

## THE MONETIZATION OF ROMAN ASIA MINOR IN THE THIRD CENTURY AD

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This paper is concerned with the impact of the monetary changes introduced in the third century on the monetization of the economy of Roman Asia Minor from the reign of Septimius Severus to the reign of Gallienus. The military and political upheaval of the third century, well attested in the sources, certainly affected the imperial decisions with regard to the annual budget. In all likelihood, substantial monetary demands by soldiers and officers induced the emperors to increase the supply of money destined to the annual payments. This additional burden on the Roman treasury could not be alleviated by employing any of the existing resources, so the authorities turned to continuous manipulation of the silver coinage. The debasement of precious metal coins was a regular practice even before the reign of Septimius Severus but it was taken to unprecedented heights during the third century AD. This situation threatened the stability of the Roman monetary system, which Augustus had introduced, and altered the levels of monetization.

Statistical analysis of a series of coin hoards and excavation finds from Roman Asia Minor helps to establish the extent of fluctuations in the production of bronze and silver coins. The presentation of this numismatic material in histograms – showing percentages of coins per year of reign – may reveal substantial differences between the mint output of the second and the third centuries AD. The analysis of these results, in combination with the evidence of repeated monetary reforms and changes in the patterns of specific denominations in circulation, may indicate changes in the use of existing coinage. At the same time, the evidence from epigraphic, papyrological and literary sources not only suggests changes in the overall monetization of Asia Minor but may also highlight problems relevant to the monetary policy of the emperors and reveal attitudes of the population towards money.

### Imperial fiscal policies and the army

By the third century the Roman imperial budget and the emperor's decisions with regard to revenues and expenses were probably determined by the growing needs of the army. The sources attest that the *stipendium* (soldiers' wages), usually paid in denarii, was complemented by various *donativa* (gifts) paid regularly in cash or in bullion. The repeated increases in soldiers' annual pay and the efforts of the emperors to meet this expense can be seen as an index of the gradual rise of the political power of the army. During the first century AD the *stipendium* of an infantryman did not exceed 225 denarii per year.<sup>1</sup> It was increased to 300 denarii during the reign of Domitian;<sup>2</sup> but then remained stable until the end of the second century. The next substantial increase, which is not quantified in the ancient sources, came under Septimius Severus,<sup>3</sup> who acted in accordance with the advice he gave to his sons, to keep the soldiers happy and despise the rest. Caracalla, faithful to his father's doctrine, doubled the payments of the troops.<sup>4</sup> The only emperor temporarily discontinuing this policy was Macrinus, who reduced soldiers' pay and withdrew both their donatives and their right to exemption from military duty, thus causing his own downfall.<sup>5</sup> Once the end of the Severan dynasty came with the untimely death of Alexander Severus in AD 234, the new emperor Maximinus Thrax again doubled the pay of the troops in order to secure his position.

This information does not permit an exact estimate of the annual military wage bill, but it does give an indication of the drastic increases in their regular payments. These did not merely keep pace with regular inflation and soldiers at the beginning of the third century certainly had greater spending power than ever before (see below p. 000). Even if some of the pay that they received was in the form of goods rather than money, they had more disposable income for buying commodities. Their higher spending power was ensured by a stable economy that was guaranteed by the central Roman state and by the relatively low inflationary tendencies in the beginning of the third century AD. To meet these increasing demands of the army emperors had to look for additional resources. The ancient writers fail, however, to clarify which additional bullion sources were used for the issue of the new silver coins.

There was little possibility of profits from imperialistic wars, since the Roman Empire did not expand substantially after the beginning of the second century, when the province of Dacia had been annexed by Trajan. The mostly defensive or civil wars of the late second and the third centuries did not produce any profit in the form of precious metal bullion. The state therefore had to turn to its internal resources and further exploit the economic capacity of its provincial subjects. It was possible to raise the

volume of precious metal coins issued by the Roman mint by increasing the provincial tax burden. New taxes, however, could not be raised indiscriminately without causing alarm among the upper classes as well as the poor. In fact, the bold attempt of Caracalla to increase direct taxes on the value of inheritances and the purchase of slaves to 10 per cent (double the previous figure) caused uproar among the wealthy.<sup>6</sup>

An alternative solution was the long-established fiscal practice of manipulating the coinage by withdrawing from circulation older silver coins and replacing them with issues of lower fineness. The most obvious mechanism to achieve this was to impose taxes payable in cash, such as those on the profits from the sale of slaves and the acquisition of inheritances. The authorities thus took in substantial quantities of silver coinage, which was re-struck with a higher base metal content, thus substantially debasing the silver denarii. Effectively the state produced more silver coins to pay the soldiers from the same overall stock of precious bullion.<sup>7</sup> During the Severan period the extent of these debasements was restricted and the silver fineness of the coins remained high. Even after the introduction of the highly debased silver *antoninianus* during Caracalla's reign,<sup>8</sup> the denarius continued to be produced in large numbers and remained the basic silver denomination in circulation until AD 238. After the death of Caracalla, Macrinus and Elagabalus issued a few series of *antoniniani* in the first months of their reigns but this development does not seem to have made a serious impact on the markets. These issues were abandoned in 219 and did not reappear until 238, when Balbinus and Pupienus reintroduced the *antoninianus* at a reduced weight of 4.75 grams, when they again risked monetary stability in an attempt to ameliorate the finances of the State.<sup>9</sup>

The stability of the monetary system depended not only on maintaining comparatively high silver fineness of the alloy but also on safeguarding the exchange rates between the gold, silver and bronze coinages. Our evidence indicates that the denarius, which had been tariffed at twenty-five to the *aureus* since the reign of Augustus, was maintained at the same rate throughout the Severan period. According to a familiar passage from Dio Cassius,<sup>10</sup> a gold coin (*chrysous*) was still worth twenty-five denarii during or immediately after the reign of Alexander Severus.<sup>11</sup> By maintaining these exchange rates the emperors avoided provoking the resentment of the soldiers, whose salary was still calculated in *aurei* of high fineness and weight,<sup>12</sup> even though they were usually paid in debased and effectively overvalued denarii. Theoretically, at least, soldiers could exchange them at the mint with the same number of gold coins as before. The stable weight of the gold coinage<sup>13</sup> guaranteed the value of debased denarii and therefore stabilized the monetary system. In order to maintain public confidence

the imperial mints continued to produce gold coins, despite their gradual devaluation, their withdrawal from circulation through melting (by some individuals) and the consequent loss of governmental revenue. This decision gave the impression that the imperial fiscal policies were backed by a stable economic system, which could still respond to the needs of the Roman population. Therefore, general confidence in the ability of the mint to exchange the silver coins for gold was not questioned, certainly not until the middle of the third century AD.<sup>14</sup>

### Approximate estimate of the mint output

The debasements of the silver coinage and the stability of the gold *aurei* created the appropriate environment for increasing the number of silver coins in circulation, while maintaining the monetary system introduced by Augustus. The study of coin hoards and excavation finds demonstrates that the production of silver coinage at Rome to some extent rose during the reigns of Septimius Severus and Caracalla and increased even more after the reign of Gordian III, when *antoniniani* supplanted the earlier denarii.

Tables 1 and 2 illustrate the composition of a group of silver coin hoards from Turkey, which were buried under the Severans or during the period of military anarchy between Gordian III and Gallienus. The peaks and troughs show increased or decreased numbers of coins in circulation. They can be analysed to demonstrate the changes in patterns of production through the period from c. 200 to 268.

The structural pattern of the Sulakyurt Hoard<sup>15</sup> and the Turkey Hoard,<sup>16</sup> which were buried in Asia Minor during the Severan period, is very similar. The first issues of coins belong to the early Severan period and they form their highest peaks during Septimius Severus' and Caracalla's time. The absence of Antonine coins indicates that both hoards were accumulated after the monetary changes of the early third century, when the debased Severan issues had supplanted the finer Antonine silver coinage (*Fig. 1*).

Ten published hoards, containing mostly denarii and *antoniniani*, were buried in Asia Minor between the reign of Maximinus and the reign of Gallienus: the Caesarea Cappadocia Hoard,<sup>17</sup> the Haydere Hoard,<sup>18</sup> the Yatağan Hoard,<sup>19</sup> the Smyrna Hoard,<sup>20</sup> the Eastern Hoard,<sup>21</sup> the Western Turkey 1 Hoard,<sup>22</sup> the Western Turkey 2 Hoard,<sup>23</sup> the Göktepe Hoard,<sup>24</sup> the Iasos Hoard,<sup>25</sup> and the Pergamon Hoard.<sup>26</sup> Only the Haydere and Eastern hoards include a handful of coins of the late first or early second century, and none of the others contains issues that predate Septimius Severus. The Eastern, Yatağan, and Haydere hoards show an early peak during Caracalla's reign followed by a sudden decrease. Most of the hoards have higher or lower peaks during the reigns of Gordian III, Philip the Arab, Trajan

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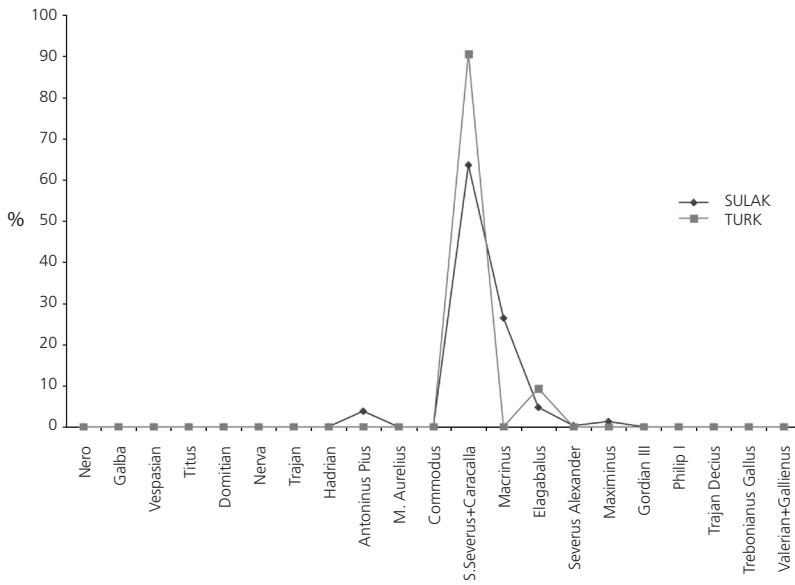


Fig. 1. Severan silver hoards (% p/a).

Decius and Trebonianus Gallus. The exceptions to this pattern are the Yatağan hoard, which was buried during Gordian’s reign and shows a peak during the reign of Maximinus, and the Western Turkey 1 and Western Turkey 2 hoards, which have later peaks during the reigns of Valerian and Gallienus (Fig. 2).

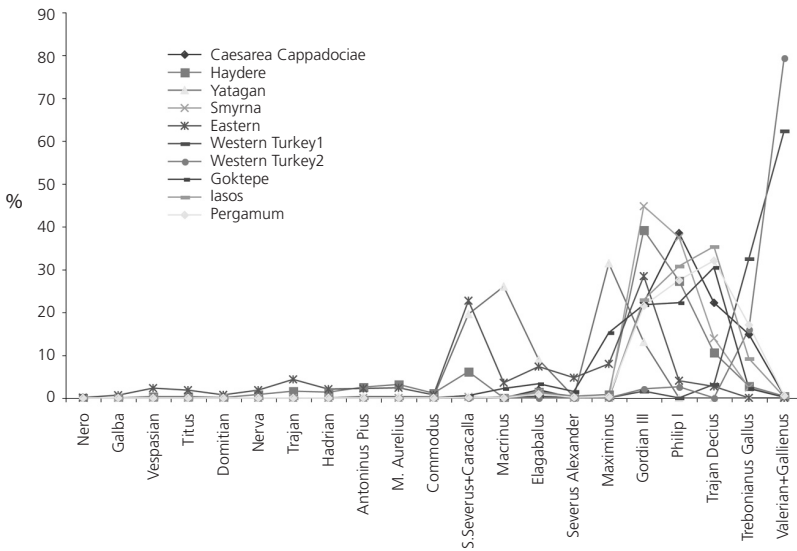
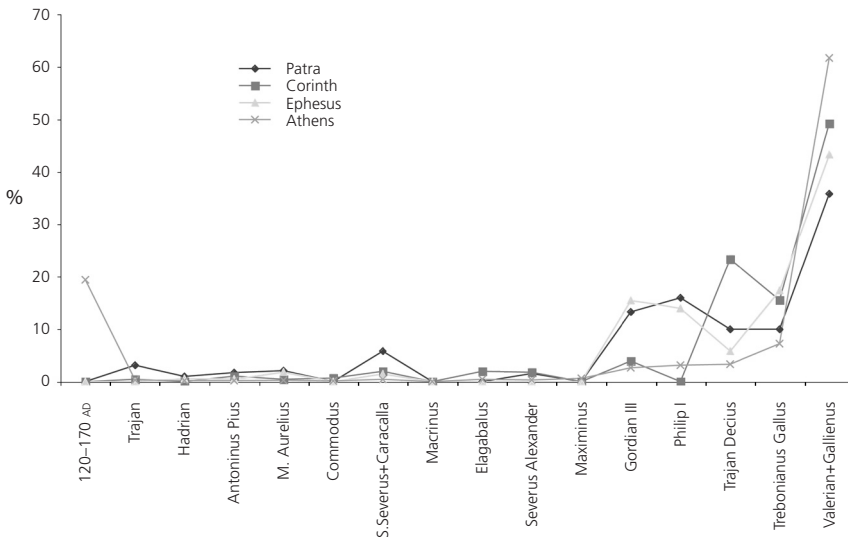


Fig. 2. Silver hoards from the imperial period (% p/a).

Excavation finds usually include few higher denomination coins, such as silver denarii or gold *aurei*. However, the coin finds at Athens,<sup>27</sup> Corinth,<sup>28</sup> Patras<sup>29</sup> and Ephesus<sup>30</sup> show a similar pattern to the Asia Minor hoard evidence. The distribution of coinage is almost uniform during the Antonine period, forms a small peak during the reigns of Septimius Severus and Caracalla, increases abruptly in volume during the reign of Gordian III, and continues rising until it reaches its highest peak during the reign of Gallienus (*Fig. 3*).



*Fig. 3.* Silver coins from excavations (% p/a).

These charts reflect the increasing output of silver coinages from Roman mints. We should distinguish, though, between two periods: the Severan, when the production of denarii increased only slightly (despite the repeated increments of the soldier's salaries), and the Military Anarchy, when the mint output of both denarii and *antoniniani* multiplied. At least in the case of the Severan period, we may assume that, since the exchange rates remained intact and the debasements of silver issues were still under control, the spending power of soldiers, who benefited from the higher rates of pay established by Septimius Severus and Caracalla, was boosted. Whether this situation could lead to a regional prosperity or not is an issue that will not be analysed in this paper. It is interesting, however, to note that the peaks on the charts remain comparatively low until the military emperors came to power, implying that the amount of coinage in circulation had not yet drastically increased.

What effect did these monetary developments have on the issue and circulation of local bronze coinage? Soldiers carrying out small-scale daily transactions, especially during the Severan period, would need to exchange silver for bronze ones through the local banking system. This need was felt in particular when the law demanded that only lower denominations should be used for certain commercial dealings. For example, an inscription from Athens contained a regulation that only bronze coins could be used in the fish market.<sup>31</sup> Inevitably there was an increased demand for bronze coins throughout the eastern provinces, including Asia Minor. During the Military Anarchy period, however, the need for bronze need not have been directly linked with the spending power of the soldiers and their transactions in local markets. After the reign of Maximinus the debasements continued at a greater rate than before, while the exchange ratio was probably altered sometime in the mid-third century, thus causing the instability of the entire monetary system. In this case, there is a possibility that the need for more money in circulation (both silver and bronze) was triggered by different reasons to be analysed in the next section.

T.B. Jones demonstrated that the number of civic mints reached its highest peak under the reign of Septimius Severus (232 mints) and then declined to about the level of the Augustan age by the beginning of the reign of Valerian.<sup>32</sup> Although proliferation of mints does not necessarily indicate proliferation of coins, the undertaking to produce new issues may reflect the dearth of bronze coins in the local markets and the will of the civic authorities to solve the problem. Although some cities minted copiously, the production of others was sporadic and restricted to only a few series. Leschhorn's statistical analysis of 20,000 coins listed in numismatic catalogues indicates a substantial peak in the volume of local coinage circulating during the reigns of Septimius Severus and Caracalla and smaller peaks during the reigns of Commodus, Severus Alexander, Gordian III, Philip the Arab and finally Trebonianus Gallus. Production ended during the reign of Tacitus,<sup>33</sup> when the last mints were closed.<sup>34</sup> The rise in the overall production of bronze coins in the first half of the third century AD was not uniform throughout Asia Minor. The arguments of Jones and Leschhorn have been criticized on the grounds that the contents of numismatic collections, on which their studies are based, do not reflect actual mint output.<sup>35</sup> These criticisms seem misplaced since it is likely that the cheap and worn bronzes typically found in museum collections more accurately represent actual mint output than carefully selected silver and gold coins. In any case, we can compare the evidence from private or public collections with the finds of bronze coins on excavation sites and in hoards.

Hoardings of bronze coins provide excellent economic indicators. It is worth noting that no sizeable Antonine bronze hoards (of over 20 coins) have been published from Asia Minor, and only one is documented during the Severan period, the Asia Minor Hoard.<sup>36</sup> This includes mostly coins from the reigns of Septimius Severus and Caracalla, with fewer than one per cent belonging to the reign of Commodus. We have no information regarding the exact place of its origin and since there is no identification of the mints as they are represented in the hoard, we cannot make assumptions about the level of production in any individual province. The absence of bronze coin hoards during the second and the early third century AD suggests that there was a dearth of bronze issues in circulation, a fact that would have led to liquidity problems during local market transactions. On the other hand, two, the Haydere and Sulakyurt silver hoards, date from the same period (we have already mentioned), which suggests that silver coins circulated in higher proportions than bronze ones, even though hoarding of precious metal coinages did not seem to be abundant.

Five bronze hoards from different areas of Asia Minor buried during the reigns of the military emperors demonstrate diverse regional characteristics. The Gülek Boğazı Hoard found in the Taurus mountains, entirely consisting of coins issued by the mint of Caesarea in Cappadocia, shows high peaks during the reigns of Elagabalus, Severus Alexander and Gordian III and smaller peaks during the reigns of Severus, Caracalla, Macrinus and Maximinus.<sup>37</sup> On the other hand, the Troy 3<sup>38</sup> and Troy 4 Hoards<sup>39</sup> demonstrate a different structure. Although not identical, they both have peaks under Caracalla and Elagabalus. Their highest peaks occur during the reign of Trebonianus Gallus, followed by an abrupt decrease until the reign of Valerian. The Troy 4 hoard also forms peaks during the reigns of Severus Alexander, Maximinus and Gallienus. The Aывagediği<sup>40</sup> and Cilicia hoards,<sup>41</sup> both found in the southern Asia Minor province of Cilicia, are similar to one another. The number of coins increased during the reign of Maximinus to form peaks under Gordian III, Philip the Arab and Trajan Decius (*Fig. 4*).

The pattern of finds from excavations shows that while every site has its own individual characteristics, there are some general similarities. The chart in *Fig. 5* is based on the bronze coins found at eleven excavations, which have produced more than eighteen coins:<sup>42</sup> Pergamon,<sup>43</sup> Tarsus,<sup>44</sup> Troy,<sup>45</sup> Ephesus,<sup>46</sup> Sardis,<sup>47</sup> Aphrodisias,<sup>48</sup> Side,<sup>49</sup> Sagalassus,<sup>50</sup> Ankara,<sup>51</sup> Kültepe,<sup>52</sup> and Perge.<sup>53</sup> Bronzes from the Antonine era were distributed evenly but mint production was very low. The first substantial peaks occur during the reigns of Septimius Severus/Caracalla, but at most of the sites high peaks only appear under later emperors, such as Elagabalus, Gordian III, Trajan Decius and Valerian and Gallienus.<sup>54</sup>

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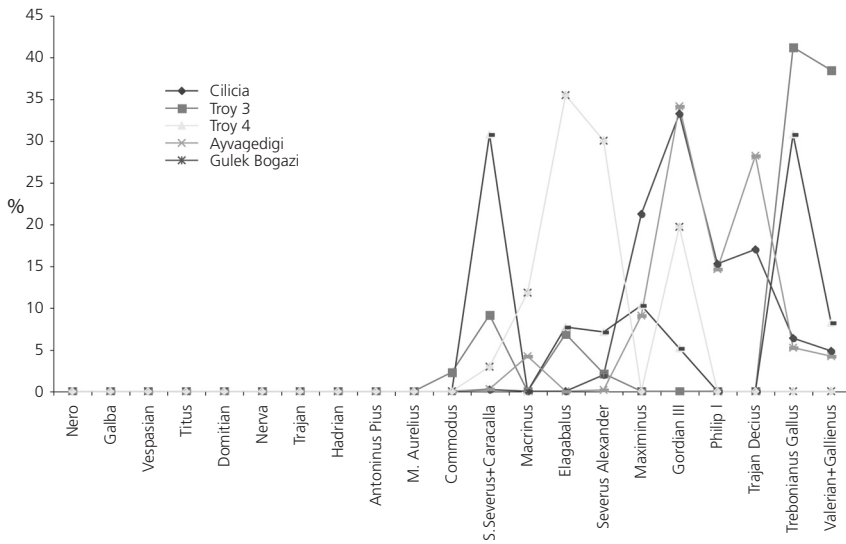


Fig. 4. The military anarchy. Bronze hoards (% p/a).

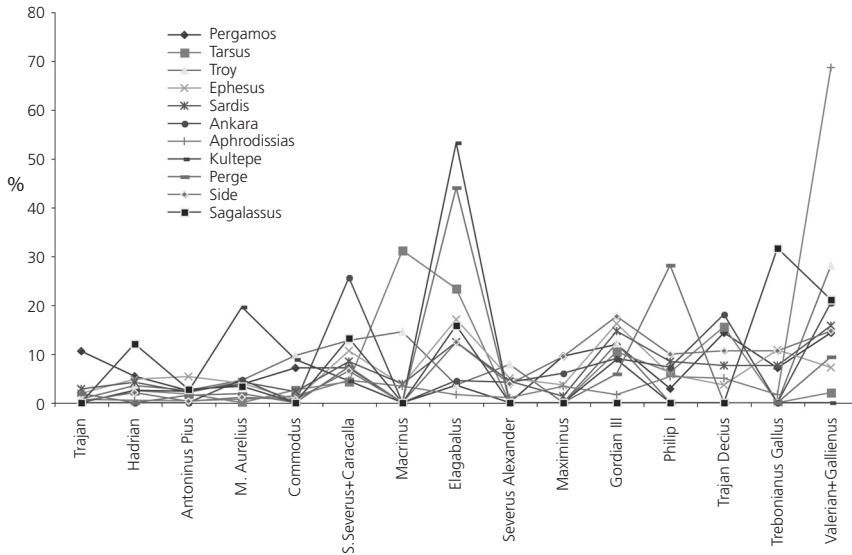


Fig. 5. The military anarchy. Bronze coins from excavations (% p/a).

Lack of data makes it impossible to estimate the overall rise of the number of civic or 'official' bronze coins, but that should not prevent an assessment of its significance. The rapid growth of the silver output in circulation and the inability of individual cities to match this immediately with local bronze suggests that at least during the early Severan period the

volume of small denominations in circulation would not cover local market needs. This created an opportunity for money-changers, who incidentally were not bankers, who took advantage of the situation and exchanged scarce bronze coins for silver denarii at a commission, thus gaining the profit that until then was legally due to the city and its representatives. This black market lasted until the local authorities had produced sufficient bronze issues to correspond with the increased silver output of the Roman mints. Eventually the volume of bronzes in circulation caught up with demand.<sup>55</sup>

### Reversing the process of monetization

Both Elio Lo Cascio<sup>56</sup> and D. Rathbone<sup>57</sup> have claimed that inflation did not rise until the reign of Aurelian, and have explained the increase in the production of silver and bronze coins as an indication of the increasing monetization of the economy. Their hypothesis that inflation remained at relatively low levels until after the reign of Gallienus is adequately proven by a number of indications from Egypt that cannot be overlooked and will not be contested in the course of this article. On the other hand, their assumption that the monetization of the Roman economy increased, while inflation remained stable, is based on the Quantity Theory of Money, which may be applicable to ancient economic systems. Nevertheless, the coin evidence has not been fully studied and there is a misapprehension of the levels of monetization during the third century. In this article I am arguing that the economy became in fact partly demonetized, again in accordance with the Quantity Theory of Money.

The increased volume of higher valued *antoniniani* combined with the apparent stability of the exchange rates and seemingly stable commodity prices until the reign of Gallienus do not necessarily indicate that the monetization of the Roman Empire was on the rise. Overvalued silver coins may have been used for a number of large transactions in the Severan period, since they were replacing the gold coins that gradually disappeared from the markets at the time. As we shall see, *aurei*, which until then represented 2/3 of the total value of the coins in circulation,<sup>58</sup> became unavailable, and denarii and *antoniniani* took their place as the basic means of exchange in major transactions. However, if one *aureus* was equal to twenty-five denarii, then the production of denarii should have been multiplied twenty-five-fold, and that of *antoniniani* twelve-fold, to cover for the lack of gold coins. But there is no evidence for such enormous increases.

The weight of gold coins was not reduced until AD 238, and was then maintained until AD 268. The fineness of the gold coinage helped to support the value of the newly debased coins and maintain the established

exchange rates.<sup>59</sup> The fineness of the *aurei* diminished only during the reign of Gallienus, when the entire monetary system was on the verge of collapse.<sup>60</sup> The repeated debasements of the silver coinages combined with the higher fineness of the *aurei* altered circulation pattern of gold coins in every province of the Roman Empire. In contrast to the previous periods, no gold coin hoards of the Severan and Military Anarchy periods have been recovered in the eastern provinces of Syria, Greece and Asia Minor.<sup>61</sup> Hoard finds from the western provinces of the Roman Empire show the same pattern. Fifty-five gold and seventeen mixed (gold and silver) hoards have been recorded in Britain, the West Continent, Italy and the Danube during the first two centuries of the Principate, compared with an insignificant number of gold finds from the same regions during the third century.<sup>62</sup> Published stray finds from these regions (except in Noricum and in the two Pannonias), also indicate a decline in the circulation of gold coinage, although the circulation of silver remained uninhibited.<sup>63</sup> The reduction of the volume of gold coins in circulation indicates either that the population did not have the monetary means to conduct major transactions, or (more likely since the volume of silver coins in circulation was inadequate) that they preferred to use bullion instead of money – hence demonetizing the economy.<sup>64</sup>

Neither literary sources nor inscriptions from the third century provide any evidence for a higher degree of monetization. However, epigraphic evidence from the middle of the third century suggests a change in attitude towards gold coinage, as a consequence of the disappearance of the *aurei* from the circulation pools. According to one inscription it was considered an unparalleled honour and a privilege for someone to be paid by the emperor in gold coins.<sup>65</sup> In fact, the rare mentions of gold coins in inscriptions or literary texts confirm that they were exceptional. Emperors during the third century used *aurei* only in order to reward their subjects for outstanding manifestations of loyalty and for carrying out special services. A number of funerary inscriptions from Asia Minor also indicate a tendency to use precious metal bullion instead of coins. There was a change in the nature of fines for tomb violation during the third century AD. While previously these took the form of denarii or silver drachmas payable to the local community or the imperial treasury, fines payable in talents or λίτρας ἀργύρου or χρυσού are attested for the first time after the middle of the third century,<sup>66</sup> and become more regular throughout the fourth and the fifth centuries in Greece as well as in Asia Minor.<sup>67</sup> In other funerary inscriptions the type of metal and the adjoining number is mentioned without specifying the denomination, if a denomination was indeed expected.<sup>68</sup> This may indicate a change in the

attitude of the population towards the function of coins around the time of Gallienus' reign. Although the some funerary fines were still set at the traditional values of 1000, 1500, 2000 etc. denarii, they were gradually replaced by figures for weights of precious metal.

The changing circulation pool of coined money with regard to specific denominations may provide further evidence of the level of monetization. The composition of the coin hoards and excavation finds show that the new highly debased *antoniniani* irreversibly replaced the denarius as the standard silver coin in circulation during the reign of Gordian III. Four of the seven hoards lost in Asia Minor during the period of military anarchy, the Smyrna, Western Turkey 1, Western Turkey 2 and Caesarea Cappadociae hoards, contain mostly *antoniniani* (apart from a few Severan denarii), while two, the Haydere and Pergamon hoards,<sup>69</sup> contain both denarii and *antoniniani*. The Haydere Hoard includes coins minted during the second and third centuries, and was possibly lost during the reign of Gallienus. There is an even distribution of denarii until the reign of Gordian III, after which denarii disappear. A sustained peak of *antoniniani* from the reign of Gordian III until the reign of Trajan Decius indicates a high volume in the production and supply of this denomination. The number of *antoniniani* only begins to decrease during the reigns of Trebonianus Gallus, Valerian and Gallienus (*Fig. 6*).

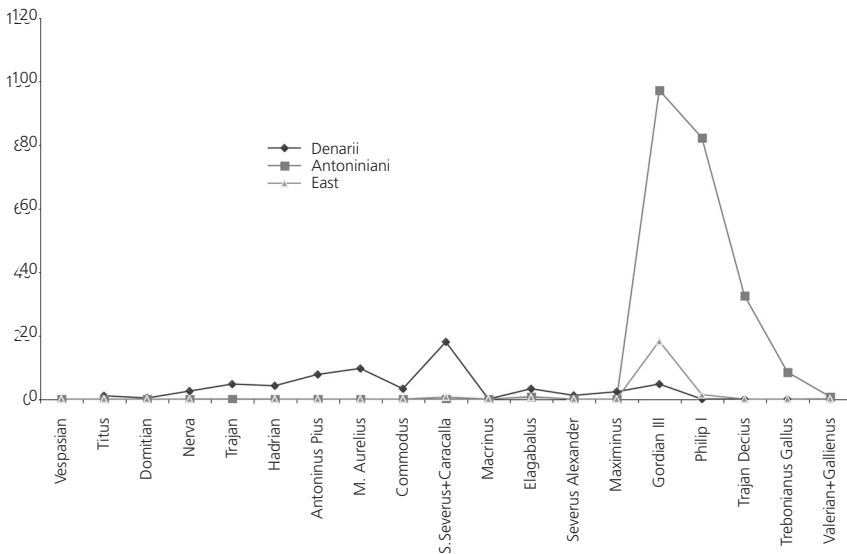


Fig. 6. Haydere hoard (denarii, antoniniani p/a).

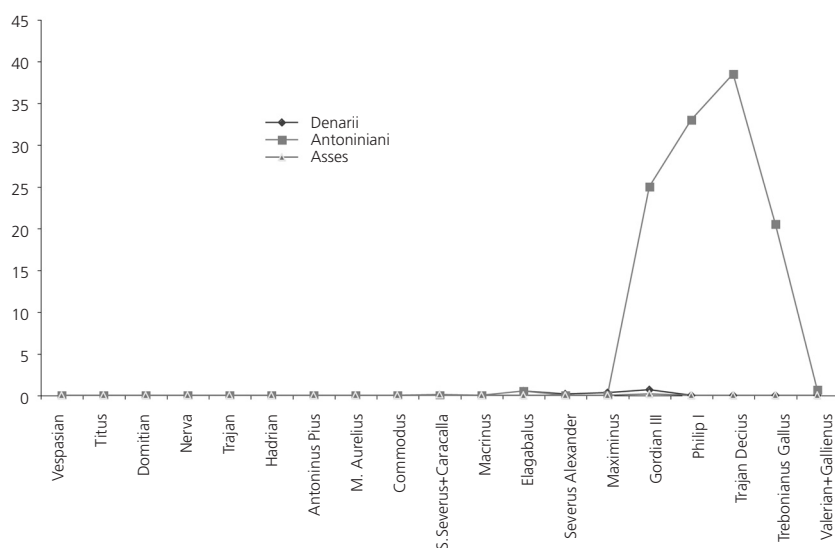


Fig. 7. Pergamum hoard (denarii, antoniniani, asses p/a).

The Pergamon Hoard demonstrates a steady increase in the number of *antoniniani* from the reign of Gordian III until the reign of Trajan Decius and a decline from Trebonianus Gallus onward. As with Haydere Hoard the number of denarii is very small (Fig. 7).

We need an explanation both for the persistence of denarii until the end of the Severan era as well as for the later prevalence of *antoniniani* in the circulation pools. Merchants may have preferred the *antoninianus* because its intrinsic value was estimated at one and a half, while it could be exchanged in the market for two denarii. According to Gresham's Law, the patent overvaluation of the *antoninianus* in comparison to the denarius would have led to its circulation at a higher level. In addition, the state had an interest in increasing production of this overvalued coin as this would increase the treasury's minting profits. Generally speaking, even if the exchange rates remained intact, the radical debasements of the era and the changes in the production of precious metal coinages would have altered the preferences of the population with regard to the different silver denominations.

Regular manipulations of currency could have triggered a growing suspicion towards the imperial coinages. As the population observed that the content of the silver coins in circulation was reduced as fast as new emperors came to power; so the merchants were anxious to get rid of their debased coins as soon as possible through the markets or the banking system. A papyrus from 260 AD, according to which the bankers refused to

exchange coins (probably debased silver coins for *aurei* of higher fineness) and closed the banks in Egypt, attests distrust of the official currency. The Roman State had to enforce the acceptance of the official money.<sup>70</sup> Even when alteration of the exchange rates became inevitable in the mid-third century, we should not assume that the Roman State instigated such reforms willingly. After the precious metal content of silver coins was reduced to 2.5 per cent by the reign of Gallienus, it may be that merchants exchanged the *antoniniani* at a lower rate, disregarding the instructions issued by the State. This situation would signify a shift towards a demonetized economy in the markets and possibly also a *de facto* alteration of the official exchange system. The collapse of the entire monetary system at the time of Gallienus and the repeated reforms that followed during the reigns of Aurelian and Diocletian may indicate a disruption in the markets and the government's repeated attempts to enforce widely accepted official exchange rates.

The production of civic and 'official' bronze coinages was in irreversible decline after the reign of Gordian III despite their brief rise during the Severan period.<sup>71</sup> A chart produced by W. Leschhorn shows regional differences with regard to the time when various mints in Asia Minor closed,<sup>72</sup> but the majority of the cities stopped producing coinage by the end of the reign of Gallienus, with only very few continuing until the reign of Tacitus. It is possible that by the mid-third century the State, which must have realized that such processes would deprive the local markets of the most essential means of exchange, centralized the production of bronze coinage in imperial mints, such as Rome, Antioch, Siscia, Milan etc.<sup>73</sup> However, despite the initial efforts of the central authorities to control the minting of smaller denominations, the production of bronze coinage was considered unnecessary by the reign of Aurelian, so the mint of Rome discontinued the minting of bronze issues.<sup>74</sup>

This situation might lead us to believe that smaller-scale daily transactions were not conducted in coin any more and that the economy was entirely under-monetized. However, there are indications in the opposite direction. Various cities started to countermark the bronze coinages already in circulation with Greek letters, in order to represent the current value of every piece of coin. At first, the use of value countermarks was widespread only in Asia and Bithynia, occurring only rarely in northern and southern Asia Minor. With a few exceptions (there are instances of countermarked values even before AD 200 AD) there was no widespread change in values until c. 255, when the practice becomes extensive.<sup>75</sup> Once the monetary system started collapsing and the exchange rates became uncertain (probably in the 250s), there would have been no way of knowing if the face value had been raised and by how much, if the value of the coin was not clearly indicated. The

practice of countermarking allowed for values to be recognized easily, so that misunderstandings and deliberate fraud could be avoided.<sup>76</sup> Furthermore, the fact that the local minting authorities took the trouble to recall bronze coins and countermark them shows that the smaller denominations were still in use in the local markets by the reign of Gallienus.

The evidence of countermarking also suggests that an adjustment of the exchange rates between bronze and silver took place during the middle of the third century, probably as part of a wider reform of the exchange rates in the Roman Empire. These changes were deemed necessary because the gap in their intrinsic value between bronze and silver coins had become negligible after the repeated debasements, with the result that the real value of bronze issues was equal to or only slightly lower than the real value of the silver coins. The excessive reduction of the fineness of the silver currency caused an unsolved problem to the civic authorities in Asia Minor. As the bronzes were no longer as highly overvalued as before, the cities may not even have been able to cover their minting costs. The magistrates who previously had bought bronze bullion for a lower price and then distributed ('sold') it in the form of coins at a substantial profit, would have lost revenue, since the legal value of bronze *assaria* was now closer to their intrinsic value. This was the main economic reason for the closure of local mints altogether by the end of the reign of Gallienus, after which the task of distributing bronze coinage in the Roman Empire was undertaken by the emperor and the imperial mints. After the end of bronze minting in the cities of Asia Minor, the bronze denominations issued in previous reigns may have circulated in the area for several decades as a complement to the official Roman issues.

At this point we should assess the outcome of these currency changes. By the reign of Gallienus the fineness of the *antoninianus* was reduced to 2.5 per cent silver – which was too low for a silver coin to be accepted at its previous full face value.<sup>77</sup> If the authorities revalued their denominations according to the amount of precious metal included in the coin, then the bronzes would have been almost as prized as silver and billon coinages. Such an undertaking would have caused an unacceptable loss to the state's profits, and the adjustment of the exchange rates in the mid-third century cannot have been designed to equalize the face value of the silver with the face value of the bronze coins. The reforms of the monetary system should have asserted the higher legal value of silver and billon coins in comparison to the lower legal value of the bronze denominations, in a way that would have been acceptable to the suspicious population. There is no evidence, however, that these efforts succeeded in stabilizing the deteriorating situation or that the silver coinages were finally accepted at substantially higher values than

the bronzes. The fact that commodity prices expressed in silver coins rose ten-fold by AD 274 in turn indicates that the face value of *antoniniani*, which were used in the market place for the purchase of low-cost commodities, decreased naturally at a similar rate.<sup>78</sup> Billon coins were probably used in the course of smaller transactions in the same way as the civic and official bronze denominations were used until then. As the central authorities realized that billon currency served the economy in the same ways as bronzes, they must also have recognized that there was no longer a need for the production of bronze coinages. This situation led to the decision under Aurelian to abandon bronze minting altogether. The existing bronze coinage already in circulation and the newly minted *antoniniani* would have been adequate for the effective operation of local markets.

Accordingly, the analysis of the numismatic evidence from Asia Minor shows that the markets were still monetized, although comparison with earlier periods demonstrates that the patterns of circulation changed. Silver coins from before the reign of Gordian III are rarely found in excavations, since unrecovered coins were mostly of low denominations. The pattern changed during the third century when silver coinage started losing most of its intrinsic value.<sup>79</sup> The increasing number of *antoniniani* recovered from excavation sites implies the widespread daily usage of billon currency and shows that everyday business was still conducted in coined money. In local markets the population used both civic coins minted during previous periods as well as billon *antoniniani* to purchase low-cost commodities.

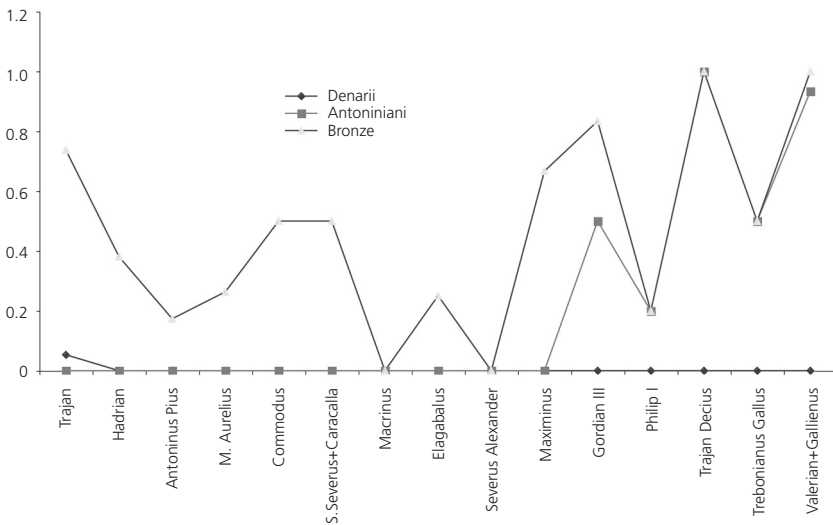


Fig. 8. Pergamum excavations (denominations p/a).

Excavation finds from Asia Minor show a substantial increase of *antoniniani* in comparison with bronze coins by the middle of the third century. In Pergamum, *antoniniani* form a first peak during the reign of Gordian III and subsequently rise until they match the pattern of local bronze coinage during the reign of Trebonianus Gallus, while denarii remain at minimal levels throughout the two centuries (Fig. 8).

Coin finds from Sardis show also that the number of *antoniniani* began to increase during the reign of Gordian III and reached the same level as the bronze coinage by the reign of Trebonianus Gallus. Both rise again during the reigns of Valerian and Gallienus. In the meantime the small peak of lost denarii during the reign of Elagabalus is not repeated (Fig. 9).

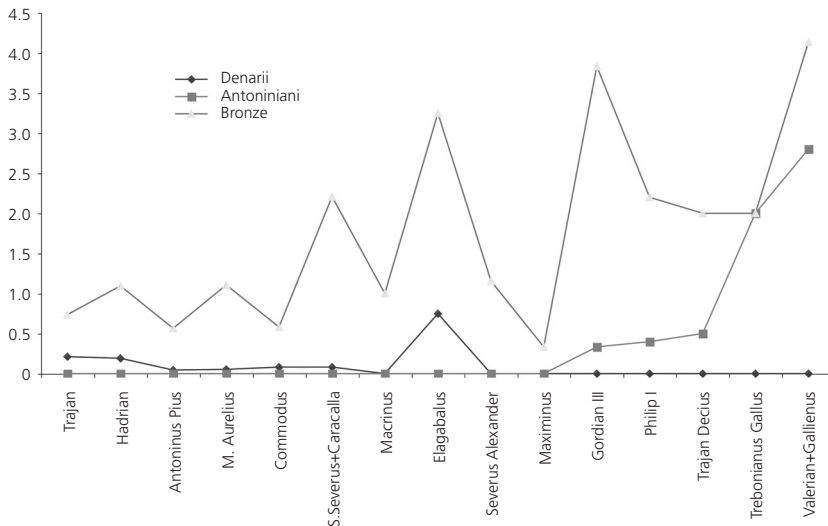


Fig. 9. Sardis excavations (denominations p/a).

A small peak of *antoniniani* occurs at Ephesus during the reign of Gordian III. During the reign of Philip the number of bronze coins declines while *antoniniani* remain stable. Both local bronze issues and silver *antoniniani* form high peaks during the reigns of Trebonianus Gallus and Gallienus. It is interesting to note that the number of both denarii and *antoniniani* are at about the same level during the reign of Gordian III (Fig. 10).

These histograms demonstrate the sizeable increase of *antoniniani* in circulation especially after the reign of Trebonianus Gallus. At this period the production of bronze coinages decreased, although earlier issues may have remained in circulation for several decades. The combined numbers of billon *antoniniani* and bronze issues probably maintained a satisfactory level of liquidity in local markets around the middle of the third century

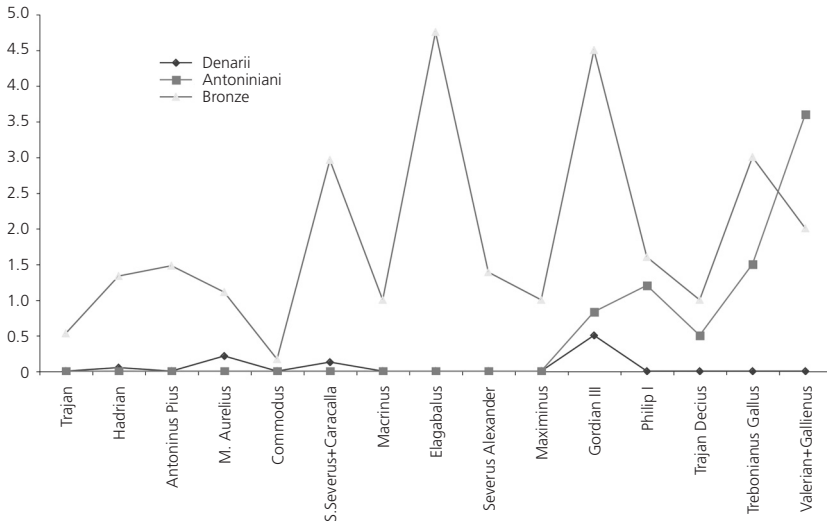


Fig. 10. Ephesos excavations (denominations p/a).

and even afterwards. In fact, the inhabitants of the eastern provinces did not seem to be concerned about the monetized purchase of goods for daily consumption, once the production of smaller denominations was guaranteed by the State.

### Conclusions

It has been suggested that increasing monetization between the reigns of Septimius Severus and Aurelian could have effectively absorbed fluctuations in the volume of coinage in circulation and ensured price stability, despite the repeated debasements of silver coinages. However, a study of the coin hoards and excavation finds from the provinces of Asia Minor shows that the accepted view of an increasing mint output in the Roman world may be an illusion. It should not be doubted that the production of silver coins, either in the form of denarii or *antoniniani*, rose substantially from the beginning until the middle of the third century. Similar rises are attested in the production of bronze civic coins, since the number of local mints multiplied substantially in order to match the growing needs of different regions for small denominations. However, we should take into account the decreasing circulation and production of *aurei*, the coins that represented 70 per cent of the value of the total amount of coinages in the market. Since the gold currency became unavailable, existing silver coins were used to cover the liquidity deficiencies. However, as the debasement of the silver coinage continued rapidly, it became necessary by the middle of the third century to carry out major transactions through the usage of gold

or silver bullion, while the billon *antoniniani* complemented the bronze denominations in smaller commercial activities.

In view of this evidence, we should conclude that the monetization of Roman Asia Minor and perhaps also of the rest of the Empire decreased rather than increased. Although daily transactions in local markets may have continued unhindered or at the same levels as before, the debasement of silver coinages and the reduction of numbers of *aurei* in circulation probably caused problems in the completion of major commercial deals. Traders may initially have used a higher number of silver coins to cover their purchases, but later they reverted into the state of a natural economy either by employing precious metal bullion or exchanging one commodity with another instead of using money. Nevertheless, the lack of high denominations for the completion of major transactions does not indicate a complete demonetization of the economy, since the smaller denominations still covered daily needs.

### Acknowledgements

I would like to thank the Foundation for the Hellenic World and the British School at Athens for their significant financial support.

### Notes

<sup>1</sup> Tacitus, *Ann.* I, 17.

<sup>2</sup> Cassius Dio 67.3; Suetonius, *Domitian* 7.3.

<sup>3</sup> Herodian 3.8.4; *SHA*, Severus 12.2.

<sup>4</sup> Herodian 4.4.7. According to Dio Cassius the increase was of the magnitude of 280 million *sestertii* annually.

<sup>5</sup> Dio Cassius 79.28.2.

<sup>6</sup> Dio Cassius, 78.9.1–6, and others were against this measure.

<sup>7</sup> For mean weight of silver in silver coins from the reign of Septimius Severus until the reign of Aemilian see: Walker 1978, 49–50. Walker's results have been corrected by Butcher and Ponting, 1997, 17–36. The extent of the silver debasements is also described in Bland 1996(a), esp. 78–9.

<sup>8</sup> The coin was termed for the first time in the *Scriptores Historiae Augustae* 28.15.8 '*argentei Antoniniani*'. Even though according to its weight it should be regarded as 1½ denarii, it was accepted as a double piece; thus the *antoninianus* was considered a highly debased and overvalued coin: Sperber 1974, 38–46; Bastien 1992, 107–8.

<sup>9</sup> For a full description of the re-introduction of the denarius and other debasements of silver coins see Carson, 1990, 232 and 234.

<sup>10</sup> Dio Cassius 55.12.5. It seems that Dio finished his history around the end of the Severan dynasty.

<sup>11</sup> Buttrey 1961, 40–5. There is a possibility that the *aureus* was still valued at 25 denarii until the reign of Gordian III, when the *antoninianus* replaced the latter in circulation; however, there is not enough evidence to confirm such a theory.

<sup>12</sup> Alston 1994, 113–23.

<sup>13</sup> The *aureus* that weighed the same for the first *c.* 20 years of the third century remained almost intact. In fact Septimius Severus restored the *aureus*, which had been reduced in weight by his predecessor, to its full weight and he maintained it at 7.2 gr. until AD 215. The weight of the *aureus* during different reigns is analysed by Bland 1996(a), 67–73; and Morrisson 1985, 82–4. For the comparative analysis of gold and silver fineness see Duncan-Jones 1994, p. 217, table 15.3.

<sup>14</sup> Katsari 2003.

<sup>15</sup> Kizilkaya 1991(a), 93 ff.; Kizilkaya 1980, 103–33.

<sup>16</sup> Coin Hoards 1 (1975) 50.

<sup>17</sup> Hodder 1981(a), 361–3; Hodder 1981(b), 76.

<sup>18</sup> Bland, and Aydemir 1991, esp. 93–4.

<sup>19</sup> Kizilkaya 1991(b), 249 ff.; Kizilkaya 1988, 137–69.

<sup>20</sup> Bland and Aydemir 1991, esp. 93–4.

<sup>21</sup> Bendall 1966, 167–70.

<sup>22</sup> Elks 1975, 91–109.

<sup>23</sup> Elks 1975, 35.

<sup>24</sup> Hollard and Bingol 1994.

<sup>25</sup> Bland and Aydemir 1991, esp. 102–4.

<sup>26</sup> Bland and Aydemir 1991, esp. 101–2.

<sup>27</sup> Thompson 1954; Kroll 1993.

<sup>28</sup> Edwards 1993; Harris 1941, 143 ff.; Price 1967, 348–88; Stroud 1967, 299–300; Wiseman 1969, 64–106; Wiseman, and Fisher 1970, 1–71; Hohlfelder 1978.

<sup>29</sup> Agalopoulou 1994.

<sup>30</sup> Wood 1938, 385 ff.; Vettors 1979, 132 ff.; Vettors 1980, 262 ff.; Vettors 1981, 154 ff.; Vettors 1982, 86 ff.; Vettors 1983, 123 ff.; Karwiese 1986, 110 ff.; Karwiese 1989, 105 ff.

<sup>31</sup> In AD 121 Hadrian writes a letter to the citizens of Piraeus in order to regulate the sale of fish. The inscription and the relevant discussion can be found in *IG* ii, 2, 1103; Pleket 1964, no. 16; Abbott and Johnson 1926, 91; Smallwood 1966, 444; Day 1942, 192 ff.

<sup>32</sup> Jones 1967, 308–47. For a list of mints in each province see: Jones, 1965, 295–301 and 308.

<sup>33</sup> Leschhorn 1981, 252–66. Leschhorn claims that he used the following numismatic catalogues: *Sylloge Nummorum Graecorum*, Deutschland, Sammlung von Aulock, 18 fasc., Berlin, 1957–68; *Sylloge Nummorum Graecorum*, Danish National Museum, Copenhagen, 1942 ff.; *A Catalogue of the Greek Coins in the British Museum*, 29 vols., London 1873–1927; MacDonald, G., *Catalogue of Greek Coins in the Hunterian Collection*, vol. II, Glasgow, 1901; Grose, S.W., *Catalogue of the MacClean Collection of Greek Coins in the Fitzwilliam Museum*, vol. III, Cambridge: Cambridge University Press 1929; *Sylloge Nummorum Graecorum*, vol.

IV: Fitzwilliam Museum, Leake and General Collections, part VI–VII, London, 1965–7; Babelon, E., *Inventaire sommaire de la Collection Waddington*, Paris 1897. All of the above are major collections including coins coming through auctions or illegal trade to western Europe.

<sup>34</sup> Leschhorn 1981, 262, chart no. 5.

<sup>35</sup> Leschhorn's value of statistics has been reviewed by Johnston 1984, 240–57.

<sup>36</sup> *Coin Hoard* 6 (1981), 17, no. 54.

<sup>37</sup> Bland 1996(b).

<sup>38</sup> MacDonald 1987, 158–60.

<sup>39</sup> Arslan 1996(a), 43 ff.

<sup>40</sup> Rebuffat 1994, 73–118.

<sup>41</sup> *Coin Hoards* 2 (1976), 38, no. 153.

<sup>42</sup> All of these excavations were systematic, although the number of coins that were recovered from Aphrodisias and Tarsus may have been low. Also, the last three rescue excavations yielded only a few coins.

<sup>43</sup> Voegtli 1993, 7 ff.

<sup>44</sup> Cox 1950, 38 ff.

<sup>45</sup> Bellinger 1950–8.

<sup>46</sup> *Ibid.* n. 43.

<sup>47</sup> Bell 1916; Buttrey, Johnston, MacKenzie and Bates 1981.

<sup>48</sup> MacDonald 1976.

<sup>49</sup> Atlan 1976.

<sup>50</sup> Scheer 1993(a), 197 ff.; Scheer 1993(b), 249 ff.; Scheer 1995, 307 ff.

<sup>51</sup> Arslan 1996(b).

<sup>52</sup> Taner 1974, 583–95; Taner 1971, 139–59.

<sup>53</sup> Tekin 1994, 179–88.

<sup>54</sup> The exceptions of Kultepe and Perge that form exceptionally high peaks during the reign of Elagabalus could be easily explained if we take into consideration the low number of coins that were found in the excavations. It is probable that new finds will change the results. The high peaks in the volume of coinage from Aphrodisias and Tarsus during the reigns of Gallienus and Macrinus respectively could also easily be explained, since the excavations covered only a small part of the city. The number of coins that was recovered may not be representative of the magnitude of the above cities.

<sup>55</sup> For a full analysis on the subject see Katsari 2001, ch. 5. The reconstruction of the Inscription of Mylasa (Dittenberger, *OGIS*, 1905, Nr. 515, pp. 160–5) shows that a law against the illegal exchange of coins became necessary during the reign of Caracalla in Asia Minor. According to the traditional interpretation of the inscription, the problem was a scarcity of silver coins. However, the evidence from excavations and coin hoards shows that the silver coins circulated in abundance, while lower denominations may have been in demand.

<sup>56</sup> Lo Cascio 1997, 161–82.

<sup>57</sup> Rathbone 1996, 321–39; Rathbone 1997, 183–244.

<sup>58</sup> Howgego 1992, 11.

<sup>59</sup> On the bimetallic system and the maintenance of exchange rates see Katsari

2003, 47–53.

<sup>60</sup> Bland 1996, 67–73; Morrisson 1985, 82–4. For the comparative analysis of gold and silver fineness see Duncan-Jones 1994, 217, table 15.3.

<sup>61</sup> Four major gold hoards were buried in the eastern provinces (excluding Egypt) during the first and second centuries AD. These hoards have been published in *Coin Hoards* 4, 106 [Patras], Thirion 1972, 80 [Caesarea], *Coin Hoards* 3 (1977) 58, no. 156 [Turkey 2], Ergeç 1996, 37 ff. [Kusakkaya], while none comes from the third century AD.

<sup>62</sup> A list of gold hoards from the western provinces was published by Duncan-Jones 1994, 262–3. Also Bland 1997, 29–55, esp. p. 35, estimates that during the third century only 11 out of 61 hoards contained exclusively gold coins in the western Roman empire. Furthermore, of those 11 hoards, only four contain significant quantities of *aurei*, while the rest either include gold multiples, or consist of only two specimens, or are only known from incomplete records.

<sup>63</sup> King 1993, esp. p. 443, table no. 2. More detailed analysis by Bland 1996, p. 81, table 1, where the number of stray finds from the western provinces has been estimated per year.

<sup>64</sup> On the devaluation of gold coins and the use of bullion in major transactions see Katsari 2003, 54–62.

<sup>65</sup> *CIL* xiii, 3162.

<sup>66</sup> Thyateira, *IGRR* 4. 1977; *IG*, 14.2331 (λίτρας ἀργύρου); *IG* 14.2336 (ἀργύρου λίτρας); Sahin 1994, n. 122, (gold uncia); Corsten 1985, n. 39 (λίτρας ἀργύρου).

<sup>67</sup> Termessus, *SEG* XLI (1991) 1277, the amount is estimated in uncias; *CIG* 3.4259 (one talent); *IG* IV 410 (one talent); *TAM* II.1 (1920) 122 (one talent); *TAM* III 1 (1941) 499 (one talent); *SEG* 6. 635=*TAM* III 1 (1941) 798 (two talents); *IGR* 4.1277 (λίτρας χρυσοῦ); Seure, G., *BCH* 36 (1912) 622, n. 79 (λίτρα χρυσοῦ); Seure, G., *BCH* 36 (1912) 629–630, n. 83 (λίτρα χρυσοῦ); Coupry, J. and M. Feyel, *BCH* 60 (1936) 53, n. 4 (λίτρα χρυσοῦ); *IG* 14. 2324–8, 2330, 2332–3 (λίτρα χρυσοῦ); *MAMA* VIII (1962) 580 (λίτραι χρυσοῦ); *IG* 14.2334 (λίτραι χρυσοῦ); *IG* II 2. 13224 (σὺνκίαι χρυσοῦ); *IG* 14.2329 (σὺνκίαι χρυσοῦ); Seure, G., *BCH* 36 (1912) 626, n. 82; *IG* II 2. 13219 (λίτραι ἀργύρου); *SEG* 16. 417 (λίτραι ἀργύρου); Seure, G., *BCH* 36 (1912) 631, n. 84b (λίτραι ἀργύρου); H. Lechat and G. Radet, *BCH* 12 (1888) 200, n. 11 (λίτραι ἀργύρου); *IG* X 2.1.556 (λίτραι ἀργύρου); *IG* XII 2. 647 (λίτραι ἀργύρου); *IG* 14.2336 (λίτραι ἀργύρου); *IG* 14.2331 (λίτραι ἀργύρου); Hasluck, F.W., *JHS* 25 (1905) 63. Most of the above references can be found in Robert, L., *Hellenica*, 3 (1946) 106, n. 3.

<sup>68</sup> Olympos (Lycia), *SEG* XLI (1991) 1387 ἀργυρίου μυριάδας δύο.

<sup>69</sup> The denomination of a number of coins in Göktepe hoard has not been identified, which is the reason for not including it here. It seems, though, that there are no *antoniniani* from the period before the reign of Gordian III.

<sup>70</sup> *P.Oxy.* XII, 1411; West and Johnson 1967, 183.

<sup>71</sup> Salamon 1970, 146–62 claims that not only would bronze coinage cause financial losses to the local cities, but also that the invasions of Persians and Goths prohibited the production of coinage. It seems that the areas invaded by the enemy correspond with the places where minting has stopped. I suspect, however, that these

invasions did not cause but only accelerated the process in certain regions.

<sup>72</sup> Leschhorn 1981, 261.

<sup>73</sup> On imperial mints during the third century see Harl 1996, 138–44.

<sup>74</sup> Watson 1999, 127–32.

<sup>75</sup> Howgego 1985, 62 ff. notes regional differences as well as similarities in countermarking. The decline in weight standards in Lakedaimon and Argos began under Commodus, continued after 253 and accelerated after 260. The Koinon of Thessaly faced a decline between 235–60 AD. In western Euxine, the standards of Tomis declined between Marcus Aurelius and Commodus, while most cities showed consistency between the reigns of Commodus to Philip. In Sarmatia, Tyra kept the same standards from Commodus until Severus Alexander while Olbia weight standards declined in the 170s. The weight standards in Bosphorus showed a decline from Claudius to Nero, further reductions 161–86 AD, halving of the value 196–210 AD and accelerated decline after 239 AD. In southern Euxine, weight standards declined under Gordian and Gallienus. Smyrna demonstrates a gradual decline in weight standards from the Severan period until after 260 AD. Finally the weight standards of Pamphylia declined from the reign of Valerian onwards.

<sup>76</sup> Johnston 1997, 205–6.

<sup>77</sup> Carson 1990, 234.

<sup>78</sup> Rathbone 1997.

<sup>79</sup> The proliferation of *antoniniani* in the middle of the third century is attested also in Britain: Fulford, 1989, 181–5 and 191–3. An attempt to explain this phenomenon led Fulford to argue that inhabitants of higher social status may have used precious coins more often, thus increasing the degree of monetization.

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