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Hadrian:
Art, Politics and Economy

Edited by Thorsten Opper

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Front cover: detail of the interior of the Pantheon, Rome, seen from the entrance to the rotunda. © The Trustees of the British Museum

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Hadrian's Economic Policy

Rosario Rovira-Guardiola

Nowadays, Hadrian is one of the most popular emperors and his reign is considered to be a milestone of the Roman Empire. His journeys through the Roman Empire, the magnificent buildings constructed during his reign and his relationship with Antinous have all captured the interest of historians and the public. No less attention has been devoted to his legal and military reforms, but there are still many other aspects of Hadrian's reign which require discussion. In this regard, I will analyse Hadrian's economic strategies and what we might call his economic policy.[1]

The aim of this article is to present a general overview of Hadrian's economic policy and the role it had within his reign. Literary sources described Hadrian as an emperor who took care of the needs of the provinces and acted accordingly, and this is also the image that emerges from other types of evidence.[2] As we will see, the textual and archaeological evidence suggests that there was a general policy for the whole of the Roman Empire, a policy that sought a better management of its resources. Production of foodstuffs and exploitation of mineral resources were encouraged where possible, but there was also a development of the administration that dealt with the distribution of these resources. This policy was not undertaken through general edicts but through local measures that took into consideration the particularities of each province. On many occasions these measures were additions to previously issued laws and edicts that were revised and modified under Hadrian, sometimes in response to requests by citizens.

Hadrian's economic measures might not seem as striking as other aspects of his reign. Many of these measures were not *ex novo* and he might not have commissioned anything with the same impact on the economy as Trajan's harbour in Portus (perhaps only the *Via Hadriana* in the Egyptian Eastern desert had a noticeable economic purpose). Nevertheless refurbishment of harbours, warehouses and *macella* was also part of his building policy and this, along with other measures, contributed to the economic development of the Roman Empire in the 2nd century AD.[3] The importance of economic policies undertaken during the empire cannot be underestimated since after all, the power of the emperor relied on an economic basis: the capacity to cover the basic food needs of the citizens of Rome and the army. Economic development played an essential role in guaranteeing the political stability of the empire and it was an important part of imperial propaganda.[4]

This was no different in Hadrian's case. His first actions as emperor, as well as the withdrawal of troops from Mesopotamia, were a series of fiscal measures. His aims might have been twofold: to mitigate the public finances, battered after years of war and to reconcile Hadrian with his subjects.[5] Hadrian had not had a good start as emperor. He had not only taken measures against Trajan's policies, but four senators had been killed. Although he claimed that he was not involved in these killings, some drastic measures had to be taken to avoid his popularity declining.[6] Consequently, once he knew the state of the public finances, Hadrian abolished the public contribution for accession to the office (*aurum coronarium*), completely in the case of Italy and partially for the provinces.[7] He also cancelled the private debts contracted in the previous 15 years to the *fiscus* from Rome, Italy and the provinces, burning the tablets where the debts were written in the Forum of Trajan. This last measure is attested both in coins and in a relief that might come from the same monument as the inscription.[8] As Boatwright has pointed out, measures like this decreased state revenue. In fact after these examples at the beginning of his reign, Hadrian only granted them sparsely and normally locally, perhaps being conscious of the stress that they might put on the empire's finances in the long term.[9]

These first measures anticipate what would be the general economic policy of Hadrian, to guarantee the production of goods by granting fiscal measures and a decrease in the rental or purchase price that would guarantee the production of goods.

Guaranteeing production

A series of papyri from *Heptakomia* in Upper Egypt dated between December AD 117 and January 118 show that Hadrian must have issued an edict according to which imperial tenants of the *basilike*, *demosia* and *ousiake* were allowed to make new offers on the price of their lease.[10] As a consequence they were able to obtain a reduction in the price of the lease.[11] The conditions for the lease of state lands that produced grain were particularly hard, with high taxes and the risk that they could be reclaimed by the state.[12] These conditions caused an endemic depopulation of the countryside and consequently land was not being cultivated. The situation in Egypt had been aggravated by the Jewish revolt that had started in AD 115 and was still going on in Egypt at the beginning of Hadrian's reign.[13] Hadrian's edict can be seen as a precautionary measure that sought to prevent the situation in the countryside from degrading even further even if it was by decreasing imperial revenue. In a recent article Capponi has interpreted the measure as an indication of the role that Egypt held in the supply of Rome. Nevertheless the importance of Egypt should be revised, and in view of the other measures that Hadrian took, we cannot see the case of Egypt as unique.[14]

This measure might have helped to avoid depopulation, but the economic insecurity of the farmers and the recurrent droughts seem to have continued. In AD 136 Hadrian had to issue a new edict, because forecasts were that the Nile flood was going to be insufficient for the year. This time he did not reduce the lease; instead he extended the period in which the payments could be made to between three and five years.[15] Westermann considered that the measures granted on this occasion were less generous than the ones that Hadrian had granted at the beginning of his reign, but in my opinion they are quite similar as they only reduced partially the amount that the farmers had to pay.[16]

Further measures to guarantee the production of staples were taken in other provinces, in what it is one of the trends of Hadrian's reign. His policies were applied generally throughout the Roman Empire, and Italy was not favoured over the provinces. Following the legal measures taken in Egypt, further action was taken in Africa with the *lex Hadriana de rudibus agris* or the law of Hadrian concerning vacant lands. Here Hadrian's policy was based on the *lex Manciana* that regulated the terms and conditions under which *coloni* cultivated imperial land in the province of Africa.[17]

Hadrian's law is documented in three inscriptions found in Aïn-el-Djemal, Aïn-Wassel and Lella Drebblia in the Bagradas valley in Tunisia, and while they do not mention the complete text of the law they show the changes made during Hadrian's reign.[18] The documents preserved are a *sermo procuratorum* issued as an answer to the request of a group of *coloni*, who had asked for authorization to cultivate olive orchards and vineyards in land that was now unused. They requested this permission on the basis that the *coloni* of the nearby *saltus Neronianus* were doing so and this followed the regulations stipulated by the previous law, the *lex Manciana*. The *procuratores* granted the permission following the *lex Hadriana*, not only allowing *coloni* to cultivate *subseciva* or unused land but also land that had been abandoned for a minimum of ten years. This measure sought continuity in agricultural production in imperial properties in Africa by allowing that land that was leased on an almost permanent basis could change hands if it was neglected.

The only other measure that we know from the *lex Hadriana* is shown in an inscription from Souk-el-Khemis dated to Commodus' reign.[19] Here the *coloni* complained about the number of days of labour that they had to do for the *conductores*. They requested to follow the terms of the *lex Hadriana* that established that only six days of labour a year should be done; the imperial answer confirmed that those should be the terms to be applied. In my opinion this measure can also be viewed as a way of guaranteeing production in imperial lands by not burdening *coloni* with tasks other than the cultivation of the land.

Continuity is the key in many imperial policies; as we have seen the *lex Hadriana* only modified some terms of the *lex Manciana* and in the same way the measures issued by Hadrian were used for a long time. The Aïn-Wassel inscription is in fact a restatement of the Aïn-el-Djemal inscription from Septimius Severus' reign and shows the continuing validity of the *lex Hadriana* 60 years after it was issued.

These laws were in the interest of both the general population and the Roman state. The *lex Hadriana* increased benefits to the *fiscus* and agricultural production in a province that was also important politically.[20] Its inhabitants, on the other hand, benefited from the possibility of increasing their production.

Further measures promoting the cultivation of public lands are documented in several cities of the Eastern Mediterranean like Thisbe and Delphi: in both places the cultivation of land that had been vacant for several years is allowed.[21]

Encouragement of production was not only limited to agricultural produce but can also be documented in other goods that were essential to the Roman Empire. Measures concerning the exploitation of silver mines are recorded on one of the bronze tablets found in 1906 in *Vipasca* (modern Aljustrel) in the province of *Lusitania*. The tablet called *Vip. II* is an *epistula* to Ulpius Aelianus, probably the person in charge of the exploitation of the mines, and it deals with the management of those mines that were granted to individuals and societies at this time. It is probable that this tablet is a reissue of the *lex metallis dicta* mentioned in another bronze tablet found from *Vipasca*, the tablet called *Vip. I*.[22]

The text of *Vip. II* suggests that some of the measures introduced *ex novo* by Hadrian concerned the lease of the silver mines, but what exactly constituted the *liberalitas* of the emperor Hadrian has been much discussed. The Roman state was offering a lease to exploit the silver mines of *Vipasca* for 4000 *sestertii*. It is unclear what these 4000 *sestertii* meant in relation to the total price of the lease and whether this was a single payment or if it actually was the first payment to secure the usufruct of the mine. According to D'Ors the second option is more plausible, as then the *liberalitas* of the emperor would be the fact that the buyer would be able to pay in instalments. The 4000 *sestertii* would be a part of the total price; the rest would be paid later. He thought that the Roman state would not consider getting less than the stipulated amount for the lease of the mine but that these conditions would be a benefit for the 'buyer' since he could wait until the mine was productive.[23] In this case it might be similar to the measures taken in Egypt in which there was no discount but a payment in instalments. Were the mine to remain idle for a certain period of time, it would be allowed to change hands. This might indicate a willingness of the Roman state to guarantee production along the same lines as we have seen in the *lex Hadriana de rudibus agris*.[24] Hadrian's economic policy regarding production is concerned with lowering the fiscal pressure that might ultimately have led to a decrease of production. Taking into consideration the terms of both the *lex Hadriana de rudibus agris* and the *lex metallis dicta*, I would suggest that the aim of Hadrian's policy was to maintain a constant level of production, not necessarily to increase it.

The *lex metallis dicta* echoes the measures of the *lex Hadriana de rudibus agris*; both encourage the use of 'means of production' through fiscal benefits. Here, as in the edict issued in Egypt at the beginning of his reign, the *lex* offered a discount on the lease, with the difference that while in Egypt the land was already in use, here, as in the province of Africa, the aim was to restore something that had fallen into disuse.

Guaranteeing supply: the oil law of Athens

The olive oil law of Athens was part of the law-giving (*nomothesia*) enacted in Athens, following the model of Solon and Dracon, during Hadrian's stay in Athens in AD 124–5. Part of the inscription is still preserved in its original location, the Roman Market of Athens.[25]

The aim of the law was to regulate the sale of olive oil in the city and to guarantee the civic supply of olive oil by avoiding speculation. The law guaranteed that a third of the olive oil production of Athens had to be reserved for the public needs of the city. The exception to this ruling concerned the owners of land in the former properties of Tiberius Claudius Hipparchus expropriated by Domitian; they had to reserve an eighth part of their production of olive oil instead of a third.[26] This was probably because these lands had been sold to purchasers less wealthy than Hipparchus, and it is also possible that the repayments for the land had to be made in kind; the requirement of a third of production might have seen this group of producers struggle to comply with the law.

These measures suggest that the producers might ordinarily have preferred to export their olive oil to selling it to the Athenian treasury, which would buy the oil at local market prices, thereby decreasing the potential profit of sellers. It is important to stress however that the aim was to guarantee the supply of olive oil, not to hoard the product as in the case of an over supply of olive oil; the product in that case might be requested back by the producers, who would then be free to sell it as they wished.

It is interesting to note that the oil law affected not only the producers who were obliged to reserve part of the production for the city, but also the merchants who exported this oil from Athens; they had to be aware of what they were exporting because they would be liable if they exported oil reserved for the city.

Although this law might have been modelled on previous Greek legislation, the measure does not differ in essence from the concept of the *annona*, which saw the state guaranteeing the supply of food to the population by buying at market price or below. The law gives an idea of the complexity of economic relationships in antiquity. Those affected by the law could be the tenants or owners of the estate or a harvest contractor; in the same way oil traders were also involved.

The oil law of Athens might not have been the only law related to the production and sale of olive oil that Hadrian enacted. From *Castulo* in the *Tarraconensis* comes a marble base with the following inscription: *rescriptum / sacrum / de re / olearia*.[27] The *rescriptum* has long been attributed to Hadrian, not only because the letter-forms can be dated to the Trajanic–Hadrianic period but also because of the supposed similarity with the law of Athens: they both deal with the production and distribution of olive oil. It has been very tempting for historians and archaeologists to suggest that both laws are proof of a general law to reorganize the production of olive oil in the Roman Empire. Martín has long proved that unfortunately there is no relation between them because they were both issued locally. The Athens law would have been drawn up by Hadrian as *nomothetes* of the city while the *rescriptum* of *Castulo* is the emperor's reply to a question formulated by an individual or perhaps a society and then inscribed on stone because it was considered of shared interest. If both were part of the same general law for the empire, they would have been written originally in Latin and then translated into Greek for the Eastern Mediterranean provinces; this is not the case. The oil law of Athens was originally written in Greek following a Greek format.[28] This does not undermine the fact that Hadrian had an interest in agricultural policy but it shows that measures were issued locally.[29]

Similar to the oil law of Athens is a letter attributed to Hadrian regarding the sale of fish in Eleusis.[30] It exempts the fishermen of Eleusis from paying the Athenian two-obol tax when selling at Eleusis and it also encourages them to sell the product directly without the intervention of middlemen. This has been interpreted as an answer to possible food shortages during the celebration of the Mysteries, but in my opinion it can also be seen in a more general context of a desire to limit an excess of benefits for producers and traders that might in turn limit consumption.

Neither the oil law of Athens nor the letter of Eleusis can be considered a particular economic policy of Hadrian. They are part of a more general economic policy during the Roman Empire whereby the common good and the food supply of the population took precedence over private enrichment. But it is important to underline that although these measures sought to guarantee the food supply for the population of Athens and Eleusis, they did not try to limit private commercial transactions, nor did the state seek to control these.[31]

Not all have interpreted these measures as contributing to a positive development of the empire's economy. Alcock reads them as Hadrian intervening in oil and fish prices. But Hadrian did not change the prices. In the case of Athens, he guaranteed the supply of oil for the city by making the producers sell the oil at market price, but only the required amounts of oil, not all. In the case of Eleusis, he did not limit the price but cut the number of parties involved in the transaction to avoid an excessive rise in the price of the product while not stopping free trade.[32]

Harbours and warehouses: managing the infrastructure of distribution

Promoting the cultivation of imperial land and encouraging agricultural production in the Roman provinces meant that the channels of distribution, both local and interprovincial, had to be kept in a good condition. Roads, harbours and warehouses were essential to maintain the production–distribution pattern and to keep the supply of foodstuffs and other materials moving around the empire.

Hadrian's passion for architecture and building is well known and the *Historia Augusta* says not only that he built something in almost every city, but that he tried to be aware of what was lacking in the provinces and acted accordingly.[33] This characteristic of his reign is also mentioned by Cassius Dio and in the *Epitome de Caesaribus*.[34] This was also a period of technological innovation based mainly on a change in the use of bricks that started in Trajan's period and flourished with Hadrian. The technique changed from the use of *opus reticulatum* to the extensive use of *opera mixta*, *opus caementicium* and *opus latericium*.[35]

The research undertaken by Boatwright on Hadrian's building policy in the provinces of the Roman Empire shows that, although 'non-utilitarian public works', like temples and leisure buildings were more frequently built than 'utilitarian structures', there was also an interest in other types of buildings. It is not surprising that aqueducts were the most popular of these 'utilitarian' constructions but Boatwright also documents the construction or remodelling of markets, *horrea* and harbours. In many cases the measures formed part of large-scale projects that included the rebuilding of other civic structures or other benefits to local citizens. The case of the flood control of the Copaic Lake in Boeotia, for which Hadrian not only built additional dykes but also intended to build an aqueduct, is a useful model of the complexity that surrounded these projects.[36]

As we will see, Ostia is also a good example of the building process in Hadrian's reign and is particularly relevant for the study of economic activity because of the relationship with the new harbour at Portus. Although largely completed during Trajan's reign, the impact of this project on the trade network in the area of Rome is fully noticeable in later periods.[37]

Nevertheless, the economic implications of Hadrian's engineering projects are clear in that they are mainly interpreted as a way of reinforcing the position of the emperor as a benefactor, rather than because of their economic value. In my opinion benefaction and economic benefit should be viewed as fulfilling a similar role within the running of the Roman Empire; we should not see economic benefit as a mere consequence of euergetism:[38] it is not possible to support this idea. If we take into consideration the changes in Roman administration that the building of Portus provoked, it becomes difficult to understand this from a purely propagandistic angle. In the same way, Trajan and Hadrian's efforts to solve the alluvium problems in Ephesus cannot be understood in those terms either (see n. 41). A different matter is that emperors sought to obtain the maximum benefit from this type of building works and presented it as euergetism. It is a reciprocal relationship, in which economic development is as fundamental for the Roman Empire as the portrayal of the emperor as a benefactor.[39]

Hadrian built or refurbished the ports and commercial infrastructure in the cities of *Lupiae*, *Byblos*, *Trapezus*, *Patera*, *Andriake Puteoli*, perhaps *Pompeiopolis*, Ephesus and of course Rome. The extent of these works is sometimes difficult to evaluate since barely any remains are preserved.[40] In Ephesus the inscriptions document the construction of a new embankment that might have been built to counteract the endemic problem of most ports, the build up of alluvium (silt), which had already caused drainage problems during Trajan's reign.[41]

Andriake was the harbour of the city of *Myra*, one of the principal cities of the Lycian League. It is also known as one of the stops of the apostle Paul on his journey to Rome; here he is said to have changed to an Alexandrian ship that has been interpreted as an annonarian ship carrying Egyptian grain to supply the city of Rome. Part of the port structures and the *horrea* that were rebuilt by Hadrian during his second journey to the Eastern Mediterranean in AD 129 are still visible, although sand has taken over and the area is now a swamp.[42] These structures are related to the supply of the city and not with external trade, since they are not close to the harbour; nothing in what is preserved today or any other literary or epigraphic document indicates that *Myra* could have been a suitable stop for an Alexandrian ship of those characteristics or held an important role in the grain supply. Hence we should interpret the new structures as part of the local refurbishment of the infrastructure of the city.

By contrast, both *Trapezus* and *Puteoli* held relevant roles in the imperial distribution network. *Trapezus* was the headquarters of the *classis pontica* while *Puteoli*, in the Gulf of Naples, had a pivotal role as one of the main ports of Rome. The interventions in these cities can then be understood within a general policy of keeping the infrastructure of the empire in suitable condition.[43] The works undertaken in *Puteoli* are attested by two inscriptions dated to AD 121 and can be related to the visit of Hadrian to Campania mentioned in the *Historia Augusta*.[44] Both inscriptions were recovered from the sea near the *ripa puteolana* and are dedications to Hadrian, one by the *vicus Lartidianus* and the other by an unknown *vicus*.[45]

Also, Hadrian now had in his hands the new port of Rome: Portus. The lack of a sea port for Rome had been an ongoing problem even if *Puteoli* fulfilled the role efficiently. In fact, even after the construction of the new harbour at Portus its role does not seem to have diminished, as the refurbishment at *Puteoli* in Hadrian's time demonstrates. Johannowsky proposed that actually the rebuilding of the harbour of *Puteoli* in this period has to be understood in the wider context of the change in measures regarding the *annona*; he thinks that the abandonment of the construction of Nero's canal pushed towards finding other solutions like the new tracks of the *Via Appia* or the new harbour in Portus.[46]

The bulk of the construction in Portus was done during Trajan's reign, with the new hexagonal basin and a vast warehouse area that increased from 32,790 sq. m to 92,278 sq. m during the 2nd century AD.[47] Undoubtedly its role developed with the construction of these Trajanic structures; probably it had been decided that Portus should replace *Puteoli* as the arrival harbour of the grain fleet and this would reflect also on Trajan's subsequent reforms of the *annona*.[48] Recent discoveries at Portus have underlined that some of its warehouses did not have the distinctive courtyard of warehouses in Ostia or in Rome. This suggests that they might be linked to state-controlled transport and a wider range of products, while those in Ostia might have been used for private activities. The warehouses would be directly linked to Rome and would help to organize fluvial transport: goods could be stored in Portus and transported to Rome gradually.[49]

The administration of the *annona* also changed during Trajan's reign, as it had done when Claudius built the first basin.[50] A new post was created, the *procurator annonae Portus et Ostiae*, and the extent of the influence of the new port in the administration of the resources that arrived there might further be seen in one of the products that arrived at Rome, Baetican olive oil, as will be discussed.[51] The impact that Portus had on the restructuring of the goods supply of Rome meant that during the reigns of Hadrian and Antoninus Pius, the infrastructure both in Rome and Ostia continued to develop and create a distribution network along with Portus.

There was in fact a boom in building works in Ostia during the mid-2nd century AD where both public and private buildings were constructed.[52] It is during Hadrian's reign that we find the first explicit mention of imperial intervention in the city.[53] Hadrian gave two million sesterces to reconstruct the Baths of Neptune and the area surrounding the building that included a porticus and the office for the *vigiles*. This is attested by the fact that they all were constructed with brick with the same *figlinae*.[54] The bricks were supplied by *figlinae* whose owners were closely linked to the emperor, Domitia Lucilla, Arria Fadilla and Q. Servilius Prudens.

Hadrian also seems to have promoted the cultivation of land and had settled imperial tenants in Ostia as Vespasian and Trajan had done previously.[55] According to Meiggs, the reason for this might have been that with the development of the harbour, the population might have been more interested in the fast money coming from trade than in agricultural cultivation,[56] a plausible explanation for a measure that brings to mind the edicts issued in Africa and Egypt in order to promote agricultural production.

In Rome, the logistic activity zone in the Aventine area around the river harbour of the city was also refurbished. It is possible that the remodelling of the area, which had already started in Trajan's period, was not only due to the needs created by Portus, but also by the endemic flooding in the region that is mentioned in the *Historia Augusta*.[57]

The excavations undertaken by Bruzza between 1868 and 1870, whose results were re-examined by Gatti in the 1930s and Cressedi in the 1950s, along the bank of the Tiber in the Testaccio neighbourhood have brought to light the remains of the embankment and adjacent buildings. The embankment was probably built during Trajan's reign at the same time as Portus, but was remodelled in Hadrian's time, as the brick stamps prove.[58] Three other milestones document further refurbishment on the banks of the Tiber during Hadrian's reign.[59] Here, the measures follow the same pattern as in other cities of the Roman Empire: we cannot see a drastic reorganization of the area but there was an effort to make sure that it is kept in good condition.

In Rome, as we have seen in Portus, there was also a change in the administrative officers who were in charge of the area and a new *curator alvei et riparum Tiberis et cloacarum urbis* appears. It is possible that some of the *horrea* underwent further refurbishment in Hadrian's time, as the change of name of the *Horrea Galbana* (changing from *Galbiana* to *Galbana*) might suggest.[60] In the opinion of Rodriguez Almeida, the construction of Trajan's harbour in Portus did not mean that new stores were built in the Testaccio area but that there might have been a specialization of the stores.[61]

As we have seen the new harbour in Portus changed the organization of the supply of the city of Rome. This change entailed the construction of new warehouses and harbour infrastructure in the cities involved in this distribution network, Portus, *Puteoli*, Rome and Ostia, but not only that, it also modified their administrative structure. This change might have been so profound that it affected the production areas of two important products for the Roman Empire: olive oil and marble.

At the very end of Hadrian's reign, *c.* AD 136, changes in the epigraphic system of two products are recorded: the Dressel 20 amphorae carrying Baetican olive oil and marble blocks from several quarries around the Roman Empire. Despite apparently being very different both olive oil and marble were essential commodities for the smooth running of the empire. Marble was a key commodity in the public building policy and olive oil was essential for the food supply of the citizens of Rome and the army. Although the production and transport of both products was in private hands, the Roman state tightly controlled its distribution with detailed written specifications. What was the reason for these changes? In the case of marble, the change in the marking in Hadrian's time cannot be understood as a result of the increase in the production of marble due to the increase of building activity, as such modifications should then have taken place earlier when building activity was at its peak.

Olive oil was carried in amphorae of a type called Dressel 20, which carried a vast amount of epigraphy: stamps, *tituli picti* and graffiti. In this case, the change is more of an evolution of the *titulus pictus* δ or fiscal control; new elements are included in the form that was written on the amphora on its way to Rome. With regard to graffiti, the marks inscribed on the amphora during the production process change; some new types of *graffiti* appear while others disappear.

Tituli picti were a means of fiscal control, and during Hadrian's reign four new elements were added to the inscription. Until then, the *titulus pictus* inscription had consisted of one line of writing with three main elements: a name in the genitive case followed by the abbreviation 'A' that was sometimes followed by a number; and finally a name in nominative case.

The Hadrianic inscriptions start with 'R' crossed horizontally by a straight line or '℞'. Dressel was the first to interpret '℞' as an abbreviation that, according to him, may indicate that the amphora and its content were property of the *fiscus*. Frank interpreted '℞' as 'received'.[62] The second new element is the mention of this city of *Baetica*: *Astigis*, *Corduba* and *Hispalis* are the most common, but occasionally other cities such as *Castulo* or *Malaca* appear. According to Remesal, this would be the capital of the administrative *conventus* where the control took place.[63] The third item to appear in this period is a place name ending in –um or –ense that normally accompanies the person's name in the genitive case and abbreviation 'A'. The fourth addition is the name of the *acceptor*, shortened to *acc*, followed by a name in nominative. This fourth element disappeared during the Severan period.[64]

The result was a new form of the *tituli picti*, as in *CIL* XV 4366, where the Latin reads *R. Hispal. xx. ccxv. / Capitonis.* Áá. *Car[- - -] / Imp. Comm. II et Vero*, would be as follows: 'Received; *Hispalis*; value 20 sest.; weight 215 lbs.; from the estate of Capito; export duty: 2 asses', followed by the name of the clerk and the consular date (AD 179). A further change was introduced during Antoninus Pius' reign with the inclusion of the consular date.[65]

In the case of the graffiti *ante cocturam*, the change is the opposite: they are simplified. Graffiti during Hadrian's period were calendar dates, names and numbers between 1 and 10 and multiples of 100. In this period and during that of Antoninus Pius there is a change; the calendar dates disappear while the number of symbols increases. The fact that we do not know what the graffiti stood for makes it difficult to understand the change, but a change in the organization of the production of amphorae during this time is plausible based on this evidence. An increase in the agricultural production has been evidenced during this time; and perhaps what we see here is the result of that increase. This would have lead to an increase in the number of amphorae needed and perhaps the potters needed a 'faster' way of recording the information they required during the production of these containers.[66]

The blocks of marble that were shipped to Rome also carried formulaic inscriptions mentioning the consular date, the contractor and the letter 'n' followed by a number, as in this example from the year AD 54 found in Rome in a column from the quarries of *Chemtou* in Tunisia: *M. Crasso co(nsule)/ex r(atione) Lae(ti)/n(umero) CCCXCIIX*.[67]

This formula was changed around AD 136 for a more complex one that keeps the consular date but changes the name of the contractor for a detailed mention of the origin of the block within the quarry as in this example from the quarry of *Docimium* in Asia Minor: *Rustico II et Aquilino cos [i.e. consulis]/off(icina) And(ae) caes(ura) Dom(estici)/b(racchio) IIII loco CVI*.[68]

As we have seen, both *tituli* δ and quarry marks change towards the end of Hadrian's reign. Both types introduce the crossed 'R' as a sign that the product has been checked, although the exact meaning is still unknown. Despite both being control marks, the products that were being controlled were very different. While for olive oil the weight of the content as well as the fiscal district from where the oil was shipped were among the aspects to be controlled, the quarry marks seemed to have included an inventory number. Nevertheless, both mention the officials in charge of the operations.

What could be the reason for the change in these marks? In my option there is no evidence that the changes were due to a reorganization in the production of olive oil or in the quarries apart from the case of the graffiti on Dressel 20 in which perhaps we could propose a change in the fabrication of the container, but not in the content. Perhaps we should look to the distribution side of the process. Both products arrived in Ostia/Portus to be shipped later to the *emporium* in Rome. As both of these areas underwent a serious transformation from the end of the 1st century AD until the mid-2nd century AD, the enlargement of the harbour area with new stores and facilities might well have had an impact on the distribution of the products. This may have led to an increase in the number of products that arrived in Rome and a better control might have been necessary. These changes may be related to the new warehouses in Portus or to another fiscal measure whereby finances were controlled directly by the emperor's offices.

Not only was production affected, but also the control of it. Inscriptions on *instrumentum domesticum* like *tituli picti* δ on amphorae Dressel 20, on brickstamps and on marble blocks show that production was better recorded. Again, despite the fact that these epigraphic changes all have different characteristics and that the *annonarian* olive oil is a different product from the exotic marbles used in public buildings, they reflect the attitude and interest of the Roman government in overseeing production and making the distribution more efficient. These changes cannot be seen as the 'invention' of Hadrian, as an interest in the provinces and a progressive supervision by the Roman emperors date back to the reign of Vespasian and they continued afterwards during the reigns of Hadrian's successors.

The changes in epigraphy may reflect a better management of the resources to be used or distributed by the Roman state like the *annonarian* Baetican olive oil or the marble from the imperial quarries. Fant has proposed that, in the case of the marble, it was the most prestigious types of marble that carried the inscriptions in order to monopolize the use of these marbles.[69] Given that these marbles were carried exclusively to Rome, I would suggest that there is not only a prestige reason for the use of inscriptions, but that the complexity of the harbour operations in Rome would require a better documentation of the products that arrived in the city and had to be recorded by the officials.

Conclusion

In summary, I would say that Hadrian's economic policy was set on the tradition of previous imperial economic policies. Hadrian's *lex de rudibus agris* was based on the *lex Manciana*; his economic measures were undoubtedly related to his predecessor's policy and this was also followed by Antoninus Pius. Hadrian's economic policy does not make him appear as the innovative emperor that surfaces in his interest for architecture or even in his law reforms, but it was equally important since it reinforced the stability of the empire by promoting agricultural production and the distribution of goods.

The economic measures were not universally applied to the whole of the Roman provinces and there is not a general edict to confirm this. The changes were applied locally following previous laws and the particularities of each province. The example of the Athens oil law is paradigmatic; issued while Hadrian was holding a local office and following the example of Greek laws. What unifies the economic policy is the fact that it had a common aim for the provinces: to secure the continuation of the production of products essential to the Roman Empire and to guarantee that their distribution was carried out smoothly by refurbishing ports and warehouses. Accompanying these measures there was also a tighter control of the distribution process. This does not necessarily mean that the role of the Roman state increased, but that there was better documentation of what was travelling where.

Many other aspects are still left to be discussed, such as the relationship between the measures taken in *Vipasca* and the intensification of the production of lead in Sardinia and Britain or how the *Via Hadriana* changed the transport of the Eastern Desert in Egypt, but I believe that the examples presented here give a good overview of what Hadrian's economic policy may have been.

Notes

1 Using the term 'economic policy' when studying the economy of the Roman Empire may still seem polemic today. There seems to be an unanimous acceptance of the fact that the Roman economy was complex and that the Roman state had an important role in the economy of the empire, either directly (i.e. imposition of taxes) or indirectly, such as in the building and maintenance of the infrastructure that allowed commercial transactions (i.e. harbours and roads). For an overview of the Roman economy: Temin 2006; Hopkins 2009. For the role of the Roman state: Scheidel 2012, 1–21 (esp. p. 8); Lo Cascio 2007; Drexhage *et al.* 2002, 28–35). Whether or not the economic measures taken by the Roman state can be considered a conscious economic policy is still a matter of discussion. For Andreau, the question is anachronistic because the Roman Empire did not have a sense of economy as we have today (Andreau 2010, 201–4), while for Lo Cascio the existence of an economic policy is doubtful as economic measures would be the result of *liberalitas* and *indulgentia* of the emperor (Lo Cascio 2007, pp. 623 and 631). Or, as was earlier suggested by Frank, the Roman state sought to maintain the stability obtained by Augustus at the end of the civil war (Frank 1940, 267). Following Drexhage *et al.*(2002), I consider that the economic actions of the state and the impact they had on the economy of the Roman empire are too complex to have been conceived exclusively under the umbrella of the *liberalitas*. The case of the harbour in Portus is one in which the impact on the administration of the *annona* and in the storage management cannot be explained solely by the euergetism of Claudius. He described the first building works at Portus as a solution to flooding but they also provided an easier route for the barges that were going upstream to Rome (Thylander 1952, B310 = *CIL* XIV 85 = *ILS* 207; Keay and Millett 2005, 298; see further in this article, p. 119, n. 38). In modern economics, an economic policymaker is one who sets and enforces the rules of the economic policy, manages tax and spending, as well as the issue and management of currency, produces goods and services, fixes problems or pretends to and negotiates with other countries (Bénassy-Quéré 2010, 11–12). I think it is fair to use the term 'economic policy' when discussing the measures that the emperor and the Roman state took. The fact that the framework was a different one and that we have little proof of it does not mean that there was not an economic conscience behind it. On Roman economic thought see Vivenza 2012.

2 *HA Hadrian*, 13; Dio, 69.5.

3 Rostovtzeff considered that Hadrian's urbanism policy contributed to the postponement of the decline of the Roman Empire (1957, 366).

4 Social unrest due to shortage of food is documented on several occasions, for example when the emperor Claudius was attacked by the population of Rome during a shortage of grain (Suetonius, *Claudius*, 18). The propagandistic use of guaranteeing the food supply of the city of Rome is evident in the *Res Gestae Divi Augusti* where Augustus boasts about how he had organized the supply: *RGDA* 5, 15 and 18. For a commentary see Cooley 2009, pp. 129; 173–4 and 181–2.

5 Nevertheless the withdrawal of the troops also had economic implications as the cost had drained the public finances, which strained the stability of the Roman Empire. For a recent view on the decision to withdraw the troops from Mesopotamia as a result of the economic situation in the Roman Empire and its justification by means of the policies of Cato and Augustus, see Cortés Copete 2009, 136–9).

6 Following *HA Hadrian*, 5–9. Dio, 69.8.1. Hadrian not only withdrew the troops from Mesopotamia but also demolished a theatre in Rome. The measure appears as relevant in the *Historia Augusta* perhaps because it stresses even more the fact that Hadrian did not follow in the footsteps of Trajan. The other measures taken by Hadrian once he become emperor were to give a double bonus to the soldiers and in order to stop the rumours about him, he ordered that the citizens should get two *congiaria* on top of the three *aureus* that had already been given while he was away. Further measures included depositing the property of those who had been condemned in the state treasury rather than in his private one as was the practice up to then. He also expanded the *alimenta* created by Trajan.

7 The lowering of the *aurum coronarium* in the provinces might be only attested in one instance, in a letter of Hadrian to Astypalaea. Oliver 1989, doc. 65 (with previous bibliography). Boatwright has recently expressed her doubts about the document because Hadrian did not know the amount that the city owed which seems unlikely in the case of the crown tax. She also mentions the fact that when Alexander Severus took a very similar measure he only mentioned Trajan and Marcus Aurelius as parallels. Boatwright 2000, 89, n. 23. For the *aurum coronarium* see also Millar 1977, 139–42. And for the contradiction in the text between the *aurum coronarium* that went directly to the emperor and the public finances see: Cortés Copete 2009, 139–40.

8 *HA Hadrian* 6.5 and 7.6; Dio 69.8.1; *ILS* 309 = Sm. 64a. Coins *BMC* III 417 = Sm. 64b. The relief is now in the collection of Chatsworth House. See Birley 1997, 97–8; Duncan-Jones 1990, 59 and 66 (on people spending more as a consequence of Hadrian's measures).

9 Boatwright 2000, 88–94 for the measures taken by Hadrian regarding taxes.

10 There are six leases, all from the same period between December AD 117 and January 118 for the same place, the town of *Heptakomia* in Upper Egypt. The first four were published in Kornemann 1908 and then restudied by Wilcken 1913, 245–6 and in Kornemann 1910–12, nos 4–7. A further papyrus with the same type of lease was published in Johnson, J. de M., Martin, V. and Hunt, A.S. 1915, no. 96. See also Blazquez 2008, 81; Cortés Copete 2009, 142.

11 Rowlandson 1996, 77–80. She argues that flexibility on taxing land according to its use and the Nile flood had already been attempted in the edict of Tiberius Iulius Alexander without much success.

12 On tenancy of state land in Egypt see: Kehoe 2007, 62–4.

13 Westermann 1925.

14 Capponi 2010. The increasing economic importance of the African provinces is well attested: Cébeillac-Gervasoni 1994, 47–59.

15 P. Oslo 78; Riccobono 81; D'Ors 1948, 177, 199–200; Jouguet 1920. For a propagandistic interpretation of these and other measures of Hadrian see: Pavón Torrejón 2009.

16 Westermann 1925.

17 The exact date of the *lex Manciana* is not known, as we only know of it through later references. The main one is an inscription from Henchir-Mettich (*CIL* VIII 25902) dated in the reign of Trajan that confirms the terms of the *lex Manciana*. The law authorizes the cultivation of vacant land (*subseciva*) for a rent of one third of the crop payable to the *conductores* on behalf of the Roman estate. The lease is long term but in case of the land being unused, it would be repossessed by the state. Trajan introduced some benefits for the cultivation of new crops and granted the suspension of the rent for five years for figs and vineyards and ten for olive orchards. The bibliography on this law and the *lex Hadriana* is extensive due to the importance of these laws to our understanding of the organization of the imperial lands in Africa: Carcopino 1906; Schulten 1907, 188–212; Carcopino 1908; Van Nostrand 1925; Flach 1978, Flach 1982; Kehoe 1988, 28–70; Kolendo 1991; Rovstovtzeff 1994; Hauken 1998, 2–28; De Light 1998–9; Kehoe 2007, 56–62; Magalhães de Oliveira 2008.

18 *CIL* VIII 25943 (Aïn-el-Djemal) and 26416 (Aïn-Wassel). De Vos 2000, 35, fig. 57 (Lella Drebblia).

19 *CIL* VIII 10570, 14451 and 14464.

20 Blazquez 2008, 84.

21 Thisbe: *IG* VII 2226 + 2227; *SIG* (3), 884; Delphi: Ferrary and Rousset 1998, 318–19. Cortés Copete 2009, 139–40; Blazquez 2008, 84–6 (on the problems with the limits of properties).

22 Lazzarini 2001; Domergue 1983 (both with extensive bibliographies).

23 D'Ors 1953, 112–33. For Domergue there is no *liberalitas* in Hadrian's measures and in his view the emperor only changes the procedure of buying the lease of the silver mines; once the required price is reached, the sale is completed. Domergue 1983, 126–8; 2004, 228.

24 Despite the similarities between the *lex metallis dicta* and the *lex Hadriana de rudibus agris* we should not forget that the *coloni* who cultivated the imperial lands of Africa and the private entrepreneurs who bought the rights to the mines belonged to very different social groups.

25 Martín 2001; Oliver 1989,232–8; Sayas Abengochea 1983.

26 Hipparchus, whose lands had been expropriated by Domitian, was the grandfather of Herodes Atticus. Philostratus, *VS* 2.1.2.; Ameling 1983; Graindor 1930; Pleket 1961, 305.

27 D'Ors 1956.

28 Martín 2001.

29 Piganiol 1965; Martin 1994, 182–3.

30 *IG* 2(2), 1102. The letter is attributed to Hadrian based on style grounds. Boatwright 2001, 90–1; Oliver 1989, doc. 77; Martin 1982, 82–5; Graindor 1934, 127–9.

31 Alcock 2007, 671.

32 For Hadrian's economic interventionism and an attempt to read both the oil law of Athens and the fish sellers letter of Eleusis from an purely economic point view: Silver 2011.

33 *HA Hadrian.* 11.1 and 19.2. Hadrian's interest in the provinces can be understood as part of an ongoing process in which Italy became a less dominant part of the empire, a process that affected all areas, not only agricultural production. For this change in the administration see: D'Ors 1965, 157 and 161.

34 Dio, 69.5.2–3; *Epit. de Caes.*14.4–5. See a comment on the sources in Boatwright 2000, 20–3.

35 As an introduction to this change see: DeLaine 2001.

36 The project was undertaken with imperial funds that were administered locally, and once the dykes were rebuilt, further measures were required to avoid their misuse. Oliver 1989, doc. 108–18. The situation dragged on until the reign of Antoninus Pius; Roesch 1985; Fossey 1986; Boatwright 2000, 113–16.

37 On Hadrianic buildings in Ostia: Meiggs 1973, 133–46; Calza *et al.* 1953, 129–49.

38 Lo Cascio 2007; Boatwright 2000, 143.

39 Suetonius *Claudius* 20; Leveau 1993. On the reluctance to accept economic activity as part as the policies of the emperors see Rickman (2008, 11) who does not think that Roman emperors ordered the construction of harbours with the intention of benefiting the economic life of the Roman Empire, rather they were just benefactions to fulfil personal interest or the desire to be seen as great benefactors. The same goes for the managing of the harbours, as the Roman state was not involved in that either.

40 Ephesus: *IEphesos* 274 Syll. (3) 839 = Smallwood, 494 (AD 129) cf. Spanu 2001; *Byblos*: *CIL* III 6696; *Lupiae* (Bruttium): Pausanias, 6.19.9); *Puteoli*: *CIL* X 1640 = ILS 336; *Trapezus*: Arr. *Perip. M. Eux.*, 16.6). The refurbishment of the harbour of *Pompeiopolis* might be attested in a coin dated to the reign of Antoninus Pius from the Newell collection at the American Numismatic Society. The coin shows a harbour structure, and the fact that the city added the name of Hadrian to its name and the shape of the structure are enough for the author to suggest that the harbour might have been remodelled under Hadrian. Evidence is scant, but neither would I rule it out as Boatwright does (Boyce 1958). For the location of *Lupiae* and the interest of the Hadrian in the Greek provinces as a reason to refurbish some of the ports, see Boatwright 2000, 119.

41 The two inscriptions that document the refurbishment of the Ephesus harbour during the reign of Hadrian: Knibbe *et al.* 1993, 122–3, no. 12 and Börker and Merkelbach 1979, 71–2, no. 274 (with further bibliography); Schorndorfer 1997, no, 29. For the history of the harbour of Ephesus see: Spanu 2001, 227 and appendix, nos 2, 4 and 5.

42 Borchardt 1975; Brandt and Kolb 2005 and for the *horrea*: Cavalier 2007.

43 For *Trapezus*: Boatwright 2000, 119–20 n. 26.

44 *HA Hadrian* 9.6. Camodeca 1977, 75–80.

45 *NSc.* 1890 = *Eph. Epigr.* VIII 360 and Camodeca1977, 75–80. See also: *CIL* X 1640 and 1641. For the harbour of *Puteoli*: Gianfrotta 1993; Miniero 2010. Two inscriptions dedicated to Hadrian in AD 121 and found *in situ* helped to identify two of the *vici* of the *Puteoli*: the *vicus Lartidianus* (*NSc.* 1890, 17 *Eph. Epigr.* VIII 360 = *AE* 1977, 200) and the *vicus Annianus* (*AE* 1977, 201). These inscriptions might be related to the visit of Hadrian to *Puteoli* in AD 119/120 during which he was very generous to the city. Camodeca 1977. The *vicus Lartidianus* was close to the sea, on the *ripa* and it is known because of the so-called 'Temple of Neptune' see Johannowsky 1993, 105–9. For the relationship between Hadrian and where he was originally buried before his ashes were transported to Rome, see Camodeca 2000–1.

46 Johannowsky 1990.

47 Keay and Paroli 2011; Keay *et al.* 2005.

48 Rickman 1980, 90, for whom Trajan was the first emperor to consider Rome's food supply after Claudius and to grant privileges to the *corpora* of *navicularii* and shippers: *Dig.* 27.1.17.6. These included the exemption from lesser duties (*munera*) to those involved in the *annona*, a public duty (*munus publicum*) in the 2nd century AD: *Dig.* 50.6.6.3 and 50.6.6.6.

49 Keay *et al.* 2005, 310.

50 After the construction of the Claudian harbour two offices were created, the *procurator annonae Ostis* and the *procurator portus Ostiensis*. Keay *et al.* 2005, 299; Bruun 2002; Rickman 1980, 48.

51 Cebeillac-Gervasoni 1991; Pavis d'Escurac 1976.

52 DeLaine 2002; Rickman 1971, 7.

53 *CIL* VI 972 and for pipes *CIL* XIV 1117, 1976, 1977, 5309; Pensabene 1996, 192.

54 Pensabene 1996, 195–6.

55 *Liber coloniarum* i. 236: '*Ostiensis ager ab imp. Vespasiano, Traiano et Hadriano, in precisuris, in lacineis, et per strigas, colonis eorum est adsignatus, sed postea imp. Verus Antoninus et Commodus aliqua privatis concesserunt*' *apud* Meiggs 1960, 267, n. 1.

56 Meiggs 1973, 267.

57 Pliny the Younger, *Letters*, 8.17.2 (AD 105), *HA Hadrian*. 21.6; Aguilera Martín 2002, 60, n. 51; Mocchegiani Carpano 1995.
58 Gatti 1936–7.
59 Cressedi 1956, 50–2; *CIL* VI 31552; *NS* 1916, 319.
60 Aguilera Martín 2002, 93 (with further bibliography).
61 Rodríguez Almeida 1984, 73–5.
62 Aguilera Martín 2001; Frank 1937, 72. See also Frank 1936, where he discusses the value of the abbreviation áá as the export tax.
63 Remesal Rodríguez 1979; Aguilera Martín 2001; Remesal Rodríguez and Aguilera Martín 1999.
64 Aguilera Martín 2004. At the present stage of the research only Baetican and African amphorae seem to carry this fiscal label. Nevertheless other containers also carried a complex series of marks, see the following for fish products: Lagostena Barrios 2004.
65 Aguilera Martín 2007.
66 Rovira Guardiola 2007.
67 Buzza 1870, no. 220.
68 Fant 1989, no 153. See also Hirt 2010, 292–3; Drew-Bear 1991; 1994; Christol and Drew-Bear 1986; 1987.
69 Fant 1989, 12.

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