

INNOVATION AND ADAPTATION IN VISIGOTHIC COINAGE

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The words “continuity” and “catastrophe” are clichés in the discussion of late antiquity, words that serve to summarize and stereotype modern interpretations of social, cultural, and economic changes.¹ The construction of this opposition between continuity and catastrophic change as an intellectual model for framing discussion, however, diverts attention from how in reality change happens all the time. To keep some institutions relatively stable for an extended time in human society typically requires strong and durable forces to act against potential changes. Continuity is inevitable, because change is always based on the past, but change, sometimes major, is also inevitable.

A more interesting way to frame questions might be to ask what things were thought worth the effort of keeping as static as possible and what innovations were adopted in response to changing circumstances. For the coinage of the Visigothic kingdom, there is much to consider on either side of that double question, but the changes may reveal the most about how the Visigothic state worked.

At the most general level, the coinage of the Visigothic kingdom seems very much a continuation of that of the late-Roman world, with its gold tremisses and bronze nummi. However, the mints of the Visigothic kingdom also introduced many innovations which demonstrate concerns or practicalities that differed from the late-Roman system, indicating different problems and challenges faced by the Visigothic regime.

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¹ Chris Wickham, *Framing the Early Middle Ages: Europe and the Mediterranean, 400–800* (Oxford: Oxford University Press, 2005), 11.

I. Patterns of change in the making of Visigothic coins

In the absence of the sort of routine administrative documentation that exists for later periods, all that is known about the organization of the production of coinage in the Visigothic kingdom is inferred from the coins, or rather, from the interaction of the coins and scholarly assumptions that have leaned heavily toward Roman comparisons. But, although the Visigothic monarchy certainly looked toward models from the Roman past and current Constantinople in its rhetorics of power, the workings of its actual administration may have been quite different.

Visigothic bronze coinage is considered to have been produced mostly on a decentralized basis, under the aegis of local or ecclesiastical authorities (a significant point in itself),² while gold coinage is generally considered to have been made under royal authority. What this means is a complex question that depends a great deal on how the administrative system of the Visigothic kingdom worked. A variety of innovations can be seen in Visigothic gold coinage, and they offer a complex picture in which official authority and practical reality meet up in interesting ways.

Many kinds of decisions go into the making of coins: Some are dictated from above, by state authorities; others are matters of practical implementation that are left to the workers. The area that is most likely to have been the subject of official decrees is the metal content (fineness and weight). Legends and designs are also usually specified by ruling authorities, though perhaps not always with precision. Technical details of die-making and flan preparation, on the other hand, are likely to have been left to the workers. With this in mind, a review of some of the changes introduced during the roughly three centuries of Visigothic coinage will provide the basis for hypotheses regarding the organization of production.

A. Metal content

The amount of gold in a coin is determined by two variables in combination: the total mass of the coin and the fineness of the gold alloy. The mass can be ascertained with a balance and well-controlled weights, in the early Middle Ages like today. In the Middle Ages, the fineness of the alloy could be

² Miquel Crusafont, *El sistema monetario visigodo: Cobre y oro* (Barcelona and Madrid: Asociación Numismática Española, 1994), 64–65; Ruth Pliego, “Rethinking the *Minimi* of the Iberian Peninsula and Balearic Islands in Late Antiquity,” *Journal of Medieval Iberian Studies* 12 (2020): 147.

measured with a touchstone, a procedure that required expert knowledge (though within the reach of experienced moneychangers and goldsmiths).³ In short, the amount of gold in a coin was knowable, though not necessarily easily.

That said, the fineness of the alloy could be obfuscated to some degree. Gold is one of the least reactive elements; if a piece of alloyed gold is placed in acid, the alloying element(s) will tend to leach out of the surface more than the gold, leaving a gold-enriched surface. With this technique, a gold-silver alloy could be made to look like purer gold than it actually was, at least temporarily.

Today there are better techniques to measure the fineness of an alloy than a touchstone, but they all have some limitations.⁴ One of the more common methods, x-ray fluorescence, has an important limitation: it measures surface concentrations, which may be misleading if surface depletion has enriched the gold concentration at the surface. Another common method, specific gravity, provides a measurement for the entire coin, but it only gives a single number, from which the proportion of a single element such as gold can only be inferred by making assumptions about any others. However, x-ray fluorescence analyses indicate that Visigothic gold coins are normally almost entirely gold-silver alloys, making inference from specific-gravity measurements straightforward.⁵

Due to the difference between surface and total compositions, the results of x-ray fluorescence and specific gravity are not directly comparable. Extensive sets of measurements of Visigothic coins by each method have been published, showing generally similar trends, despite systematic differences in the reported finenesses.⁶ The charts presented here are based on the largest available set of measurements: a set of specific-gravity measurements (fig. 1),

³ Walo Wächli, "Touching Precious Metals," *Gold Bulletin* 14 (1981): 154–58.

⁴ For a more detailed discussion, see Peter Bartlett, David Yoon and Ruth Pliego, "Weight, Fineness, and Debasement in Visigothic Tremisses from Theudis to Leovigild: New Evidence from the Hoards of Seville and Reccopolis," *American Journal of Numismatics* 29 (2017), 152–54.

⁵ D. M. Metcalf and F. Schweizer, "Milliprobe Analyses of Some Visigothic, Suevic, and Other Gold Coins of the Early Middle Ages," *Archaeometry* 12 (1970): 173–188; Mário Gomes Marques, João M. Peixoto Cabral and José Rodrigues Marinho, *Ensaio sobre história monetária da monarquia visigoda* (Porto: Sociedade Portuguesa de Numismática, 1995).

⁶ X-ray fluorescence: Marques et al., *Ensaio*, 66–70, 151–70; specific gravity: Andrew Kurt, *Minting, State and Economy in the Visigothic Kingdom: From Settlement in Aquitaine to the First Decades of the Muslim Conquest of Spain* (Amsterdam: University of Amsterdam Press, 2020), app. I.

along with corresponding measurements of mass (fig. 2), originally compiled by Lauris Olson, published recently by Andrew Kurt, and extended with additional measurements of coins at the American Numismatic Society by Peter Bartlett, Andrew Kurt, and myself.⁷ From this body of data a number of interesting patterns emerge.

From the beginning, in the early to mid-fifth century, the gold coins minted in Visigothic Gaul tended to be a little lower in mass and fineness than official Roman coins. Occasional coins were made at the official standards followed in Rome or Constantinople – slightly under 1.5 grams of fine gold for a tremissis – especially in the early sixth century, but most Visigothic gold coins are clearly lower than the Roman standards in fineness, and often in mass too.

From the sixth century on, a second generalization can be made: that mass and fineness tended gradually to decline, punctuated by occasional reforms of the coinage. As the standards at which coins were made declined below the ideal, variability tended to increase, with some mints or batches of coins considerably farther from the ideal than others.

However, when there were reforms to bring the coinage back to a standard, they did not always aim at the same ideal value. For mass, there was a brief interval around the year 580 when Liuvigild (r. 569–586) attempted to change the standard to around 1.3 grams. Within a few years, however, he reverted to the Roman standard of 1.5 grams, and this remained the theoretical goal for the remainder of the Visigothic kingdom's life. In fact, late Visigothic tremisses sometimes slightly exceeded 1.5 grams.

Fineness is a different story. When Liuvigild reformed the coinage around 580, he also revised the standard for fineness, which had fallen variably far below the 98% to 99% of Roman coins, to around 75%.⁸ The coinage remained stable for a generation, until the time of Gundemar (r. 610–612), when the

⁷ Olson's data set includes his own measurements of coins at the American Numismatic Society as well as published measurements by W.A. Oddy of coins at the Fitzwilliam and Ashmolean Museums. The measurement methods of the different individuals involved have varied slightly in relative precision, due to use of different immersion fluids (Freon-113 or distilled water by Olson, perfluoro-1-methyldecalin by all others), but all are similar and have produced comparable results. The total data set includes 627 coins, but this includes multiple denominations as well as ancient counterfeits and modern fakes, so the effective sample size of comparable coins is smaller for any one comparison.

⁸ The exact standard is unclear. X-ray fluorescence measurements (which tend to err on the high side) of coins of Liuvigild and Reccared I with Facing Bust types indicate a standard around 78% to 83%: Marques et al., *Ensaïos*, 151–53. Specific gravity measurements (which tend to err on the low side) of the same series indicate a standard around 70% to 75%: Kurt, *Minting, State and Economy*, 308–10.

fineness began gradually to decline. Fineness declined to around 50% by the 640s and increased in variability until sometime during the reign of Chindaswinth (r. 642–653), when it was restored to around 70% to 75%. After stability under Recceswinth (r. 649–672), it began again both to decline on average and to increase in variability. At some point during the sole reign of Wittiza (r. 702–710), the mint of Toletó (present-day Toledo, in central Spain) returned to a fineness around 70%.

It is worth noting the difference between this pattern and the way debasement of coinage usually worked in the Roman Empire. Reductions of standards were a frequent occurrence in earlier Roman coinage, but they were done in a more controlled way. They are interpreted as a deliberate expedient by the imperial fiscal system to provide more coins to cover budgetary shortfalls.⁹ There was some variation in the execution of these changes, especially when the government was divided between two or more emperors, but mints, being directly controlled by government financial officials, evidently tried to conform to current specifications.¹⁰

Roman debasements were generally permanent adjustments to the standard. There were some back-and-forth changes on the fineness of the silver denarius in the first century,¹¹ but otherwise once a standard had been officially lowered, usually the only way a higher standard would be established was through the introduction of a new, higher denomination of coin.¹² And in the case of late Roman gold coins, the official standard did not change at all from the early fourth century until the late tenth century.¹³ This suggests clear administrative intent.

The pattern of Visigothic debasement can be interpreted in various ways. Andrew Kurt has suggested that it occurred when the royal fisc needed increased output of coins, especially at minor mints, for military expenditure

⁹ Kenneth W. Harl, *Coinage in the Roman Economy, 300 B.C. to A.D. 700* (Baltimore: Johns Hopkins University Press, 1996), 90.

¹⁰ See, e.g., Lawrence H. Cope, "The Argentiferous Bronze Alloys of the Large Tetrarchic Folles of A.D. 294–307," *Numismatic Chronicle* 7th ser. 8 (1968): 115–49; Lawrence H. Cope, "Roman Imperial Silver Coinage Alloy Standards: The Evidence," *Numismatic Chronicle* 7th ser. 7 (1967): 107–31. Note, however, occasional periods of high variation, followed by returns to standardization, in Jean-Pierre Callu, "Analyses métalliques et inflation: L'Orient romain de 295 à 361/368," in *Hommes et richesses dans l'Empire byzantin*, t. 1 (Paris: P. Lethielleux, 1989), 230 fig. 2.

¹¹ Kevin Butcher and Matthew Ponting, "The Reforms of Trajan and the End of the Pre-Neronian Denarius," *Annali dell'Istituto Italiano di Numismatica* 61 (2015): 21–42.

¹² Harl, *Coinage in the Roman Economy*, 146–74.

¹³ Michael F. Hendy, *Studies in the Byzantine Monetary Economy, c. 300–1450* (Cambridge: Cambridge University Press, 1985), 506–10.

during times when gold was in short supply.¹⁴ It might be noted, however, that the lowest standards and greatest variation occurred at times when there is no evidence for major military campaigns, during the reigns of Chintila (r. 636–639), Tulga (r. 639–642), and Egica (r. 687–702). Moreover, there was relatively little debasement during the reigns of some kings known to have campaigned actively, such as Witteric (r. 603–610) and Sisebut (r. 612–621). Bullion supply may well have been an important factor, but military campaigning may have been of relatively limited importance for debasement.

I would suggest, instead, that the prevailing tendency for the gold content of the coins to drift downward seems more like a lack of control (sporadically interrupted by royal interventions) rather than an expression of intentional policy. The attempts by Chindaswinth and Wittiza to restore a standard around 1.5 grams and 70% to 75% fine suggest that this remained the official standard from the last years of Liuvigild to the end of the kingdom, but the increasingly wide variation when standards were low suggests that adherence to the official standard was poorly monitored and frequently unenforced.

Visigothic mints, in other words, were operated differently from Roman mints, with a key difference being that they were generally not closely monitored by government financial officials. At moments of royal attention, they could achieve highly controlled results, but most of the time the standards of weight and fineness were variable and prone to gradual decay.

B. Legends and designs

The information placed on the coins takes various forms, both verbal and pictorial. There is much to be said about the political messages conveyed by both,¹⁵ but here I concentrate on a more routine, utilitarian sort of information. Some of the messages encoded in coins are intended for the administrative use of the governing authority, and these can be particularly informative about the organization of production.

Because of these political and administrative functions, the design specifications for coins are a matter of interest to high-level officials. In this, Visigothic coinage resembled Roman coinage, at least to the extent that major design changes appear to have been made by central directive and introduced at all mints around the same time. However, in some other respects Visigothic

¹⁴ Kurt, *Minting, State, and Economy*, 237–40.

¹⁵ See, e.g., S. Steinbach, *Imitation, Innovation und Imperialisierung* (Münster: Lit, 2017).

coins used design information in somewhat different ways from Roman precedents.

To begin with, the coins were fairly direct imitations of current Roman coinage. However, beginning with the last issues in the name of Valentinian III (r. 425–455) and especially those in the name of Libius Severus (r. 461–465), Visigothic tremisses ceased to follow the same designs as the imperial coins.¹⁶ This change, although the designs remained within the iconographic space of Roman imperial coinage, made Visigothic tremisses instantly identifiable as something different from official Roman tremisses, as did a new reverse type, adopted sometime between 491 and 510, featuring Victory holding a palm branch and wreath.¹⁷

The iconographic content of the designs is often the primary motivation for these changes, but the simple fact that a new design is different is sometimes more important. Making the coins visibly distinct both from official imperial coins and from previous Visigothic coins enabled administrators to distinguish recent local coins from older or non-local issues.

This ability to identify specific coin issues is important when standards are intentionally changed or reformed. This may explain some design changes such as the introduction of the Victory with Palm and Wreath reverse around 500 and the introduction of the Facing Busts type around 583–584, both of which coincided with changes to standards. Control marks may also be important for identifying particular batches of metal or particular responsible parties. Visigothic regal coinage sometimes has dots or symbols that have been interpreted as control marks for administrative identification of this sort.¹⁸

However, the most important feature introduced into Visigothic coinage for providing administrative information is the introduction of the names of the king and the mint under Liuvigild around 575–577 and 581–582, respectively. Late-Roman mints had used abbreviated codes as mint marks; the Visigothic practice appears to be a reinvention of the concept, spelling out the name of a place clearly in the oblique or objective case (as distinct from

¹⁶ Philip Grierson and Mark Blackburn, *Medieval European Coinage*, vol. 1 (Cambridge: Cambridge University Press, 1986), 46; Pliego, *Moneda visigoda*, vol. 1, 74.

¹⁷ Wallace J. Tomasini, *The Barbaric Tremissis in Spain and Southern France, Anastasius to Leovigild* (New York: American Numismatic Society, 1964), 25–44.

¹⁸ Peter Bartlett, Gonzalo Cores Uría and María Cruz Cores Gomendio, “The Use of Dots as Control Marks in the Coin Legends at the Visigothic Mint of Ispali during the Reign of Sisebut (612–621),” in *Actas del XIII Congreso Internacional de Numismática, Madrid, 2003* (Madrid: Ministerio de Cultura, 2005), 1127–33.

the nominative case used for the king's name and epithet).¹⁹ Clearly someone decided this information needed to be there so that coins could be identified as current issues from a particular minting operation.

One typical reason for administrators to want to be able to identify which coins came from which mint is so they can attribute blame correctly if coins are sub-standard due to malfeasance by the mint.²⁰ Unlike Merovingian Gaul or Anglo-Saxon England, there was no requirement to put the moneyer's name on the coin along with the location. If the name of the place was sufficient information for attributing blame, this indicates a more controlled relationship of producers to places in the Visigothic kingdom than seems to have existed in the Merovingian and Anglo-Saxon kingdoms.

C. Number of mints

The place names attested on Visigothic coins also document a major decentralization of the minting process relative to Roman practice. Roman minting was very centralized relative to the size of the empire. In the Principate, all of the gold and most of the silver was usually produced at a single mint (in either Lyon or Rome).²¹ Starting from the mid-third century the number of mints increased, but at maximum in the fourth century there were only fourteen or fifteen regular mints operating at the same time.²² This was associated with a highly centralized organization in which the imperial government controlled mints as state facilities, run by government officials and operated at state expense.²³

None of the Roman mints of the fifth century were located in what became the sixth-century Visigothic kingdom. The Visigoths briefly controlled Arles in the fifth century, at a time when a Roman mint may still have existed there,

¹⁹ Visigothic regal coins are a significant, if mostly ignored, source for early Romance grammar: José Antonio Correa Rodríguez, "El latín de las monedas visigodas," in *Latin vulgaire – Latin tardif VII*, ed. Carmen Arias Abellán (Sevilla: Universidad de Sevilla, 2006), 238–40; Paul Gaeng, *A Study of Nominal Inflections in Latin Inscriptions: A Morpho-Syntactic Analysis* (Chapel Hill: University of North Carolina, Department of Romance Studies, 1977), 24, 60, 62.

²⁰ Philip Grierson, *Numismatics* (Oxford: Oxford University Press, 1975), 80–81.

²¹ Harl, *Coinage in the Roman Economy*, 75, 86.

²² Hendy, *Studies in the Byzantine Monetary Economy*, 378–94.

²³ For the early imperial mint of Rome, the staff appear to have been a mix of imperial freedmen and slaves, all probably working for the imperial household: Bernhard E. Woytek, "System and Product in Roman Mints from the Late Republic to the High Principate: Some Current Problems," *Revue Belge de Numismatique* 158 (2012), 101–12.

but otherwise their mints were created *ex nihilo*. Until the late sixth century, when mint names were placed on Visigothic gold, it is not possible to say how many mints were in operation at any one time. But from the 580s to the 710s, almost a hundred mints are known to have produced gold coins in the Visigothic kingdom at one time or another. Not all of them operated at the same time, but in some reigns as many as around fifty mints were in operation, in an area less than one-seventh as large as the fourth-century Roman Empire.²⁴

This pattern is extremely different from the tightly controlled minting of the later Roman empire. Andrew Kurt has pointed out a strong correlation between the locations of minor mints and zones of likely military activity.²⁵ However, it should be noted that the Roman state managed to produce coins to pay a much larger, more professionalized military spread over a much larger area with a much smaller number of mints. The great increase in number of mints indicates a significant change in the way coin production was linked to administration.

In the Roman Empire it was routine to transport large amounts of coins for long distances from the mints to places where the government had payments to make.²⁶ Moreover, at least in the early imperial period, even local or regional coins that were issued in the eastern provinces were sometimes struck in Rome and transported halfway across the empire to be issued.²⁷ Clearly Visigothic mint organization prioritized something other than centralized control or management.

D. Production methods

Roman imperial coins, like most coins of Greco-Roman antiquity, were struck using dies engraved by hand with naturalistic images in modulated relief and with lettering around the edge. The flans are generally thought to have been cast or fused in molds to the correct weight; they were then placed between

²⁴ For mints, see Pliego, *Moneda visigoda*, vol. 1, 148–151. For comparison of areal extent, see estimates in Rein Taagepera, “Size and Duration of Empires: Growth–Decline Curves, 600 B.C. to 600 A.D.,” *Social Science History* 3 (1979), 125–26.

²⁵ Kurt, *Minting, State and Economy*, 195–220.

²⁶ Johan van Heesch, “Transport of Coins in the Later Roman Empire,” *Revue Belge de Numismatique* 152 (2006): 51–61.

²⁷ Kevin Butcher and Bernhard Woytek, “The Grand Scheme of Things: Modelling Coin Production and Coin Distribution in the Roman Empire in the First and Second Centuries AD,” in *Infrastructure and Distribution in Ancient Economies*, ed. Bernhard Woytek (Vienna: Austrian Academy of Sciences Press, 2019), 253–81.

obverse and reverse dies and struck with a heavy hammer blow.²⁸ The process involved a considerable amount of labor: the imperial mint at Rome in the early second century, for example, appears to have had a staff of at least ninety workers.²⁹ Some of this labor was relatively unskilled, such as swinging a hammer, but the engraving of dies was a skill that must have required long apprenticeship to master.

Visigothic coinage used the same basic method of striking blanks between dies with a hammer, but most other details of the process changed significantly. These changes can generally be summed up as ways of enabling the work to be done with fewer workers, and especially with fewer highly skilled workers.

This is not to say that the coins show a lack of skill. By the standards of hammer-struck coinages, Visigothic gold coins are very well made. The flans are approximately circular, the designs are well-centered on the flans, and the strike is usually strong and clear. Minor errors such as double-struck coins occur occasionally,³⁰ but major striking errors such as brockages are extremely rare or unknown.

The dies also were competently made by skilled workers, but efficiency was clearly the highest priority. They frequently contain small errors that appear to be the result of hasty work (fig. 3). More importantly, a number of innovations were adopted in making dies that can be explained as ways of saving on the most skilled work.

During the sixth century, traditional Roman techniques for engraving dies were abandoned. Instead, a previously minor technique—using a small metal punch to stamp a mark into the die—was elevated to become the major method of creating designs. This changed the appearance of the struck coins, so that the naturalistic *bas-relief* of Roman coins was replaced by relatively abstract, two-dimensional designs made of repeated geometric elements.³¹ The difference can be seen by comparing two Visigothic coins, one from the early sixth century and one from the 580s (figs. 4 and 5).

²⁸ See metallurgical evidence in Nicola George, "Experiments Reproducing Roman Debased Alloys," in *Debasement: Manipulation of Coin Standards in Pre-modern Monetary Systems*, ed. Kevin Butcher (Oxford: Oxbow Books, 2020), 75–96.

²⁹ Woytek, "System and Product," 103. This may not include a significant number of workers involved in making dies.

³⁰ Pliego, *Moneda visigoda*, vol. 1, 193.

³¹ David Yoon, "Art, Craft, Innovation, and Efficiency: Early Medieval Minting Technology," *American Numismatic Society Magazine* 14, no. 2 (2015): 18–27.

These two techniques of making a die have very different labor requirements. The hand-engraving method requires a master engraver with long training to spend hours cutting the main design; it is likely that simpler elements such as lettering were carved by less-skilled assistants. It can be calculated for a series of Roman Republican denarii with die marks that the master engravers spent at least three and perhaps six hours on each obverse die.³² By contrast, the punching method requires only moderate skill, and in experimenting with this method David Sellwood found that he could sink a die in fifteen minutes for a simple design and twenty-five minutes for a more complex one.³³ Presumably an experienced die-sinker could do this even more quickly. Thus, one worker could produce around seven to fourteen obverse dies with the Visigothic method in the time it would take an engraver to make one Roman obverse die.

A second innovation concerns making the flans on which coins were struck. Again, a relatively minor method from antiquity—hammering out a thin sheet or strip of metal and then cutting round blanks from the sheet metal—was promoted to become the principal method for making the flans for Visigothic gold coins. In this case the Visigothic method probably requires as much labor or more than the Roman method, though probably less skill. However, it may have had advantages for other reasons related to the adoption of punches for making dies.

The act of striking a coin between dies works by forcing malleable metal to flow into the recesses engraved or punched into the surfaces of the dies. Higher relief on the coin means that more metal has been forced to move. In general, displacing more metal requires greater force to be applied to the dies. When flans are made of molten metal, by casting or fusing, surface tension causes them to be somewhat globular. This shape works well for striking coins with high relief at the center, but it means more metal must be displaced to create a flat coin with low relief. A thin, flat flan allows a flat, low-relief coin

³² Giles F. Carter and Brian G. Carter, "Simulation of a Roman Mint by Computer," in *Proceedings of the 22nd Symposium on Archaeometry*, ed. S.E. Warren and A. Aspinall (Bradford: Schools of Physics and Archaeological Sciences, University of Bradford, 1983), 42, calculated 3.1 hours per die on average. However, they included both obverse and reverse dies in the calculation; the source for the numbers clearly states that engravers are only identified for the obverse dies: T.V. Buttrey, "The Denarii of P. Crepusius and Roman Republican Mint Organization," *American Numismatic Society Museum Notes* 21 (1976), 90–93. The reverses would most likely have been cut by other engravers. If the Carter calculation is redone using only the number of obverse dies, the result is 6.4 hours per die.

³³ David Sellwood, "Medieval Minting Techniques," *British Numismatic Journal* 31 (1962), 58.

to be struck without having to displace a large amount of metal. This has two practical implications for the minting process: less force needs to be used to hit the upper die with a hammer, so that one worker can do the striking process alone (rather than a team of three, as in Roman mints), and because less force is applied to the upper die, it should last longer in use (other things being equal).

Thus, the technical innovations adopted by Visigothic mints can be seen as having two effects. First, they reduced labor requirements, so a mint could realistically operate with only a few workers. Second, and most importantly, they reduced the amount of labor required to supply the dies needed to strike a given number of coins, by making the dies more quickly and probably also by reducing the number of dies needed.

These changes suggest that Visigothic mints were adapting their working methods to a different organizational structure. Instead of massive factory-style operations with scores of workers, they were probably much smaller workshops. And minimizing labor on the making of dies seems to have been important, whereas other stages of the process show no tendency to skimp on labor time. This in turn suggests that fewer die-sinkers were available relative to the demand for dies. When paired with a large increase in the number of mints, some apparently with a low rate of production, this suggests that the making of dies was more centralized than the striking of coins.

II. A model of Visigothic mint administration

Now that a number of changes introduced in the Visigothic monetary system have been described, the next question is how best to explain them. In the absence of administrative documentation, any model will inevitably be hypothetical, but it may be guided by consideration of the reasons that would tend to promote the adoption of these particular innovations.

A few basic conditions constrain the possibilities for likely minting arrangements. First, there is no question that the minting of gold in the Visigothic kingdom was ultimately subject to royal authority. The more-or-less simultaneous adoption of new designs at all mints and the coordination seen in occasional reforms of weight and fineness bespeak response to decrees from the royal administration, the only central institution capable of dictating such changes.³⁴ However, there is no need to assume that royal authority

³⁴ An interesting and puzzling exception is found in the coinage of Wittiza, where improvements in weight and fineness are seen mostly at Toletó, and a new reverse design was introduced only at Toletó.

managed routine operation of mints using exactly the same procedures as in the Roman Empire.

Second, institutional continuity with Roman monetary administration would have been limited. The early Visigothic kings did not assume control of the locations of any higher-level Roman administrative institutions until Euric seized Arles (present-day Arles, in southern France) around 471. At that point his kingdom may have acquired skilled workers from the Roman mint of Arles, but he does not seem to have retained the praetorian prefecture and its administration, or the Roman mint as an organization.³⁵ It is unlikely that any diocesan administration of Hispania survived the period of Suevic domination until the Visigoths took over.³⁶ Without a praetorian prefecture, a diocesan *comes largitionum*, or a functioning Roman mint, new institutions and practices had to be created for the management of the monetary system.

Third, the Roman fiscal system survived in some form at least to the end of the sixth century and perhaps to the end of the kingdom.³⁷ The amount of land liable to taxation may have decreased, much tax may have been paid in kind, and not all writers agree on how the money was spent, but there seems still to have been some sort of political-economic engine for moving coins around on a large scale, and an ongoing need for a supply of new coins.

The early stages of the development of Visigothic coin production are the least clear part of the picture. Some groups of fifth-century coins have been attributed to the Visigoths with varying degrees of confidence,³⁸ but not much can be said about them in the present state of knowledge. They were competently executed derivatives of contemporary Roman coins, without the labor-saving shortcuts that were adopted in the sixth century. They do not seem to be particularly abundant. Unfortunately, this period provides little evidence regarding the organization of production.

³⁵ Marc Heijmans, *Arles durant l'Antiquité tardive* (Rome: École Française de Rome, 2004), 76.

³⁶ See the discussion of Roman fiscal institutions in Javier Arce, *Esperando a los árabes* (Madrid: Marcial Pons Historia, 2011), 94–95.

³⁷ For a maximalist view, see Kurt, *Minting, State, and Economy*, 179–86. For minimalist views, see Wickham, *Framing the Early Middle Ages*, 93–102; Felix Retamero, *La continua illusió del moviment perpetu* (Bellaterra: Universitat Autònoma de Barcelona, 2000), 169–74.

³⁸ Wilhelm Reinhart, “Die Münzen des tolosanischen Reiches der Westgoten,” *Deutsches Jahrbuch für Numismatik* 1 (1938): 107–35; Georges Depeyrot, “Les émissions wisigothiques de Toulouse (V.^e siècle),” *Acta Numismatica* 16 (1986): 79–104; Cathy E. King, “Roman, Local, and Barbarian Coinages in Fifth-Century Gaul,” in *Fifth-Century Gaul: A Crisis of Identity?*, ed. John Drinkwater and Hugh Elton (Cambridge: Cambridge University Press, 1992), 184–95.

The sixth-century types, first produced in the Visigothic kingdom in the name of the emperor Anastasius I (r. 491–518), offer more evidence for how minting worked. They have been the subject of a detailed stylistic analysis that provides a starting point, in the absence of mint marks or other overt administrative messages, for distinguishing the structure of production.³⁹ A uniform type was adopted throughout the regions under Visigothic control, together with an increase in standards of weight and fineness, most likely indicating a central dictate, as mentioned above. However, multiple stylistic traditions soon emerged, suggesting different workshops with little interaction.

From the 550s to the 570s, the amount of stylistic diversity increased considerably, and it was accompanied by increasing divergence of the standards of weight and fineness.⁴⁰ Many small issues of coins from this period appear to have been designed by inexperienced engravers, unassociated with any major mint – quite possibly, some goldsmiths with no previous minting experience were producing small batches of coins on their own initiative.⁴¹ Whatever the institutional arrangements had previously been for minting, it is clear that by this time minting was no longer effectively controlled by any central authority.

The quick and effective introduction of new types and standards in the early 580s is reasonably seen as a re-establishment of royal control over the monetary system. However, one must ask how royal control was exercised. The twenty-seven or twenty-eight minting places known to be paired with Liuvigild's name in coin legends do not make much sense if interpreted as Roman-style state facilities run by treasury officials.⁴² Instead, they suggest a system based on newly enhanced state regulation of private moneyers.

Mints run by government officials at state expense are more controlled and secure, and for this reason they are often favored by rich, centralized states. However, they are also very expensive to operate, which is why many governments historically have preferred to have minting done by private businesses that pay fees to the government and put their own capital at risk, in the hope of profiting from minting fees. In this case, minting was already being done privately, in practice, regardless of what the legal theory was, so

³⁹ Tomasini, *Barbaric Tremissis*.

⁴⁰ Bartlett et al., "Weight, Fineness, and Debasement," 178–82.

⁴¹ David Yoon and Peter Bartlett, "The Transitional Visigothic Coinage of Leovigild: A Die Study and Metrological Comparison of Tomasini's JII 5 Category," *Revue Numismatique* 178 (2021): 295–333.

⁴² The exact number of minting places is uncertain due to questions about authenticity: Pliego, *Moneda visigoda*, vol. 1, 151.

regularizing (and monetizing) this practice was the simple, sensible way to regain control of the monetary system.

As we have seen, the production of dies appears to have been a limiting point in the system. In a comparable situation of a state with centralizing ambitions but limited administrative capacity, the kings of late-Saxon England controlled minting and obtained revenue from it by requiring an annual fee from moneyers and by (partially) centralizing production of dies and selling them to moneyers for a fee.⁴³

A similar system, but with greater royal control, would explain why production of dies required increases of efficiency in the Visigothic kingdom—a relatively small number of die-sinkers would have been supplying the dies for many mints. Strong evidence for such a system of die control can be seen in Kurt's stylistic study of early seventh-century coins.⁴⁴ He has shown clearly how the work of individual die-sinkers can be seen at multiple mints. The relationship of individual workers to mints is partially regional but not entirely, suggesting that no administrative hierarchy such as provincial officials was involved. It seems that as long as dies were purchased from a royal workshop, only practical issues such as distance or convenience dictated which one.

Such a system of private but royally licensed moneyers would also explain the observed pattern of debasement. When minting is done at state expense, the mint workers do not have to worry about the difference in metal content between old, worn or clipped coins that the mint receives and new, full-standard coins that they produce. For private moneyers, however, the difference comes out of their profits, so they have an incentive to adjust their standards slightly downward to resemble worn coins in circulation.⁴⁵ If there were any moments of coordinated royal debasement, they are difficult to see against the background of uneven but widespread deterioration. The evidence that a higher legal standard remained the goal for Chindasuinth and Wittiza suggests that the decline was primarily done at local initiative, as does the divergence between mints in the degree of debasement.⁴⁶

⁴³ Martin Allen, *Mints and Money in Medieval England* (Cambridge: Cambridge University Press, 2012), 182–83.

⁴⁴ Kurt, *Minting, State and Economy*, 149–55, App. II. For balancing the demand for and supply of dies at mints – to say nothing of making the best use of the die-sinkers' valued time – it is most likely that dies were sent from the die-sinker's workshop to the mint, rather than the die-sinker traveling around to many mints as suggested by Kurt.

⁴⁵ Peter Spufford, *Money and Its Use in Medieval Europe* (Cambridge: Cambridge University Press, 1988), 243, 312.

⁴⁶ Spufford, *Money and Its Use*, 101.

Although in practice it did not suffice to maintain standards, the addition of the names of minting locations to the coins can be seen as a way of providing some ability to monitor the moneyers, theoretically enabling royal officials to identify the issuers of substandard coins. The significant reduction in the number of mints operating under Recceswinth may also have been intended as a more effective way to facilitate royal control of minting quality.⁴⁷

III. Conclusions

In summary, the absence of surviving Roman institutions for the production of money in the Visigothic kingdom forced its people and its rulers to create their own system. Although Roman models and assumptions were inevitably part of the intellectual environment within which Visigothic coinage developed, the lack of functioning precedents at hand also allowed the flexibility to improvise new solutions. Like most administrative solutions in states whose administrative capacities are limited, Visigothic coinage relied on a large measure of local or private initiative leavened with an admixture of central control and exploitation.⁴⁸

This is not to deny the fundamental importance of the state and its fiscal cycle in the monetary system. It does, however, open up additional possibilities for how coins entered that cycle. In addition to coins being produced for use in state expenditures, this model also allows coins to have been produced for taxpayers to use in payments to the state, or indeed for use in other monetized sectors of the economy, without which the fiscal circuit could not be completed. In an economy with weak monetization and little input of new precious metal, a dispersed, decentralized system of minting optimizes the ability of mints to attract bullion for striking into coins.

Another point that should be clear from this examination of the Visigothic gold coinage is the pivotal role of Liuvigild in re-structuring the monetary system. Faced with a system that had badly broken down – again, regardless of whether it was originally meant to be centrally controlled or not – he re-established order and consistent standards. This was not done by demanding

⁴⁷ Kurt, *Minting, State and Economy*, 240.

⁴⁸ Discussion of private and public power in the Visigothic kingdom is traditionally discussed in terms of “proto-feudalism,” but Damián Fernández, “Statehood, Taxation, and State Infrastructural Power in Visigothic Iberia,” in *Ancient States and Infrastructural Power*, ed. Clifford Ando and Seth Richardson (Philadelphia: University of Pennsylvania Press, 2017), 243–71, shows how private roles in administration can instead be seen in terms of creative solutions to administrative problems.

a return to an imperial ideal: Liuvigild's reforms accepted much of what had happened in the preceding decades, ratifying a decentralized system with metal standards significantly lower than the Roman ones.

The argument that this involved partial royal control over private moneyers would fit an overall picture of how the Visigothic state, with centralizing ambitions but limited administrative means, creatively adapted itself. The technical innovations in Visigothic coinage provide indirect evidence of how a state with economic and administrative resources that were very different from those of the Roman Empire managed to maintain the strongest monarchy and fiscal system of seventh-century Western Europe, through a readiness to find new solutions to new problems.

Postscript

This essay was written in 2020, based on a conference presentation in 2019. Since that time, a number of relevant publications have appeared, one of which is especially necessary to mention. In his *Making Money in the Early Middle Ages*, Rory Naismith presented a framework for describing relationships of minting to the state and the wider public. In terms of his discussion, the hypothesis presented here can be seen as having much in common with his second model: minting that is motivated to a substantial extent by state demands but actually taking place as mediated through demand from the tax-paying public rather than through state action.⁴⁹

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The participants in the Networks and Neighbours conference on Coinage and Money in 2019 discussed the presentation on which this is based very extensively, and their questions and comments were an important guide in writing this text, for which I owe them all my gratitude. In addition, I thank Peter Bartlett and Andrew Kurt for allowing me to include their unpublished specific-gravity measurements in Figure 1. Some of the ideas presented here were inspired by discussions with Peter Bartlett, Andrew Kurt, and Michael Bates. None of these individuals should be held responsible for the debating positions that I have chosen, but I thank them for provoking me to think.

⁴⁹ Rory Naismith, *Making Money in the Early Middle Ages* (Princeton: Princeton University Press, 2023), 54.

FIGURES

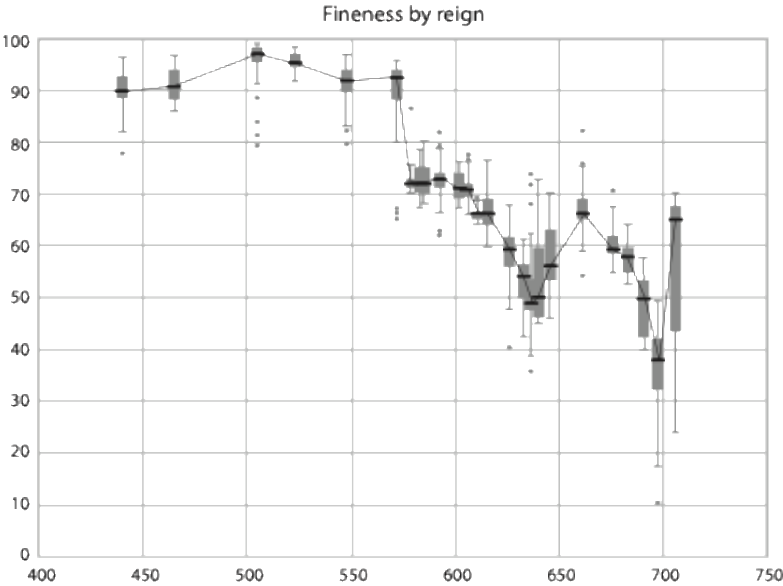


Fig. 1. Fineness in percent of Visigothic gold tremisses by median date of reign or issue period (box plots showing median, interquartile range, inner fences, and outliers; n = 596).

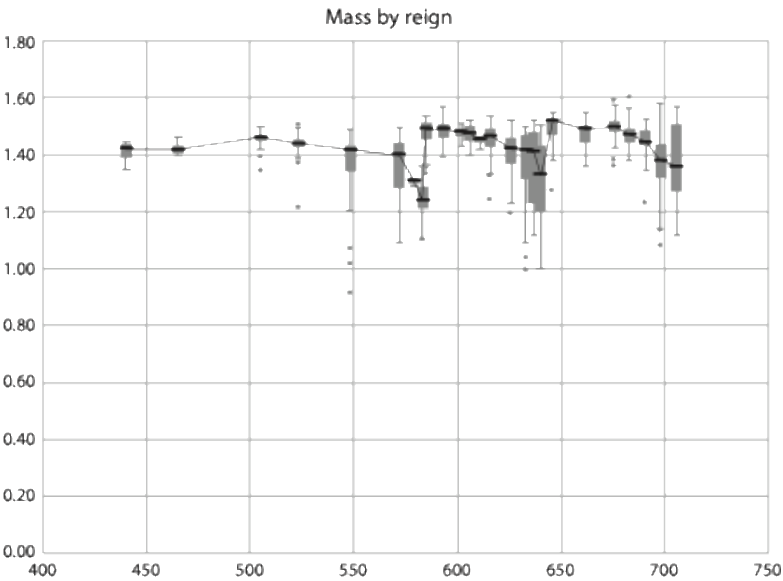


Fig. 2. Mass in grams of Visigothic gold tremisses by median date of reign or issue period (box plots showing median, interquartile range, inner fences, and outliers; n = 567).



Fig. 3. Gold tremissis of Recceswinth (653–672) from the mint of Cordoba. The die-sinker appears to have punched in the serifs of the letters first, then joined them up. In the second and third letters on the obverse, it can be seen that the middle arm of the letter “E” has been mistakenly connected to the “C” rather than to the stem of “E.” ANS 2015.48.379, American Numismatic Society.



Fig. 4. Gold tremissis from the Visigothic kingdom in the name of Anastasius I (491–518). The figures and lettering were made by engraving the face of the die with burin and drill. ANS 2014.44.32, American Numismatic Society.



Fig. 5. Gold tremissis of Liuvigild from the mint of Toledo. Note how the designs are mostly made with a variety of triangular, crescent-shaped, and ring-shaped punches; some engraving is still evident in the neck and chin on the obverse and in straight lines. ANS 2015.48.7, American Numismatic Society.

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