

CHOOSING AND CHANGING MONETARY STANDARDS IN THE GREEK WORLD DURING THE ARCHAIC AND THE CLASSICAL PERIODS

Selene E. Psoma

The evidence of coins has much to tell us about markets and trade in the Ancient Greek world. There are primarily two kinds of numismatic evidence relevant to the topic of markets. First, there is the evidence of coin hoards. The presence of coins from one city in a hoard found in another city may reveal trade links between the two cities. Second, a common weight standard shared by two or more cities may reveal commercial ties. A common weight standard makes it easier for merchants from one city to exchange coins in another city and thus facilitates commercial relations and helps to expand markets.¹ Common weight standards may therefore reveal a city's commercial policy. But we must be careful when interpreting numismatic evidence. Coins may travel from one city to another for the purposes of trade, but it is also possible that coins served to pay for mercenaries or for other military purposes. Two or more cities may also have shared a common weight standard to facilitate military finances. When interpreting numismatic evidence, therefore, one must always take into account all available literary, epigraphic, numismatic and archaeological evidence.²

The Greek cities issued their coinages on different standards that either derived from weight standards in use before the invention of coinage,³ or were created afterwards, sometimes by adopting a reduced version of one of the main monetary standards.⁴ During the Archaic and the Classical periods the main monetary standards of the Greek world were the Lydo-Milesian, the Persian, the Euboic, the Aeginetan and the Corinthian.⁵ These standards have

something to tell us about our subject because they were adopted by cities far away from their original *Heimat*. From this point of view, the choice of a monetary standard by an issuing authority may say more about trade than hoards, while hoards sometimes reflect the impact of a monetary standard in an area.⁶

Some other standards in use during the Archaic and Classical periods either derived from or were connected to these weight-standards.⁷ Reduced versions of the main standards were created in areas with significant natural resources such as Southern Italy and Aegean Thrace.⁸ We will try to show that trade and markets often influenced the choice of weight standards and also of their reduced versions.

THE MILESIAN STANDARD

We begin with the oldest weight standard, the so-called Lydo-Milesian. This was the local standard of Lydia and was adopted by Miletus for its electrum and early silver coinage.⁹ This was also the standard of the earliest electrum coinages of the cities of Ionia. The division of the stater of 14.2 g followed the duodecimal system – that is, the stater was divided into thirds, sixths, twelfths, and so on.¹⁰ Sometime later the Mainland system of division was followed (with fourths – that is, drachms – and obols).¹¹ The Milesian standard was adopted by the Ionian cities of Erythrai, Ephesus, Clazomenae, Teos and Samos,¹² by cities in Caria, such as Poseidion [?] of Carpathos, Lindos and Ialysos on Rhodes,¹³ by cities of the Chalcidic peninsula (Torone, Sermylia, Argilos and others) and by some Cycladic islands.¹⁴

The cities in Ionia that adopted this standard were often neighboring cities, and this adoption may easily be explained by the fact that this was the standard with which some of these cities issued their electrum coinages.¹⁵ Ionia's links to Caria are also revealed by the use of the Milesian standard by the cities previously mentioned.¹⁶ The various resources of Ialysos and Lindos, cities of the island of Rhodes, could be either exported to Miletus or transported elsewhere by Milesian traders: fish, wine, cabbages, balsam, raisins, figs and other agricultural products as well as metals, bread, honey, marble and sponges.¹⁷ Cnidos, whose earliest silver was also on this standard, had a variety of agricultural and manufactured products.¹⁸ Silver coins that are attributed to Miletus were part of a number of hoards buried in Western Asia Minor, Ionia, Caria and Cilicia.¹⁹

We find a reduced version of the Milesian standard in the electrum of a number of cities in Thrace and the earliest silver coinages of some cities of the Chalcidic peninsula.²⁰ Dikaia *par' Abdera*, Maroneia and possibly some other cities in Thrace issued early electrum fractions on this standard.²¹ Small cities of the peninsula of Pallene (Aigantioi *et alii*), Torone, Sermylia and cities situated in Sithonia or in the middle of the Gulf of Singos and Torone, as well as

Argilos west of the estuary of the Strymon river, issued their early silver on the Milesian standard.²² The significance of this standard in this area is reflected in monetary circulation. The earliest hoard from the Chalcidic peninsula, *CH VIII 39*, was found at Gerakini, in the *chora* of Sermylia, and contained staters and fractions on the Milesian standard.

As I have shown elsewhere, Alexander I, the king of Macedonia, adopted a reduced version of the Milesian standard for tetradrachms (staters) and smaller fractions.²³ The king clearly decided to use this standard because of his commercial relations with the Chalcidic peninsula, in particular with the cities of Pallene that issued staters and fractions on this standard.²⁴ For his largest denomination (triple staters), Alexander I adopted the standard of the cities of the Thasian Peraea.²⁵ Here he was following Abdera and local *ethne*. This was a way to export silver from the newly acquired mines of the Pangaeum mint and also to pay for commodities.²⁶ One recalls that some triple staters of Alexander I were buried in Egypt from where the king imported grain as Bacchylides reports.²⁷ In other words, for short distance and local trade he used the Milesian standard of his neighbors, but for long-distance trade he used the standard in which traditionally triple staters were issued.

The common weight standard shared by Alexander I and the cities of the Chalcidic peninsula has nothing to do with joint military action. The king's army had moved successfully to the East and occupied the territories of Anthemous and Crestonia, north of lakes Bolbe and Pyrrolia,²⁸ but these areas were distant from the cities that issued on the Milesian standard. The link between the king and the cities of the Chalcidice was commercial, not military. Torone and the cities of the Pallene produced wine of excellent quality and in very large quantities.²⁹ This was a commodity that the Macedonians appreciated the most and imported from the Chalcidic peninsula. The term *Mendaios oinos* is used to denote wine from the wider area that passed through the port of Mende to Pydna, Methone and Pella and found its way to Aigeai and all other Macedonian *poleis* and palaces.³⁰ Wine exports from Mende to the Macedonian court continued during the Hellenistic period, as amphora stamps from Mende found in very large quantities in the palace of Pella reveal.³¹

The adoption of the Milesian standard in this area well before the late sixth century BCE is connected with the fact that this was the oldest monetary standard and that there were links between Ionia and this area. Although there are no colonies of Miletus in the Chalcidic peninsula, commercial links between the Greek North and Ionia are revealed by excavations.³² Miletus, which contributed eighty ships to the battle at Lade (Hdt. 6.8), could import timber of very good quality for shipbuilding, grain, wine, olive oil and silver from Aegean Thrace. These natural resources were well known to the Milesians and Histiaeus. According to Herodotus (5.23), Megabazus said to Darius: '[T]here is abundant wood for ship-building and the making of many oars and also

the silver mines and a big population, both Greek and barbarian.' It was to Myrkinos that Aristagoras of Miletus later retreated and made this his headquarters (Hdt. 5.126).³³ Further evidence for the presence of Ionians in the area of the Strymon river during the first half of the sixth century BCE is provided by Suda, which notes Colophonians and other Ionians involved in mining activity in this area.³⁴ We recall also that Samians, Erythraeans and Parians were involved in the international arbitration (*diatesia*) between Chalcideans and Andrians for colonizing Acanthos.³⁵

The Milesian standard also had a significant impact in the Cycladic islands.³⁶ Melos, a Dorian colony (Str. 10.5.2) in the Cretan Sea, issued its coinage on this standard.³⁷ The links of Miletus with the Cycladic islands are revealed by Herodotus, who mentions Parian arbitration at Miletus (Hdt. 5.28–31), and also from Polyaeus about Milesian efforts to get control of Naxos (Polyaen. *Strat.* 8.36.1).³⁸ Miletus' thalassocracy and trade networks may have had an impact on the monetary habits of some Aegean islands. Melos, which issued its staters on the Milesian standard, was well known for its goats, its honey and most significant, for its metals, the *Meliake ge* being the most significant of them.³⁹ Melos continued to strike its coinage on the Milesian standard, although this standard lost its significance after the destruction of Miletus in 494 BCE and the end of the Ionian revolt.⁴⁰ There are also some other early Cycladic coinages on this standard whose attribution is difficult.⁴¹ This is the short but glorious history of the earliest Greek coin standard.

THE PHOCAIC STANDARD

The standard (16.5 g) of the city of Phocaea may have been a reduced version of the Euboic. As the earliest coinages issued on the Euboic standard, it was divided on the duodecimal system, with halves, *hektai*, *hemiekta*, and so forth.⁴² The significance of this standard may be deduced by its early adoption by Cyzicus, the Milesian colony in Mysia.⁴³ This was also the weight of the later electrum coinages of Phocaea and Mytilene and of the famous Cyzicene staters.⁴⁴ From the second half of the fifth century and during most of the fourth century BCE, Cyzicene staters were the most prominent currency in the Black Sea area as rich hoard evidence and the well-known fourth-century BC decree of Olbia reveal.⁴⁵ They found also their way abroad and are often mentioned in Athenian financial documents, temple inventories and literary sources.⁴⁶ Cyzicus' choice of this standard is clearly connected with trade. The emblem of the city, the tuna fish, occurs on the earliest electrum fractions of this city and reveals the significance of fish trade.

It might be that this standard, on which electrum coinage was mainly issued, had an impact on the fractional coinages of cities of Aeolis, Troas and Mysia.⁴⁷ However, there are still no systematic studies of these coinages, and we know

only small fractions of most of them. The Phocaic may have also been the earliest monetary standard of Ainos, an Aiolian colony, with population from Alopeconnesus, Methymna and Mytilene.⁴⁸ Ainos, at the mouth of the Hebros' delta, was a significant centre for trade, from where trade routes led to inner Thrace. The city also commanded fertile lowlands (Plin. *HN* 18.7.70).⁴⁹

The Phocaic standard is also found in Southern Italy at Velia, a colony of Phocaea, and at Velia's neighbor, Poseidonia, a colony of Sybaris.⁵⁰ Massalia, another colony of Phocaea, also followed this standard.⁵¹ This Phocaic standard had an influence on the coinages of the Greek cities of Campania, and a slightly reduced version of it was adopted by Cyme and Neapolis.⁵² Empurias, a Phocaic settlement, also adopted the Phocaic standard.⁵³ The adoption of this standard by Velia and Massalia, both colonies of Phocaea, says a lot about the relation between colonies and mother city.⁵⁴ These relations included trade.

THE CHIAN STANDARD

The rich island of Chios, with its important agricultural production and a large number of slaves, issued its Archaic and Classical coinage on its own standard with staters of 7.9 g and hemistaters of 3.9 g.⁵⁵ As I have shown elsewhere, a reduced version of this standard was also adopted by Abdera, a joint colony of Clazomenae and Teos, and also by its neighbor, Maroneia.⁵⁶ Both cities were situated on the Aegean coast of Thrace. According to Pseudo-Scymnos, Maroneia was a colony of Chios (*Ad Nicomed. reg.* 676). Contacts with Chios are revealed by the very significant presence of Chian pottery at the site of Archaic Abdera and also at other sites in Aegean Thrace.⁵⁷ Abdera, followed by Maroneia, further reduced this standard, while both cities issued silver staters and fractions down to the 330s (Maroneia), and fractions even later (Abdera).

Chios continued to use its own standard. One-third staters of 2.6 g were struck from the 430s and these were the coins Thucydides (8.101.1) refers to as *tessarakostai*.⁵⁸ Electrum and silver of 15.6 g were issued in the late fifth century BCE and later silver drachms, tetrobols and tetradrachms down to the 330s. The standard of Chios had an influence on the monetary practices of Western Asia Minor, Thrace and a number of issuing authorities under the Great King during the fourth century BCE. We will return to this standard while discussing changes of weight standards.

THE SAMIAN STANDARD

The Samians adopted a reduced version of the Milesian standard and reduced it further. Samian staters are mentioned in a sixth-century BCE dedication to Hera by two citizens of Perinthus, a Samian colony on the Northern coast

of the Propontis (*IG XII 6, 2, 577*, lines 15–19). Samos issued a full range of denominations down to hemiobols following the division of the stater in drachms (fourths) and obols (twenty-fourths).⁵⁹

Like other cities of Asia Minor and the Propontis, Samos issued ΣΥΝ tridrachms with Heracles the snake killer on the obverse and the lion's scalp on the reverse.⁶⁰ These coins date after the end of the Peloponnesian war, Samos' capitulation, the establishment of a decarchy and the return of the oligarchs (*Xen. Hell. 2.3.6–9*). They were on the Chian standard, and as many cities of Western Asia Minor, Samos issued its fourth-century BCE silver on this standard.⁶¹ There was a gap in the coinage of the city during the period of Athenian occupation (366–322 BCE). When Samos reopened its mint in the late fourth century BCE, the local standard was reintroduced. The term *stateres patrioi* found in the Grain Law (*IG XII 6, 1, 172A*, line 8), an inscription of early Hellenistic date, refers to this standard. The re-adoption of its own standard may be easily understood as the city desired to have its own monetary policy during a period Alexanders were the coinage par excellence all around Eastern Mediterranean.⁶²

We now turn to Mainland Greece where coinage was introduced during the second half of the sixth century BCE.⁶³ No matter which city was the first to introduce coinage, literary, epigraphic and numismatic evidence point to three distinct standards in this area: the Aeginetan, the Corinthian and the Euboic, which was another old weight (and later monetary) standard.⁶⁴ The standards of Corinth and Athens were adjusted to the Euboic,⁶⁵ their stateres being the half of the Euboic stater of 17.2 g. Double stateres began to be issued by Athens before the end of the sixth century and were called *tetradrachma*, referring to their equivalence to four drachmas.⁶⁶ Both the Aeginetan and the Euboic standards followed the duodecimal system, but at Aegina a terminology based on a drachma divided into six obols was adopted.⁶⁷ Corinth followed the division in thirds and sixths, but for these the terms drachma and *hemidrachmon* were used, as revealed by epigraphic evidence.⁶⁸ As at Aegina, at Corinth, Athens and the cities that followed the now so-called Euboic-Attic standard, the drachma was divided into six obols.⁶⁹

THE AEGINETAN STANDARD

The Aeginetan standard was adopted by all issuing authorities in the Peloponnese with the exception of Corinth and some small neighbors,⁷⁰ by the city of Delphi and the Phocians, by the cities of Boeotia, by Malis, the Opountian Locrians, the cities of Thessaly, most of the Cycladic islands and Crete.⁷¹ We find it also at Teos in Ionia, Cyme of Aeolis, a number of cities of Caria⁷² and in the Black Sea.⁷³ In many cases, it was slightly reduced, most probably to obtain a profit in exchange.⁷⁴

Aegina may have produced perfumes and pottery for everyday use, as in modern times, but nothing else.⁷⁵ The adoption of the Aeginetan standard may be explained by what Ephorus says about the sea trade of Aegina.⁷⁶ Aristotle reports that the Aeginetans were mainly traders (*Pol.* 1291b24). Aeginetans were involved in slave trade, as is revealed in the explanation offered for the expression ‘cargo from Aegina’ (Steph. Byz. *s.v.* Αἴγινα).⁷⁷

Aegina’s silver coinage served as a commodity to buy local products in one area and sell them in another.⁷⁸ The Aeginetans transported all sorts of commodities.⁷⁹ After the battle of Plataea, one could find in the port of Aegina ships leaving for many different destinations.⁸⁰ Aeginetan ships brought products to the port of Cyllene in Elis and then transported these with mules to Arcadia (Paus. 8.5.8).⁸¹ The earliest hoards buried in Arcadia and Elis contained only Aeginetan currency (*IGCH* 15, 20). Both Pollux (9.74) and Hesychius (*s.v.* χελώνη) refer to the turtle as *Peloponnesion nomisma*.⁸² Large numbers of Aeginetan turtles are also found in hoards of Thessaly, an area well known for its rich agricultural production and wealth.⁸³ The earliest silver coinage of Crete was pseudo-Aeginetan and was issued by Aegina’s colony, Cydonia.⁸⁴ Aegina is heavily represented with its staters in the earliest hoard of Archaic date from Crete (*IGCH* 1), and also in early hoards buried on the Cycladic islands (*IGCH* 6, 7, 8). These hoards also contained silver coins from Cycladic mints and also silver on the Aeginetan standard from South West Asia Minor.⁸⁵ This has been viewed as an indication of a well-organized trade route linking these islands to South-West Asia Minor. Aeginetan merchants could have transported marble from Paros and other islands to this area.⁸⁶

Remaining in South-West Asia Minor, one recalls that Cnidos, Chersonnesus and Cos as well as Camiros of Rhodes also adopted the Aeginetan standard.⁸⁷ Hoards contain staters of Aegina that reached these areas and traveled far to the East, as the Apadana (Persepolis) foundation deposit, dated ca. 514–511 BCE reveals (*IGCH* 1789).⁸⁸ There is good evidence for trade between Aegina and Southern Asia Minor: after the battle of Plataea a noble lady from Cos who was freed by Pausanias of Sparta had no trouble finding a ship at Aegina to bring her back home (Hdt. 9.76). Cnidos, Cos and the island of Rhodes produced many different commodities that could be transported by Aeginetans.⁸⁹

The impact of Aeginetan currency in South-Western Asia Minor is apparent in a series of staters depicting a sea turtle on the obverse and two distinct incuse squares on the reverse.⁹⁰ There were significant links between Camiros and Chersonnesus as the decree of Camiros (*Syll.*³ 339) referring to *ktoinai* of the Camireis both on the island and the mainland shows.⁹¹ A number of coinages issued by Astyra, Halicarnassos, Caunos and some other cities in Caria also reveal the influence of the Aeginetan standard.⁹² Halicarnassus could export wine while Mylasa could export different agricultural products, marble and hemp (*kannabe*).⁹³ Teos in Ionia switched from the Milesian to the Aeginetan

standard before the end of the sixth century BCE.⁹⁴ Cyme in Aeolis also issued its coinage on the Aeginetan standard.⁹⁵

The Aeginetan standard of a fifth-century BCE silver coinage issued in Northern Asia Minor reveals contacts between Aegina and this area.⁹⁶ Later, in the fourth century, Sinope, located on the southern coast of the Black Sea, issued its silver coinage on the Aeginetan standard and shared standard and reverse types with Isthria and Olbia, two other colonies of Miletus, situated on the western and the northern coasts of the Black Sea.⁹⁷ Olbia and Istros were significant suppliers of grain during the fourth century BCE.⁹⁸ From the early fifth century BCE, the Bosporan cities also issued their coinages on a slightly reduced version of the Aeginetic system.⁹⁹ The use of the Aeginetic standard during the fourth century BCE for their coinages reveals traditional contacts with Aegina. From these areas the Aeginetans transported grain; Herodotus mentions Aeginetan cargo ships with grain in the area of Abydos when Xerxes was in the city (7.147.2). This area also supplied slaves to the Greek world, as the names Paphlagon and Sinope given to slaves in Greece indicate (Ath. 13.67.28).¹⁰⁰ Sinope linked Greek cities on the eastern coast of the Black Sea to Greek cities in the Aegean because it laid on the route to Phasis (Polyb. 4.56). For instance, Xenophon saw merchant ships at Sinope sailing from Trapezous (Xen. *An.* 5.4.11).¹⁰¹ Aeginetan commercial activity in Paphlagonia may be also reflected in the name of *Aeginetes*, a *polichnion* and a river of Paphlagonia.¹⁰² Commodities that could be transported from this area were nuts (Ath. 2.43.27), fish (*kestreis*: Ath. 3.87.12; 7.77.35), ruddle (*miltos*: Hsch. *s.v.*), maple, oil (Str. 12.3.12) and slaves.

A common Aeginetan standard also links Paros with its colonies, Thasos and the cities of the Thasian Peraea. Parians were active in this area down to the first decades of the fifth century BCE, as epigraphic evidence reveals.¹⁰³ Paros' silver coinage on the Aeginetan standard consists only of staters. It also resembles the coinages of Thasos and the Peraea on iconographic, stylistic and technical grounds.¹⁰⁴ We have suggested that the standard of Thasos and the cities and tribes of the so-called Thasian Peraea is a reduced version of the Aeginetan standard.¹⁰⁵ During the fourth century BCE, the Aeginetan system was used at Thasos for calculating amounts of money.¹⁰⁶ Thasos and the cities of the so-called Thasian Peraea could export different products, including timber, metals, marble and wine.¹⁰⁷

Coins of Aegina are extremely rare in the North, but this is not an indication that Aegina did not have trade links with this area. One can explain the absence of Aeginetan coins in hoards from this area by the fact that most cities in this area minted their own coins from an early period. One recalls that in Asia Minor, the presence of Aeginetan currency is also very limited.¹⁰⁸ This is also the situation in Boeotia and the Cycladic islands, where coinages were issued on this standard from the last decades of the sixth century BCE.¹⁰⁹

But early hoards from areas as Thessaly, Elis and Arcadia that introduced coinages some decades later, and relied for a period only on the coins of Aegina, included only Aeginetan currency.¹¹⁰ These hoards all date before the introduction of the local coinages.

The new coinages in the Peloponnese that began after Leuctra were all on the Aeginetan standard, which was also the standard of their great ally, the Thebans.¹¹¹ The electrum drachms and obols of Thebes depicting Dionysus' head on the obverse and Heracles Drakontopnigon on the reverse corresponded to five staters and a stater of Aeginetan weight.¹¹² During the fourth century the Achaean League and the Opountian Locrians issued their splendid silver coinages with their own types but on the Aeginetan standard in use in these areas from the sixth century BCE.¹¹³

There were no coinages on the Aeginetan standard in southern Italy and Sicily.¹¹⁴ This corroborates hoard evidence; there are few turtles in hoards buried in these areas.¹¹⁵ However, the arrival of Aeginetan merchants bringing most probably Attic pottery in Etruria may be deduced from the dedication of Sostratus.¹¹⁶

THE EUBOIC STANDARD AND THE EUBOIC-ATTIC STANDARD

The Euboic standard with a stater of 17.2 g was one of the earliest standards.¹¹⁷ It shares with the Corinthian standard the division of the stater into thirds and sixths and follows the duodecimal system.¹¹⁸ This was the standard of the earliest coinages of the Euboean colonies in southern Italy (Campania), Sicily and the Chalcidic peninsula.¹¹⁹

It is striking that the cities of Euboea did not issue their early coinages on this standard.¹²⁰ Chalcis, Eretria and Carystos issued their coinages after a significant change took place before the end of the sixth century BCE: the Euboean stater was then divided in the same way as the Attic¹²¹ and the Boeotian staters.¹²² This standard is called the Euboic-Attic standard. Scyros and Peparethus followed the Euboean cities.¹²³ Cythnos, Seriphus and at times Siphnos struck coins of 4 g, that could be exchanged with coins on both the Aeginetan and the Attic-Euboic standards.¹²⁴ The cities of Sicily and the Chalcidic peninsula, two areas where Euboean presence was significant, also adopted this Attic-Euboic standard.¹²⁵ Delos, an island with strong ties to Athens issued its silver coinage on this weight standard.¹²⁶ It was also true for the earliest coinage of the Thracian Chersonnese and of Methymna on Lesbos.¹²⁷

This new standard was also adopted by the cities of Cyrenaica.¹²⁸ The precious *silphion* was one of the commodities that this area could provide to traders. Attic currency arrived in this area, as some overstrikes of Attic tetradrachms reveal.¹²⁹ Later in the 420s, the comic poet Hermippus reported the arrival at Athens of other products from Cyrenaica such as hides (*derma boeion*).¹³⁰

Apollonia and Mesambria both issued their silver coinages on the Attic standard and adopted a reduced version for smaller fractions.¹³¹ The coinage of Mesambria was not of a very significant volume. Hoard evidence shows that Apollonia's silver coins circulated widely in the area west of the city,¹³² while the royal edict of Pistiros reveals the leading role of Apollonia in trade in Thrace.¹³³

Clazomenae and some other Ionian mints adopted this standard during the fifth century BCE and continued to use it during the fourth century.¹³⁴ The Athenians Themistocles and his son Archepolis struck their coinages on the Attic standard in Western Asia Minor.¹³⁵ When the Athenian fleet was based on Samos during the Ionian war, Samos struck silver on the Attic standard and with its own types most probably to fulfill the needs of the ten Samian warships engaged in the war against Sparta and its allies (Xen. *Hell.* 1.6.25, 29; 1.7.30; Diod. Sic. 13.97.2). From the same period date silver tetradrachms on the Attic standard issued by an unknown satrap, possible Tissaphernes, with a bearded man's portrait wearing the Median *tiara*, and an owl on the reverse. This money served the needs of the Ionian war.¹³⁶ Later, most probably in the years Chares resided at Sigeion (335/334 BCE), the city issued a silver coinage with Athenian types and standard.¹³⁷

In these cases, the adoption of this standard seems to reflect political and military needs rather than commercial ties. However, it reflects the growing significance of the Attic standard, which already had international character. Attic silver is found in a number of hoards buried in Attica and Euboea.¹³⁸ There is little evidence for the circulation of Attic weight coinage in Asia Minor, Thrace, the Black Sea and Lycia.¹³⁹ It is more frequent in Egypt, Syria and the Levant, and also in Sicily from the late 410s onwards. Imitations of Athenian tetradrachms started towards the end of the fifth century BCE and kept on being issued during the fourth century in the East, Egypt and the West (Sicily). These coins served various needs and also were used for military payments.¹⁴⁰ The arrival of a large number of Athenian tetradrachms and imitations in Syria, Phoenicia and the Levant down to the arrival of Alexander points to trade links and special commodities and reflects, in my opinion, what Xenophon (3.9.2–3.10.4) says about Athenian coinage of the fourth century BCE.¹⁴¹

THE CORINTHIAN STANDARD

According to Thucydides (1.13.2–6), the Corinthians were well known for being great merchants, and Corinth was probably the most important centre for trade over a long period of time.¹⁴² Literary sources and archaeology provide plenty of information about Corinthian trade. Corinthian pottery is found in large quantities in the West.¹⁴³ Corinthian ships were commoner in

the West than any others; Herodotus (1.24) says that Arion leased a Corinthian ship in Tarentum. Thucydides reports (3.86.4) that the aim of the first Athenian expedition to Sicily in 427 BCE was to disrupt the transport of Sicilian grain to the Peloponnese.¹⁴⁴ Corinth used this grain for local consumption but also for export to its neighbors.¹⁴⁵ Corinth could export wool, bedclothes (Ath. 27D = Antiphanes fr. 236 Edmonds), textiles, roof tiles and architectural terracottas,¹⁴⁶ as well as the surplus of its own agricultural production and of its neighbors, olive oil, wine and the apples from Sidous (Ath. 82a–c).¹⁴⁷ Corinth may have also exported perfumes¹⁴⁸ and, on a less significant scale, bronze objects of various kinds.¹⁴⁹ From the fourth-century building accounts from Epidaurus and Delphi we learn that Corinthians were also involved in the stone and timber business.¹⁵⁰ Most significant of all: silver in the form of Corinthian coinage was a sort of commodity that the city could use to buy the surplus production of cities in Southern Italy and Sicily.¹⁵¹

The influence of the Corinthian standard may be seen in the adoption either of the standard itself or of reduced versions of it. The adoption of the Corinthian standard and types by colonies of Corinth in Western Greece may have been voluntary and not dictated by Corinth, the mother city. For instance, Potidaea, the only Corinthian colony in the North, with strong ties to the *metropolis*, issued earlier in the late sixth and early fifth century a coinage on the Euboic standard with its own types.¹⁵² The coinages of the Corinthian colonies that were minted on the Corinthian standard and with Corinthian types during the fifth century BCE,¹⁵³ the well-known Pegasi, served to finance common military operations of Corinth.¹⁵⁴ Pegasi were issued by Leucas around 480, while the first issues of Ambracia shared reverse dies with Corinth, which points to their having been produced in Corinth ca. 480/79. The choice of the denomination sheds light on this unusual situation. Corinth issued an important number of fractions,¹⁵⁵ whereas fractions are rather rare in its colonies.¹⁵⁶ Epidamnus and Potidaea issued in the mid-430s silver coins with Corinthian types. The production of Pegasi by Anactorium, Leucas and Ambracia might have also served the needs of the war against Corcyra.¹⁵⁷

After the mid-fourth century BCE, the Corinthian colonies of western Greece, Leucas, Corcyra, Argos Amphiloichicum, Apollonia, Dyrrhachium, Anactorion and Thyrrheion issued Pegasi partly to support Timoleon's efforts to re-establish democracy in Syracuse, impose peace and populate a devastated Sicily with Greeks (Kraay 1976). As a recent study has shown, the most significant part of these Pegasi served to facilitate the grain trade with Sicily during periods of shortage.¹⁵⁸ Because these Pegasi were issued primarily to facilitate large-scale international trade, fractions are completely absent.

We need now to turn to Corcyra, Corinth's rebellious colony.¹⁵⁹ Corcyra minted its coinage with its own types on a standard that derives from the Corinthian.¹⁶⁰ The stater of Corcyra is 11.4 g and therefore equivalent to four

Corinthian drachms or to a reduced Aeginetan stater. The Corcyrean stater is divided into halves, quarters, and so on. This standard was also adopted by the Ionian islands of Cephallenia and Zacynthus, which both lay south of Corcyra.¹⁶¹ Zacynthus is off the coast of Elis where the Aeginetan standard was used.

The creation of this standard by Corcyra needs to be explained in terms of its geographical position. Corcyra was the gateway to the Adriatic Sea and a key point for communications with the West.¹⁶² The island had all sorts of natural resources¹⁶³ and could exploit the rich resources of the coast opposite the island and develop a network of trade with this area.¹⁶⁴ The coinage of Corcyra did not travel far and in some cases has been found in hoards buried in Illyria, southern Italy and Sicily. On the other hand, coins from other cities are rarely found in hoards buried in Corcyra.¹⁶⁵ Like the wealthy Achaean colonies, Corcyra was a closed monetary zone.¹⁶⁶

From Corcyra, we cross the Adriatic Sea to southern Italy and Sicily. Because the Attic stater shared the same weight with the Corinthian one (8.6 g), the Attic tetradrachm had the weight of the Euboic stater (17.2 g) and the Euboic stater began to be divided into fourths before the end of the sixth century BCE, it is difficult to say which standard was adopted in areas dominated by the colonies of Chalkis and Corinth. These areas were Sicily and the Chalcidic peninsula.¹⁶⁷ What numismatists consider an Attic tetradrachm for cities of Sicily and the Chalcidic peninsula could be a Euboean stater, while Attic didrachms could also be seen as Corinthian staters or Euboean half-staters. This is proved, as far as the Chalcidic peninsula is concerned, by a silver coin issued with the types of Sermyleia, the weight of a Euboean stater/ Attic tetradrachm and the legend ΣΤΑΤΕΡ.¹⁶⁸ As far as Sicily is concerned, there is epigraphic evidence from Akrai of mid-fifth century BCE date.¹⁶⁹

The influence of the Corinthian standard was strong in Sicily, where Corinth founded Syracuse in 734 BCE. The Dorian colonies of Selinus and Acragas issued Corinthian staters and later Syracuse struck what could be considered as a double Corinthian stater or a Euboean stater (Attic tetradrachm).¹⁷⁰ These cities adopted the Corinthian standard to serve their own needs; these coins circulated locally, and it is the choice of the standard that reveals the impact of Corinthian merchant activity in this area. One recalls that these cities issued their coinages with their own types.

Sicily produced large quantities of grain but also clothing and other products as cheese and pigs.¹⁷¹ Euboean, Corinthian and Attic pottery has often been found in excavations in these areas and points to commercial relations with Mainland Greece. In Sicily three early hoards contained Attic tetradrachms; all other hoards with Attic tetradrachms are of much later date.¹⁷² In the Chalcidic peninsula there is only one hoard that might have contained Attic tetradrachms; its burial dates from the 420s (*CHVIII* 63).¹⁷³

Another hoard, this time from the excavations of Methone, might also be connected with military operations.¹⁷⁴ This makes it clear that Athenian involvement in these areas is not of early date and the first appearance of Athenians was connected with military operations. One recalls that Thucydides says that in 415 BCE the Athenians knew almost nothing about Sicily (6.1.1; cf. 6.46.3–5). Although Attic pottery arrived in Sicily and in Etruria, Athenian merchants were not involved in their transport. Trade in the Ionian and the Adriatic Seas was dominated at first by the Euboeans and later by the Corinthians. The Athenians arrived in Sicily quite late and against the historical background of the Peloponnesian War. Some scholars have thought that Sicilian coinages were minted on the Attic standard, but it is more likely that they were minted on the Corinthian and Euboean standards.

We find reduced versions of the Corinthian standard in the earliest silver coinage of Phleious, Pheneos and Cleonae,¹⁷⁵ neighbors of Corinth, the cities of Acarnania, situated very close to Corinthian colonies,¹⁷⁶ and of the Achaean colonies of Southern Italy.¹⁷⁷ Georges Le Rider explained the standard of the Achaean colonies of southern Italy with a stater of 8 g and peculiar features based on hoard evidence and on some overstrikes of Corinthian staters.¹⁷⁸ He showed that the aim of the adoption of a reduced version of the Corinthian standard was to create a closed monetary zone from which all other currencies were excluded. By requiring one Corinthian stater of 8.6 g for a local stater of 8 g, these cities made a profit of 7 per cent.¹⁷⁹ The resources of Sybaris, Metapontium, Croton and Caulonia are very well known: huge quantities of grain and leather from big animals, preserved fish and others.¹⁸⁰ Corinth could acquire the surplus of these Achaean colonies with its Corinthian staters, which these cities also used to strike their own coinages, as the overstrikes reveal. Thus, trade provides a good explanation for the movement of Corinthian staters to Southern Italy.

THE PERSIAN STANDARD

The Persian standard was introduced by Darius I, who first followed Croesus' standard (silver stater of 10.75 g, gold stater of 8.06 g), and later adopted a weight of 8.36 g for the gold stater (*dareikos*) and 5.5 g for the silver stater (*siglos*).¹⁸¹ This standard was popular in areas with strong ties to the central government of the Persian Empire and its subordinates such as the cities of Cilicia, Pisidia and Pamphylia.¹⁸² From ca. 380 BCE, Persian governors of Cilicia, such as Tiribazus, Pharnabazus, Datames and Mazaeus, issued double *sigloi*.¹⁸³ Tiribazus' staters may have been used to pay soldiers during his campaign against Evagoras of Cyprus. The double *sigloi* of Pharnabazus and

Datames were minted for their campaigns against Tachos, the rebellious satrap of Egypt.¹⁸⁴ In the late 360s, Datames issued two series of silver staters (double *sigloi*) during his revolt against the Great King.¹⁸⁵ Datames' successor, Mazaeus, also issued double *sigloi* with his name and titles.¹⁸⁶ The city of Lampsacus in Mysia issued gold staters on the Persian standard that supplemented the royal currency in international payments.¹⁸⁷ Mallos in Cilicia issued double silver *sigloi* under Artaxerxes III. Gold staters with the weight of a daric depicting an archer and a galley might have served as payments for the royal fleet.¹⁸⁸

The adoption of the Persian standard may be explained in two different ways, both related to geography. We have two distinct zones where the Persian standard was adopted. The first includes the northern and southern coasts of Asia Minor, and the second is Ionia. During the fourth century BCE loyal (and disloyal) satraps and subject cities issued their coinages on this standard because they had to meet expenses related to armies mobilized by or against the Great King. From Xenophon we learn that the monthly payment of mercenaries under Cyrus was one daric, and later Cyrus offered his mercenary soldiers one and a half darics. One daric was the equivalent of twenty *sigloi*, and one *siglos* of seven and a half Attic obols (Xen. *An.* 1.5.6). The silver coinages on the Persian standard issued by Amisos and Trapezous can be explained in the same way. One recalls that Datames' military involvement in this area is revealed by combined information from Ps.-Aristotle (*Oec.* 2.2.24a) and Polyaeus (*Strat.* 7.21.1).

A different explanation might be proposed for the Ionian cities of Ephesus and Colophon. These cities adopted the Persian standard, since this was the successor of the Lydo-Milesian standard.¹⁸⁹ The ties of these cities with the Persians and their commercial relations with them may have had some influence on their choice of standard.¹⁹⁰ The other Greek cities of Western Asia Minor did not use the Persian standard. Ephesus and Colophon had another common point besides the Persian standard: they were both excluded from the celebration of the *Apatouria*, a common festival for all cities of the Ionian Dodecapolis.¹⁹¹

Two distinct reduced versions of the Persian standard were adopted in Lycia.¹⁹² Tissaphernes also issued silver staters on this local Lycian standard during the years of the war against Agesilaus of Sparta.¹⁹³ Another version of this same standard was introduced in Cyprus with a *siglos* of 11 g.¹⁹⁴ The standard of the coinage of the Great King remained unchanged to the very end of the Persian Empire.¹⁹⁵ This is a reflection of stability and refers to the adoption of the Persian standard for political and military reasons. By contrast the Greek cities and the colonies occasionally changed their weight standards.

CHANGES OF STANDARD

Mainland Greece and the North

The reduced Milesian standard of the earliest silver and electrum of the Chalcidic peninsula was abandoned, and some of the cities that previously issued on this standard, Torone, Sermylia and Argilos, changed to the Euboic–Attic standard.¹⁹⁶ This must be explained either by the impact Athenian tetradrachms had in international trade or by the links of the Euboean colonies with the Euboean standard. The Milesian was the earliest monetary standard, and after a period of experimentation the cities changed to their own *nomima*. In this same area some decades later the military help with which Perdikkas II provided the enemies of Athens during the *Poteidaiaitika* brought his silver sixths (tetrobols) into the area and had an influence on local coinages.¹⁹⁷ His allies adopted the Macedonian monetary practices in their efforts to meet military expenses. Thucydides (4.83.5–6) explicitly says that Perdikkas and his allies had to pay for the soldiers of Brasidas. These allies were the Chalcidians of Thrace and later Acanthus.¹⁹⁸ Down to the sack of Olynthus in 348 BCE this standard dominated monetary circulation in the Chalcidic peninsula and was also adopted by Amphipolis and Philip II.¹⁹⁹

Thucydides (2.100.2) informs us that king Archelaus of Macedonia introduced many innovations.²⁰⁰ He introduced staters of ca. 10.7 g (10.20–10.90 g), being the equivalent of five light tetrobols (2.15 g).²⁰¹ By the adoption of a lighter standard than that of his neighbors, the cities of Thessaly and the Chalcidic peninsula, and of his main commercial partners, the Athenians, the king created a currency and a closed monetary zone for his kingdom.²⁰² The only hoard of staters from early fourth-century Macedonia contained staters of the Macedonian kings from Alexander I to Amyntas III and no other currencies (*IGCH* 365 from Ptolemais, Macedonia).

Two changes in the weight standards of coins minted by the Euboean cities are probably connected to shifts in military alliances. After 371 BCE the Euboean cities adopted the Aeginetan standard used by the Boeotians, as a result of their new alliance with Thebes.²⁰³ In 357 the Euboeans brought up their ties with Thebes and became the allies of Athens. The Euboean cities passed then to a reduced Attic standard. The alliance with Athens may be of some significance as it involved the arrival of Athenian currency in Euboea and also military collaboration.²⁰⁴

The adoption of the reduced Attic standard in Euboea is almost contemporary with the introduction of new coinages on the same standard by the Cycladic islands. This reduced Attic weight remained the standard in use down through the Hellenistic period.²⁰⁵ The circulation patterns of these coinages show that they did not leave the wider area where they were produced. This

reflects local economic patterns.²⁰⁶ During the Hellenistic period their coinages could be exchanged with some profit with the various international currencies on the Attic standard.

Asia Minor

The main innovation in Asia Minor before the arrival of Alexander III was the adoption of the Chian standard by a large number of cities. The financial support provided by Chios to the Spartans is attested by Thucydides (8.101.1). A number of coinages on the Chian standard were issued by cities that supported Lysander during the last years of the Ionian war. These are the well-known ΣΥΝ coinages depicting a baby Heracles strangling snakes on the reverse and civic types on the obverse.²⁰⁷ The ΣΥΝ staters were tridrachms on the Chian standard and double *sigloi* on the Persian. This 'was particularly significant to Lysander, on account of the huge subsidies he received from Cyrus from 406 onwards.'²⁰⁸ Thus, the production of Chian weight coinage started from a 'strong nucleus of major Greek cities,' spread to the Hecatomnid dynasty in the early fourth century BCE and then to the majority of Greek cities in Thrace, Bithynia, Mysia, Troas, Aeolis, Ionia and Caria, but also in Paphlagonia and maybe Lydia. Silver on this standard was also struck by satraps and subordinates of the Great King for use in military payments.²⁰⁹

Although the Chian standard began to be adopted for military and political reasons, one cannot explain the spread of the new standard in the same way. The cities of Asia Minor were all subjects of the Great King after 387 BCE but were free to develop their own monetary policy. The cities that adopted the Chian standard in this period appear to be linked by trade and not by political ties. As has been recently shown, this was the standard that was also adopted by the islands of Rhodes and Cos, as well as by a number of cities in Thrace such as Thasos, Ainos and Byzantium.²¹⁰ These cities were not subjects of the Persian king and had no political links with the cities of Asia Minor. The monetary union of Byzantium in Thrace and Calchedon in Bithynia on the opposite coast points also to an explanation involving trade and joint commercial activity.²¹¹ These two cities, which were both Megarian colonies and were situated at the entrance to the Black Sea, issued their silver coinages on the same standard and with very similar types from the end of the fifth century BCE. The adoption of the Chian standard by many mints that issued coinages during the fourth century BCE is best explained by large-scale transactions for long-distance trade.

It was during the last decades of the fourth century BCE that the Persian weight standard was adopted by a number of mints: Amisus and Trapezous of Pontus, Astacus, Calchedon, Cios and Heraclea Pontica in Bithynia.²¹² Lampsacus adopted the full Persian standard for its gold and silver coinages.

Perinthus in Propontic Thrace, the Thracian Chersonnese, a significant number of cities in Mysia, Parion and the less significant cities of Atarneus and Pergamon, Antandros and Gargara in the Troad, and also Ephesus in the late 330s adopted the Persian standard.²¹³ Byzantium might have followed Calchedon, as the two Megarian colonies struck their earlier silver coinages with very similar types on the Chian standard.²¹⁴ A lighter version of the Persian standard occurs in the Tauric Chersonnese (Nymphaion, Chersonnesus, Panticapaeum, Theodosia and Phanagoria) during the late fourth century BCE.²¹⁵ The Persian standard became popular again during the very last years of the fourth century BCE with the coinages of Alexandria Troas, Abydus, Mytilene and Scepsis.²¹⁶

Le Rider explained this change as the result of increased military activity under Artaxerxes III.²¹⁷ This may be the best explanation for the coinages of the cities of Asia Minor that were under the control of the Great King from 387 BCE. When Alexander III crossed the Hellespont and needed to meet military expenses, some of these cities may have issued coinages on the Persian standard. It might have also been the case under Lysimachus.²¹⁸ During the third century BCE a number of civic coinages were issued on this standard.²¹⁹

CONCLUSION

The adoption of a standard or the change to another standard may be caused by one of four factors:

1. Two or more cities may adopt a common standard to facilitate trade and to expand markets. The Aeginetan, the Milesian and the Phocaic standards provide examples of this phenomenon. In the areas where coinage(s) of a certain standard largely circulated and some significant cities also issued their coinages on this standard, all other cities tended to adopt this weight standard. This was the case of the Chian standard in Asia Minor and Thrace during the fourth century BCE. In some cases, cities adopted a reduced version of the standard in use with the aim of creating a clearly defined monetary zone where no other coinages circulated.²²⁰ This was the case of the Achaean colonies of Southern Italy.
2. Military involvement. In this case, coinages of different issuing authorities are minted in the same standard and they also share types. When cities had to collaborate to provide military help, they either followed their leader in terms of monetary standard and types (Corinth and colonies) or introduced new types (the ΣYN coinage on the Chian standard). It might be that they issued their coinage with the weight standard of their ally but with their own types, as the allies of Perdiccas II in the Chalcidic peninsula, and Samos as an ally of Athens, in the late fifth century BCE.
3. Weight and monetary standards were part of the city's life and one of its *nomima*. This is the reason, together with trade, that in many cases colonies adopted the

weight standard of the metropolis but preferred their own types.²²¹ This was the case of the Corinthian and Euboean colonies in the Chalcidic peninsula and Sicily, Phocaea and its colony Velia in southern Italy, as well as Massalia and Empurias. The foundation of colonies involved trade activities of the metropolis with the area where the colony was founded, and with the colony before its decision to strike its own coinage.

4. Political control of an area can impose the adoption of a monetary standard.²²² This might be the case of Delos and Athens in the Archaic and Classical periods and was certainly the case of the Ptolemaic kingdom from the early third century BCE, as well as of Cyprus, Phoenicia and Cyrenaica.²²³ One also recalls the ties of a number of cities of Cilicia and Pamphylia with the Great King and his subordinates or local dynasts combined with military and other obligations towards them.

The adoption or the change of a coinage's weight standard was a deliberate decision made by the issuing authority, that is, the city-state or monarch. As we have seen, this decision was often made for commercial reasons and therefore reveals the existence of a trade policy. This policy was aimed not only at securing the import of a few essential items; a common weight standard facilitated the flow of both exports and imports. Common weight standards also played a major role in reducing transaction costs for merchants moving their goods from one city to another. As it has been recently shown by Alain Bresson also for electrum, electrum coins issued in three standards (Lydo-Milesian, Phocaeian and Euboic) are grouped in hoards per standard. Combined with the mid-fourth-century BCE anecdote about Persinos (Callisthenes *FGrHist* 124 F 4: *apud* Poll. 9.93.4–9), this points to low transaction costs within the zone of its standard.²²⁴ The use of common weight standards thus helped to create the necessary infrastructure for the expansion of markets and to lay the foundations for economic growth in the ancient Greek world.

NOTES

- 1 See Bresson 2009.
- 2 Gold coinages were rarely issued in the Greek world before the Hellenistic period, while bronze coinages have no place in a discussion about weight standards and international trade. For the gold Greek coinages before the Hellenistic period, see the *synthesis* of Melville-Jones 1999. For bronze coinage and its use in every day life and local transactions, see Psoma in Psoma *et al.* 2008: 243–54; Marcellesi 2010.
- 3 Kroll 2001; 2008.
- 4 See Le Rider 1989; Psoma forthcoming a.
- 5 Kraay 1976: 329–30.
- 6 For Mainland Greece during the Archaic and Classical periods, see Psoma 2011a. For Western Asia Minor, see Meadows 2011. For the Hellenistic World, see Ashton 2012.
- 7 See discussion later in the chapter. These were the so-called Achaean of Southern Italy, that is, a reduced version of the Corinthian; the Campanian standard that adopted a more reduced version of the Achaean and derived from the Phocaeic; the Corcyraean that was

- related to both the Corinthian and the Aeginetan standards; the standard of the coinages of Cyprus, which could also be considered either as Persian or as a reduced version of the Aeginetan; the Lycian that may be a reduced version of the Persian; and the Samian and the Phoenician, which were merely of local character. Last but not least, we will see the so-called Thracio-Macedonian standard, 'the extremely complicated weight system of northern Greece': Kraay 1976: 330. On this standard, see Psoma forthcoming a.
- 8 See previous note as well as the discussion later in the chapter.
 - 9 Pfeiler 1966; Moucharte 1984; Becker 1988.
 - 10 Konuk 2011.
 - 11 For fourths (drachms) and obols of Milesian standard, see Barron 1966: 9 with a reference to small fractions of Colophon with inscriptions: Milne 1941: 32–3, nos. 2–10.
 - 12 For Ephesus, see Karwiese 1995. For Samos, see Starr 1966: 9–11.
 - 13 Nicolet-Pierre 2006: 52–4. For Ialysos, see Weiss and Hurter 1998. The stater of Ialysos is between 14.45 and 14.95 g. Rare one-third staters and smaller fractions were also issued. See also the discussion about the weight standard, *ibid.* p. 8–9 and *ibid.* Appendix IV p. 13 for an attribution to Ialysos of staters of the same weight with a palmette (= Bresson 1981). For Lindos, see Cahn 1957.
 - 14 For the cities of the Chalcidic peninsula, see Hardwick 1998; Liampi 2005; Psoma, forthcoming a. For Melos, see Sheedy 2006: 58–71.
 - 15 Konuk 2011.
 - 16 There is Ionic influence also in the dialect and the names of the months of Halicarnassos. See Trümper 1997: no. 96, 113–14.
 - 17 Panagou 2010.
 - 18 For Cnidos, see Cahn 1970. Fish, cereals, onions, cabbages, honey, wine and vinegar, carobs, pottery, pod and pharmaceutical brya.
 - 19 *IGCH* 1165, 1168+1637, 1195, 1196, 1199, 1205, 1482, 1644, 1792.
 - 20 Psoma forthcoming a.
 - 21 Psoma forthcoming a.
 - 22 Psoma forthcoming a. Argilos issued also *hektai* (2.46–2.40 g) and forty-eights of the stater (0.40–0.25 g). For the division in sixths, thirty-seconds and forty-eights, see Liampi 2005. It has been shown that the thirty-sixths and the forty-eights are one and the same denomination: W. Fischer-Bossert, *SNR* 86 (2007) 184–8. The reason Argilos adopted the Milesian standard and its division in sixths, twelves etc. was because the city was in the vicinity of the so-called Thasian Peraea where the duodecimal system was followed. Later, in the fourth century, Amphipolis, which adopted the weight standard and numismatic habits of the Chalcideans of Thrace, struck drachms of 3.4 g under the influence of Neapolis and Thasos. The silver coins of Amphipolis and Thasos circulated together as reveals *CH* IX 18 from the cemetery of Gazoros with a burial date early in the fourth century BCE. For this hoard, see Poullos 2009.
 - 23 Psoma forthcoming a.
 - 24 Psoma forthcoming a.
 - 25 For the control of the mines by Alexander during this period, see Kagan 1987; Psoma 2002a; Picard 2006.
 - 26 Kroll 2011: 27–38.
 - 27 Bacchylides 3.15–16. For hoards from Egypt with silver of Alexander I, see *IGCH* 1182, 1482, 1790.
 - 28 Thuc. 2.99.
 - 29 For the wine production in the Chalcidic peninsula, see Papadopoulos and Paspalas 1999.
 - 30 See previous note.
 - 31 Panagou 2010.
 - 32 *AEMTh* – 2011 (passim)
 - 33 See also Liampi 2005: 240–1.
 - 34 Suda s.v. Χρυσός Κολοφώνιος.

- 35 Plut. *Mor.* 298A3–B6.
- 36 Sheedy 2006. Cf. Sheedy 2012: 110, 112.
- 37 Sheedy 2006: 58–71; Sheedy 2012: 112.
- 38 For Paros, see Hdt. 5.30 to 31. For Naxos, see Polyaeus *Strat.* 8.36.1.
- 39 Panagou 2010.
- 40 Kraay 1964; Sheedy 2006: 6–71; 2011, 114.
- 41 Sheedy 2012: 112.
- 42 See Babelon 1901: 356–61.
- 43 Hurter–Mani and Liewald 2002; 2004; 2006.
- 44 This might also be the earliest standard of electrum and silver of Teos: Matzke 2000. For the coinages of Phocaea and Mytilene, see Bodenstedt 1981. For the Cyzicene staters, see Touratsoglou 1999. Small fractions, mainly *hemiekta*, were issued by Cyzicus from the late sixth century BCE. For these, see Hurter–Mani and Liewald 2006.
- 45 For the hoards, see Hurter–Mani and Liewald 2004: 30–1. For the decree of Olbia, see *IK Kalchedon* 16, the analysis by Dubois 1996: 28–38 no. 14 and the comments of Ph. Gauthier in *BullEpigr* 1997: 420.
- 46 For these testimonia, see Psoma forthcoming c.
- 47 For Tenedos, see Head 1911: 550.
- 48 As the stater of Ainos was the equivalent of three sigloi, this standard was considered Persian: May 1950: 265–9 with previous bibliography and discussion (see 269–71 for the Chian standard). However, at the date of the beginning of silver coinage at Ainos, the Persian standard was not popular in North–Western Aegean. We also remind that sigloi, coins of 5.5 g, were never issued by Ainos. At Ainos the stater (16.5–16.2 g) was divided in *hektai* (2.80–2.70 g) and *hemiekta* (1.35–1.25 g), while fourths, i.e. drachms (4.10–3.90 g), were also issued: Psoma 2002b: 518–19; forthcoming b.
- 49 Papadiamandis, the very significant Greek author of the late nineteenth–early twentieth century CE, from Sciathus, very often speaks about life on his island. From what he says we can infer that goat cheese of Ainos was a significant commodity in the Aegean.
- 50 Rutter 2012: 130. For Poseidonia, see Ebner 1964. For Velia, see Williams 1992.
- 51 See García-Bellido 1994.
- 52 Rutter 1979: 8–41, 123–41; Rutter 2001 *et al.*: 66–7 (Kyme); Rutter 1979: 42–59, 165–239; Rutter 2001 *et al.*: 68–71.
- 53 Pau Ripolles 2013: 3.
- 54 Graham 1964: 125, 128–35.
- 55 Both terms are mentioned in Archaic and Classical inscriptions of Chios: Meiggs–Lewis no. 8; Sokolowski 1969 no. 116; *SEG* 19: 575; *SEG* 17: 377; *SEG* 22: 497, 498, 501, 508; Sokolowski 1969 no. 118; *SEG* 18: 334. For the coinage of Chios during the Archaic and the Classical periods, see Hardwick 1991.
- 56 Psoma forthcoming a.
- 57 Skarlatidou 2010: 361. Clazomenian pottery is abundant in the oldest Clazomenian phase of Abdera: Koukouli–Chryssanthaki 2004: 241; Skarlatidou 2004: 249–59; Skarlatidou 2010: 255–304.
- 58 The drachms of 2.6 g were in fact the fortieth part of a Gold Daric of 8.35 g with a ratio of 1/12.46, close to 1/13, the usual ratio in the Achaemenid Empire and neighboring areas during the Classical period. See Hardwick 1996.
- 59 Barron 1966: 7–11.
- 60 Barron 1966: 210, plate XXII1c, 1e; Karwiese 1980; Meadows 2011: 288.
- 61 Barron called it Rhodian: Barron 1966: 105; Meadows 2011: 286.
- 62 During this same period Samos issued Alexanders (Price 1991: no. 2446A). One recalls that other cities that desired to have their own monetary policy during this period issued silver coinages on the Persic standard: Kinns 2006: 37; Ashton 2007.
- 63 See Nicolet–Pierre 2000.
- 64 Kroll 2001. For the Attic standard, see Kroll 1998.

- 65 Kroll 2001.
- 66 For epigraphic evidence, see Psoma 2009: 173 with notes 28–30.
- 67 See Psoma forthcoming a.
- 68 *CID* 2: 4 III 28; 2: 12 II 23, 25.
- 69 Kroll 2001. For Corinth, see Puglisi 2000.
- 70 For the coinages of the Peloponnese, see Walker 2006 with bibliography and discussion. For Messene, see Grandjean 2003. For Achaëa, see Psoma and Tsangari 2003; Mackil and van Alfen 2006. For Sicyon, see Warren 2009. For the fifth-century BCE Arcadia, see Williams 1965; Psoma 1999a. For the neighbors of Corinth, see *infra* note 153.
- 71 For Delphi, see Svoronos 1896. For the fourth-century BCE Amphictyonic coinage, see Kinns 1983. For Phocis, see Williams 1972. For Boeotia, see Psoma and Tsangari 2003. For the Oitaioi, see Valassiadis 2004. For Lamia and Malis, see Georgiou 2004. For the earliest coinages of Larissa, see Kagan 2004. For Thessaly during the fifth century BCE, see Liampi 1996; Papaueangelou 1998. For hoards buried in Thessaly, see Psoma 2011a: 66–7. For the Cycladic islands and Crete, see Sheedy 2011: 109–14, 117–20.
- 72 Cnidos, Chersonnesus, Caunos, Cindya in Caria (or Telmessus), the Carian island of Cos, the city of Camiros on Rhodes and Mylasa. For Cnidos and Chersonnesus, see Cahn 1970. For Caunos, see Konuk 1998. For Cindya, see Kagan and Krittr 1995 and for an attribution of these same coins to Telmessus, see *SNG Kayhan* 810. For Camiros, see Cahn 1957. For Mylasa, see Konuk 2000: 172; 2007: 472–3. To these may be added some *incerti* that were recently attributed to Caria: see Sheedy 1998. Cyme of Aeolis and may be Gargara in the same area have also issued a coinage on the Aeginetan standard. One recalls that Demodike of Cyme together with Pheidon of Argos were thought to be the first who struck a coinage (Pollux 9.83). For Teos, see Kinns 1989: 187 with note 26.
- 73 Istros, Olbia and Sinope in the Black Sea also adopted it. For Istros, see Preda 1975. For Olbia, see Hind 2007: 12–14 with bibliography. For Sinope, see Hind 1976; 2007. For an opposing view, see de Callataÿ 2007.
- 74 For Kindya, see Kagan and Krittr 1995.
- 75 For flowers from which perfumes could be produced, see Theophr. fr. 4.27. For local pottery, see Poll. 7.197: τῆν δ' Ἀργίναν χυτρόπωλιν ἐκάλου; Steph. Byz. s.v. Γάζα.
- 76 Str. 8.6.16.
- 77 To slave trade points also the information given from Theopompus about Pythionike, the mistress of the Macedonian Harpalus: Ath. 2.119.
- 78 Kroll 2011.
- 79 Scholia in Pind. *Ol.* 8.29b.
- 80 Figueira 1981 based on Hdt. 9.76.
- 81 Figueira 1981.
- 82 To the significance of Aeginetan currency in the Peloponnese point also the traditions about Pheidon of Argos: see Kroll 2001.
- 83 For Elis, see Walker 2004. For Thessaly, see Psoma 2011a: 66–7a.
- 84 Le Rider 1966; Stefanakis 1999.
- 85 Sheedy 1997. See also *IGCH* 6 that contains silver coins of Aegina, Ceos, Paros, Siphnos, Cos, Chios, Thera [?], Chios and Dardanos. The presence of silver coins on the Aeginetan standard either of Mylasa or Caunos in hoards buried on Thera (*IGCH* 7) and Melos (*IGCH* 8) points to the same direction.
- 86 See Sheedy 1997: 116–17.
- 87 For Cos and Camiros, see Nicolet-Pierre 2006: 50 with bibliography. For the other two cities, see Cahn 1970.
- 88 For this hoard, see Kagan 2011: 235–6.
- 89 Panagou 2010. Caunos was famous for its figs (Ath. 2.1.4). At Teos, in Ionia, whose earliest coinage was issued also on this standard, a reduced version of it was adopted: see Matzke 2000.
- 90 Chevillon and Fournials 2012.

- 91 Wiemer 2010: 418 with note 17.
- 92 Konuk 1998.
- 93 Panagou 2010.
- 94 For Teos, see Balcer 1968: 17–18; 1970: 25–34. See also Matzke 2000.
- 95 Hurter and Pászthopy 1984.
- 96 Hind 1976. Doubts for this attribution were cast by de Callatay 2007: 1–8 with previous bibliography in note 2. This is traditionally attributed – *à tort* – to Sinope.
- 97 For Olbia, see Avram *et al.* 2004: no. 690. For Istros, see Hind 2007 with note 12. The earliest silver coinage of Theodosia was also on the Aeginetic standard: see Kovalenko and Molchanov 2005. For relations between Olbia and Sinope, see Dubois 1996: 5–6 no. lines 15–17 with note 5. The eagle and the dolphin of the reverse of these coinages referred to Zeus Ourios, whose sanctuary was at the southern entrance of the Black Sea: see Hind 2007. For the sanctuary of Zeus Ourios, see Avram 2004: 981; Moreno 2008.
- 98 For Istros, see Avram *et al.* 2004: no. 685. For Olbia, see *ibid.* no. 690.
- 99 Hourmouziadis 2011: 211–12 with previous bibliography.
- 100 Ath. 2.2.119. For the attribution of this coinage to Sinope, see above notes 73 and 96.
- 101 See also Xen. *An.* 4.8.22 for Trapezous in the land of the Colchians. Str. 2.1.39.
- 102 Steph. Byz. *Ethnica* 43 (Αἰγινήτης).
- 103 For a discussion of this evidence and previous bibliography, see Psoma 2006.
- 104 Kagan 2008.
- 105 Berge, Thasos, Galepsos, Neapolis and also Thracian tribes of the same area (Ichnaians, Orrescians, etc.) issued staters of c. 10 g and fractions on the duodecimal system. See Psoma forthcoming a.
- 106 Fournier and Hamon 2007: 358–63.
- 107 For the resources of Thasos, see Müller 2011.
- 108 *IGCH* 117 (ca. 480 BCE; Lycian–Pamphylian border); *IGCH* 1182 (460 BCE; Western Asia Minor); *IGCH* 1185 (450 BCE; Rhodes); *IGCH* 1252 (430 BCE; Southern Asia Minor).
- 109 Psoma 2011a: 68.
- 110 Psoma 2011a: 66–7, 72–4
- 111 For Messene, see Grandjean 2003.
- 112 See Gartland 2013. He proposes to date these coins in the 360s during the years Thebes built a fleet and had to meet significant military expenditure.
- 113 See Psoma and Tsangari 2003; Mackil and van Alfen 2006.
- 114 With the exception of the hoard of Taras (*IGCH* 1874) that included almost all known coinages of the late sixth century BCE, there are no other hoards with Aeginetan staters from these areas. The hemiobol of Aegina travelled to Auriol (*IGCH* 2352) most probably with the two Phocaeen trihemioibols.
- 115 For Italy, see *IGCH* 1874. There are no hoards with Aeginetan coins from Sicily. For a hemiobol in the hoard of Auriol, see *IGCH* 2352.
- 116 Figueira 1981; Salmon 1984. Johnston 1972 has demonstrated that Sostratus dealt extensively in Attic vases in the west.
- 117 See Kroll 2001; 2008. A weight on this standard that dates from the seventh century BCE was excavated at Pithekoussai.
- 118 Doubts about the attribution of what is considered as the first series of the coinage of Chalcis were expressed recently by van Alfen 2009.
- 119 Cyme in Campania, Naxos, Zancle, Messina and Himera in Sicily (thirds = drachmas), Samos (electrum). For Cyme in Campania, see Rutter 1979: 8–41 and the catalogue in pp. 123–41. For Sicily, see Fischer-Bossert 2012: 143–50. Euboean colonies of the Chalcidic peninsula (Mende and Torone), and also Aineia, Aphytis, Scione, Potidaea, Sermylea, Acanthus, Stageira in the Chalcidic peninsula and Argilos in the north-east of the peninsula. For these coinages see Psoma 2000. One of the earliest coinages of the Chalcidic peninsula was struck on this standard: see van Alfen 2009. The cities of the Chalcidic peninsula issued staters and fractions following a mixed system. Fifths were issued only by an uncertain mint.

- Staters, sixths, twelves etc. could also be considered as tetradrachms, tetrobols, diobols etc. of the Attic standard. Half-staters were issued by Scione, Sermylia and Stageira. These could be either half-staters of the Euboic standard (Attic didrachms), or staters of the Corinthian standard. Acanthus issued drachms and Mende, Dikaia and Acanthus tritemora.
- 120 Van Alfen 2009 proposed the attribution of the early chariot staters and related fractions on the Euboic standard (*trite, hekte*), which were previously attributed to Chalcis, to a mint in the Chalcidic peninsula related to Chalcis. There are striking similarities with local coinages as far as the incuse square is concerned but no find spots in the area.
- 121 The presence of the earliest Athenian coinage, the Wappenmünzen (half-staters of the Euboic standard) and their fractions that were drachms (fourths), obols (twenty-fourths), half-obols and quarter obols in the earliest hoard buried in Euboea (*IGCH* 3), together with the Chalcidian coinage following the new denominational system, points to an earlier date for this change well before the end of the Wappenmünzen.
- 122 To contacts with Boeotia point also staters on the Euboic standard with the Boeotian shield on the obverse and the red X, another common point between the Boeotian and the Euboic scripts, that may refer to Chalcis: see Kraay 1976: 90 with note 4.
- 123 For Skyros and Peparethus: Balcer 1967; 1975; 1978. Both coinages date ca. 485–480 BCE.
- 124 Sheedy 2011: 110.
- 125 For the strong ties between these areas and Euboea more evidence is brought by the *Onomastikon*: see Knoepfler 2007 with all previous bibliography.
- 126 For Delos, see Hackens 1973.
- 127 For the Thracian Chersonese, see Kraay 1976: 158 and for Methymna, see Franke 1975.
- 128 Kraay 1976: 296–9.
- 129 For overstrikes, see Kraay 1976: 296.
- 130 *Phormophoroi* 68 (fr. 63 K-A).
- 131 For Apollonia, see Topalov 2007. For Mesambria, see Karayotov 1994.
- 132 They were parts of hoards that also contained silver of Parium: see Psoma 2011b: 152.
- 133 For the royal edict of Pistiros, see Loukopoulou 1999: 359–71.
- 134 Magnesia, Samos and Miletus: see Dengate 1989. Its fourth-century BCE coinage on the Attic standard might be explained with the help of [Arist.] *Oec.* 2.16. See Kinns 1989: 184–6.
- 135 Nollé and Wenninger 1998/1999 with previous bibliography.
- 136 Alram 2012: 72.
- 137 For Sigaeum, see Mitchell 2004: 1014.
- 138 Attica: *IGCH* 2, 5, 12, 14, 16, 33 (Megara); Euboea: *IGCH* 3, 9, 10, 39; *CH* II 20; *CH* IX 11; *CH* VIII 69. Cf. *CH* IX 17.
- 139 For Asia Minor, see Konuk 2011.
- 140 For Athenian imitations, see Flament 2003; 2005; 2007; 2011a and b; Buxton 2009; Gitler *et al.* 2009; Gorini 2009; Ponting *et al.* 2011; van Alfen 2011a and b; 2012 a and b.
- 141 See van Alfen, Chapter 12 in this volume.
- 142 Salmon 1984.
- 143 In Sicily, Italy and North Africa, and in smaller quantities in the Aegean. A different quality of Corinthian pottery was excavated in Etruria. The invention of the potter's wheel is ascribed to Corinth (Plin. *HN* 7.198).
- 144 For literary evidence about imports of corn, see Salmon 1984: 129. Cf. Polyaeus *Strat.* 5.13.1.
- 145 Cf. Xen. *Hell.* 7.2.17–23.
- 146 Salmon 1984: 120.
- 147 Cf. Thuc. 1.120.2.
- 148 Plin. *HN* 13.5. Cf. 21.40 and Plut. *Tim.* 14.3: Dionysius II, while in exile at Corinth, spent time in Corinthian perfume shops.
- 149 For literary sources about the quality of Corinthian bronze-work, see Payne 1931: 349–350.
- 150 Salmon 1984: 124.
- 151 Le Rider 1989.

- 152 Alexander 1953.
- 153 Leucas ca. 480 BCE, Ambracia from ca. 480/79, Epidamnus, Anaktorium and Potidaea between 436 and 433: Kraay 1976: 82–6; Kagan 1998. Ambracia participated in contemporary military operations against the Persians and later its Corinthian issues became occasional: Kraay 1976: 82. Epidamnus and Potidaea, together with Corinth, Leucas and Ambracia, provided money for the war against Corcyra and the Athenians, which may explain the Athenian sanctions on Potidaea: Kagan 1998: 163–73.
- 154 Kraay 1976: 86–9.
- 155 Puglisi 2000.
- 156 Kraay 1976: 82.
- 157 Kagan 1998.
- 158 MacDonald 2002.
- 159 Thuc. 1.25.4.
- 160 Nicolet-Pierre 2009 with previous bibliography.
- 161 For the coinages of Cephallenia and Zacynthus, see Head 1911: 426 (Cephallenia) and 429 (Zacynthus).
- 162 Str. 7.7.5: καὶ πάλιν ἄλλος Κασσιόπη, ἀφ' οὗ ἐπὶ Βρεντέσιον χίλιοι ἑπτακόσιοι στάδιοι· οἱ δ' ἴσοι καὶ ἐπὶ Τάραντα ἀπὸ ἄλλου ἀκρωτηρίου νοτιωτέρου τῆς Κασσιόπης ὃ καλοῦσι Φαλακρόν.
- 163 For the resources of Corcyra, see Psoma forthcoming c.
- 164 Arist. *Mir.* 839a.34–839b.8 ; Hsch. *s.v.*: Κερκυραῖοι ἀμφορεῖς.
- 165 Nicolet-Pierre 2009.
- 166 For Corcyra's wealth and early monetary policy, see Psoma forthcoming c.
- 167 There is one colony of Corinth in the Chalcidic peninsula, Potidaea, the most significant city during the Archaic period and with strong ties with the metropolis.
- 168 Evidence from a Euboic weight silver coin issued by Sermylia with the legend *stater* and from the mention of Acanthian stater in *IG I³ 383A* front. col. II fr. VIII lines 178–9. See Psoma 2001b.
- 169 *IGASMG V* 78.
- 170 Fischer-Bossert 2012: 143–50.
- 171 Hermippus *Phormophoroi* 68 (*PCGV* 1986, fr. 63).
- 172 The early Sicilian hoards that included Attic tetradrachms are the following: *IGCH* 2065 (Messina, 489–479 BCE) (20 out of 36); *IGCH* 2066 (Gela, c. 485 BCE) (166 out of 1,076); *IGCH* 2071 (Monte Bubbonia, Gela, 475–470 BCE) (6 out of 338). All other hoards are of much later date.
- 173 For this hoard, see Tselekas 2009.
- 174 Gatzolis-Psoma forthcoming.
- 175 *The BCD Collection, LHS* 96, 8–9 *May* 2006, nos. 1597–8 (Pheneos), nos. 1309–13 (Cleoneae), no. 77 (Phleious).
- 176 Psoma 2007.
- 177 Le Rider 1989.
- 178 Le Rider 1989. The stater of these coinages was divided into thirds and sixths, another common point with the Corinthian stater.
- 179 With the adoption of this standard by almost all other cities of southern Italy during the fifth century BCE, this zone became larger and included all this area. The impact of this standard is reflected in the coinage of Thurii, the Panhellenic colony at the site of Sybaris and some other coinages that were all struck on a more reduced standard. At Taras the stater was called *nomos* and its weight was 7.8–8 g while the stater of Terina was 7.6 g. See Rutter 2001 *et al.*: 92–3.
- 180 Salmon 1984: 135.
- 181 Konuk 2011; Alram 2012: 64–5.
- 182 See also Troxell 1981.
- 183 Alram 2012: 76.

- 184 Alram 2012: 76–7.
- 185 Alram 2012: 77.
- 186 Alram 2012: 77.
- 187 Kraay 1976: 251; Alram 2012: 76.
- 188 Alram 2012: 72.
- 189 Kim and Kroll 2008: 57 with note 3. For the fourth century BCE, see Kinns 1989: 187–8. For Colophon, see Milne 1941.
- 190 See Rubinstein 2004: no. 844, pp. 1071–2 (Ephesus); 848, pp. 1078–9 (Colophon).
- 191 Hdt. 1.147–8.
- 192 Mørkholm 1964.
- 193 Hurter 1979.
- 194 For Cyprus, see Markou 2011. For Phoenicia, see Kraay 1976: 286–92.
- 195 For coinage in the Persian Empire, see Alram 2012.
- 196 See note 110 in this chapter.
- 197 For the presence of Perdiccas' heavy tetrobols in hoards from Olynthus and the Chalcidic peninsula, see Raymond 1953; Psoma 2001a: 175–9.
- 198 Psoma 1997.
- 199 For circulation in the Chalcidic peninsula, see Psoma 2001a: 169; Tselekas 2011. For the adoption of this standard by Philip II and Amphipolis, see Le Rider 1977.
- 200 Archelaus issued a bronze coinage, a step further from the overvalued silver of its predecessors: see Psoma 1999b.
- 201 For the staters of Archelaus, see Price 1974 and Westermark 1993.
- 202 This coinage was for local use and circulated locally: see Psoma 1999/2000. Macedonian silver from the late fifth century BCE to Philip II is extremely rare outside the frontiers of the kingdom with the exception of the staters of bad alloy issued by Amyntas III that are present in hoard IGCH 370. The hoard found on the western part of the Chalcidic peninsula may be related to the military presence of Amyntas III in this area during the years of the Spartan intervention. Archelaus, who exported timber to the Athenians and was paid with silver by them, felt strong enough to introduce this innovation.
- 203 Picard 1979. Cf. *IG XII* 9, 7.
- 204 For the history of Euboea during this period, see Picard 1979.
- 205 Stefanaki 2010. The position of Stefanaki finds support in the studies of Reger 1994 and Tréheux 1992.
- 206 For a local economy in the Cycladic islands during the Hellenistic period, see Reger 1994: 49–82.
- 207 Meadows 2011. For the ΣΥΝ coinages, see Karwiese 1980.
- 208 Meadows 2011.
- 209 Alram 2011: 72–4.
- 210 Meadows 2004.
- 211 Le Rider 1963.
- 212 Meadows 2004.
- 213 See Meadows 2004: 55–6. For Abydus, see Robinson 1921: 13. For Ephesus, see Kinns in Ashton *et al.* 2002: 200.
- 214 Le Rider 1963: 11–61; Schönert-Geiss 1970; Le Rider 1971: 145.
- 215 See Anokhin 1980. For the Chersonnesus Taurica, see Kovalenko 2008: 39–45. Some fractions of this reduced Persian standard of the Black Sea – diobols, tetrobols and octobols – could also be considered as hemidrachms, drachms and didrachms of the Chian standard, which was very popular during the fourth century BCE for reasons we will explain later: Kovalenko 2008: 45.
- 216 Meadows 2004.
- 217 Le Rider 1963: 58.
- 218 Meadows 2004: 55.
- 219 Kinns 2006: 37, 39.

220 Le Rider 1989.

221 See the discussion in Graham 1964: 125f.

222 For Athens and Delos, see Chankowski 2008: 11–12 with note 13. See also Hackens 1973: 223.

223 For the Ptolemies, see Le Rider and de Callatay 2006.

224 Bresson 2009.

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