A frog's eye view of the Roman economy: the Batavian casus

By Joris Aarts

1. Introduction

Since the seventies of the previous centuries, many things have been said about the character of the Roman economy and the extent of its monetary economy. This topic was understandably dominated by ancient historians like Finley, Crawford, Hopkins, Howgego, Duncan-Jones, using monetary circulation as a measure of economic integration.[1] Both literary and archaeological sources were used to produce large-scale models of the Roman economy, concentrating on questions of monetization of the economy: how fast, how wide, how deep. As archaeological evidence for monetary circulation mostly coin hoards and museum collections were used: large-scale inventories of stray finds were not yet available, or deemed too time-consuming in the analyses thereof. In the last ten years, however, more work has been done on a regional level, using regional inventories of both hoards and stray finds.[2]

At first, scholarly discussion about the character of the ancient economy was dominated by the question whether or not the ancient economy was fundamentally different from modern western economies and if, by extension, modern economic analysis and terminology could, and should be applied to ancient economies (the formalist-substantivist debate). This ultimately resulted in a tie, and in the last two decenniums the general agreement seems that both substantivist and formalist models and methods may be used, depending on the topic of research. It must be said, that recently many ancient historians seem inclined to embrace modernist analyses[3], particularly when dealing with macro-economic analyses. Also, much attention is paid to the extent and nature of credit systems in the (Roman) economy, and how this interacted with the circulation of physical money (coins) and bullion[4]. On the other hand, more cultural approaches to coinage and money appear, although they tend to stay within the realm of the Greek world.[5]

One returning point in the discussions about the Roman economy is the regionality of economic systems. Although there is some evidence for empire-wide economic integration – in long-distance trade in luxury items and foodstuffs and chains of credit-relations – the circulation of coin suggest that the province or even smaller regional units pressed their mark on coin circulation. And indeed, analyses of tax paying-systems imply a great regional variation in time and place. What I propose today is to approach the Roman economy from the bottom up, not from the top down. I will try to do this thematically, taking the *civitas batavorum* as a case study.[6]

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[1] Finley 1992 (reprint 197#); Crawford 1970; Hopkins 1980 (and 2002); Howgego 1992; Howgego 1994; Duncan-Jones 1992.
[2] See for instance Aarts 2000; Katsari 2008 and many more.
[3] Temin 2001; Temin 2004; Harris 2006 ;
[4] Harris 2008; Lo Cascio 2003; Verboven 2009.
[5] I mean the work of Von Reden, Schapps, Kurke. For an elaborate discussion, see Aarts 2005.
[6] The Batavians were chosen as example because they are relatively well-known, both historically and archaeologically (see Roymans among others 2004, Roymans/Derks 20##, Nicolai 2007, Groot 20##, Heeren 20##, Vos 2009)

The case of the Batavians

2.1 a very brief history of the Batavians

The Batavian *civitas* can be located in the eastern half of the Dutch river area, although its southern border may have extended to part of the sandy plateau of the southern half of the Netherlands. Nijmegen (*Ulpia Noviomagus*) was the capital of this *civitas*, which lay on the border of the Roman empire during the first three centuries AD. The Batavians themselves were probably a construct of the Roman authorities, consisting of Chattian migrants and the local population, which may have been remnants of the tribe of the *Eburones* who were decimated by Julius Caesar. The *civitas* and the Batavians can be followed historically into the first half of the 3rd century AD, after which they were likely replaced by Frankish migrants from across the Rhine border. We may assume that this also meant the end of the Batavian *civitas*. We know particularly much about their early history through the narrative of Tacitus, in which they play an important role in a native (Batavian) revolt during the years 69-70. Before this uprising, the Batavians were, according to Tacitus, a *gens foederata*: a people with a special treaty with the Romans, the only –but main- point of which is known to us is the exemption from paying regular taxes to the Roman government. In exchange, the Batavians were enlisted in the Roman army on a grand scale.[7] Vossen has calculated a minimum average of 1.3 young men per household (!) who were serving in the Roman auxiliaries. Also, in the pre-Flavian period these troops seem to have been led by officers who were recruited from the same tribe. This probably all changed after the Batavian revolt, although the treaty was continued, albeit along other lines (which we do not know from historical sources).

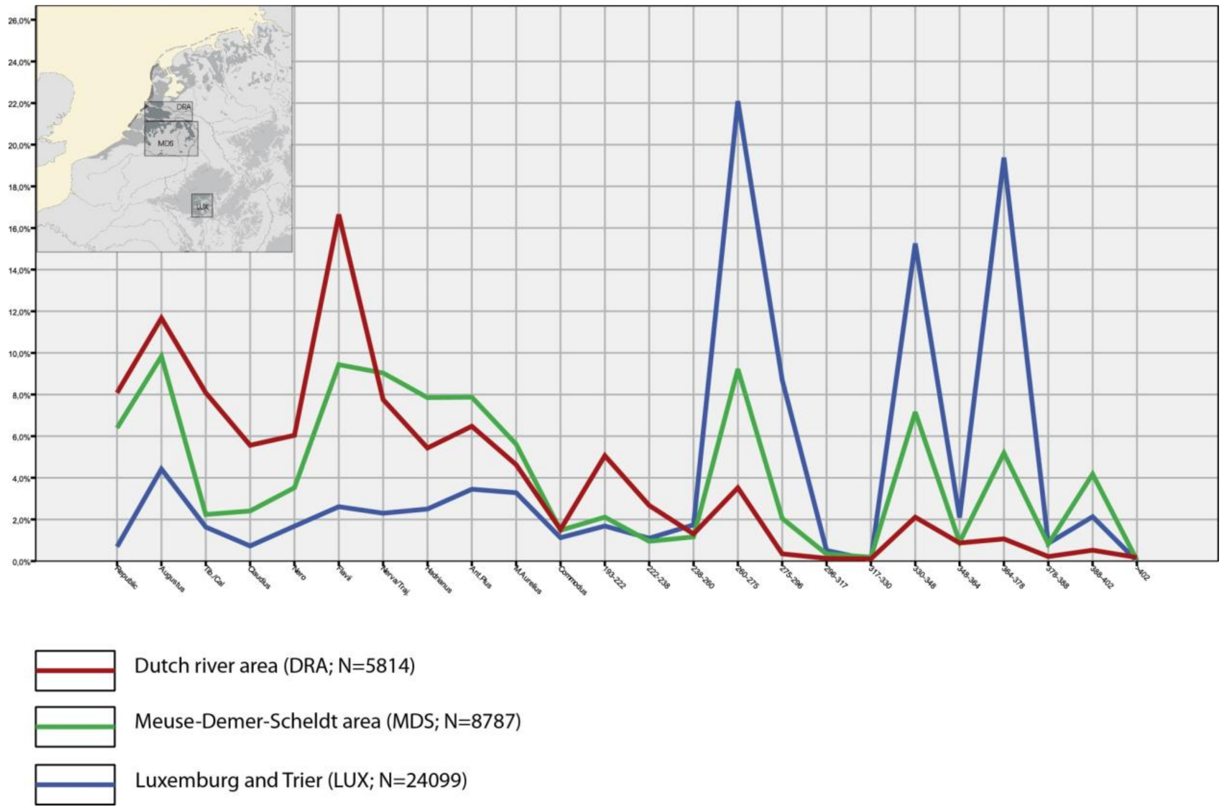
The Batavian *civitas* was a densely-settled area, consisting of a string of auxiliary forts along the Rhine, a city (Nijmegen) , some badly-known central places (*vici*) and a large number of simple and small rural settlements. Some of these were the object of large-scale excavations in the previous decades, providing us with a few high-quality archaeological data sets.[8] Using these data, contextual analysis of material culture provides us with a detailed picture of the social, political and economic integration of the Batavians in the Roman empire.

2.2 Money supply

The coin finds of the Batavian area were part of a recent large-scale inventory of Roman and Late-Iron-Age coins in *Germania inferior* and *Gallia Belgica*.[9] Figure 1 shows the chronological distribution of these finds in three areas of study: the Dutch river area, encompassing the *civitates batavorum* and *cananefatium*; the area between the rivers Meuse, Demer and Scheldt, and the area of Luxemburg and Trier (*civitas treverorum*). A grand total of 62.518 coins were recorded for all three

[7] One might argue against Tacitus that the Roman authorities in all probability considered this recruiment as a form of *tributa* (see for instance Aarts 2000, 16-17).
[8] Tiel-Passewaaij (Heeren 20## and Aarts/Heeren 2010); Geldermalsen Hondsgemet (Van Renswoude/Van Kerckhove 2009); Wijk-bij-Duurstede-De Horden (Vos 2009).
[9] Aarts 2000.

areas.[10] Because we are dealing with large numbers of coin finds, I propose that they are representative for the physical money supply to these areas during the Roman period.



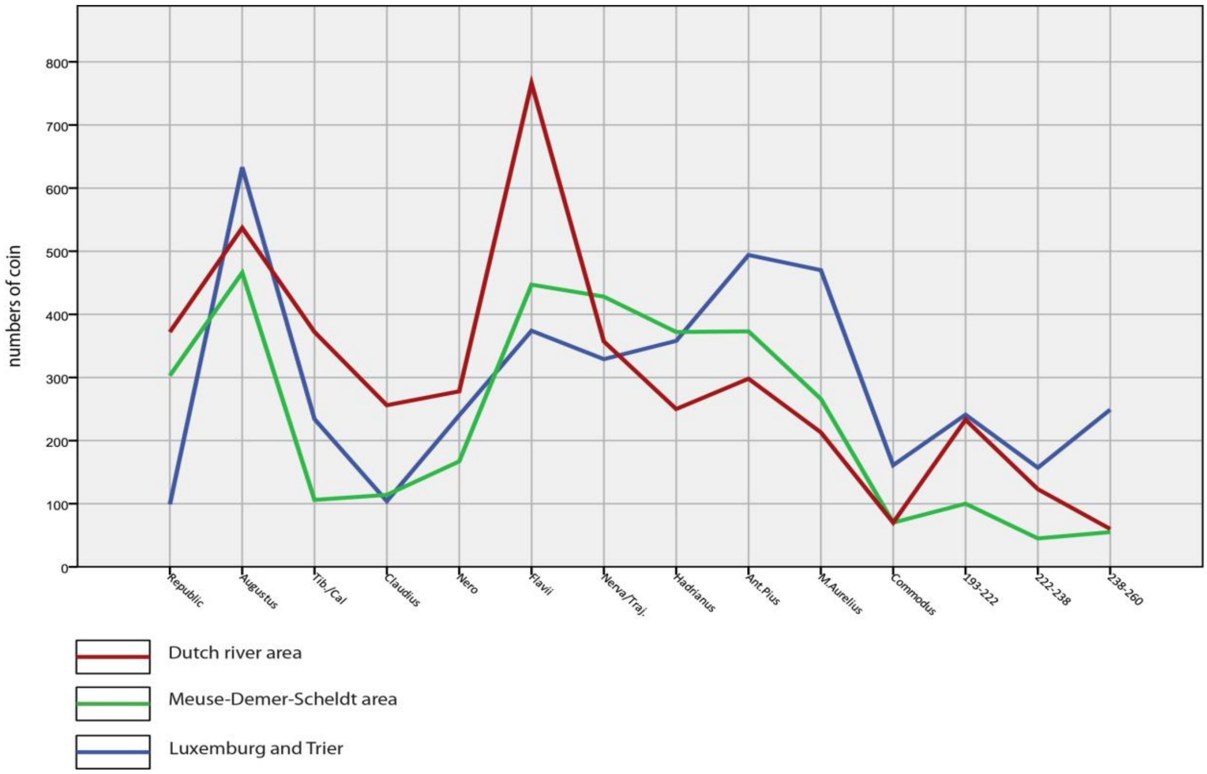
The main difference between the three areas is clear. In the Dutch river area, we see high levels of coin supply in the 1st century AD (peaks in the Augustan and Flavian periods); from the beginning of the second century, a downward trend is visible, of which this area will never recover. In contrast, the curve of Luxemburg and Trier stay stable but low until the late 3rd century AD, after which coin supply soars. Even when one takes into account the changing character of Roman money, the proportional differences between these areas remain the same. The MDS area lies not only in geographical sense between the two others, but also in terms of coin supply.

The reason for the high supply levels in the Dutch river area lies in all probability in the fact that it was a military zone. The presence of large numbers of troops in the 1st century, and the building (and maintaining of forts) cost a lot of money. After the army was greatly reduced in numbers at the start of the 2nd century, coin supply decreases and never reaches 1st-century levels any more. This implies that the army played a key role in the monetary economy of this area.

In the area of Luxemburg and Trier we see a different picture. Here, admittedly after a modest peak in the Augustan period, levels of coin supply stay low, until the end of the 3rd century. Also in this case, there seems to be an evident explanation, because Trier became an imperial residence in the 4th century AD and host to one of the mints. This does not mean, however, that the actual coin mass which reached this area was insignificant: as can be seen, the Luxemburg-Trier area shows the largest

[10] Only a part of these coins could be dated well enough to fit one of the issue periods. The missing coins and late-Iron-Age coins were omitted from the graph. Also, the coins of the fort of Nijmegen-Kops Plateau were excluded, because they would cause a grotesque distortion of the data of the Dutch river area.

numbers of coin finds of all three areas, although the actual coin numbers in figure ### show that this is an effect of the late Roman period only.



The main incentive for coin supply to all regions which emerges here are governmental costs, and in particular military expenditure. And indeed, most seem to agree that agree that the Roman government was not interested in maintaining a steady flow of fresh coin for the sake of regional markets.[11] But in all of the three areas, the coin supply to these areas cannot be explained by governmental spending alone. The presence of the Roman army in the treverian area was too low to account for the high numbers of coin finds there, and figure ### suggests that coin supply started not much later than in the Dutch river area. It is clear that there must have been other mechanisms of coin supply in play. In the case of Trier, one might think that the intensive building programme in the 1st century AD must have had a monetizing effect on the economy of the area. At the same time, the development of villa's producing for the urban market may have profited from this monetary market.

One of the disadvantages of using coin finds to analyze the money supply is that they are heavily biased towards bronze coin.[12] Silver and gold in particular were less regularly lost, and more often recovered. Also, the chance of gold coin finds being reported is many times less than that of bronze.

Still, comparing the chronological distribution of gold, silver and bronze coins shows some interesting points (figure 4)[13]. The Augustan peak we saw above in the Dutch river area is absent in the silver and

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[11] However, contra this see Heinrichs 2000.

[12] This becomes eminently clear when the bronze:silver/gold ratio is compared with the finds of Pompei (Duncan-Jones 2003, the critique of Andreau notwithstandingly (Andreau 2008)) or the coin finds of the battlefield of Kalkriese (Berger 1996).

gold. Instead, only from the Flavian period onwards silver and gold appear in large numbers. Furthermore, the Antonine peak in silver coins, that at the beginning of the 3rd century and the two peaks in the supply of gold coin in the second half of the 4th century spring into view.

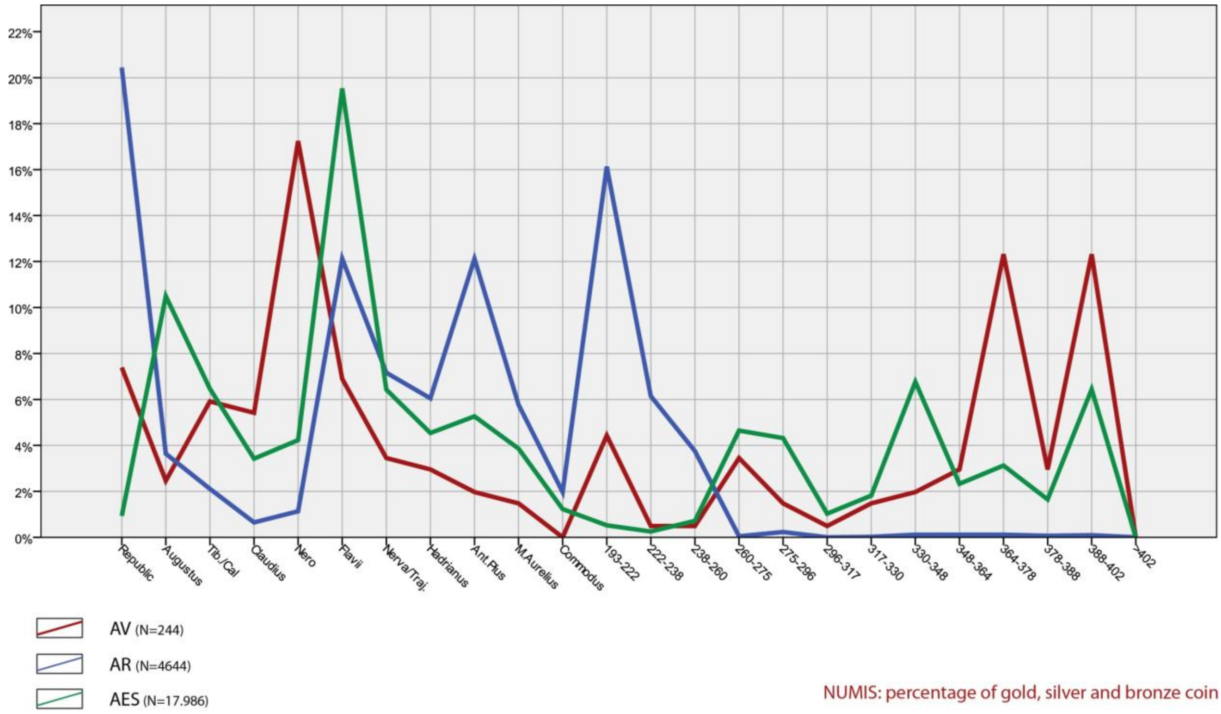

Figure 3: percentages of gold, silver and bronze coins in the DRA and MDS area (data from NUMIS)

The Flavian increase in gold and silver may be linked with a change in the structure of the tax system, accompanied by an increase in (monetized?) exchange in regional pottery and metalware. I will return to this later.

Coin circulation

Once Roman coin reached the Dutch river area, what became of it? Did it linger in the Roman army camps and the city of Nijmegen, never to reach the widely scattered rural villages of the hinterland? Figure 4 shows clearly that this is not the case. The coin finds are not only concentrated in the forts along the Rhine and the cities of Nijmegen and Forum Hadriani (capital of the civitas cananefatium), but are strewn across the countryside as well, particularly in the civitas batavorum (eastern half). Moreover,there seems to exist virtually no time lag between the coin supply to the forts and coins reaching the rural settlements. This is evident from the fact that the chronological distribution of coins from forts and from rural settlements is the same (figure 5). A second indication for the quick spread of Roman money over the countryside is the frequent occurrence of coins with pre-Flavian countermarks on rural sites.[14]

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[13] The data of figure 3 is not exactly the same as in figures 1 and 2; here, the coin finds of the Dutch river area and the Meuse-Demer-Scheldt area are grouped together, hence the different coin totals. The data are from the database of the Geld-en Bankmuseum in Utrecht (NUMIS).
[14] See Aarts 2003.

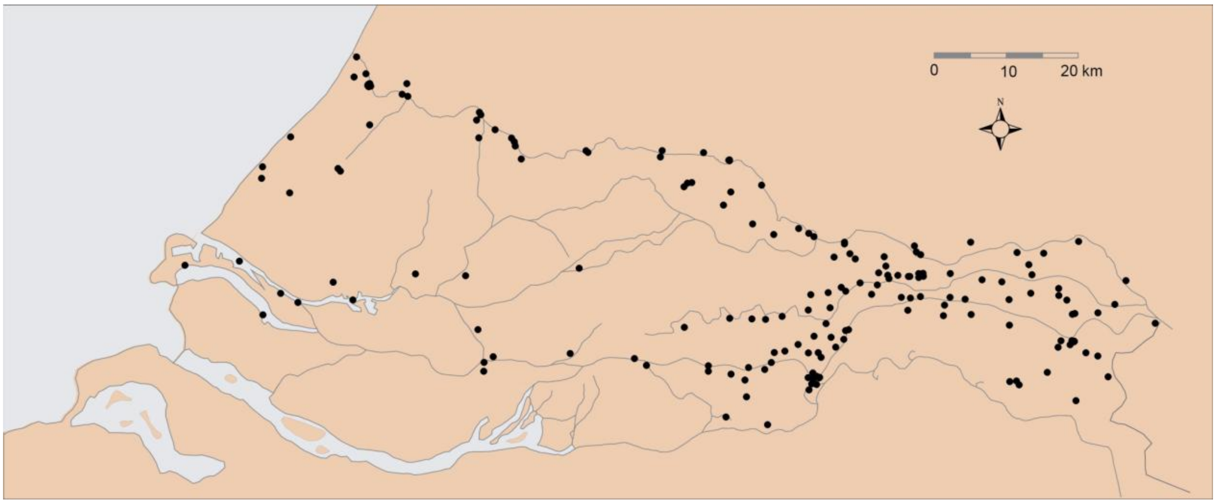

Figure 4: coins finds in the Dutch river area before AD 70

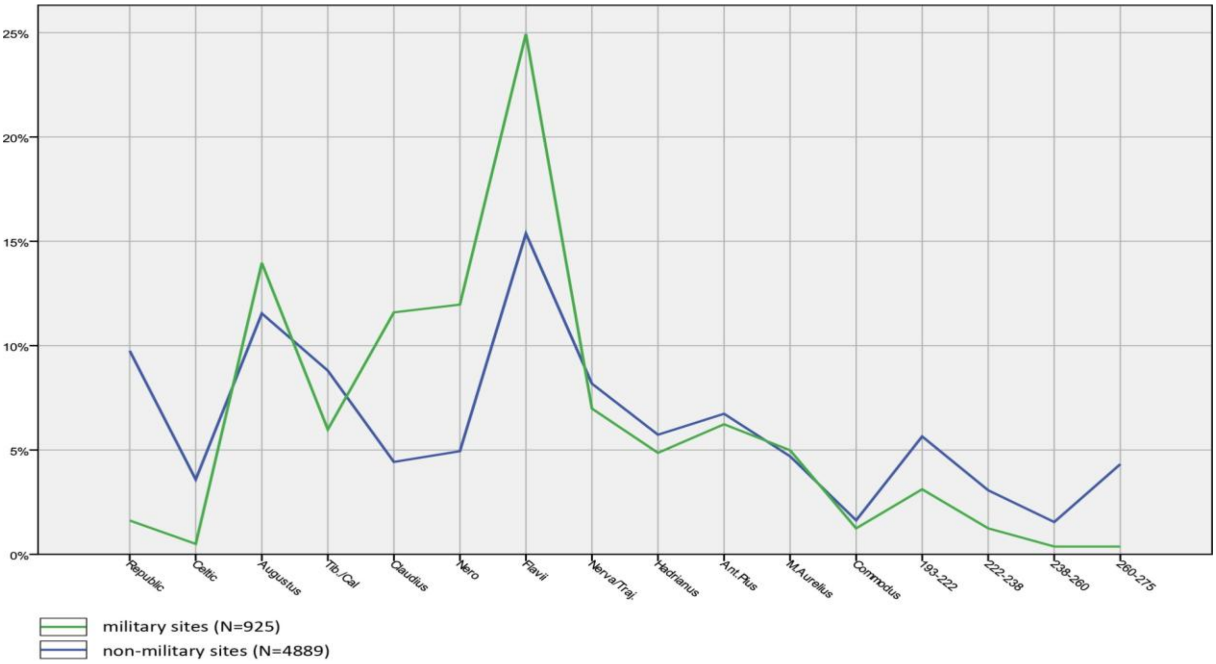

Figure 5: coins from military and non-military sites in the Dutch river area

The next question is of course by which mechanisms these coins flowed so easily from the prime target of money supply to these villages. Does this say anything about the speed of monetization of the Batavian economy ? Earlier, I have made the point that a large part of the Batavian male population served in the Roman army in the early Roman period. The effect of this was that not only they were paid in Roman coin, but they also quickly learned how to use it in a 'Roman'way. Part of their wages were probably spent in the forts themselves and the adjacent camp villages, but since they were able to visit their home villages on a regular basis during leave, it is certainly not impossible that they brought the money with them, along with their acquired knowledge of monetary ways. Althought this did not mean that exchange *within these villages* became monetized, the people who lived there possessed money and the knowledge how to use it. The monetary markets in this area were located outside the forts and in the city, and this is were monetary exchange took place.

In the pre-Flavian period, there is little evidence for a lively economic interaction between the urban and military markets: percentages of local pottery wares remain high in the rural world. There is no surplus production of grain and other crops that could be sold on the market. We have evidence for surplus production of cattle and horses, but this seems to have started around the middle of the 1st century AD.[15] The possibilities for the conversion of agricultural surplus into money seem limited, in any case for the pre-Flavian period. Also, the tax system did not invite people to use money on a substantial scale. Batavian taxes were paid in manpower, not in money, nor in agricultural produce.

This all changed in the Flavian period. Although the ethnic recruitment of Batavians did not stop, it is not likely that it remained the basis of the taxation in the Batavian civitas. The Batavian revolt came as an extremely unpleasant surprise for Roman authorities, and they would have looked very critically to the recruitment of Batavian soldiers and where they were based.[16] The re-evaluation of the terms of the treaty after the Batavian revolt and the creation of a formal civitas organization under Domitian imply that the rules of taxation may well have changed. Archaeological indicators for this change are the increased production of meat, hides and horses for the military and possibly urban markets. Also, the inner structure of rural settlements changed: in the Flavian period, field systems appear which re-structured both the internal space of the settlements themselves and the surrounding fields. Vos has made a plausible case for the field systems of the settlements at Wijk-bij-Duurstede De Geer and De Horden having been based on the Roman *actus*.[17] In the settlements themselves, larger structures appeared for the storage of agricultural produce. All these changes imply a different approach to the ownership of land and its yield. Perhaps this can be linked to a shift in the taxation system to payments in agricultural produce and/or money; if this is the case, the area would have been subjected to a new *census*.

At the same time, percentages of regional pottery and metal wares increased in the material culture of rural settlements.[18] Coins reached another high in the Flavian period, and this time silver and gold coin joined the bronze (fig. 3). The latter could have been an effect of the alteration in taxation, but may also have been a consequence of the increased building in the area. The city of Nijmegen grew steadily, although it stayed essentially a backward town compared to others. Nevertheless, also in the countryside there is evidence for monumental architecture in the temples of Kessel-Lith and Elst. Additionally, also the military infrastructure continued to grow during the Flavian period. The civilian architecture would have been paid for by elite members of the *civitas batavorum*. In order to do this, they must have lent sums of money (from *patroni* outside of the civitas), because this would not have been available (yet) through the workings of a monetary economy on the *civitas* level. This argument for the role of credit in the monetary economy is not backed up by archaeological evidence. There is no complementary flow between supply of credit and physical money. That is, not in the sense that credit took over when money supply was low: if anything, the coin evidence seems to imply that an increase in credit meant an increase in the physical money supply as well.

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[15] Vos 2009 , 253.

[16] See also Van Driel-Murray 1994, 93 for the probability of a restriction on the possession of weapons by citizens after the Batavian revolt; this is corroborated by the change in the finds of *militaria* in rural contexts (see Nicolai 2007; Vos 2009, 197.

[17] Vos 2009, 109-216.

[18] Van Kerckhove 2009, 189.

The drastic reduction of Roman troops in the Dutch river area took its toll. After this, the general trend in the coin supply is a downward one (fig. 1). In any case, a substantial less amount of money flowed to the area in the form of army wages. This must also have had repercussions for the exchange between the rural settlements and the army markets, whether or not through urban channels or the tax system (direct army supply contracts?). Both the official supply of money and the income from surplus production dwindled through the shrinkage of the military market. At the same time, debts had to be paid back. This must have put some economic pressure on the urban elite. Perhaps in recognizance of this, Trajan extended municipal rights to the city of Nijmegen (*Ulpia Noviomagus*). However, for the Batavian population there was no real alternative market to turn to. No economic interactive exchange system between the urban settlements developed, like in the case of the *civitas treverorum*. In this light, the Antonine peak in silver coins and in both gold and silver during the Severian period seem unexpected. The Antonine increase in the supply of silver may have had some relation with the construction of a city wall in Nijmegen, but it is harder to explain the increase in gold and silver coin under the Severians. However, the same Severian increase in silver coin is visible in the coins finds of Luxemburg, and perhaps we must look for an explanation in the changing money system and higher price levels.

The absolute bottom: the coin finds of two rural settlements

Descending form a regional level of analysis to a local one, what can the coin finds of two average rural settlements in the Batavian area tell us about the Roman economy? In the manner of research, the settlements of Tiel-Passewaaij and Geldermalsen-Hondsgemet are far from average. Both were excavated almost completely (Tiel-Passewaaij) or for the largest part (Geldermalsen-Hondsgemet); also, they were excavated by the same team of archeologist which applied a system of intensive metal detection. In this way, large numbers of coins were retrieved from both sites: 347 coins at Tiel and 320 coins at Geldermalsen. Considering that these were simple rural villages consisting of only a few farmsteads per phase, the number of coins is impressive.

	Tiel-Passewaaij	**Geldermalsen-Hondsgemet**
	coins	*coins*
Hoards	105	30
Settlement finds	221	290
Cemetery finds	21	-
Total	347	320

Table 1. Coin finds of Tiel-Passewaaij and Geldermalsen-Hondsgemet

In the case of Tiel, the adjacent cemetery where the villagers buried their dead was excavated completely, in Geldermalsen we have no knowledge of the burial place. Almost a third of the coins of Tiel came from three hoards: two (or possibly one) Severan silver hoards which was buried inside a house, and a hoard of 60+ barbarous radiates which was recovered from the cemetery, buried at a moment it was no longer in use. The one hoard of Geldermalsen is more modest: a hoard of 30 barbarous radiates found in the corner of a ditch surrounding the late-Roman settlement. I will not present an exhaustive discussion of all aspects of the coin finds of these two settlements, but rather pick some points which are pertinent to our theme.[19]

The first point is that the spatial distribution of coins does not imply that they were lost during monetary transactions. They were found in or nearby the houses of the village. There is no indication whatsoever for local market places at which periodically monetary exchange took place. In fact, the only probable monetary exchange which I can think of is that with outsiders. The people of the village were closely related, and it is hard to imagine people of such communities exchanging things through the intermediation of Roman money. In consequence, the population would not have run around daily carrying money purses. This leaves us with two options for the interpretation of the stray finds: either they were used in a ritual context, as we can clearly see in the case of the cemetery finds, or they were part of (small) hoards waiting to be used again in a monetary context (outside market). This does not mean, of course, that the rural population was not monetized. As I have shown, Batavian communities learned quickly how to use money in market exchange and did so, albeit in monetary market centres.

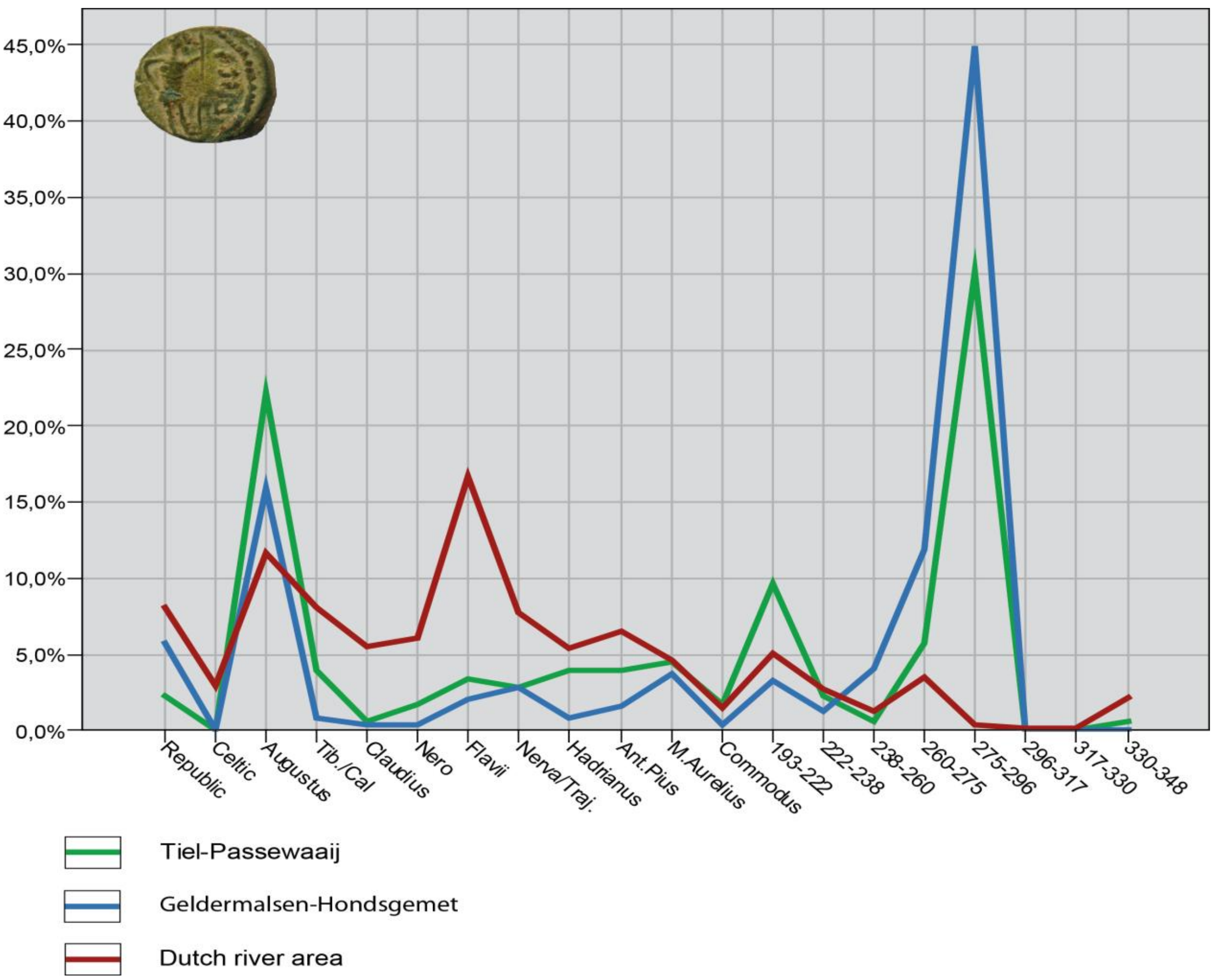

Figure 6. The coins of Tiel-Passewaaij, Geldermalsen-Hondsgemet and the Dutch River area.

[19] For a more elaborate account, see Aarts 2007; Aarts 2009; Aarts 2010.

The second point is related with the spatial distribution of coins: contextual analysis revealed that from the second century onwards, there was a large percentage of 'old money' in circulation. This phenomenon was already known from funerary finds, but many 2nd-century coins could be assigned to 3rd-century structures. Thus, the seemingly continuous supply of coins emerging from the chronological distribution from the settlement finds (figure 6), is misleading. A more likely scenario is that, particularly from the second century onwards, money reached the settlement in periodical spurts. Again, this perceived slowness in the circulation of rural money (or periodicity in coin supply) does not imply that the Batavians living inside the villages were not involved in the monetary economy. It simply means that they not always had the means (surplus) or need to participate in monetary exchange.