X

MONEY AND CREDIT

In an exchange network limited to the family or the immediate neighborhood, money does not have to be used. Information regarding partners is optimal and reciprocity is guaranteed by a system of values transcending trade. Goods and services are not quantified with precision because what one receives in return is not strictly equivalent in quality and quantity to what one initially provided. Thus the reciprocity inherent in trade does not have to be formally guaranteed by an organization external to the trading partners. Similarly, there is no need for an intermediary to guarantee an exchange that is to take place at a later time.

We have just described, *ex negativo*, what are customarily called the three functions of money: to provide a measure of value, a medium of exchange, and a store of value. In a complex society tending toward anonymity, only a third element external to the trading partners can make it possible to quantify the goods and services exchanged and to guarantee the indispensable reciprocity of trade. A system of supervision by a third party in the form of a bureaucracy is one of the two possible ways of guaranteeing this reciprocity. The other way consists in resorting to an autonomous instrument recognized by both parties as having the same value: that is what we call money. Whether every society has used money is the subject of a classical debate in economic anthropology. We can answer this question in the affirmative, because debt, which is intrinsically linked to money, is a universal phenomenon. But the forms taken by “money” in various societies should be carefully

differentiated.

In the "general history of money," the Greek world invented something that was to remain a landmark in the Western tradition for more than two millennia: the use of a metal disk of a standard weight as a monetary instrument, this disk having an intrinsic or a fiduciary value and bearing the mark of the state, which conferred on it the privilege of being accepted by everyone. The key element in producing these metal coins was that of their minting. That is why we usually call the monetary instrument of ancient Greece "minted" or "coined" money. The latter made the Greek world the first society that had a monetary instrument that combined in a single element, with unprecedented precision and convenience, the three functions of money previously mentioned. The monetary history of Greece at the end of the Archaic period and during the Classical period was the history of the generalization of minted coins, along with that of the noteworthy innovations that made this possible. The monetary history of the Hellenistic period was the heir to this earlier history. Money (that is, minted coins, as defined earlier) came into constant use in all economic processes. An ancillary question is how much coined money was in circulation and what the evolution of the money supply was.

But although coined money constituted both the daily and the ultimate point of reference in monetary matters, we must also pay special attention to credit. In a stable institutional environment, the possession of a monetary instrument made possible drawing rights on the present and the future. But someone who does not have this instrument of exchange may also receive, conditionally, immediate drawing rights—in that case, he has access to credit. But in view of what has been said about the role in ancient Greece of coins struck in precious metal, one should inquire into the connection between credit and money, as well as into the possibility that credit might have an autonomous role as a monetary instrument.

MONEY AND TRADE IN THE WORLD OF THE GREEK CITY-STATES

Precious Metals and Monetary Instruments

The monetary use of precious metals was not peculiar to Greek society.[1]

As early as the third millennium BCE, silver or electrum began to play the role of a privileged merchandise and a value reserve in Egypt and the kingdoms of the Near East. In the second millennium, and increasingly in the first half of the first millennium, silver was used not only as a reserve and a measure of value, but also as an instrument of payment. Because of their inalterability, their divisibility, and their high intrinsic value connected with the great difficulty of procuring them, gold, electrum and, especially in the Near East, silver, thus took on the role of money. Whether archaeological or textual, the evidence from the Mesopotamian states and from the Levant shows that silver was increasingly used as a monetary instrument in the first millennium BCE. Chunks of silver (the so-called *Hacksilber*) are found in more than twenty hoards in the Levant in the Iron Age period, which does not mean, however, that the speed of circulation was as great as that of coined silver.[2] The expansion of the Babylonian and Mesopotamian economy in the sixth century is also clearly linked to the increasing role of silver as money metal in transactions.[3]

In this respect, the Greek world was not in any way a precursor. The use of precious metals as monetary instruments was introduced there only after a significant delay. Mycenaean tablets from the second millennium reveal a society that delivered products in kind, and at least so far as we can tell from the present evidence, this did not permit the monetary use of precious metals. The "Homeric world" did not assign any particular monetary privilege to precious metals. It calculated value in numbers of oxen or other objects and no good or merchandise had a monopoly on the monetary function. During the Early Iron Age and the early Archaic period, bronze and iron certainly played a role as reserves and as measures of value. This is shown by the offerings of bronze tripods and iron spits in sanctuaries of that period. The system of calculating weight and money during the Classical and Hellenistic periods still bears the mark of this, since its basic unit is the drachm (*drachmē* means "handful") and its subunit is the obol (*obelos* means "spit": a drachm was equivalent to a "handful of six spits"). But increasing bronze and especially iron production, and the qualities that made gold and silver more appropriate for monetary use, led to the emergence of the latter (in Greece, chiefly silver, de facto) as the privileged monetary metals. If we combine prices in the fifth and fourth

centuries (which is plausible given what we know about the general development of prices during this period), we can form an idea of the relationships of value among the various metals during the Classical period (table 10.1).[4] This will allow us to understand better the notion of "precious metal."

This table shows why during the Classical period, iron had only a use value. The price relationship between iron and silver, on the order of 1 to 500, is a concrete manifestation of this. Iron came into common use as a result of the proliferation of production centers, so that everyone was henceforth able to gain access to this metal through trade among cities. We must, however, not conclude that there is a direct relationship between the scale of value for metals and the overall production numbers for the various metals. A brief excursus on iron production will lead us to a few subjects for reflection.

TABLE 10.1. Ratio of Value among Metals during the Classical Period

METAL	RATIO	VALUE PER TALENT	COMMENTARY
Gold	21,201	60,000 dr.	Ratio 1:10 after ca. 350; higher earlier
Silver	2,120	6,000 dr.	—
Tin	82.3	233 dr.	Athens, fifth century
Bronze	21.3	60 dr. 1.5 ob.	Worked, Athens mid-fourth century
Copper	12.4	35 dr. 1 ob.	Athens, fifth century
Iron	4.4	12 dr. 3 ob.	Wholesale worked metal, Delphi, mid-fourth century
Lead	1	2 dr. 5 ob.	Epidauros

Notes: Base 1 = lead. Reminder: bronze is a copper-tin alloy. See the data collected by Treister 1995, 248–50. The figures in column 2 should of course be taken *cum grano salis:* beyond the illusion of a false precision, the point is to get an estimate of the ratio.

All other things being equal, iron and bronze continued to be produced in modest quantities by our standards. Moreover, *comparanda*

drawn from early modern Europe will allow us to gauge the magnitude of ancient production. In the sixteenth century, England, which was then one of the most advanced countries in Europe, produced only a few thousand metric tons of cast iron.[5] After a period of steady growth in the second half of the sixteenth century and the beginning of the seventeenth century, iron production rose to more than 10,000 tons, reaching 18,500 tons around 1620, 23,000 tons around 1770, around 100,000 tons at the end of the century, but exploding quickly to several hundred thousands after 1800, once technological changes (smelting with coke) had produced their full effects. It is true that to domestic British production we must add imports, which varied depending on the period, but which in the eighteenth century far exceeded domestic production.

As for the ancient Aegean world, it had a number of iron ore deposits.[6] However, in most of Aegean Greece, inadequate forestation and thus inadequate fuel supplies limited metallurgical production. During the Classical and Hellenistic periods, an annual production of cast iron in the Aegean basin of about 1,500 metric tons, perhaps supplemented by imports on the order of 500 to 1,000 tons per year, appears to be the maximum we can envisage. (In comparison, we might recall that the weight of the metal in the Eiffel Tower is about 7,300 tons.) During the Imperial period, a major iron-smelting site like the upper basin of the Dure in southern Gaul, produced about 250 tons per year.[7] Much higher annual production figures have been suggested for the rich deposit in Populonia, in Etruria: 2,000 tons per year on the basis of two million tons of slag produced over a period of four hundred years.[8] But if the production period was longer than has been supposed, the annual production figure could be significantly lower. In any case, Aegean Greece did not have iron deposits as rich as those of Etruria and on the island of Elba.

On the other hand, if we add up the silver produced in Laurion and in the mines of northern Greece and Thrace, various factors suggest an average production of silver in the Aegean basin on the order of 1,000 to 1,500 talents (26 to 39 metric tons) during the Classical period.[9] Of course, these figures provide no more than crude approximations. However, on the basis of a minimal silver production of about 1,000 talents or about 26 tons, an iron supply of about 2,600 tons (certainly a

very optimistic figure, as we have seen), the value relationship between silver and iron in the Aegean area would seem to have been on the order of 1 to 100. However, it appears to have been about 1 to 500. Rather than increasing the estimate for iron production or lowering that for silver production, we have to see that the demand for silver, both on the domestic and international market, was greatly increased by the specific nature of monetary demand. All our sources show that individuals and sanctuaries stored up significant quantities of precious metals.[10] Systematically subtracting part of silver production from the amount that was in circulation (which was not done for iron) must have contributed to silver's higher value. Well-attested and constant exports of silver toward the eastern Mediterranean must also have helped increase the value of silver in the Greek world. Again, we hardly need to add that these figures are only rough estimates. In any event, the production of silver or iron must have constantly varied. But these estimates at least allow us to explain why iron was not the precious metal that it had been a few centuries earlier, and why silver (and gold) henceforth played their specific role.

The Rise of Coinage

The system of minted money was established between 650 and 625 BCE in the crucible of civilizations represented by the Greek coastal city-states and the kingdom of Lydia. Gold and silver were abundant in the Lydian kingdom. Coins were first made of an artificial alloy of gold and silver that the Greeks called "electrum." The ratio between the two metals was manipulated in various ways that show the highly elaborate nature of the decisions made by the monetary authorities of the city-states and the Lydian monarchy.[11] In its initial phase, coinage in Asia Minor thus corresponded distinctively to a form of monometallism.[12] However, before the middle of the sixth century, gold and silver were minted separately under the Lydian king Croesus, who issued coins that our sources call "croesids." This system was adopted by the Persians after they conquered western Asia Minor in 546 BCE. From that time on, electrum coins existed only residually. Only rare exceptions to this rule are found, mainly coins struck by the city of Kyzikos, which continued to mint a large number of electrum coins down to the second half of the

fourth century, and whose currency was dominant in the area of the Bosporos and Pontos, and those minted jointly by the two cities of Phokaia and Mytilene.[13]

Following the tradition established by the Lydian king Croesus (with his Croeseids of both gold and silver), the Persian king distinguished himself by minting the two metals. Later, King Darius modified the standards to strike the gold "darics" named after himself, and the silver "shekels" (the *sigloi* of the Greeks). By contrast but on the basis of these experiments, the cities of mainland Greece began to mint coins themselves, but silver coins only. Exceptions to this rule are rare. As far as we now know, silver coins were first minted west of the Aegean around or after 550 BCE, in Aigina, Athens, and Corinth (the exact chronology of the introduction of coinage in the three cities is still uncertain). Between 540 and 480 BCE, silver coins began to be issued in a multitude of other city-states, as far as Massalia (Marseilles) in the far west and Pantikapaion on the northern coast of the Black Sea (figure 10.1). Apart from coins minted by the Persian monarchy, minting was initially associated with the Greek city-state only, since at least at the end of the Archaic period and at the very beginning of the Classical period neither the Phoenician cities of the Levant, Carthage, nor the Etruscan cities struck precious metal (the Phoenician cities, Tyre and Sidon, and cities of Philistia began to strike coins perhaps around 450 BCE only).[14] The coins issued by the cities of Karia and Lykia do not constitute an exception to this rule.[15] These cities were not only closely connected with the Greeks. They were also city-states whose social system was probably not very different from that of the Greeks, although indeed they were commonly under the control of local "big men," dynasts or tyrants. In two fourth-century epigraphic texts, these cities call themselves *poleis*, "city-states."[16] Mylasa, Kaunos, and Xanthos could vote decrees just as Greek cities did.[17]



FIGURE 10.1. Main cities that coined silver ca. 500 BCE (from Kim 2001, p. 10).

Having or Not Having Coined Money

At the outset, therefore, and for several centuries, coinage was specific to the Greeks. Thus we must inquire not into the origin and function of coinage (a complex question that cannot be dealt with in this work), but rather into the equivalence between the economic and social system on the one hand and the monetary system and the circulation of value on the other.

To explain the existence of coinage, we must of course first mention the technical considerations: to mint a precious metal, one must obviously have the metal. Thus we could conclude that peoples like the Etruscans, the Phoenicians, and their Punic cousins, who had no silver mines on their territory, were thereby discouraged from imitating the Greeks. While it is true that the Greeks had fairly abundant resources in silver, these were very unequally distributed. The mines of the island of Siphnos were exhausted before the end of the Archaic period, and in the

Classical period, most of the silver produced must have come from the mines of Laurion and from northern Greece, Thrace (particularly from the famous district of Mount Pangaion), Troad, and possibly also, to a small extent, from mines situated in Illyria or even in Iberia. Thus the great majority of cities procured through trade the metal they needed for coinage, and this alone suffices to prove the connection between trade and metal coinage. Although the world of Etruscan and Roman Italy continued to use bronze as commodity money, this was not the case in the Near East, where silver had played that role since at least the end of the second millennium.

It is therefore certain that although having a stock of metal was a necessary condition for coinage, it was not a sufficient condition. Clear proof of this is provided by the Achaemenid kingdom. Over the centuries, the Achaemenid kings accumulated huge quantities of precious metals, which in the second half of the fourth century amounted to a colossal total of 180,000 talents (in equivalent silver).[18] Nonetheless, except for coins minted in the western part of the kingdom, where the Achaemenid kingdom was in contact with the Greek Mediterranean, to finance military expeditions, it did not issue large numbers of gold or silver coins. Those that were struck represented only a small proportion of the enormous reserves of precious metals at its disposal. These coins were in no way capable of providing for an internal monetary circulation in the various regions of the kingdom. This is not a simple technological fact. The tributary structure of the Persian Empire, which was itself heir to the ancient tradition of the Mesopotamian kingdoms, was based on a principle radically different from that of the circulation of goods among equals.[19] The state levied tributes not only in the form of precious metal, but also in that of forced labor or deliveries in kind: grain, livestock (war horses, cattle, or sheep), products such as wood and bitumen, and so on. The goods provided by the state, which were piled up in royal storehouses, were then usually redistributed in kind, on written order of the king or his administration, or in cash, in the form of weighed silver. Even if the state, the temples, and rich individuals gave priority to recovering amounts due in the form of precious metal, weighed silver was only one means of circulation of value among others.[20] This difference is also illustrated by the contrast between the economy of Babylon and Mesopotamia, in which weighed

silver began to play an increasingly growing role in transactions from the sixth century onward, and that of Persis—the heart of the Achaemenid empire—which was a sophisticated economy, but based on transfers that at least in our sources are exclusively in kind.[21]

This tributary system, which was so effective in carrying out major works or assembling large armies, had long since demonstrated its superiority over the traditional system of tribal chiefdoms. It had allowed the kingdoms of the Eastern Mediterranean world to extend their dominion over ever-vaster regions until the Persian Empire finally reached from India to Egypt and the Aegean. Through time and through the successive expansion zones of the kingdoms of Egypt, and then especially Assyria and Babylon, and finally Persia, there is a steady logic that shows the dynamics of this system. The king of Persia could legitimately believe himself destined to rule the world until he encountered an adversary he could not conquer, first in the Massagetans[22] and the Skythians[23] (in reality, only because they took advantage of the wide open spaces and could not be cornered), and then, especially, the Greeks (the sole sedentary group to succeed in resisting him). Even if locally (weighed) silver could commonly be used as money by temples, satraps or "private individuals," as far as the central Achaemenid state was concerned, precious metals became the king's private property. The king's enormous reserves permitted him to establish a political power relationship incommensurable solely with those who might have proven to be rivals, because his own financial reserves were virtually limitless.

In the Persian world, silver and gold thus entered the central royal treasury as a tribute, but for the most part they did not emerge from it again. They were essentially destined to be removed from circulation, and hence to become sterile. They did not serve as a means of social communication. The revenues and expenditures of the state, on the one hand, and those of private individuals on the other, were fundamentally heterogeneous. The state played ordinarily no role in trade between individuals, which thus remained mainly private. Of course, the compartmentalized form of the instrument of trade did not prevent fluctuations in price determined by the rules of the market.[24] We should note that living without coinage did not mean "living apart from the economy," or even "living apart from the economy of exchange." In

Persepolis, at the turn of the sixth and fifth centuries BCE, the Persepolis Fortification Tablets testify to an economy of a region (southern Persis) where deliveries of goods and supplies of rations were accounted for exclusively in kind. Coming from the same site, the Persepolis Treasury Tablets (first half of the fifth century BCE) show a more sophisticated system of accounting in silver.[25] The various ways of transferring value (small-scale commerce, large-scale commerce, tributes paid to the king and the latter's expenditures) were not structurally integrated.[26]

Thus there were three important practical differences between Classical and Hellenistic Greece, on the one hand, and the "eastern Mediterranean world" (in an inclusive definition, that is, from Egypt to Iran) on the other. The first of these is that in the markets of Egypt, the Levant, and Mesopotamia, silver was not the sole means of payment. Even in Babylon, the largest city in Mesopotamia until Alexander's conquest, other commodities such as barley, dates, wool, or sometimes gold might serve in this role.[27] The second difference is that throughout the eastern Mediterranean world, it was traditional always to weigh silver to obtain the appropriate quantity for a given exchange, since preweighed silver in the form of minted coins was not available. The third difference had to do with distrust regarding the metal that circulated. In the world of weighed silver, each payment was open to challenge because it was purely private and did not benefit from the immediate sanction of public authority: hence there were frequent disputes about the quality of the silver used in transactions.[28] Indeed, in sixth-century pre- and post-Achaemenid Babylon, the mentions of *ginnu* ("certified") silver show clearly that public authority (acting in the name of the King) could intervene to guarantee the quality of the silver used in transactions.[29] But this was not a universal practice. In the absence of a general state guarantee, which would have been provided by the central Achaemenid state or its satraps, it remained impossible to trust the quality of the precious metal. Thus Greek coins that circulated in the Achaemenid Empire were often treated no differently than local *Hacksilber* and they frequently have a chisel cut. Their users had no reason to believe that in some distant Greek city the state guaranteed the coin's value. And thus in the large Asyut hoard in Middle Egypt, most of whose coins were minted before 475 BCE and which may have been closed around 460 BCE, many of the coins had been chiseled, showing

that people had no confidence in the value of a coin, which was treated as bullion.[30]

Thus there was a radical difference between the Achaemenid world and that of the Greek city-states, all of which, even the largest, were ridiculously small in comparison to the immense Persian Empire. That is, in a way, the paradox of Marathon. But despite the sentimental image, there is a reality: that of a society based on principles profoundly different from those of the tributary system, a society whose principle Herodotus formulated in a remark he attributes to Cyrus:[31] the world of the Greek city-states was a world whose center was the agora. This public square was a place of exchange among equals in which, in the operation of exchange itself (of course not in society at large), inequalities of birth or fortune were of little or no importance. This relationship of formal equality before the law held for economic exchange because it was also based on at least the theoretical formal equality of the members of the *dēmos*. It was this formal legal equality, of which the political equality in the democratic city-state was only the most radical manifestation, that made possible the development of the general equivalent constituted by the coinage of precious metals. The Greek *polis* was not a reality separate from the body of citizens, situated at a higher, inaccessible hierarchical level, but rather the common possession of the citizens who were members of it.[32] Exchange constituted the very definition of political speech in the assembly (and in the theater, at least in the fifth century). In Greece, precious metals were a value that circulated, just like words. Sitta von Reden has shown that for Herodotus, exchange was the structuring principle of society.[33] Herodotus judged the world through the category of exchange because it was consubstantial with the system of the polis. In Persian society, which was stratified with the king at its summit, a hierarchical circulation of wealth (the levying of tributes or the distribution of rations) left little room for exchange among equals, because social relationships were fundamentally asymmetrical. The king, the master of Truth, held a monopoly on political speech, just as he reserved most of the precious metal for himself.[34] Here we are at the antipodes of a society based on communication among equal partners.[35] The transition to coinage was in a way the outcome and best instrument of this generalized system of exchange.

Of course, in the reserves held by states and by sanctuaries, there was a kind of public accumulation that constituted the indispensable reserves that could be issued in the form of coins or the ultimate reserves that were drawn upon only when absolutely necessary.[36] But in a way, this process of accumulation was part of circulation. In any case, once issued, coins played the role of a general equivalent, serving both as a measure and reserve of value and as an instrument of exchange. In the world of the Greek city-states, only silver coins minted by the city-state and foreign coins it accepted as legal tender could be used. This monopoly may seem odd or even superfluous. Why wouldn't a given quantity of weighed silver have the same value as an equivalent weight in coined metal? What was the difference between the Greece of the city-states, where trade was carried on using silver coins, and the markets of the Babylon under the Achaemenids (or even in large measure under the Seleukids), where trade was carried on by weighing out silver?

The fundamental point is that the coined silver used in transactions among citizens had passed at least once—when it was minted—through the hands of the state, which had put its stamp on it. In addition to factors that are certainly not negligible but remain marginal for our subject here (the privilege of coined metal over weighed metal, the difference between real weight when issued and theoretical weight, the profit taken by the state issuing the money, the wear of coins), what is most important to note is that the state guaranteed its coins. The quality and quantity of the metal were certified by the state's stamp. Thus the transparency of any transaction was assured: normally, except in cases where coins had to be reminted, coins were counted, not weighed.[37] Not to mention the practical convenience of using coins of a standard weight, exchange among individuals was thus both guaranteed by the state and at the same time completely freed from the latter's intervention.

In Greece, mercantile trade was not carried on in a hermetically sealed cell, alongside other modes of transferring value such as tributes. Beyond a few exchanges among private individuals in a family context or in a neighborhood trade network, mercantile trade was the general and unique principle of the circulation of value, and most payments were traditionally made in cash. Depending on the region, the transition between payments in kind or other forms of values took place at various dates between the second half of the Archaic period and the beginning of

the Classical period. While in Asia Minor, payments in coined electrum were introduced as early as the second half of the seventh century, on mainland Greece or among the western Greeks the transition from the world of payments in kind or weighed silver to that of payments in coined money began only one century later, in the second half of the sixth century and the first half of the fifth century in the most advanced states. Thus, around 500 BCE, the recruitment contract for the secretary-archivist Spensithios in the little city of Datalla, in central Crete, still specifies that compensation is to be paid in various goods.[38] Similarly, the contract for a public physician in Cyprus around 470 BCE mentions that he will receive either a talent of silver or a piece of land in payment for his services.[39] But later, silver coins became the universal mode of payment in all the urbanized cities open to trade. By the fourth century at the latest, most payments were made in coined money. Thus in inscriptions from the fourth century, even ground rents, as they appear in the numerous extant land leases, are always calculated in monetary terms. The source of the system of coining precious metals is to be sought in the universal character of coins as a means of payment. They were used for all income and expenditures, whether those of the state (levies and taxes on the one hand, payment for services or expenditures for equipment for the use of the community on the other) or those of private individuals (purchases on the domestic market, in the agora, payment of ground rents or salaries, acquisitions on the foreign market, in the *emporion*). It was of course through the payments made by the state that coinage was pumped into circulation. The specific relationship entertained between the state and economic activity—this was not a command economy and the state paid for the services it needed—is thus crucial for the existence of coinage as a privileged means of payment in Ancient Greece. That was the key to the Greek city-states' system of coined money.[40]

In their fundamentally egalitarian legal context (it is not necessary to take into account here the avatars of the history of the city-states, in the course of episodes of tyranny and revolutions), coined money was the symbolic form of the circulation of value, which both manifested the formal equality among legally equal trading partners and guaranteed the cohesion of the civic community. The difference from the Persian world's tributary system is thus revealed. In the Greek city-state trade, even if it

was still carried on at the free initiative of the partners, always bore the stamp of the state by the simple fact that coined money was used.

The proof *a contrario* of the connection between coined money and market exchange can be found not only in the Achaemenid Empire but also in the Greek world. Like the Cretan cities, Sparta had inherited from the early Archaic period strongly stratified political and social structures. But the contrasts were sharper among the Lakedaimonians than elsewhere. At the apex of the social pyramid, a group of citizens of the city of Sparta proper, or "peers" (*homoioi*), exploited a dependent peasantry, the helots, forcing them to hand over half of what they produced. The citizens of Sparta were not supposed to be engaged in any activity related to production. The city of Sparta itself controlled a series of peripheral cities inhabited by second-class citizens, the so-called *perioikoi*. Agricultural production was thus carried out by helots or *perioikoi*, domestic trade probably being handled mainly by the *perioikoi* and other categories of people of inferior status. Although the city-state of Lakedaimon cannot have been completely ignorant of foreign trade, it did all it could to limit it. Sparta had the reputation of being a closed city that regularly "expelled foreigners" (these expulsions were called *xenēlasiai*).[41] Furthermore, the wealth of Lakonia and the neighboring regions in the realms of agriculture and iron ore explains why foreign trade could be far less important there than elsewhere. Sparta began to coin money only in the second quarter of the third century BCE, almost three centuries after Athens (and for limited usage only).[42] This was, of course, no accident: on the contrary, it was a fundamental characteristic of the system. There was no room for a transparent instrument of exchange in this hierarchized, inegalitarian city-state, which was also as little open to foreign trade as possible. Furthermore, we have proof that at the beginning of the fourth century BCE, Spartan leaders deliberately refused to introduce silver coinage, even though after their resounding victory over Athens in the Peloponnesian War they had the means to do so.[43] They said that they preferred to retain the old system of using iron bars. In fact, the point was chiefly to prevent transparent ways of circulating value and to give priority to credit based on land and to documents acknowledging debts.

Money as an Institution

By putting money into legal circulation, the state provided an additional guarantee for transactions. The use of a single and unchallengeable currency in transactions in the agora or the *emporion* forestalled the disputes to which money, as the common instrument of measuring values and of exchange, might itself have given rise. But this required more than a mere declaration of principle. The necessary steps to ensure that the principle was applied had to be taken. The repression of counterfeit coins—counterfeiting was punishable by death—shows the importance attached guaranteeing money.[44] But transactions also had to be conducted using this money. That is certainly already the meaning of an archaic law of Eretria from the sixth century BCE, even if the text is very mutilated.[45] A law of Olbia from the fourth century required the exclusive use of the city's currency, though it allowed metal coined by other cities to come in and go out freely.[46]

In most of the cities that minted coins, excavations have shown a significant predominance of the city's coins, which is logical, of course, but also allows us to assume that legislation existed (and certainly differed from one city to another) to ensure that the money was actually used. Thus in the hoards found on Rhodian territory, we find only coins from Rhodes, whereas during excavations on the island a small proportion of bronze coins from other cities has been found.[47] However, the definition of which coins were legal tender sometimes posed a problem. This was the case in Athens during the first decades of the fourth century. The city's coinage had been so abundant in the fifth century that it had become a sort of *de facto* standard. As a result, it had also been imitated by a number of other states, perhaps especially just after the defeat of 404 (when Athens briefly stopped issuing coins). These coins, which circulated internationally, ended up by returning to the Athenian market, mixed with "genuine Attic coins." The city had to legislate, and the decree it issued in 375/4 BCE illustrates the ways in which coins were monitored.[48] There was already an inspector responsible for verifying coins, who officiated in the agora in Athens. The law provided for a second inspector in Piraeus to check the coins used by ship-owners and wholesale traders. Counterfeit coins, for example those that were made of bronze with a thin layer of silver on the surface, were to be chiseled and withdrawn from circulation. Foreign coins bearing Athenian types were returned to the traders, evidently so

that they could make free use of them, but without sellers being under any obligation to accept them. On the other hand, coins recognized as authentically Attic could not be refused, on pain of having the merchandise offered for sale confiscated.[49] Using the coins that were legal tender on the market was not an option: it was an obligation. This was a crucial difference with trade exchange based on weighed silver. Through the provisions of the law, we can guess the modalities of supervision. There was no systematic examination of coins in either the agora or the *emporion*. If a seller had doubts about the coins given him in payment for his merchandise, he could go with his customer to consult an inspector, who would examine the coins in question.

Athenian law thus tolerated, without designating them as legal tender, a certain number of foreign coins that did not meet Athenian norms, provided that they were of genuine quality. Furthermore, we can understand why Athens proceeded in this way. If it had taken no steps, it would have undermined confidence in its own money, and even encouraged traffickers to come to Athens to pass their inferior coins or counterfeits. Conversely, had it been too strict and authorized only its own money, it would have risked paralyzing trade, because it was difficult to distinguish foreign coins from authentic Attic coins, the latter often being of mediocre quality. By obliging people to accept coins recognized as authentically Attic, it nonetheless maintained the latter's privileged status.

Moreover, depending on their monetary policy, the city-states made one series of coins legal tender and denied that status to another series. A law of Gortyn from the third century BCE made new bronze obols legal tender but silver obols were no longer legal tender; those who did not observe the law were fined.[50] Users were obviously wary of the new coins—whence this law's prohibition on demanding a premium when bronze coins were used. This was more than a simple matter of style. We know, for example, that in Ptolemaic Egypt an official premium had to be paid when using bronze coins. Furthermore, if a city-state wanted to revalue its money (and profit from the operation), a simple way of doing so consisted in announcing that all its coins had to be turned in. The coins were then struck with a countermark that gave them a new value, and which had to be present for these coins to be legal tender in the city-state. The latter retained some of the coins (the number of

countermarked coins returned to the owners was lower than that of the unmarked coins they had handed in) and thus made a kind of profit.

Beyond the details of these procedures, we note that as a rule, if a city-state coined money—and almost all the large ones did, with the exception of Sparta until the third century BCE—it was made legal tender on its territory. Most of the cities that did not mint money—that is, most of the smaller ones—had to accept foreign coins as legal tender. However, almost from the outset, certain currencies went into international use, making the situation more complex. This first occurred with the "turtles" from Aigina (these coins bore the image of a sea turtle on their obverse) at the end of the Archaic period and the beginning of the Classical period. These coins have been found from Sicily (the Selinous hoard) and Illyria (the hoard of Hollm) to Egypt.[51] The spread of the Aiginetan standard over a large part of the southern Aegean shows that on this basis a genuine monetary zone was established.

Then came the famous "owls" of Athens (so called because these coins bore the image of Athena's head on the obverse and on the reverse that of an owl). This coin was very widely distributed in the fifth century BCE, at the time of the Athenian Empire, partly because owls were issued in considerable quantities, and partly because Athens finally forbade minting other coins within its empire. After a period of contraction at the beginning of the fourth century, these coins underwent a further phase of internationalization as a result of renewed activity at the mines in Laurion after 350 BCE and the pivotal commercial role played by Piraeus. In the Hellenistic period, this phenomenon was further accentuated and took on an institutional form. Royal Macedonian coinages, gold staters of Philip, silver tetradrachms and gold staters of Alexander, all of them on the Attic standard, became the genuinely international currencies of the Hellenistic world.

This was particularly true of the silver Alexander tetradrachms, which bore on their obverse an image of Herakles wearing a lion's scalp that was in fact a representation of Alexander, and on their reverse side an image of Zeus sitting in majesty on his throne. These coins were struck during Alexander's lifetime, but after his death in 323 BCE they were struck in still larger quantities by his first successors, until around 290. Starting around 240 BCE, some cities in the Levant began to strike what are called "posthumous Alexanders." In turn, coastal cities in

southern and western Asia Minor minted Alexanders until about 160 BCE. Only an additional indication (for example, a meander for Magnesia on the Maeander or a rose for Rhodes) made it possible to determine the provenance of these coins.[52] Moreover, the minting of posthumous Alexanders, undertaken by a multitude of cities, surely responded to a desire to compensate for the shortage of royal coins. As we have seen, the minting of Alexanders was interrupted at the beginning of the third century BCE, and by the middle of that century, the number of them had considerably diminished as they wore out or were lost, exported to barbarian countries, recast in the form of dishware or jewel, or used to mint other coins. Moreover, all these coins (old lifetime Alexanders and posthumous Alexanders) were disseminated in a vast international circulation.[53] Even if a certain number of local standards and coins still persisted, there is no doubt that international trade was considerably facilitated by these Alexander coins that transcended the traditional borders of the city-states. Thus there existed a genuine international currency on which everyone agreed because it had every possible advantage for trade: the same standard and the same form, no matter who issued it.

The picture changes starting about 160 BCE. Some cities in western Asia Minor struck, still on the Attic standard and down to about 140, "wreathed" coinages (so called because there was the image of a wreath on the reverse). These coins circulated side by side and, one way or another (and although the reason why they were minted remains much debated), met the needs of international trade between Asia Minor and the Levant.[54] In mainland Greece, against the background of the established decrease or simple cessation of most of the minting of silver, Attic coins were almost the only ones that remained. Starting in 164/3 BCE, it seems Athens even introduced a new coin that was somewhat lighter than the earlier one and also bore the image of a wreath on its reverse (whence the name of this coin, *stephanēphoros*). The great success of this coin is connected with Athens's supervision of Delian commerce.[55] At some time during the last fifteen years of the second century, Athens also succeeded in persuading the amphictiony of Delphi, the "religious confederation" that governed the sanctuary, to issue a decree obliging "all Greeks" to accept the Attic tetradrachms as legal tender.[56] Here, "all Greeks" meant all the cities of mainland Greece south of the province of

Macedon (probably including the western Kyklades). This inaugurated a new phase in the internationalization of Attic currency. Between the end of the second century and the catastrophic war against Rome waged from 88 to 86 BCE, *stephanēphoroi* coins played *de facto*, and for many cities also *de jure*, the role of an international currency from the Roman province of Macedon to Crete.

Minting and the Use of Money

The attention city-states gave to the use of minted money raises the question of how this money was used. This question leads us to ask in turn why a state decided to mint money or not. Paradoxically, many studies have shown that by minting money states were not necessarily seeking to provide for regular monetary circulation. What led many states to mint money was chiefly the need to finance their own expenditures. For the kingdoms, the first budget item was expenditures for financing war. This is demonstrated by the kingdom of Mithridates VI of Pontos, where the highpoint of minting corresponded in each case to the wars were being waged or prepared by this king.[57] There is every reason for thinking that the same was true for the city-states, which also frequently had to finance heavy war expenses. Furthermore, this was not a situation peculiar to antiquity; the states of modern Europe and even of the contemporary world vastly increased the money supply in wartime. Another important budget item was construction, when new cities were being founded or after natural disasters such as earthquakes that led to major urban building projects. The case of the city of Rhodes offers a good example of the relationship between coin production and wars or phases of construction or reconstruction.[58]

However, although the increase in the money supply was very logically connected with periods of war or construction, we cannot conclude that state expenditures were the “cause” of coinage. To corroborate this, we have only to note that in the eastern Mediterranean the states that preceded the Persian Empire had always financed considerable war expenditures without ever having introduced coinage. Instead, we should say that state expenditures were the main way in which coins were introduced into a circulation that they thereby helped create and maintain. The minting of Alexanders by Alexander himself or

by his first successors, using precious metals pillaged from the Persian treasuries, fall completely into the category of financing war expenses (we must, naturally, include in these the salaries paid mercenaries). At the same time, these massive mintings directly supplied a very widespread circulation of coined money. In addition, if we consider the case of a few city-states that minted large quantities of coins, as Athens did at the end of the Archaic period and in the Classical period, we see that the key factor in these issues is to be sought in the monetization of the resources produced by the mines of Laurion. On the one hand, the state received directly the rent on the mining concessions. On the other, it could mint for individuals the products from their mines. For the owners of the mines, it was essential to convert the silver taken from the mines into coins. If only in order to continue to work the mines, the coins thus minted had to be reinjected into monetary circulation. In other words, the pace of monetary issues was basically governed by constraints other than the desire to encourage monetary circulation. It is this mediation, in which we see clearly that expenditures for war could not be considered as being the direct "cause" of minting, that accounts for the connection between minting money and monetary circulation.

However, nothing allows us to conclude that there was no interest in fueling money supply, because a collectivity necessarily directly experienced the difficulty of providing enough coined metal. But issuing coins in precious metals was expensive; metal had to be collected, secured, and finally minted. Since a high-quality currency was very likely to be exported to foreign markets, we can understand why to pay its external expenses, the average small city preferred to rely on the great currencies circulating on the international markets rather than mint money by itself. That is also why the policy of "closed currency systems" was widely adopted; this policy made it possible to take advantage of an unfavorable exchange rate for imported currencies with respect to the local currency, which was struck on a lower weight-standard, in order to retain the coins the city-state had put into circulation.[59] These closed-currency system policies may remind us of those urged by mercantilists in the modern period, who maintained that the state's interest was to acquire as much money as it could.[60] For individuals who held them, these coins represented the most convenient way of preserving their wealth or acquiring new property on the market.

In this respect, we must ask how much these coins were worth. The most valuable coins, especially gold coins (whose value in relation to silver was 13.3:1 in the fifth century, 10:1 after about 350 BCE) and large silver coins such as tetradrachms, were used for all major purchases: land, houses, luxury goods. They were also used to pay mercenaries, and constituted the medium of large-scale commerce as well. Finally, they were the privileged instrument used by the elite of the city-states for all payment operations, both public and private. Taken as a whole, they represented most of the value of the coins minted. But given that these had a very high intrinsic value, should we therefore conclude that the world of everyday trade, that of the agora, remained outside a monetarized system, as was long thought? That would contradict the previously stated principle of the homogeneity and unity of the monetary instrument. In fact, we now know that from the end of the Archaic period and the beginning of the Classical period, Athens as well as city-states in Asia Minor and Sicily issued not only large monetary units but also very small ones, going as far as the obol or a fraction of an obol.[61] The problem raised by these fractions is that they necessarily weighed very little, less than 0.20 gram, or even 0.10 gram for the smallest of them. They were also as small as a few millimeters in diameter. That is why they were neglected for such a long time. On the one hand, they did not interest collectors; on the other, no one knew how to find them: metal detectors now make it possible to identify them, even buried deep in the earth.

Thus the monetization of everyday trade in the agora began at the end of the Archaic period and in the early Classical period. However, the system had disadvantages as well as advantages. It was not very user-friendly. Small coins could easily be lost and they must not have always been easy to identify. For the city-state, minting these small coins was expensive.[62] The result was that while some cities regularly minted fractional coinage, others did not. The true innovation came from Magna Graecia. Shortly after 450 BCE, a system of fractional bronze coins began to be established in southern Italy and then in Sicily.[63] It replaced silver coins for denominations of low value. Why did the Italiot cities have this priority? The absence of silver mines in Italy and the tradition of bronze coins in the Etruscan and Italic cities might well have played a role in this. The first cities to mint such coins were Thourioi and Rhegion.

Before the end of the century, their example was followed by Poseidonia, Velia, Metaponton, Kroton, and Kaulonia, as well as by the cities of Sicily. From the west, the movement rapidly spread to the Aegean, and before the end of the fifth century, a certain number of city-states had begun to mint bronze. Then, during the first half of the fourth century, coined bronze was adopted everywhere and established itself as the normal currency for trade in the agora. Bronze coins had a fiduciary value, because the value of the metal they contained always remained significantly lower than their legal exchange value. As a result, even if the aggregate value of the bronze coins remained comparatively small, the issuer nonetheless made a profit by minting. In addition, there was the profit derived from exchanging these coins against foreign currencies.[64] Thus introducing and maintaining bronze coins was within the reach of most city-states, even the smallest.[65] In fact, beginning in the fourth century we find masses of these small bronze coins, especially, of course, in the agora sectors of the various city-states.[66]

In this movement, Athens was not a precursor, not introducing bronze coins until well into the fourth century. It is very possible that the preference for silver played a braking role in a city-state whose supply of this metal was guaranteed by the mines of Laurion. It is also possible that the experience with emergency currencies after the Peloponnesian War—bronze coins plated with silver, "genuine counterfeits," so to speak—may have left bad memories. In his play *The Assemblywomen* (815–22), Aristophanes mentions the demonetarization of this "bad bronze" at the beginning of the fourth century.

Coined Money and Economic Growth

Economists have long debated the notion of the "veil of money": does money play only the role of a pure "seismograph" of economic activity, or does it have an impact of its own, positive or negative, on that activity? The first point of view is that of classical economics, while the second is especially associated with the Keynesian tradition. So far as contemporary economic thought is concerned, one should emphasize Milton Friedman's and John Maynard Keynes's theories regarding monetary policy. Thus Friedman's principle of the necessity of maintaining a balance between the amount of money in circulation and

the level of economic activity presupposes that a disequilibrium (for example, resulting from inflation or deflation) would have a negative impact on the level of economic activity. Keynes, on the other hand, wanted a moderate increase in the amount of money, assuming that money could itself increase activity.

The economy of the Greece of the city-states was certainly very far from the contemporary world's economy based on credit-money. However, given the conditions of precious metal merchandise-money in antiquity, it is worthwhile to ask whether money by itself had an impact on economic development. For this purpose, the best example is Athens, and beyond it the system of trade that grew up around that city during the Classical period. At the end of the Archaic period and the beginning of the Classical period, Athens underwent a lightning-fast development from a city that was important, to be sure, but not of the first rank, to become the leading city in the Greek world, in various ways and for almost two centuries.

A classic explanation of Athens's dominance emphasizes the political factor. Clisthenes's reform in 508/7 BCE made Athens the first city-state to establish an egalitarian system that would rapidly become the first democracy in the world of the Greek city-states. But in addition to the political aspect, from the end of the Archaic to the end of the Classical period Athens was also the city-state that minted the most coins. Athens enjoyed the advantage of having the silver deposits in Laurion at its disposal. These mines had been in operation in the Mycenaean period. We know very little about mining during the Archaic period, but it is possible that there was a small amount of activity in Laurion. With Aigina and Corinth, Athens was one of the first city-states to issue silver coins, the famous *Wappenmünzen*, or "heraldic coins." These coins were not struck on a single type, but on several (whence their name, for in the nineteenth century it was thought that they had been issued by great families that wanted to sign their money with their coats of arms—a theory that has now been abandoned).[67]

The date when this coinage began remains uncertain: after 540 BCE at the earliest, or perhaps after 530 BCE, is the most likely. Physical analysis has shown that these coins did not use metal from Laurion but rather silver that came from elsewhere (northern Greece?). At the end of the century, around 515 BCE perhaps, a new coin was introduced that

bore an image of the head of Athena on the obverse and that of an owl on the reverse.[68] These types were to remain virtually unchanged until the introduction of the *stephanēphoroi* in the second century. From the outset, these coins were minted using silver from Laurion. This was, of course, a major change. According to tradition, the Athenians found a new vein of silver that was particularly rich and allowed a rapid increase in monetary production. To reach this new vein, it was necessary to dig deeply and pierce through a particularly hard layer of rock before reaching the strata from which the silver could be extracted. It was the production of this metal that made it possible to finance the construction of the triremes that won the Battle of Salamis in 480 BCE.

Naturally, mining did not begin immediately before the battle. It was the result of a development that had begun more than three decades earlier, between 520 and 510 BCE.[69] The Athenians had to make investments (in slaves, in structures, in importing fuel) and also take risks, because all the pits did not turn out to be equally productive. Thus a conscious desire to make profits was required both collectively, on the part of the city-state that sold the temporary mining concessions, and individually, on the part of investors. A quantitative analysis allows us to gauge the impact of the rise of Laurion on coinage. Based on the chronology of issues drawn up by Chester G. Starr in 1970, the annual average production rose from about 11.5 talents for the first *Wappenmünzen* to 19 talents for the second series, then to about 155 talents for the owls issued between 510 and 475 and about 470 talents for those issued between 474 and 449. As Christophe Flament has shown, Starr's assumptions have to be reexamined.[70] If, as Flament suggests, this development took place over a shorter period of time than envisaged by Starr, the growth would be even more spectacular. Basing himself on an analysis of the costs of mining, Flament estimates that after 450 BCE, and then again between 350 and 340 BCE, annual silver production in Laurion must have exceeded 1,000 talents.[71] Even if these figures are debatable, they nonetheless give us an idea of the rapidity of the increase in monetary production after the transition to owls. They also allow us to gauge the dynamism of Athens at the end of the Archaic period and the beginning of the Classical period. It is no accident that alluding to Laurion, the chorus in Aeschylus's *Persians* (238) says that the source of the Athenians' wealth was the possession of a "source of

silver, the treasure of their soil." Athens took great care of its production of silver, which was basic not only to its political but also to its economic dynamism, since coined silver was one of its main products for export.[72]

To return now to the question asked at the outset regarding the impact of coined money on economic development, we can say that, being naturally connected with the whole of the city-state's institutional system and with the vast commercial network that was then being established, and of which it was the center, the growth of Attic coinage triggered a process of production and trade, and thus economic growth, in a large part of the Mediterranean world.[73]

CREDIT

Ancient Greece thus created a monetary system that was both flexible and coherent, and integrated all aspects of trade. It remains to be determined how credit operated.

Forms of Credit in Ancient Greece

Lending is a practice very frequently attested in Greece. Literary sources and inscriptions, among others those on the numerous mortgage stones (especially in Attika) guaranteeing loans, prove that it existed.[74] When someone needed money, where did he go? Today, we would expect him to go to a bank. And in fact, apart from their activities in currency exchange and holding deposits, banks made loans, at least to members of the social elite.[75] But there were several other sources of financing that seem to have been much more frequently used by ordinary borrowers. To get a small loan, one went first to relatives and friends to obtain a loan that was usually interest-free. An *eranos* ("friendship group"[76]) often undertook to make these loans. Our sources show how frequent such loans were in the Greek world, particularly in Athens.[77] Why were such favors done? Solidarity was strong within the family, which was a lively, very supportive social unit, and it was also strong within the friendship group. In addition, we should note that loans raised a serious question: their repayment. Within the framework of a network of family members or friends, the lenders had in theory the best possible information

regarding the borrower's reliability. Moreover, the solidarity of the network also exercised social pressure to ensure that the sum borrowed would be repaid.

What were the advantages of this arrangement for the borrower and the lender? So far as the borrower is concerned, the absence of interest was obviously a considerable advantage. The multiplicity of lenders also made it possible to accumulate a larger sum. This characteristic also had advantages for the lender, because it allowed him to limit his risks. Moreover, the lender could count on the solidarity of the network of friends if someday he needed help himself. That said, the lender making a friendly loan could also ask for guarantees, such as a lien on the borrower's property. Finally, in the event that the loan was not repaid, he could legitimately file a legal suit against the borrower, exactly as in the case of a loan at interest, knowing that the jury would be disinclined to excuse the beneficiary of a friendly loan who failed to repay it. We note that this kind of group, which might now be described as a "rotating savings and credit association," can still frequently be observed today in Asian and African countries, and among nationals of those countries living abroad. In itself, it is thus in no way peculiar to antiquity. The advantage of this kind of loan was all the more significant in antiquity, when the ordinary interest rate exacted by high-profile money-lenders was between 10 and 12 percent a year.

Borrowers could also go to sanctuaries, which might lend them part of their store of precious metal in the form of a loan at interest. Thus in the fifth century, the sanctuary of the goddess Nemesis in Rhamnous, in northeast Attika, made loans at interest. Our sources show that between 450 and 440 BCE, this sanctuary granted loans in the amount of 200 or 300 drachms. Over a period of four years, it lent between 8 and 10 talents, a considerable sum.[78] Loans of 200 or 300 drachms were certainly not very large, but they were nonetheless roughly equivalent to a worker's annual income.

One could also hope to obtain a loan from his deme, his phratry, or another organized social group.[79] As a last resort, one might borrow from a private individual, but at high rates of interest. In his *Letters* (1.13), Alciphron, who wrote during the Imperial period but situated his characters in a conventional late Classical Greece, provides interesting testimony on this subject. Since fish are abundant and his nets are

damaged, a fisherman borrows from a usurer, mortgaging his boat as security. On the appointed day, the usurer demands repayment of principal and interest, an obligation that the fisherman is unable to meet. To free himself from his loan, and swearing that he will never fall into the same trap again, he has to sell his wife's gold necklace to the banker Pasion. Beyond the anecdote, we should note that such loans were completely ordinary.

Why did people resort to loans? That is one of the points on which historians disagree. For some, following Moses Finley, these loans were exclusively "consumer" loans intended to finance operations such as the marriage of a daughter, a *chorēgia*, or a trierarchy. We know that one could, paradoxically, be rich and still lack short-term liquidities: whence the recourse to a loan. The existence of such motivations is not in doubt. But the question is whether this kind of motivation was the only one. Did people borrow for other reasons—for example, to acquire land, to improve their farms or their equipment, or to buy slaves and put them to work on their land or in a mine? The answer is clearly that they did. We have already seen that in the *Constitution of Athens*, Aristotle mentions among the city-state's magistrates the "introducers" (*eisagōgeis*), one of whose responsibilities was to present before a court matters that concerned "borrowing start-up capital [*aphormē*] to conduct business in the agora." But more generally all the evidence suggests that there was no borderline or firewall between a traditional economy based on land and dominated by an elite concerned solely with its own status, and an economy oriented toward profits and, in Athens, toward mining in particular, but also toward other activities, such as textiles.[80] This is clearly proven by the already mentioned anecdote of the advice given by Socrates to his friend Aristarchos, who had fourteen mouths to feed at home after the Peloponnesian War. *Pace* Raymond Bogaert, the anecdote does not prove a reluctance to borrow money for productive investment.[81] Quite the opposite: it proves how common it was. First, the discussion between Socrates and Aristarchos is not focused on borrowing or not borrowing, but on the need to put free women from normally wealthy families to work, just as if they were slaves. When Aristarchos is convinced by Socrates to put his women to work, he immediately decides for himself to borrow the start-up capital (*aphormē*) that will allow him to buy wool to start a business, no doubt just as everyone did

when it came to putting slaves to work. While initially, before deciding to put the women of his household to work, Aristarchos stated it was difficult to find money lenders—for a nonproductive loan, this was quite understandable; lenders would not easily lend knowing that a borrower will not be able to reimburse a loan—he does not seem to doubt that he will immediately find a loan for a productive investment. Beyond the case of Athens, the "hunger for money" we find in the Greece of the city-states and the desire to find sources of loans at any price, through foundations or possibly by making use of the sanctuaries' reserves, as in Delos, show that credit was very widespread and constituted a key element in economic activity.[82]

Maritime Loans

To finance large-scale commercial operations, it was necessary to resort to other circuits. Here only a minority of enterprising people could obtain the indispensable financing.[83] Banks could provide loans. But borrowers often also approached wealthy private individuals who were known to invest part of their resources in commercial loans.

Such loans were often sought to finance maritime ventures. The risk was great, the amounts involved were large, and the rates of interest were high, justified by the risks inherent in this kind of commercial voyages. Profits (and sometimes losses) could be considerable. The Demosthenic speech *Against Lacritus* (35.10–14) preserves a commercial contract made in Athens for a voyage to the Bosporan kingdom, one of the commercial voyages that were fundamental for supplying Athens. This text is an exceptional source that long remained the only one of its kind. Until the publication in 1985 of a papyrus bearing a maritime contract from the Roman period for a voyage from Alexandria to India and back, the document transmitted to us by the speech *Against Lacritus* was the only complete commercial contract extant for all of antiquity.[84] It is not that this kind of document was rare, but insofar as it was a private document, a contract had no chance of being inscribed on stone. Thus outside Egypt, all the public and private archives of the Greek city-states have been lost. That is why a kind of document as ordinary as a commercial contract is known to us only through a few rare testimonies. Moreover, nothing indicates a priori that the contract in *Against Lacritus*

was unusual or exceptional, on the contrary. The speech is part of the Demosthenes corpus. Its authenticity has been debated: is it or is it not a work by Demosthenes? The answer is probably that it is not, but this point is unimportant for the study of the form of the contract, since it was not composed by Demosthenes but rather by the parties to the litigation. The question of its date is more important, even though it too, remains uncertain: around 340 BCE or a little later? However that may be, it dates from a time when at Athens business was going well and when the city served as a transit point for trade. The lender, Chrysippos, was suing the merchant Phormion and his associates, whom he accused of not respecting the clauses of the commercial contract to which they had agreed.

> Androkles from the deme of Sphettos and Nausikrates from Karystos lent Artemon and Apollodoros from Phaselis 3,000 silver drachms for a voyage from Athens to Mende or Skione, and from there to Bosporos, and then, if it pleased them, as far as Borysthenes by sailing along the coast at the left, with a return to Athens. The interest is 225 per 1,000 and, if they sail only after the rising of the Guardian of the Bear star [Arktouros] to go from Pontos to Hieron, 800 per 1,000. The loan is guaranteed by 3,000 amphoras of wine from Mende, to be loaded in Mende or Skione, on a ship with twenty oars commanded by Hyblesios, the said security reserved free and clear, without being subject to any debt present or future. The merchandise bought in Pontos, along with the product of the sale, will be brought back to Athens on the same ship. If they arrive safe and sound in Athens, the borrowers will pay the lenders the capital and interest within twenty days after their arrival, without any deduction other than what has had to be jettisoned by common agreement among the passengers and any ransom paid to the enemy, all other losses to be borne by the borrowers. The security reserved will be made available to the creditors free and clear of any right of seizure, until the capital and interest have been paid in conformity with the contract. If the payment is not made within the agreed time, the creditors will have the right to mortgage the security reserved and to sell it at the going rate. If the price is insufficient to reimburse the creditors for the sum that they are

supposed to receive in accord with the terms of the contract, their right of seizure will be extended to all the other property of Artemon and Apollodoros, both terrestrial and maritime, wherever it might be, as if there had been a court judgment against them and the deadline has passed, the said right belonging to both creditors. If they do not pursue their voyage to the end, they will stop in the Hellespont ten days after the rising of the Dog Star [Sirius] and will unload the merchandise in a place where the Athenians cannot be the object of reprisals; they will return from there to Athens and will pay the interest specified in the contract the preceding year. In the event that the ship on which the cargo will be transported is wrecked, if it is possible to save the merchandise that is affected by the loan, the part saved will belong to the creditors undivided. With regard to all these points, the present agreement supersedes any contrary rule.

Witnesses: Phormion, from the deme of Piraeus, Kephisodotos from Boiotia, Heliodoros from the deme of Pithos.

Testimony: Archenomides, son of Archedamas, from the deme of Anagyrous, testifies that a contract has been deposited with him by Androkles, from the deme of Sphettos, Nausikrates from Karystos, Artemon and Apollodoros from Phaselis, and that he still holds this document.

—Read also the testimony of those present.

Testimony: Theodotos, a a foreigner with equal tax rights [*isotelēs*], Charinos, son of Epichares, from the deme of Leukonoe, Phormion, son of Ktesiphon, from the deme of Piraeus, Kephisodotos, Boiotian, Heliodoros, from the deme of Pithos, testify that they were present when Androkles loaned Apollodoros and Artemon 3,000 silver drachms, and that they know that the document was deposited with Archenomides, from the deme of Anagyrous.

Even though this document is a *unicum* for the Greece of the city-states, what we can learn from other sources suggests that a contract of this kind was perfectly ordinary in fourth-century Athens. We see first of all that it is a written contract, and not a purely oral agreement. Naturally, oral procedures continued to play an important role in

Athenian law. Moreover, witnesses are required, summoned before the court by the parties to the suit after the declaration of the contract, so that it can be considered valid.

The subject of the contract is a loan, in this case, a loan of 3,000 silver drachms for a commercial voyage whose itinerary and calendar are largely determined in advance. The borrower is therefore not free to use the money as he sees fit, but only as stipulated by the contract. As for the itinerary, in this case it is a voyage to the Kimmerian Bosporos, with an obligatory return to Athens. For obvious reasons, this kind of contract for a round-trip voyage (*amphoteroplous*) seems to have been particularly common: it gave lenders a better chance of getting their money back. However, there were also contracts for one-way voyages. The voyage had to take place during the season of good weather, before the rise of the of Arktouros in the autumn. If the voyage was longer or riskier, with a return after the beginning of the season of bad weather, the interest rate would be higher.

The interest rate was 22.5 percent for a voyage during the season of good weather, and 30 percent for a longer voyage. These were interest rates common at the time. For one-way voyages (*heteroplous*), the interest rate was lower (10–12 percent). The contract also provided for the case in which the captain had to jettison all or part of his cargo in order to save the ship. We see that in that event, the lenders shared in the loss and could not reclaim the corresponding money. The same was true for ransom paid to the enemy, and also, implicitly, for shipwreck, though there was a clause providing that the lenders would have priority in selling the goods that might be saved. We find such provisions in the law of the Hellenistic period, and also in Roman law, Byzantine law, and even contemporary law. In all other cases, on the other hand, the borrowers were completely responsible, and their responsibility extended to all their property.

We may find the mortgage clause curious. In fact, the property that serves as security for the loan is none other than a cargo of wine amphoras that is supposed to be purchased during the voyage, not real property that is already in the hands of the borrowers and that they own.[85] However, as is shown by many other documents, including the mortgage boundary-stones that were so numerous in fourth-century Athens, in that city the practice of mortgaging was governed by rules

that are familiar to us: for example, a borrower mortgaged his land or his house in order to obtain a loan. If this was not the case in this maritime contract, that is first of all because foreigners and metics did not own real property in Athens (unless they had a special privilege), so that in their case the usual practices of mortgaging were not applicable: whence the procedure of the "reserved security" (*hupothēkē*) that was constituted by merchandise to be bought, which was the only kind possible. In the event of default, this "reserved security" was supposed to serve as a source of revenue to compensate the lender.[86] The loan was for 3,000 drachms and the mortgage for 3,000 amphoras: these are obviously connected (if we assume that an amphora was worth two drachms, the value of the mortgage was double that of the amount loaned).

The contract distinguished *emporoi* (merchants) from *nauklēroi* (ship-owners, who were often both owners and captains of the ship). It happened that *nauklēroi* were also *emporoi*, but usually the two activities were distinct. Here, the merchants Artemon and Apollodoros are carefully distinguished from the owner of the ship, Hyblesios.

The parties to the contract were of diverse origins. One of the lenders, Androkles from the deme of Sphettos, was an Athenian, while the other, Nausikrates, was a foreigner from the neighboring city-state of Karystos, whose history was closely linked with that of Athens. The borrowers, Artemon and Apollodoros, were both foreigners from Phaselis, a city on the southern coast of Asia Minor. We note that we find the same diversity among the witnesses to the contract: two Athenians, Phormion, from the deme of Piraeus, and Heliodoros, from the deme of Pithos, and a Boiotian foreigner, Kephisodotos, while two other witnesses were present, Theodotos, an *isotelēs*, that is, a foreigner who was treated as a citizen for tax purposes, and Charinos, a citizen of the deme of Leukonoe. What is most striking is that no distinction is made among them: in business matters, nationality was not a factor. We must not forget that it was precisely around 340 that Athens established the system of the *dikai emporikai*, which instituted a legal system specific to commercial affairs in which the nationality of the parties did not matter.[87]

The key question is how people from Phaselis came to make a contract in Athens for a voyage to the Bosporos and back. The answer is

simple: Athens was a rich city and it imported massive amounts of grain to meet the needs of its population. The origin of the actors involved was of little importance: all that counted was that there be a commercial venture to be undertaken and profits to be made for merchants of all origins. Athens was also a city in which capital was abundant and it was easy to find money to be borrowed. We see that in this case the money was lent by an Athenian and a foreigner, probably a metic who had settled in Athens. For lenders, such a loan was an advantageous investment. In a short time (three to four months if everything went well) it could bring in a profit ranging from 22.5 to 30 percent, whereas ordinary loans were made at annual interest rates of about 10 to 12 percent. On the other hand, it was also a riskier investment (and that is what justified the higher interest rate): the proof of this is the situation of the parties to the suit here, who cannot recover the funds they have lent.

For the borrower, the rate of interest was certainly high. But this kind of maritime contract had a considerable advantage. In the event of shipwreck, the sum borrowed did not have to be repaid. We can therefore conclude that in addition to the profit corresponding to the risk taken by the lender, the elevated interest rate was justified on both sides by the cost of the insurance that was thus provided. In addition, on the basis of the profits that could be made in this kind of venture, such a loan made it possible to use leverage to full effect, and thus to maximize gains in relation to the capital invested.[88]

At the same time, this contrast no doubt provides an excellent view of the commercial actors and main commercial routes in the Greek world of the fourth century. Thus from the fifth century onward, people from Phaselis seem to have been among the most active (if not the most active) foreign traders operating in Athens. It is no accident that the oldest extant legal agreement in Athens was made with Phaselis.[89] If we believe the plaintiff, people from Phaselis did not have a good reputation in Athens, probably simply because of their role in trade. Phaselis was a city of middling size, but its merchants ranged over the seas in all directions, earning their livings or their fortunes by serving as intermediaries. People from Phaselis took maximum advantage of the possibilities offered by the financial market in Athens.

Thus an original monetary system, that of coined money, and credit

institutions that were both flexible and solidly guaranteed by law gave the world of the Greek city-states a stable and effective financial instrument. Within the limits of a world in which land was still an essential production factor, credit, even if it could not become an autonomous monetary element, played a fundamental role in economic life. By sharply decreasing transaction costs and by enabling capital concentration, the joint development of coined money and credit made a significant contribution to the growth of trade and to economic growth in general.