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I, David Schwei, hereby submit this original work as part of the requirements for the
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Student's name: David Schwei

This work and its defense approved by:

Committee chair: Barbara Burrell, Ph.D.

Committee chair: Peter Van Minnen, Ph.D.

Committee member: Duncan MacRae, Ph.D.
The Empire Strikes:  
The Growth of Roman Infrastructural Minting Power, 60 B.C. – A.D. 68

A dissertation submitted to the  
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by David Schwei  

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B.A., Emory University, May 2009  

Committee Chairs:  
Peter van Minnen, Ph.D  
Barbara Burrell, Ph.D.
Coins permeated the Roman Empire, and they offer a unique perspective into the ability of the Roman state to implement its decisions in Italy and the provinces. This dissertation examines how this ability changed and grew over time, between 60 B.C. and A.D. 68, as seen through coin production. Earlier scholars assumed that the mint at Rome always produced coinage for the entire empire, or they have focused on a sudden change under Augustus. Recent advances in catalogs, documentation of coin hoards, and metallurgical analyses allow a fuller picture to be painted. This dissertation integrates the previously overlooked coinages of Asia Minor, Syria, and Egypt with the denarius of the Latin West. In order to measure the development of the Roman state’s infrastructural power, this dissertation combines the anthropological ideal types of hegemonic and territorial empires with the numismatic method of detecting coordinated activity at multiple mints. The Roman state exercised its power over various regions to different extents, and it used its power differently over time. During the Republic, the Roman state had low infrastructural minting capacity. The Roman state’s infrastructural power over the European and African provinces grew as more regions began using the denarius and its bronze coin fractions. The Roman state’s minting infrastructural reach suddenly extended into Asia Minor, Syria, and Egypt during the reign of Nero and continued to increase thereafter. In the Imperial Period, the state’s infrastructural power was modest and limited to some extent, as it managed an empire-wide system of coordinated mints in which the mints also retained some autonomy. This diachronic sketch suggests that the state’s infrastructural minting capacity grew significantly about one hundred years into the Imperial Period, in part due to the development of an imperial ideology.
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# Table of Contents

Abstract ........................................................................................................................................... ii
Acknowledgements ......................................................................................................................... iv
Table of Contents ............................................................................................................................ vii
List of Tables .................................................................................................................................. xiv
List of Charts ................................................................................................................................. xvii
List of Figures ............................................................................................................................... xviii

Chapter One: Introduction

1.1. The Problem .......................................................................................................................... 1
1.2. Theoretical Framework ......................................................................................................... 2
1.3. Previous Scholarship ............................................................................................................. 12
1.4. Coordinated Decisions at Multiple Mints ......................................................................... 16
1.5. Unknown Decision-Makers ................................................................................................. 19
1.5.1. The Mint at Rome ............................................................................................................. 20
1.5.2. Coin Legends .................................................................................................................... 21
1.5.3. Summary .......................................................................................................................... 23
1.6. Decisions About Coin Production and How to Detect Them ............................................. 24
1.6.1. Opening and Closing Mints .......................................................................................... 26
1.6.2. Denominations, Weight Standards, and Metal Standards ............................................. 29
1.6.2.1. Weight Standards ....................................................................................................... 29
1.6.2.2. Denominations of Bronze Coins ............................................................................... 31
1.6.2.3. Metal Standards .......................................................................................... 32
1.6.3. Coin Types .................................................................................................. 33
1.6.4. The Quantity of Coins Produced ................................................................. 35
1.6.5. Recoinages .................................................................................................. 38
1.6.6. Data Management ...................................................................................... 40
1.7. Outline of the Dissertation ............................................................................. 42

Chapter 2: The Late Republic (60 – c. 55 B.C.)

2.1. Introduction .................................................................................................... 47
2.2. The Denarius in Italy, Sicily, Spain, and Africa ............................................. 48
2.2.1. The Origin of the Denarius ......................................................................... 48
2.2.2. The End of Silver Coin Production on the Iberian Peninsula .................... 49
2.3. Greece and Macedonia .................................................................................. 53
2.3.1. The Annexation of Greece .......................................................................... 53
2.3.2. Greece ......................................................................................................... 57
2.3.3. Macedonia .................................................................................................. 62
2.4. The Province of Asia ..................................................................................... 64
2.5. Syria ............................................................................................................... 67
2.6. Roman Infrastructural Minting Power in the Late Republic (60 – c. 55 B.C.) .... 69

Chapter 3: The Civil Wars (49 – 27 B.C.)

3.1. Introduction .................................................................................................... 73
3.2. Imperatorial Mints During the Civil Wars ..................................................... 74
3.2.1. Caesar ................................................................. 75
3.2.2. Pompey and the Pompeians ........................................ 77
3.2.3. Brutus, Cassius, and the Liberators ................................. 78
3.2.4. Sextus Pompeius .................................................. 79
3.2.5. Antony ............................................................... 81
3.2.6. Octavian ............................................................. 87
3.2.7. After Actium .......................................................... 90
3.2.8. The Displacement of Denarius Production ...................... 92
3.3. Introduction of the Aureus ............................................. 94
3.3.1. The First Aurei ..................................................... 94
3.3.2. The Value of the Aureus ........................................... 96
3.3.3. Why was the Aureus Introduced? ................................. 97
3.3.4. Why did the Aureus Catch on in the 40s B.C.? .................. 98
3.4. Antonian Recoinage of Cistophori ................................. 104
3.4.1. The Antonian Cistophori ......................................... 104
3.4.2. The Circulating Medium in the Province of Asia .............. 105
3.4.3. The Noticeable Change in Coin Types in 39 B.C. ............... 109
3.4.4. The Debasement and a Low-Medium Infrastructural Capacity ..... 110
3.5. The so-called “Fleet Coinage” of Mark Antony .................... 111
3.6. End of Silver Coin Production in Achaea ........................... 121
3.7. Continuity at Syrian Mints .......................................... 126
3.8. Roman Infrastructural Minting Power during the Civil Wars (49 – 27 B.C.) ................................. 128
Chapter 4: The Augustan Period (27 B.C. – A.D. 14)

4.1. Introduction ........................................................................................................ 132
4.2. Imperatorial Mints in Early Augustan Period (27 – c. 10 B.C.) .......................... 133
  4.2.1. Mints in the East until c. 15 B.C. ................................................................. 133
  4.2.2. Mints in the West until c. 15 B.C. ................................................................. 135
  4.2.3. The Mints at Lugdunum and Nemausus ....................................................... 138
  4.2.4. A Mint with an Uncertain Location ........................................................... 140
  4.2.5. Coordination among Imperatorial Mints .................................................... 140
    4.2.5.1. CA Coinage .......................................................................................... 141
    4.2.5.2. Uncertain Gallic Mints ........................................................................ 144
    4.2.5.3. Summary ............................................................................................... 155
4.3. The Augustan Cistophori (27 – 20 B.C.) ........................................................... 156
4.4. The Augustan Tresviri Monetales at Rome (c. 23 – c. 10 B.C.) ......................... 158
4.5. The Augustan Reintroduction of Bronze Coinage ............................................ 166
  4.5.1. The New System at Rome .......................................................................... 166
  4.5.2. A New System outside of Rome? .............................................................. 168
    4.5.3. Methodology ............................................................................................ 169
    4.5.4. Italy .......................................................................................................... 172
    4.5.5. Gaul .......................................................................................................... 173
    4.5.6. Hispania Citerior/Hispania Tarraconensis ............................................... 176
    4.5.7. Baetica ..................................................................................................... 177
    4.5.8. Lusitania ................................................................................................. 179
    4.5.9. Sicily ........................................................................................................ 180
4.5.10. Africa Proconsularis ................................................................. 181
4.5.11. Achaea ................................................................. 183
4.5.12. Macedonia ................................................................. 183
4.5.13. The Effects of the Reform Outside of Rome .............................. 184
4.6. End of Iron Age Coinages in Gaul ............................................. 187
4.7. The Continuation of Coin Production in Alexandria .................... 192
  4.7.1. The Silver Coins ......................................................... 192
  4.7.2. The Bronze Coins ....................................................... 195
4.8. Syrian Coinages ................................................................. 196
4.9. Roman Infrastructural Minting Power in the Augustan Period (27 B.C. – A.D. 14)

Chapter 5: The Later Julio-Claudian Period (A.D. 14 – 68)

  5.1. Introduction ................................................................. 205
  5.2. The Continuation of Silver Production in Cappadocia ................. 205
  5.3. The Resumed Production of Alexandrian Tetradrachms .............. 209
  5.4. Continued Production at the Empire’s Major Mints ..................... 213
    5.4.1. Tiberius (A.D. 14 – 37) ............................................ 213
    5.4.2. Caligula (A.D. 37 – 41) ............................................ 216
    5.4.3. Claudius (A.D. 41 – 54) ............................................ 217
    5.5. Creation of New Silver Denominations ................................ 221
    5.5.1. Alexandria ............................................................. 222
    5.5.2. Caesarea in Cappadocia ............................................ 224
    5.5.3. Antioch ................................................................. 226
5.6. End of Civic Bronze Coinages in the West ................................................. 228
5.7. End of the Production of Silver Coinage in Numidia and Mauretania ............ 231
5.8. End of Iron Age Coinage in Britain ............................................................. 234
5.9. New Weight and Silver Standards under Nero .............................................. 235
5.9.1. The Changes ............................................................................................ 236
5.9.2. The Reason for the Changes ................................................................. 239
5.9.3. The Significance of the Neronian Coordination ...................................... 263
5.10. Roman Infrastructural Minting Power in the Later Julio-Claudian Period (A.D. 14 – 68) ............................................................ 268

Chapter 6: Conclusion ...................................................................................... 270

Glossary ............................................................................................................. 281
Bibliography ..................................................................................................... 287
Appendix 1: Gresham’s Law, Legal Tender Laws, and Other Scenarios ............... 339
App. 1.1. Scenarios Following a New Metal Standard ....................................... 339
App. 1.2. Legal Tender Laws in the Greco-Roman World ................................ 342
App. 1.3. Free Minting in the Greco-Roman World? ........................................ 344
Appendix 2: The Tresviri Monetales of the 50s B.C. ......................................... 346
Appendix 3: Silver Coin Hoards from Asia (c. 125 B.C. – A.D. 117) .................... 349
Appendix 4: Tables for the Effects of the Antonian Fleet Coinage ..................... 353
Appendix 5: Silver Coin Hoards from Achaea (146 B.C. – A.D. 300) .................... 359
Appendix 6: The Augustan Tresviri Monetales ............................................... 365
# List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2.1.</td>
<td>Contents of Iberian Coin Hoards (125 – 1 B.C.)</td>
<td>51</td>
</tr>
<tr>
<td>Table 3.1.</td>
<td>Fleet Coinage Types</td>
<td>112</td>
</tr>
<tr>
<td>Table 3.2.</td>
<td>Denominations of As-based Bronze Coins</td>
<td>114</td>
</tr>
<tr>
<td>Table 4.1.</td>
<td>Diameter and Average Weights of the CA Coinage and the New Roman Base</td>
<td>143</td>
</tr>
<tr>
<td>Table 4.2.</td>
<td>Nemausus Bronze Coins Compared with Known Semuncial and Uncial Asses</td>
<td>174</td>
</tr>
<tr>
<td>Table 4.3.</td>
<td>Hoards of Silver Coins from Gaul (100 – 2 B.C.)</td>
<td>189</td>
</tr>
<tr>
<td>Table 5.1.</td>
<td>Silver Bullion Content in Cappadocian Drachms (42 B.C. – A.D. 65)</td>
<td>206</td>
</tr>
<tr>
<td>Table 5.2.</td>
<td>Comparison of Elemental Silver Content in Alexandrian Tetradrachms and</td>
<td>211</td>
</tr>
<tr>
<td></td>
<td>Con temporaneous Denarii in the Julio-Claudian Period</td>
<td></td>
</tr>
<tr>
<td>Table 5.3.</td>
<td>Number of Civic Mints Striking per Reign</td>
<td>229</td>
</tr>
<tr>
<td>Table 5.4.</td>
<td>Hoards from Numidia and Mauretania, 50 B.C. – A.D. 300</td>
<td>232</td>
</tr>
<tr>
<td>Table 5.5.</td>
<td>Percent of Silver Bullion in Coins of Major Neronian Mints</td>
<td>237</td>
</tr>
<tr>
<td>Table 5.6.</td>
<td>Ratio of Silver to Gold in Denarii and Aurei</td>
<td>242</td>
</tr>
<tr>
<td>Table 5.7.</td>
<td>Summary of Ancient Exchange Rates</td>
<td>254</td>
</tr>
<tr>
<td>Table 5.8.</td>
<td>Ratios of the Weight of Silver Bullion in Eastern Coinages to the Weight of</td>
<td>254</td>
</tr>
<tr>
<td></td>
<td>Silver Bullion in the Denarius During the First Century A.D.</td>
<td></td>
</tr>
<tr>
<td>Table 5.9.</td>
<td>Ratios of the Weight of Silver Bullion in Eastern Coinages to the Weight of</td>
<td>256</td>
</tr>
<tr>
<td></td>
<td>Silver Bullion in the Denarius During Nero’s Reign</td>
<td></td>
</tr>
<tr>
<td>Table 5.10.</td>
<td>Summary of Ancient Exchange Rates and Ratios in A.D. 64, 68, and 85</td>
<td>258</td>
</tr>
<tr>
<td>Table App2.1.</td>
<td>Various Proposed Chronologies of the Tresviri Monetales of the 50s B.C.</td>
<td>347</td>
</tr>
</tbody>
</table>
Table App3.1. Hoards of Cistophori from Asia (c. 125 B.C. – A.D. 117) .......................... 350
Table App4.1. Diameter and Average Weights of Copper Alloy Coinage Struck by Civil War Legates in Achaea .................................................. 354
Table App4.2. Diameter and Average Weights of Copper Alloy Coinage Struck in Achaea, After 50 B.C. ................................................................. 354
Table App5.1. Silver Coins Hoards from Achaea, 146 B.C. – A.D. 300 ......................... 360
Table App6.1. Comparison of Chronologies of Augustan Tresviri Monetales .......... 365
Table App7.1. Diameter and Average Weights of Copper Alloy Coinage Struck in Italy, After 23 – 19 B.C. ................................................................. 373
Table App7.2. Diameter and Average Weights of Copper Alloy Coinage Struck in Gaul, After 23 – 19 B.C. ................................................................. 373
Table App7.3. Diameter and Average Weights of Copper Alloy Coinage Struck in Hispania Tarraconensis, After 23 – 19 B.C. ................................. 375
Table App7.4. Diameter and Average Weights of Copper Alloy Coinage Struck in Baetica, After 23 – 19 B.C. ................................................................. 386
Table App7.5. Diameter and Average Weights of Copper Alloy Coinage Struck in Lusitania, After 23 – 19 B.C. ...................................................... 387
Table App7.6. Diameter and Average Weights of Copper Alloy Coinage Struck in Sicily, After 23 – 19 B.C. ................................................................. 387
Table App7.7. Diameter and Average Weights of Copper Alloy Coinage Struck in Africa Proconsularis, After 23 – 19 B.C. ................................. 388
Table App7.8. Diameter and Average Weights of Copper Alloy Coinage Struck in Macedonia After 23 – 19 B.C. ................................................................. 395
Table App8.1. Hoards from Egypt (c. 60 B.C. – A.D. 64) ................................. 398
Table App9.1. Hoards from Cappadocia in Anatolia (c. 100 B.C. – A.D. 300) .......... 400
### List of Charts

<table>
<thead>
<tr>
<th>Chart</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>The Roman State’s Infrastructural Minting Capacity regarding Bronze Coin Production for Italy, Sicily, Gaul, Iberia, and Africa Proconsularis</td>
<td>231</td>
</tr>
<tr>
<td>5.2</td>
<td>Price of Gold, in Terms of Silver</td>
<td>244</td>
</tr>
<tr>
<td>5.3</td>
<td>Price of Silver, in Terms of Gold</td>
<td>244</td>
</tr>
<tr>
<td>6.1</td>
<td>The Roman State’s Infrastructural Minting Power Regarding Silver Coin Production for the West</td>
<td>277</td>
</tr>
<tr>
<td>6.2</td>
<td>The Roman State’s Infrastructural Minting Power Regarding Silver Coin Production for the East</td>
<td>278</td>
</tr>
</tbody>
</table>
## List of Figures

| Fig. 1. 1 | A Conceptual Drawing of a Hegemonic Empire | 10 |
| Fig. 1. 2 | A Conceptual Drawing of a Territorial Empire | 10 |
| Fig. 1. 3 | Aureus quinarius featuring the portrait of Tiberius and an image of Victory sitting on a globe, from Lugdunum, A.D. 30, *RIC* I² 16 | 19 |
| Fig. 1. 4 | Screenshot of the Entire Prezi Canvas | 41 |
| Fig. 1. 5 | Screenshot of the Prezi Zoomed in on the Coins Produced by the *Tresviri Monetales* at Rome between 19 and 3 B.C. | 41 |
| Fig. 1. 6 | Screenshot of the Prezi Zoomed in on the Coins Produced by M. Durmius at Rome, in 19 or 18 B.C. | 42 |
| Fig. 2. 1 | Iberian Denarius, from Bolskan, mid-2nd Century B.C. | 50 |
| Fig. 2. 2 | Athenian New Style Tetradrachm, from Athens, c. 54/3 B.C. | 59 |
| Fig. 2. 3 | Achaean League Hemidrachm, from Dyme, 88 - 30 B.C. | 59 |
| Fig. 2. 4 | AESILLAS Tetradrachm, from Uncertain Macedonian Mint | 63 |
| Fig. 2. 5 | Attalid Cistophorus, from Ephesus, BM Ionia 152 | 65 |
| Fig. 2. 6 | Proconsular Cistophorus of T. Ampius Balbus, from Ephesus, 58 - 57 B.C., BM Ionia 173 | 66 |
| Fig. 2. 7 | Proconsular Cistophorus of C. Fannius from, Ephesus, 48 B.C., BM Ionia 177. | 66 |
| Fig. 2. 8 | Map showing Circulating Areas and Coordination c. 55 B.C. | 69 |
Fig. 3. 1. Antonian Cistophorus, Possibly from Ephesus, *RPC* I 2201 .......................... 110

Fig. 3. 2. Antonian Cistophorus, Possibly from Pergamum, *RPC* I 2202 .......................... 110

Fig. 3. 3. Map showing Circulating Areas and Coordination c. 27 B.C. ......................... 128

Fig. 4. 1. 22-24mm/10.13g Coin from the CA Coinage, Howgego Class 4, from an Uncertain Mint in Syria, 23 B.C. - A.D. 14, *RIC* I² 495 or 500 = *RPC* I 4103 ..... 142

Fig. 4. 2. Denarius Featuring the *Sidus Iulium*, from Uncertain Gallic Mint 1, 19 - 18 B.C., *RIC* I² 37b ................................................................. 144

Fig. 4. 3. Denarius featuring the *Sidus Iulium*, from Uncertain Gallic Mint 2, 19 - 16 B.C., *RIC* I² 102 ................................................................. 144

Fig. 4. 4. Aureus Featuring Mars Holding a Legionary Eagle inside a Round Temple of Mars Ultor, from Uncertain Gallic Mint 1, 19 - 18 B.C., *RIC* I² 28 ...................... 146

Fig. 4. 5. Aureus Featuring Mars Holding a Legionary Eagle inside a Round Temple of Mars Ultor, from Uncertain Gallic Mint 2, 19 - 16 B.C., *RIC* I² 68 ...................... 146

Fig. 4. 6. Denarius Featuring Mars Holding a Legionary Standard, from Uncertain Gallic Mint 1, 19 - 18 B.C., *RIC* I² 41 ................................................................. 146

Fig. 4. 7. Denarius Featuring Mars Holding a Legionary Standard, from Uncertain Gallic Mint 2, 19 - 16 B.C., *RIC* I² 58 ................................................................. 146

Fig. 4. 8. Denarius Featuring a Legionary Eagle Standing in Chariot inside a Round Temple of Mars Ultor, from Uncertain Gallic Mint 2, 19 - 16 B.C., *RIC* I² 115 ..... 146

Fig. 4. 9. Denarius Featuring two Military Standards and a Legionary Eagle inside a Round Temple of Mars Ultor, from Uncertain Gallic Mint 2, 19 - 16 B.C., *RIC* I² 103 ................................................................. 146
Fig. 4. 10. Denarius Featuring two Laurel Branches with CAESAR above and
AVGVSTVS below, from Uncertain Gallic Mint 1, 19 – 18 B.C., RIC I² 33b ….. 147

Fig. 4. 11. Aureus Featuring two Laurel Branches with CAESAR above and
AVGVSTVS below, from Uncertain Gallic Mint 2, 19 – 16 B.C., RIC I² 50a ….. 147

Fig. 4. 12. Denarius Featuring two Laurel Branches Flanking the Clupeus Virtutis with
CAESAR above and AVGVSTVS below, from Uncertain Gallic Mint 1, 19 – 18
B.C., RIC I² 36b ……………………………………………………………………………………. 148

Fig. 4. 13. Aureus Featuring two Laurel Branches Flanking the Clupeus Virtutis with
CAESAR above and AVGVSTVS below, from Uncertain Gallic Mint 2, 19 – 16
B.C., RIC I² 52a ……………………………………………………………………………………. 148

Fig. 4. 14. Denarius with the Legend CAESAR AVGVSTVS between two Laurel
Branches, from Uncertain Gallic Mint 1, 19 - 18 B.C., RIC I² 26a ………………… 148

Fig. 4. 15. Denarius Featuring the Corona Civica with OB CIVIS above and
SERVATOS below, from Uncertain Gallic Mint 1, 19 - 18 B.C., RIC I² 40a ….. 151

Fig. 4. 16. Denarius Featuring the corona civica with OB CIVIS above and SERVATOS
below, from Uncertain Gallic Mint 2, 19 - 16 B.C., RIC I² 75a ………………… 151

Fig. 4. 17. Aureus Featuring the Clupeus Virtutis within the Corona Civica with
OB CIVIS above and SERVATOS below, from Uncertain Gallic Mint 1, 19 - 18
B.C., RIC I² 30a ……………………………………………………………………………………. 151

Fig. 4. 18. Denarius Featuring the Clupeus Virtutis within the Corona Civica with OB
CIVIS above and SERVATOS below, from Uncertain Gallic Mint 1, 19 - 18
B.C., RIC I² 79a ……………………………………………………………………………………. 151
Fig. 4. 19. Denarius Featuring the Legend OB CIVIS SERVATOS within the *Corona Civica*, the Ties of which are Rising into the Wreath, from Uncertain Gallic Mint 2, 19 - 16 B.C., *RIC* I² 77 .............................. 151

Fig. 4. 20. Aureus Featuring the Legend OB CIVIS SERVATOS within the *Corona Civica*, from Uncertain Gallic Mint 1, 19 - 18 B.C., *RIC* I² 29a ......................... 151

Fig. 4. 21. Denarius Featuring the *Clupeus Virtutis* with CAESAR above and AVGVSTVS below, from Uncertain Gallic Mint 1, 19 - 18 B.C., *RIC* I² 35 ...... 152

Fig. 4. 22. Denarius Featuring the *Clupeus Virtutis* with the Letters SPQR around it, from Uncertain Gallic Mint 1, 19 - 18 B.C., *RIC* I² 43a ......................... 152

Fig. 4. 23. Denarius Featuring the *Clupeus Virtutis* with the Letters SPQR CL V on it, from Uncertain Gallic Mint 1, 19 - 18 B.C., *RIC* I² 42a ......................... 152

Fig. 4. 24. Aureus Featuring the *Clupeus Virtutis* with a Legionary Eagle to the left and a Military Standard to the right, with SIGNIS above and RECEPTIS below, from Uncertain Gallic Mint 2, 19 – 16 B.C., *RIC* I² 85 ................................. 152

Fig. 4. 25. Aureus Featuring Victory Flying and Carrying the *Clupeus Virtutis*, with the legend SPQR, from Uncertain Gallic Mint 1, 19 – 18 B.C., *RIC* I² 31 .............. 152

Fig. 4. 26. Denarius Featuring Victory Facing and Carrying the *Clupeus Virtutis*, from Uncertain Gallic Mint 2, 19 – 16 B.C., *RIC* I² 93 ................................. 152

Fig. 4. 27. Augustan Cistophorus Featuring a Sphinx, from Pergamum, 27 – 20 B.C.,

*RIC* I² 487 = *RPC* I 2207 ....................................................... 157

Fig. 4. 28. Augustan Cistophorus Featuring a Sphinx, from Uncertain Asian Mint,

27 – 20 B.C., *RIC* I² 527 = *RPC* I 2204 ....................................................... 157
Fig. 4. 29. Augustan Cistophorus Featuring a Bundle of Grain, from Pergamum,

27 - 20 B.C., RIC I² 490 and 494 = RPC I 2209 ........................................ 157

Fig. 4. 30. Augustan Cistophorus Featuring a Bundle of Grain, from Ephesus,

27 - 20 B.C., RIC I² 478 and 481 = RPC I 2214 ........................................ 158

Fig. 4. 31. Augustan Cistophorus Featuring a Capricorn and Cornucopia Surrounded by a Wreath, from Pergamum, 27 - 20 B.C., RIC I² 488 = RPC I 2208 ............... 158

Fig. 4. 32. Augustan Cistophorus Featuring a Capricorn and Cornucopia Surrounded by a Wreath, from Ephesus, 27 - 20 B.C., RIC I² 477 and 480 = RPC I 2213 ........ 158

Fig. 4. 33. Augustan Cistophorus Featuring an Altar decorated with Deer and with AVGVSTVS above, from Ephesus, 27 – 20 B.C., RIC I² 479 and 482 = RPC I 2215 ........................................ 158

Fig. 4. 34. Denarius of P. Petronius Turpilianus, Featuring a Kneeling Parthian, from Rome, 19 or 18 B.C., RIC I² 287 ................................................................. 163

Fig. 4. 35. Denarius of L. Aquillius Florus, Featuring a Kneeling Parthian, from Rome, 19 or 18 B.C., RIC I² 304 ................................................................. 163

Fig. 4. 36. Denarius of M. Durmius, Featuring a Kneeling Parthian, from Rome, 19 or 18 B.C., RIC I² 315 ................................................................. 163

Fig. 4. 37. Denarius of L. Vinicius, Featuring the Parthian Arch, from Rome, 16 B.C., RIC I² 359 ................................................................. 164

Fig. 4. 38. Denarius Featuring the Parthian Arch, from Uncertain Gallic Mint 2, 19 – 16 B.C., RIC I² 132 ................................................................. 164

Fig. 4. 39. Cistophorus Featuring the Parthian Arch, from Ephesus, 19 – 18 B.C., RIC I² 510 = RPC I 2216, 2218 ........................................ 164
Fig. 4. 40. Egyptian Bronze Coin Featuring the Parthian Arch, from Alexandria,
8 – 3 B.C., *RPC* I 5004 .......................................................... 164

Fig. 4. 41. Denarius of L. Vinicius, Featuring a *Cippus* Recording Road Repairs, from
Rome, 16 B.C., *RIC* I² 360 .......................................................... 166

Fig. 4. 42. Aureus Featuring Augustus driving an Elephant-Biga on top of two Arches
on top of a Viaduct, from Uncertain Gallic Mint 2, 19 – 16 B.C., *RIC* I² 140 ..... 166

Fig. 4. 43. Map of Iberian Civic Mints from Julio-Claudian Period ...................... 181

Fig. 4. 44. Map showing the Weight Standards for Copper Alloy Coins struck
throughout the Empire during the Reign of Augustus ............................. 185

Fig. 4. 45. Map showing Circulating Areas and Coordination in A.D. 14 ............... 202

Fig. 5. 1. Drachm Featuring Ariarathes X and Athena Standing and Holding a Spear,
Shield, and Nike, from Caesarea of Cappadocia, (39/8 or 38/7 B.C.), BM
Cappadocia Ariarathes X 1 ................................................................. 209

Fig. 5. 2. Drachm Featuring Archelaus I and a Club from Caesarea of Cappadocia, 15/14
B.C., BM Cappadocia Archelaus I 2 = *RPC* I 3602 ............................... 209

Fig. 5. 3. Drachm Featuring Tiberius and Mt. Argaeus, from Caesarea of Cappadocia,
A.D. 17 -32, *RPC* I 3620 ................................................................. 209

Fig. 5. 4. Tetradrachm Featuring Nero and an Eagle, from Antioch, A.D. 59/60, *RPC* I
4180 .................................................................................................. 260

Fig. 5. 5. Shekel Featuring Bust of Hercules/Melqart and an Eagle, from Tyre, A.D.
50/1, *RPC* I 4675 ............................................................................ 260

Fig. 5. 6. Map showing Circulating Areas and Coordination c. A.D. 54 .............. 266
Fig. 5. 7. Map showing Circulating Areas and Coordination c. A.D. 60 – 68 ............... 268
CHAPTER 1: INTRODUCTION

1.1. The Problem

Did the infrastructural reach of the Roman state change between the late Republic and the end of the Julio-Claudian period? To answer this question, this dissertation examines the production of coins in Italy and the provinces. While this question can be examined from many perspectives, such as jurisprudence, legislation, military operations, taxation, and coin production, the last of these has been chosen for this dissertation for several reasons. Coins were frequently used and seen by the people living throughout the Roman Empire, from Hispania Ulterior to the Syrian frontier. Coins were also struck in nearly every province at some point during the transition from Republic to Empire. Many of these coins survive—albeit in varying amounts, with varying degrees of documentation—from each province. Therefore, this dissertation’s scope provides an empire-wide perspective on the state’s infrastructural capacity throughout its realm.

The results of this study contribute to a larger historical discussion about the Roman state and to discussions about states, in general. Rome has often been a classic example for scholars studying states. Early Rome provides a case study for the emergence of a state, and the Roman Empire is the classic example for the decline and collapse of a state. The transition from the Republican constitution, which mixed oligarchic and democratic elements, to the monarchy of the Empire also represents a classic example of state transformation. This change and some of its implications will be examined in this study.

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1 Howgego 1992.
1.2. Theoretical Framework

Coins, the state, power, and empire are central concepts to this dissertation, and a deeper understanding of each of them will clarify how this dissertation seeks to measure the Roman state’s infrastructural minting power in Italy and the provinces during the transition from Republic to Empire. A **coin** is an object, often of metal, carrying a commonly accepted value within an area whose ruler or state is responsible for the coin’s production.\(^3\) Individual coins are struck at state-operated mints as part of larger issues of coins, and for each emission six decisions must be made: (1) whether to open or close a mint, (2) the coin’s denomination, (3) the coin’s metal standards (i.e. how much of each metal is included in the coin), (4) the coin’s weight standard (i.e. how heavy the coin is), (5) the coin’s type (i.e. the legend/inscription and the image on the coin’s face), and (6) the quantity of coins to be produced. Some issues of coins, for which all six decisions are also made, are the results of a less common seventh decision: to recoin the coins within the area where a mint’s coins circulate.

In the tradition of Max Weber and other sociologists, Michael Mann has defined a **state** as:

1. “a *differentiated* set of institutions and personnel, embodying
2. “*centrality*, in the sense that political relations radiate outwards from a centre to cover a
3. “*territorially demarcated area*, over which it exercises
4. “a monopoly of *authoritative binding rule-making*, backed up by a monopoly of the
   means of physical violence.”\(^4\)

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\(^3\) studies of this transformation that focus on the reign of Augustus, see, most famously Syme 1939 and more recently Eck 2007, 2009 and Galinsky 2012.

\(^4\) This definition is adapted from Christiansen 2004, p. 14 and Verboven 2007, pp. 245-246.

\(^4\) Mann 1984, p. 112, italics in the original.
The state is represented by institutions and officials who have the ability to make rules for a given territory and the people in that territory. Thus, to properly consider the state’s exercise of power, it is necessary to examine how much power the Roman magistrates had over the inhabitants of the empire.

In general, **power** is “the ability to pursue and attain goals through mastery of one's environment.”\(^5\) Power is best viewed as a relationship—someone has power over someone else. Secondly, power can be actively exercised or latent. Historical studies are often limited because they examine the exercise of power. The effects of using power—not the potential uses of power—are preserved in the historical record and artifacts. Nevertheless, a study of the exercise of power offers an approximation of how powerful an individual or group is. For example, certain conservative groups believed the American Communist Party had power over the people of the United States of America. Even though the Communist Party had a reputation for being powerful, it could not realize its agenda or make people comply with its wishes. These observations about the exercise of power suggest that the Communist Party was weak, contrary to some perceptions of its power.\(^6\) Therefore, since this dissertation focuses on the Roman state’s exercise of power over mints throughout the empire, it offers an approximation of the Roman state’s minting power.

Mann also defines two types of state power: despotic power and infrastructural power. **Despotic power** is “the range of actions which the elite is empowered to undertake without routine, institutionalized negotiation with civil society groups.” This range could be quite large. Mann clarifies this idea by stating that the Chinese Emperor “could do as he wished with any

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\(^5\) Mann 1986, p. 6.
\(^6\) Wrong 1995, pp. 6-10.
individual or group within his domain.” Mann goes on to vividly illustrate the idea with the Red Queen from Lewis Carroll’s *The Adventures of Alice in Wonderland*. The despotic power of the Red Queen would be demonstrated well if her shouting “Off with his head!” did actually result in people’s heads being chopped off. This is not the type of power investigated by this study.

Instead this dissertation will examine one aspect of the state’s **infrastructural power**: “the capacity of the state actually to penetrate civil society, and to implement logistically political decisions throughout the realm.” States can have low infrastructural power or high infrastructural power. In states with low infrastructural power, the state elites have a limited capacity to bring about their will throughout their territory. To continue the illustration of the Red Queen, she may shout that a man in another, subject town should lose his head, but there is no guarantee that he would be decapitated. But in states with high infrastructural power, the states’ elites are able to easily carry out their will throughout the territory. The Red Queen’s command to execute the distant subject would kill him. Mann noted several infrastructures for which the state could be responsible: roads, rivers, message systems, weights and measures, the arrangements for markets, and coinage.

Numismatic, epigraphic, and literary evidence confirm that the Roman state did actually produce denarii and their fractions throughout this time period. The legend on the earliest denarii was ROMA, and this legend continued to appear consistently on coins for the next eighty years. Eight issues of coins from the first century B.C. used the legend EX A(rgento) P(ublico)

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7 Mann 1984, p. 113.
8 Mann 1984, p. 113.
9 Mann 1984, pp. 120-121.
10 *RRC* 44-245. *RRC* 246/4a-b and 246/5 were the first coins to omit the legend ROMA, most likely because these quadrantes and semisses were small in size and the monyer’s name replaced the legend ROMA.
to suggest that these coins were made from silver owned by the state.\textsuperscript{11} These legends connect Rome and public funds to the denarii and their fractions coming from the mint in Rome.

The connection between the Roman state and the production of denarii is made clearer by a survey of the evidence for the mintmasters at the mint in Rome: the \textit{tresviri aere argento auro feriundo flando}, “the Board of Three for Casting and Striking Bronze, Silver, and Gold.”\textsuperscript{12} These officials are first attested c. 207 B.C. when their names appear on denarii.\textsuperscript{13} The denarius was introduced a little earlier to replace Rome’s didrachms, and it is likely that the office of the \textit{tresviri monetales} was established at the same time as the denarius.\textsuperscript{14} The \textit{tresviri} served one-year terms, but no evidence sufficiently proves whether they were elected or appointed by a consul.\textsuperscript{15} Under Sulla, the post may have become a common office held before a quaestorship; and before A.D. 20, it was certainly made a part of the vigintivirate, a set of offices that were preliminary to the \textit{cursus honorum}.\textsuperscript{16}

In Book Three of \textit{de Legibus}, written in the 50s B.C., Cicero is thinking \textit{de optima re publica}, “about the ideal state,” and many of his proposals for this utopia bear a striking resemblance to the Roman \textit{res publica} (3.4).\textsuperscript{17} Among Cicero’s proposals for minor magistracies, he states \textit{aes, argentum, aurumve publice signando}, “Let them publicly coin bronze, silver, and gold” (3.6). Cicero says that the magistrates of an ideal, Roman-like state should be

\begin{itemize}
\item \textsuperscript{11} Crawford 1974b, p. 605 lists the issues and discusses the legend.
\item \textsuperscript{12} Grilli 2003 has the most complete collection and discussion of the literary evidence related to the mint at Rome.
\item \textsuperscript{13} Crawford 1974b, pp. 601-602.
\item \textsuperscript{14} On the introduction of the denarius, Buttrey 1965; and Crawford 1974b, pp. 28-35. On the introduction of the \textit{tresviri monetales} with the denarius, Pink 1952, pp. 50-52; and Crawford 1974b, p. 602.
\item \textsuperscript{15} For the election of \textit{tresviri monetales}, see Pink 1952, pp. 54-55; Crawford 1974b, pp. 602-603; and Mattingly 1982, pp. 10-11. For the appointment by the consul, see Burnett 1977, pp. 42-43. Hamilton 1969, p. 185 refused to decide whether the \textit{tresviri monetales} were elected or appointed by the consul. Hollander 1999, pp. 14-19 admitted it is uncertain but seems to favor election.
\item \textsuperscript{16} Hamilton 1969, pp. 186-196; Mattingly 1982, pp. 11-16.
\item \textsuperscript{17} Text from Powell 2006; this and all other translations are my own unless otherwise noted. On the date of \textit{de Legibus}, Dyck 2004, pp. 5-7 with references to earlier scholarship. On the resemblance between his \textit{optima res publica} and Rome, Cic. \textit{de Leg.} 2.23 and 3.12, and Dyck 2004, pp. 13-15.
\end{itemize}
involved in coin production. Even if one does not accept that Cicero’s proposal means Roman magistrates—the tresviri aere argento auro feriundo flando—were involved in coin production, there can be no denying that Cicero thinks the state ought to be involved in coin production. Suetonius records that, as part of putting the Roman *res publica* in order, the dictator Caesar *minorum etiam magistratum numerum ampliavit*, “he even increased the number of the lesser magistrates” (41.1).¹⁸ Even though this statement does not specifically name the *tresviri monetales*, the office’s title on the coins changes from IIIIVIR to IIIIVIR in 44 B.C.¹⁹ In addition to the *tresviri monetales*, other Roman magistrates—such as quaestors and *praefecti urbi*—struck special issues of coins when needed.²⁰

During the civil wars that ended the Republic and made Octavian emperor, the mint at Rome closed and the warring generals’ armies struck coins. The mints operating for a military campaign are traditionally classified as “imperatorial mints.” An *imperatorial issue* is a coinage struck at an imperatorial mint by a military commander in the field so that he can have coins with which to pay his soldiers and pay for supplies. Romans had struck imperatorial issues before 60 B.C.: during the Second Punic War when the denarius was introduced and during the Sertorian and Sullan Civil Wars.²¹ In both instances, the imperatorial mints closed after the wars ended. Imperatorial mints were opened again during the civil wars involving Caesar and his heir, and these imperatorial mints will be discussed in Chapters Three and Four. Indeed, in Book One of Lucan’s *Bellum Civile*, the poet confirms that these military mints were used by Roman officials. The primus pilus Laelius has asked Caesar why he had hesitated to take up war against Pompey.

As part of his declaration of loyalty to the general, he says:

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¹⁸ Text from Ihm 1908.
¹⁹ *RRC* 480, 485, 494, and 525.
²⁰ Crawford 1974b, pp. 603-604.
Pectore si fratris gladium iuguloque parentis
Condere me iubeas plenaeque in viscera partu
Coniugis, invita peragam tamen omnia dextra;
Si spoliare deos ignemque inmittere templis,
Numina miscebit castrensis flamma monetae;

If you order me to bury my sword in the chest of my brother, in the throat of my parent,
and in the body of my pregnant wife, I will do all these things although with an unwilling
hand; if you order me to plunder the gods and cast fire into their temples, the flame of the
military mint will melt and mix the statues of the gods.

(Lucan, B.C. 1.376-380)\(^{22}\)

After the civil war ended, the mint at Rome reopened c. 23 – 19 B.C. During the imperial
period, the *tresviri monetales* continue to be attested numismatically until c. 10 B.C. and
epigraphically until the third century A.D.\(^{23}\) A little before 10 B.C., another major mint opened
in Lugdunum, and this mint can be connected to the Roman state. In Strabo’s *Geography*, which
was written c. A.D. 17 – 24 during Tiberius’s reign, the author said that, in his time, the
*ἡγεμόνες* struck gold and silver coins in this city (4.3.2).\(^{24}\) Strabo’s word choice here is
ambiguous. As both Louis Robert and Hugh Mason have noted, *ἡγεμόν* can refer to one of a
variety of Roman officials.\(^{25}\) Even though Strabo usually uses this word as an equivalent of
*princeps*,\(^{26}\) there are instances in which Strabo’s use of the word can only refer to a provincial
governor.\(^{27}\) Given the ambiguity of *ἡγεμόνες*, Strabo’s testimony does not indicate who had
power over the mint in Lugdunum, but it does indicate that a Roman official (and therefore a
representative of the Roman state) had power over it.\(^{28}\)

\(^{22}\) Text from Shackleton Bailey 1988.
\(^{23}\) The names of the *tresviri monetales* were consistently used on the coins of the *tresviri monetales* from
c. 23 B.C. until c. 10 B.C. See Appendix 6 for the dates of these coins. On the epigraphic attestations of
the *tresviri monetales*, Jones 1970.
\(^{24}\) On the date of Strabo’s *Geography*, Dueck 1999 and Pothecary 2002.
\(^{26}\) Mason 1974, p. 145.
\(^{27}\) Smith 1951, pp. 168-169 citing 3.4.20 and 17.3.25.
\(^{28}\) Smith 1951, pp. 168-169 and Grant 1955b, pp. 47-48 used this passage of Strabo to argue that
Lugdunum was only one of the mints where gold and silver coins were struck. Smith 1951 argues that,
Two inscriptions also indicate that a mint was located in Lugdunum. An inscription from Lugdunum records a slave of Tiberius, who was an *aequator*, meaning he measured the coins to make sure that the flans weighed the proper amount.\(^{29}\) The other inscription states that, probably before the time of Claudius, a cohort was stationed at Lugdunum in order to protect the mint.\(^{30}\) These three sources mention Roman officials with power over the mint, a slave of the Roman emperor working at the mint, and a cohort of the Roman army guarding the mint. This evidence associates the production of denarii, aurei, and their fractions at Lugdunum with the Roman state. The mint at Lugdunum closed with the death of Nero.

After the Julio-Claudian dynasty, the Roman state continued to be involved in coin production at Rome. As mentioned above, the *tresviri monetales* are epigraphically attested until the third century A.D. Another official presumably with some responsibility for the operation of the mint at Rome is attested epigraphically: the *procurator monetae*. The emperor appointed an equestrian to hold this office for an unclear length of time. It was first attested at the end of the first century or the beginning of the second century A.D. and continued to be attested after the age of Constantine.\(^{31}\)

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under Augustus, gold and silver were also struck at Rome. Grant 1955 argued that multiple small mints struck gold and silver coins throughout Gaul. Sutherland 1976a, pp. 45-49 adduced coins’ portrait styles, this Strabo passage, and the inscriptions discussed in the next paragraph to argue a mint was at Lugdunum. Sutherland also convincingly responded to Smith and Grant’s objections—(1) too much stylistic variety for one mint, (2) Lugdunum is an inconvenient location for a mint, and (3) a die from the Lugdunum mint was found at Nemausus and this indicates that a mint should be located there—to the idea that this was the only mint for aurei and denarii at the end of Augustus’s reign. Sutherland said (1) that varied portrait styles can indicate either multiple mints or a large issue of coins, such as would have been appropriate at the empire’s only mint for aurei and denarii, (2) that convenience of the location is a subjective argument that can be countered by the convenience of transporting bullion from Spain to Lugdunum to be struck into coins for the German front, and (3) that a mint at Nemausus does not necessarily mean a mint could not exist at Lugdunum. The metallurgical analyses of Butcher and Ponting 2005b and 2015, pp. 167-200 have determined that only one mint struck aurei and denarii at the end of Augustus’s reign: Lugdunum.


\(^{30}\) *CIL* 13.1499. Mommsen 1881.

The literary, epigraphic, and numismatic evidence confirm that minting is one of the infrastructural capabilities of the Roman state, so the development of this state infrastructure can be studied. Just as coin production is one of the many capabilities of the Roman state and one of the many possible demonstrations of Roman power, this dissertation’s focus on coin production is one of many lenses through which to examine the Roman state.

Anthropological and sociological ideas about empires offer a way by which to measure the Roman state’s infrastructural minting power. Michael W. Doyle defines an empire as a relationship, formal or informal, in which one state, the metropole, controls the domestic and international affairs of another polity. Anthropological research has sketched out two ideal types of empires: hegemonic and territorial. In a hegemonic empire (Fig. 1.1), the metropole has indirect control over the subject polities—the subject polity is not told to do something but does it because the polity thinks the metropole wants it to happen. The metropole relies on the subject polities to defend its borders, and it influences and may replace the leaders of the subject polities, but it cannot control with any certainty the subject polities’ domestic and foreign policy decisions. The local elites maintain their own governments and infrastructure, and they become managers for the extraction of resources to pay tribute to the metropole. In a hegemonic empire, the metropole provides no infrastructure for the subject polities, and it has low infrastructural power over the subject polities.

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32 Doyle 1986, p. 45.
34 Doyle 1986, p. 34.
Fig. 1.1. A conceptual drawing of a hegemonic empire (Luttwak 1976, p. 22)

Fig. 1.2. A conceptual drawing of a territorial empire (Luttwak 1976, p. 23)

In a territorial empire (Fig. 1.2), the metropole directly governs the subject polity. The metropole defends the subject polities, controls all domestic and foreign policy decisions, and installs its own government apparatus in the subject polities. The metropole extracts more resources from the subject polity, and it often maintains some control over certain kinds of raw
materials and products, such as prestige goods and media of exchange. The metropole provides the infrastructure, including coinage, so territorial empires have a high infrastructural power.

In reality, empires may exhibit traits of both ideal types. The metropole could have low infrastructural power over one subject polity and high infrastructural power over another. Similarly, the metropole’s power over one polity may increase or decrease over time. As will be shown by this dissertation, from the Late Republic to the end of the Julio-Claudian period, the Roman state evolved from a hegemonic empire with low infrastructural power towards—but not into—a territorial empire with high infrastructural power. This transition happened earlier in the western provinces in Iberia, Sicily, Gaul, Africa, and Britain than in the eastern provinces of Syria, Egypt, Asia, and Cappadocia. The infrastructural capacity for each province developed at its own pace.

The diachronic element of this study derives from a series of analyses of the Roman state’s infrastructural power over various provinces. By accumulating many assessments of these relationships at various times—in 60 – c. 55 B.C., during the civil wars of the 40s and 30s B.C., during the reign of Augustus (27 B.C. – A.D. 14), and during the later Julio-Claudian period (A.D. 14 – 68)—this dissertation can suggest how the Roman state’s exercise of power over coin production throughout its empire evolved during the transition from Republic to Empire.

Before discussing previous scholarship about Roman minting power and how assessments of this power will be made, it is necessary to clarify the geographic area examined by this dissertation because the hegemonic empire ideal types allow for power relationships that extend beyond the territory directly controlled by the metropole. For this dissertation, the hegemonic and territorial empire ideal types will be used to assess only the Roman state’s power
over coin production. In this sense, the dissertation’s results are limited; but by focusing on one part of the state’s infrastructure, it would always be only part of the picture. Other aspects of the Roman state’s power will guide what regions to examine. In the provinces, the proconsul or the legatus Augusti pro praetore was the primary embodiment of Roman power. If a provincial governor had direct control and power over the cities and people in a region at a time under investigation, that region will be part of the analysis.

This (admittedly somewhat arbitrary) decision accords well with the ancient Roman understandings of the words provincia and imperium. In the time of Hannibal, imperium referred to a command or a magistrate’s right to command, and provincia denoted the task for which this magistrate was given imperium. Starting with Cicero and Augustus, these words took on more geographic connotations. In the second century A.D., provincia referred to a geographic area over which a governor presided, and imperium could mean the territory of the Roman Empire. But because the original definition of imperium and provincia related to gaining power over a rebellious people or over an external enemy, this study will focus on that power relationship. It will avoid applying the geographic and territorial concepts of provincia from the second century A.D. to the Roman Republic. The dissertation, therefore, seeks to understand how much power the Roman state had over the production of coins for the regions over which provincial governors had direct control. By gauging this power at various times between 60 B.C. and A.D. 68, this dissertation will chart the trajectory of the Roman state’s infrastructural minting power.

1.3. Previous Scholarship

In the introduction to the first edition of the first volume of Roman Imperial Coinage, the numismatists Harold Mattingly and Edward A. Sydenham stated that coins issued “on the

35 Richardson 2008.
imperial standard were undoubtedly current over the whole Empire.” Among numismatists, “standards” can refer either to weight standards (i.e. the weight for a coin that the mint workers believed was ideal) or to metal standards (i.e. the amount of various metals that the mint workers believed was ideal to include in each coin). Each denomination of coin would have a certain metal and weight standard. In the section “Metals, Denominations, Weights,” Mattingly and Sydenham discussed four metals for imperial coins: gold, silver, orichalcum (brass), and copper. In their list of the coins issued in these metals, Mattingly and Sydenham only mention the aureus, the aureus quinarius, the denarius, the silver quinarius, the sestertius, dupondius, as, semis, and quadrans. The coins “on the imperial standards” are the denarius, its fractions, and its multiples. According to Mattingly and Sydenham, therefore, the Roman state always had infrastructural power over the entire Roman Empire. Their proposal, though, is problematic because it does not fully account for the regions within the empire for which coins were produced. The denarius was struck for Italy, for Iberia, for Sicily, after the 40s B.C. for Achaea and Gaul, after the reign of Caligula for Mauretania, and staring in the reign of Claudius for Britannia. Cistophori were the only coinage that was struck for use within the province of Asia. Tyrian shekels and Antiochene tetradrachms were produced for and used in Syria, where the denarius started circulating before or during the reign of Hadrian. Alexandrian tetradrachms were the only silver coins issued for and circulating in Egypt, and drachms from Caesarea of Cappadocia were the only coinage struck for Cappadocia.

36 Mattingly and Sydenham 1923, p. 11.
37 Mattingly and Sydenham 1923, pp. 23-25.
38 Mattingly and Sydenham 1923, pp. 25-27.
39 For these circulation patterns, see Chapter Two, Sections 3.4, 3.6, 4.6, 5.2, 5.6, 5.7, 5.8, and 5.9.
Even though Mattingly and Sydenham recognized that other coinages circulated within the Roman Empire and they called for another “thorough independent study” of these non-denarius coinages, why did they focus so intensely on the denarius? After mentioning that these coins exist, the numismatists stated, “Practical considerations make it impossible to make more than a survey of them.” Similarly they included the cistophori, the drachms of Cappadocia, and a few bronze issues among the “Imperial Roman coinage” because they “have been so long and so closely connected with the imperial that for practical purposes it appears unwise to separate them.” The definition of “imperial coinage” coinage, therefore, was based on tradition and practical considerations, presumably of publishing their catalog. The influence of this decision has affected numismatic scholarship for decades.

Michael Grant, next, argued that Rome began “supplying coinage to so large a part of the civilized world” under Augustus. Grant noted that, c. 19 B.C., many mints across the empire began producing denarii and cistophori on an unprecedented scale at a politically vital moment to provide the publicity possible through coins. A second attempt to provide a “world coinage” came c. 14 B.C. when many other mints struck large issues of denarii and aurei and were coordinated by Augustus and Agrippa, as indicated by similar coin types, the location of mints,

40 Mattingly and Sydenham 1923, p. 11.
41 Mattingly and Sydenham 1923, p. 10.
42 Cf. The statement of Burnett, Amandry, and Ripollès 1992, p. xiii: The Roman Provincial Coinage (RPC) series “is intended to provide a reconstruction of the coinage minted in the provinces of the Roman Empire; roughly speaking it aims to include everything which is not included in RIC [Roman Imperial Coinage], and its main function is, in conjunction with RIC, to provide a source book for all the coinage produced under the Roman emperors; volume I covers the Julio-Claudians.” “Roman Provincial Coinage,” has been defined as not “Roman Imperial Coinage.” The definition of the latter was, ironically, partly based on the idea that cataloging Roman provincial coinage would be impractical in 1923. By investigating the coins produced in the cities under direct control of their Roman governors, this dissertation goes beyond this somewhat arbitrary distinction of “Imperial” and “Provincial” coins.
43 Quotation from Grant 1951, p. 88.
44 Grant 1951.
and the location of Augustus and Agrippa. Grant’s ideas are problematic in several ways. First, there is no clear connection between Augustus, Agrippa, and these mints. Second, it too ignores that denarii were not struck for the entire empire and that eastern tetradrachms did not circulate alongside denarii. Instead, Grant limited his focus to denarii and cistophori, and so he relied on the coins listed in and the assumptions of *Roman Imperial Coinage* rather than on the coins used in the Roman Empire.

After Grant’s work, few scholars attempted to fully understand when the Roman state became involved in producing coins for the whole empire, but Michael H. Crawford’s *Coinage and Money under the Roman Republic* of 1985 is the notable exception. Crawford traced the development of Roman coinage from its creation in the third century B.C. until the death of Augustus. He ended with the death of this emperor because “by the time of Augustus, not only was the whole of the Mediterranean world under Roman rule, most of it was taxed by Rome and used the Roman monetary system and Roman coinage.” Even though this work examined more coinages than the denarii and cistophori, it has been much criticized. As T. V. Buttrey put it, Crawford’s book suffered from misinterpretations and from “a neglect of the evidence and of clear distinctions between the factual, the fairly certain, the plausible, and just guesses. In his enthusiasm to provide the Big Picture, confident assertion displaces exposition and argument.”

Shortly after the publication of Crawford’s book, a conference was held at the British Museum to discuss and reexamine the circulation patterns of coins throughout the empire during the Late Republic. The published proceedings of the conference improve upon the fundamental interpretations supporting Crawford’s book, but the proceedings did not include a synthetic

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45 Grant 1949. Quotation of “world coinage” from p. 35.
46 For the problem of associating mints and coordination with specific people, see Section 1.5.
49 Burnett and Crawford 1987.
conclusion to correct “the Big Picture” of *Coinage and Money under the Roman Republic*. This dissertation serves as part of that correction.

1.4. Coordinated Decisions at Multiple Mints

The infrastructural reach of the Roman state can be measured by seeing when minting decisions at multiple mints were coordinated. If the mint at Rome was coordinated with other mints, the Roman state’s infrastructural reach was extended to those mints. Several scholars’ incidental comments provide a methodology for detecting coordination among mints. These numismatists have assumed that, if multiple mints made similar decisions at the same time, the mints were coordinated somehow—either in the form of an order from a more powerful official or in the form of collaboration among mintmasters. This idea underpins Waldemar Wruck’s discussion of supposedly imperially coordinated coin legends from the Julio-Claudian period.\(^{50}\) C. H. V. Sutherland applied the assumption to his half-page discussion about the collaboration of two mints, which Section 4.2.2 will reattribute to Gaul, and to his page-long discussion of denarii, aurei, and cistophori that, to him, suggested that Augustan and Tiberian governors probably decided the coin types used by multiple mints.\(^{51}\) Finally, David W. MacDowall used the same assumption to discuss the various decisions made at the mints in Lugdunum and in Rome and by the emperor and his staff during the transfer of denarius and aureus production from Lugdunum back to Rome in A.D. 64.\(^{52}\) These discussions have all been brief—no more than five pages. This dissertation is the first to use this idea on a large scale and to discuss the significance of this coordination.

\(^{50}\) Wruck 1931, pp. 55-57.
\(^{51}\) Sutherland 1945, p. 72 on the mints which Section 4.2.2 will reattribute to Gaul (Section 4.2.5.2 on coordinated coin types at these two mints); Sutherland 1986, pp. 88-89 on governors’ deciding coin types.
\(^{52}\) MacDowall 1979, pp. 129-131. Section 5.9.2 discusses this and other changes to coin production in Nero’s reign.
There are two major advantages and two major disadvantages of relying on the assumption that decisions were reflected in contemporaneous actions at multiple mints. First, it eliminates red herrings from one mint imitating the coin types used at another mint. Such imitation was common among forgers and some mints, especially the Alexandrian mint during the reign of Augustus which copied earlier cistophoric coin types onto Egyptian bronze coins.\(^{53}\) Such imitation always happens after the imitated coin type was struck, and there is no clear evidence to say that one mint was told to imitate another’s coins. There is no evidence, for example, that the mint at Alexandria was told by the mint at Ephesus or some other official to imitate the Augustan cistophoric struck at Ephesus. Furthermore, it is unclear how we would even know about such a directive. It is only possible to determine that there is some coordination among mints if the mints make the same or similar decisions at the same time—so using the same coin type in the same year, not imitating a type previously used by another mint.\(^{54}\)

Secondly, it is useful to foreground contemporaneity when trying to understand decisions made within the Roman state because of the short terms of many Roman officials. The tresviri monetales at Rome and most other Roman officials served one-year terms. Provincial governors

\(^{53}\) Milne 1927a, p. 136; Grant 1946, p. 132; Noeske 2009, p. 93; and O’Neill 2011, p. 133.

\(^{54}\) Not all mints counted their years from the same time period. For example, the mint in Rome followed the Roman calendar from January 1 until December 31, but the mint in Alexandria followed the Egyptian calendar from August 30 until August 29 (Poole 1892, p. ix.). In this instance, a coin from Rome could only be imitated between January 1 and August 29 (or, less likely, a coin from Egypt imitated at Rome between August 30 and December 31) and, following this methodology, be mistaken for coordination. The defined circulation areas of each type of coin (Sections 2.1, 2.2, 2.3, 2.4, 2.5, 3.6, 4.6, 4.7, 5.2, 5.6, 5.7, 5.8, and 5.9) would make this scenario of imitation unlikely to have happened. In this dissertation, this added factor of the varying calendars is taken into account. As will be seen throughout the dissertation, there are only a few instances in which well-dated coin types are coordinated according to this methodology (Sections 2.4, 3.5.1, 4.2.5.1, 4.2.5.2, 4.3, 4.4, and 5.9.2)—and coin types are the only decision that can reasonably be considered “imitated by another mint.” Most of these instances have been recognized as episodes of coordination before.
might have served for a few years, but the length of their terms was generally unpredictable.\textsuperscript{55}

As a result, long-term planning from the top-down could only have been the prerogative of the emperor and the Senate.\textsuperscript{56} Therefore, it is justifiable to focus on the contemporaneous changes in coin production at the mints within the Roman Empire in order to determine whether coin production decisions were coordinated.

On the other hand, this reliance is disadvantageous because the numismatic evidence cannot always be precisely dated to one year, or to part of one year. As will be discussed in Section 1.6.1, below, the legends on coins can date coins to either one year or to one of several years within a timeframe. Coins’ styles, archaeological strata, and a series of hoards may also only provide a window of several years within which the coins were struck. This limited precision for dating coins has two implications. First, it means that “contemporaneous” means, at best, coins struck in the same year. Second, when using this methodology, it is important to use precisely dated coins, so this dissertation only focuses on well-dated coins. For example, even though many Augustan mints struck coins featuring a Capricorn, not all of these coins are well dated, so these coins are not discussed as a case study in this dissertation.\textsuperscript{57}

\textsuperscript{55} On the length of provincial governors’ terms, Arnold 1906, pp. 46-54 and 121-122; and Wesch-Klein 2008, pp. 48-55 and 65-67. Eckstein 1987 frequently maintained that Republican provincial governors’ military actions were motivated by a fear that their command would not be prorogated and/or given to another senator.

\textsuperscript{56} Cf. Luttwak 1976, a military strategist by trade, who proposes that the Romans developed a grand strategy planned long-term for the defense of the empire. MacMullen 1977, p. 931 and Morgan 1978, p. 486 doubt that there was ever a long-term strategy for defending the empire. Kagan 2006, who attempts to examine the allocation of military resources in order to move forward with a discussion of Roman grand strategy, admits that we cannot know for sure if the state engaged in practices of long-term planning and strategizing. Luttwak 2009, pp. 409-414 agrees that he uses the terms “grand strategy” and “strategy” as modern concepts and heuristic tools, not as expressions of what ancient people were thinking or planning. Also, Cf. Millar 1977 who proposed a popular petition-and-response model for an essentially passive governing style during the Roman Imperial Period. Bleicken 1982 and Burton 2002 allow for more active elements to the Roman style of government during the Imperial Period.

\textsuperscript{57} \textit{RIC} I\textsuperscript{2} 124-130 (Uncertain Gallic Mint 2), 174 (Lugdunum), 521 (Ephesus), 541-542 (Uncertain Mint 3), 544-545 (Uncertain Eastern Mint 5), 547-548 (Uncertain Mint 6), \textit{RPC} I 5015, 5034, and 5036 (Alexandria), \textit{RIC} I\textsuperscript{2} 488 and 493 = \textit{RPC} I 2208 (Pergamum), and \textit{RIC} I 521, 477 and 480 = \textit{RPC} I 2213
1.5. Unknown Decision-Makers

A limitation of this focus on coordination is that it is impossible to determine who is making the mints’ coin production decisions, even if they are coordinated. For example, Fig. 1.4 shows an aureus quinarius struck at the mint in Lugdunum, according to the legend, in A.D. 30 during the reign of Tiberius. Tiberius’s name and the portrait are the only explicit clues about who was responsible for striking the coin. At this time, Tiberius had isolated himself on the island of Capri in the Bay of Naples, so it is very unlikely that he was managing a mint in Gaul (Suet. Tib. 41 and 73.1). This same point can be made more thoroughly by an examination of the mint workers known from literary and epigraphic sources as well as through a discussion of coins’ legends from Republican denarii, Hellenistic Athenian tetradrachms, and the Augustan bronze coins struck at Antioch.

![Fig. 1.3. Aureus quinarius featuring the portrait of Tiberius and an image of Victory sitting on a globe, from Lugdunum, A.D. 30, RIC I² 16 (Giard 1988b, pl. I, fig. 12)](image)

(Ephesus). Suetonius says that Augustus struck silver coins with the image of Capricorn, in which constellation the moon was located when Augustus was born: … Augustus... nummumque argenteum nota sideris Capricorni, quo natus est, percussit, “…and Augustus struck a silver coin with the mark of the Capricorn star, in which he was born” (Suet. Aug. 94.12). This passage of Suetonius does not necessarily imply the emperor dictated the coin types to these mints because it may be representative of the ancient belief that the emperor was responsible for the coinage (Wallace-Hadrill 1986, p. 68 and Ando 2000, pp. 215-228). For discussion of the significance of Augustus’s use of the Capricorn as a coin type and the moon in the constellation of Capricorn when Augustus was born, see Kraft 1967; Dwyer 1973; Barton 1995; Lewis 2008.
1.5.1. The Mint at Rome

In addition to the evidence regarding the *tresviri monetales* and the *procurator monetae* discussed above, inscriptions from Rome indicate some of the other mint workers who *might* have made some of the decisions involved in coin production. An inscription, most likely from the later Julio-Claudian period, provides the epitaph of the free man C. Julius Thallus, who had been in charge of moneychangers at the mint in Rome.\(^{58}\) Additionally, a series of inscriptions from A.D. 115 lists the names and titles of many workmen at the mint.\(^{59}\) The highest ranking man, the freedman Felix, was given the title *optio et exactor auri, argento, aeris,* “assistant and overseer of the gold, silver, and bronze.” He had an assistant who is also called an *optio.*\(^{60}\) There were then twenty-five *officinatores,* sixteen imperial freedmen and nine imperial slaves, whose role is unclear but might have been in a supervisory position and/or tested coins’ quality; seventeen *signatores,* twelve freedmen and five slaves, who engraved dies; eleven *suppostores,* seven freedmen and four slaves, who heated and positioned flans on the anvil dies; and thirty-two *malliatores,* eleven freedmen and twenty-one slaves, who placed the punch die on top of the flan and struck that die with a hammer.\(^{61}\) Another inscription mentions a *dispensator,* a slave who seems to have been another administrator of some sort;\(^{62}\) and a sixth inscription mentions

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\(^{58}\) *CIL* 6.8461=ILS 1397. For a possible reconstruction of this man’s life, Smith 1951, pp. 171-176, who incorrectly dated C. Julius Thallus to the reign of Augustus. The inscription provides two clues for the date of the inscription: the name of the man and the expression *Dis Manibus.* His name is Gaius Julius Thallus, so he must have been either a freedman of Julius Caesar, Augustus, or Caligula, or the descendent of a slave of one of these three men (Smith 1951, p. 172; and Alföldi 1958, p. 43). The mint of Rome was open during the reign of all of these men, so the name does not provide a *terminus post quem,* but it suggests a date in the first century A.D. Secondly, the phrase *Dis Manibus* was first used during and after Claudius’s reign, so the inscription should date to the reigns of Claudius, Nero, or possibly even a Flavian (Andreau 1987, p. 203 n. 34; and Lassère 2011, p. 234. The earliest example of this phrase in Gordon 1958-1966 is no. 101 (*CIL* 6.8843) from Claudius’s reign).

\(^{59}\) *CIL* 6.42, 43, and 44.

\(^{60}\) Carson 1956, p. 234.


\(^{62}\) *CIL* 6.239. Alföldi 1958, p. 44.
five *conductores flaturae argentariae monetae* of unknown legal status, who seem to have prepared the silver flans before they were struck.\(^{63}\)

All these inscriptions about the mintmasters and mint workers at Rome merely list titles from which scholars have deduced the men’s roles, and the inscriptions record only one decision made by the workers: to make the dedications commemorated by these inscriptions. Even though we know the names and titles of the officials—or at least a few of them from the imperial period—this epigraphic evidence does not indicate that one of these men made any specific coin production decision. Furthermore, many of these men’s roles could have been administrative, so it is difficult to even say whether an *officinator*, the *optio*, the *optio et exactor*, the *tresviri monetales*, or the *procurator monetae* made a decision regarding coin production in Rome, or if these positions even existed when a coin under consideration was struck. If another official, such as a praetor or *praefectus urbi*, struck coins in Rome, his title is included in the coins’ legend, but it is unclear whether or not he worked with the normal mint in Rome or who made the minting decisions for this special issue.

### 1.5.2. Coin Legends

The names of mint officials listed on both Republican denarii and Hellenistic Athenian tetradrachms have often led numismatists to assume that a name on a coin indicates who was responsible for that issue of coins. On both coinages, the coins record the name, or abbreviations of the name, of at least one mint magistrate. Two possible interpretations for these names have been proposed. Margaret Thompson has proposed that the names on the Athenian coins record the performance of a liturgy somehow related to coin production.\(^ {64}\) Roman numismatists, on the

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\(^{63}\) *CIL* 6.791.

\(^{64}\) Thompson 1961, pp. 593-599 who, following Bellinger 1958, pp. 15-17.
other hand, propose that the *tresviri monetales* were required to mark their coins with their names in order to guard against illegal profiteering and fraud.\(^{65}\) For such a system to work, the mintmasters’ name or initial on a coin had to be an accurate representation of the person responsible for that coin’s production. Even though both interpretations suggest that the name records who was, who ought to have been, or who claims to have been responsible for at least some of the coin production decisions, there is no guarantee that this person made those decisions. As noted above, there were many people at the second century A.D. mint in Rome who could have made any and all of the coin production decisions, perhaps in order to flatter or ease the work load of the man nominally responsible for the mint.

Similarly, the coin legends on several bronze series of coins struck at Antioch in 5/4 B.C. provide reason to doubt the veracity of the legends because they all purport to have been struck by, or under the authority of, different officials or parts of the Roman state. One series has an SC for the reverse legend that suggests it was authorized by the Roman Senate.\(^{66}\) Another series has a CA for the reverse legend that leaves the responsible party unclear.\(^{67}\) A third series—the so-called archieratic series—has the reverse legend ΑΡΧΙΕΡΑΤΙΚΟΝ ΑΝΤΙΟΧΕΙΣ and the year, and an obverse legend ΚΑΙΣΑΡΙ ΣΕΒΑΣΤΩ ΑΡΧΙΕΠΕΙ that suggests a civic authority associated with a high priest.\(^{68}\) A fourth records that it was struck by the Antiochenes under Varus, the legate of Syria, ΑΝΤΙΟΧΕΩΝ ΕΠΙ ΟΥΑΡΟΥ.\(^{69}\) The final series says that it was struck by the autonomous metropolis of the Antiochenes, ΑΝΤΙΟΧΕΩΝ ΜΗΤΡΟΠΟΛΕΩΣ

\(^{65}\) On Roman Republican coins, Pink 1952, p. 63; and Crawford 1974b, pp. 601-602. On a similar practice at the mint in Venice during the Middle Ages, Stahl 2000, pp. 25-26, 164, and 251-252.

\(^{66}\) RPC I 4246-4248. This series is attributed to Antioch based on the close similarity of the portraiture of the SC series to the so-called archieratic series and the Antiochene tetradrachms (Burnett, Amandry, and Ripollès 1992, p. 620).

\(^{67}\) RPC I 4249. For more on this series, its attribution to Antioch, and the various interpretation of the CA (i.e. *Caesaris Auctoritate*, *Caesar Augustus*, and *Commune Asiae*), see Howgego 1982.

\(^{68}\) RPC I 4250-4251.

\(^{69}\) RPC I 4252.
AYTONOMOY.70 Within the same year, the legends on the coins struck at the same Antiochene mint suggest or imply they were struck by order of or with the approval of the Senate in Rome, of the governor, and at least one part of the civic government. Even though the legends seem to suggest the people responsible for these issues, there is no available ancient evidence to determine who was actually making decisions in this mint.71

1.5.3. Summary

Inscriptions and coins, therefore, cannot provide reliable evidence for who made decisions regarding coin production at each mint. The coins themselves, however, are able to suggest when multiple mints were coordinated, and we know that the Roman state was involved in producing the denarius at Rome. Together these observations help measure the infrastructural reach of the Roman state at various times. When the production of denarii was not coordinated with the production of other coinages, the Roman state was not involved in the production of those coinages—as one would expect with a low infrastructural capacity. When the production of denarii was coordinated with the production of other coinages, the Roman state was involved in the coordination of those coinages—as one would expect with a high infrastructural capacity. The coordination is a sign of the extension of the Roman state’s infrastructure and is detected from similar, contemporaneous coin production decisions made at more than one mint. By comparing the degree of Rome’s infrastructural power at different times, this dissertation can chart how Rome’s infrastructural minting power over its subjects changed over time.

70 RPC I 4253-4254.
71 The methodology used within this dissertation suggests that decisions at the Antiochene mint were made locally within the mint.
1.6. Decisions About Coin Production and How to Detect Them

In addition to contemporaneity, this methodology relies on the numismatist’s ability to detect each of the decisions made at a mint during coin production. For each issue of coins, six decisions were made. First, after one decided to strike coins, they needed to decide (1) whether to use an already open mint or to open a new mint. Related to this decision is whether to permanently close mints after the issue was produced. After the mint was chosen or opened, there needed to be a determination about (2) what denominations of coins to strike. The selection of denominations struck at a mint was often path dependent in the sense that they were the same denomination as, or at least in the same denomination pattern as, the coins that had been struck at that mint before, that were used in the region where the new coins would circulate, and/or that were used by the people who would use these coins. The choice to strike a certain denomination often dictated (3) the coin’s weight standard and (4) metal standard, because these too were path dependent and legitimated the coins’ value. Of course, someone could decide to change the weight standards and metal standards, and thereby shift the path on which decisions (2), (3), and (4) depended. The changes in these paths are important decisions that will always be considered in detail in this dissertation.

Next, there was a decision about (5) the types, or images and legends, to include on the coins’ faces. In some mints, such as in Athens, the coin’s type may also have been path dependent. At Athens, in the fifth through the first centuries B.C., the obverse of the coins always showed the bust of Athena, and an image of an owl was always on the reverse. But other mints, such as in Rome after the middle of the second century B.C., changed the types annually. In 106 B.C., the denarii of the Roman triumvir monetalis L. Memmius showed the bust of Saturn
on the obverse and Venus driving a biga on the reverse.\textsuperscript{72} The next year, the denarii of the
\textit{triumvir monetalis} L. Thorius Balbus showed the head of Juno Sospita on the obverse and a
charging bull on the reverse.\textsuperscript{73}

Finally, knowing the coin’s denomination, weight standard, metal standard, and types, someone needed to decide (6) how many coins to produce. Michael Crawford had thought that coins were primarily struck for military expenditure.\textsuperscript{74} Christopher Howgego’s more thorough examination of literary evidence, however, suggests that coins were struck for a variety of other reasons that could also dictate the number of coins produced: the available amount of bullion, the purchase of grain, especially for Rome’s \textit{annona} and \textit{frumentatio}, food supply and grain distributions; the provision of spectacles and games; distributions of coins to the people, soldiers, or senators; the construction of public works; to foster pride and civic identity; to pay, or allow for the payment of, taxes; to increase the coin supply, especially to calm a concerned and protesting populace; to make a profit; to impose and maintain a closed currency system; and to extensively recoin the existing coin supply within the region for which the mint struck coins.\textsuperscript{75} This final reason is another important coin production decision that involved most, if not all, of the six aforementioned decisions. Recoinages will be considered throughout this dissertation because they usually affected the paths on which other decisions depended. Different approaches to examining the numismatic evidence provide knowledge about each of these six decisions, as well as recoinages, at each mint within the empire.

\textsuperscript{72} RRC 313/1. 
\textsuperscript{73} RRC 316/1. 
\textsuperscript{74} Crawford 1970. 
\textsuperscript{75} Howgego 1990b.
1.6.1. Opening and Closing Mints

In order to learn whether a mint was open or closed in a given year, we need to know if that mint struck coins in that year. This nice statement is made more complicated by the difficulties of dating Roman coins. Legends, or the inscriptions on coins, offer the most precise way to date coins because some coins’ legends contain the date. For example, the mint at Tyre included in its legend PIE for Year 115 in the reverse legend of its shekel. The mint of Tyre started counting the years on its coins from 126/5 B.C. when it became independent from the Seleucid Empire. This coin, therefore, was struck within the year 12/1 B.C.

Other legends offer less precision because their legend may refer to a title that was held for multiple years. For example, an aureus from the mint of Lugdunum features the portrait of the emperor Augustus on the obverse and a bull butting to the right on the reverse. The obverse legend reads AVGSTVS DIVI F, and the reverse legend reads IMP X. The obverse legend suggests that the coin was struck after 27 B.C. when the emperor received the title Augustus. The reverse legend suggests the coin was struck after Augustus had received his tenth acclamation as imperator for being a successful general in 15 B.C. but before his eleventh acclamation in 13 B.C. The aureus, therefore, was struck between 15 and 13 B.C.

Coins’ stylistic relationship to other coins can indicate the approximate date of coins. The production of coins at Ephesus during the early reign of Augustus provides a good example.

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76 RPC I 4645.
78 RIC I 166b.
79 Giard 1988a, pp. 50-51.
80 Sutherland 1951, p. 195 and Grant 1955b, p. 42 admit that style is not necessarily the most reliable evidence, in part due to its subjectivity. Indeed, die studies (on which, Section 1.6.4) may provide a more objective chronology for the coins produced within a single issue of coins, assuming that the issue has many of the same coin types (e.g. the aurei of Trajan studied by Beckmann 2009). Die studies, however, cannot necessarily illuminate the order of Roman coins that were struck on very large scales (e.g. the die
A group of cistophori from this mint can be dated to 19 – 18 B.C. because their obverse legends read IMP IX TR PO IV or IMP IX TR PO V, recording the ninth imperatorial acclamation of Augustus and the fifth year that he held tribunician power, which he received in 23 B.C. (Dio 53.32.5).81 The style of the obverse portraits of the emperor on these coins developed from and is similar to the portraits on another group of cistophori.82 This earlier group of coins contains less information to date it. The obverse of the earlier coins features a portrait of the emperor with the legend IMP CAESAR, and the reverse features the legend AVGVSTVS and one of three images: (1) an altar decorated with deer, (2) a bundle of six ears of grain, or (3) a Capricorn. From the legend AVGVSTVS, we know the coins have a terminus post quem of 27 B.C. when the emperor received the title Augustus. From a stylistic comparison with the cistophori of 19 – 18 B.C., we know the coins have a terminus ante quem of 19 B.C. These cistophori, then, were struck sometime between 27 and 19 B.C.

Usually, ancient coins help provide the dates for archaeological contexts and finds,83 but occasionally, archaeological contexts can help date coins. The most notable example is the excavations at Morgantina that helped date the first issue of denarii. During the Second Punic War, this Sicilian city was destroyed in 211 B.C., as recorded by Livy 26.21.14-17. The earliest denarius was found in a destruction layer at Morgantina, so the denarius was introduced before or in 211 B.C.84

Coins can also be dated from a careful examination of the contents of many hoards (i.e. deposits of “at least two coins (or at least one coin and another object of value) apparently

81 RPC I 2216-2220 = RIC I 505-510.
83 For the relevant issues involved in this process, see Evans 2013.
84 Buttrey 1961 and Crawford 1974b, pp. 28-35.
purposefully buried together’ or lost – and … found together”). Michael H. Crawford explained this method: “Of two hoards with some issues in common, that which is later will contain issues which do not occur in the other hoard and which are less worn.” With a large enough corpus of sizeable hoards, a relative chronology for an entire coinage can be determined. This relative chronology becomes an absolute chronology if the coins’ legends and images, or archaeological contexts, offer fixed dates. Most famously, Crawford used this method to determine the chronology of coins struck between c. 300 and 31 B.C. His chronology of coins struck in the 80s – 50s B.C. has been recently updated with the publication of the Mesagne Hoard, found near Brindisi.

To determine coins’ chronology from hoards and to study hoards in most any other way, as is often done in this dissertation, it is best to know the contents of a large number of hoards. But not all hoards have been recorded well enough to use for many studies. In antiquity many hoards were recovered by their owners, so they are not available for us to study. In the late nineteenth century, most museums and numismatists still focused on collecting coins and filling gaps in their collections, so many hoards went unrecorded. For example, around 1900, the antiquities dealer Dattari dominated the trade in coins from Egypt and melted down large quantities of coins without documenting them. Currently, most hoards are not found in archaeological excavations, and so they are not all well documented. Some hoards are found by metal detectorists and enter the coin trade before they have been documented. Other hoards receive very limited documentation before being sold. For example, a hoard from southeastern

85 For this definition of a hoard, see Christiansen 2004, p. 14, quoting (for the first two thirds of my quotation) Christiansen 1985, p. 78.
86 Crawford 1969b, p. 1. For the chronology, Crawford 1974b.
87 Crawford 1974b, based on the hoards published in Crawford 1969b.
Turkey was recovered around 1976 and contained over 720 silver coins. The dates of some Seleucid coins—2 posthumous drachms of Antiochus IV, at least 13 drachms of Alexander I, at least 39 drachms of Demetrius I, and at least 13 drachms of Antiochus VI—are known. Much about this hoard remains unknown: at what mint(s) these coins were struck, whether all the coins in the hoard were Seleucid, when and where the other nearly 650 coins were struck, and where exactly the hoard was buried (CH 3, 60). Still other hoards, such as one found near Halicarnassus in 1975, have been fully identified before some of the coins entered the coin trade (CH 6, 86). Because of these limitations in the reporting of hoards, scholars must be judicious about each hoard and the information it could provide before including it in a data set.

1.6.2. Denominations, Weight Standards, and Metal Standards

After deciding to operate a mint, the denomination of the coins produced at that mint was determined. The coin’s denomination (minting decision 2) determined which weight and metal standards (minting decisions 3 and 4) would be used to produce that coin. A weight standard is a rule that sets the ideal weight for a coin of a certain denomination. A metal standard is a rule that sets the amount of each metal within a coin of a certain denomination, and metal standards will be discussed in Section 1.6.2.3. When the weight standard of a gold and silver coin is known, the denomination of that coin can be determined.

1.6.2.1. Weight Standards

There are a few complications in determining a gold or silver coin’s weight standard. First, one must choose between reporting a mean weight, the median weight, the mode weight, or a range of weights when reporting for the standard. In this dissertation, the mean and/or a range

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90 Overbeck 1978.
of weights are given for a weight standard because the mean is most often reported among
numismatists, because averages are easy to compare with one another, and because the range of
weights provides a sense of the larger data set from which the calculations are derived. Indeed, it
is important that these calculations be made from as large of a data set as possible. Therefore, if
a new standard has been calculated as part of this dissertation, it has been calculated from a large
data set of coins and the sources of the data are indicated in the footnotes.

Another problem with calculating a coin’s weight standard is that coins may have lost
weight since the coin was produced. In antiquity, during coin production, the mint workers may
have used flans (i.e. the disk of metal onto which the types were struck) that weighed slightly
less than the weight standard in order to increase the mint’s seigniorage (i.e. the profit made by
the mint from producing coins). Additionally, during coin production, a silver coin may have
been blanched. In the blanching process, a flan made from a silver-copper alloy was soaked in a
natural acid in order to remove the copper from the surface layers of the flan. This process could
have removed enough copper from the surface layers of the coin to lower its weight. Wear
from using coins would have also reduced the coins’ weights. After the coins were deposited,
most coins underwent some form of corrosion. All these factors would suggest a lower weight
standard than the ideal used by the ancient mint.

To control for this bias for low weight measurements, it is best to calculate a weight
standard from “well-preserved” coins, such as those in museums, auction catalogs, or published
hoards. Even though some hoarders may have selected heavier coins to save, the weights of
coins in hoards are, in general, similar to the weights of coins in museums or in trade. When a

\[91\] e.g. Walker 1976, and Butcher and Ponting 2015, esp. p. 92.
\[92\] Butcher and Ponting 2015, p. 90.
\[93\] Butcher and Ponting 2015, p. 90.
\[94\] Butcher and Ponting 2015, p. 90.
weight standard is calculated as part of this dissertation, it is calculated from coins in museums
or from other publications of coins, not from coins in trade.

1.6.2.2. Denominations of Bronze Coins

As noted above, a numismatist knows the denomination of a gold and silver coin from its
weight standard; but the weight is not the best evidence for determining the denomination of a
bronze coin. For example, based on the weight of the one bronze denomination produced at the
mint at Nemausus, some scholars have argued that the coins were dupondii and others have
argued that the coins were asses.95 This confusion is cleared up by the convincing proposal of
Ann Johnston: that denomination patterns used by multiple mints can be more profitably
determined from countermarks (i.e. designs or letters punched into the face of an already
circulating coin by a minting or political authority, usually a city),96 if available, and the module
(i.e. diameter) of the bronze coins struck at the various mints. These factors are more useful than
the weight of the coins because bronze coins’ weights varied greatly.97 This variation is the
result of bronze coins being struck *al marco*, or by the weight of a group of coins. For example,
when the denarius was first introduced, it was struck alongside a bronze coin on the sextantal
standard, meaning that six of these coins were struck from one pound of bronze.98 Johnston used
this method to determine some denomination patterns used at many mints in Asia Minor during
the third century A.D. but expressed caution about projecting this system earlier into the first
century A.D. when value marks from either coin types or countermarks—so explicit statements

95 For dupondius, see Zehnacker, Richard, and Barrandon 1984, pp. 73-75; Amandry 1986, p. 27; Burnett,
Section 4.5.5 that proposes, e. 23 – 19 B.C., the coin changed from an uncial as to a semuncia as.
96 Cf. the definition of countermark in Howgego 1985, p. 1-5.
approach.
98 Crawford 1974b, pp. 6-7.
of a coin’s value—are less common on coins. Indeed, it is quite possible that multiple mints located near each other did not share a coherent system of denominations. Even if such a system did exist, it may not necessarily be possible to simply equate the denominations struck at civic mints with the Roman denominations because of differences in metals or to a lack of equivalencies among the coinages. Therefore, this dissertation’s cautious analysis of bronze denominations will rely on value marks and the coins’ modules, but coins’ weights will also be considered if relevant to the argument.

1.6.2.3. Metal Standards

A coin’s denomination determined not only which weight standard to use but also which metal standard to use. The metal content of gold and silver coins has been difficult to determine, especially because museums and collectors do not want their coins to be harmed or destroyed by any analysis performed on them. D. R. Walker published the results of many non-destructive tests on coins struck in both Rome and the provinces. Walker’s x-ray fluorescence (XRF) analyses determined the metal content of the surface of coins. This method is problematic because, during coin production, a silver coin may have been blanched. By using an acid to remove copper from the surface layers of the flan, this process made the coin appear to be made of more pure silver than it actually was. This blanching process could have removed enough copper from the surface layers of the coin to make XRF analyses suggest a higher silver content for the coin than was true before the blanching process. Therefore, Kevin Butcher and Matthew Ponting have devised a new method. They drill into the side of the coin and perform

\[100\] *Contra* Burnett, Amandry, and Ripollès 1992, passim.
\[101\] Walker 1976.
\[102\] Butcher and Ponting 2005b, pp. 173-174 and Butcher and Ponting 2015, p. 84-88.
inductively coupled plasma atomic emission spectrometry (ICP-AES) analyses on the metal shavings removed from the coin’s core. They have published the results of their many analyses performed on silver coins of the first two centuries A.D.¹⁰³ They have been less successful at obtaining permission to perform tests on coins from the first century B.C., so the silver standards for many of these coinages are still unknown.

Ernst Göltitzer obtained similar results to those of Butcher and Ponting for Alexandrian tetradrachms even though he only performed XRF analyses.¹⁰⁴ Göltitzer’s method differs from that of Walker because Göltitzer abraded away part of the surface of the coin before testing the coin’s metal content.¹⁰⁵

1.6.3. Coin Types

After the denomination of a coin was chosen, someone decided the coin’s types, which are the images and legends on each face of the coins. Some mints, such as Tyre, used a traditional image on its coins. From 126/5 B.C. until the mint ceased producing coins in A.D. 65/6, this mint’s shekels and half-shekels featured the head of Hercules/Melqart on the obverse, and the reverse showed an eagle standing on the prow of a galley with a palm on its wing, with the legend ΤΥΡΟΥ ΙΕΡΑΣ ΚΑΙ ΑΣΥΛΟΥ.¹⁰⁶ Other mints changed their coin types annually. Starting around 150 B.C., the mint at Rome regularly changed types to honor the families of the tresviri monetales or to commemorate other events.¹⁰⁷ For example, in 43 B.C., at Rome, a denarius was struck featuring the bust of the goddess Flora on the obverse and a seated woman

holding a cullulus, who is labeled as VESTALIS, on the reverse. In the following year, a
denarius was struck with the portrait of Caesar wearing a laurel crown on the obverse and a bull
charging to the right on the reverse. Other mints, such as those in Lugdunum, Ephesus, and
Alexandria, began changing types with each issue in imitation of the mint at Rome.

Numismatists have debated whether or not these annually changing coin types, especially
those minted in Rome, contained any propagandistic value. Sutherland and other scholars have
argued that coins’ types were propaganda, or at least publicity tools, for the emperor because the
types were often very topical. The scholars who are sympathetic to this argument, though,
disagree about the audience for the coin types. Barbara Levick proposed that the primary
audience for the coin types was the emperor, Sutherland thought that the intended audience was
the Senate and the military, and Andrew Wallace-Hadrill argued that the audience was both the
emperor and his subjects. Some scholars even proposed that certain metals were directed
towards certain audiences—the gold and silver to the higher classes and the bronze to the lower
classes.

Some scholars, however, remained unconvinced, mainly because they assumed that coins
were ill-suited for propaganda. A. H. M. Jones believed the linguistic diversity of the empire
would have prevented the messages from being understood. Buttrey argued that Vespasian’s

108 RRC 512/2.
109 RRC 494/24.
110 For a detailed discussion of how Alexandria bronze coins combine Ptolemaic and Roman iconographic
characteristics while they shift towards more Roman features, see Noeske 2009; and O’Neill 2011, pp.
129-141.
111 Sutherland 1959 and 1983. Levick 1982 preferred the term “publicity” to “propaganda.” These ideas
113 Metcalf 1993 and Hekster 2003. Noreña 2011, p.144-146 suggested this as a possibility for only a few
types: the Pax and Concordia personifications on imperial gold and silver were targeted to the higher
classes and the Fortuna and Salus personifications on imperial bronze were targeted to the lower classes.
coins were not topical, but antiquarian. Gia Guido Belloni questioned how small issues could leave any impression on the people of the Roman Empire, and he thought other methods, such as letters from the emperor, were better forms of propaganda. Finally, Crawford surveyed literary evidence and noticed that only the most common types were mentioned by ancient Greeks and Romans. These most common types indicated the authority responsible for the coin, and not, in his opinion, any propagandistic message.

The differences of opinion are really responses to two different ideas. On the one hand, numismatists think that coin types were topical and that, during production, the coins were encoded with a message that might be classified as propaganda. On the other hand, scholars doubt whether, in circulation, the coins’ message was understood by the public because of the linguistic diversity of the empire, because other forms may have been more convenient for sharing a message, and because of the sheer variety of coin types. Carlos Noreña has offered the best synthesis of these views and the ancient evidence: that coin types were topical expressions of an imperial ideology, but the most common types would have actually communicated messages to the Roman people because those are the ones that were noticed.

1.6.4. The Quantity of Coins Produced

For every coin issue, the last decision is how many coins to strike. The most popular method for estimating the size of a coin issue has been a die study, but this method is not without controversy. Die studies rely on the way that ancient coins were made. Two dies (i.e. metal objects, like stamps, that press the coin types into the face of a flan) were engraved by hand. The

115 Buttrey 1972b.
117 Crawford 1983.
118 Noreña 2001 and 2011.
obverse die was fixed into an anvil, the flan was heated and placed on top of the obverse die, and the reverse die was placed above the flan and struck with a hammer. This process was repeated many times until the dies became defective and were no longer useable. Usually the reverse die wore out first because it was hit with the hammer. Each obverse die, therefore, was often used with multiple reverse dies.

In a die study, a numismatist collects a large sample of coins using the same coin types. By comparing each coin with all the others and looking for similarities among the coins, the numismatist is able to differentiate the dies used to produce each coin. A numismatist can then use her count of the number of obverse dies and the number of coins in her sample to statistically extrapolate an estimate for the number of obverse dies used at the mint.\textsuperscript{119} To estimate the size of the issue of coins, this estimate for the number of obverse dies must be multiplied by an estimate for the number of coins produced from each obverse die.

There is no agreement on what was the average number of coins produced by an obverse die. Various readings of an Amphictyonic decree from c. 338 – 333 B.C. suggest that each obverse die could have produced between 23,000 and 47,000 silver coins. Records for dies used in England between 1281 and 1327 suggest that each obverse die struck between 5,000 and 74,000 silver coins.\textsuperscript{120} Modern experiments with minting coins by D. G. Sellwood produced over 10,000 silver coins from one obverse die.\textsuperscript{121}

Buttrey rejected the very idea that one can use a die study to estimate the number of coins produced in an issue because of these varied numbers for the coins from a die and the assumptions involved in statistical extrapolation.\textsuperscript{122} François de Callataï is the most outspoken

\textsuperscript{119} Etsy 2006.
\textsuperscript{120} Howgego 1995, p. 32.
\textsuperscript{121} Sellwood 1963.
\textsuperscript{122} Buttrey 1993, pp. 338-345, and 1994.
proponent of estimating the size of ancient coin issues, and he has responded to Buttrey’s criticism. First, he argued that this method is reliable as long as there are many known coin specimens struck from each obverse die. Ideally, the numismatist would have a ratio of at least 6 extant coins to 1 observed obverse die. The estimate should be treated with caution if the estimate is lower than 3 extant coins to 1 observed obverse die. Second, de Callataÿ no longer considers the estimated size of issues. He compares the estimated number of obverse dies in order to determine the relative size of various coin issues.

This method works well to obtain ideas of the relative size of Archaic, Classical, and Hellenistic issues of coins, but it does not work well to estimate the size or relative size of Roman coin issues. Denarii were struck on such a large scale that it would require a very large sample for the numismatist to account for every obverse die with at least three, or preferably six, coins in the data set. The process would be very labor intensive to obtain estimates for one issue, let alone for many issues.

The best way to estimate the relative size of Roman, and other, coin issues is to compare the number of coins in hoards. If an issue of coins is well represented in the hoards, that issue was probably larger than the other issues. If it is poorly represented in the hoards, that issue was smaller than the other issues. This method of comparative quantification works best under two ideal circumstances. First, the hoards are from the same time period, so that a new issue is not mistaken for a large issue simply because the coins have just entered the circulating medium and

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123 de Callataÿ 1995, p. 75.
125 This method is not the same as Crawford 1974b’s use of a “master-hoard” (i.e. a conglomeration of a selection of several large, supposedly representative hoards from several time periods) to obtain estimates for the number of obverse dies used to produce each issue of denarii struck during the Republic. For a thorough explanation and reasonable rejection of this method, which produced untrustworthy estimates for the number of obverse dies, Buttrey 1993 and de Callataÿ 1995, pp. 291-292.
so that an older issue is not mistaken for a small issue because of coin loss and attrition. Second, the hoards are large enough to include even small issues.\footnote{For approval of this method, see de Callataï 1995, pp. 291-292 (who points out that Buttrey 1993 and 1994 do not reject this method); Howgego 1995, pp. 31-32; Christiansen 2004, pp. 21-22 and p. 26; and Butcher and Ponting 2015, p. 98.}

\subsection*{1.6.5. Recoinages}

Most of the six, sometimes interconnected, decisions described above can all be involved in a recoinage. A recoinage involves the recall of old coins, which are then melted down by the mint and restruck into new coins, which are now considered legal tender. A recoinage is not the same as recycling old, worn coins because the two actions happen on different scales. A recoinage happened on a large scale and was aimed at eliminating the previous circulating medium. Recycling old coins happened on a small scale and was not necessarily the only source of metal for new coins. The recycling of coins has often been assumed, but only recently have scholars’s metallurgical analyses (and comparison of the coins’ likely metal sources) been able to confirm that coins were recycled. Butcher and Ponting have determined that, during Caligula’s reign, the mint at Antioch seems to have recycled old Augustan tetradrachms and used another silver source.\footnote{Butcher and Ponting 2015, p. 560.} The regular recycling of old coins is also a habit more characteristic of some mints than others. During the Julio-Claudian period as a whole, recycling of old coins or coins from other regions was most likely regular practice at the mints in Antioch and Alexandria, but it does not seem to have happened frequently at Rome or Lugdunum.\footnote{Butcher and Ponting 2015 suggested that the mint at Antioch recycled earlier coins under Augustus (pp. 551, and 557) and under Caligula (p. 560); and that the mint at Alexandria did so under Tiberius (pp. 619-620) and Claudius (p. 623). While earlier coins do provide the bullion for new coins in recoinages, I have omitted possible recoinages here.}
In Peter Spufford’s study of medieval coins, he notes several characteristics of a large-scale recoinage: (1) a sufficiently developed coin-using economy, (2) a sufficiently small stock of coin for a recoinage to be practicable, (3) the absence of foreign coins in circulation, and (4) new types distinctly different from previous coin types.\(^{129}\) He also notes that a recoinage is an indication of a state’s power.\(^{130}\) When providing these criteria, Spufford was discussing Anglo-Saxon pennies of the tenth and eleventh century, which were *fiat* coins—or coins whose value depended on the decree of the king. In a discussion of the coins of Roman Egypt, where coins’ value was supported by a belief in metallism (i.e. the belief that a coin’s value is determined by the amount of precious metal in the coin), Christiansen pointed out a fifth relevant aspect of recoinages: the connection between recoinages and a change in coins’ metal standards.\(^{131}\)

Of these five criteria, two apply to the Roman Empire between c. 60 B.C. and A.D. 68, one is difficult to measure, and two provide clues to detect a recoinage. Coins were widely used within the empire (criterion 1),\(^{132}\) and, as can be seen from the hoards discussed in this dissertation, no foreign coins circulated within the empire (criterion 3).\(^{133}\) The second criterion, the “sufficiently small” number of coins in circulation, is inherently difficult to measure, except by determining that a recoinage happened.\(^{134}\) Lastly, criteria 4 and 5—a change in coin type and a change in the metal standard—suggest two of the three clues that a recoinage happened. The possible results of a change in the metal standard are discussed in “Appendix 1. Gresham’s Law, Legal Tender Laws, and Other Scenarios.”

\(^{129}\) Spufford 1988, pp. 43-44 and 93-94.  
\(^{130}\) Spufford 1988, pp. 43-44.  
\(^{131}\) Christiansen 2004, p. 27.  
\(^{132}\) Howgego 1992.  
\(^{133}\) Appendices 3, 5, 8, and 9.  
Hoard provide a third indication that coins were recoined. If a series of hoards shows that new coins have completely replaced old coins, a recoinage has probably occurred. In this instance, “old coins” refer not just to coins from, say, fifty years prior that could be disappearing due to attrition, but also to those coins struck immediately prior to the “new coins.” These “new coins” should have a different coin type and metal standard from the “old coins.” The recoinage, then, would be dated by the earliest coins among the “new coins.”

1.6.6. Data Management

Finally, in order to facilitate the examination of a large number of coins and help detect these changes, a number of research tools have been employed. A FileMaker Pro database of 3,115 coin types with detailed descriptions of the images and legends was assembled from numerous catalogs and updated based on the most accurate and persuasive studies of individual issues and mints. This database could be easily searched and sorted. For bronze coins not included in the database, the invaluable Roman Provincial Coinage was frequently consulted. Furthermore, a Prezi presentation was created with the geographic regions on the y-axis and the chronological progression from 60 B.C. to A.D. 68 on the x-axis (Fig. 1.5). Each issue from each mint was given its own box, and images and/or descriptions of the coin types were placed within the box. The freedom afforded users by Prezi provided a large enough canvas on which to visualize the entire empire at once, and the program’s zoom feature enabled comparisons of multiple mints’ or Roman moneyers’ products (Fig. 1.6), as well as the detail of a single mint or coin (Fig. 1.7). In addition to these tools that facilitated the comparison of many coin types, multiple Excel spreadsheets were created to compare the contents of 191 hoards, hundreds of

135 Spufford 1988, p. 93; and Christiansen 2004, p. 27.
136 https://prezi.com/tddruoahwhc/the-empire-strikes/
bronze coin denominations, the weights of coins, or the silver contents of coins. These
spreadsheets have been reformatted and are presented as the tables throughout this dissertation
and in the appendices.

Fig. 1. 4. Screenshot of the entire Prezi canvas

Fig. 1. 5. Screenshot of the Prezi zoomed in on the coins produced by the *tresviri monetales* at Rome between 19 and 3 B.C.
1.7. Outline of the Dissertation

Using these data analysis tools and numismatic techniques, this dissertation examines the six possible coin production decisions and recoinages at the active mints in the Roman Empire to determine if mints were coordinated at certain times. The “territory of the Roman Empire” is defined as the areas inhabited by the people and cities over which the provincial governors had power. If the coins show that similar decisions have been made simultaneously at multiple mints, the mints are said to be coordinated. This coordination with the denarius mint at Rome implies that the Roman state is involved in producing coins for those regions, an indication of the Roman state’s infrastructural minting power. In order to present a convincing and relatively concise argument for the growth of the Roman state’s power over coin production decisions within the empire between 60 B.C. and A.D. 68 at the hundreds of mints within the empire, two decisions have been made to limit the material under discussion.

First, the dissertation will focus primarily on gold and silver coins, along with the major changes to many bronze coinages. Primarily, civic bronze coinages were produced for use as
small change within a city’s territory. Generally, as with the non-denarius silver coinages, these civic mints struck pre-Roman denomination patterns that continued after the cities became part of a Roman province. These denominations patterns were rarely compatible with the Roman as, but numismatists have proposed that the Roman state tried to make civic bronze coins compatible with the Roman as at three times: the so-called fleet coinage of Antony, the Augustan bronze coinage reform at Rome, and the closure of western civic mints. Since these three events could have involved the Roman state, they will be discussed in this dissertation. There are no other clear events that could have involved the Roman state and the exercise of its power over bronze coinage production at civic mints between 60 B.C. and A.D. 68.

This limited focus on the empire’s bronze coinages is also advantageous for methodological reasons. Civic coins were produced very intermittently. For example, on the Iberian Peninsula, the mint at Carthago Nova was one of the most productive mints in the region. It struck twenty emissions of bronze coins between the middle of the first century B.C. and the end of Caligula’s reign, a period of nearly ninety years. Illici, a mint of more moderate output, produced coin issues five times from the triumviral period until the end of Tiberius’s reign. The civic mint of Saguntum also struck a moderate amount of coins in three issues during the late first century B.C. and the reign of Tiberius. To the east, the mint of Corinth was one of the most important bronze coin mints. It struck twenty-four issues between 44 B.C. and A.D. 68, one of the most regular production cycles. Since this rather intermittent

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137 Howgego 1985, p. 84; Burnett, Amandry, and Ripollès 1992, pp. 16-17; and Butcher 2004, pp. 144-146. For cities’ use of countermarks to regulate the bronze coin circulating within their territory, see Howgego 1985, pp. 8-14 with p. 3 that established cities as the primary users of countermarks.

138 For estimations of the various coin outputs of Iberian mints, see Ripollès, Muñoz, and Llorens 1991, p. 315-318.

139 *RPC* I 146-186.

140 *RPC* I 187-199.

141 *RPC* I 200-204.
striking makes the civic bronze coins hard to date precisely, they are generally incompatible with this dissertation’s methodology for detecting coordination.

Furthermore, during the period under consideration (60 B.C. – A.D. 68), there are few other signs of cooperation among civic mints. The same engraver may have provided dies for a few cities’ coinages and the coins of the Cretan Koinon’s cities under Caligula show similarities, but these are limited to a few instances. These instances are nowhere near as extensive as the workshop system of minting used in Asia Minor during the second and third centuries A.D. Therefore, since there are few instances of cooperation among cities producing bronze coins and since civic bronze coin production is usually incompatible with this dissertation’s methodology, discussion of bronze coins will be limited.

As a second way to present a convincing and relatively concise argument in this dissertation, important and illustrative case studies will be examined. The opening and closing of major silver mints will always be examined, as will changes in the silver standards for those mints’ coins. Other case studies are chosen as important moments in the numismatic history of the empire, such as the end of bronze coinage produced by cities in the western provinces, or for

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142 Cf. Meadows 2001 who argues that Hellenistic kings rarely interfered with coin production at civic mints, and that the Romans began this practice. Meadows 2001, p.54, though, too rigidly interprets ten Julio-Claudian civic mints’ legend PERM IMP, PERM AVG, or PERM PROCOS to mean that all cities needed the emperor’s permission to coin (RPC I 5-8, 10-19, 34-38, 45-46 (Emerita Augusta); RPC I 50-51 (Ebora); RPC I 60-67 and 69-72 (Italica); RPC I 73-76 (Romula); RPC I 98-100 and 107-110 (Iulia Traducta); and RPC I 127-131 (Colonia Patricia); RPC I 762-770 (Colonia Iulia Pia Paterna); RPC I 802 (Cercina); and RPC I 810 (Thaena); RPC I 4541-4542 and 4544 (Berytus)). The legends can best be understood as a record of the cities’ demonstration of loyalty and subordination to Rome when they asked if they could coin, or, as in the case of Flavian Achaea, the restoration of the right to coin (Levy 1987). For other scholars who thought cities needed permission to coin, Mattingly 1923, p. xxiv; Robert 1960a; Levy 1987; Burnett, Amandry, and Ripollès 1992, pp. 2-3. For those who thought cities did not need permission to coin, Crawford 1985, p. 268, n. 18; Weiss 1992, p. 174; Nollé 1993; Butcher 2004, pp. 144-146 and 241-245.

143 Burnett, Amandry, and Ripollès 1992, p. 15.

the development of the Roman state’s power, such as the new silver standards at many of the empire’s silver mints during the 60s A.D.

These case studies will be examined chronologically. Chapter Two examines the period between 60 and c. 55 B.C. in order to understand the development of the circulating media (i.e. the coins in circulation) in 60 B.C. and the distribution of power within the empire at the end of the Republic before the civil wars involving Caesar and his heir. In order to explain the circulating media within the empire in 60 B.C., this chapter often examines time periods before the dissertation’s explicit starting point. Despite the acknowledgement of earlier minting practices, 60 B.C. is an ideal starting point for an examination of the Roman Empire’s infrastructural power because most numismatic changes happen after this date. As will be discussed in sections within this dissertation, coin circulation patterns change after 60 B.C.\textsuperscript{145} and the coins from the mint at Antioch\textsuperscript{146} and in the province of Asia begin to include the names of proconsuls around 60 B.C.\textsuperscript{147}

Chapter Three examines the lack of coordination among the empire’s mints during the civil wars of 49 – 27 B.C. Chapter Four examines the mints during the reign of Augustus (27 B.C. – A.D. 14), who Grant and Crawford argued was important for the empire’s numismatic history. This chapter will propose that Augustus had a limited effect on the empire’s infrastructural power regarding coin production decisions.

Chapter Five examines the more rapid increase of infrastructural power during the reigns of the later Julio-Claudian emperors (A.D. 14 – 68). A.D. 68 is a good ending point because of the empire’s numismatic history. Studies of hoards performed by Sture Bolin, Richard Duncan-Jones, Erik Christiansen, and Kevin Butcher, along with recent metallurgical analyses performed

\textsuperscript{145}Sections 3.3, 3.4, 3.6, 4.5, 4.6, 5.6, 5.7, 5.8, and 5.9.

\textsuperscript{146}Section 2.5.

\textsuperscript{147}Section 2.4.
by Butcher and Ponting, have indicated major changes to the silver content of the empire’s coins and major changes to the empire’s circulating media that were initiated in the reign of Nero (A.D. 54 – 68). These changes indicate the development of an empire-wide system of coordinated mints.

Chapter Six brings these case studies and chronological chapters together, offers a summary and explanation for the trajectory of the Roman state’s infrastructural power related to coin production, and discusses some implications and contributions of this dissertation.

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CHAPTER 2: THE LATE REPUBLIC (60 – C. 55 B.C.)

2.1. Introduction

This dissertation examines how the Roman state’s infrastructural capacity regarding coin production within Italy and the provinces changed during the transition from Republic to Empire. In order to understand this diachronic change, it is necessary to clarify Rome’s involvement with coin production at the mints operating at the beginning of the relevant time period, in 60 – c. 55 B.C. Since mints struck coins for the region in which their coins circulated, it is also important to know where each mints’ coins circulated. With this knowledge derived from coin hoards, it is possible to understand on what major mints this dissertation should focus. The mints that greatly contributed to the empire’s circulating media will be examined. This focus on the major coinages will be more faithful to the ancient world than a reliance on the arbitrary distinction between “Republican/Imperial” and “Provincial” coins.

Like Michael H. Crawford’s *Coinage and Money under the Roman Republic*, which sought to trace the history of Rome’s coinage and the spread of its use from the first Roman coins in the Hellenistic period to the Augustan period, this chapter surveys the mints producing coins and the circulating media within the empire c. 60 B.C. in the order in which provinces were added to the empire. This chapter starts with the prominence of the denarius in Italy, Sicily, the Iberian Peninsula, and Africa (Section 2.2); then it examines the Balkans area where Greek mints are relevant to the province of Macedonia (Section 2.3); next, the province of Asia bequeathed to Rome in 133 B.C. (Section 2.4); and finally Syria (Section 2.5). For each region of the empire, this chapter may need to review the relevant numismatic history prior to 60 B.C. in order to understand the circulating medium and coin production in that region c. 60 B.C. The chapter
ends with a summary discussing the Roman state’s infrastructural minting power throughout the empire in 60 – c. 55 B.C. (Section 2.6)

2.2. The Denarius in Italy, Sicily, Spain, and Africa

2.2.1. The Origin of the Denarius

The denarius was the silver coinage produced at Rome. It originated in, or shortly before, 211 B.C. following the financial strains of the Second Punic War.¹ This war was a watershed moment in Italian and Sicilian numismatics. In Italy, most mints had stopped producing silver coins earlier in the third century B.C., but many mints struck during the Second Punic War.² Afterwards, Italian mints outside of Rome only struck bronze coins.³ During the war, Sicilian mints ceased producing silver coins, but a few mints continued to strike bronze coins after the war.⁴ The denarius became the main, if not only, silver coin circulating within Italy and Sicily after the war.⁵ Also, as a result of the Second Punic War, Rome acquired territory on the Iberian Peninsula, where local mints began striking a local coinage—the so-called Iberian denarius—between the beginning of the second century and the 130s B.C.⁶ The end of the production of this silver coinage will be discussed in Section 2.2.2.

Use of the denarius also spread into the Po Valley and Africa as a result of wars. After the Romans conquered the Po Valley in the early second century B.C., local mints stopped

¹ Buttrey 1965; Crawford 1974b, pp. 28-35; Crawford 1985, pp. 55-58.
⁴ Förtschner 1986, pp. 120-207; and Rutter 1997, pp. 175-179.
⁵ Crawford 1985, pp. 71 and 110-115.
producing silver and bronze coins. The Roman quinarius, which was half the value of the
denarius, and which was similar to the local drachm, became the main circulating medium of the
Po Valley during the few decades following the conquest of that region.\(^7\) At the end of the Third
Punic War, in 146 B.C., the Romans sacked Carthage. No new silver coins were struck in Africa
until the civil wars of the 60s – 30s B.C., but denarii began circulating in Africa before c. 125
B.C.\(^8\) The few known hoards from Africa contain both Roman denarii and the silver coins of the
Numidian and Mauretanian kingdoms, so these coinages were compatible in some way. Given
the similarity in the weight standards of the African coins to the Roman coins, it is likely that the
Numidian and Mauretanian coins were meant to be interchangeable with the Roman coins.\(^9\) The
Mauretanian kingdom later became part of the Numidian kingdom, and the end of the production
of the Numidian silver coins in A.D. 44 will be discussed in Section 5.7.

2.2.2. The End of Silver Coin Production on the Iberian Peninsula

Around 60 B.C., two silver coinages circulated on the Iberian Peninsula: the so-called
Iberian denarii and Roman denarii. Civic mints in the province of Hispania Citerior had struck
both the so-called Iberian denarii and bronze coins during the second century B.C., but the mints
of Hispania Ulterior had only struck bronze coins.\(^10\) Of the fifty-five mints in Hispania Citerior,
thirteen struck denarii during the second century B.C., five at the change from the second to the
first century B.C., and eight during the first century B.C. After 60 B.C., only one mint struck
Iberian denarii.\(^11\) Otherwise, all civic mints on the peninsula struck bronze coins.

\(^7\) Crawford 1985, p. 81.
\(^8\) Kay 2014, pp. 94-95.
\(^10\) Villaronga 1994; and Kay 2014, pp. 95-96.
\(^11\) The mints striking “Iberian denarii” were Kese/Tarraco early in the second century B.C. (Villaronga
1994, p. 160), Ausesken early in the second century B.C. (Villaronga 1994, p. 185), Arekorata-
The silver coins of *Hispania Citerior* are called “Iberian denarii” because they were struck on the Iberian Peninsula and because they were meant to be equivalent to Roman denarii. The Iberian denarii had a similar weight to Roman denarii, and some cities, such as Bolskan (Fig. 2.1), used the abbreviation for a denarius, \( \times \), as part of their coins’ types.\(^{12}\) Furthermore, the Iberian denarii and Roman denarii circulated together, as is shown by the hoards from the Iberian Peninsula, as collected in Michael Crawford’s *Roman Republican Coin Hoards* and in Kris Lockyear’s *Patterns and Process in Late Republican Coin Hoards, 157-2 B.C.* These hoards also provide the date for most Iberian denarii, so numismatists can only date these denarii to approximate periods of time. The closing date for most of the hoards is determined by the date of the Roman denarii. These hoards are listed in Table 2.1.

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\(^{12}\) Ripollès 2012, p. 364.
### Table 2.1. Contents of Iberian Coin Hoards (125 – 1 B.C.)

<table>
<thead>
<tr>
<th>Hoard</th>
<th>Closing Date</th>
<th>Number of Roman Denarii</th>
<th>Number of Iberian Denarii</th>
<th>Other coins</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRCH 178</td>
<td>112 B.C.</td>
<td>74</td>
<td>2</td>
<td>42 drachms of Emporiae</td>
</tr>
<tr>
<td>RRCH 180</td>
<td>112</td>
<td>47</td>
<td>2</td>
<td>963 drachms of Emporiae</td>
</tr>
<tr>
<td>RRCH 184</td>
<td>109</td>
<td>224 (and 1 victoriatus)</td>
<td>79 and one half</td>
<td>1 drachm of Saguntum</td>
</tr>
<tr>
<td>RRCH 185</td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>RRCH 188</td>
<td></td>
<td>682 (and 1 double victoriatus)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>RRCH 196</td>
<td>102</td>
<td>12 total Roman and Iberian denarii</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RRCH 204</td>
<td></td>
<td>1</td>
<td>409</td>
<td></td>
</tr>
<tr>
<td>RRCH 193</td>
<td>101</td>
<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RRCH 205</td>
<td>100</td>
<td>12</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>RRCH 206</td>
<td>100</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Villaronga 1980</td>
<td>100</td>
<td>1346</td>
<td>17</td>
<td>5 Drachms of Saguntum</td>
</tr>
<tr>
<td>RRCH 264</td>
<td>80</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RRCH 259(=282)</td>
<td>78</td>
<td>32</td>
<td>113</td>
<td></td>
</tr>
<tr>
<td>RRCH 314</td>
<td>74</td>
<td>14</td>
<td>2628</td>
<td></td>
</tr>
<tr>
<td>RRCH 385</td>
<td>45</td>
<td>57</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>RRCH 397</td>
<td>44</td>
<td>982</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RRCH 483</td>
<td>19 – 18</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

The equation of the Iberian denarius to the Roman denarius helps explain the end of the production of silver coinage on the peninsula. As more Roman denarii entered the province, there was less, and eventually no, need for Iberian denarii. Table 2.1 shows that at the end of the second century B.C., Roman denarii had become prevalent in the Iberian Peninsula. Hoards No. 4, 7, and 10 are the only hoards from the second century B.C. to have more Iberian denarii than Roman denarii. In the other nine hoards from that period, Roman denarii outnumber Iberian denarii, sometimes by as little as 4 to 1 (No. 11) and sometimes by as much as 95 to 1 (No. 9).
The mint in Rome was providing the inhabitants of the peninsula with large numbers of denarii, so there was no need for Iberian mints to produce the equivalent Iberian denarii.

During the first century B.C., in general, the Roman denarii continued to dominate the circulating medium of Iberia. Four of the six hoards buried on the Iberian Peninsula contain more Roman denarii than Iberian denarii (No. 13, 16, 17, and 18). The ratios of Roman denarii to Iberian denarii range from as much as 982 to 1 to as little as 4 to 1. Two of the six hoards, though, contain more Iberian denarii than Roman denarii (No. 14 and 15). These hoards were both buried during the Sertorian War of 82 – 72 B.C when Q. Sertorius rebellion against Rome.\(^\text{13}\) At this time, Iberian denarii were struck in large numbers at the mint in Bolskan.\(^\text{14}\) This mint city is near the hoard found at Maluenda (No. 14), and this proximity may be one reason for the large number of Iberian denarii in this hoard. Another reason is the greater availability of Iberian denarii, as opposed to Roman denarii, for use during the Sertorian War. After this spike in the production of Iberian denarii, Roman denarii again quickly entered the peninsula and became the dominant circulating medium, as shown by the large number of Roman denarii in hoards No. 16, 17, and 18.

The twenty-two mints that produced Iberian denarii in the second and first centuries B.C. stopped striking coins because it was unnecessary to produce their own coins. Roman denarii were equivalent to Iberian denarii, and they were very common on the peninsula. Since the production of Iberian denarii was redundant, the mints gradually stopped issuing silver coins. The Kolounikou-Clovnioq, Sekobirikes, and Sekotias mints produced their first and last denarii early in the first century B.C.\(^\text{15}\) The mints in Kelse and Konterbia Karbika-Segobriga struck their

\(^\text{13}\) On this war, Seagar 1992a, p. 191 and Seagar 1992b, pp. 215-221.
\(^\text{14}\) Villaronga 1994, p. 212 and Ripollès 2005, p. 84.
\(^\text{15}\) Villaronga 1994, pp. 283, 292, and 293.
first and last denarii after 133 B.C.\textsuperscript{16} The mint in Bolskan struck its last issue of denarii during the Sertorian Wars, which ended in 72 B.C.\textsuperscript{17} The last issue of Iberian denarii was struck at Osca c. 39 B.C.\textsuperscript{18} The gradual end of Iberian denarius production suggests that the end of silver coin production at the mints was not coordinated.\textsuperscript{19} Despite the lack of coordination, the end of Iberian denarius production made the mint in Rome the only mint producing silver coins for the peninsula. Indeed, the extensive use of the Roman denarius in Italy, Sicily, the Po Valley, the Iberian Peninsula, and Africa meant that the Roman state produced silver coins for all these regions. Therefore, the Roman state had a high infrastructural capacity regarding silver coin production for these regions.

2.3. Greece and Macedonia

2.3.1. The Annexation of Greece

Denarii did not circulate in all regions of the empire. Following several wars, starting in 148 B.C., the Romans regularly sent a governor to oversee the province of Macedonia.\textsuperscript{20} Whether this province of Macedonia also included some or all of Greece has been a matter of scholarly dispute, and it is an important problem for this study of the Roman state’s infrastructural minting power. Silvio Accame had argued that part of Greece was attached to the

\textsuperscript{17} Villaronga 1994, p. 212.
\textsuperscript{18} Villaronga 1994, p. 213 = \textit{RRC} 532/1. Section 3.2.6 classifies this issue as an imperatorial coinage because the reverse legend, DOM•COS•ITER•IMP refers to a governor supporting Octavian. The obverse legend identifies the mint as in Osca, so it can also be called an Iberian denarius issue.
\textsuperscript{19} Cf. Ripollès 2014, pp. 58-61 who proposes that the governors no longer allowed silver coins to be struck, perhaps because the production of Iberian denarii became associated with Sertorius and his army. This idea, though, presumes that the governors did give the cities permission to issue coins (as argued on Ripollès 2014, pp. 31-34), but this proposal is largely an argument from silence.
\textsuperscript{20} Kallet-Marx 1995a, pp. 12-18 and Wesch-Klein 2008, pp. 262-263. Cf. Gruen 1984, pp. 433-436 who questions whether governors were sent to Macedonia annually and doubts that a \textit{lex provinciae}, “provincial charter,” for Macedonia or clear borders of the province were established, but who agrees that Rome was now responsible for “Independence for Macedonia and Illyria had vanished” (p. 436).
province of Macedonia at some point before 112/1 B.C. because of his interpretation of IG VII, 2413-2414.\textsuperscript{21} This inscription, found in Thebes, mentions [Μακεδονίαι] τῇ Ῥωμαίων ἐπαρχείᾳ καὶ ἣς ἐπάρχουσ[ιν τῇ Ἑλλάδος], “the Roman province of [Macedonia?] and that part [of Greece?] which they rule” (lines 2-3), but the key words of “Macedonia” and “Greece” are restored. Additionally, the possible dates of the inscription have been determined based on proposed restorations of Macedonian governors’ names, and these restorations have themselves been suggested based on the limited evidence contained within the inscription.\textsuperscript{22} Accame’s interpretation seems to have been constructed on an uncertain foundation. Furthermore, in a letter to Dyme from c. 144/3 B.C., the governor of Macedonia asserted that the Romans had given ἑλευθερία, “freedom,” to the cities of Greece.\textsuperscript{23} Even though ἑλευθερία—and its Latin parallel libertas—can have multiple meanings, it implies that the cities were autonomous in some way.\textsuperscript{24} The Dyme inscription brings Accame’s interpretation into doubt and makes it unclear when a Roman proconsul had power over central Greece. Therefore, it is necessary to survey the other evidence regarding the status of Greece between 148 B.C. when governors were regularly sent to the province of Macedonia and 27 B.C. when governors were regularly sent to a separate province of Achaea.\textsuperscript{25}

\textsuperscript{21} Accame 1946.
\textsuperscript{22} On the uncertainty of the restored names, Sherk 1969, pp. 250-252.
\textsuperscript{23} Sherk 1969, no. 43, lines 15-16. Gruen 1984, p. 524. On the date of the inscription, Kallet-Marx 1995b, pp. 141-143. Cf. Bernhardt 1977, pp. 65-73 who follows Accame 1946 and defines this “freedom” as if the cities of Greece are civitates stipendariae that remain free in the sense that they can use their own laws but are not free in the sense that they send tribute to Rome.
\textsuperscript{24} Bernhardt 1977, pp. 65-73 follows Accame 1946, surveys the various possible Roman meanings of a “free” city, and defines this “freedom” as if the cities of Greece are civitates stipendariae that remain free in the sense that they are able to use their own laws but are not free in the sense that they send tribute to Rome. Brunt 1988, pp. 291-298 discusses the various meaning of libertas as it applies to communities.
\textsuperscript{25} On 27 B.C. as the first time governors are regularly sent to the province of Achaea, Kallet-Marx 1995a, p. 50; and Wesch-Klein 2008, p. 265.
In 146 B.C., after the Achaean War, ten senatorial commissioners went to Greece to help L. Mummius enforce a peace settlement. A fragmentary section of Polybius only records that the commissioners sold the confiscated property of Rome’s opponents (39.4). Pausanias claims that Mummius imposed tribute on Greece and changed many cities’ governments, ended democracies, and broke up confederacies; but the Romans cancelled the tribute and reversed the other changes a few years later (7.16.9-10). Indeed, evidence suggests that confederacies in Greece continued to exist after 146 B.C. Beyond Pausanias’s possibly confused and not very helpful account, the aforementioned letter from c. 144/3 B.C. implies that the Romans granted the cities of Greece freedom following the Achaean War. The changes following the Achaean War appear to have been temporary, and a Roman proconsul, whether of Greece or of Macedonia, seems not to have had power over central Greek cities.

After the settlement of the Achaean War, c. 144/3 B.C., Q. Fabius Maximus, proconsul of Macedonia, was in Greece following a revolt in Dyme. After this extraordinary situation, proconsuls of Macedonia appear not to have entered Greece until the Mithridatic War. Instead, governors of Macedonia were primarily concerned with defending Macedonia along the Thracian border. Indeed, when the governor was involved in Greek affairs, he was primarily asked to settle disputes between Greek cities, or between guilds of Dionysiac Artists. This arbitration, much like the Senate’s arbitration of Greek disputes, followed the Greek custom of asking another polity to settle a dispute between two cities rather than allowing the dispute to result in war.

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26 Gruen 1984, p. 525, n. 218.
27 Gruen 1984, pp. 527-528.
28 Sherk 1969, no. 43.
29 Kallet-Marx 1995a, pp. 52-56.
When war did erupt between Mithridates and Rome in 87 B.C., Sulla took command over Greece and Asia in order to fight Mithridates. Indeed, he appointed L. Licinius Murena as a legate to help him in both Greece and Asia, and Gn. Manlius Agrippa may have been appointed as Murena’s legate in Greece. With the help of these men, Sulla drove Mithridates and his armies from Greece and Asia, recovered Roman territory, and imposed harsh fines on the Asian cities, who had supported the Pontic king. When Sulla returned to Italy in order to march on Rome and become dictator, he took troops from Greece and this act allowed the Thracians to invade. Rome responded by briefly sending a governor to Greece instead of to Macedonia. Once security was restored, proconsuls of Macedonia were regularly appointed again.

After the Mithridatic War, taxes were imposed on many Greek cities. With the introduction of taxes, the publicani and the proconsul of Macedonia became more involved in Greek affairs. For example, a senatus consultum, in both Latin and Greek, of 78 B.C. granted privileges to three ship captains who helped Rome during the Social War. The captains were freed from any liturgies or taxes in their home cities, regardless of the cities’ status or relationship with Rome (lines 3 and 10-11 in the Latin, lines 12 and 23 in the Greek). Indeed, the decree instructed the magistrates farming the tax contracts for Asia and Euboea to make sure these captains did not pay taxes (line 11 in the Latin, line 23 in the Greek). The decree further advised the consuls to tell the proconsuls of Macedonia and Asia to ensure that the decree was carried out (lines 14-15 in the Latin, lines 28-29 in the Greek). This decree suggests that the proconsul of Macedonia was becoming more involved in Greek affairs, even if the region was not formally added to his province. A separate governor for Greece was appointed under

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35 Kallet-Marx 1995a, pp. 278-279.
36 Sherk 1969, no. 22.
Caesar, but subsequent governors seem not to have ruled in Greece while the region served as a civil war battlefield. Finally, starting in 27 B.C., governors were regularly sent to oversee the province of Achaea.

Based on this account, when did Roman officials have power over Greece as it became a part of the Roman state? After 146 B.C., Rome allowed Greek cities to govern themselves, and Greek cities voluntarily approached Roman officials and the Senate to arbitrate disputes. After the Sullan fight with Mithridates, Roman power and influence over Greece was more pronounced, even if governors were not regularly sent to govern a province of Achaea. Taxes were exacted from the region, and the proconsul of Macedonia was given some, if ambiguous or limited, oversight over Greece. The strongest indication of Greece’s entry into the empire—the regular presence of governors specifically responsible for Achaea—was not present until 27 B.C. Given the somewhat unclear position of the proconsul of Macedonia in relationship to Greece following the Mithridatic War, this dissertation will consider the coinages produced and circulating in Greece and Macedonia c. 60 – 55 B.C. and what they show about Roman infrastructural minting power.

2.3.2. Greece

The cities of Greece had a long tradition of coinage. Rather than rehearsing the entire history of Greek mints, only the production of coins relevant to the major mints and circulation patterns prevailing c. 60 B.C. is discussed here. During the late second century B.C., the Athenian tetradrachm became the dominant silver coinage in northern and central Greece and

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Macedonia. This Athenian New Style coinage featured a bust of Athena on the obverse and an image of an owl standing on an amphora on the reverse (Fig. 2.2). The reverse also included magistrates’ names and symbols. These coinages were first issued c. 165 B.C. and were struck intermittently until c. 145 B.C. A period of heavy, nearly continuous minting lasted from c. 145 until c. 78/7 B.C. The New Style coinage then became less frequently produced until its production ceased around 45 – 40 B.C. The Athenian tetradrachm became the dominant currency in northern, central Greece and Macedonia as a result of the nearly seventy years of heavy minting when other mints were less active. During this period, many cities also produced small issues of silver and bronze coinages, which were primarily for local use. To the north of the Peloponnese, therefore, the Roman state seems to have had no infrastructural capacity regarding coin production.

On the Peloponnese, the cities of the Achaean League struck coins both before and after the sack of Corinth in 146 B.C. In the early fourth century B.C., the mints in Achaean League cities began producing a coordinated coinage as an attempt to facilitate regional trade among the cities of the league, and because the Achaean cities, seeing that other leagues issued coordinated coinages, produced one as something a league should do. In the third century B.C., the leagues’ silver hemidrachms began using the coin types that would last until the end of the coinage. In its

38 For northern and central Greece, see Price 1987, p. 98 and the discussion of Table App6.1 below. For Macedonia, see Touratsoglou 1993, pp. 36-37.
41 Mackil 2013, pp. 251-252 and 254-255.
last phase, between 88 and 30 B.C., mints in Aigeira, Aegium, Dyme, Elis, Kleitor, Pallantion, Patrae, Sicyon, Sparta, and Tegea struck silver hemidrachms, weighing an average of 2.35g, that were remarkably similar.\(^{42}\) On the obverse, the coins featured the head of Zeus, and the reverse featured the monogram \(\chi\), which stood for κοινὸν τῶν Ἀχαιων, “the Achaean League,” within a wreath (Fig. 2.3). In the quadrants formed by the monogram, various other monograms were placed. Some monograms represented the names of city officials responsible for the coinage, and others represented the name of the city producing that coin.\(^{43}\) Even though none of the mints’ issues can be precisely dated, the great similarity of the types seems to indicate that the mints were coordinated in some way, but the variety of monograms indicates that the mints retained a little autonomy when striking the league coinage.

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Since Achaean League cities’ mints first used this coin type during the third century B.C., it is unclear if the coordination happened only in the third century B.C. or if the mints continued to be coordinated c. 60 – 55 B.C. The problem is further muddled by the uncertain date that the Achaean League ended. Pausanias states that leagues, including the Achaean League, were abolished in 146 B.C. (7.16.9), but he also states that Romans allowed the leagues to reform a few years later (7.16.10). If the leagues did indeed disband in 146 B.C., it is less likely that the coins were coordinated among the league cities’ mints and more likely that the types were retained because of tradition.44

Independent decision-making is certainly shown by hemidrachms struck by the mint at Corone. This mint had struck hemidrachms with the league’s types in the late second century B.C.,45 but it struck drachms with its own types at some time between c. 90 and 50 B.C. These drachms featured the head of Athena wearing a Corinthian helmet on the obverse, and a bunch of grapes surrounded by an ivy wreath were depicted on the reverse.46

In addition to the silver hemidrachms, five Peloponnesian mints struck bronze coins. Again, these coins cannot be precisely dated. Between 100 and 50 B.C., Aigeira issued a 12-15mm/1.54-3.42g coin featuring the foreparts of a goat on the obverse and a tripod circled by a wreath on the reverse.47 The mint at Sicyon struck three different types of bronze coins between 100 and 60 B.C. Two issues had a denomination of 16-17mm/2.43-4.34g: (1) a coin with a feeding dove on the obverse and a wreath border around a tripod on the reverse, and (2) a coin with a laureate head of Apollo on the obverse and a flying dove on the reverse.48 The mint in Sicyon also struck a 10-14mm/1.64-2.76g denomination featuring a flying dove on the obverse,

44 Mackil 2013, p. 143 accepts the testimony of Pausanias 7.16.9 against 7.16.10.
46 Hoover 2011, p. 121, no. 556-557.
47 Hoover 2011, p. 11, no. 18.
48 Hoover 2001, p. 66, no. 265-266.
and the reverse showed a wreath around the letters ΣΙ, which stood for the city’s name.\textsuperscript{49} Around the same time, between 90 and 50 B.C., the mint at Corone struck 20mm/3.6g bronze coins with types similar to its independent hemidrachms: a helmeted Athena on the obverse and a bunch of grapes on the reverse.\textsuperscript{50} A fourth mint in Argos struck 14-17mm/2.5-4.71g bronze coins between c. 95/85 and 50 B.C. One set of types featured the head of Hera, wearing a polos, on the obverse and a pillar fountain on the reverse.\textsuperscript{51} The other set of types showed Apollo wearing a laurel crown on the obverse and a tripod on the reverse.\textsuperscript{52} Finally, the fifth mint, in Megalopolis, struck a 18-19mm/3.06-3.87g bronze coin with the head of Zeus on the obverse and a syrinx on the reverse.\textsuperscript{53}

These five Peloponnesian mints struck a variety of bronze coin types, and this suggests an absence of coordination. Some types, such as the head of Apollo or the tripod, were used at multiple mints, but our inability to date the coins more precisely makes it difficult to determine whether the mints were coordinated in some way. Interestingly, the coins’ denominations may show signs of approximating each other. The mints at Aigeira and Sicyon both struck denominations within the 10-15mm/1.5-3.5g range, and the mints at Argos and Sicyon issued coins in the 14-17mm/2.5-4.75g range. These points of similarity might suggest that the mints were coordinated if the chronology were more precise.

Possibly with some coordinated minting of silver coins and certainly with some independent minting, the various Peloponnesian mints continued striking silver hemidrachms from the third century B.C. until around 30 B.C. They had certainly stopped producing silver hemidrachms before 27 B.C. when Roman governors were appointed for a province of Achaea.

\textsuperscript{49} Hoover 2011, p. 68, no. 281.  
\textsuperscript{50} Hoover 2011, p. 122, no. 588.  
\textsuperscript{51} Hoover 2011, p. 166, no. 705.  
\textsuperscript{52} Hoover 2011, p. 166, no. 706.  
\textsuperscript{53} Hoover 2011, p. 236, no. 950.
The end of the production of the Athenian New Style coinage and the other silver coinages from mainland Greece will be discussed in Section 3.6. Around 60 B.C., some mints continued to issue bronze coins, but it is impossible to determine if the coins were coordinated because the chronology is imprecise. Peloponnesian mints continued to strike bronze coins after 60 B.C., and the possible changes to the power over these mints’ coin production will be discussed in Sections 3.5 and 4.5.

2.3.3. Macedonia

Around 148 B.C. when governors were regularly sent to Macedonia, Athenian New Style coins became the dominant silver coinage in Macedonia.\(^{54}\) In addition to the Athenian tetradrachms, the Macedonians used tetradrachms struck in the name of the quaestor Aesillas, in Macedonia, during the first half of the first century B.C. This coinage featured a portrait of Alexander the Great on the obverse, and the reverse featured the fiscus of a quaestor, the club of Hercules, a stool of a quaestor, and usually the legend AESILLAS (Fig. 2.4). On two dies from 87 B.C., the reverse legend was replaced by SVVRA LEG PRO Q.\(^{55}\) At the end of the series, the obverse legend, which was normally MAKEΔONΩN, was augmented with CAE PR, which probably does not refer to L. Julius Caesar when he was governor of Macedonia.\(^{56}\) This coinage was first struck around 95 B.C.,\(^{57}\) and it continued to be struck until early in the 60s B.C.\(^{58}\) The AESILLAS coins only circulated in Thrace and Macedonia, and they did not circulate for a long time.

\(^{54}\) Touratsoglou 1993, p. 37.  
\(^{55}\) De Callataý 1998, p. 128; and Bauslaugh 2000, p. 47.  
\(^{56}\) Bauslaugh 2000, p. 115 points out that a hoard indicates these coins were struck at the beginning of the 70s B.C. and L. Caesar was perhaps governor in 78/7 B.C. De Callataý 1996 and Bauslaugh 2000 are publications of two separate die studies of this coinage and they both agree that the SVVRA LEG PRO Q and the CAE PR coins are not contemporaneous as had been thought by earlier scholars.  
\(^{57}\) Bauslaugh 1987, pp. 16-20; de Callataý 1996, p. 149; Bauslaugh 1997, p. 123; and Bauslaugh 2000, p. 112.  
\(^{58}\) De Callataý 1996, pp. 150-151; and Bauslaugh 2000, p. 114.
period of time after the 60s B.C. The legend naming a legatus pro quaestore and the coin types with symbols of the quaestorship indicate that the issue was originally initiated for the legate, but the near thirty-year production period for the coins suggests that any magistrate’s direct control over the mint faded in subsequent years.

The weight standard and denomination of the coin, though, make the influence of the Roman state difficult to measure. Like the New Style coins, the AESILLAS coins were struck on a reduced Attic weight standard so that they would be accepted within Macedonia where the Athenian New Style coins had been circulating for decades. Indeed, it is likely that the AESILLAS coins were struck either in order to pay Roman troops and mercenaries or to make payments to Thracian kings who supported Rome. These inhabitants of Thrace and Macedonia would have expected payment in coins on the reduced Attic weight standard. Since the mint

Fig. 2. 4. AESILLAS Tetradrachm, from uncertain Macedonian mint (Bauslaugh 2000, pl. 3, fig. 9-47).

60 On the weight standard, de Callataÿ 1996, p. 141; and Bauslaugh 2000, p. 25.

took the local circulating medium into account when it decided to strike these AESILLAS coins, and since the AESILLAS coin resembled no other coin, its production was not coordinated with other mints. Overall, the AESILLAS coinage suggests that, in the 60s B.C., Roman officials’ power over the production of silver coins in Macedonia was low.

Other than the AESILLAS coinage, no other mints struck coins in Macedonia because the region generally relied on the Athenian mint for coins. Beginning in the first half of the first century B.C., denarii also began circulating in Macedonia.\textsuperscript{62} This addition to the circulating medium extended the Roman state’s infrastructural reach regarding silver coin production for the region.

\section*{2.4. The Province of Asia}

In 133 B.C., the Attalid kingdom was surprisingly bequeathed to Rome and it was subsequently added to the Roman Empire as the province of Asia.\textsuperscript{63} The Attalid kingdom had originally issued tetradrachms on the Attic weight standard, and Eumenes II introduced the cistophorus as an additional coinage sometime between 180 and 160 B.C.—probably after 167/6 B.C. and certainly by 150 B.C.\textsuperscript{64} Mints at Pergamum, Ephesus, Tralles, and a few other cities throughout the Attalid kingdom produced the cistophorus, which featured snakes and a bow-case on the obverse, and a snake crawling out of a \textit{cista mystica} surrounded by a wreath on the reverse (Fig. 2.5). At least during the Attalid period, the mint in Pergamum struck some cistophori in the name of the cities of Pergamum, Sardis, Synnada, and Apamea, as shown by

\footnotesize
\begin{itemize}
\item \textsuperscript{62} Touratsoglou 1993, p. 38; de Callataÿ 1996, p. 146; Bauslaugh 1997, p. 128; and Bauslaugh 2000, pp. 101-110.
\item \textsuperscript{63} Wesch-Klein 2008, p. 267.
\item \textsuperscript{64} For the contemporaneous production of Attic weight standard coins and cistophori, see Meadows 2013, pp. 184-191. For the date of introduction for the cistophorus, see Meadows 2013, pp. 176-183; and de Callataÿ 2013a, pp. 218-227. For a summary of the many introduction dates proposed by other scholars, see de Callataÿ 2013a, p. 219, n. 41.
\end{itemize}
Soon after the Romans took control of the kingdom, cistophori became the circulating medium within the province of Asia. At that time, they were produced as separate series at several mints. The production of the cistophori paused around 67 B.C., and it resumed again in the 50s B.C.

Fig. 2. 5. Attalid cistophorus, from Ephesus, BM Ionia 152 (Head 1892, pl. 12, no. 2)

Beginning in 58/7 B.C., mints at Ephesus, Pergamum, Tralles, Apamea, and Laodicea struck cistophori featuring the traditional types with a few variations. The name of the proconsul was now included in a Latin legend, the name of a local magistrate was in a Greek legend, and the mint was identified by a monogram. Additionally, under some proconsuls the bow-case was replaced by another symbol. For example, on the cistophori naming T. Ampius Balbus, whose name first appeared on the Asian coins, a tripod replaced the bowcase (Fig. 2.6); and on the cistophori naming C. Fannius, whose name last appeared on the cistophori, an image of the Temple of Vesta in Rome replaced the bowcase (Fig. 2.7). These “proconsular cistophori” were issued at all five mints in 58/7 – 53 B.C. and 49/8 B.C., and only at the mints in Apamea.

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65 Kleiner and Noe 1977, pp. 120 and 126-127.
70 Cody 1973, p. 46.
and Laodicea in 53 – 50 B.C. Production of cistophori ceased from 49/8 B.C. until it was briefly resumed under Antony and his deputy Atratinus.  

![Fig. 2. 6. Proconsular cistophorus of T. Ampius Balbus, from Ephesus, 58 - 57 B.C., BM Ionia 173 (Head 1892, pl. 12, no. 7)](image)

Fig. 2. 6. Proconsular cistophorus of T. Ampius Balbus, from Ephesus, 58 - 57 B.C., BM Ionia 173 (Head 1892, pl. 12, no. 7)

![Fig. 2. 7. Proconsular cistophorus of C. Fannius from, Ephesus, 48 B.C., BM Ionia 177 (Head 1892, pl. 12, no. 11)](image)

Fig. 2. 7. Proconsular cistophorus of C. Fannius from, Ephesus, 48 B.C., BM Ionia 177 (Head 1892, pl. 12, no. 11)

Several features indicate that the proconsular cistophori were coordinated. The proconsuls generally served one-year terms and the mints all included the same changes to their coin types. Each year, the legend changed to include the name of the proconsul in Latin and the coin type may have changed to include a feature specific to an individual proconsul. One of these symbols shows Roman influence: the Temple of Vesta struck under C. Fannius in 49/8 B.C. The appearance of this temple in the city of Rome is very similar on the coins of Ephesus, Tralles, Laodicea, and Apamea.  

The contemporaneous nature of these similar actions at multiple mints indicates that the cistophoric mints were coordinated. Since there is no indication of coordination with the mint at Rome, there is no certainty that the Roman state was involved in the coordination of the cistophoric mints. The decision to depict the Temple of Vesta, on the other hand, shows the influence of Rome. During the Republican period, Greek cities did not depict buildings on coins, but the mint in Rome commonly did so.  

By showing the Temple of Vesta on their coins, the proconsular mints were directly influenced by the Roman mint. This is a clear example of the coordination of coinage in the Roman provinces.

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71 Metcalf 2009.
72 Cody 1973, p. 44. The temple was not depicted on the tetradrachms from Pergamm because, as the tetradrachm from 49/8 B.C. indicates, it was under the authority of Q. Caecilius Metellus Pius that year, not C. Fannius (Stumpf 1991, pp. 41-42, no. 68).
Vesta, the cistophoric mints imitated the Roman coin production practice of depicting buildings. This imitation of Roman coin production practices, as well as the use of Latin legends, shows that the Roman state had a low infrastructural capacity regarding the production of cistophori during the time period of 58 – 48 B.C.  

2.5. Syria

Coins from Syria began to name proconsuls at the same time as those of Asia. The territory of Syria was added to the Roman Empire when Pompey reordered the East and ended the Seleucid dynasty in 64 B.C. The Seleucid Empire had been divided into two coin circulation areas. In the north, silver coins had been struck on an Attic standard, but this standard was lowered episodically during the second and first centuries B.C., so foreign Attic standard coins no longer circulated or were hoarded within northern Syria. In the south, the mints used a reduced Phoenician standard, which was also lowered during the second and first centuries B.C. As a result of the lower standards, only the most recently produced, local coins circulated within Syria. Also, since mints in northern Syria used a different standard than the mints in southern Syria, the coins did not circulate in the same regions. Coins on the reduced Attic standard circulated in the north and coins on the reduced Phoenician standard circulated in

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74 Cf. de Callataÿ 2011a who argues that the Romans had a high infrastructural minting capacity in Athens and Asia Minor in 133 – 63 B.C. His thesis relies on (1) Roman names in and Roman influence on coin types, (2) minting practices presumably more similar to the mint in Rome than mints in Asia Minor, (3) overstruck coins that could have potentially been moved by Romans before being overstruck, (4) increased coin output, mint openings, and mint closures that might have been caused by the presence of the Roman army. Even though the article shows that the Roman state’s minting power in this period deserves further study, arguments 2 and 4 are based on tempting coincidences but remain speculative. Argument 3 does not relate to coin production and is also tempting but speculative. Argument 1 is convincing but only suggests a low, or a low-moderate, infrastructural minting power.

the south.\textsuperscript{76} When the Seleucid Empire ceased to exist, two major mints issued silver coins: those at Antioch in the north and at Tyre in the south, each on its own standard.\textsuperscript{77}

The mint at Antioch continued to strike coins with the posthumous portrait of the Seleucid king Philip Philadelphus on the obverse and with an image of Zeus sitting on a throne and holding Nike on the reverse. A small issue of these coins were struck by Antioch sometime between 64 and 58/7 B.C.\textsuperscript{78} Between 57 and 53 B.C., the mint at Antioch struck these coins with the addition of small monograms on the reverse referring to the name of the provincial governors.\textsuperscript{79} Alongside the silver coins, the Antiochene mint struck small issues of bronze coins in three denominations which were labeled with ΑΝΤΙΟΧΕΩΝ ΤΗΣ ΜΗΤΡΟΠΟΛΕΩΣ, “Of the Metropolis of the Antiochenes.” The largest denomination (19-20mm/7.65g) featured the head of Zeus on the obverse and an image of Zeus sitting on the reverse. The medium denomination (18mm/5.77g) showed a bust of a goddess with a veil and mural crown on the obverse and Tyche, standing, on the reverse. The small denomination (13mm/2.27g) showed the head of Artemis on the obverse and Apollo, standing and leaning on a column, on the reverse. These small issues were struck nearly annually from 64/3 B.C. until 50/49 B.C.\textsuperscript{80}

The mint at Tyre issued shekels and half-shekels with the same types that it had been using since 126/5 B.C. Both denominations had the bust of Hercules/Melqart on the obverse and the reverse had an image of an eagle standing on the prow of a galley with a palm on its wing. The obverse legend, ΤΥΡΟΥ ΙΕΡΑΣ ΚΑΙ ΑΣΥΛΟΥ, identifies the coins as those from Tyre.\textsuperscript{81}

Given the differences in the coin types and standards used at these mints, the decisions regarding

\textsuperscript{76} Seyrig 1973; and Houghton 2013, pp. 248-250.
\textsuperscript{78} Hoover 2004.
\textsuperscript{79} Bellinger 1944.
\textsuperscript{80} Burnett, Amandry, and Ripollès 1992, p. 618.
\textsuperscript{81} Hill 1910, pp. cxxxiv-cxxxcv.
coin production in Syria were made locally, at the mints, even though the name of the proconsul was evoked on Antiochene tetradracms. The appearance of these monograms is the only evidence to suggest that the Roman state had any infrastructural power over either Syrian mint.

2.6. Roman Infrastructural Minting Power in the Late Republic (60 – c. 55 B.C.)

Fig. 2. 8. Map showing Circulating Areas and Coordination c. 55 B.C.

In 60 – c. 55 B.C., the Roman Empire was comprised of many relatively closed circulating areas, as shown by Fig. 2.8. The mint at Rome produced denarii for Italy, southern Gaul, the Iberian Peninsula, Sicily, and northern Africa. Many of the other circulating media
were legacies of the pre-Roman states that Rome conquered. The Attic tetradrachm and the hemidrachm of the Achaean League continued to be struck by the civic mints of central Greece. The cistophoric tetradrachm was struck by mints in the former Attalid kingdom, and the Antiochene tetradrachm and Tyrian shekel were legacies from the recently conquered Seleucid kingdom.

As argued in Chapter One, the idea of empires—a system of power relationships between a metropole and subordinate polities—helps clarify how these regions continued to obtain coins after coming under Roman rule. In an empire, some decisions are made by the metropole, and some are made by the subordinate polities. In the ideal type of a hegemonic empire, the subordinate polities provide the infrastructure for striking coins—the metropole has a low infrastructural capacity. In the ideal type of a territorial empire, the metropole strikes the coins and has a high infrastructural capacity. In reality, Italy and the provinces exhibit traits of both ideal types. The presence of coordination among mints helps measure the infrastructural capacity of the Roman state regarding coin production. If the mint at Rome was coordinated with mints in subordinate polities and/or provided coins for a region, the Roman state can be said to have had a high infrastructural power over coin production for that region. If a subject mint is not coordinated with the mint at Rome and imitates Roman coin production practices, the Roman state’s infrastructural capacity is low.

For the areas using the denarius—Italy, Sicily, Iberia, southern Gaul, and northern Africa—the mint at Rome provided coins, so it had a high infrastructural capacity regarding coin production for these regions. This capacity was beginning to grow in Macedonia where the Attic tetradrachm had circulated since the middle of the second century B.C. and the denarius was beginning to circulate. Also in Macedonia, the mint producing the AESILLAS coinage suggests,
in one respect, a low infrastructural capacity of the Roman state after c. 95 B.C. when these
tetradrachms were first produced until the early 60s B.C. when they stopped being produced.
Therefore, whereas Rome had a high infrastructural capacity regarding coin production for Italy,
Sicily, Iberia, southern Gaul, and Africa Proconsularis, its capacity in Macedonia was low but
growing.

To the south of Macedonia, the mint at Athens produced tetradrachms for northern and
central Greece, and the mints of the (possibly former) Achaean League struck hemidrachms for
use within the Peloponnese. Even though the Peloponnesian mints might have been coordinated,
the mints within central Greece show no signs of coordination with the mint at Rome and no
influence of Roman coin production practices. The Roman state’s infrastructural minting power
over these regions was very low.

Just as with the mints of the Peloponnese, the cistophoric mints were coordinated
amongst themselves, but not with the mint in Rome. Cistophori imitated Roman coin production
practices in two ways: the use of Latin legends on all proconsular cistophori and the presence of
the Temple of Vesta on the cistophori struck in 49/8 B.C., C. Fannius’s term as proconsul. These
practices suggest that the Roman state’s infrastructural power over silver coin production in Asia
was low. These mints struck tetradrachms on the cistophoric standard for western Asia Minor.

A similar low infrastructural capacity existed in northern Syria where the mint at Antioch
struck tetradrachms with types that included monograms for the Syrian proconsul’s name. To
the south, the Tyrian mint showed no signs of any power exercised on it by the Roman state.
These Syrian mints provided coins for two distinct circulating areas: Antioch struck tetradrachms
for the north, and Tyre shekels for the south.
In general, the Roman state exercised the most minting power over the regions which it had conquered earliest. Italy, Sicily, and Iberia were all under Roman control when the denarius was created c. 211 B.C. and the mint at Rome provided coins for these regions. Africa and Macedonia both came under the power of Rome in the middle of the second century B.C. Coins for Africa came directly from Rome, and the infrastructural reach of the Roman state was expanding into Macedonia. Shortly after Romans began sending proconsuls to Macedonia, the Attalid kingdom entered the empire. In the 50s B.C., the Roman state had a low infrastructural capacity regarding the production of cistophori for the province of Asia. The cities of central Greece and Syria had come under Roman control soon before 60 – c. 55 B.C., and the Roman state appears not to have exercised any power over coin production for these regions. The length of time that Romans had had political power over a territory, therefore, appears to have been an important factor regarding the exercise of minting power over that region in the Late Republic.
3.1. Introduction

In the Late Republic, the Roman state had a high infrastructural capacity in regions that had been governed by governors the longest: Italy, Sicily, Iberia, and Africa. It had a low but growing capacity in Macedonia and a limited reach in Asia. The state seems not to have exercised its power over the mints of central Greece and Syria, which had recently come under Roman control. The First Triumvirate, a private political alliance formed in 59 B.C., had no effect on minting decisions. The subsequent dissolution of the triumvirate in the civil war between Julius Caesar and Pompey the Great, who was supported by most of the Senate, disrupted and transformed the Roman Empire. At this time, the Roman state became fragmented. Political power was no longer centralized in the Senate and People of Rome and delegated to its provincial governors. It was coopted by the warring generals competing for domination of the Roman state, or ostensibly for its freedom.

Just as the civil wars disrupted the relationships of power within the Roman state, they disrupted coin production. The civil wars involving Caesar and his posthumously adopted son Octavian resulted in the creation of imperatorial mints. An imperatorial issue is a coinage struck by a military commander in the field so that he can acquire coins with which to pay his soldiers and pay for supplies. These imperatorial coinages and the concomitant warfare allowed for a period of great experimentation in coin production as required by the expedients of war. This chapter addresses the imperatorial coinages (Section 3.2), the permanent addition of the aureus to the denarius coinage system (Section 3.3), the recoinage of the cistophori in Asia (section 3.4), and the so-called Antonian fleet coinage (Section 3.5), the end of silver coin production in the
future province of Achaea (Section 3.6), and the relative continuity in coin production at the major mints in Syria (Section 3.7).

Even though the civil wars ended with Octavian’s capture of Alexandria and victory over Antony and Cleopatra in 30 B.C., this chapter’s chronological terminus is 27 B.C. for practical reasons. As noted in Section 1.6.1, legends provide one of the best ways to date coins. Since the common legend AVGSTVS dates many coins to the period after 27 B.C., that terminus post quem has been used as the break between this chapter and Chapter Four which focuses on the reign of Augustus.

3.2. Imperatorial Mints During the Civil Wars

In 49 B.C., Julius Caesar crossed the Rubicon, invaded Italy, and began a civil war. As part of this campaign Caesar’s mint struck a denarius featuring an elephant trampling a snake, with the legend CAESAR, on the obverse and priestly implements on the reverse. Unfortunately, the evidence is insufficient to determine the mint location, other than in either Spain or Gaul. There is also insufficient evidence to determine whether the coins were issued before or after Caesar’s march on Rome. This issue of denarii was the first of many imperatorial issues struck over the next few decades in order to pay the expenses of a

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1 The mint attributions for the civil war period were determined after consulting Grueber 1910, Grant 1946, Crawford 1974b, Hill 1975 and 1976, Newman 1990; Burnett, Amandry and Ripollès 1992; Sear 1998, Woytek 2003, and articles specific to each issue. When only RRC numbers are cited, these authorities agree on the date and mint location for the issue. When there is disagreement, the relevant arguments are cited in support of the attribution used in this dissertation.

2 RRC 443/1. Crawford 1974b, p. 735 rejected the common interpretation that the elephant type was chosen as a pun on Caesar, using the Berber word for elephant, Caesai. Sear 1998, p. 9 did not commit to whether the coin was struck before or after marching on Rome. Woytek 2003, pp. 119-132 used hoards, Caesar’s financial history, and the coins’ fabric to propose that they were struck at two parallel mints, one of which was Massilia, in mid-49 B.C. when Caesar besieged Afranius and Petreius on the Iberian Peninsula. Woods 2009 proposed that the coins were struck in honor of Gaius Scribonius Curio’s expedition into Africa against the Pompeians, and that the snake refers to Juba; but Amelia Valverde 2013, p. 154-156 pointed out that it does not make sense to commemorate Curio’s disastrous defeat (Caes., B.C., 2.23-44).
commander in the field. Imperatorial issues could be struck by commandeering, contracting with, or starting a local mint, or in a mint that moved with a general. As distinguished by the fabric of the coins, Antony preferred to use local mints, Octavian preferred to use a mint moving with him, and Caesar used a mix of the two. Romans had struck imperatorial issues before: during the Second Punic War when the denarius was introduced and during the Sertorian and Sullan Civil Wars. Caesar revived this practice, as did other competing generals during the civil wars of the 40s and 30s B.C.—Pompey and the Pompeians; Brutus, Cassius and the Liberators; Sextus Pompeius, Antony, and Octavian—who needed coins to pay their troops and for other expenses during the war. The production of denarii continued at Rome but this mint soon succumbed to the political chaos, closed in 40 B.C., and left it to generals to strike aurei and denarii at will amid the ever-changing vicissitudes of the civil wars.

3.2.1. Caesar

Caesar was the first general to strike coins in the civil war following the break up of the First Triumvirate. After the denarius issue of 49 B.C., Caesar’s next two issues were struck at a mint moving with Caesar in the East on the way to the Battle of Pharsalus and then in pursuit of Pompey to Alexandria in 48 and 47 B.C. The later of these two issues inaugurated the continued production and use of the aureus and revived the silver quinarius. Section 3.3 will explain why Caesar issued the new aureus denomination and why it became an accepted part of the Roman coinage system. While Caesar was returning from the East in 47 B.C., a denarius featuring

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4 RRC 525-526.
5 RRC 452 and 456. On this period, App. B.C. 2.49-90; Caes., B.C. 3; Dio 41-42.8; Plut. Caes. 37-48; Suet. Jul. 35.1; and Vel. 2.51-54.1.
Venus on the obverse and showing Aeneas carrying Anchises on the reverse was struck in Caesar’s name, probably in Asia Minor at a mint not moving with Caesar himself.6

In 47 B.C., another mint for Caesar also struck denarii in Sicily for his campaign into Africa against Cato.7 This denarius records the name of the proconsul A. Allienus, so it is unusual among Caesar’s coinages, which normally only record Caesar’s name.8 Early in 46 B.C., possibly in Sicily, a mint for Caesar struck an issue of denarii that highlighted his ancestry from Venus on the obverse and his position as Pontifex Maximus on the reverse in order to pay his troops and pay for supplies during his African campaign.9 Following the Battle of Thapsus, Caesar triumphed in Rome where A. Hirtius, as praetor, oversaw an issue of aurei with Caesar’s name in the obverse legend.10 In late 46 or early 45 B.C., the praefectus urbi L. Plancus was also responsible for aurei in the name of Caesar and himself.11 At the same time, a Spanish mint struck denarii in Caesar’s name to make payments during his campaign against the sons of Pompey.12 Finally, an aureus struck in Rome during 44 B.C. was the last precious metal issue in the name of Julius Caesar before his assassination in March.13

One of Rome’s first orichalcum (brass) coinages bears the name of C. Clovius, a supporter of Caesar, but the location of the mint has been debated. The obverse of the coin bears the bust of Victory and the legend CAESAR DIC TERT, and the reverse features Minerva

7 RRC 457. On this campaign, App. BC 2.95-100; Dio 43.1-13; Plut. Caes. 52-54, Cat. Min. 66-70; Suet. Jul. 35.2; and Vel. 54.2-55.2.
8 Sear 1998, p. 37.
9 RRC 467. Sear 1998, p. 40 and Woytek 2003, pp. 248-253 both suggested the Sicilian mint location, but Sear rightly accepted that the mint location is ultimately uncertain (following Crawford 1974b, p. 478). Crawford 1974b, pp. 735-736 discussed how Caesar emphasizes the connection to Venus and his priestly offices on his coins.
11 RRC 475. On the date, Woytek 2003, pp. 269-270.
12 RRC 468. On this campaign, App. B.C. 2.103-105; Dio 43.32-42; Plurt. Caes. 56.1-3; and Suet. Jul. 35.2.
13 RRC 481.
holding a trophy in one hand and a shield with a *gorgoneion* in the other. The reverse legend reads C CLOVI PRAEF.\textsuperscript{14} The obverse legend dates the coin to 46 B.C. or early 45 B.C., and the reverse legend associates the coin with the prefect C. Cluvius who was settling Caesar’s veterans in Cisalpine Gaul (Cic. *ad Fam.* 13.7 = SB 320).\textsuperscript{15} Bernhard Woytek proposed that the PRAEF referred to Cluvius’s position as a prefect of the city in charge of the treasury, but Michael Grant had rightly pointed out that prefects of the city did not omit *urbi* from coin legends at this time.\textsuperscript{16} It is most likely, therefore, that these *orichalcum* coins were produced during Cluvius’s prefecture in Cisalpine Gaul where he settled veterans.\textsuperscript{17}

### 3.2.2. Pompey and the Pompeians

After Julius Caesar crossed the Rubicon in 49 B.C., Pompey and his supporters left Rome. Among those fleeing Caesar’s advance was the moneyer Q. Sicinius in whose name coins continue to be struck in Asia Minor during 49.\textsuperscript{18} Another mint, which included the names of the consuls of 49 B.C. in its coins’ legends, struck denarii first in Illyria and then in Asia where the consul Lentulus mustered troops in support of Pompey (Caes. *B.C.* 3.4).\textsuperscript{19} In Greece during 48 B.C., before the battle of Pharsalus, Gn. Piso was responsible for an issue of denarii

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\textsuperscript{14} *RRC* 476 = *RPC* I 601.
\textsuperscript{15} Even though the manuscripts of the letters read Cluvius, Shackleton Bailey 1977, vol. 2, p. 460, in his commentary and critical edition, says that the identification of the Cluvius of the letter with the C. Cluvius of the coins is plausible.
\textsuperscript{16} Grant 1946, pp. 7-11; *contra* Woytek 2003, pp. 271-274.
\textsuperscript{17} Burnett, Amandry, and Ripollès 1992, p. 517.
\textsuperscript{18} *RRC* 444. Sear 1998, p. 6 argued that the mint was in Asia Minor because the club and lion’s head type may have drawn on cistophoric drachms with a similar type. The last drachm struck at Ephesus with the lion’s head and club type was issued in 109/8 B.C. (Kleiner 1972, p. 28). Woytek 2003, pp. 101-103 argued for an Asian mint location based on more solid grounds. He argued that Coponius, who is mentioned in Sicinius’s coin’s legend, was in charge of the Pompeian fleet stationed at Rhodes so the coins would have been struck nearby. The coins also seem to have been struck at three separate mints—each mint struck a variant of the reverse with the lion’s head turned in a different direction on top of the club—as the cistophoric mints had done in the past.
\textsuperscript{19} *RRC* 445.
for Pompey, and another issue was struck in the name of Varro. After the battle of Pharsalus, the Pompeians followed Cato and Scipio to Africa where two mints struck coins in the name of both men in 47 and 46 B.C. After the Battle of Thapsus, the younger Gn. Pompey began leading the Pompeians, and Spanish mints struck two issues of denarii and one issue of asses on the uncial standard in 46 and 45 B.C. One of these issues—that with the name of M. Minatius Sabinus—was struck at two mints, which were coordinated because they used the same type: a personified Spanish city greeting a soldier who is receiving a shield from another personified Spanish city.

3.2.3. Brutus, Cassius, and the Liberators

After the assassination of Caesar, the frequently changing politics forced the Liberators to flee Rome in 43 B.C. Brutus and Cassius’s mints struck aurei and denarii for the armies that they raised to fight against the Caesarians. Numismatists have offered several suggestions for where the coins were minted, but there is little evidence to support these hypotheses. It is safest to say that the mints traveled with Brutus as he campaigned in northern Greece, Macedonia, and western Asia Minor, including Lycia; and with Cassius as he campaigned against Rhodes.

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20 *RRC* 446 (Piso) and 447 (Varro). Woytek 2003, pp. 113-118 rightly dated the coins to 48 B.C. based on Pompey’s titulature but his speculation about the mints’ locations (Varro near Dyrrhacium and Piso maybe on Corcyra) are not based on secure enough evidence. Therefore, I prefer the less specific “moving with Pompey” in Greece attribution of Crawford 1974b, p. 463.

21 *RRC* 459-461 (Scipio) and 462 (Cato). For citations on Scipio and Cato in Africa, see note 7, above.

22 *RRC* 469-470 (denarii) and 471 (asses). On the uncial standard of these coins, Grueber 1910, vol. 2, p. 367, n. 1. The uncial standard means that the as weighed the same as one Roman *uncia*. For citations on Gn. Pompey in Spain, note 12, above.

23 *RRC* 470. Buttrey 1960a, pp. 81-84 notes that his type B (*RRC* 470/1b) is struck at two mints. Buttrey’s die study examined 73 specimens to find 5 obverse dies and 8 reverse dies used at both mints.

against Cos, and in Asia Minor. Two issues were struck in the names of both Brutus and Cassius. All these issues were struck between 43 and 42 B.C.

Other generals sympathetic to Brutus and Cassius’s cause were also associated with mints for aurei and denarii. In 42 B.C., an African mint struck aurei and denarii to make payments for Q. Cornificius, a governor in Africa, who was fighting with a Caesarian governor of Africa Vetus. In 42 or 41 B.C., Statius Murcus commanded a fleet and denarii were struck in his name. Murcus then joined with L. Domitius Ahenobarbus, another naval commander, in whose name another mint issued aurei and denarii before the man joined with Antony. A few years later, in 40 B.C., Q. Labienus, who had gone to Parthia in order to get help for Brutus and Cassius, invaded Syria with an army of Parthians. To pay for this invasion, a mint for Labienus struck denarii, on which Labienus was given the title PARTHICVS, not because he conquered them but because he led them against Roman armies.

3.2.4. Sextus Pompeius

After the defeat of the Pompeians at Munda in 45 B.C. and the defeat of the Liberators at Philippi in 42 B.C., Sextus Pompeius led the men opposed to Caesar, Antony, and Octavian. The first coins issued in his name were struck at two different Spanish mints—possibly Baelo and

| 25 | RRC 501-4 and 506-508 (Brutus) and RRC 498-499 (Cassius). Hill 1975, pp. 159, 162, and 166-168 suggested Apollonia and Thessalonica for Brutus’s issues and Sardis for Cassius’s issues, including RRC 500 and 505. Sear 1998, p. 129-132 suggested Smyrna and Sardis for Cassius’s issues, including RRC 500 and 505. On these campaigns, App. BC 3.77-79, 4.57-82, 4.88-134; Dio 47.21-49; Plut. Ant. 22, Brut. 24-53; and Vel. 2.69-70. |
| 26 | RRC 500 and 505. |
| 28 | RRC 510. On Statius Murcus’s role in the civil wars, App. BC 5.8 and Vel. 2.72.4. |
| 29 | RRC 519. On L. Domitius Ahenobarbus’s role in the civil wars, App. BC 5.55; Dio 48.7.4 and 48.16.2; Suet. Ner. 3; and Vel. 2.72.3 and 2.76.2. |
| 30 | RRC 524. On Labienus’s invasion and fight against the Romans led by P. Ventidius Bassus, App. 5.65; Dio 48.24.3-26, 48.39.2-41.6, and 49.19-21; Jos. Bell. Jud. 1.15.2 = 288, Ant. 14.392; Plut. Ant. 33-34; and Vel. 2.78.1. |
Salpensa—in late 45 B.C. or early 44 B.C. The coin types of these mints differed only in the mint marks in the obverse legend. The reverse for both mints showed the goddess Pietas standing with a palm branch and a scepter, and the obverse featured a portrait of Pompey the Great. The coins possibly struck at Baelo had the obverse legend SEX MAGNVS IMP B, and the coins probably struck at Salpensa had one of the following obverse legends: SEX MAGN IMP SAL, SEX MAGNVS SAL IMP, SEX MAGN PIVS IMP SAL, and SEX MAGN PIVS IMP. The similarity of the coin types as well as the similarity of the “Baelo” legend and the first legend at Salpensa suggests that the mints were coordinated in some way.

The next issue of Sextus was an emission of asses that were primarily struck in Sicily, most likely at some time between 42 and 38 B.C. Another issue of asses was struck with the name of the legate Eppius, most likely in Sicily, between Sextus’s first issue of denarii and his second issue of asses, most likely at the end of 43 B.C. or the beginning of 42 B.C. Also between 42 and 38 B.C., Q. Nasidius’s name appeared on other denarii for Sextus Pompeius, who is not named but whose father’s portrait is featured on the obverse. Sextus Pompeius’s

31 *RRC* 477. Buttrey 1960c (*contra* Woytek 2003, pp. 497-499 who argued against the idea that B and SAL in *RRC* 477/1 are mint marks because he interpreted the IMP SAL in the obverse legends of *RRC* 477/1b, 2, and 3a as *imperator salutatus*. Buttrey 1960c, p. 91 n. 1 had already shown this interpretation of the IMP SAL is not attested in contemporary sources and would be bad Latin). On Sextus Pompeius in Spain, App. *BC* 4.83, and Dio 45.10.

32 Buttrey 1960c on *RRC* 477.

33 *RRC* 479. Woytek 2003, pp. 499-501, relying on the facts that most specimens of this coin were found in Sicily and that the Pompeian army moved from Spain to Sicily. Burnett, Amandry and Ripollès 1992, p. 146 suggested, based on a few finds in Spain and Sicily, that some of these were struck in Spain before the majority of the issue were produced in Sicily; but Martini 1995, pp. 123-124, 147, 155, and p. 176 argue that the coins were struck at multiple mints in Sicily and maybe in southern Italy. On Sextus Pompeius and his military activity in Sicily, App. *BC* 4.84-85, 5.25, 5.67-72, 5.77-91, 5.106-122; Dio 47.12.1-2, 48-17-20, 48.29-30, 48.36, 48.45.4-49.1, 49.1-18; Suet. *Aug.* 16; and Vel. 2. 72.4-73, 2.77.1-2, 2.79.


35 *RRC* 483. Woytek 2003, pp. 502-505. These dates agree with the hoards that also allow the reattribution of the *triumviri monetales* of 43 and 41 B.C.E. (*RRC* 512-515 (C. Clodius Vestalis, M. Arrius Secundus, C. Numonius Vaala, and L. Servius Rufus) are of 43 B.C. and *RRC* 485-487 (L.
final issue was comprised of aurei and denarii struck after 42 B.C. These coins advertised both Sextus’s second acclamation as imperator following his defeat of Salvidienus Rufus, Octavian’s fleet commander, in 42 B.C. and Sextus’s position as praefectus classis et orae maritimae, which he was given by the Senate to hold between 43 and 40 B.C. Sextus’s defeat at the Battle of Naulochus in 36 B.C. left only two major contenders in the civil war: Antony and Octavian.

3.2.5. Antony

After Caesar’s assassination, leadership of the dictator’s supporters devolved upon Mark Antony. The turbulence of politics, though, drove Antony from the city of Rome to Mutina where his extensive use of imperatorial mints during his many campaigns began. After Antony was declared an enemy of Rome in late 44 B.C., he faced D. Brutus, the consuls Hirtius and Pansa, and Caesar’s heir Octavian in battle at Mutina. After the battle, Antony traveled from Cisalpine Gaul to Transalpine Gaul where he met and allied with M. Lepidus. At this time, a mint in Cisalpine or Transalpine Gaul struck one issue of denarii, and another contemporaneous issue from another mint began. The latter mint traveled with Antony from Cisalpine Gaul to Lugdunum, and it recorded the partnership between Antony and Lepidus in the coins’ legends.

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Flamininus Chilo, P. Accoleius Lariscolus, and Petillius Capitolinus) are of 41 B.C. (Buttrey 1956, p. 37; Crawford 1969b, Table XV; and Woytek 2003, pp. 433-437).  
36 RRC 511.  
37 Crawford 1974b, p. 521. Woytek 2003, p. 442 wanted to date the coins after 38 B.C. because they were at the end of Sextus’s Sicilian campaign, but the evidence of hoards and coin legends only provide 42 B.C. as a certain terminus post quem.  
38 RRC 488. On Antony in Gaul and the Mutina campaign, App. BC 3.61-63, 3.65, 3.67-76 3.83-84; Dio 45.14-16, 45.29-38, 46.50; Plut. Ant. 17-18; and Vel. 2.60.5-61.  
39 RRC 489. Woytek 2003, pp. 476-481 which argued that 489/1-4 were struck in Cisalpine Gaul during 43 B.C., 489/5 was struck at Lugdunum in 42 B.C., and 489/6 was struck in 42 B.C. in Transalpine Gaul but not necessarily at Lugdunum.
In November 43 B.C., Antony, Lepidus, and Octavian agreed to form the Second Triumvirate, and the triumvirs’ mints celebrated the alliance.\(^{40}\) Antony’s mint struck an issue of aurei in 43 B.C. that had his portrait on the obverse and two different reverse types, each featuring the portrait of his colleagues.\(^{41}\) Octavian’s mint struck similar aurei, whose place within his own coinages will be discussed below.\(^{42}\) Finally, Lepidus’s mint struck similar coins in November and December 43 B.C. These aurei and denarii feature Lepidus’s portrait on the obverse and Octavian’s portrait on the reverse, and they were the only coins ever struck at a mint devoted solely to Lepidus.\(^{43}\)

Antony, Lepidus, and Caesar’s heir then turned their attention towards fighting Caesar’s assassins, and Antony’s mints continued to strike coinages for his military campaigns. For the campaign against the Liberators Brutus and Cassius in 42 B.C., Antony’s mint struck an issue of denarii, which featured the god Sol.\(^{44}\) In 41 B.C., another mint traveling with Antony struck coins while he traveled in Asia, met Cleopatra in Cilicia, and campaigned against Palmyra. These aurei and denarii included the legend PIETAS, which advertised his dedication to his brother L. Antonius who was besieged at Perusia by Octavian’s forces.\(^{45}\)

The siege at Perusia highlights another aspect of the mints striking for, and to support, Antony: that Antony’s supporters also waged war and operated imperatorial mints. While Antony was fighting the Mutina campaign and allying himself with Lepidus, a mint in Apollonia

\(^{40}\) On the creation of the Second Triumvirate, App. B.C. 4.2-3, Dio 46.54-56; Plut. Ant. 19-20.1; Suet. Aug. 13.1; and Vel. 2.55.

\(^{41}\) RRC 492.

\(^{42}\) RRC 493.

\(^{43}\) RRC 495. Woytek 2003, pp. 485-487.

\(^{44}\) RRC 496. Sol’s portrait is along in RRC 496/2-3 and is facing and surrounded by a building in RRC 496/1. On this campaign, App. BC 4.86-138; Dio 47.37-49; Plut. Ant. 22; Suet. Aug.13; and Vel. 2.70-72.2.

struck a small issue of denarii in the name of his brother C. Antonius, whom Brutus was besieging in that city. 

Probably around the turn from 43 to 42 B.C., possibly near Picenum, a very small issue of denarii was issued in the name of P. Ventidius Bassus. These coins featured a bearded portrait of Antony on the obverse and a man holding a staff on the reverse. 

In addition to independent mints operating for Antony’s supporters, the mint moving with Antony sometimes struck coins honoring both Antony and his supporters. In 41 B.C., a mint traveling with Antony struck a series of double portrait coins. On the obverse was the portrait of Antony, and two different reverse portrait types: those of L. Antonius and Octavian. In 40 B.C., Antony’s mint struck three different denarius issues. The first issue featured a winged caduceus flanked by two cornucopiae. The second issue celebrated the fleet-commander L. Domitius Ahenobarbus allying himself with Antony. The third issue was with L. Plancus and may have been struck on the way to meet Octavian in Italy.

Antony and Octavian met in Italy in order to discuss some points of disagreement, and their meeting resulted in the renewal of the triumvirs’ alliance at Brundisium in 39 B.C. As part

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47 *RRC* 531. Buttrey 1960b attributes these coins’ mint to the Cilicia or northern Syria during Venditius’s campaign against the Parthians because Ventidius is styled IMP and because he would only have been called this after his victories against the Parthians in 39 B.C. Biedermann and Haymann 2015 attribute the coins to a mint in Italy, likely Picenum, in early 42 B.C. because the coins work best with Antony’s titulature (i.e. IMP IIIV RPC, and Antony became a *triumvir rei publicae constituendae* in late 43 B.C., and this titulature does not include later triumphs or (designated) consulships), Antony is shown wearing a beard (which is only shown on some of his coins struck before the Battle of Philippi in 42 B.C.), and because this denarius includes a lituus, in reference to Antony’s augurship (and the lituus is no longer shown on Antony’s coins after c. 40 B.C.). Even though Biedermann and Haymann 2015, pp. 303-304 does not satisfactorily explain why Ventidius would be called IMP c. 42 B.C. (cf. Buttrey 1960b which argues he could not have been IMP until 39 B.C.), their attribution accounts for more of the evidence than Buttrey’s, so a mint location and date in Italy, c. 42 B.C. is considered to be probable. Regarding the size of the issue, Buttrey 1960b, pp. 96-97 counted two obverse and two reverse dies from twelve coins.

48 *RRC* 517.

49 *RRC* 520.

50 *RRC* 521. On Ahenobarbus, note 29, above.

51 *RRC* 522, which Sear 1998, p. 162 argued may have been issued on the way to meet Octavian. On Plancus, App. *BC* 55. On the meeting at Brundisium, App. *BC* 5.56-65; Dio 48.28-31; Plut. *Ant.* 30.2-31; and Vel. 2.76.3.
of the agreement, Antony married Octavian’s sister Octavia. That year, Antony’s mint celebrated the renewed alliance with two coin emissions. One issue featured Antony’s portrait on the obverse and that of his new wife Octavia on the reverse.\textsuperscript{52} The second issue showed the portrait of Octavian on the reverse while Antony’s portrait remained on the obverse.\textsuperscript{53}

While the triumvirs negotiated peace between themselves, Antony’s generals continued to campaign and issue coins from imperatorial mints in the eastern provinces. Atratinus’s mint in an uncertain location issued bronze coins with the traditional Janus and prow types, most likely around 39 B.C.\textsuperscript{54} Another mint striking for Atratinus produced a very small issue of cistophori in 40/39 B.C.\textsuperscript{55} In 39 B.C., two mints in the province of Asia struck cistophori honoring Antony, and the effects of these cistophori on the circulating medium of Asia will be discussed in Section 3.4.\textsuperscript{56} Soon thereafter, in 38 – 37 B.C., the mints for Antony’s legates Atratinus, Capito, and Bibulus issued a large bronze coinage in the East that was comprised of quadrantes, semisses, asses, dupondii, tresses, and sestertii.\textsuperscript{57} Section 3.5 will argue that these coins were coordinated but did not noticeably affect the denominations of civic bronze coins in Achaea, Crete, Syria, and Cyprus.

After Antony and Octavian met at Brundisium, Antony moved eastward to prepare for a campaign against Parthia. In 38 B.C., Antony wintered in Athens where a mint most likely struck an issue of aurei and denarii, on which the filiation M F M N is appended to Antony’s name and,

\textsuperscript{52} RRC 527.
\textsuperscript{53} RRC 528.
\textsuperscript{54} RRC 530.
\textsuperscript{55} Metcalf 2009.
\textsuperscript{56} RPC I 2201-2202.
on two varieties of which Antony was shown standing on the obverse.\textsuperscript{58} Another mint producing denarii, also in 38 B.C., prepared for Antony’s Parthian campaign.\textsuperscript{59} During the campaign, after facing resistance in Parthia, Antony turned towards Armenia where he was victorious. Upon Antony’s return from the military operations, in 36 B.C., yet another mint struck denarii celebrating his success in Armenia.\textsuperscript{60}

In 34 B.C., the coinage of Antony focused on more dynastic images. An issue of aurei and denarii featured the portrait of Antony on the obverse and his son Marcus on the reverse.\textsuperscript{61} Two other issues featured Antony’s portrait on the obverse and Cleopatra’s portrait on the reverse, and both commemorated the Donations of Alexandria. The denarius issue bore the legend CLEOPATRAE REGINAE REGVM FILIORVM REGVM. The legend is difficult to interpret because her Alexandrian tetradrachms style her differently as ΚΑΕΟΠΑΤΡΑΣ BACIAICCHC, “Of Queen Cleopatra,”\textsuperscript{62} the legend omits the names of Cleopatra’s children, and there is no clear mention of her daughter. Nevertheless, the legend is often understood as “[Coin] of Cleopatra, queen of kings, and of her sons who are also kings.”\textsuperscript{63} This legend can only make sense after Antony gave parts of Syria to Cleopatra and her children. Additionally, a

\textsuperscript{59} RRC 536. On Antony’s Parthian and Armenian campaigns, App. BC 5.95, 5.132; Dio 49.22-33; Plut. Ant. 37-52; and Vel. 2.82.
\textsuperscript{60} RRC 539.
\textsuperscript{61} RRC 541.
\textsuperscript{62} Svoronos 1904, p. 305, no. 1847-1870.
\textsuperscript{63} RRC 543. Crawford 1974b, p. 102 associated the type with the Donations of Alexandria of 34 B.C., but p. 539 assigns it to 32 B.C. without explanation. Newman 1990, p. 50 n. 29 and Sear 1998, p. 228 were right to reassign the coin to 34 B.C. For this reading of the legend, see Grueber 1910, vol. 2, p. 526 (n. 1 from p. 525); and Sear 1998, p. 228. On the Donations of Alexandria, Dio 49.32.5 and 49.41 and Plut. Ant. 36 and 54.3-6.
mint in southern Syria struck tetradrachms on the same standard as Tyre’s coinage and with the portraits of Antony and Cleopatra on each side of the coin.\(^{64}\)

Subsequent issues were struck either by provincial governors or by Antony’s mint in preparation for the coming war against Octavian.\(^{65}\) In 33 B.C., a small issue of denarii was struck in the names of both Antony and Q. Silanus, a proconsul of Achaea.\(^{66}\) In 31 B.C., the mint of Scarpus, the governor of Cyrenaica, struck denarii in support of Antony, but he supported Octavian following the Battle of Actium.\(^{67}\) Around this time, it was becoming clear that the alliance between Antony and Octavian would soon dissolve. In preparation for the imminent battle, between 33 and 31 B.C., a massive issue of the so-called legionary aurei and denarii was struck, most likely in Antony’s camp, in preparation for war with Octavian.\(^{68}\) This famous issue featured Antony’s portrait on the obverse and the reverse commemorated each of the Roman legions. This massive issue continued to circulate for centuries.\(^{69}\) Finally, just before the Battle

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\(^{64}\) *RPC* I 4094-4096. Buttrey 1954 assigned the mint of these Antony/Cleopatra tetradrachms to southern Syria based on what territory Cleopatra controlled and the coin’s weight. Baldus 1987, pp. 129-130 assigned the Antony/Cleopatra tetradrachms to Antioch where there was a break in production at the time this coin was struck and because the coin’s metrology is not on the Tyrian/Phoenician standard (*contra* Buttrey 1954). Burnett, Amandry, and Ripollès 1992, pp. 601-602 pointed out that, while the Antony/Cleopatra tetradrachm’s metrology is consistent with the Antiochene mint’s tetradrachms, the Antony/Cleopatra tetradrachms letter forms, engraving quality, and the strength of the strike differ from the known Antiochene tetradrachms. Therefore, it is only possible to say with certainty that the Antony/Cleopatra tetradrachms were struck in Syria. For a meeting between Antony and Cleopatra in Syria at this time, see Plut. *Ant.* 51.

\(^{65}\) On the Actian campaign, the lead up to it, and its conclusion in Alexandria, Dio 50; Plut. *Ant.* 55-87; and Vel. 2.83-87.

\(^{66}\) *RRC* 542.

\(^{67}\) *RRC* 546/1-3 support Antony and *RRC* 546/4-8 support Octavian.

\(^{68}\) *RRC* 544. Grueber 1910, vol. 2, p. 526n1 proposed that the mint was located in Ephesus because Antony’s troops began gathering there; Crawford 1974b, p. 539-541 most reasonably proposed that the mint moved with Antony, presumably from and to the locations mentioned by other scholars; Hill 1976, p. 124 attributed it to Athens because he had assigned other Antonian issues to Athens, sometimes on unclear grounds; and Sear 1998, p. 230 proposed Patras because Antony’s headquarters were there.

\(^{69}\) Bolin 1958, pp. 336-343, Tables 1-4. One reason for its fame is that it was debased and was recorded as such by Pliny, *N.H.* 33.132. For more on the silver content of Antonian legionary denarii, see Butcher and Ponting 2015, pp. 161-167.
at Actium, the hopeful and unfortunate Antony struck an issue of denarii featuring his own portrait on the obverse and an image of Victory on the reverse.  

3.2.6. Octavian

Just like Antony, Octavian began to strike coinage in his own name during the campaign for Mutina and the remainder of 43 B.C. Caesar’s heir preferred to use one mint at a time, and this penchant led Octavian to open several solitary mints at various times early in his political career. Octavian’s first two issues were struck on the Italian peninsula after the battle with Antony at Mutina. One issue contained aurei and denarii that featured Octavian’s portrait on the obverse and, on the reverse, one of two types: either a portrait of Caesar or an image of an equestrian statue dedicated by the Senate to honor Octavian. The other issue, which has a bust of Venus on the obverse and a trophy with Gallic arms and the legend C CAESAR IMP on the reverse, has often been attributed to Julius Caesar rather than to his adopted son. Hoard evidence, though, suggests that the coin would have been issued in 43 B.C., after Caesar had been killed. Additionally, the legend C CAESAR is used more often by Octavian than by Caesar, who always omitted his praenomen and for whom IMP was only used at the end of his life. Furthermore, the Venus/Trophy types would be appropriate on coins used to pay Caesar’s veterans who fought for Octavian at Mutina and to link Octavian to his adoptive father. This issue of denarii was one of Octavian’s earliest emissions.

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70 RRC 545.
71 On Octavian’s role in the Mutina campaign, App. BC 3.64-76; Dio 46.36-39; Suet. Aug. 10-11; and Vel. 2.61-62.
72 RRC 490. On the equestrian statue, Cic. ad Brut. 1.15.7 = SB 23.7; Dio 46.29.2; and Vel. 2.61.3.
73 RRC 482. For example, Grueber 1910, vol. 2, p. 363 and Crawford 1974b, p. 495 attributed the denarius to Caesar.
74 Crawford 1969b, Table XVII.
75 Sear 1998, p. 87.
As mentioned above, after the formation of the Second Triumvirate, Octavian commemorated the alliance with an issue of aurei showing Octavian’s portrait on the obverse and Antony’s on the reverse. To complement Antony’s coinage for the campaign against Brutus and Cassius, Octavian used a military mint that followed him from Italy to Greece in 42 B.C. It struck aurei with the equestrian statue on the reverse and Octavian’s portrait on the obverse. It also struck denarii either featuring a portrait of Octavian on the obverse and a curule chair on the reverse, or featuring a bust of Mars on the obverse and military standards on the reverse.

After the Battle of Phillipi, all of Octavian’s coinage began to have a consistent fabric so it was struck at one mint: his civil war mint that traveled with him during the Perusine war, during his conferences with Antony at Brundisium and in the Bay of Naples, against Sextus Pompeius in Sicily, and on his campaign in Pannonia. Octavian struck denarii in the years 41, 40, 39, 37, and 36 B.C and aurei in 39 and 36 B.C. The aureus issue of 39 B.C. paralleled Antony’s double portrait issue recognizing the renewal of the alliance between Antony and Octavian. Octavian’s aurei showed Octavian’s portrait on the obverse and Antony’s portrait on the reverse. A bronze issue was also struck in Octavian’s name in southern Italy around 38

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76 RRC 493. On the formation of the Second Triumvirate, App. BC 4.2-3, Dio 46.54-56; Plut. Ant. 19-20.1; Suet. Aug. 13.1; and Vel. 2.55.
77 On Octavian’s role in the Philippi campaign, App. BC 4.86-138; Dio 47.37-49; Plut. Ant. 22; Suet. Aug. 13; and Vel. 2.70-72.2.
78 RRC 497.
79 On Octavian’s activities leading up to and including the Perusine War against L. Antonius, App. BC 5.12-24 and 29-49; Dio 48.1-15; Plut. Ant. 30.1; Suet. Aug. 15; and Vel. 2. 74. On Octavian’s activities leading up to and including the agreement with Antony at Brundisium, App. BC 5.50-66; Dio 48.27-31; and Vel. 2.77-78.1. On the agreement with Antony and Sextus Pompeius in the Bay of Naples, App. BC 5.69-73 and Dio 48.36-38. On Octavian’s campaign against Sextus Pompeius and Octavian deposing Lepidus, App. BC 5.77-126; Dio 48.45.4-49.14; Suet. Aug. 16; and Vel. 2.79-81. On Octavian’s campaign in Pannonia, Dio 49.34-38.
80 RRC 518 (41 B.C.), RRC 523 (40 B.C.), RRC 529 (40/39 B.C.), RRC 537 (37 B.C.), and RRC 540 (36 B.C.).
81 RRC 529/1.
B.C. After the defeat of Sextus Pompeius at the Battle of Naulochus, Octavian’s mint produced a large issue featuring both types that celebrated the victory and legends that named Octavian CAESAR DIVI F and IMP CAESAR.

Octavian’s mint, which probably moved with him or his army during the Actian campaign, did not strike much coinage during this campaign or immediately after the battle because of financial problems—if the mint was still producing any coinage at all. Octavian’s latest issue (the CAESAR DIVI F and IMP CAESAR issue) was much smaller than the contemporaneous legionary denarii of Antony. Furthermore, Octavian needed to impose new, harsh taxes in order to raise money to fight Antony (Dio 50.10.4-5). Dio also states that, at the battle, Octavian hesitated to burn Antony’s camp lest he destroy the coins inside (Dio 50.34.1). Indeed, most of Octavian’s payments following Actium were probably in the recently captured legionary denarii of Mark Antony rather than in freshly produced denarii and aurei. These

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82 RRC 535.
83 RIC I.250-277. Grant 1946, pp. 49-50; Grant 1953, p. 65; Gurval 1998, pp. 48-55; and Assenmaker 2007; cf. Grueber 1910, vol. 2, pp. 8-14 and Grant 1954, pp. 13-16 and p. 275 n. 9; contra Laffranchi 1916a, pp. 213-222; Mattingly 1923, cxxii-cxxiv; Kraft [1969] 1978, pp. 292-311; Robertson 1962, pp. xlvii-xlvi; and Sutherland 1976b, pp. 147-156 who preferred a post-Actian date for this series. Arguments for a post-Actian date for the series depended on Cassius Dio 52.41.3, which stated that Octavian was granted the use of Imperator as a praenomen in 29 B.C. However, both epigraphic and numismatic evidence demonstrate that Octavian had used Imperator as a praenomen before 29 B.C. (Syme 1958, pp. 176-182, esp. p. 176; and Sutherland 1976b, p. 141; and Gurval 1998, p. 51). The CAESAR DIVI F and IMP CAESAR series also contained more clear references to the Battle of Naulochus in 36 B.C. than to the Battle of Actium in 31 B.C.
84 Sutherland 1976b, p. 157 stretched literary evidence to argue that the mint could be located in Brundisium. Given the civil war context in which the mint operated, it is more likely that the mint followed Octavian or his army (Kraft [1969] 1978, pp. 305-309 and Crawford 1974a, p. 246 state that the coins are Western in Style. cf. Crawford 1974b which assigns civil war mints to “Moving with” the generals.). On the Actian campaign, its lead up, and aftermath, see note 65, above.
85 Dillon 2007, p. 39 suggested, based on a comparison of finds from Augustan hoards, that the CAESAR DIVI F and IMP CAESAR series was nearly one tenth the size of the roughly contemporaneous debased legionary denarii of Antony. Lanna 2011 used the estimation formulae proposed in Etsy 2006, rather than the assumptions of die estimates in Sutherland 1976b, pp. 145-146, to lower the estimated number of obverse dies used to produce this coinage.
86 Dillon 2007.
financial problems prevented Octavian from producing coins until 29 B.C. after the Battle of Actium.

Between the major battles at Philippi and Actium, Octavian’s subordinates only struck issues with their own name twice. In 39 B.C., a denarius mint, which mentioned the location of the mint with the legend OSCA, celebrated the victory of Cn. Domitius Calvinus, a governor in Iberia, over the Cerretani. The absence of any reference to Octavian on these denarii was unusual for this period. The following year, Agrippa, Octavian’s right-hand man, struck denarii and aurei celebrating Octavian while Agrippa was fighting rebels in Gaul.

3.2.7. After Actium

After the Battle of Actium, several mints struck coins in order to show a governor’s or mint’s allegiance to Octavian or in order to celebrate the victory. The clearest example of a display of loyalty is from the first mint to strike after the battle: that of L. Pinarius Scarpus, a former legate of Antony. Once news of the battle reached Cyrene, the mint changed the reverse types of its denarii. The image now imitated an earlier coin of Octavian, which showed Victory standing on a globe and holding a palm branch and a wreath; and the legends now read IMP CAESAR DIVI F, DIVI F AVG PONT, or CAESAR DIVI F instead of ANTONIO AVG SCARPVS IMP.

Octavian’s civil war mint struck the next numismatic celebration of the Battle of Actium shortly after the triple triumph of 29 B.C. Once Octavian’s financial status improved after the

88 Sear 1998, p. 309 drew attention to this absence but assumes without any supporting evidence that Octavian sanctioned the omission.
89 RRC 534. Sear 1998, p. 188. On his campaign in Gaul, Dio 48.49.3.
90 RRC 546/4-8 (RIC I 2 531-535) imitates Octavian’s coin RIC I 2 255. For the date of this coin, and the other coins in the CAESAR DIVI F and IMP CAESAR issues, see above.
Battle of Actium and his mint returned to Italy, the mint struck four types in three denominations. The first denarius’s obverse showed a Victory, with an outstretched hand holding a garland, on a ship’s prow; and the reverse showed Octavian driving a triumphal chariot with the legend CAESAR DIVI F in the exergue.\textsuperscript{91} A silver quinarius celebrated the recapture of Asia by showing a Victory on top of the \textit{cista mystica} with snakes and the legend ASIA RECEPTA on either side. The obverse legend IMP VII dates the quinarius to 29 – 26 B.C.\textsuperscript{92} A denarius, bearing the famous reverse type of a crocodile and the legend AEGVPTO CAPTA, referred to Octavian’s sixth consulship of 28 B.C. in the obverse legend.\textsuperscript{93} Finally, the last issue of Octavian’s civil war mint was an aureus featuring the reverse type of an eagle above a wreath with the legends AVGSTVS and SC. The obverse legend’s reference to his seventh consulship in 27 B.C. and the words CIVIBVS SERVATEIS show that the aureus commemorates the grant of this title to the victor at Actium.\textsuperscript{94}

Two other mints in the empire celebrated the Actian victory in 28 and 27 B.C. A mint of unknown location in the East struck denarii with the same reverse type as the civil war mint: the crocodile with the legend AEGVPTO CAPTA.\textsuperscript{95} In addition to the denarii, a cistophorus, struck most likely at Ephesus, commemorated the victory by styling Octavian as the VINDEX LEIBERTATIS P R, “Defender of the freedom of the Roman people,” and depicting the goddess

\textsuperscript{91} RIC I\textsuperscript{2} 263-4. Assenmaker 2007, p. 176.
\textsuperscript{92} RIC I\textsuperscript{2} 276. Since the coins still bear the name CAESAR and not the name AVGSTVS, it is likely that these coins were struck before 27 B.C.
\textsuperscript{93} RIC I\textsuperscript{2} 275a-b.
\textsuperscript{94} RIC I\textsuperscript{2} 277.
\textsuperscript{95} RIC I\textsuperscript{2} 544-545. On the eastern mint location, Gabrici 1902, p. 155 n. 20; Grueber 1910, vol. 2, p. 537; Laffranchi 1916b, p. 295; Grant 1946, p. 69; and Sutherland 1974, pp. 65-67. Gorini 1968, pp. 54-58 discussed a multiple of an aureus (RIC I\textsuperscript{2} 546), which features a hippopotamus instead of a crocodile and the lettering AEGYPTO instead of AEGVPTO, and which could be attributed to this same mint but is not discussed here due to its dubious authenticity.
Pax and a cista mystica on the reverse.\textsuperscript{96} The cistophoric mint also struck an aureus that celebrated the “First Settlement” by showing Augustus sitting on a curule chair and offering a scroll, with a scroll case at his feet, and with the legend LEGES ET IVRA P R RESTITVIT, “He restored the laws and rights of the Roman people.”\textsuperscript{97}

3.2.8. The Displacement of Denarius Production

When the mint of Rome closed in 40 B.C., denarii, a few bronze coins, and a new denomination—the aureus—were being produced and continued to be produced by many imperatorial mints in the names of Julius Caesar, Pompey, the Pompeians, the Liberators, Sextus Pompeius, Antony, Octavian, and their subordinates. These mints were primarily intended to and used to pay for the civil wars these men fought. Some of these men began the war with little, if any money. Julius Caesar, for instance, began the imperatorial coinages with money that he had looted from the Roman treasury (App. B.C. 2.41, Plin. N.H. 33.17, and Plut. Caes. 35). The military commanders needed to pay for armies with which to fight for domination over the Roman state or its freedom, or to fight regular incursions against the Parthians or rebels in Gaul. The imperatorial coinages of this period served this purpose.

Even though the coinages were struck by Roman officials, it is unclear to what extent there was a Roman state in this period. At the end of his term as governor, Caesar invaded Italy, and the consuls, much of the Senate, and a triumvir monetalis fled Italy. After Caesar was assassinated, in 43 B.C., the Battle of Mutina saw Antony claiming to be governor of Cisalpine Gaul and besieging another claimant to this governorship, D. Brutus. In response, Antony was himself besieged by the consuls Hirtius and Pansa along with the private army of Caesar’s heir.

\textsuperscript{96} RIC \textsuperscript{1} 176 = RPC 2204. On its probable production at Ephesus, Sutherland 1970, pp. 88-89.

In 42 B.C., Q. Cornificius, a governor in Africa fought with a Caesarian governor of Africa Vetus. The Roman magistrates, the representatives of the Roman state, were at war with each other.

In some respects, the need for a title and magistracy became less important. Octavian raised his private army soon after the assassination of Caesar, and it was deployed against Antony at Mutina. Just before Actium, Antony’s fleet coinage recorded his position as *triumvir rei publicae constituendae*, even though his term in this unique position had lapsed. This unclear status of “the Roman state” poses a problem. Section 1.5 showed that it is not possible to attribute minting decisions to specific officials, but the Roman state had fractured into warring factions. How then can we talk about the Roman state’s infrastructural power between 49 and 27 B.C.? This chapter will continue to refer to “the Roman state” but, now, in reference to the leaders of the warring factions. This convenient, albeit imperfect, choice has the advantage that one of these leaders, Octavian, became the first emperor and effective head of state in 31 B.C.

Interestingly, even though the production center for the denarius was displaced from Rome to various mints in Iberia, Africa, Sicily, Italy, Greece, Macedonia, and Asia Minor, and although the denarius’s coin types changed, its weight and metal standards did not. The mints’ choices to use these denominations were path dependent and pragmatic. The Roman generals and the Italians comprising their armies had used denarii, and Italians were accepting the new aureus denomination. It was what they were accustomed to, and in what the soldiers expected to be paid. The choice was a pragmatic way to maintain support and fight a war. The only change to the denarius system came with the introduction and continued production of a gold coin: the aureus.

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98 *RRC 544/1-39*. Pelling 1996, p. 48 and 67-68 said the triumvirate had expired on 31 Dec. 33 B.C. The legionary denarii were struck in 32 – 31 B.C.

99 Brunt 1971, pp. 473-512 discusses the armies as if they were comprised of Romans and other Italians.
3.3. Introduction of the Aureus

3.3.1. The First Aurei

Julius Caesar began striking imperatorial coinages in 49 B.C., and his mint introduced the aureus in 48/7 B.C.\(^{100}\) The use of gold for an emergency coinage (i.e. an issue struck in an unusual metal when no other sources of payment are forthcoming) was typical among the Archaic and Classical Greek city-states. For example, at the end of the Peloponnesian War (431 – 404 B.C.), the Athenian mint had mainly produced silver tetradrachms, but its supplies of silver were low and fiscal demands required new coin to be produced, so the mint struck gold staters so that the Athenians could pay their expenses.\(^{101}\) During the Hellenistic period, royal mints struck (albeit rarely) gold coins.\(^{102}\) At first the gold coins were struck to pay troops, but they came to be used as a medium of exchange in Ptolemaic Egypt and for honorific purposes and emergency issues among the Seleucids.\(^{103}\)

Gold coins had seldom been struck in Roman mints. During the third century, gold coins were part of Rome’s pre-denarius coinage.\(^{104}\) There were a 6 scruple gold piece of 6.82g and a 3 scruple gold piece of 3.41g.\(^{105}\) At the end of the third century, as part of the introduction of the denarius system, gold coins featuring a bust of Mars on the obverse and an Eagle on the reverse were struck in several denominations. A small Mars/Eagle coin weighed 1.11g, and according to

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\(^{100}\) *RRC* 452/1 is the first aureus. Cf. Woytek 2004 who retermed the “Augustan Coinage System” (used by, e.g., Grant 1954, p. 50 and Harl 1996, p. 73) as the “Caesarian Coinage System” based on the addition of gold and *orichalcum* (brass) coins to the denarius system. The new brass coins of Oppius and Clovius, on which Woytek focused, however, did not persist as much or as well as the later copper and *orichalcum* coinage system established under Augustus (Sections 4.4 and 4.5). Woytek also did not address the eastern coinages of Asia, Syria, or Egypt, which are included in this dissertation.

\(^{101}\) van Alfen 2013, pp. 94-95.


\(^{104}\) Crawford 1974b, pp. 43 and 46.

\(^{105}\) Crawford 1974b, p. 593.
the value marks in the coin type it was worth twenty asses, twice as much as a denarius, which at that time was worth ten asses. Value marks also indicate that a medium-sized Mars/Eagle coin weighing 2.23g was worth forty asses and that a large one weighing 3.35g was worth sixty asses. ¹⁰⁶ Whereas the silver denarius continued to be minted extensively, the Mars/Eagle gold coins ceased to be minted c. 209 B.C. ¹⁰⁷ A few issues of gold were struck as an emergency issue by a mint moving with Sulla in the 80s B.C. when he was fighting Mithridates or Marius the Younger, or in Rome to commemorate Sulla’s triumph. ¹⁰⁸ These pieces were struck on a 10.75g weight standard. ¹⁰⁹ Finally, the last pre-Caesarian issue of gold coins was a small issue of gold struck on a weight standard just below 9g in order to celebrate one of Pompey’s triumphs. ¹¹⁰ The relationship between the value of these gold pieces and the denarius is unclear.

In 48/7 B.C., when Caesar was going to the Battle of Pharsalus or afterwards when he pursued Pompey to Egypt, his mint inaugurated the regular minting of aurei. The first aureus struck at Rome was issued in 46 B.C. in the name of the praetor A. Hirtius, ¹¹¹ and one of the tresviri monetales first issued aurei in 43 B.C. ¹¹² The major combatants in the civil wars—Sextus Pompeius, Brutus and Cassius, Mark Antony, and Octavian—all had an abundance of aurei struck in their names over the next several decades. All these aurei weighed approximately 7.90-8.10g (with 8.03g as the most likely standard), like the aurei of Caesar from 48/7 B.C. and not

¹⁰⁶ von Bahrfeldt 1923, pp. 16-19; and Crawford 1974b, pp. 3-5.
¹⁰⁷ Crawford 1974b, p. 34.
¹⁰⁸ RRC 359/1 (84/3 B.C.) and 367/2 and 4 (82 B.C.) were struck while Sulla was fighting Mithridates and Marius the Younger. RRC 381/1 (80 B.C.) was struck to honor the triumph. RRC 375/1 was struck at an uncertain mint in 81 B.C.
¹¹⁰ RRC 402. von Bahrfeldt 1923, p. 28-29 proposed that the coins were struck in 81 B.C.; Crawford 1974b, p. 413 proposed in 71 B.C.; and Amisano 2008, pp. 48-51 proposed 79 B.C. There is no clearly best proposed date for this coin. Woytek 2013, p. 321 noted that only five specimens are known, so this was most likely a very small issue; but he did not offer a date for the coins. On the weight standards, von Bahrfeldt 1923, pp. 28-29.
¹¹¹ RRC 466/1.
the Sullan gold coins with a 10.75g weight standard or the rare Pompeian coins with a standard close to 9g.\textsuperscript{113} The weight standard, then, was initiated by Caesar’s aurei. The weight of the aureus gradually declined over time in order to maintain the ratio of value between the aureus and the denarius.\textsuperscript{114}

3.3.2. The Value of the Aureus

Since Caesar’s aurei determined the weight standard for the aureus, these same aurei likely began the valuation of one aureus in relation to denarii.\textsuperscript{115} The equivalence of one aureus and twenty-five denarii is known from several first century authors.\textsuperscript{116} When Otho supported Galba at the beginning of the civil war in A.D. 68, Otho gave Galba’s soldiers money. Both Suetonius and Plutarch recorded the sum as one aureus for each soldier, and Tacitus recorded the same amount as one hundred sestertii (Plut. \textit{Galba} 20.4, Suet. \textit{Otho} 4.2, and Tac. \textit{Hist.} 1.24). Since there were four sestertii in one denarius, twenty-five denarii would be equivalent to one aureus for all three authors to record the same value. Additionally, Josephus noted that due to the exceptional influx of gold into Syria during the plundering of Jerusalem, the value of gold coins declined from the normal twenty-five denarii to a temporary twelve denarii (\textit{B.J.} 5.13.4 = 550). The first century A.D. author Claudius Didymus also indicated that one aureus is the equivalent of one hundred sestertii or twenty-five denarii (quoted by Priscian, \textit{De figuris numerorum} 18). Therefore, sometime before the civil wars of A.D. 68 – 69, the aureus was

\textsuperscript{113} von Bahrfeildt 1923, pp. 24-179; West 1941, p. 17; Crawford 1974b, p. 593; and Butcher and Ponting 2015, p. 435.

\textsuperscript{114} Butcher and Ponting 2015, pp. 434-439.

\textsuperscript{115} The value of the aureus, and the maintenance of this value, are important elements in the Neronian changes to weight and silver standards for several coinages (Section 5.9).

\textsuperscript{116} The following citations are from Hultsch 1862, p. 232, n. 6 and Butcher and Ponting 2015, p. 47, n. 105. Butcher and Ponting 2015, pp. 47-48 doubted the usefulness of Dio 55.12.4-5 which also provides this exchange rate between the denarius and the aureus because this part of Dio is epitomized and refers to the aurei of Severus Alexander which fluctuate greatly in their weights.
made equivalent to twenty-five denarii. Because one aureus was approximately twice the weight of one denarius, the ratio of value for gold to silver was 1:12.5. This was near the 1:10 ratio of gold to silver in the eastern Mediterranean after Alexander the Great and near the 1:12 ratio in the western Mediterranean.\textsuperscript{117}

3.3.3. \textit{Why was the Aureus Introduced?}

The first aureus was struck at Julius Caesar’s imperatorial mint because he was in desperate need of coins with which to make payments during the civil war against Pompey. At the beginning of the civil war, Caesar’s troops were covering some of the war’s cost. Centurions paid for horses and their own expenses, soldiers offered to serve without pay or state-supplied grain, and richer soldiers supported poorer ones (Suet. \textit{Jul.} 78.1). At the beginning of the Spanish campaign, Caesar even borrowed from tribunes and centurions to pay the soldiers (Caes. \textit{B.C.} 1.39.3). This reliance on his officers suggests that Caesar was deeply in need of money.\textsuperscript{118} After Caesar arrived in Rome, he plundered the state treasury in order to obtain money (App. \textit{B.C.} 2.41 and Plut. \textit{Caes.} 35.2-3). Pliny the Elder records that Caesar took 15,000 gold ingots, 30,000 silver ingots, and 30,000,000 sestertii in coins from the treasury (\textit{N.H.} 33.17). Caesar, then, had the precious metal to pay his expenses, but he needed to convert it into coin. The gold ingots were almost certainly used to produce Caesar’s first aurei, which were struck and issued in order to celebrate Caesar’s fifty-second birthday in July 48 B.C., as indicated by the \textit{II} on the obverse of his coins.\textsuperscript{119} Also around the time of this birthday, Caesar went to Apollonia to pay his troops (Caes. \textit{B.C.} 3.78.1). Caesar most likely used this first issue of aurei and the denarii to pay his troops, as suggested by the contemporaneity of this payment, his birthday, and the coins’

\textsuperscript{117} Crawford 1974b, p. 626, n. 1; and Lorber 2013.
\textsuperscript{118} Woytek 2003, p. 126.
\textsuperscript{119} Crawford 1974b, p. 92; and Woytek 2003, pp. 143-145.
production. Even though Caesar allotted a small amount of time to paying his troops, he still made sure to interrupt his hurried pursuit of Pompey in order to pay the soldiers (Caes. B.C. 3.78.1), because he recognized the importance of paying his army. He needed to ensure their allegiance to him and help ease the expenses they had incurred on his behalf. Caesar paid them how he could: with the freshly coined gold and silver produced from ingots obtained from the treasury in Rome.

3.3.4. Why did the Aureus Catch on in the 40s B.C.?

Soon after the emergency issue of aurei, the denomination quickly became a fixture of the Roman monetary system. In 44 – 43 B.C., Cicero denounced L. Antonius’s companions not only as public enemies but also as people who had harmed him personally. Among his examples, he said: *Atque idem hic myrmillo Asiaticus, latro Italae, conlega Lentoni et Nuculae, cum Aquilae primipilo nummos aureos dare, de meis bonis se dare dixit,* “And this same gladiator Asiaticus, a thief of Italy, a colleague of Lento and Nucula, when he gave gold coins to Aquila, a chief centurion, he said that he gave them from my property” (*Phil.* 12.20).120 The aurei are mentioned almost in passing, as if their presence was not troublesome or strange.121 In fact, to Cicero and to his audience (he hoped), they were seen as valuable. Asiaticus was a rotten man for giving away what purportedly belonged to Cicero, and Cicero was appalled that his property—valuable aurei—was given away. Cicero, then, provides evidence that within a few years of the introduction of the aureus, the gold coin was a valued, fixed part of the coin supply. About the same time, the *tresviri monetales* at the mint in Rome too decided to produce

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120 Text is from Fedeli 1982.
121 Crawford 1985, p. 251.
the coin. By the end of the 40s B.C., the aureus was an accepted part of the Roman monetary system.

This was a significant change. Unlike earlier gold coins struck by the Romans, Caesar’s aurei permanently moved the Romans from a bimetallic system to a trimetallic system. Caesar clearly had the minting power necessary to issue the coins, but was it the exercise of his power that permanently changed the entire system?

At least some Romans engaged in very large transactions, so there was a growing need for a new, larger denomination coin. For example, in 125 B.C., the censors rebuked Lepidus Aemilius the augur for renting a house for 6,000 sestertii (Vell. 2.10). When Julius Caesar was young and captured by pirates, he paid 500 talents as a ransom (Suet. Jul. 4). During the civil war with Pompey, Caesar gave Paulus 1,500 talents to adorn a basilica in the Roman Forum (Plut. Caes. 29.3), and he may have bribed the tribune of the plebs Curio with 100,000 sestertii to support him (Vell. 2.48.4). When he celebrated his quadruple triumph in 46 B.C., he gave each soldier 5,000 drachmas, twice that to each centurion, and fourfold to each tribune and prefect of the cavalry (App. B.C. 2.102). In fact, most of the Roman elite was engaged in such exorbitant expenditure. When M. Lepidus was consul in 78 B.C., his house was the finest in the city; but thirty-five years later it was not even among the one hundred finest. This competitive spending on houses continued until at least the time of Pliny the Elder (Plin. N.H. 36.24.109-110).

Admittedly, some of this spending could have happened through transfers of money on paper or loans. Cicero’s letters record several instances of a *permutatio*, or transfer of money on paper (rather than in coin) from one person to another. The *permutatio* could also potentially

\[122\] Cf. Woytek 2004, p. 345 who proposed that the aureus was accepted as a useful and practical replacement for gold bars which had been used in large transactions (on which see below), but he did not mention the use of credit, the *permutatio*, or the debt-crisis of 55-45 B.C. which feature prominently in my explanation for the aureus becoming accepted.

\[123\] On Roman “money” as more than just coins, Harris 2006.
involve a loan from the sender of the money to the recipient. Nor was this the only means of obtaining a loan. Starting in the late fourth or early third century B.C., argentarii, “bankers,” changed money, held deposits, and made loans, especially at auctions. Private individuals also made loans. For example, both Brutus and Pompey had loaned money to eastern kings (Cic. ad Att. 6.1.3-4 = SB 115.3-4, 5.3.5 = SB 117.5). The incursion of debt to finance elections, public games, and the elite lifestyle was so pervasive that Claude Nicolet remarked, “More or less everybody was borrowing, lending, pledging, buying and selling real estate; and the size of the sums involved rose in line with the growth of private fortunes.” Indeed, Caesar was thirteen hundred talents in debt before he even entered public office (Plut. Caes. 5.4).

This credit system, however, faltered right when Caesar struck his emergency issue of aurei. During the first century B.C., argentarii are less well attested in Italy than in the provinces. Also, even though nummularii, “money-changers,” are first attested in Italy during the last half of the second century B.C., they only tested money and held deposits during the first century B.C. They had not yet started loaning money—as they did during the second century A.D.

Furthermore, between 55 and 45 B.C., Rome suffered from a debt crisis. Caesar stated that fides tota Italia esset angustior, “credit was rather restricted in all of Italy,” in late 49 B.C. (B.C. 3.1). Cicero illustrated this well in a letter written to Atticus on 3 February 49 B.C. He claims that his brother Quintus could not pay his debt to Atticus, other friends did not have cash on hand to even pay for travel expenses, and no one seemed willing to lend money (ad Att.

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124 Hollander 2007, pp. 40-44 collected the instances of a permutatio in Cicero’s letters.
125 Andreau 1987, pp. 355-356.
127 Andreau 1987, p. 430.
128 Andreau 1987, p. 194.
129 Text from Klotz 1969.
7.19.4 = SB 142.3). While the exact nature of the crisis is unclear,\textsuperscript{130} we do know Caesar’s attempts to solve the crisis and Cicero’s understanding of the crisis. From Caesar’s solutions, we can deduce that he understood the crisis similarly to Cicero. Their belief can be taken as representative of the Roman elite’s explanation for the crisis. This widespread belief, then, helps explain why the aureus was accepted as part of the Roman monetary system during the 40s B.C.

In response to the crisis, Caesar enacted five different measures. (1) If debtors offered their houses and land as payment for debt, in 49 – 47 B.C., Caesar made sure that the property was assessed at pre-war levels before it was used to pay the debt. (2) In 49 B.C., he revived a lex that forbade hoarding and possession of more than 60,000 sestertii in coin. (3) In 48 B.C., Caesar cancelled some of the interest on loans and some rents. Two laws were also passed. (4) One law of 49, 46, or 45 B.C. required investment in Italian land, and (5) the other law, probably from 46 or 45 B.C., was the lex Julia de bonis cedendis.\textsuperscript{131} This latter law established a procedure whereby the debtor could admit his insolvency to a magistrate. Then, with the magistrate’s permission, the debtor ceded his land and/or goods to his creditors, while the debtor retained enough property on which to live and avoided infamia.\textsuperscript{132}

According to Caesar, these actions were taken in order to diminish fears of debt cancellation and to preserve the reputations of debtors (B.C. 3.1). He claimed to help both creditors and debtors. The cancellation of a few debts and rents (measure (3), above) helped

\textsuperscript{130} Nicolet 1971, pp. 1214-1220 thought a lack of money caused a collapse of prices, especially land; Verboven 2003 thought Rome experienced stagflation (i.e. rising price levels as a result of decreased production) because the civil war disrupted production and the grain trade that supplied Rome; and Collins and Walsh 2015 thought Rome experienced debt deflation (i.e. potentially lower price levels (but certainly lower asset prices) triggered by the liquidation of debt following a shock to the economy).

\textsuperscript{131} Frederiksen 1966, pp. 134-141 citing Caes. B.C. 3.1 and 3.20-22; Dio 41.37-38, 42.22-23, 42.29.1, and 42.51.1; Suet. Jul. 42.2 and Tib. 48; and Tac. Ann. 6.16-17. Frederiksen first proposed the association of the lex Julia de bonis cedendis with the debt crisis of 49 B.C., and his proposal was accepted by Nicolet 1971, p. 1216; Verboven 2003, p. 52; and Hollander 2007, pp. 65-66.

\textsuperscript{132} Frederiksen 1966, p. 135.
debtors. Measures (1), (2), and (5) favored creditors and help explain how Caesar understood the crisis. Measure (2), because it forbade hoarding, attempted to encourage payment of debts and increase the number of coins in circulation. Measure (1) and (5) are similar: they both allowed debtors to pay their debts by means of property and land. They essentially allowed property and land to be used as media of exchange to pay debts. Measures (1), (2), and (5), then, sought to increase the ways in which debts could be paid. Such action is the reasonable response to a perception that people do not have enough ways to make payments. Cicero shared this opinion. He blamed the debt crisis on a nummorum caritas, which can be translated either as “a lack of coins” or as “a lack of money” (ad Att. 9.9.4 = SB 176.4).

Both Cicero and Caesar understood the crisis as the result of a lack of coins, money, and/or other means to make payments. In the middle of the crisis, Caesar began striking the aureus in order to pay his troops and pay for supplies during the civil war. This new gold coin was accepted by the Roman people because they thought they needed more ways to make payments. The debt crisis had rendered the denarius insufficient. Many people were spending on a large scale and had large amounts of debt to pay and loans to collect. A gold coin worth one hundred sestertii fortuitously appeared and suited their perceived needs.

Aurei possessed several other advantages that further encouraged their adoption. First, it was easy for Romans to be convinced to accept the new coins. As mentioned above, Greek cities and kingdoms had struck (albeit rarely) gold coins, so Romans would have been predisposed to

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133 Measure (4), which required investment in Italian land, cannot easily be characterized as pro-debtor or pro-creditor and its place within the Caesarian response to the debt crisis is uncertain (Frederiksen 1966, p. 134; and Verboven 2003, p. 52). Perhaps it was an attempt to prevent another debt crisis by encouraging greater investment in land, the most socially acceptable source of wealth and income (D’Arms 1981, pp. 20-24).

134 Hollander 2007, p. 59-75 surveyed non-coin methods of payment: grain, wine, olive oil, livestock, land, slaves, and labor; but he says the use of land as payment was only part of a soldier’s discharge package and the result of a debt-crisis (pp. 64-66).

135 Cf. Verboven 2003, pp. 52-53 who preferred “lack of money.”
the idea of gold coins as a valid medium of exchange.\textsuperscript{136} Sulla’s and Pompey’s earlier issues of aurei would also have encouraged this predisposition. Gold bullion had also been used as a store of value and sometimes as a medium of exchange—two functions of coins—because of gold’s intrinsic value. Cicero says that Rabirius gave Cicero as much gold as he needed before his own exile (\textit{Rab. Post.} 47). He also accused a certain doctor Strato of stealing gold from a chest in which coins had also been kept. Indeed, the language of this passage—\textit{in quo sciret esse nummorum aliquantum et auri, “in which he knew there was some amount of coins and gold,”}—shows how gold could be paired with and understood in very much the same way as coins (\textit{Clu.} 179).\textsuperscript{137} Gold and silver had been stored together in the Temple of Saturn from which Caesar looted the coins and bullion (App. \textit{B.C.} 2.41, Plut. \textit{Caes.} 35.2-3, and Plin. \textit{N.H.} 33.17).

Similarly, an Italian hoard from the 40s B.C. contained 80,000 coins and some gold bars.\textsuperscript{138} The Romans conceived of gold bullion and denarii in such similar ways that they were stored together. In the defense speech of Caelius, Cicero says that Caelius had Clodia’s gold because she gave it to him as a loan (\textit{Cael.} 30-32). In yet another speech, Cicero says that it was customary for gold to be sent from the provinces to Jerusalem as a way for Jews to pay their Temple Tax (\textit{Flacc.} 67-69). Furthermore, gold coins were a small, easily concealable, and easily

\begin{footnotesize}
\begin{enumerate}
\item On gold coins in the Hellenistic kings’ coinages, de Callataï 2013b, pp. 176-181; Houghton 2013, pp. 235-237; and Lorber 2013, pp. 211, 213-215, 217, 219, and 221-222. Hollander 2007, p. 22 rightly rejected the idea that regal associations prevented the earlier production of aurei, because Caesar’s assassins also later produce aurei (contra Harl 1996, p. 52). Just because gold coins circulated in Hellenistic kingdoms, this does not mean that the Romans used the gold coins outside of those areas (cf. Harl 1996, p. 49 who unconvincingly cited the Iron Age imitation of Macedonian gold staters (Haselgrove 1993, p. 35) as evidence that the gold coins were used in international commerce but this is an unlikely use for the Iron Age coinages (cf. Haselgrove 1993, pp. 48-59; and Howgego 2013, pp. 26-31) and who correctly said that gold ingots were used as means of exchange more frequently than Macedonian gold staters (on the use of gold bullion as a means of exchange, see below). Indeed, the examples below suggest that Romans had not extensively used gold coins before the \textit{aureus.}  
\item Text from Clark 1908.
\item RRCH 357.
\end{enumerate}
\end{footnotesize}
portable store of value and medium of exchange. The examples listed here support the idea that the aureus was accepted partly because of gold’s intrinsic value.

In sum, Caesar introduced the aureus in 48 B.C. as an emergency measure to pay his expenses during his campaign against Pompey. His issues set the weight standard of this gold coin within the 7.90-8.10g range from where it began to decline in tandem with the weight of the denarius. Even though the coin was initially struck as a small emergency issue, it was readily accepted as part of the Roman coinage system during the 40s B.C. The Romans thought they needed more ways to make payments, and the fortuitous growing quantity of aurei served this need when credit was limited—fides… angustior esset (Caes. B.C. 3.1.1-4). The earlier uses of gold bullion as a medium of exchange and as a store of value, based on the metal’s intrinsic value, predisposed the Romans to use the new gold coins. While the debt crisis of 55 – 45 B.C. was being resolved, the aureus became accepted as part of the coinage system and was produced in Rome. The tresviri monetales simply followed the trend when they first struck aurei in 43 B.C. Similarly, the Liberators and Caesarians struck aurei in large numbers as a way to pay the expenses of the civil war and because they had become an accepted part of the monetary system. Even though Caesar could initiate the production of this new coin, the capacity to legitimize it with the people—as a legal tender law may have done—was not held by any one person but by the market.

### 3.4. Antonian Recoinage of Cistophori

#### 3.4.1. The Antonian Cistophori

In 39 B.C., two issues of cistophori were struck—one at Ephesus, one at Pergamum—and these issues, this section proposes, drastically changed the circulating medium within Asia Minor.

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139 Howgego 1992, pp. 11-12.
because they were part of a larger undertaking to recoin cistophori. As discussed in Section 1.6.5, a recoinage involves the recall of all old coins, which are then melted down by the mint and restruck into new coins, which are now considered legal tender. Three clues show that a recoinage happened: (1) a change in weight and/or metal standards, (2) a sudden disappearance of “old coins” from the circulating medium and the sudden appearance of “new coins” in the circulating medium, as seen by hoards, and (3) a change in the coin types. Although many recoinages are the result of a change in the metal content of a precious metal coin (clue 1), there are no adequately published metallurgical analyses of the cistophori from the Hellenistic period, Late Republic, or civil war period. Therefore, clues (2) and (3) must bear the weight of the argument about a recoinage of earlier cistophori.

3.4.2. The Circulating Medium in the Province of Asia

Before looking for a possible change in the Asian circulating medium of cistophori, it is necessary to review the production history of cistophori. The cistophorus was introduced between 180 and 160 B.C. It was originally produced alongside silver coins on the Attic standard, but the cistophoric standard became the only standard used in Asia after 133 B.C. The cistophoric standard called for less silver than the Attic standard, and the cistophoric

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140 RPC I 2201-2202.
141 Butcher and Ponting 2015, pp. 465-489 published inductively coupled plasma atomic emission spectrometry (ICP-AES) analyses of cistophori from the reign of Claudius until the reign of Trajan, and they mention results for a few Antonian and Augustan cistophori. However, they cautioned against basing interpretations on the scanty evidence regarding the Antonian and Augustan cistophori. Furthermore, for the purposes of this section, such analyses are insufficiently helpful because we do not have any comparable analyses of pre-Antonian cistophori. Walker 1976, pp. 26-32 had published results of x-ray fluorescence (XRF) analyses of pre- and post-Antonian cistophori, but these non-destructive analyses which examined the possibly enriched surface of the coin are unreliable and should not be the basis of arguments (Butcher and Ponting 2005b, p. 174 and 2015, pp. 104-113).
142 Meadows 2013, pp. 176-183; and de Callataý 2013a, pp. 218-227.
standard became common, as expected by Gresham’s Law or Rolnick and Weber’s Law.\footnote{145}

Various mints continued producing cistophori until 67 B.C.\footnote{146} In the 50s B.C., a few mints produced cistophori in the name of proconsuls, and the coordination of these coins’ types was discussed in Section 2.4.\footnote{147} This practice was briefly revived shortly before 39 B.C. with the issue of L. Sempronius Atratinus.\footnote{148} In 39 B.C., two very large issues of cistophori were struck in the name of Mark Antony. Within two decades, several large issues were struck in the name of Augustus.\footnote{149} Subsequently, only a few small issues of cistophori were produced under Claudius, the Flavians, Nerva, and Trajan;\footnote{150} and a massive issue was produced by Hadrian. Many of the Hadrianic cistophori were overstruck on cistophori primarily from the Antonian and Augustan issues and a few cistophori from Claudius’s reign.\footnote{151} Nineteen hoards from Asia, after the Aristonicus revolt, indicate the coins in the circulating medium of Asia. The hoards are listed in Appendix 3 and their contents are recorded according to the period in which the coins were struck. The low number of Asian hoards from the two hundred year period of 125 B.C. – A.D. 117 limits the soundness of interpretations based upon them. In order to strengthen the following proposal, other evidence, such as the subsequent minting history of cistophori, will be adduced.

Hoards No. 1-16 show that the circulating medium gradually changed over time, with some coins being lost due to attrition. In hoards No. 1-7, the early cistophori, which were struck between 180 – 160 B.C. and 128 B.C., continue in circulation while the late cistophori were

being struck between 127 and 59 B.C.\textsuperscript{152} The early cistophori seem to have briefly disappeared from circulation around 80 B.C., as shown by their absence in hoards No. 8-13. The early cistophori, however, reappeared in hoards No. 14 and 15, so the early cistophori did not completely disappear from circulation. Starting in 58/7 B.C. the cistophoric mints began producing coins with legends naming the proconsuls, but there was no recoinage.\textsuperscript{153} Hoards No. 12-16 show the proconsular cistophori circulating alongside the late cistophori and a few early cistophori. The relative numbers of coins in these hoards suggest that there was a rather large number of late cistophori minted compared to the number of proconsular cistophori. In hoards No. 12 and 14, there were fifteen times as many late cistophori as proconsular cistophori.\textsuperscript{154} These hoards, then, suggest there was continuity in the circulating medium, not a recoinage.

As the last hoard in this period of continuity, and as a hoard with somewhat unusual contents, hoard No. 16 ought to be discussed in detail. This hoard contained a drachm of Kibyra from the second or first century B.C., four late cistophori (127 – 58 B.C.), thirty-two proconsular cistophori (58/7 – 48 B.C.), no Antonian cistophori, and sixty-two denarii. The latest denarius was from 41 B.C., so the hoard was deposited in 41 or 40 B.C (CH 6, 86).\textsuperscript{155} Since late cistophori had been numerous and denarii almost absent in earlier large hoards,\textsuperscript{156} the low number of late cistophori and the sizeable presence of denarii deserve comment. Denarii were also not present in subsequent hoards until late in the first century A.D., so it is unlikely that

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{152} The terms “early cistophori” and “late cistophori” are terms used by F. S. Kleiner, who extensively studied the cistophori, to describe the dates of the coins (Kleiner 1972, 1978, 1979; and Kleiner and Noe 1977). They are used here for convenience and because they provide a nice chronological division roughly comparable to the Attalid and Roman Republican periods. The “early cistophori” were struck between c. 180/160 B.C. and 128 B.C. The “late cistophori” were struck between 127 and 59 B.C.
\item \textsuperscript{153} On the proconsular cistophori, Section 2.4.
\item \textsuperscript{154} Hoard No. 13 contained only late cistophori and so cannot be used to judge the size of issues. Hoard No. 15 contained only eleven coins and so is too small to make accurate comparisons about the sizes of coin issues. Hoard No. 16 will be discussed in more detail below.
\item \textsuperscript{155} Overbeck 1978.
\item \textsuperscript{156} A denarius appeared in hoard No. 15, but a coin does constitute a pattern, even in this small hoard.
\end{enumerate}
\end{footnotesize}
denarii circulated in Asia c. 40 B.C. This hoarder, then, showed a great preference for Roman denarii—obtained from an unclear source, region, or method. This preference probably encouraged the hoarder to include other coins featuring the names and titles of Roman magistrates: the proconsular cistophori. This proposal explains why the proconsular cistophori outnumbered the late cistophori by eight to one, when earlier hoards had opposite ratios. This hoard, then, does not necessarily reflect the relative amounts of cistophori in circulation in 41 or 40 B.C.; but it, together with hoard No. 15 from a few years earlier, does suggest what cistophori were in circulation.

In 41 or 40 B.C., early cistophori seem to have been disappearing due to attrition because there was only one early cistophorus in hoard No. 15 and none in hoard No. 16. Late cistophori were certainly still in circulation, probably in large numbers given the relative size of the issues of late cistophori. The proconsular cistophori were also circulating, again perhaps in large numbers—or at least in large enough numbers that a large number could be obtained by someone who was predisposed to select them for hoarding. As mentioned above, even though denarii appeared in these hoards, it is most unlikely that this coinage circulated in Asia at this time.

Hoard No. 17 and 18 contained only cistophori struck under Antony and Augustus. The early, late, and proconsular cistophori were no longer present in hoards, even though the latter two may have been circulating in large numbers in 40 B.C. They most likely disappeared because they were melted down in order to strike the Antonian cistophori. Even though both hoards were buried in or after the Augustan period, it is important to note that the earliest coins in these hoards were from 39 B.C. Since the date of a recoinage is dated by the earliest coins in the hoards, not by the burial date of the hoards, the recoinage happened in 39 B.C.
Later events confirm this interpretation. Hoard No. 19 contained only Flavian and later cistophori, but there is no other evidence to suggest that another recoinage happened in the province. Based on the chemical composition of Domitianic cistophori, Butcher and Ponting said these coins were made from earlier Domitianic denarii, not earlier cistophori.\textsuperscript{157} Additionally, the very large issue of Hadrianic cistophori were overstruck on earlier cistophori. At that time, many mints operated because the people of Asia could bring their coins to the mint in order to be confirmed as legitimate coins.\textsuperscript{158} As shown by the many overstrikes, the coins brought to the mint were mainly Antonian and Augustan cistophori—not early, late, or proconsular cistophori.\textsuperscript{159} Therefore, there was no recoinage of the cistophori under the Flavians. Just as with the hoards, the pre-Hadrianic recoinage can be dated by the earliest coins in the Hadrianic recoinage. Since the earliest coins overstruck during Hadrian’s reign were Antonian, a recoinage of cistophori happened in 39 B.C.

\subsection*{3.4.3. The Noticeable Change in Coin Types in 39 B.C.}

As noted above, another sign of a recoinage is that the coin types changed in a noticeable way. The early, late, and proconsular cistophori featured a snake crawling out of the \textit{cista mystica}, all surrounded by an ivy wreath, on the obverse, and two snakes flanking a bowcase on the reverse (Figs. 2.5-8). The Antonian cistophori, on the other hand, looked rather different. On one coin, the obverse featured a portrait of Antony surrounded by the legend M ANTONIVS IMP COS DESIG ITER ET TERT that was in turn surrounded by an ivy wreath; and the reverse featured the bust of his wife Octavia above the \textit{cista mystica}, both of which were flanked by two

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{157} Butcher and Ponting 2015, pp. 476.
\item \textsuperscript{158} Metcalf 1980, pp. 115-120. Cf. Section App. 2.4.
\item \textsuperscript{159} Metcalf 1980, p. 116.
\end{itemize}
\end{footnotesize}
snakes (Fig. 3.1).\textsuperscript{160} The other Antonian cistophori featured the portraits of Antony and Octavia, surrounded by the legend M ANTONIVS IMP COS DESIG ITER ET TERT on the obverse; and its reverse showed Dionysus standing on the \textit{cista mystica} and flanked by two snakes (Fig. 3.2).\textsuperscript{161} Portraits now dominated on the obverse, the bowcase disappeared, and the cista mystica was now smaller and flanked by snakes on the reverse.

As indicated by the coin types and hoarding patterns, this recoinage happened in 39 B.C.\textsuperscript{162} Since most recoinages involve the debasement of a silver coin, it is likely that this recoinage did too, but future chemical analyses of Hellenistic cistophori are necessary to confirm this hypothesis. The decreasing weights of proconsular cistophori and Antonian cistophori support the idea that the recoinage involved a debasement. Proconsular cistophori weighed an average of 11.97g, and the average weight of Antonian cistophori declined to 11.24g.\textsuperscript{163}

3.4.4. \textit{The Debasement and a Low-Medium Infrastructural Capacity}

Both the mint at Pergamum and the mint at Ephesus debased their coins contemporaneously, and this suggests the debasement was coordinated in some way. Even

\textsuperscript{160}RPC I 2201.
\textsuperscript{161}RPC I 2202.
\textsuperscript{162}To my knowledge, this debasement has not been noted in earlier publications.
\textsuperscript{163}The average weight of proconsular cistophori is calculated from the 274 weights recorded by Stumpf 1991, pp. 17-55 for the cistophori struck at Ephesus, Laodicea, Pergamum, Tralles, and Apamea. The average weight of Antonian cistophori is from Walker 1976, p. 28.
though the mints changed their coin types at the same time, the decision regarding the content of the types was not as coordinated. The types used at the two mints were very different stylistically and iconographically. One mint featured Antony and Octavia on the obverse, the other featured her on the reverse. Both mints retained the *cista mystica*, but one mint showed Dionysus standing on it and the other showed the bust of Octavia above it. The presence of Dionysus related to attempts to associate Antony with the god, and thereby made the two cistophori thematically different. One honored Antony and Octavia, the other honored them but also associated the husband with the god Dionysus. Additionally, both mints’ obverse coin legends ran around the coin face in a clockwise direction. This represented a change from earlier cistophori that had only used linear legends, such as those on the reverse of the Antonian cistophori. It was also an imitation of Roman coin production practices because the mint at Rome routinely struck coins with clockwise and counterclockwise legends. This imitation of Roman legends and the honoring of Antony and Octavian, as well as the lack of coordination with the mint at Rome or with imperatorial mints, suggest that the Roman state had a low-medium infrastructural capacity over cistophorus production in 39 B.C., which included a recoinage of the cistophori.

3.5. The so-called “Fleet Coinage” of Mark Antony

Shortly after the debasement of the cistophorus, in 38 – 37 B.C., the mints of three of Antony’s lieutenants—L. Sempronius Atratinus, L. Calpurnius Bibulus, and M. Oppius Capito—struck remarkably similar bronze coinages at three different mints.\footnote{Zanker 1988, pp. 44-47 surveys the evidence, primarily from Plutarch, that shows people in Athens, Ephesus, and Tarsus acknowledged some association between Antony and Dionysus.} The coins of Atratinus and

\footnote{\textit{RPC} I 1453-1461 (Atratinus), 4088-4093 (Bibulus), and 1462-1470 (Capito). On the date, Amandry 1990, pp. 80-83 and Amandry 2008, p. 432.}
Capito were found primarily in the region that would become the province of Achaea and in the existing province of Crete, so their mints were located in Achaea. Bibulus’s coins were found in Syria and Cyprus, so his mint was in Syria. These bronze coinages included six denominations. For each lieutenant, the coin types were the same except that the reverse legend changed. The obverse legend was always M ANT IM(P) TER(T) COS DES(IG) ITER ET TER(T) III VIR R P C. The reverse legend for Atratinus was L ATRATINVS AVGVR COS DESIG; for Bibulus it was L BIBVLVS M F PR DESIG; and Capito’s reverse legend ran M OPPIVS CAPITO PRO PR PRAEF CLASS F C. Table 3.1 lists the obverse and reverse types of each denomination:

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Obverse Type</th>
<th>Reverse Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sestertius</td>
<td>On the left, a bust of Antony facing right. On the right, a bust of Octavia facing left.</td>
<td>Four hippocampas racing to the right with two drivers. To the left, HS. Below, Δ and a rectangle.</td>
</tr>
<tr>
<td>Tressis</td>
<td>On the left, busts of Antony and Octavian facing right. On the right, a bust of Octavia facing left.</td>
<td>Three ships sailing to the right. Below, Γ and a triskelis.</td>
</tr>
<tr>
<td>Dupondius</td>
<td>On the left, a bust of Antony facing right. On the right, a bust of Octavia facing left.</td>
<td>Two ships sailing to the right. Above, two caps of the Dioscuri. Below, B.</td>
</tr>
<tr>
<td>As</td>
<td>Jugate busts of Antony and Octavia to the right.</td>
<td>One ship sailing to the right. Below, A and a Gorgoneion facing front.</td>
</tr>
<tr>
<td>Semis</td>
<td>Bust of Antony facing right.</td>
<td>Half of a ship without a sail, to the right. Above, S.</td>
</tr>
<tr>
<td>Quadrans</td>
<td>Janus-head.</td>
<td>Ship’s prow. To each side, a small sphere.</td>
</tr>
</tbody>
</table>

The remarkable similarity of these three coinages’ types indicates that their production was coordinated.

The coins’ types show the purpose of these coins. The Greek letters Δ, Γ, B, and A and the Latin HS and S were denomination marks. The Greek letters counted 4, 3, 2, and 1 units; the

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166 Amandry 1990, pp. 77-79.
167 Amandry 1990, p. 76-77 and Amandry 1998, p. 188.
HS indicated that coin was a sestertius; and the S indicates that coin was a semis. The combination of these value marks on different denomination coins showed the units that the Greek numerals counted. The HS was on the coin with the letters Δ, for the number four. Since there were four asses in a sestertius, the letter Δ counted four asses. The images on the coins also communicated the value of the coin in asses. Four hippocamps on the reverse suggested the coin was worth four asses, three ships suggested three asses, two ships suggested two asses, one ship suggested one as, half a ship suggested half of an as, and an even smaller portion of the ship suggested a fourth of an as. The coin labeled as a semis, which was half an as, had half a ship.

This use of multiples, or fractions, of a ship and Greek numerals was meant to communicate the value, in asses, of the coin to a non-Roman, non-Latin-speaking audience. The location of the mints in Achaea and Syria suggest that the coins were meant to communicate the coins’ as-based denominations to the Greek-speaking inhabitants of these regions.

These as-based denominations were modeled on the bronze coins that had been struck in Rome. The last issue of bronze coins struck at the mint in Rome were issued in 91 – 84 B.C., and they were struck on a new standard that had been dictated by the *lex Papiria de assis pondere* of 91 B.C. The denominations of those bronze coins and the denominations of the fleet coinage bronze coins are listed in Table 3.2. The fleet coinage bronze coins had a slightly smaller diameter and were slightly lighter than the older coins from Rome, perhaps because the fleet coinage mints were trying to match their coins to bronze coins that had become worn after several decades in circulation. The denominations were also slightly different. Antony’s lieutenants’ mints struck a sestertius in bronze rather than in silver—the mint in Rome had used silver since c. 211 B.C. The lieutenants also added the tressis and dupondius and omitted the

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168 For S and dots as denomination marks on earlier Roman bronze coins, see Crawford 1974b, p. 6.
169 Plin. *N.H.* 33.13 = 33.46; Sydenham 1918, p. 171; Pink 1952, p. 58; Crawford 1974b, p. 611; and Burnett 1977, p. 45.
triens and sextans. Despite these slight differences, the fleet coinage was clearly as-based and meant to approximate the denominations from Rome.

<table>
<thead>
<tr>
<th>Mint</th>
<th>Date</th>
<th>Citation</th>
<th>Sextans</th>
<th>Quadrans</th>
<th>Triens</th>
<th>Semis</th>
<th>As</th>
<th>Dupondius</th>
<th>Tressis</th>
<th>Sestertius</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90-84 BC</td>
<td>RRC 338-345</td>
<td>16.09/2.38</td>
<td>17.49/3.22</td>
<td>19.05/4.08</td>
<td>22.69/6.63</td>
<td>27.87/11.31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>38-37 BC</td>
<td>RPC I 1468-70</td>
<td>16/4.23</td>
<td>17-20/4.52</td>
<td>22/12.18</td>
<td>29-31/17.63</td>
<td>29-31/20.15</td>
<td>31-32/26.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bibulus</td>
<td>38-37 BC</td>
<td>RPC I 4088-93</td>
<td>16/4.23</td>
<td>17-20/4.52</td>
<td>22/12.18</td>
<td>29-31/17.63</td>
<td>29-31/20.15</td>
<td>31-32/26.17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Numismatists have interpreted the coin types’ communication and the approximation of Roman denominations as a way to make the local obol-based bronze denominations compatible with the Roman bronze denominations, but this does not necessarily have to be the case. If the Greek-speakers accepted the fleet coinage bronzes—and the wide circulation of the coins suggests that they were accepted—the Greek-speakers might have ignored, or even misunderstood, the types and considered the coins to be multiples, or fractions, of the obol. The Greek-speakers could also have understood the coins as part of an as-based denomination system completely separate from their typical obol-based system. In neither of these scenarios would compatibility have existed. Or, thirdly, the Greeks could have understood the coins as asses that were somehow compatible with their obol-based system. If the as-based fleet coinage and the

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170 The average weights and modules of these coins were calculated from those listed in Grueber 1910, vol. 1, pp. 288-335.
171 Buttrey 1953, pp. 35-38 and p. 52; and Amandry 1990, pp. 84-85. Burnett 2011, pp. 8-10 goes further and suggests that the fleet coinage attempted “to impose a new pattern of currency across a wide extent of the Empire” (p. 10).
obol-based systems were somehow compatible, this could have caused a fourth option: a decision to stop producing obol-based coins and begin producing as-based coins at the civic mints.

Unfortunately, it is almost impossible to determine which of these four scenarios happened in one city, let alone across the regions of Achaea, Crete, Syria, and Cyprus. As outlined in Section 1.6.2.2, it is possible to determine if multiple cities in the same region were using the same bronze denomination patterns by comparing the bronze coins’ diameter and, with less emphasis, their weights. Only value marks in the coin type or countermarks, however, communicate the coins’ denomination—and whether it was in an obol- or as-based system—with any certainty. Value marks such as this are very rare before the second century A.D. A countermark on a fleet coinage bronze coin would indicate if it were understood as an as or as an obol, but only two coins in Michel Amandry’s die studies of the fleet coinage have countermarks. Both countermarks—the monogram Α, combining A and P, on a coin from Syria and ¥/E on a coin from Israel—have unclear meanings. A hoard containing both fleet coinage bronze coins and local bronze coins would indicate that the fleet coinage was somehow compatible with the local bronze system, but none is known. If the fleet coinage caused a mint to change from producing obols to asses, we would need to see value marks indicating pre-38 B.C. coins were obols and value marks indicating that post-37 B.C. coins were asses. This final scenario would indicate that the Roman state’s power had affected, intentionally or unintentionally, the coin denominations struck at civic mints—one of the coin production decisions examined by this dissertation.

173 On the former, Howgego 1985, p. 225, countermark 606. The latter is not in Howgego 1985’s catalog of countermarks, but a single E on coins from Caesarea in Cappadocia (Howgego 1985, p. 239, countermark 671) has no clear meaning and it is unlikely that the other part of the countermark relates to the coin’s understood denomination.
For the final scenario, the evidence is not available in Crete, Syria, or Cyprus. Value marks and denominational countermarks were not on bronze coins from these regions both before and after 38 – 37 B.C. These value marks and denominational marks were on coins from Achaea. According to the data in Table App4.2, among the four Achaean mints that struck bronze coins before and after 38 – 37 B.C.—Sparta, Corinth, Dyme, Athens, and Chalcis—there were only two clear denominations produced at multiple mints: (a) a 15-16 mm coin that weighed about 2.5-4.5g and (b) the much more common 18-22mm coin that could weigh between 5 and 10g but usually weighed 7-9g. These denominations did not change after the fleet coinage was issued, and they are very close to the semis (15-16mm/4.75g and 14-16mm/2.96g) and as (22-24mm/9.29g and 20-23/8.06g) of Atratinus and Capito’s first, heavier series (see Table App4.1). If the fleet coinage made the local denominations compatible with the Roman denominations, the Achaean denomination (a) would have been equal to a Roman semis and denomination (b) would have equaled an as.

Corinth, which had been refounded as a Roman colony by Julius Caesar, produced coins before and after the production of the fleet coinage. In the late 40s B.C., countermarks established many of the same equivalencies as those created by the fleet coinage. Under Tiberius, the types of the denomination (a) coins from Corinth contain the letters SE to designate the coin as a semis, just as in the fleet coinage. In Corinth, then, the fleet coinage was consistent with the earlier values of the cities’ coins because the fleet coinage had the same diameters as as-based local coins. The fleet coinage, then, did not affect the coin production decisions at Corinth because the civic mint there was already producing as-based coins.

174 Since these denominations are dissimilar to those in Atratinus and Capito’s second, lighter series of the fleet coinage, and since later countermarks correspond with the heavier series’s denominations (on which see below), the light series is not considered in this discussion of Achaean denominations.
176 RPC I 1164, 1167, and 1236-1237.
Dyme, another Roman colony, also struck coins before and after the production of the fleet coinage. None of the coins—from the Hellenistic Period, from the Triumviral Period, or from the Imperial Period—contain value marks. In the Hellenistic Period, the mint in Dyme struck a coin that had the 15-16mm denomination with the legend ΔΥ, or a monogram thereof, to identify the coins as coming from Dyme. This denomination was most likely an obol-based denomination. The mint at Dyme would not strike this denomination again. In 40 B.C., the mint changed denominations and struck denomination (b) as well as a slightly smaller 17-20mm coin. Instead of the legend ΔΥ, or its monogram, the coins of 40 B.C. included C I D in the legend. These letters abbreviated the name Colonia Iulia Dumaeorum in recognition of the foundation of a Roman colony in the city. Later, the Tiberian coins of Dyme were struck with a countermark that has been cautiously interpreted as a denominational mark to declare that the 18-20mm coins (i.e. denomination (b)) should be treated as asses, just as in the fleet coinage. It is most likely that Dyme began striking as-based coins in 40 B.C. after a colony was founded in the city because most coloniae struck as-based coins rather than obol-based coins. The fleet coinage, then, was consistent with the earlier denominations produced at Dyme, and it did not affect subsequent decisions.

For the other three cities examined in Table App4.2—Sparta, Athens, and Chalcis—value marks and denominational countermarks are not available. Nevertheless, their habits of coin production may provide a little insight into whether the fleet coinage affected coin production in Achaea. In 32 – 31 B.C., the mint at Sparta doubled the weight of its 18-22mm (denomination (b)) coin from an average weight of 4.98g to an average of 10.69g. This new weight is a little heavier than the weights of Atratinus and Capito’s asses, as shown by Table App4.2, and the

177 RPC I 1283-1284.
178 Howgego 1985, p. 59 and countermark 703.
production of the Spartan coins may have changed in order for them to pass as asses. Without countermarks or value marks, this possibility can only be considered hypothetical. At Athens, the mint only produced denomination (b) and these coins always weighed between 6.5 and 9g. The size and weight of the coins produced did not change after the production of the fleet coinage. Finally, at Chalcis, the last mint from Achaea listed in Table App4.2, an issue from the first century B.C. was 23mm/7.37g. The next issue was produced after the fleet coinage, and it was struck during the reign of Augustus. This and the subsequent Neronian issues were 20-21mm/6.5-7g. This issue could have reacted to the coins of Proculeius, which will be discussed below, but neither the coins of Athens nor the coins of Chalcis correspond in diameter or weight to the fleet coinage issues of Atratinus or Capito. Therefore, it is unlikely that the mints in Athens and Chalcis changed their production due to the fleet coinage, and it may only be possible that the mint at Sparta did.

Beyond these three cities and the two colonies discussed above, it is clear that not all cities adopted the as-based system of the fleet coinage and of the mint at Rome. Aegium, for example, struck two relevant issues of coins: one shortly before the Battle of Actium and one in the Hadrianic period.\textsuperscript{180} The issues used the same modules and the reverse inscription labeled the Hadrianic coins as hemiobols, so it is likely that the pre-Actium issue was also comprised of hemiobols. These hemiobols were 20-22mm and 4-6g, so they would have approximated the as of the fleet coinage. The hemiobol, however, was worth 1/12 of a silver drachm and the as was worth 1/16 of a denarius, and the local drachms weighed more than the denarius, so the hemiobol was theoretically more valuable in terms of silver than the as.\textsuperscript{181} If Aegium accepted the fleet coinage at the same value as their hemiobol (as the coins’ diameter suggest, and other...
numismatists proposed), the Aegium coins would have lost some of their value—a usually undesirable outcome that the city would have tried to avoid. Financial and fiscal motives, then, may have prevented cities from revaluing their coins in accordance with the fleet coinage.

Achaean cities may also have avoided changing the denominations of their coins because Antony lost the Battle of Actium. Soon after this battle, in c. 30 – 28 B.C., C. Proculeius, who was a friend of Octavian, issued coins with similar weights and modules to the fleet coinage of Atratinus and Capito, as shown by Table App4.1. The location of Proculeius’s mint was probably on the island of Cephallenia, or possibly more specifically in the city of Cranium.

His mint struck three denominations: (o) a 12-13mm/1.87g coin with the bust of Tyche on the obverse and a column on the reverse, (a) a 15-16mm/2.71g coin with the head of Jupiter on the obverse and a double axe on the reverse, and (b) a 21-22mm/6.46g coin with the bust of Jupiter on the obverse and a fish on the reverse. These coins were countermarked, probably by Cranium, soon after they were struck in order to establish new values for two of the denominations. The 21-22mm coins changed from an as (fleet coinage) to one and a half asses (Proculeius), and the 15-16mm coins changed from half an as (fleet coinage) to three fourths of an as (Proculeius).

The countermarks created a new set of values that at least one city followed, instead of those on

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182 Kroll 1997 would agree with the idea that, after Actium, not all civic coinages in Greece could be reckoned in accordance with the Roman bronze system, but for different, often problematic reasons. Kroll argued that most cities maintained their chalkous- and obol-based bronze coinage systems but Sparta and Roman colonies used the Roman as-based (or in the East, assarion-based) system. Kroll determined that Sparta struck assaria because their coins had the same weight and module as the Roman as. A similar procedure was used to say the city of Patras, and the Roman officials C. Proculeius and C. Sosius struck obols. As discussed in Section 1.6.2.2 “Denominations of Bronze Coins,” this does not logically follow unless countermarks or legends indicate the coins’ denominations. Kroll also states the Athenians used hemidrachms because Hadrianic and Antonine epigraphic evidence can be retrojected back to the Antonian period, but we should be cautious to use an epigraphic unit of account to label a coin that does not have a clear denomination. Kroll used a more reliable method to retroject the denomination of hemiobol coins from Hadrianic Aegium to Antonian Aegium—a legend says the Hadrianic coins are hemiobols—and this determination of the denomination is followed above.

183 Grant 1946, pp. 66-67; and Burnett, Amandry, and Ripollès 1992, pp. 271-272.

the fleet coinage. For inhabitants of other cities, these countermarks, and perhaps Proculeius’s
coinage itself, may have created confusion about the proper value of Roman coins and their
possible relationships to local bronze coins. This confusion and the countermarks show the
limited effects of Antony’s fleet coinage on the denominations produced at the mints in Achaea,
the one region for which suitable evidence exists to discuss this possible reaction to the fleet
coinage.

The Achaean evidence suggests that the Antonian fleet coinage did not make Achaean
coins compatible with as-based coins and it did not impose a new denomination system on the
civic mints. The cities that used the denomination pattern of the fleet coinage and Roman bronze
coins—Corinth and Dyme—were both colonies and likely had produced an as-based coinage
before 38 B.C. Other cities, such as Aegium, perhaps for financial reasons, continued to produce
obols and retained power over their own mints. Still other cities, such as Cranium, changed how
many asses their coins, and the fleet coinage bronze coins of the corresponding sizes, were
worth, perhaps in relation to the outcome of the Battle of Actium. Interestingly, this limited use
of the fleet coinage’s as-based coins may be reflected in the circulation pattern of this coinage in
Achaea. Both Corinth and Dyme are located along the Gulf of Corinth, one of the areas where
coins of the fleet coinage have been found in large numbers.185 The fleet coinage, then, was
most likely accepted and used only where people had normally used as-based coins.

The findspots of Bibulus’s coins in Syria support this idea. After P. Ventidius Bassus
campaigned against Labienus and the Parthians, Antony ordered that two legions be given to
Herod the Great (Jos. BJ 1.17 = 327, AJ 14.447). Herod had just been fighting against rebels in
the Galilee where two specimens of the fleet coinage were found, and another specimen was

185 Amandry 1990, pp. 74-77.
found further south in Herod’s kingdom. The Roman legions would have been familiar with
the as-based coins of the fleet coinage and readily accepted them. Therefore, the fleet coinage
did not affect the denominations produced at any civic mints, as far as can be determined from
the available evidence, and it may only have joined other as-based coins in the empire’s
circulating media. Even though the coins are a clear instance of coordinated minting activity,
they are not an example of the use of infrastructural power over eastern civic mints, as some
numismatists have implied.

3.6. End of Silver Coin Production in Achaea

In 27 B.C., central Greece started to be regularly administered by a governor of Achaea
and local, silver coinages were no longer minted there. As discussed in Section 2.3.2, the
Athenian New Style tetradrachm was struck from c. 165 B.C. until 45 – 40 B.C., and it
dominated the circulating media of northern, central Greece and Macedonia. To the south, on
the Peloponnese, the cities of the Achaean League struck hemidrachms both for the league and
autonomously before and after the sack of Corinth in 146 B.C. Like the New Style coinage, these
coinages were no longer produced when Achaea became a separate Roman province in 27 B.C.

Silver coin production in Achaea ended because of (1) the influx of denarii during
Rome’s civil wars and (2) the exchange rates that were established among denarii and local

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187 It is unclear whether the presence of legions can further explain the findspots of coins in Achaea
because the locations of all of Antony’s legions in 38 – 37 B.C. are unclear. Tarn 1932, p. 76 proposed
that legions were in Macedonia at the time, but Brunt 1971, p. 503 rightly points out that the evidence
only clearly shows that legions were in Macedonia in 39 B.C. and that it is unclear if they remained in
that region thereafter. Neither Tarn nor Brunt made any reference to any of Antony’s legions in Crete or
Cyprus.
188 Crawford 1985, pp. 196-197 explained the end of silver production in Achaea as a result of denarii
circulating in the region but he does not offer a more precise date than the first century for when denarii
circulate there.
coinages. In order to understand the circulation of denarii within Achaea, hoards must be examined. Appendix 5 contains a table that lists the contents of seventy-eight hoards buried after 146 B.C. in the region that became the province of Achaea, and these hoards are the foundation of this section’s discussion of the end of silver coin production in Achaea. 189 Table App5.1 lists the number of Roman denarii in each hoard, the number of non-Roman coins in the hoard, and the percentage of silver coins that were from a denarius mint. This last column is important to gauge to what extent denarii were actually circulating in Achaea. A single denarius or a single hoard of denarii does not indicate that denarii were circulating widely, but consistently large proportions of denarii in multiple hoards indicate that denarii were circulating in the province.

Denarii first appeared in the future province of Achaea in the Agrinion hoard (No. 13) buried soon after 129 B.C., but this does not mean denarii began circulating in Achaea that early. The 39 denarii in this hoard make up a very small fraction (3.0%) of the 1,348 coins in the hoard, so denarii had not begun to circulate extensively in Achaea by the mid-120s B.C.

Another hoard from near Naupactus (No. 16), buried c. 114 B.C., contained three denarii out of the four silver coins in the hoard. This hoard, though, is the sole example of a second century B.C. Achaean hoard comprised predominantly of denarii, so denarii did not yet circulate in the region.

Denarii begin to comprise large proportions of hoards around 86 B.C. Approximately 59.5% of a hoard from c. 85-80 B.C. was denarii (No. 53). Additionally, a hoard from the Piraeus was completely comprised of denarii (No. 50). The latter hoard was almost certainly associated with Sulla's siege of Athens during the First Mithridatic War. Indeed, hoards No. 34-53 were all deposited between 88 and 85 B.C. during the First Mithridatic War and can be

189 These hoards were collected from Crawford 1969b; Thompson, Mørkholm, and Kraay 1973; and Lockyear 2007.
considered related to this period of violence. Only hoards No. 50 and 53 contained denarii, and most of the other eighteen hoards were mainly comprised of Athenian New Style coins. These two hoards with denarii, then, do not indicate that denarii were circulating in Achaea in the 80s B.C. Between 80 and 50 B.C., denarii again represented a small proportion of the coins in hoards which primarily contained coins issued by Greek mints.

The real watershed for the circulation of denarii was the 40s and 30s B.C. Of the three hoards from the 40s, one contained only denarii (No. 68) and one contained no denarii (No. 69). The third hoard was comprised half of denarii and half of Thessalian double-victoriates (No. 70). The denarius was becoming more important in the circulating medium of Achaea during the 40s. It was during this decade that Pompey was defeated at Pharsalus in Thessaly, C. Antonius was defeated at Apollonia in Illyria, and Brutus and Cassius were defeated at Philippi in Macedonia. Each of these generals’ armies and their opponents struck denarii at imperatorial mints. A large number of denarii would have been struck, spent, and lost during the campaigns of the Roman civil wars.

The four hoards from Achaea during the 30s B.C. were all chronologically clustered around 32/1 B.C. and all contained exclusively, or nearly exclusively denarii. Since two of the hoards were from Preveza (ancient Actium), the site of the decisive battle between the triumvirs, whose mints had struck many denarii in preparation for war, the Battle of Actium is a clear

\[\text{\footnotesize \cite{Crawford 1969a} who pointed out the correlation between periods of violence and the deposition of coin hoards.}\]

\[\text{\footnotesize The Thessalian double-victoriate is so called because earlier numismatists saw that IG IX 2, 415 equated Thessalian staters with 1.5 denarii, and the earlier Roman victoriatatus had been worth 3/4 denarii, half the value of Thessalian coin, and because they identified Thessalian staters with this, the largest Thessalian coin (Gardner 1883, p. xxii). This inscription, and the series of slave manumission inscriptions from which it comes (TN 400-404), indicates that this exchange rate was first established in 27 B.C. (Helly 1997), so it is unclear if this exchange rate was used prior to 27 B.C. The name, therefore, should be considered a modern numismatic convention rather than a certain reflection of the coins’ value throughout their history.}\]

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reason for the presence of denarii in Greece (No. 73 and 74). Another hoard (no. 71) from Delos contained only Roman denarii and a single African silver coin which was minted as an equivalent to the denarius. Therefore, the entire hoard can be considered to be comprised of denarii. Both this hoard and hoard No. 72 from Euboea suggest that the denarius was used by people outside of the triumvirs’ armies. All subsequent hoards buried in Achaea contain only denarii.

The denarius, then, became the dominant coinage in central Greece and Macedonia during the 40s and 30s B.C. when many denarii were minted, used, and lost by the Roman armies fighting the civil war in Achaea. This influx of denarii into Achaea provided a coinage that could augment or even supplant the city-states’ coinages.

This replacement of the city-states’ coinages was made easier because individual city-states had already begun establishing exchange rates between their own coinage and the denarius. At Delphi, a series of inscriptions recorded the manumission of slaves and the cost of the transaction between 200 B.C. and the end of the first century A.D. In these inscriptions, the price of the slaves’ freedom was listed in denarii for the first time at the beginning of the first century B.C., so an exchange rate must have existed at that point in time so that the denarius could be used as a unit of account. To the south, in Messene, a tax of eight obols—the ὀκτώβολος εἰσφορά—or its equivalent in denarii was instituted between 70 and 30 B.C., as demonstrated by the orthography of the inscription. Finally, to the north, in Thessaly, a diorthoma from Pyrasos created the conversion rate between the local drachm and the denarius. The diorthoma was from the Thessalian strategia of Augustus, which can be dated to 27/6

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192 For the equivalence of the African silver coins and the denarius, see Burnett 1987, pp. 176-177. This same conclusion applies to hoard No. 76.
194 Migeotte 1997 on IG V 1, 1432-1433.
This gradual creation of exchange rates suggests various local decisions eventually led to the end of the production of silver coinage in Achaea.

This decision could have been motivated by the growing costs of producing their own silver coinages because the production of the imperatorial coinages increased the demand for silver. The competition for silver may have made the cost of producing silver coins prohibitively expensive for many Greek civic mints. The source of the metal for Antony’s legionary denarii, the one imperatorial coinage for which metallurgical analyses have been published, suggests that the imperatorial mints would have competed with Greek mints for silver. The silver used to make the Antonian coins has an isotopic signature that suggests it was produced with silver from Siphnos and from silver deposits in either Macedonia or the Taurus Mountains. These silver deposits would have been among the likely sources of silver for the mints in Achaea.

The size of the imperatorial issues further indicates that the demand and competition for silver would have increased dramatically. The author’s ongoing die study of the aurei and denarii struck under the supervision of Lentulus Spinther for Cassius between 44 and 42 B.C. has identified 136 obverse dies (or 68 dies/year). For the sake of comparison, the mint of Maroneia used 120 dies between c. 189/60 and c. 60 B.C. (or about 0.93 dies/year). The mint of Athens struck the New Style tetradrachms with an estimated 1289.8 dies and drachms with an estimated 154.2 dies between c. 180 and c. 45 B.C. (or about 9.55 dies/year for tetradrachms and 1.1 dies/year for drachms). Even earlier monarch’s large coinages pale in comparison to Cassius’s large emission. The mint of Philip II of Macedon used c. 547 dies to strike silver tetradrachms between c. 359 and c. 315 B.C. (or about 12.43 dies/year). Demetrios Poliocetes’

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195 Helly 1997 on IG IX 2, 415.
197 The aurei and denarii share the same dies, as is typical in this period.
mint struck tetradrachms with c. 229 dies over 19 years between c. 306 and 287 B.C. (or 12.05 dies/year). The size of this one imperatorial issue dwarfs the size of the earlier coinages.

This issue in Cassius’s name shows not only how much competition for silver the civic mints were facing but also the amount of denarii flooding into Achaea during the civil wars. Indeed, the legionary denarii made up a large proportion of hoard No. 71 from Delos (604 of the 650 coins)\textsuperscript{199} and hoard No. 73 from Actium (31 of the 41 coins).\textsuperscript{200} The legionary denarii also make up about a tenth of hoard no. 74 from Actium (17 of 124 coins) and the slightly later hoard No. 76 (6 of 63 coins).\textsuperscript{201} This deluge of denarii prompted the city-states to create exchange rates between their local coinages and the denarius and to stop producing their own silver coinages during the 40s B.C.

The local decisions to cease silver coin production may have been an unintended factor of the imperatorial coin production. After all, the feuding generals’ mints did not strike coins in order to end silver coin production in Achaea, but in order to make payments during a civil war. The large numbers of denarii circulating in Achaean did, though, mean that, in the future, the Roman state’s infrastructural reach regarding silver coin production extended into this region.

3.7. Continuity at Syrian Mints

Even though the silver coins of Achaea stopped being produced and the cistophori were debased, the Syrian coinages continued to be produced without any major changes or interruptions. From 47/6 until 14/3 B.C., the mint at Antioch continued to strike tetradrachms

\textsuperscript{198} De Callataý 2005a, pp. 81-85.
\textsuperscript{199} \textit{RRCH} 465 = \textit{CH} 10, 186 = Papgeorgiaou-Bani 2003.
\textsuperscript{200} \textit{RRCH} 473 = Varoucha-Christodouloupolou 1960, p. 495.
\textsuperscript{201} Hoard No. 74: \textit{CH} 7, 226 = \textit{CH} 8, 542 = \textit{BCH} 107, 1983, p. 774. Hoard No. 76: Sidiropoulos 2011. No additional information is available on hoards No. 72 or 75 in order to determine how many Antonian legionary denarii were in the hoards.
featuring a posthumous portrait of Philip Philadelphus on the obverse, and an image of Zeus sitting on a throne and holding Nike on the reverse. Instead of the earlier monograms that stood for the name of the proconsul, these tetradrachms have a monogram for ANT(IOXEΩN) AYT(ONOMΩN), “Of the independent Antiochenes.”

Between 47/6 and 41/0 B.C., the Antiochene mint struck a 23-24mm/11.73g bronze denomination with images of Zeus’s head on the obverse and Zeus sitting on the reverse. This denomination was continued between 39/8 and 29/8 B.C. At this time, two bronze denominations were added. A medium 18mm/6.28g denomination showed either (1) a bust of Zeus on the obverse and a tripod on the reverse, or (2) a goddess with a veil and mural crown, who represented the city, on the obverse and a tripod on the reverse. The small 15mm/3.74g denomination showed the same city goddess on the obverse and a poppy between two ears of grain on the reverse.

To the south, the mint at Tyre continued to strike, nearly annually, shekels and half-shekels with the same types that it had been using since 126/5 B.C. Both denominations had the bust of Hercules on the obverse, and the reverses featured an image of an eagle standing on the prow of a galley with a palm on its wing. As mentioned in the last chapter, the differences in the mints’ coin types and standards suggest that the decisions about producing the Antiochene tetradrachms and the Tyrian shekels were not coordinated with any other mint and were made autonomously within the mints.
3.8. Roman Infrastructural Minting Power during the Civil Wars (49 – 27 B.C.)

During the civil wars of 49 – 27 B.C., just as during the Late Republic, the Roman Empire continued to be comprised of many relatively closed silver coinage areas (Fig. 3.3). Italy, Iberia, southern Gaul, Africa, and now Macedonia and Greece used the denarius. The absence of a single denarius production center, which had been at Rome, is conspicuous. Instead, the warring generals displaced and fragmented denarius production among their many imperatorial mints, which were emblematic of the Roman state’s decentralization in this period. The Roman generals’ mints produced aurei and denarii for these regions.
The cistophoric mints, most likely at Ephesus and Pergamum, continued to be the exclusive suppliers of silver coin for the province of Asia. The cistophori were debased in 39 B.C., and this debasement was coordinated between the two mints, but not with any mint of a Roman general. Despite this lack of coordination, the cistophori now used clockwise coin legends and honored the Triumvir Antony so the Roman state’s infrastructural minting capacity in Asia was growing. This greater use of Roman minting practices indicates a greater reach than in the 50s B.C. when the mints included only the proconsuls’ names and sometimes a symbol, such as the Temple of Vesta, that betrayed Roman influence.

To the south, the mint in Antioch shows fewer signs of Roman influence. Whereas its tetradrachms featured a monogram for the governors’ names in the 50s B.C., the mint no longer mentions a governor during the civil war period. The proconsul’s monogram was replaced for a monogram declaring the city’s autonomy. The mint at Tyre continued to show no signs that the Roman state’s infrastructural reach regarding silver coin production extended into southern Syria. The very limited exercise of power over the Syrian mints in the Late Republic diminished and possibly even disappeared during the civil war period.

In terms of silver coin production, the civil war period represents small changes in the power dynamics among the Roman state and the mints of the empire. Rome continued to have a high infrastructural power over Italy, Sicily, Iberia, southern Gaul, and Africa. A similar relationship developed with Achaea and Macedonia. The Roman state exercised a little more power over Asia, but it used less power over the Syrian mint in Antioch. New relationships developed with the mints of Gaul, which Caesar conquered and which continued to strike their own Iron Age coinages, and with the mint in Alexandria, which Octavian conquered and which
continued to strike Alexandrian tetradrachms. Changes to these relationships will be discussed in Chapter Four.

In regards to bronze coin production, there appears to have been no change. The fleet coinage, which some numismatists had thought affected the bronze coinage of Achaea, Crete, Syria, and Cyprus had no effect on bronze coin production. It was used by people who had already used as-based coins.

Even though the use Roman state’s infrastructural capacity regarding coin production continued more or less at the same, earlier levels, the civil wars should not be mistaken for a period of continuity. These twenty-eight years show great experimentation. Caesar’s introduction of a gold coin changed the Roman coinage system for the next three centuries. It was accepted because the coin was made of an intrinsically valuable metal and because Romans wanted a higher denomination coin during a debt crisis. Since the aureus was the only regularly produced gold coin within the empire, the Roman state had high minting power control over gold coin production throughout its territory.

The mint of Caesar’s supporter C. Clovius was the first to strike brass coins with as-based denominations when he used the metal for small change. The latter idea would be taken up by Caesar’s adopted son and his supporters. These new metals would drastically overhaul the Roman mint’s coinage system, for which the mint in Rome had only struck silver denarii during the last few decades. Finally, the Antonian fleet coinage was important as the first coinage resulting from collaboration across provincial boundaries. It may even have been the first attempt to wrestle with a barrier to the creation of an empire-wide minting system: the great diversity of coinages in the eastern Mediterranean and their potentially unclear relationship with the Roman coinage system.
Ironically, the extensive use of imperatorial minting by men competing for control of the empire fostered some of this experimentation, but it ultimately decided the fate of some of these experiments. Clovius’s, Atratinus’s, Capito’s, and Bassus’s experiments were not repeated with a subsequent coinage struck soon thereafter. The victor’s friends may also have undercut the success of these experiments, as happened with Proculeius in Achaea. Some of the changes to the empire’s coinages which happened under Augustus, and which are discussed in Chapter Four, though, show some similarity to and continuity with some of these experiments.
CHAPTER 4: THE AUGUSTAN PERIOD (27 B.C. – A.D. 14)

4.1. Introduction

Octavian’s emergence as the undisputedly most powerful person in the Roman Empire has had a significant effect on the numismatic literature.¹ Michael Crawford’s *Roman Republican Coinage* ended with the coins of L. Pinarius Scarpus struck shortly after the Battle of Actium. The *Roman Imperial Coinage* series begins with the other issues subsequent to Actium. C. H. V. Sutherland, who provided the second edition of *RIC* I, focused so much on the coins in *RIC* I that his article on Octavian’s civil war mint is his one treatment of coins struck before 31 B.C. Notably, he argued they were struck after 31 B.C. and included them in his edition of *RIC* I.² Yet this influential division is arbitrary. The British Museum catalogs of Roman Republican coins and Roman Imperial coins both include coins struck after 31 B.C., during the reign of Augustus.³

Nevertheless, Augustus’s political impact and *Roman Imperial Coinage* have cast a large shadow over numismatic scholarship which often assigns a prominent position to the reign of Augustus. Michael Grant has argued that Augustus and Agrippa created a “world coinage” c. 19 and c. 14 B.C.⁴ Michael Crawford argued that the denarius became widely accepted throughout the empire during the reign of Augustus.⁵ The shortcomings of these studies—most notably their under appreciation of circulation patterns in the eastern provinces—have been discussed in Section 1.3, and they require that the importance of this reign for the spread of Roman infrastructural power regarding coin production be reassessed.

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¹ On Octavian’s position at the end of the civil war, Millar 1973.
² Section 3.2.6, note 82.
⁴ Grant 1949 and 1951.
⁵ Crawford 1985.
4.2. Imperatorial Mints in the Early Augustan Period (27 – c. 10 B.C.)

During the reign of Augustus, just as during the civil wars, commanders continued to issue imperatorial coinages. As stated in Section 3.2, an imperatorial issue is a coinage struck for a military commander in the field—rather than at a central mint—so that he can have coins with which to pay his soldiers and pay for supplies. Roman commanders, starting with Julius Caesar, had struck imperatorial issues throughout the civil wars. Imperatorial coinages had, in fact, been struck throughout Octavian’s political career before he took on the title Augustus. The mint in Rome had ceased to strike coins in 40 B.C., nine years before the Battle of Actium, and thirteen years before Octavian became Augustus. Rome’s first emperor and his lieutenants continued the use of imperatorial issues, both in the East and the West, out of habit and convenience and because it was the norm that most of them and other Romans knew.

4.2.1. Mints in the East until c. 15 B.C.

In the East, many imperatorial mints struck coins, but few can be assigned to certain cities or dates, and therefore to certain military campaigns. In fact, several of the mints’ coins have no firm *terminus ante quem* other than the death of Augustus. Stylistic parallels with firmly dated coins suggest that these eastern imperatorial mints stopped operating around 15 B.C. Most of the stylistic parallels are to the cistophori struck at three mints between 27 and 20 B.C. The Augustan cistophoric mints will, therefore, be surveyed now in order to discuss the dates of the imperatorial coinages, and they will be discussed again in Section 4.3 to determine to what extent the Roman state’s infrastructural power affected their production. One mint is hypothesized to be Pergamum, and a reverse type featuring an altar decorated with deer indicates

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that another mint was Ephesus, where a major temple to Artemis was located.\textsuperscript{7} This second mint was also the location where a group of cistophori, aurei, and denarii were struck in 19 and 18 B.C. to celebrate—and pay for—Augustus’s and Tiberius’s victories over the Parthians and Armenians.\textsuperscript{8} The location of a third cistophoric mint which operated from 27 until 20 B.C. is unknown.

The portrait styles of these cistophoric mints and their reverse types, which depict a single image, such as a Capricorn or sphinx, with the legend AVGVSTVS allow a few more mints to be attributed to the East between 27 and c. 15 B.C. Two mints of uncertain location produced denarii showing a Capricorn above the title AVGVSTVS, all within a linear or pearled border.\textsuperscript{9} Similar portraiture was also used on aurei that feature a heifer and on denarii that depict a bull. While one mint produced the aurei and another mint produced the denarii, both issues can be more precisely dated to c. 22 – 18 B.C. based on hoard evidence and the similarities of the portraiture to the 19 – 18 B.C. issue of cistophori.\textsuperscript{10} The bull denarii also provide the closest parallels for the portraiture on part of a larger issue of bronze coinage: the CA Coinage. This bronze coinage was struck at six mints in the provinces of Asia, Cyprus, and Syria at uncertain dates between 27 and 18 B.C. and between 5 B.C. and A.D. 5, probably to pay for the military

\textsuperscript{7} RIC I\textsuperscript{2} 487-494 = RPC I 2205-2212 (Pergamum), RIC I\textsuperscript{2} 477-482 = RPC I 2213-2220 and RIC I\textsuperscript{2} 505-510 = RPC I 2217-2220 (Ephesus), and RIC I\textsuperscript{2} 527 = RPC I 2204. Woodward 1952 and Sutherland 1970.

\textsuperscript{8} RIC I\textsuperscript{2} 505-527. On the attribution of the coins of 19 – 18 B.C. to Ephesus based primarily on portraiture style, Laffranchi 1916b, pp. 284-289; and Mattingly 1923, pp. cxxi and cxxv; \textit{contra} Sydenham 1920, pp. 33; Woodward 1952, pp. 26-28; and Sutherland 1970, pp. 100-104 whose stylistic analysis is less convincing. On the aurei and denarii, Sutherland 1973.

\textsuperscript{9} RIC I\textsuperscript{2} 541-542 and 547-548. Mattingly 1923, p. 107; and Robertson 1962, p. li. Cistophori of the Uncertain mint and Pergamum used this same reverse but within a wreath border (RIC I\textsuperscript{1} 477, 480, 488, and 493).

\textsuperscript{10} RIC I\textsuperscript{1} 474 (denarius) and 536-538 (aureus). Robertson 1962, p. 1; Crawford 1969b, Table XVIII; Sutherland 1974, pp. 62-63; Sutherland 1984, p. 35; and Rambach and Walker 2012.
campaigns, such as those in Parthia and Armenia.\textsuperscript{11} Some of these six mints operated contemporaneously so section 4.2.5.1 will discuss whether the mints were coordinated.

While some mints can be dated by a similarity of portraits, hoards allow a mint in the province of Achaea to be dated to approximately 22 B.C. In that year, Augustus traveled through Greece on his way to campaign against the Parthians (Dio 54.7.2). This mint produced denarii featuring a temple labeled IOVI OLV or IOVI OLVM, denarii featuring a \textit{corona navalis}, and silver quinarii featuring Victory on a prow.\textsuperscript{12} The mint can be assigned to the province of Achaea because of the temple, which has been identified as either the Temple of Zeus Olympios in Athens or the temple to the same god in Olympia.\textsuperscript{13} In 20 B.C., the emperor returned to Italy through Greece after the Parthian campaign turned into the negotiations that returned the lost military standards to Rome (Dio 54.9.10). The journey in either direction could have been the campaign or travels for which Augustus used these coins to pay his expenses.

\textit{4.2.2. Mints in the West until c. 15 B.C.}

Just as in the East, the coins struck in the West continued to be imperatorial issues used to pay the expenses of Roman generals. Fairly small issues were struck in Iberia to pay expenses during the Cantabrian Wars. An issue of denarii, bearing an Iberian shield on the reverse, was

\textsuperscript{11} \textit{RIC} I\textsuperscript{2} 495-504 = \textit{RPC} I 2227-2235, 3914-3915, and 4100-4107. Howgego 1982; Amandry 1987b, pp. 25-26; and Burnett, Amandry, and Ripollès 1992, p. 381, and pp. 602-603. Grant 1946, pp. 102-110; and Grant 1949 propose that the coins were struck as currency for Asia, Cyprus, and Syria (although Grant 1953, pp. 18 and 111-116 are less forceful in this assertion), but Howgego 1982’s argument that the coins were struck for a military campaign is more convincing because of chronology, circulation patterns, and the subsequent denominations struck in these provinces. On the parallel to the portrait on the coins featuring a heifer, Howgego 1982, p. 3. On the interpretation of the controversial letters CA, Grant 1946, pp. 107-110; Sutherland 1976a, p. 17; Burnett 1977, pp. 47-48; Howgego 1982, pp. 18-19; and Burnett, Amandry, and Ripollès 1992, pp. 380-381 (which presented the most reasonable view that it is unclear whether the CA should be understood as “Caesar Augustus” or as “Commune Asiae”).

\textsuperscript{12} \textit{RIC} I\textsuperscript{2} 472-474. Crawford 1969b, Table XVIII; and Sutherland 1974, pp. 50-53.

\textsuperscript{13} Gabrici 1902, pp. 169-170; and Sutherland 1974, pp. 56-57.
struck in the northwestern portion of the Iberian Peninsula between 31 and 25 B.C. Another coinage connected to the war is the coinage of P. Carisius who is known to have fought in the war. The general, whose coinage gives him the title legatus Augusti pro praetore, served from 26 until 22 B.C. His mint struck quinarii and denarii that emphasized the military and anticipated a victory, and it struck dupondii and asses in orichalcum (brass) and copper, respectively. While other mints may have been involved in the production of coinage to finance the Cantabrian Wars, these three mints are the only ones that can be assigned to Iberia with any certainty.

After the production at two military mints during the Cantabrian Wars, production of coins in Roman denominations ceased for a few years until they were resumed at Rome in 23 – 19 B.C. (Section 4.4 below) and at two Gallic mints in 19 B.C. Uncertain Gallic Mint 1 and Uncertain Gallic Mint 2 used many of the same reverse types and can only be differentiated after inspection of the portraiture and fabric of the coins, so it is usually assumed they belonged to the same region or province. These Gallic mints have traditionally been assigned to the Iberian Peninsula because civic bronze coinages imitate the aurei and denarii of these mints, but this imitation only indicates where the coins circulated, not where they were minted. More

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17 Cf. Laffranchi 1949-1950 suggested the coins of the uncertain Gallic mints (*RIC* I² 26-49 and 50-153) were struck to finance this war. *RIC* I² 26-49 date from 19 – 18 B.C., and *RIC* I² 50-153 from 19 – 16 B.C. For more on these mints, see below.
18 *RIC* I² 26-49 (Uncertain Gallic Mint 1) and 50-153 (Uncertain Gallic Mint 2). Mattingly 1923, p. cix; Laffranchi 1949-1950, p. 14; and Volk 1997, pp. 76-77. For more on the significance of the similarities of these coin types, see Section 4.2.5.2.
importantly, a die used at one of these mints—Uncertain Mint 2—was found at the La Fontaine Sanctuary in Nemausus.\textsuperscript{20} This is important for two reasons. First, inscriptions from both Athens and Delos record the dedication of dies from the Athenian mint in temples, some of which may have been used for special issues.\textsuperscript{21} Since the other known instance of dies being dedicated at sanctuaries involved official dies, it is unlikely that this die is a forger’s die, as has often been claimed.\textsuperscript{22} Secondly, the La Fontaine Sanctuary was dedicated to the local god \textit{Matrebo Namausika} before Augustan renovations transformed it into a shrine for the emperor and the god Nemausus.\textsuperscript{23} Since the pre-Augustan La Fontaine Sanctuary fits a regional, southern Gallic ritual pattern, it is most likely that the dedicant of this official die was from Gaul.\textsuperscript{24} Similarly, the origins of most other people mentioned in inscriptions from this sanctuary, when they can be deduced from the inscriptions, are also Gallic.\textsuperscript{25} Therefore, these mints were most

\textsuperscript{20} Le Gentilhomme 1945. Another die used to produce coins attributed to the mint of Lugdunum was found at the sanctuary (\textit{Nismes} 1743, p. 104; Vermeule 1954, pp. 20-21; Dhénin 1977; Dhénin, Drilhon, and Lahanier 1977; and Malkmus 2007, p. 123). Based on these dies, and Giard 1988a, p. 12 and p. 22 proposed that one of these “uncertain” mints was located at Nemausus and began production of the coins assigned to Lugdunum (For skepticism of this view, see Sutherland 1976a, p. 45 and p. 49, and Volk 1997, pp. 76-77). Chemical analyses of the coins produced by these mints, however, prove Giard’s theory to be incorrect (Suspène, Blet-Lemarquand, and Amandry 2011).

\textsuperscript{21} Athens: \textit{TN} no. 169 (\textit{IG II} \textsuperscript{2} 1408, lines 11-13), no. 170 (\textit{IG II} \textsuperscript{2} 1409, lines 4-6), no. 174 (\textit{IG II} \textsuperscript{2} 1424a, col. II, line 280), no. 175 (\textit{IG II} \textsuperscript{2} 1425, Face B, line 374), no. 178 (\textit{IG II} \textsuperscript{2} 1438b, lines 23-24 = \textit{SEG} XIX, 129), no. 185 (\textit{IG II} \textsuperscript{2} 1469, Face B, col. I, lines 107-109), and no. 186 (\textit{IG II} \textsuperscript{2} 1471, Face B, col. II, lines 56-57). Delos: \textit{TN} no. 272 (\textit{ID} 1428) and no. 279 (\textit{ID} 1443). Melville Jones 1993, vol. 2, pp. 104-105 (\textit{ad} no. 169-170) said that the Athenian dies were dedicated to Athena because they were used in 407/6 B.C. to strike gold owned by Athena. A similar explanation is not forthcoming for the dies at Delos.

\textsuperscript{22} On the die as a forger’s die, e.g. Sutherland 1976a, p. 44. Cf. Le Gentilhomme 1945 who argues the die is authentic because coins struck with the die have been identified.

\textsuperscript{23} \textit{CIL} 12.3148-3149; Gros 1984, p. 129; Pène and Veyrac 1994; and Anderson 2013, pp. 186-188.

\textsuperscript{24} Haeussler 2007; and Dietler 2010, pp. 322-332. The best parallel to the shrine La Fontaine Sanctuary at Nîmes is the shrine to Glanis at Glanum (Anderson 2013, pp. 183-186).

\textsuperscript{25} \textit{CIL} 12.3093 = \textit{ILS} 4842 records a dedication by a C. Andolatius, and the name Andolatius is only known from this inscription and AE 1995, 1066, also from Nemausus. Similarly, \textit{CIL} 12.3142a records a dedication by a Sex. Torgius Severus, and the name Torgius is only known from \textit{CIL} 12.3962 from Nemausus and \textit{CIL} 10.1726 = \textit{ILS} 4972 from Puteoli. The areas in which these names are known suggest the people are from Nemausus. \textit{CIL} 12.3152 records a dedication by the \textit{res publica nemausensium}, and \textit{CIL} 12.3165 = \textit{ILS} 5680 records a dedication by the \textit{fabri tignarii Nemausensium}. \textit{CIL} 12.3109, \textit{CIL} 12.3165 = \textit{ILS} 5680, \textit{CIL} 12.3232 = \textit{ILS} 5082, \textit{CIL} 12.3274 = \textit{ILS} 6980, and \textit{CIL} 12.3275 = \textit{ILS} 6980a record five notable equestrians from Gallia Narbonensis (Pflaum 1978, pp. 99-100 and 231; Gayraud
likely in Gaul, not Iberia. One of the mints, Uncertain Gallic Mint 1, produced aurei and denarii from 19 to 18 B.C., and the other, Uncertain Gallic Mint 2, struck the same denominations from 19 until 15 B.C. The coordination of these mints’ coin types will be discussed in Section 4.2.5.2.

4.2.3. The Mints at Lugdunum and Nemausus

After these two Gallic mints ceased production, two other Gallic mints served as imperatorial mints: the mints in Lugdunum and Nemausus. In 16 B.C., the Sugambri crossed the Rhine and plundered Gaul to such an extent that Augustus decided to take the field against them. Even though the Sugambri negotiated a peace with Lollius, a governor in Gaul, Augustus remained in the region for several years in order to settle matters relating to the administration of Gaul (Dio 54.20.4-6). After Augustus left the region in 13 B.C., Drusus took over. In 12 B.C., Drusus began the first of many campaigns against the Germans who had crossed the Rhine. His last campaign was in 9 B.C., and the Romans continued to have a strong military presence on the German frontier for the next several decades.26

The mints in Lugdunum and Nemausus were used to help the Roman commanders pay for these military efforts and their other administrative duties in Gaul. The mint at Lugdunum

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opened in 15 or 14 B.C. and struck aurei, aurei quinarii, denarii, and quinarii. It quickly became the Roman state’s major, and only, production center for these precious metal coins in the western half of the provinces. This mint began striking an important orichalcum and copper coinage featuring the Altar of the Three Gauls in 10 B.C., and this issue continued until perhaps 7 B.C. and again c. A.D. 9 – 14. The mint at Lugdunum continued to strike gold and silver for the next several decades. One of this mint’s largest Augustan emissions was the large issue of aurei and denarii featuring Gaius and Lucius holding shields, struck between 2 B.C. and maybe A.D. 4 when Gaius died.

The mint in Lugdunum, though, was not the only major mint for small change in the West. The mint in Nemausus had produced a major issue of bronze coins within the period between 19 and 10 B.C., and the mint struck again between 9 and 3 B.C. These coins were struck on such a large scale—indeed much larger than the mint’s small issue of asses in 29 – 28 B.C.—and were such an important part of the coinage at legionary bases near the Rhine, that it is commonly thought that the imperial government was manipulating a civic mint for its own needs. Indeed, the small change struck at Lugdunum, Nemausus, and Rome appeared at the

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27 Laffranchi 1913; Sydenham 1917, pp. 64-70; Mattingly 1923, pp. cxlii-cxliii; and Grant 1949, p. 33, based on the probable date of the victory that caused Augustus’s tenth imperatorial acclamation, which is recorded on this mint’s coins and is the basis for the 15/14 B.C. date. For the continuity of this mint, see Metcalf 1989, and Butcher and Ponting 2005b. Suspène, Blet-Lemarquand, and Amandry 2011 disproves the ideas of Lugdunum’s auxiliary mints proposed by Grant 1955b and Giard 1988a.


29 MacDonald 1978-1979, pp. 28-29; Fischer 1981, p. 39; and Wolters 2002, pp. 298-311 agreed on the 2 B.C. date but disagreed about how long the issue continued. MacDonald and Fischer thought it could have continued to be struck for a long time but Wolters argues it was finished being struck in or before A.D. 9. There is no good evidence to determine how long before A.D. 9 the issue continued to be struck.

30 *RIC* I 154-158. For the 19 – 10 B.C. date (which is probably closer to 19 – 18 B.C.) for Group Ib, see Grant 1946, p. 74; Zehnacker, Richard, and Barrandon 1984, pp. 73-75l; and Besombes 2008, p. 237. For the 9-3 date for Group II, see Kraay 1955, p. 84; Giard 1967, p. 126 and p. 132.

Roman camps along the Rhine soon after the coins were struck. The coin supply of these camps confirms the initial, imperatorial nature of these mints.

4.2.4. A Mint with an Uncertain Location

Additionally, a mint with a wholly unique style produced aurei and denarii featuring a man, looking younger than Augustus appears on any coin, so some numismatists have claimed that the portrait is Gaius, not Augustus. The combination of the legends CAESAR (obverse) and AVGVST (reverse), though, can only refer to the emperor. This unique style makes it hard to date and attribute the coins to even a clear region of the empire, but hoards suggest that they must have been struck before 12 B.C., possibly in connection with the Ludi Saeculares to which the candelabrum could refer. Because of the uncertain location of the mint, it is difficult to determine for what military campaign this small issue was struck.

4.2.5. Coordination among Imperatorial Mints

After the Battle of Actium, military commanders continued to make use of imperatorial mints, but in decreasing numbers. Between the 31 and 27 B.C., throughout the empire, four imperatorial mints struck aurei and denarii, as noted in Section 3.2.7. Between 27 and 18 B.C., sixteen did so. Between 19 and 15 B.C., three did so. After 15 B.C., the mint at Nemausus struck bronze until early in Tiberius’s reign and the mint at Lugdunum struck some bronze coins until the end of Augustus’s reign and became the center of aureus and denarius production. As argued in Section 1.2, the mint at Lugdunum was tied to the Roman state. This process of

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34 Mattingly 1923, p. cxxvi; and Sutherland 1944, pp. 46-47.
35 Sutherland 1944; and Crawford 1969b, p. 42.
centralizing the many diffuse denarius mints of the civil war period into the one denarius mint for most of the Julio-Claudian period is a key numismatic feature of the reign of Augustus.

The large number of imperatorial mints operating c. 19 B.C. and c. 14 B.C. was one piece of evidence supporting Michael Grant’s proposal that a “world coinage” was created by many coordinated mints during the reign of Augustus.\(^{36}\) It is true that many mints struck coins in or approximately in these years, but there are many reasons to doubt that the mints were actually coordinated. Many of these mints’ dates of operation cannot be precisely fixed, so it is unclear whether any similarity among the coin types results from coordination or from imitation. There is, though, little similarity among the coin types. There are two clear instances of coordination among the imperatorial mints: the CA coinage of the 20s B.C. and at the Uncertain Gallic Mints of 19 – 15 B.C. A closer examination of these mints’ products provides little support for Michael Grant’s idea that minting was extensively coordinated across the empire, but they do suggest that coordination was happening in a new way during the reign of Augustus.

4.2.5.1. CA Coinage

During the 20s B.C., the production of coins at several mints in Asia and Syria was coordinated in order to strike *orichalcum* and bronze coins resembling each other and using the new denomination pattern from the mint at Rome.\(^{37}\) The marked similarity of these coins has long been noticed. The obverses of all denominations feature the portrait of Augustus and the legend IMP CAISAR or CAISAR (Howgego Class 1), AVGVSTVS or CAESAR (Howgego

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\(^{36}\) Section 1.3 discusses the other major idea underpinning this proposal: that the entire empire used denarii and their fractions.

\(^{37}\) For earlier discussions of the coordination among the mints, see Grant 1946, pp. 102-110; Burnett 1977, pp. 46-48; Howgego 1982; Burnett, Amandry, and Ripollès 1992, pp. 380-381, 576-577, and 602-603. The less precisely dated issues from Syria (Howgego Classes 4 and 5 from c. 23 B.C. – A.D. 14) and the later issues from Cyprus (Howgego Class 6 from c. 5 B.C. – c. A.D. 5) are not discussed here because they are too imprecisely dated and/or later in date.
Class 2), or CAESAR (Howgego Class 3). On the reverse, the letters CA or AVGVSTVS are surrounded by a wreath—the former legend gives the coinage its traditional name. A circle separates the legend from the wreath, and a second, concentric circle surrounds the entire type (Fig. 4.1). While depictions of wreaths are common on Hellenistic coinage and wreaths can only be presented in a limited number of ways, the consistent use of concentric circles on the reverse and the similar legends strongly suggest that the mints were coordinated in some way.38

Fig. 4.1. 22-24mm/10.13g coin from the CA Coinage, Howgego Class 4, from an uncertain mint in Syria, 23 B.C. - A.D. 14, RIC I5 495 or 500 = RPC I 4103 (Howgego 1982, pl. 4, fig. 4)

Not only do the coin types imply that there was some coordination among the mints producing the CA Coinage, but the weights and modules of the coins, as recorded in Table 4.1, also indicate coordination among the mints in the two provinces. The mints in Asia and Syria (Howgego Classes 1-3), which operated between 23 and 18 B.C., all struck coins with a diameter of 22-25mm and an average weight near 11g. This is very similar to the 25-28mm and 10.37g copper as struck at Rome. This and the other new denominations struck at the mint in Rome will be discussed in Sections 4.4 and 4.5. The Asian mint and one of the Syrian mints also struck a coin with a diameter of 25-28mm and an average weight near 12.5g; and this is very similar to the Roman mint’s orichalcum dupondius of 26-28mm diameter and 11.66g average weight. Finally, these same two mints also struck a 33-35mm diameter coin with an average weight of

38 On wreaths on Hellenistic coinage, Ashton 2013, pp. 198-199.
21.54g (Asian mint) and 23.12g (Syrian mint) that is very similar to the Roman sestertius’s 36-42mm diameter and 23.56g average weight. The CA coinage, then, used the same denominations that the reformed copper and *orichalcum* coinage of the Roman mint used.

Table 4.1. Diameter and Average Weights of the CA Coinage and the New Roman Base Metal Coinage

<table>
<thead>
<tr>
<th>Mint</th>
<th>Date</th>
<th>Citation</th>
<th>Denominations:</th>
<th>Diameter (mm) / Average Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Quadrans 17-19mm/ As 22-28mm/ Dupondius 25-28mm/ Sestertius 33-42mm</td>
</tr>
<tr>
<td>Howgego Class 1 (Asia)</td>
<td>27-18 BC</td>
<td><em>RPC I</em> 2227-2232</td>
<td>17-19/ 4.82</td>
<td>22/ 11.48</td>
</tr>
<tr>
<td></td>
<td>27-18 BC: Bronze</td>
<td></td>
<td></td>
<td>25/12.67</td>
</tr>
<tr>
<td>Howgego Class 2 (Asia)</td>
<td>27-18 BC</td>
<td><em>RPC I</em> 2233-2235</td>
<td>25/ 11.19</td>
<td>35/23.12</td>
</tr>
<tr>
<td></td>
<td>27-18 BC: Or</td>
<td></td>
<td></td>
<td>26/12.44</td>
</tr>
<tr>
<td>Howgego Class 3 (Syria)</td>
<td>27-18 BC</td>
<td><em>RPC I</em> 4100</td>
<td>23/ 10.58</td>
<td></td>
</tr>
<tr>
<td>Rome</td>
<td>c. 23-10 BC: Cu</td>
<td></td>
<td>15-17/ 3.13</td>
<td>25-28/ 10.37</td>
</tr>
<tr>
<td></td>
<td>c. 23-10 BC: Or</td>
<td></td>
<td>26-28/ 11.66</td>
<td>36-42/ 23.56</td>
</tr>
</tbody>
</table>

Since the coin types of the CA coinage are so similar to each other and they used the same denominations, the production of the coins was coordinated. This is all the more noteworthy because mints in multiple provinces were being coordinated. Given the CA coinage’s denominations’ similarity to the new copper alloy denominations issued by the mint in Rome, the CA coinage and the bronze coinage reform at Rome are clearly related somehow (Sections 4.4 and 4.5, below). Unfortunately, neither the CA coinage nor the reform at Rome

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can be precisely dated, so it is unclear whether the two were coordinated or if one influenced or inspired the other.\footnote{Grant 1946, pp. 98-102; Sydenham 1918, p. 183; and Burnett 1977, pp. 46-48 who talk about the CA coinage as a precursor and inspiration for the reform at Rome.}

4.2.5.2. Uncertain Gallic Mints

On the other side of the empire, two mints opened in 19 or 18 B.C. to produce gold and silver coins at uncertain locations in Gaul, and the decisions regarding coin types at the mints were also coordinated. Both mints struck a wide range of types: the \textit{sidus Iulium}, the comet that appeared after Julius Caesar’s death;\footnote{On the development of the image of a star to a comet, Gurval 1997.} the Temple of Mars Ultor housing the military standards retrieved through Augustus’s negotiations with Parthia; the honors bestowed on Augustus in the “First Settlement;” and the goddess Victory. Interestingly, as will be shown below, the coin types used at these mints indicate not only coordination between the mints, but that the mints also expanded beyond the agreed upon types.

\begin{figure}[h]
\centering
\includegraphics[width=0.4\textwidth]{fig4_2.png}
\caption{Denarius featuring the \textit{sidus Iulium}, from Uncertain Gallic Mint 1, 19 - 18 B.C., \textit{RIC I2} 37b (Mattingly 1923, pl. 6, fig. 7)}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=0.4\textwidth]{fig4_3.png}
\caption{Denarius featuring the \textit{sidus Iulium}, from Uncertain Gallic Mint 2, 19 - 16 B.C., \textit{RIC I2} 102 (Mattingly 1923, pl. 7, fig. 9)}
\end{figure}

The mints used almost the exact same coin types for both the commemoration of the \textit{sidus Iulium} and the celebration of the standards in the Temple to Mars Ultor. The \textit{sidus Iulium}
was portrayed as an eight-pointed star with a tall tail rising upwards. The words DIVVS IVLIVS were to the left and right of the center point of the comet in order to associate the comet with the assassinated dictator (Figs. 4.2 and 4.3). On some coins of Mint 1, the legend is above and below the comet. Additionally, the two mints struck aurei and denarii with very similar depictions of the Temple of Mars Ultor, which celebrated Augustus’s retrieval of the military standards from Parthia. The temple depicted on the coins is round, domed, and has four columns, two of which are moved apart in order to display an item within the temple. Both mints depicted Mars holding a legionary eagle within the temple, and they used the same image of Mars but without showing a temple (Figs. 4.4, 4.5, 4.6 and 4.7). Gallic Mint 2 expanded on these types and showed two alternative types: (1) a legionary eagle standing in a chariot inside the temple, and (2) two military standards and a legionary eagle inside the temple (Figs. 4.8 and 4.9). The legionary standard standing in a chariot was also shown without a temple.

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42 *RIC* I² 37a-38b (Uncertain Gallic Mint 1) and *RIC* I² 102 (Uncertain Gallic Mint 2).
43 *CBN* 1305-1308.
44 The debate about the appearance and location of this temple—as shown on the coins on the Capitoline Hill or as an earlier plan of the temple in the Forum of Augustus—is irrelevant to this discussion. For this debate, see Simpson 1977; and Rich 1998, pp. 79-89.
45 This separation of the central columns is a standard practice on numismatic depictions of temples where the cult statue is shown (Trell 1945, p. 4 and pl. II-VIII; and Drew-Bear 1974, pp. 28-29).
46 For Mars holding the legionary eagle inside the temple, *RIC* I² 28 and *RIC* I² 39a-b (Uncertain Gallic Mint 1) and *RIC* I² 68-74b (Uncertain Gallic Mint 2). For only Mars and no temple, *RIC* I² 41 (Uncertain Gallic Mint 1) and *RIC* I² 58, 60, and 80-84 (Uncertain Gallic Mint 2).
47 For a legionary eagle in a quadriga, *RIC* I² 114-120A. For two military standards and a legionary eagle, *RIC* I² 103-105.
48 *RIC* I² 96-101 and 107-113.
This habit of further developing a similar coin type is exhibited at both Gallic mints with coin types featuring the honors awarded to Augustus following the First Settlement of 28 – 27 B.C. and showing the goddess Victory carrying the *clupeus virtutis*, one of these honors. The full list of honors granted by the Senate is enumerated by the emperor in his *Res Gestae Divi*.
Augusti:

Quo pro merito meo senatus consulto Augustus appellatus sum et lauraeis postes aedium meorum vestiti publice coronaque civica super ianuam meam fixa est, et clupeus aureus in curia Iulia positus, quem mihi senatum populumque Romanum dare virtutis clementiae et iustitiae et pietae causa testatum est per eius clupei inscriptionem.

For which merit of mine, according to a decree of the Senate, I have been called Augustus, the door posts of my house have been publicly adorned with laurels, the oak civic crown has been fixed above my door, and in the Julian Senate House has been placed a golden shield which attests through an inscription on that shield that the Senate and people of Rome gave it to me on account of my manliness, clemency, justice, and piety. (34.2)

These laurel branches, corona civica, and clupeus virtutis appeared on many coins of the Gallic Mints nearly ten years later in 19 – 15 B.C.

Fig. 4. 10. Denarius featuring two laurel branches with CAESAR above and AVGSTVS below, from Uncertain Gallic Mint 1, 19 – 18 B.C., RIC I 33b (Mattingly 1923, pl. 6, fig. 3)

Fig. 4. 11. Aureus featuring two laurel branches with CAESAR above and AVGSTVS below, from Uncertain Gallic Mint 2, 19 – 16 B.C., RIC I 50a (Mattingly 1923, pl. 7, fig. 5)

The two mints used the same reverse type featuring the laurel branches in two instances, but the Uncertain Gallic Mint 1 developed the type further to create a new type which was used as both an obverse and a reverse type. The mints both struck a simple reverse type with the

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49 Text from Cooley 2009.
name CAESAR above two laurel branches and the name AVGVSTVS below the branches (Figs. 4.10 and 4.11).\footnote{RIC I\textsuperscript{2} 33a-b (Uncertain Gallic Mint 1) and RIC I\textsuperscript{2} 50a-b and 51 (Uncertain Gallic Mint 2).} Gallic Mint 1 struck only denarii with this type, but Gallic Mint 2 struck both denarii and aurei. Both mints also issued a more complex type—in silver at Gallic Mint 1 and in gold at Gallic Mint 2. The type featured the two laurel branches to the left and right of a shield, which was inscribed with CL V. The name CAESAR was above the branches and shield, and the name AVGVSTVS was below them. The letter S was to the upper left of the shield, P to the upper right, Q to the lower left, and R to the lower right; and all the letters and shield were flanked by the laurel branches (Figs. 4.12 and 4.13).\footnote{RIC I\textsuperscript{2} 26a-b.}

Uncertain Gallic Mint 1 expanded on this agreement by altering the simpler type and using it on both the obverse and reverse of aurei. This new type featured the names CAESAR AVGVSTVS in two rows between the two laurel branches (Fig. 4.14).\footnote{CBN 1280-1281.} On a few rare aurei, it was used as the obverse type while the corona civica was used as a reverse type.\footnote{RIC I\textsuperscript{2} 36a-b (Uncertain Gallic Mint 1) and RIC I\textsuperscript{2} 52a-b (Uncertain Gallic Mint 2).}
The two mints also struck coins with the same design celebrating Augustus’s receipt of the *corona civica*. Historically, a Roman soldier gave this oak wreath to another Roman who saved him in battle, or, starting with Cicero, the Senate gave the wreath to a Roman citizen who saved the Roman people.\footnote{Bergmann 2010, pp. 135-183.} Based on this precedent, the Augustan numismatic representations of the *corona civica* were often accompanied by the explanatory legend OB CIVIS SERVATOS, “On account of the citizens having been protected,” or an abbreviation thereof. The Gallic Mints always used the full three-word phrase, as opposed to the *tresviri monetales* at Rome who abbreviate it as OB C•S or O•C•S on gold and silver coins.\footnote{For OB C•S on the coins of Turpilianus and Durmius, *RIC* I\(^2\) 278-279 and 285-286 (Turpilianus), 312 (Durmius). For O•C•S on the coins of Florus, *RIC* I\(^2\) 302.} The Gallic mints used two coin types, which were identical at the two mints: (1) the words OB CIVIS were shown above and SERVATOS below the oak wreath, the ties of which rose into the circle of the wreath, and (2) the same legend was above and below the oak wreath which encircled a shield inscribed S•P•Q•R CL•V in two lines (Figs. 4.15, 4.16, 4.17, and 4.18).\footnote{For the first type, *RIC* I\(^2\) 40a-b (Uncertain Gallic Mint 1) and *RIC* I\(^2\) 75a-b (Uncertain Gallic Mint 2). For the second type, *RIC* I\(^2\) 30a-b (Uncertain Gallic Mint 1) and *RIC* I\(^2\) 78 and 79a-b (Uncertain Gallic Mint 2).}

The two mints did not share a third type depicting the *corona civica*. On the one hand, a type of the Uncertain Gallic Mint 2 depicted the wreath’s ties rising into the circle of the wreath and then turning outwards to make room for the phrase OB CIVIS SERVATOS in three lines within the wreath (Fig. 4.19).\footnote{*RIC* I\(^2\) 76a-b and 77a-b.} On the other hand, a similar type was used at Uncertain Gallic Mint 1 with only the three-word phrase within the wreath (Fig. 4.20).\footnote{*RIC* I\(^2\) 29a-b.} This slight difference in the depiction of the *corona civica* types might suggest that the mintworkers at the two mints did
not receive the exact same directions about all aspects of the coin type designs, and each mint was willing to act independently of the other.

This willingness to act independently regarding the choice of coin types is more clearly shown by the coins showing the *clupeus virtutis*, which was awarded to Augustus in 27 B.C. Both mints frequently depicted the shield, but they did so in different ways which mark their independence. At Uncertain Mint 1, the shield, inscribed with CL•V, below which was the name CAESAR and above which the name AVGVSTVS appeared on denarii (Fig. 4.21). The mint also issued denarii with only the inscribed shield with the letter S to the upper left of the shield, P to the upper right, Q to the lower left, and R to the lower right (Fig. 4.22). Finally, a third denarius type showed only the shield inscribed with SPQR CL V in two lines (Fig. 4.23).

Gallic Mint 2, however, commemorated Augustus’s honor of the *clupeus virtutis* differently in only one rather than the three types of Gallic Mint 1. This mint used its single *clupeus virtutis* reverse type for both denarii and aurei. A legionary eagle was on the left of the shield, which was inscribed CL V, and a military standard was to the right. The letters S, P, Q, and R were arranged around the shield; the word SIGNIS was above the shield; and the word RECEPTIS was below the shield in recognition of Augustus’ and Tiberius’ achievements in Parthia and Armenia, respectively (Fig. 4.24). Interestingly, Gallic Mint 2 mixed references to the *clupeus virtutis* from 28 – 27 B.C. with allusions to the more recent events: the standards and the legend SIGNIS RECEPTIS. Gallic Mint 1 never mixed the honors in this way.

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59 *RIC* I² 34-35.
60 *RIC* I² 43a-b.
61 *RIC* I² 42a-b.
62 *RIC* I² 85-86. *RIC* I² 87 has the standard on the left and legionary eagle on the right.
Fig. 4. 15. Denarius featuring the corona civica with OB CIVIS above and SERVATOS below, from Uncertain Gallic Mint 1, 19 - 18 B.C., RIC I 1240a (Mattingly 1923, pl. 6, fig. 10)

Fig. 4. 16. Denarius featuring the corona civica with OB CIVIS above and SERVATOS below, from Uncertain Gallic Mint 2, 19 - 16 B.C., RIC I 1275a (Mattingly 1923, pl. 8, fig. 6)

Fig. 4. 17. Aureus featuring the clupeus virtutis within the corona civica with OB CIVIS above and SERVATOS below, from Uncertain Gallic Mint 1, 19 - 18 B.C., RIC I 1230a (Giard 1988a, pl. LI, fig. a)

Fig. 4. 18. Denarius featuring the clupeus virtutis within the corona civica with OB CIVIS above and SERVATOS below, from Uncertain Gallic Mint 1, 19 - 18 B.C., RIC I 1279a (Giard 1988a, pl. XLV, fig. 1146)

Fig. 4. 19. Denarius featuring the legend OB CIVIS SERVATOS within the corona civica, the ties of which are rising into the wreath, from Uncertain Gallic Mint 2, 19 - 16 B.C., RIC I 1277 (Mattingly 1923, pl. 8, fig. 7)

Fig. 4. 20. Aureus featuring the legend OB CIVIS SERVATOS within the corona civica, from Uncertain Gallic Mint 1, 19 - 18 B.C., RIC I 1229a (Mattingly 1923, pl. 5, fig. 19)
Even though Gallic Mint 2 used less variety with the types featuring the *clupeus virtutis*, it did elaborate upon the type it shared with Mint 1 regarding types showing the goddess Victory carrying the shield. The two mints both used the same coin type on aurei and denarii that show Victory flying, carrying a shield inscribed CL•V. The letters SP were to the left of Victory, and
QR were to the right (Fig. 4.25). Sometimes a column was shown behind Victory, and sometimes Victory carried a wreath. Gallic Mint 2 elaborated on this type by placing the legend SPQR in several more locations on the coin: in the exergue, on the shield, or above Victory. A more drastic development from the common type was the image of Victory facing and holding the inscribed *clupeus virtutis* with the legend S•P•Q•R above the goddess (Fig. 4.26).

In sum, the workers at the Uncertain Gallic Mints often received the same directions regarding the mints’ coin types as the result of some form of coordination. The mints used very similar depictions of the *sidus Iulium*, the *corona civica*, the Temple of Mars Ultor, the goddess Victory, and the honors from the First Settlement of 27 B.C. Mint 2 expanded on the types featuring the Temple of Mars Ultor and the goddess Victory in order to show a wider range of types. Similarly, Mint 1 expanded on the types featuring the two laurel branches that were awarded to Augustus during the First Settlement. The coordinated activity at these mints, though, was not absolute. As the types featuring the *clupeus virtutis* show, the Uncertain Gallic Mints also independently chose some of their own coin types.

This partial independence is further demonstrated by the reverse types that Gallic Mint 2 used but that were not paralleled by Gallic Mint 1. Some aurei and denarii featured a hexastyle temple with a deity inside and the label IOVI TONANTIS. The temple of Jupiter Tonans on the Capitoline Hill was dedicated by Augustus in 22 B.C. to celebrate his escape from lightning during the Cantabrian Wars. Additionally, in the 20s B.C., Augustus took on the repair of many

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63 For SP to the left and QR to the right, *RIC* I² 31-32 and 45-46 (Uncertain Gallic Mint 1) and *RIC* I² 61, 88 and 95 (Uncertain Gallic Mint 2); cf. *RIC* I² 48 (Uncertain Gallic Mint 1) in which S is to the left and PQR are to the right.
64 For S•P•Q•R•CL•V in the exergue, *RIC* I² 89, 91-92; for S•P•Q•R•CL•V in two lines on the shield, *RIC* I² 90; for S•P•Q•R above victory and CL•V on the shield, *RIC* I² 94.
65 *RIC* I² 62 and 93.
66 *RIC* I² 59 and 63-67.
67 Suet. *Aug.* 29; and Dio 54.4.
Italian roads,\textsuperscript{68} and three aureus and denarius coin types commemorated this act. One showed Augustus in a biga drawn by elephants on top of an arch with the legend QVOD VIAE MVN SVNT.\textsuperscript{69} A second used the same legend between two arches on a road, and equestrian statues surmount each arch.\textsuperscript{70} The third type employed the same legend to label Augustus driving a quadriga on a road, and being crowned by Victory.\textsuperscript{71} Gallic Mint 2 struck a type featuring an altar labeled FORT RED AVG SPQR to celebrate the altar of Fortuna Redux that the Senate dedicated in honor of Augustus’s return from Parthia in 19 B.C.\textsuperscript{72} On coins dated to 27 June 18 – 26 June 17 B.C., Gallic Mint 2 depicted the Parthian arch (Section 4.4, below).\textsuperscript{73} In 17 B.C., Augustus celebrated the \textit{ludi Saeculares}, and Gallic Mint 2 commemorated these games on denarii and aurei. The coins’ reverse showed a praying figure to the left, and a herald to the right of an altar labeled LVDI SAECVL.\textsuperscript{74}

Other coin types only used by Gallic Mint 2 cannot be precisely dated. One reverse type simply featured a legend, IOVI VOT SVSC PRO SAL CAES AVG SPQR, recording a vow taken for the good health of Augustus.\textsuperscript{75} Another pair of types recorded the vow as the legend either encircling or flanking Mars who holds a military banner.\textsuperscript{76} Gallic Mint 2 struck aurei and denarii featuring the Capricorn with a globe, rudder, and cornucopia in recognition of the

\textsuperscript{68} Eck 2009, pp. 236-237.
\textsuperscript{69} \textit{RIC} I$^2$ 140-141 and 143.
\textsuperscript{70} \textit{RIC} I$^2$ 142.
\textsuperscript{71} \textit{RIC} I$^2$ 144-145.
\textsuperscript{72} \textit{RIC} I$^2$ 53-56. Dio 54.10.
\textsuperscript{73} \textit{RIC} I$^2$ 131-137.
\textsuperscript{74} \textit{RIC} I$^2$ 138-139. On the \textit{ludi Saeculares}, Blumenthal 1918; Coarelli 1991; and Sobocinski 2006.
\textsuperscript{75} \textit{RIC} I$^2$ 57.
\textsuperscript{76} \textit{RIC} I$^2$ 146-153.
astrological sign under which Augustus was born. The Uncertain Gallic Mint 2 also struck aurei quinarii, which were rarely produced under Augustus.

4.2.5.3. Summary

These two examples of coordination are insufficient to support Michael Grant’s idea of a “world coinage” produced at many coordinated mints c. 19 B.C. and c. 14 B.C.; but they do show signs of innovation among some of the Augustuan imperatorial mints, just as the civil war imperatorial mints had experimented. During the civil wars, the mints struck coins in new metals. In the reign of Augustus, there were new kinds of coordination. The CA Coinage mints were coordinated across provincial boundaries. Even though this repeated the trans-provincial coordination of the Antonian fleet coinage, it was the first time that multiple mints were coordinated over a provincial boundary under Octavian/Augustus. This coordination may be even more important because it somehow related to the reform of copper alloy coinage at Rome. These two examples of trans-provincial coordination interestingly appear at the same time as the rise of powerful men able to affect affairs in multiple provinces. Additionally, the Uncertain Gallic Mints 1 and 2 were coordinated to an impressive degree. Whereas the cistophoric mints had routinely coordinated one, two, or three coin types and the CA coinage coordinated one type, the Uncertain Gallic Mints coordinated over a dozen coin types. There was agreement about which honors bestowed upon Augustus to commemorate and with what designs to celebrate them. The immensity of this coordination is underscored by the freedom that the mints had to

77 Suetonius says that Augustus struck silver coins with the image of Capricorn, in which constellation the moon was located when Augustus was born: …Augustus…nummumque argenteum nota sideris Capricorni, quo natus est, percussit, “…and Augustus struck a silver coin with the mark of the Capricorn star, in which he was born” (Suet. Aug. 94.12; Text from Ihm 1908). On the significance of Augustus’s use of the Capricorn as a coin type and the moon in the constellation of Capricorn when Augustus was born, Kraft 1967; Dwyer 1973; Barton 1995; and Lewis 2008.

78 RIC I² 121-123.
elaborate on the designs or to mention other imperial deeds. Indeed, in the few years after
Uncertain Gallic Mint 1 closed, Uncertain Gallic Mint 2 celebrated many events that honored the
emperor. This scale of coordination—whether geographic or the extensive sharing of coin
types—would not be seen again for decades.

4.3. The Augustan Cistophori (27 – 20 B.C.)

At about the same time as many of the earlier eastern imperatorial coinages, the
cistophori, produced at three mints in Asia, continue to provide clear evidence for being
coordinated. 79 Between 27 and 20 B.C., the mints at Ephesus and Pergamum each struck three
reverse coin types, and the Uncertain Asia Mint struck only one reverse type. The mints often
shared types. Both Pergamum and the Uncertain Asian Mint struck a reverse type showing a
sphinx under the legend AVGVSTVS (Figs. 4.27 and 4.28), which ran around the top left of the
flan. 80 This design was chosen because it was the design on Augustus’s signet ring (Suet. Aug.
50.1). The other two types used at Pergamum were also used at Ephesus: a bundle of wheat ears
with the legend AVGVSTVS, which was divided by the bundle after the second V (Figs. 4.29
and 4.30); and a Capricorn with a cornucopia above the legend AVGVSTVS, both of which
elements were surrounded by a wreath border (Figs. 4.31 and 4.32). 81 Ephesus used the only
reverse type that was not shared with another mint: an altar decorated with deer under the legend
AVGVSTVS because of the famous cult of Artemis at Ephesus (Fig. 4.33). 82 This great
similarity among all the cistophoric mints suggests that the selection of coin types was

79 On the proconsular cistophori, Section 2.4. On the Antonian cistophori, Section 3.4.
80 RIC I 2 487 = RPC I 2207 (Pergamum) and RIC I 2 527 = RPC I 2204 (Uncertain Asia Mint).
81 For the bundle of wheat ears, RIC I 2 488 and 493 = RPC I 2208 (Pergamum) and RIC I 2 477 and 480 =
RPC I 2214 (Ephesus). For the Capricorn, RIC I 2 488 and 493 = RPC I 2208 (Pergamum) and RIC I 2 477
and 480 = RPC I 2213 (Ephesus).
82 RIC I 2 479 and 482 = RPC I 2215.
coordinated again. This coordination ended when the mint at Pergamum and the Uncertain Asian Mint closed, leaving Ephesus as the only mint within the province to strike coins in 19 or 18 B.C.

The choice of coin types shows a growing Roman influence on the types. The cistophori no longer depict the *cista mystica*, and some of the types directly alluded to Augustus. The sphinx referred to his signet ring, and the Capricorn to his birth. The Roman state’s infrastructural power over the cistophoric mint was gradually increasing.
Fig. 4. 30. Augustan cistophorus featuring a bundle of grain, from Ephesus, 27 - 20 B.C., *RIC* I² 478 and 481 = *RPC* I 2214 (Woodward 1952, pl. III, fig. 2)

Fig. 4. 31. Augustan cistophorus featuring a Capricorn and cornucopia surrounded by a wreath, from Pergamum, 27 - 20 B.C., *RIC* I² 488 = *RPC* I 2208 (Giard 1988a, pl. XXXVII, fig. 951)

Fig. 4. 32. Augustan cistophorus featuring a Capricorn and cornucopia surrounded by a wreath, from Ephesus, 27 - 20 B.C., *RIC* I² 477 and 480 = *RPC* I 2213 (Woodward 1952, pl. III, fig. 2)

Fig. 4. 33. Augustan cistophorus featuring an altar decorated with deer and with AVGVSTVS above, from Ephesus, 27 - 20 B.C., *RIC* I² 479 and 482 = *RPC* I 2215 (Woodward 1952, pl. III, fig. 6)

4.4. The Augustan *Tresviri Monetales* at Rome (c. 23 – c. 10 B.C.)

While several imperatorial mints produced many gold and silver coins, the production of gold and silver coinage at Rome began again under the college of *tresviri monetales* in either 19 or 18 B.C. when the coin types recognized Augustus’s negotiations with the Parthians and
Tiberius’s victory in Armenia. Four more colleges struck aurei and denarii at Rome between 18 and 12 B.C. The mint had reopened a few years earlier—in 23 B.C. at the earliest—to produce coins in both orichalcum and copper, and four colleges of moneyers struck this small change coinage before 12 B.C. Six other colleges struck the copper alloy coinage soon thereafter, one perhaps striking in 7 B.C.

Given the heavy reliance on imperatorial mints during the early years of Augustus’s reign and the preceding civil war, the reopening of the mint at Rome, ostensibly under the direction of the tresviri monetales, needs to be explained. The first issues of Rome were copper and orichalcum coins. Rome was a logical place to resume production of a copper alloy coinage, which had not been struck since the 80s B.C. In Iberia, Gaul, and Africa, civic mints provided copper alloy coinages for local use; but only three civic mints other than Rome had struck coins in Italy since the middle of the second century B.C., and only one of these three mints continued to strike coins after the civil wars. As the location for the historically most important mint for Italy, and center of the empire, Rome was the logical choice for a mint to strike the necessary, new copper alloy coinage.

Additionally, the mint at Rome resembled imperatorial mints when it produced gold and silver coins. Gold and silver were struck in Rome between 19 and 16 B.C. and in 13 and 12 B.C. During all these years, Augustus was in Rome (Dio 54.10.3, 54.20.5, 54.25.1, and 54.36.2-4). The mint at Rome was like imperatorial mints in that it struck gold and silver when Augustus

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83 RIC I 2 278-320. For the chronology of the Augustan tresviri monetales, see Appendix 6.
84 RIC I 2 321-322 (in 19 or 18 B.C.), 337-349 (in 17 B.C.), 350-369 (in 16 B.C.), 397-411 (13 or 12 B.C.), and 412-419 (13 or 12 B.C.).
85 RIC I 2 380-393 (in 23-20 B.C.), 370-379 (in 22? – 19 or 18 B.C.), 323-336 (21 – 12 B.C.), 426-436 (after 12, maybe in 7 B.C.), and 437-442 (after 12 B.C.), and 420-425 and 443-468 (c. 10 B.C.).
86 Cf. Bay 1972 who argues this reform was initiated by a senatus consultum.
87 Crawford 1985, pp. 71-72.
88 Panvini Rosati 1951, p. 73; Robertson 1962, p. xxxiii; and Halfmann 1986, pp. 157-162.
was in Rome even though he was not on campaign. The mint then was similar to other mints operating during Augustus’s reign.

Finally, the reopening of the mint, ostensibly under the authority of the *tresviri aere argento auro feriundo flando*, was politically advantageous for Augustus. At this time, Augustus was attempting to suggest that there was a return to Republican forms of government and that he alone did not dominate the state. In 23 B.C., after a terrible illness, Augustus resigned the consulship and was given less conspicuous privileges and powers, such as tribunician power and greater proconsular imperium than any other governor in whose province Augustus was (Dio 53.30-32). Augustus also refused to take up the consulship for several years, even though the people wanted him to be consul again (Dio 54.6.1-4, and 54.10.1-2). He also refused the people’s pleas for him to be named dictator and censor for life in 22 B.C. (Dio 54.1-2.3). Despite these appearances, there was still a plot against Augustus at this time (Dio 54.3.4), perhaps because not everyone would have appreciated the institutionalization of Augustus’ power outside the traditional magistracies of Rome.

In this political climate, a reopening of the mint, ostensibly again under the management of the *tresviri monetales*, fit in with Augustus’s larger goal of creating at least the appearance of a return to the Republican forms of government. In addition to the legends naming the moneyers, the gold and silver coin types initially reflected a return to Republican norms. During the late Republic, the families of the *tresviri monetales* were often publicized on Rome’s

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89 Crook 1996, pp. 78-87; Rich and Williams 1999; and Galinsky 2012, pp. 72-74. cf. Zanker 1988, pp. 89-100 who emphasized this show of Republicanism on the coins and other monuments referring to the Settlement of 28 – 27 B.C. such as on the coins struck in Gaul c. 19 – 16 B.C. (Section 4.2.2).


91 Eck 2007, p. 66.
coinage. In 19 or 18 B.C., the denarii of P. Petronius Turpilianus, L. Aquilius Florus, and M. Durmius not only honored Augustus and his achievements, but they also referred to the families or names of the tresviri monetales. The coins of Turpilianus commemorated his family’s connection to the cult of Liber with a bust of that god on the obverse of several coins. They also referred to his Sabine ancestry or punned on his name with a type showing the death of Tarpeia under Sabine shields. The coins of Florus punned on his name with a reverse type showing a flower and used a triskelis as an obverse type to honor his ancestor’s political reorganization of Sicily in 101 B.C. In 16 B.C., the coins of C. Antistius Vetus also referred to his family. A reverse type celebrated a treaty between Rome and Gabii, which was the hometown of his family. After 16 B.C., the coins from the mint at Rome no longer referred to the families of the tresviri monetales. They focused on honoring Augustus and his achievements. This shift is comparable to shifts in other areas of public life—such as triumphs, triumphal monuments, public buildings, the location of elites’ houses, and the extravagance and prominence of their funeral monuments—in which the elite of the city of Rome no longer overtly competed and advertised themselves. The political climate among the Roman elite eventually led to the disappearance of the names of the tresviri monetales from the coinage struck at Rome shortly after the mint reopened. In sum, the mint was reopened to resupply Italy and the western

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93 RIC I 2 278, 282-283, 285, 287, 290, and 292.
95 RIC I 2 308-309 (Flower) and RIC I 2 302 (triskelis). Mattingly 1923, pp. cii-ciii.
97 Sutherland 1943.
98 Eck 1984 and 2010. cf. Zanker 1988, pp. 137-144 who discussed how the building programs of Agrippa and the imperial family relate the building program of Augustus, and p. 145 which mentioned how Q. Caecilius Metellus, a member of the elite, who was not a member of the imperial family, adjusted renovations of the Porticus Metelli (into the Porticus Octaviae) so that it reflected the Augustan program.
provinces with a new copper alloy coinage, in accord with Augustus’s political tactics of the late 20s B.C.

While the mint at Rome shifted its coin types to celebrate Augustus, it celebrated many of the same honors commemorated at other mints, but there are very few signs of coordination with other mints. As mentioned above, both the mint in Rome in 19 or 18 B.C. and the Uncertain Gallic Mints 1 and 2 depicted the corona civica. All the mints explained the wreath, but they did so differently. The Gallic Mints wrote out OB CIVIS SERVATOS and the coins from Rome abbreviated this explanation as OB C•S or O•C•S on aurei and denarii. The consistent legend at the Gallic mints is part of the evidence for the coordination among those two mints, and the consistent legends at Rome suggest the types were coordinated within the mint, but the mints in Gaul and Italy differ too much to say they were coordinated.

Further evidence for this lack of coordination with other mints can be seen from the coin types of a triumvir monetalis of 16 B.C., L. Vinicius, who was part of the only college to provide the tribuniciam date of their term in office. Vinicus's coin types often referred to events commemorated by other mints. One widely celebrated theme is Augustus’s negotiations with the Parthians to retrieve the lost legioary standards. As mentioned above, both the Gallic Mints celebrated these deeds between 19 and 15 B.C., and the mint at Ephesus commemorated these accomplishments soon after Augustus returned from Parthia. It struck cistophori with the temple of Mars Ultor holding a legioary standard and the Parthian arch, which will be discussed below. It struck an aureus with the sphinx accompanied by the legend ARMENIA CAPTA,

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99 *RIC* I² 359. For the recognition of the Parthian negotiation with an arch, see Dio 54.8.2-4.  
100 *RIC* I² 508-510 = RPC I 2216 and 2218 (Triumphal arch) and *RIC* I² 507 = RPC I 2220 (Temple of Mars Ultor). Even though the Uncertain Gallic Mints struck coins featuring the Temple of Mars Ultor it is not discussed here because the Uncertain Gallic Mints’ coins were not precisely dated. This same uncertain dating and potential absence of contemporaneity applies to the discussion of the Parthian
another aureus with a Capricorn and the legend SIGNIS (PARTHICIS) RECEPTIS, and a third with Victory slaying a bull accompanied by the legend ARMENIA CAPTA.\textsuperscript{101} It also struck denarii. One denarius featured only the legend SIGNIS PARTHICIS RECEPTIS.\textsuperscript{102} Another featured an Armenian tiara and quiver with the legend ARMENIA CAPTA, and a third denarius type showed a soldier flanked by the legend CAESAR DIVI F ARMEN CAPT IMP VII (or CAESAR DIVI F ARMEN RECE IMP VII).\textsuperscript{103} These denarius and aureus types were not used at other mints, so this mint’s coin types were not coordinated with other mints.

The mint at Rome used the same coin type for all three tresviri monetales of 19 or 18 B.C.: a kneeling Parthian presenting Roman military standards (Figs. 4.34-36).\textsuperscript{104} The Parthian always knelted to the right with his right leg on the ground, and the standards were always depicted in the same style. At the top of the standard, a circular disk was shown above a lunate award, which was itself placed above another disk. These three decorations were placed above a triumphal arch too, but it is offered here as an illustration of the lack of coordination among the empire’s mints during the reign of Augustus.

\textsuperscript{101} RIC I\textsuperscript{2} 513 (Sphinx), 514 (Victory and bull), and 521-522 (Capricorn).
\textsuperscript{102} RIC I\textsuperscript{2} 523-526.
\textsuperscript{103} RIC I\textsuperscript{2} 515-517 (Tiara and quiver), 518-520 (Soldier and legend).
\textsuperscript{104} RIC I\textsuperscript{2} 287-289 (Turpilianus); RIC I\textsuperscript{2} 304-305 (Florus); and RIC I\textsuperscript{2} 314-315 (Durmius).
rectangular panel showing the number X. Even the legends showed a remarkable similarity.

CAESAR AVGSTVS SIGN RECE labeled the Parthian kneeling on the coins of all three tresviri.

In addition to the mint at Rome striking for L. Vinicius, Gallic Mint 2, the mint at Ephesus, and the mint in Alexandria struck coins featuring the Parthian Arch (Figs. 4.37-40). It is commonly accepted that the Alexandrian coins imitated the cistophori of Ephesus, but the arches on the other coins all differed. The arch on the coins of Ephesus and Alexandria had one bay, but the coins of the Gallic mint and of L. Vinicius had three bays. The side arches at Rome and the Gallic mint differed in height relative to the central arch, and they were surmounted by

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105 For example, CBN 118-137 (Turpilianus), 173-175 (Florus), and 199-205 (Durmius).
106 RIC I² 131-137 (Gallic Mint 2); RPC 2216, 2218 = RIC I² 508-510 (Ephesus); and RPC I 5004 (Alexandria).
107 Milne 1927a, p. 136; and Grant 1946, p. 132.
men holding different objects. Furthermore, the arches all had different inscriptions in the architrave. The architrave on the cistophori reads IMP IX TR PO(T) (I)V, but there appears to have been no inscription on the architrave of the Alexandrian bronzes. In the West, the Gallic mint showed no inscription on the arch, and S P Q R IMP CAE appeared in two lines on the architrave and on the coins from Rome. These differences indicated that the depictions of the Parthian arches were not coordinated among the mints that did use the coin type.

Another type of Vinicius—that celebrating Augustus’s work on Italian roads—differed from another mint’s coin types. Vicinius’s type depicted a *cippus* with the legend SPQR IMP CAE QVOD V M S EX EA P Q IS AD A DE in six lines (Fig. 4.41). The *cippus* on these coins does not resemble the coins from Gallic Mint 2 that also commemorated Augustus’s work on Italian roads. The aurei and denarii of Gallic Mint 2 showed Augustus driving either a biga of elephants or a quadriga of horses on a road, or on an arch on a road, with the legend QVOD VIAE MVN SVNT, or they featured the same legend between two arches on a viaduct with equestrian statues on the arches (Fig. 4.42). The absence of coordination between the mint at Rome and another mint within the empire was normal for Augustus’s reign. This very low level of coordination among mints during the reign contradicts Grant’s proposal that extensively coordinated Augustan mints produced a “world coinage.”

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109 RIC I² 360-362. The legend can be understood as *Senatus populusque Romanus imperatori Caesari quod viae munitae sunt ex ea pecunia quam is ad aerarium detulit*, or *Senatus populusque Romanus imperatori Caesari quod viae munitae sunt ex ea pecunia quae iussu senatus ad aerarium delata est*. 110 RIC I² 140-145.
4.5. The Augustan Reintroduction of Bronze Coinage

4.5.1. The New System at Rome

As mentioned in the previous section, the mint at Rome reopened in 23 B.C. when it struck an *orichalcum* (brass) and copper coinage on a massive scale in order to revive the production of a base metal coinage. The mint in Rome had produced bronze coins throughout the second century and the beginning of the first century B.C. When the denarius was introduced c. 211 B.C., bronze coins were struck on the sextantal standard, which means that the ideal as weighed two *unciae*, or 54.58g. These bronze coins served as fractions of the denarius, which was equal to four silver sestertii. The bronze fractions gradually declined from the sextantal standard to the uncial weight standard, with which the ideal bronze as weighed one *uncia*, or 27.29g. In 91 B.C., the *lex Papiria* was passed and, as a result, the mint at Rome began striking bronze coins on the semuncial standard, in which the ideal as weighed half an ounce, or

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111 Buttrey 1972a, p. 33; and Crawford 1974b, p. 6.
112 Buttrey 1972a, p. 33; and Crawford 1974b, pp. 11-12.
13.64g. This law and the concomitant new weight standard were advertised on the asses of 91 B.C. which featured the head of Janus on the obverse and a prow with the legend L(ex) P(apiria) D(e) A(ssis) P(ondere). The mint at Rome used this standard for a brief time until it struck its last issue of Republican bronze coins in 84 B.C.

When the mint of Rome began striking coins between 23 and 19 B.C., it again used the semuncial standard. The mint adjusted the semuncial standard in order to compensate for the heart of the Augustan reform: the use of new metals for various coin denominations. The silver sestertius became an orichalcum coin weighing one uncia. Bronze coins were no longer struck. The dupondius became a 1/2 uncia orichalcum coin. The as and quadrans were struck in copper, and they weighed 2/5 uncia and 1/8 uncia, respectively. These were the first issues of copper and orichalcum coins from the mint of Rome.

The new base metal coins were remarkably consistent in their coin types throughout the years. Starting with the first issue between 23 B.C. and 19 B.C., the sestertius always had the corona civica and the legend OB CIVIS SERVATOS on the obverse of the coin, and letters SC surrounded by the name of a triumvir aere argento auro feriundo flando on the reverse. The dupondius featured a wreath surrounding the legend AVGVST TRIBVN POTEST on the obverse, and the same reverse type as the sestertius. The obverse of the as was a portrait of the emperor, and the reverse was the same as the sestertius and dupondius. Finally, the quadrans had four obverse types: (1) two hands clasping each other and a caduceus, (2) an altar, (3) a cornucopia and the letters SC, and (4) a lituus and simpulum. The reverse type was either an

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113 Plin. *N.H.* 33.13 = 33.46; Sydenham 1918, p. 171; Pink 1952, p. 58; Crawford 1974b, p. 77 and p. 611; and Burnett 1977, p. 45.
114 *RRC* 338.
115 *RRC* 354-355.
116 Bay 1972, p. 113.
altar or the letters SC. The names of the tresviri monetales surrounded both the obverse and
the reverse types. The uniformity of the base metal coinage over several years was necessary to
encourage the people to accept the newly reformed coins from Rome.

4.5.2. A New System outside of Rome?

Some scholars have suggested that the changes at Rome affected the production at other
mints. The editors of Roman Provincial Coinage, for example, assert that some cities in Iberia
and Gaul adopted the orichalcum and copper coinages on the semuncial standard. Other cities in
Iberia, Africa, Gaul, and Sicily, they say, struck bronze coins on a “modified Augustan system”
with either slightly heavier coins than the Roman orichalcum and copper coins or coins
approximating the Roman coins’ weights. Additionally, in Miguel Ángel Cebrián Sánchez’s
study of the metrology of the coins from Emerita Augusta in Hispania Lusitania, he stated that,
in the mint’s first issue struck after 2 B.C., the city began using the semuncial standards in
imitation of Rome. These comments raise an important question about the Augustan reform:
did it affect only the coins produced at the mint in Rome or did it apply to other mints throughout
the empire?

An examination of the coins produced and used in the provinces may elucidate the extent
to which the reform of 23 – 19 B.C. affected mints throughout the empire. As fractions of the
denarius, the new coins from Rome circulated in many of the same provinces of the empire
where the denarius was used. During the Julio-Claudian period, they circulated in Italy, in Gaul,

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118 RIC I² 420-436 and 443-468.
120 Cébrian Sánchez 2006, p. 59.
on the Iberian Peninsula, and in Sicily. Coin production patterns within Italy, Gaul, Iberia, and Sicily should certainly be examined to see if the reform affected these regions. Given the widespread use of the new fractions of the denarius, we should check to see whether the reform also affected the production of bronze coins in the areas using this coinage and the denarius. In addition to Italy, Gaul, the Iberian Peninsula, and Sicily at this time, the denarius circulated in Africa, Achaea, and Macedonia so the potential effects of the reform will also be examined in these provinces. Each of these provinces will be examined in their own section.

4.5.3. Methodology

A few methodological comments are necessary. Since the reform of 23 – 19 B.C. could only affect coins struck afterwards, and since it is not possible to precisely date many coins from provincial mints, only coins clearly struck after 23 – 19 B.C. are examined here. If a mint operated both before and after 23 – 19 B.C., then all its coins are examined in order to demonstrate a change in denomination as a result of the reform. For example, it is not certain whether the other most notable uses of orichalcum under Augustus—the eastern CA coinage and the coins struck by P. Carisius, legatus Augusti pro praetore in Spain—were contemporaneous with or preceded the reform at Rome because none of the three issues are dated exactly. Therefore, these two issues are not included in this analysis. Carthago Nova in Hispania Tarraconensis, however, struck bronze coins both before and after 23 – 19 B.C., so the coins

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122 RPC I 2227-2235 and 4100-4107 (CA Coinage) and RIC I 2 11-25 (Carisius); Sydenham 1918, pp. 181-182; Amandry 1986, pp. 21-22; and Cebrián Sánchez 2006, p. 53.
both before and after this date are included in order to also look for changes in coin production.\footnote{Kroll 1972; and Burnett, Amandry, and Ripollès 1992, pp. 265-266.}

Additionally, as argued in Section 1.6.2.2, the best way to determine copper alloy coins’ denominations is to rely primarily on countermarks or value marks. Without these, it is necessary to compare the coins’ modules, or diameters, rather than on the coins’ weights, in order to see if multiple mints in the same region were striking the same denominations. Therefore, most of the analysis relies on the coins’ modules, but coins’ weights are also considered with less emphasis. This method of determining denominations is used in two ways. First, modules of coins from the same province are compared to determine if multiple mints were producing the same denominations.\footnote{This method was used by Johnston 1997 and 2007.} If multiple mints issued the same denominations, it is an indication that the mints’ decisions might have been coordinated.

Secondly, the modules and weights are examined to see if they conformed to the renewed semuncial standard of the mint in Rome. The semuncial standard would, theoretically, call for a bronze as weighing 13.64g.\footnote{Sydenham 1918, p. 171; and Bay 1972, p. 118.} Alongside this coin, the semuncial system would require a bronze sestertius to weigh 54.58g, a dupondius of 27.29g, a semis of 6.82g, and a quadrans of 3.41g. The ideal weights of bronze coins on the semuncial standard may be helpful but are not conclusive by themselves. The ideal diameters for each denomination are harder to predict because the Augustan as and dupondius from Rome had the same module: 26-28mm. Nevertheless, it may be helpful to note that earlier Roman bronze asses struck on the uncial standard (i.e. 27.28g) were 29-32mm wide.\footnote{Buttrey 1972a, p. 33.} Similarly, uncial asses issued by the Pompeians were 29-33mm/20.92g (RRC 471/1, 46 – 45 B.C.), 28-31mm/17.28g (RRC 478/1a-b, 45 – 44

\footnote{Kroll 1972; and Burnett, Amandry, and Ripollès 1992, pp. 265-266.}
\footnote{This method was used by Johnston 1997 and 2007.}
\footnote{Sydenham 1918, p. 171; and Bay 1972, p. 118.}
\footnote{Buttrey 1972a, p. 33.}
B.C.), and 24-31mm/21.52g \((RRC\ 479/1,\ 45-44\ B.C.).\)\(^{127}\) A diameter of 29-32mm then could have been associated with an as on the uncial standard.

Finally, when considering coins’ denominations, it will be important to remember that the comparison of small change coins’ weights and modules is most convincing if the coins are made of the same metals because a bronze coin of 10g could potentially have a different intrinsic value from a coin of 10g of pure copper.\(^{128}\) This ideal comparison is not possible with the bronze coins after the reform of 23 – 19 B.C. because only the mints at Rome and Lugdunum immediately began using copper and \textit{orichalcum} to produce their coins, and only a few other mints began using these metals under Tiberius. For example, on the Iberian peninsula, the mint at Caesaraugusta temporarily used \textit{orichalcum} for large denomination coins under Tiberius,\(^{129}\) then changed to another base metal for these denominations,\(^{130}\) and finally consistently began to use copper and \textit{orichalcum} for its coins under Caligula.\(^{131}\) Other than at Caesaraugusta, \textit{orichalcum} was only used at a few Iberian mints: at P. Carisius’s mint which may have operated before, contemporaneous with, or after the reform at Rome;\(^{132}\) at Tarraco, temporarily after A.D. 15;\(^{133}\) and at Turiaso under Tiberius, as the last issue of the mint.\(^{134}\) Therefore, the civic mints typically struck coins in other metals, and the equivalencies between these civic coins and the coins from the mints at Rome and Lugdunum are not readily apparent except through an

\(^{127}\) For the uncial standard, see Sydenham 1918, pp. 173-174. For the diameters and modules, see Buttrey 1972a, p. 34.

\(^{128}\) This argument does not necessarily mean that the new copper and \textit{orichalcum} coins were intrinsically valuable rather than fiduciary token coinage. The new coins were meant to appear very different from the earlier bronze coins, such as those produced in the provinces (Mattingly 1923, p. xlvii). This difference in appearance would have required the creation of exchange rates among the metals to clarify how the two coins would be used alongside each other within a common coinage system.

\(^{129}\) \textit{RPC\ I} 342 and 344.

\(^{130}\) \textit{RPC\ I} 345-451, 359-360, 362-364, and maybe 365-367.

\(^{131}\) \textit{RPC\ I} 368-386.

\(^{132}\) \textit{RIC\ I} 11-25.

\(^{133}\) \textit{RPC\ I} 218-223.

\(^{134}\) \textit{RPC\ I} 422.
examination of denominational countermarks and value marks. These countermarks and value marks are rare but will be discussed with each province’s denomination pattern when the data are available.

4.5.4. Italy

In Italy, two mints—the one in Rome, and one in Paestum—struck bronze coins during the first century B.C. and after the reform of 23 – 19 B.C. The mint at Rome reformed its weights and metals, and a mint at Paestum produced a small issue of bronze coins during the reign of Tiberius. According to Table App7.1, between 69 B.C. and the reign of Augustus, the mint in Paestum issued a denomination of 13-14mm/3.5g. During the reign of Tiberius, the mint struck for the first time after the reform at Rome in 23 – 19 B.C. The Tiberian coins of Paestum were a single denomination: 16-17mm/4.04g. The module of the coins from Paestum corresponded to the appropriate module for a quadrans from Rome, and the weights are heavier than the ideal weight of a bronze quadrans within a semuncial system: 3.4g. This 3.4g weight is slightly above the weight of the copper quadrans from Rome (3.13g). The 4.04g weight of Paestum’s bronze coins may have resulted from a desire to issue a coin noticeably heavier than the copper quadrans so that Paestum’s bronze coins did not appear discounted in comparison to Rome’s quadrans. Paestum’s coins, then, most likely followed the same, semuncial denomination pattern as the coins from Rome. Since the coins in Rome had been in circulation for nearly twenty-five years before the mint at Paestum struck coins, it is impossible to tell whether the mint at Paestum imitated the coins from Rome or followed instructions associated with the reform of 23 – 19 B.C. at Rome.
4.5.5. Gaul

In Gaul, five mints struck after 23 – 19 B.C. As will be discussed in Section 4.6, cultural change in Gaul led to changing habits of coin production and coin use. These changes happened more quickly in the south where the mints in Nemausus and Lugdunum were located than in the north where three Iron Age mints were located. Because of this difference, these two regions will be discussed separately. The modules and weights of all five mints’ coins are recorded in Table App7.2.

In the south, the mints in Nemausus and Lugdunum both struck series of copper alloy coins. The mint in Lugdunum had struck a few issues of bronze coins during the civil wars. Even though each issue was comprised of one denomination at a time, the issues together included denominations (a) 12mm/1.7g, (b) 15mm/3.0g, and (c) 30-32mm/19-20g. Denomination (c) was paralleled by other southern Gallic mints striking during the civil wars: at Narbo c. 40 B.C. (28-30mm/16.29g), Vienna c. 36 B.C. (29-31mm/19.19g), and a mint possibly located in Arausio c. 30 B.C. (27-28mm/17.37g). This denomination (c) was very close in diameter to the earlier Roman uncial as (29-32mm) and in weight to the Pompeian uncial asses (with averages of 17.28g, 20.92g, and 21.52g). The mints at Lugdunum and these other three mints, therefore, appear to have used the uncial standard for one denomination of their bronze coins.

Later, starting in 10 B.C., a series of copper alloy coins from Lugdunum featured Augustus’s portrait on the obverse and the Altar of the Three Gauls on the reverse. The Altar

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135 On the civil war bronze coins (RPC I 511-516), Amandry 1986.
136 RPC I 517 (Vienna), RPC I 518 (Narbo), and RPC I 533 (Arausio?).
series was struck in copper and *orichalcum*, and they were very close both in weight and in diameter to the coins on the semuncial standard from the mint at Rome.

At Nemausus, the other major mint in the south struck 13-14mm/1.19g and 15-16mm/2.22g coins around 40 B.C. and then focused on a 28-29mm denomination coin, starting around 28 B.C. The issue starting c. 28 B.C. contained three series of coins featuring the portraits of Augustus and Agrippa on the reverse, and a crocodile chained to a palm tree on the reverse. The first series began with a group (Series Ia) weighing 16.74g slightly before the reform, but the mint did not operate continuously until the production of the next group of coins (Series Ib), which was stylistically different from Series Ia and weighed less (12.50g).\(^\text{138}\) Later coins in Series II and III maintained the diameter and weights established by Series Ib c. 19 – 10 B.C.

<table>
<thead>
<tr>
<th>Copper Semuncial asses from Rome</th>
<th>Bronze Series Ib-III from Nemausus</th>
<th>Bronze Uncial asses</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-28mm/10-11g</td>
<td>27-29mm/12.50-13.50g</td>
<td>29-32mm/27.29g (Rome)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28-31/17.25-21.50g (Pompeians)</td>
</tr>
</tbody>
</table>

The new standard for this coin can be identified by a comparison with the uncial coins of Rome and the Pompeians and the new semuncial coins from Rome, as shown in Table 4.2. The diameter of the Nemausus coins overlaps with both the semuncial and the uncial asses, but more with the former. The weights of the Nemausus coins were closer to the copper semuncial asses from Rome, and they were only slightly less than the ideal weight for bronze semuncial asses: 13.64g. Based on these similarities, the Nemausus mint most likely struck bronze semuncial asses.

Countermarks and the circulation pattern of coins from Nemausus and Lugdunum also indicate that the Nemausus coins were compatible with the reformed coins from Rome and

\(^{138}\) Zehnacker, Richard, and Barrandon 1984, pp. 73-75; and Besombes 2008, pp. 237-238.
Lugdunum. Nemausus coins were often struck with countermarks that were used on coins from Lugdunum and Rome.\textsuperscript{139} Since ancient people were very careful about which coins they struck with a countermark,\textsuperscript{140} the person applying the countermark believed that the Nemausus coins were compatible with the coins from Lugdunum and Rome. Additionally, the bronze coins from Nemausus circulated throughout the western empire alongside the coins from Lugdunum and Rome, including in the legionary camps along the Rhine.\textsuperscript{141} The coins from Nemausus, therefore, were able to be exchanged with and were equivalent to the coins from Lugdunum and Rome following the reform of 23 – 19 B.C. The countermarks and circulation patterns are further evidence that the mint at Nemausus, along with the mints at Rome and Lugdunum, began using the semuncia standard after the reform of 23 – 19 B.C.

To the north, the three mints of Belgic Gaul—the Germanus Indutilli L, the AVAVCIA, and the Bellovaci? mints—acted differently. After the reform, these mints struck a 15-18mm/2-3.5g denomination. Coins of a similar denomination had been produced at Nemausus (15-16mm/2.22g) and at Lugdunum (15mm/3.00g) before 23 – 19 B.C. The other denomination produced by the AVAVCIA mint (13mm/2.36g) was also similar to the earlier 12-14mm/1-1.75g coins produced at Nemausus and Lugdunum. These similarities suggest that the mints in northern Gaul were striking denominations that had been produced before the change to Roman coin use practices, which will be discussed in Section 4.6. Therefore, even though the mints in Nemausus and Lugdunum adjusted their coins’ denominations around the same time as or

\textsuperscript{139} Grant 1946, p. 72; and Werz 2004, pp. 48.
\textsuperscript{140} Howgego 1985, pp. 7-8.
shortly after the reform at Rome, the mints of Belgic Gaul continued to use the earlier Gallic denominations, even after the reform.

4.5.6. *Hispania Citerior/Hispania Tarraconensis*\(^{142}\)

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Fig. 4. 43. Map of Iberian Civic Mints from Julio-Claudian Period (After Ripollès 2005, p. 92).

Eighteen mints in the province of Hispania Tarraconensis struck copper alloy coins after 23 – 19 B.C. Their locations, along with the locations of other Iberian mints, are shown in Fig.

\(^{142}\)As discussed below, the Iberian provinces of Hispania Ulterior and Hispania Citerior were reorganized between 22 and 13 B.C. Since there was no major change to the boundaries of Hispania Citerior, which became Hispania Tarraconensis, this analysis of Tarraconensis’s mints is not affected by the reorganization (Wesch-Klein 2008, p.237).
4.43, which also indicates the reigns during which each mint was active. The modules and weights of the coins from Tarraconensis are recorded in Table App7.3. Two of the major mints, those at Carthago Nova and Lepida-Celsa, had struck bronze coins earlier. During the first century B.C., the mint at Carthago Nova struck coins with denominations (a) 15-17mm/2.75-4.00g and (b) 20-21mm/5.00-6.50g. The mint at Lepida-Celsa had struck denomination (c) 27-29mm/11.00-12.50g. After 23 – 19 B.C., the eighteen mints within the province struck four similar denominations: (a) based on the 15-17mm/2.75-4.00g coins from Carthago Nova, (b) based on the 20-21mm/5.00-6.50g coins from Carthago Nova, (c) based on the 27-29mm/11.00-12.50g coins from Lepida-Celsa, and (d) 31-34mm/20.00-25.00g. A fifth denomination (22-24mm/5.75-9.00g) was struck by some of the mints along the Mediterranean coast.¹⁴³ A few mints struck coins that were larger than denomination (d) of 31-34mm, but this largest denomination was not commonly produced across the province. The widespread use of denominations (a), (b), (c), and (d) throughout the province after 19 B.C. may indicate that the mints were coordinated in some way.

Interestingly, denomination (c) shares a diameter with the new Roman as and a weight with Series Ib from Nemausus, which Section 4.5.5 suggested might be an as on the semuncial standard. Hispania Tarraconensis, therefore, may also have struck coins compatible with the semuncial standard, even before 23 – 19 B.C.

4.5.7. Baetica

Between 22 and 15 B.C., the Cantabrian Wars were fought in the northwestern corner of Iberia, and Augustus appointed a legate to manage the campaign in that region: the provincia

¹⁴³ The mints that produce this denomination are Acci, Carthago Nova, Ilici, Illercaovonia-Dertosa, Tarraco, Lepida-Celsa, Osca, Segobriga, and Ebusus. Lepida-Celsa, Osca, and Segobriga are not coastal.
transduriana. Around 13 B.C., the peninsula was again reorganized into the three imperial provinces. Hispania Citerior became Hispania Tarraconensis, and Hispania Ulterior split into Lusitania and Baetica.\textsuperscript{144} Five mints in the new (or soon-to-be-new) province of Baetica struck after 19 B.C. According to Table App7.4, no denomination pattern developed across the entire province of Baetica, but there were two localized patterns. First, the mint at Colonia Patricia struck five denominations: (a) 16mm/2.64g, (b) 20-21mm/5.12g, (c) 24-25mm/10.03g, (d) 32-33mm/19.44g, and (e) 40-41mm/37.25g. The smallest four denominations paralleled the denominations commonly produced in Hispania Tarraconensis (Section 4.5.6): (a) 15-17mm/2.75-4.00g, (b) 20-21mm/5.00-6.50g, and (d) 31-34mm/20.00-25.00g. The only discrepancy is that the weight of the 32-33mm coins from Colonia Patricia were lighter than the Tarraconensis 31-34mm coins. Furthermore, the Baetican city’s middle denomination (c) 24-25mm/10.03g was slightly larger and heavier than the denomination produced primarily at coastal cities in Hispania Tarraconensis: 22-24mm/5.75-9.00g. Colonia Patricia’s denomination pattern probably resulted from its relatively close proximity to the cities of Tarraconensis whose denominations it shared.

Second, under Tiberius, the mint at Romula issued the same denomination pattern as the coins from the nearby city of Italica. In the second emperor’s reign, the mint at Romula struck four denominations: (a) 20mm/3.52g, (b) 22mm/6.34g, (c) 28-29mm/12.02g, and (d) 33-34mm/23.50g. During the same reign, Italica’s mint struck four denominations: (a) 20mm/3.79g, (b) 22-24mm/6.29g, (c) 29mm/11.81g, and (d) 34-35mm/25.51g. The absolute chronology of both issues is unclear, and both cities probably used a similar number of dies, so it is unclear whether one city imitated the other or if the cities collaborated to use the same denominations.

denominations. Proximity also explains why the denominations were shared by Italica and Romula. Interestingly, the denomination (c) was the same diameter as the Roman as and weighed a little less than the bronze coins of Nemausus Series Ib-III, which have tentatively been designated as a semuncial as. Therefore, it is also possible that denomination (c) was meant to be, or at least to be equivalent to, an as on the semuncial standard.

4.5.8. Lusitania

In Lusitania, the two cities that struck coins after 19 B.C.—Emerita Augusta and Ebora—share two denominations. According to Table App7.5, these two denominations were (a) 26-29mm/10.00-12.00g and (b) 31-34mm/18.50-22.50g. Emerita Augusta’s first three issues of coins were struck between 27 B.C. and 2 B.C. The first issue included only denomination (a) 28-30mm coins weighing 13.50g. The second issue contained three denominations: a small 15mm/2.24g denomination, a medium 21-22mm/6.96g denomination, and the large denomination (a) weighing 14.06g. The third issue included only two denominations: (a) which changed weight from 13.50-14.06g to 10-12g and the new denomination (b). The fourth issue was struck after 2 B.C., and it changed the weights of the mint’s two smallest denominations from the second issue. The small denomination rose from 2.24g to 2.68g, and the middle denomination dropped from 6.96g to 3.5-6.15g where it remained in the mint’s eighth and eleventh issues, both of which were produced during the reign of Tiberius. The new weight standard for denomination (a) in the third issue, the creation of denomination (b) in the third issue, and the new weight standards for the small and medium denominations in the fourth issue all suggest that the mint at Emerita Augusta changed its denomination pattern c. 2 B.C. This

new denomination pattern was most likely semuncial. Denomination (a) shared the module with the Roman as and was slightly lighter than the Nemausus Series Ib-III bronze coins, which are tentatively considered to be semuncial asses.146

Eboracum’s single issue of coins was produced between 12 B.C. and A.D. 14. Since Eboracum only struck one issue of denominations (a) and (b), it is unclear whether Emerita Augusta’s two smaller denominations were local to Emerita Augusta or used throughout Lusitania.

4.5.9. Sicily

In Sicily, three mints struck bronze coins after 19 B.C. According to Table App7.6, they shared two denominations: (a) 16mm/4.25-6.00g and (b) 22mm/8.75-9.75g. Denomination (a) was first struck after 23 – 19 B.C. After c. 20 B.C., the mints at Panormus and Agrigentum increased the weight of denomination (b) from c. 8.75g to c. 9.25g. Late in the reign of Augustus, Sicilian cities countermarked Rome’s new sestertii and dupondii in order to allow them to circulate on the island as part of a common coinage system.147

The countermarks, though, raise the question: why were only sestertii and dupondii countermarked? The Roman orichalcum sestertii (36-42mm/23.56g) and dupondii (26-29mm/11.66g) were larger than both denominations (a) and (b). Denomination (a) was the same diameter as, but slightly heavier than, the Augustan quadrantes from Rome (15-17mm/3.13g) and the Tiberian quadrantes on the semuncial standard from Paestum (16-17mm/4.04g). Denomination (a) may have been an approximation of a quadrans, so Roman quadrantes from the Italian Peninsula were unneeded and were not countermarked. Denomination (b) was several

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146 Cf. Cébrian Sánchez 2006, p. 59 who said this same issue was the first use of the semuncial standard at Emerita Augusta.
147 Macaluso 1987; and Burnett, Amandry, and Ripollès 1992, pp. 165-166. Werz 2004, pp. 48-51 redated these countermarks to late in the reign of Augustus.
millimeters thinner than the Roman as (26-28mm) and several grams lighter than the ideal semuncial bronze coin (13.64g), or the likely semuncial bronze coin from Nemausus Series Ib (12.50g). Therefore, following the scenarios described by either Gresham’s Law or Rolnick and Weber’s Law, Roman asses might not have been able to circulate in Sicily because they were rejected because of their heavy weight. Sicilians, then, only imported the dupondii and sestertii that fit their coinage system. As suggested by the similarity between denomination (a) and the Italian quadrantes, this coinage system may have been compatible with the semuncial standard established at Rome by the reform of 23 – 19 B.C.

4.5.10. Africa Proconsularis

In Africa Proconsularis, fourteen mints struck copper alloy coins after 19 B.C. For the mints of Africa Proconsularis, the editors of *RPC* proposed this denominational pattern:

- (quadrans) 12-13mm/c. 2.00g,
- (semis) 18-22mm/4-6g,
- (as) 22-27mm/7-11g,
- (dupondius) 27-31mm/14-20g,
- (sestertius) 35-38mm/36g.

The editors argued that, because the coins of Leptiminus have the value marks A (i.e. 1 unit), B (i.e. 2 units), and Δ (i.e. 4 units), the bronze coins in Africa Proconsularis were equivalent to the as, dupondius (i.e. 2 asses), and the sestertius (i.e. 4 asses) struck in Rome. Their interpretation has three serious flaws. First, there is no guarantee that the value marks on the coins of Leptiminus counted asses. Just as with the (as) denomination above, the Leptiminus A coin (25-27mm/7.31-9.09g) barely overlaps with the diameter of Rome’s as (26-28mm) and was lighter than the bronze semuncial as (ideal weight of 13.46g or tentative, possible weight of 12.50g from Nemausus Series Ib). It is also uncertain that any other mint counted denominations in the same way as the mint at Leptiminus. Furthermore,

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148 On these Laws, see Appendix 1.
this pattern of five denominations is not the only possible interpretation of the coins’ weights and modules. One could also interpret the coins listed in Table App7.7 as having been produced with seven denominations: (a) 21-24mm/7.00-10.00g, (b) 26-28mm/9.00-12.00g, (c) 28-31mm/12.00-14.50g, (d) 31-33mm/14.00-21.00g, (e) 33-35mm/20.00-27.00g, (f) 35-38mm/23.00-43.00g, and (g) 38-41mm/30.00g or 55.00g.\textsuperscript{150} This pattern does not include the “quadrantes” or the “semisses” of the \textit{RPC} pattern. It splits the \textit{RPC} editors’ (as) and (dupondius) denominations into denominations (a), (b), and (c), and it adds denominations (d), (e), and (g).

There are several reasons for doubting that this seven-denomination system actually existed either. First, no civic mint produced all, or even most of, these denominations, and many mints produced coins smaller than denomination (a). Second, even though the weights are not the most indicative of a denomination, the weights of denominations overlap awkwardly in a way that would lend itself to confusing rather than simplifying transactions. For example, the weights of denominations (e) and (f) overlap for most of the range of (e)’s weights. Finally, there is a rather large weight range for denominations, especially for (f) but also for (d), (e), and (g).

Given that the evidence does not allow us to extrapolate from Leptiminus as the editors of \textit{RPC} would like, and since the data can be interpreted in two conflicting, unsatisfactory ways, it is unlikely that a clear province-wide denomination pattern existed in Africa Proconsularis. Nevertheless, this province’s bronze coins provide a good example of why it is difficult, and perhaps slightly misleading, to try to formulate multi-city denomination patterns in regions that did not widely use value marks. Neither pattern is entirely convincing, but each could have been possible, at least in some cities. While more consideration of the evidence and attempts to find

\textsuperscript{150} This pattern is proposed here as hypothetical and possible. Table App7.7 is organized based on this denomination pattern. As noted below, such a scheme probably did not exist throughout this province.
several localized patterns may be fruitful, it is sufficient to note for the current investigation that neither possible pattern appears to have used the semuncial standard.

4.5.1. Achaean

As mentioned in Section 3.5 on the limited effects of Antony’s fleet coinage on the Achaean civic mints, the mints at Sparta, Corinth, Patras, Dyme, and Athens—every city with data in Table App4.2—struck coins both before and after 23 – 19 B.C. Starting before the 40s B.C., these mints struck two denominations both before and after the reform at Rome: (a) a rare 15-16mm/2.5-4.5g denomination and (b) a very common 18-22mm/7-9g denomination. The absence of change in the coins’ weights or modules suggests that the reform at Rome did not affect coin production decisions in Achaean. This interpretation is supported by the continued production of hemiobols at Aegium, which was also mentioned in Section 3.5. At Aegium, the 30s B.C. issue and the Hadrianic issue of hemiobols were not part of the as-based denominations that the reform might have affected. The continued use of obol-based systems in some Achaean cities can partially explain why the changes to Rome’s bronze coins did not affect the civic mints in this province.

4.5.12. Macedonia

In Macedonia, according to Table App7.8, five mints struck bronze coins after 19 B.C., and they struck four denominations: (a) 14-17mm/3.00-5.00g, (b) 21-23mm/6.00-9.25g, (c) 26-28mm and varied weights, and (d) 30mm and varied weights. As can be seen from the mints at Thessalonica and Philippi, earlier pre-Augustan denominations continued to be produced during
Augustus’s reign. The reform of 23 – 19 B.C., therefore, did not affect the decisions regarding the production of copper alloy coinage in Macedonia.

4.5.13. The Effects of the Reform outside of Rome

To review, not all the mints in the western provinces adopted the semuncial standard after the mint at Rome did. The mints in Belgic Gaul, Africa Proconsularis, Macedonia, and Achaea continued to produce their pre-23 B.C. denominations. Some mints in Baetica followed the semuncial pattern, and others did not. There are, however, some indications that coin production was coordinated within some of these provinces. The mints in Belgic Gaul struck denominations that appear to have been popular before the diffusion of Roman coin use practices. The mints in Hispania Tarraconensis struck coins on a region-specific pattern that was modeled on the earlier denominations of Carthago Nova and Lepida-Celsa. One mint in Baetica issued the denominations of Tarraconensis, and two Baetican cities’ mints chose to strike the same denominations as each other during Tiberius’s reign. In Lusitania, the mint at Ebora produced the same denominations struck by the mint in Emerita Augusta. The mints in Macedonia and Achaea issued denomination patterns specific to their provinces.

All these shared denomination patterns might indicate some coordination among the mints. The imprecise dating of the coins, however, makes it difficult to determine when or if this coordination happened. Furthermore, as Section 3.5 showed for Achaea, some of the denomination patterns had developed before the reign of Augustus. Indeed, some of these patterns could have been centuries-old relics of leagues. For example, the Achaean League cities struck silver hemidrachms on the same standard during the first century B.C., and this standard may have been the result of a collaborative agreement of the third century B.C. (Section
2.3.2).\textsuperscript{151} These denomination patterns deserve further study in the future. For the present purposes, it is sufficient to note that coordination of these western civic mints \textit{might} have started during the Early Empire, but this coordination did not result in an extension of Rome’s infrastructural minting power, which continued to be low.

Finally, the establishment at Rome of the semuncial standard seems to have encouraged other mints to adopt this standard (Fig. 4.44). The mint at Lugdunum struck coins that very closely resembled, in metal content, weight, and module, the copper and \textit{orichalcum} coins from Rome. The mints at Paestum in Italy and Nemausus in southern Gaul continued to strike bronze,

\textsuperscript{151} For more on league coinages, see Mackil 2013, pp. 247-255.
and these coins were most likely on the semuncial standard. Many of the mints in Hispánia Tarraconensis had already used the semuncial standard. In Baetica, the two mints, which struck the same denominations during Tiberius’s reign—Romula and Italica—struck coins compatible with the semuncial standard. The Lusitanian mint in Emerita Augusta, which may have served as a model for the mint in Ebora, struck a coin approximating the semuncial as. Finally, in Sicily, the smallest shared denomination was comparable to the quadrans from the Roman semuncial denomination pattern, and the Sicilian cities countermarked dupondii and sestertii also on this pattern. This widespread use of the semuncial denomination pattern in Italy, southern Gaul, parts of Iberia, and Sicily mirrors where the new copper and orichalcum coins from Rome and Lugdunum circulated. The coin circulation patterns, therefore, likely encouraged the mints in these regions to imitate Rome’s new semuncial standard.

Interestingly, this imitation of the semuncial standard was not confined to coin production, but it extended into another numismatic phenomenon: halving coins. In 1972, T. V. Buttrey assembled the evidence regarding halved coins in Italy, Gaul, and Sicily to argue convincingly that c. 20 B.C. many coins were cut in half as a result of the Augustan copper alloy coinage reform at Rome. According to Buttrey, earlier Roman sextantal and uncial coins, Pompeian uncial coins, and uncial coins from Lugdunum, Vienna, Nemausus, Narbo, and Arausio became dupondii because the semuncial standard was established. Since the as was the most desired and commonly used denomination, the new “dupondii” were cut in half. In addition to the coins in Italy, Gaul, and Sicily, excavations at Emporion and Asturica Augusta in Tarraconensis and Conimbriga in Lusitania show that similar halving of coins occurred around 20 B.C. in Iberia.152 Similar halving appears not to have happened in Arse-Saguntum or Clunia.

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both in Tarraconensis, c. 20 B.C.\textsuperscript{153} Therefore, as a response to the reform of the bronze coins from Rome in 23 – 19 B.C., the people of Italy, Gaul, Sicily, and parts of Iberia cut coins to comply with Rome’s semuncial standard, even if their mints did not change their denomination patterns. It is in these regions that we can speak of a high infrastructural capacity regarding bronze coin production.

4.6. End of Iron Age Coinages in Gaul

In one of these regions—Gaul—the last bronze coins were struck c. 3 B.C. and the last silver coins had been struck a few decades earlier. Southern Gaul had been a province since the beginning of the first century B.C.,\textsuperscript{154} and the rest of the region was conquered during Caesar’s Gallic Wars of the 50s B.C. Before the Romans, coinage had a long tradition in the region. The Greek city of Massilia had issued coinage since the fifth century B.C., and by 180 B.C., Iron Age tribes, who had often been hired as mercenaries, produced gold coins that imitated the coins of the peoples who hired the Celts as mercenaries.\textsuperscript{155} Massilia’s coinage was important throughout Gaul during the second century B.C., but the Iron Age coinages dominated during the first century B.C. During or soon after Caesar’s conquest, Gallic mints produced gold coins that were less pure or that weighed less than their earlier coins. Some silver coins were also produced by peoples who had a history of using silver coins, and struck bronze coins quickly replaced potin coins (i.e. bronze coins with a high tin content). The last silver and gold coins were produced in the 40s and 30s B.C.\textsuperscript{156} After this time, only three mints struck bronze coins. The GERMANVS

\textsuperscript{153} Gurt Esparraguera 1985, pp. 61-62; and Gozalbes Fernández de Palencia 1999, pp. 49-54 and pp. 129-130.
\textsuperscript{154} Anderson 2013, p. 9.
\textsuperscript{156} Nash 1987, pp. 29-37; Haselgrove 1999, pp. 149-162; and Haselgrove 2006, pp. 99-100.
INDVTILLI L bronze coins were struck c. 15-10 B.C., the AVAVCIA coins were struck c. 10 B.C., and the final bronzes of the Bellovaci were struck c. 7 – 3 B.C.157

Several factors explain the end of production of Iron Age gold and silver coinages in Gaul. The gold coinage ceased being produced partly because of the difficulties involved in acquiring bullion. After Caesar’s Gallic Wars, the gold coinage was lighter weight and less pure because mints had less access to gold.158 Caesar had extensively plundered the territory and imposed a yearly tribute of 40 million sestertii (Suet. Jul. 25.1 and 54.2). Furthermore, the gold mines in Gaul were no longer exploited after Caesar’s conquest of Gaul, possibly because the Romans ordered them closed.159

Silver coinage ceased being produced partly because it had been equated to the Roman quinarius. Iron Age silver had often used the same weight as other major coinages in the western Mediterranean Basin. First, the silver coinages had been aligned to the weight of the Rhodian drachm, then the Massilian drachm, and finally, in the first century B.C., the Roman quinarius.160 This denomination had been revived by Caesar in 48/7 B.C. while he was on his way to the Battle of Pharsalus, and it was continued by the mint in Rome during 47 B.C. and subsequent years.161 As with the Iberian denarii, the equivalence among the local and Roman coinages helped ease the Gauls onto the Roman coinage system while the local coinage became redundant. This was particularly true at non-military sites where the quinarius was more common than it was in the military areas.162

158 Nash 1978, p. 22.
159 Cauuet 1999, pp. 39-40 and 68.
160 Gruel 2005, pp. 35-36. Crawford 1985, pp. 182-183 interestingly observed that the mint at Rome often struck quinarii when the Roman army was acting in Gaul.
161 RRC 452 (Caesar) and RRC 454/3 and 455/3 (Tresviri monetales of 47 B.C.).
Even though the equivalence helped the Gauls transition to the Roman coinage system, the quinarius did not frequently appear in Gaul. Table 4.3 lists the silver coins found in Gallic hoards from 100 B.C. until 2 B.C. In these hoards, even if we acknowledge that fewer quinarii than denarii would have been produced, there is a surprisingly low number of quinarii, which served as a link between the Gallic and the Roman coinages. In fact, only the Quiberon hoard (RRCH 517) has more quinarii than any other coin, and this hoard was deposited sometime after 9 – 3 B.C. when denarii and quinarii had already been circulating in Gaul. Furthermore, on archaeological sites, both military and non-military, denarii were always more common than quinarii.\footnote{Wigg 2000, p. 451, fig. 6.} The relative scarcity of the quinarius, therefore, makes the redundancy of Iron Age silver due to its equivalence with the quinarius a less important factor in the end of all Iron Age silver coinage production than has been supposed.

Table 4.3. Hoards of Silver Coins from Gaul (100 – 2 B.C.)

<table>
<thead>
<tr>
<th>Hoard</th>
<th>Location</th>
<th>Closing Date</th>
<th>Number of Denarii</th>
<th>Number of Quinarii</th>
<th>Number of Iron Age Coins</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRCH 216</td>
<td>Cheverny</td>
<td>92 B.C.</td>
<td>3</td>
<td>0</td>
<td>45</td>
</tr>
<tr>
<td>RRCH 290</td>
<td>Bompas</td>
<td>77 B.C.</td>
<td>13</td>
<td>0</td>
<td>600</td>
</tr>
<tr>
<td>RRCH 375</td>
<td>Viverols</td>
<td>46 B.C.</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RRCH 384</td>
<td>Vernon</td>
<td>46/5 B.C.</td>
<td>≈ 1,200</td>
<td>6</td>
<td>≈ 1,200</td>
</tr>
<tr>
<td>RRCH 393</td>
<td>Villette</td>
<td>45 B.C.</td>
<td>340</td>
<td>20</td>
<td>976</td>
</tr>
<tr>
<td>RRCH 409</td>
<td>Lissac</td>
<td>42 B.C.</td>
<td>53</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RRCH 413</td>
<td>Francin</td>
<td>41 B.C.</td>
<td>45</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RRCH 430</td>
<td>Arbanats</td>
<td>39 B.C.</td>
<td>966</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>RRCH 458</td>
<td>Amiens</td>
<td>31 B.C.</td>
<td>117</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>RRCH 459</td>
<td>Beauvoisin</td>
<td>31 B.C.</td>
<td>196</td>
<td>11</td>
<td>40</td>
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<tr>
<td>RRCH 461</td>
<td>Chantenay</td>
<td>31 B.C.</td>
<td>177</td>
<td>2</td>
<td>409</td>
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<tr>
<td>RRCH 471</td>
<td>Mont Beuvray</td>
<td>31 B.C.</td>
<td>33</td>
<td>0</td>
<td>11</td>
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<tr>
<td>RRCH 488</td>
<td>Maillé</td>
<td>19-16 B.C.</td>
<td>444</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RRCH 493</td>
<td>Bourgueil</td>
<td>20/19 B.C.</td>
<td>693</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RRCH 497</td>
<td>Charnatenay</td>
<td>15-13 B.C.</td>
<td>Uncertain Amount</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RRCH 501</td>
<td>Metz</td>
<td>15-13 B.C.</td>
<td>273</td>
<td>0</td>
<td>0</td>
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<tr>
<td>RRCH 516</td>
<td>Hussigny-Godbrange</td>
<td>9-3 B.C.</td>
<td>2</td>
<td>4</td>
<td>164</td>
</tr>
</tbody>
</table>
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<th>Number of Iron Age Coins</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRCH 517</td>
<td>Quiberon</td>
<td>9-3 B.C.</td>
<td>4</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>RRCH 538</td>
<td>Magdalensberg</td>
<td>2 B.C. – A.D. 4?</td>
<td>20</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>RRCH 539</td>
<td>Mesnil-sur-Oger</td>
<td>2 B.C. – A.D. 4?</td>
<td>1,200</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RRCH 540</td>
<td>Moulineaux</td>
<td>2 B.C. – A.D. 4?</td>
<td>54</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Roman gold and bronze coins from hoards RRCH 516, RRCH 517, and RRCH 540 have not been included in this table.

The limited frequency of the quinarius means that we require a stronger explanation for the end of the production of Gallic Iron Age gold and silver coins. The gradual adoption of Roman coinage in the different parts of Gaul provides this stronger explanation. As shown by Table 4.2, Roman denarii and quinarii frequently appeared alone or alongside Gallic coinages in hoards from the 40s and 30s B.C. in southern, central, and northwestern Gaul. In Belgic Gaul, however, Roman coinage only became prevalent once the Roman army established bases along the Rhine around 15 B.C. Roman coins, then, entered the area through the Roman army. Away from the military camps, Roman coins were less prevalent in Belgic Gaul until Tiberius’s reign.

Two factors explain the slower adoption of Roman coinage in Belgic Gaul: (1) coin supply and (2) the changing regimes of value, or concepts of money and coin use. Roman coins were less easily accessible to the people of Belgic Gaul until the Roman camps were placed along the Rhine. Furthermore, the people of Belgic Gaul were still producing coins for their own use. The last Gallic issues of coins were from Belgic Gaul and they ended around 3 B.C. These locally produced coinages were likely sufficient for the needs of the people of Belgic Gaul, so they did not import Roman coins.

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165 Haselgrove 2006, p. 103.
Secondly, the change from the Iron Age regime of value to the Roman regime of value happened later in Belgic Gaul than in Southern Gaul. The concept of “regime of value” understands value “not in economic and monetary terms, but rather through the broadest range of social and cultural links people have to the material world.”\textsuperscript{167} In the Iron Age regime of value, coinage was used primarily in a religious, ceremonial context as dedications, and coins may have been used as part of gift exchange or in the hiring of mercenaries, but rarely as a commercial medium of exchange.\textsuperscript{168} The Roman regime of value involved a trimetallic coinage system that was used as a medium of exchange, included the extensive use of credit, and involved limited ritual deposition of coins.\textsuperscript{169} Given the differences in the regimes of value, the adoption of the Roman regime of value facilitated the adoption of Roman coinage. The Iron Age coinages functioned primarily in a ritual context, and it was more acceptable to adopt the Roman coinage as a medium of exchange than to change the primary use of Iron Age coinages into media of exchange.

The transition to the Roman regime of value seems to have happened earlier in southern, central, and northwestern Gaul because these areas’ peoples had come into earlier and greater contact with the Romans than the people of Belgic Gaul. Once the Roman military fortified the Rhine, the people of Belgic Gaul had greater access to Roman coins and their change to the Roman regime of value was facilitated by greater interaction with the Romans.\textsuperscript{170}

\textsuperscript{167} Gosden 2004, p. 18, followed by Howgego 2013, esp. p. 17.
\textsuperscript{168} Howgego 2013, pp. 26-31.
\textsuperscript{169} Howgego 2013, pp. 31-34.
\textsuperscript{170} Howgego 2013, pp. 36-37.
4.7. The Continuation of Coin Production in Alexandria

On the other side of the empire, the production of coins did not stop in Egypt, over which Octavian became master after the suicides of Antony and Cleopatra. Egypt’s mint was in Alexandria, and its coin production practices changed under the Romans. The mint had struck continuously under the Ptolemies—issuing tetradrachms each year since 155/4 B.C.\(^{171}\) but it struck intermittently under the Julio-Claudians—just as the other major silver mints in the Roman Empire did. Under Augustus, the mint at Alexandria stopped striking silver and struck six series of bronze coins.\(^{172}\) The weights of this bronze coinage decreased throughout the first emperor’s reign. The production of silver tetradrachms resumed in A.D. 20/1 under Tiberius. The reasons for not producing silver coins and for the changes to Alexandria’s bronze coin standards under Augustus will be discussed in this chapter, and the resumption of the production of tetradrachms will be discussed in Section 5.3 of the next chapter.

4.7.1. The Silver Coins

The production of silver coins at Alexandria most likely stopped after Cleopatra’s reign because there was an adequate quantity of coins in circulation or available to be put into circulation.\(^{173}\) The continuous operation of a mint would be a sign that the coin supply needed constant replenishment; but the intermittent operation of a mint, as happened under the Julio-Claudians, would be a sign that the coin supply was adequate but needed periodic replenishment. The intermittent minting of Alexandrian tetradrachms, then, suggests that Egypt had a coin supply sufficient to meet the demands for coin. Indeed, it is likely that the demand for coins declined during Augustus’s reign. After taking control of Egypt, the Romans reduced the tax

\(^{171}\) Mørkholm 1975, pp. 19-23.  
\(^{172}\) RPC I 5001-5074.  
\(^{173}\) Savio 1988, p. 3.
burden—paid in cash and in kind—from earlier Ptolemaic levels and attempted to reduce corruption among officials administering Egypt.\textsuperscript{174} The size of the army and navy also declined during the beginning of the imperial period, so there was less need to strike new coins to maintain soldiers and sailors.\textsuperscript{175} By reducing these factors in the demand for coinage, the Romans made it more likely that the Cleopatran coin supply would remain sufficiently large to meet the demand for coins throughout Augustus’s reign.

To strengthen this interpretation of Alexandria’s pause in minting silver, the other available evidence should suggest that a large number of coins were struck at the end of the Ptolemaic dynasty so that no new coins would need to have been issued under Augustus. To meet this condition, the evidence should indicate one very large issue of coin production or several large issues that cumulatively resulted in a large pool of coins in circulation.

The evidence for Ptolemaic coin production suggests there was one very large issue of tetradrachms as part of a debasement of the Alexandrian tetradrachm and a recoining of the coin supply. In 53/2 B.C., the purity of Alexandrian tetradrachms declined from approximately 90\% elemental silver to approximately 45-50\% elemental silver.\textsuperscript{176} As expected by Gresham’s Law, which states that less pure coins drive the purer coins out of circulation, the coins struck before 53/2 B.C. should have been removed from circulation. This idea is supported by the hoard evidence, which ought to be interpreted with caution because of the few known hoards from the period between c. 60 B.C. until the Neronian debasement of Alexandrian tetradrachms. The

\textsuperscript{174} Bowman 1996, pp. 689-691; and Monson 2012, pp. 249-262.
\textsuperscript{175} Bowman 1996, pp. 686-689.
\textsuperscript{176} Hazzard 1994, pp. 60-62; and Göltzter 2004, pp. 51-52. This discussion of coins’ silver content is in terms of “elemental silver” because that is how the data is reported by Hazzard and Göltzter. Butcher and Ponting 2015, on which other discussions of coins’ silver content is based, reported data in terms of percentages of “silver bullion,” but they were not able to test earlier Hellenistic coins on which my discussion depends. Butcher and Ponting 2005a and 200b reported results in terms of both “elemental silver” and “silver bullion.”
table in Appendix 8 lists the contents of thirteen Egyptian hoards of Alexandrian tetradrachms from this period, and it shows that the coins issued before Ptolemy XII Auletes’s reign (80 – 58 and 55 – 51 B.C.) began to be removed from circulation. Hoards No. 1, 3, and 4, which were all buried during this king’s reign, contained only coins struck during his reign. The earlier coins were most likely not available for hoarders to deposit. Yet the recoinage was not complete. Hoards No. 5 and 6 from Cleopatra’s reign (51 – 30 B.C.) contained coins issued before Ptolemy XII Auletes’s reign.

At the beginning of Cleopatra’s reign, the purity of silver dropped again, this time to 34.0% elemental silver. As a result of this debasement and as expected by Gresham’s Law, the coins of Ptolemy XII Auletes and any remaining coins struck under earlier monarchs were removed from circulation. Hoards from the end of Cleopatra’s reign—hoards No. 7-10—suggest the recoinage was complete before the queen died. Hoards No. 7 and 9 are unable to support or contradict this interpretation because an insufficient number of coins have been identified, but hoards 8 and 10 contained only coins struck during Cleopatra’s reign. The process of striking new coins to replace all the earlier coins removed from circulation would have required a rather large issue. Therefore, the issues struck under Cleopatra were likely large enough to satisfy Egypt’s needs so that additional tetradrachms were not struck during Augustus’s reign. As shown by hoard No. 11, Cleopatra’s tetradrachms continued to circulate in Egypt during Tiberius’s reign.

177 I collected these thirteen hoards from Thompson, Mørkholm, and Kraay 1973 and the Coin Hoards series. On the Neronian debasement, Section 5.9.
178 Butcher and Ponting 2015, pp. 613-614 reported the silver bullion content of two tetradrachms as 31% and 32.1%.
179 Cleopatran bronze coins continued to circulate at least through Augustus’s reign (Noeske 2009, pp. 118-119).
Admittedly, only a few hoards are known from Egypt, so this interpretation is a somewhat speculative model, but it accounts for the available evidence that presents a consistent image. This interpretation suggests that the decision to pause production of silver at the mint in Alexandria was made in Alexandria because it was based on the local coin supply.

4.7.2. The Bronze Coins

Although the Alexandrian mint stopped producing silver under Augustus, it continued to produce bronze coins in six series, and the weight standards for the bronze coins changed. The first series of bronze coins, which was struck between 30 and 28 B.C., continued the bronze denominations of Cleopatra, as shown by the II and M denomination marks on the bronze coins from both rulers’ reigns.\(^{180}\) The second and third series (after 8 B.C. and 3/2 B.C., respectively) also continued these denominations.\(^{181}\) In these series, value marks only appeared on two new, smaller bronze denominations, which were created into order to facilitate transactions involving small change.\(^{182}\) The fourth series, which was struck in 2/1 B.C., was reduced in weight.\(^{183}\) These weights were maintained in the fifth series (c. A.D. 1 – 5) but the coins’ weights were reduced again during the sixth series of A.D. 9 – 12.\(^{184}\) This last series appears to have been the

\(^{180}\) RPC I, 5001-5002. Milne 1927a, p. 135-136; and Burnett, Amandry, and Ripollès 1992, p. 691.
\(^{181}\) RPC I, 5003-5012 (Second Series) and 5013-5018 (Third Series).
\(^{182}\) RPC I, 5009-5010 have the value mark K inscribed on the obverse of these Second Series coins (Milne 1927a, p. 136). RPC I, 5015-5016 have the value mark I inscribed within the name [EBA]TOV on the reverse of these Third Series coins (Burnett, Amandry, and Ripollès 1992, p. 692).
\(^{183}\) RPC I, 5019-5024. Burnett, Amandry, and Ripollès 1992, p. 693 on the date; Göltitzer 2004, p. 65 on the date and the weight; contra Milne 1927a, p. 137 who dated this series to after 8 B.C. based on the appearance of Gaius on the coins, but it must date after Series III which is dated to 3/2 B.C. based on the regnal dates on the coins.
\(^{184}\) RPC I, 5025-5033 (Fifth Series) and 5034-5074 (Sixth Series). Burnett, Amandry, and Ripollès 1992, p. 689; and Göltitzer 2004, p. 65.
largest of the Augustan bronze coin series, and its reduced weight standards continued in use until the reign of Domitian.\textsuperscript{185}

Several factors suggest that the decision to reduce the weight of the Alexandrian bronze coins was made in Alexandria. First, the bronze coins were meant for use only within Egypt. Only one hoard containing Alexandrian bronze coins from the Julio-Claudian period was found outside of Egypt: near the Nile River’s Second Cataract.\textsuperscript{186} This findspot—to the south of the province and far from the sea—is more understandable for a coinage meant for the province of Egypt rather than for a coinage meant for widespread use within the Mediterranean Sea-based Roman Empire. Second, these weight changes were not contemporaneous with any other weight reductions in a major bronze coinage within the empire, so it is unlikely that the weight drop was coordinated with another mint.

4.8. Syrian Coinages

During Augustus’ reign, there were relatively few changes to Syrian coin production decisions. The mint at Antioch briefly increased production of tetradrachms following the Battle of Actium, and the mint continued annual production of coins bearing the posthumous portrait of Philip Philadelphus with a monogram standing for ANT(IOXEΩN) AYT(ONOMΩN), “Of the independent Antiochenes.”\textsuperscript{187} The production of these Philip coins had started in 47/6 B.C. and

\begin{footnotesize}
\begin{itemize}
\item[\textsuperscript{185}] On the relative size of the series, Noeske 2009, pp. 120-121. On the weight standards, Schuman 1952, pp. 216-217; and Göltzer 2004, p. 65.
\item[\textsuperscript{186}] Christiansen 1985, p. 137, hoard A180. For finds of Alexandrian, Augustan bronze coins within Egypt, see Noeske 2009, pp. 118-120.
\item[\textsuperscript{187}] Alternatively, based on the parallel with the Tyche tetradrachms, the legend could be read, ANT(IOXEΩN) AYT(ONOMΩY), “Of the autonomous city of the Antiochenes,” without any real change to the sense of the legend.
\end{itemize}
\end{footnotesize}
continued until 14/3 B.C. Small issues of bronze coins had been struck nearly annually from 64/3 B.C. until 29/8 B.C., and then again in 24/3, 23/2, and 19/8 B.C. During the governorship of P. Quinctilius Varus (7/6 – 5/4 B.C.), Antioch produced tetradrachms bearing Augustus’s portrait for the first time on the obverse. On the reverse, the goddess Tyche was seated and held a palm branch, and the river god Orontes was before her. The obverse legend, ΚΑΙΣΑΡΟΣ ΣΕΒΑΣΤΟΥ, recorded the emperor’s name. The reverse legend, ΕΤΟΥΣ ΖΚ ΝΙΚΗΣ, as well as a monogram of ΥΠΑ with ΙΒ, date the coin to the twenty-sixth year of an era based on the victory at Actium (so 5 B.C.) and during or after Augustus’s twelfth consulship (so in or after 5 B.C.). The letters ANT below the enumeration of the consulship indicate the coins were struck at Antioch. The silver tetradrachm was produced annually from 5 B.C. until 1 B.C./A.D. 1.

Also during Varus’s governorship, the mint at Antioch resumed production of bronze coins in four series. In 7/6 B.C., the mint struck a 21mm coin in the “legate series” which featured a bust of Zeus on the obverse, and the reverse featured the same Tyche image as on the silver coins of 5 B.C. The reverse legend, ΑΝΤΙΟΧΕΩΝ ΕΠΙ ΟΥΑΡΟΥ, recorded that the coins were struck at Antioch while Varus was legate—the letters EK in the right field date the coins to 7/6 B.C. In the same year, the mint began the “civic series.” This series featured the bust of Tyche on the obverse and an image of her standing on the reverse. The reverse legend included the date and ΑΝΤΙΟΧΕΩΝ ΑΥΤΟΝΟΜΟΥ. In the next year of Varus’s legateship, 6/5 B.C.,

\[190\] For the dates of Augustus’s consuls, see Giard 1988a, p. 55-56.
\[191\] RPC I 4150-4152.
\[192\] RPC I 4150-4157.
\[193\] RPC I 4242.
\[194\] RPC I 4243-4244.
only the legate series was struck with the same types and with a new date. In the last year of his legateship, 5/4 B.C., both the legate and civic series were struck, and two new series were also produced: the “SC series” and the “archieratic series.” The SC series featured the portrait of Augustus on the obverse and the letters SC surrounded by a laurel wreath on the reverse. The archieratic series featured the portrait of Augustus and the legend ΚΑΙΣΑΡ ΣΕΒΑΣΤΟΣ APXIEPEI on the obverse. The reverse featured the words APXIEPATIKON ANTIOXΕΙΣ and the date ZK surrounded by a wreath.

Numismatists speak of the change to the tetradrachm’s coin types and the creation of the bronze series as part of “reforms” enacted by Quinctilius Varus, so it is necessary to review the evidence for this reform and clarify which aspects of coin production might have been reformed. Michael Grant supported the idea of a reform by saying that Velleius Paterculus’s account shows the legate’s “financial acumen;” but Velleius actually stated that Varus began his governorship poor and left Syria rich (2.117). Varus may have had financial acumen, but Vellieus’s passage suggests it helped Varus and did not necessarily relate to a “financial reorganization of the area.” Even though Christopher Howgego does not explicitly support the idea of a “reform,” he does adduce coins from Varus’s tenure as governor in Africa to make the claim that Varus in particular was interested in financial matters. Bronze coins from Hadrumetum and Achulla, from 8 – 7 B.C. when Varus was proconsul of Africa Proconsularis,

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195 RPC I 4245.
196 RPC I 4252-4254.
197 RPC I 4246-4249.
198 RPC I 4251.
199 Grant 1946, p. 376; and Burnett, Amandry, and Ripollès 1992, pp. 606-607.
200 Grant 1946, p. 376.
201 The interpretation of Velleius is my own and in Howgego 1982, p. 7. The “financial reorganization of the area” is quoted from Burnett, Amandry, and Ripollès 1992, p. 607.
did indeed have portraits of Varus on the reverse.\textsuperscript{202} These civic mints also struck coins with the portraits of the next proconsul L. Volusius Saturninus,\textsuperscript{203} and the mints in this province routinely labeled their coins with the names and titles of civic or provincial magistrates.\textsuperscript{204} The presence of Varus on the African coins, then, provides better evidence for an African habit of noting officials rather than for Varus’s particular interest in financial matters.

The “reform” idea, then, relies solely on the numismatic evidence from Antioch. According to numismatists, the “reform” involved the revival of silver and bronze coin production. The silver coins were revived after a period of seven years without new tetradrachms, and the bronze coins after a period of eleven years without new bronze coins. Since intermittent minting was normal at Julio-Claudian mints across the empire, especially for the production of bronze coins, these gaps in the Antiochene mint’s activity are not significant enough to be called a “reform.” What about other changes to the coins themselves? The new tetradrachms had the same fineness (67% silver bullion) as and a slightly lower weight standard (15.05g) than the last Posthumous Philip tetradrachms of 13 B.C. (68% silver bullion and 15.25g).\textsuperscript{205} The new bronze series used the same denominations as the earlier bronze coins of the 60s – 20s B.C.\textsuperscript{206} The coins struck under Varus did feature new coin types for those denominations. The “reform” idea, therefore, only refers to new coin types and a slightly lower weight standard for the tetradrachm.

Was Varus responsible for this limited “reform”? The coin legends of the legate series of bronze coins have been used to suggest that he was. The legends on the other bronze series produced at the mint, however, indicate the Antiochenes were responsible for coin production.

\textsuperscript{202} RPC I 775-776 (Hadrumetum) and 798 (Achulla).
\textsuperscript{203} RPC I 778 (Hadrumetum) and 800-801 (Achulla).
\textsuperscript{204} Burnett, Amandry, and Ripollès 1992, pp. 186-209.
\textsuperscript{205} Butcher and Ponting 2015, p. 603.
\textsuperscript{206} Burnett, Amandry, and Ripollès 1992, pp. 618-621.
decisions. As argued in Section 1.5.2, the legends do not indicate who made these coin production decisions. They only indicate that the decisions were made within Antioch. A comparison of minting decisions for other coinages in the empire with those made at Antioch confirms this interpretation. No other mints used the same coin types in the same year, and no other silver coinage’s weight standard was slightly reduced. The coin production decisions for the so-called reform of Varus, therefore, were made in Antioch, and it is impossible to be more specific about who made the decisions. Nevertheless, the “reform” does suggest that the Roman state had a low minting power over the mint at Antioch because the portrait of Augustus was now the obverse type of the Antiochene tetradrachm.

After the “reform,” all four bronze coin series continued to be struck during Augustus’s reign, and they were produced annually from 7/6 B.C. until 2/1 B.C. with more irregular and less precisely dated minting from A.D. 4/5 until annual production resumed in A.D. 11/12. The mint in Antioch struck tetradrachms with Tyche on the reverse in A.D. 6, 12, and 14.

To the south, the mint at Tyre continued to frequently strike shekels and half-shekels with the obverse portrait of Hercules/Melqart and the reverse image of an eagle perched on a prow. Tyre’s mint produced shekels and half-shekels in 6/5 – 4/3 B.C., 2/1 B.C – A.D. 7/8, 8/9 – 14/5, and half-shekels in A.D. 8/9, 11/2, and 14/15. Since Tyre’s types are also unparalleled at other mints, this Syrian mint continued to operate independently. The Roman state, therefore, appears not to have exercised any power over the mint of Tyre.

207 RPC I 4242-4259 (from 7/6 to 2/1 BC), and 4260-4264 (from 4/5 to 11).
208 RPC I 4158-4160.
4.9. Roman Infrastructural Minting Power in the Augustan Period (27 B.C. – A.D. 14)

Augustus’s creation of the Principate has been interpreted as a moment of tremendous change. Indeed, Sir Ronald Syme famously treated the period in a monograph entitled *The Roman Revolution*. Numismatists have similarly been tempted by the allure of Augustus. The denarius system of the imperial period has been called the “Augustan System.”\(^{210}\) Michael Grant also argued that Augustus created a world coinage.\(^{211}\) Michael Crawford even proposed that both the spread of a single monetary system and the concentration of the minting authority into the hands of a single individual were complete by the end of Augustus’s reign.\(^{212}\)

Yet this chapter shows that, numismatically, the reign of Augustus contains no such revolution. The denarius mints continued to have a high infrastructural capacity in Italy, Sicily, Iberia, Africa, and Achaea (Fig. 4.45). The denarius did become the major coinage in most of Gaul, and it would soon become the only silver coinage there. The Roman state, therefore, expanded its infrastructural minting reach into Gaul, not the rest of the empire as Grant and Crawford argued.

In fact, most of the empire’s relatively closed circulating areas continued to exist and the Roman state did not exercise much more power over the mints within these areas. The cistophori continued to be used throughout Asia. The mints in Pergamum and Ephesus used coin types that shed earlier traits of the Attalid cistophori and increasingly focused on honoring the emperor. The Roman state continued to have a low-medium infrastructural capacity in Asia. Similarly, the mint in Antioch continued to provide tetradrachms for northern Syria. Its coin

\(^{210}\) E.g. Grant 1954, p. 50 and Harl 1996, p. 73.
\(^{211}\) Grant 1946 and 1951.
\(^{212}\) Crawford 1985, esp. pp. vii and 256. This dissertation serves as a correction to at least the latter arguments.
types indicated a slightly higher Roman infrastructural capacity than in the civil war period because it began to show the portrait of Augustus c. 5 B.C.

Fig. 4.45. Map showing Circulating Areas and Coordination in A.D. 14

To the south, the mint at Tyre continued to show no signs of being under the power of the Roman state. The recently conquered mint at Alexandria made autonomous decisions about bronze coin production based on local conditions, but its coin types began to show Roman influences. The obverse type featuring the portrait of Augustus acknowledged the emperor’s control of Egypt, and the Parthian arch reverse type employed a Roman coin production
technique: depicting buildings on coins. The eastern mints of the empire continued to operate independently to produce coins for their own circulation areas, and their products showed a low, or low-medium, infrastructural capacity of the Roman state regarding silver coin production.

Similarly, the reform of the copper alloy coinage at Rome showed the Roman state’s various degrees of minting power over the provinces’ civic mints. The mints in Italy, Sicily, southern Gaul, and some parts of Iberia began, or continued, to produce bronze coins on the semuncial standard after the mint at Rome adopted its new weight and metal standard system. People in these same areas cut earlier uncial bronze coins in half in recognition of the new semuncial standard. The Roman state had a higher infrastructural capacity regarding bronze coins for these areas than it did for the areas that did not use the semuncial standard: some cities in Iberia, Africa, Achaea, Macedonia, Asia, Syria, and Egypt.

The reign of Augustus, therefore, represents a slight progression along the path from low to high infrastructural capacity. Yet there were three innovative episodes of coordination that could be seen as precedents for or hesitant forays into coordinated activity affecting large geographic areas. First, the production of the CA Coinage was coordinated across provincial lines and somehow related to the reform of bronze coinage at Rome. This reform itself also affected some mints in several provinces. With the advent of monarchy, provincial boundaries no longer limited the extent to which mints could be coordinated. Thirdly, the production of aurei and denarii at Uncertain Gallic Mint 1 and Uncertain Gallic Mint 2 was coordinated on a large scale. Not a few, but over a dozen types were chosen for both mints; and the mints were still able to decide on other types autonomously as they expanded upon the shared types. These two qualities—coordination across provincial boundaries and coordination with some
autonomy—were characteristic of the empire-wide system of coordinated mints established under the later Julio-Claudian emperors, especially Caligula and Nero.
5.1. Introduction

During the reigns of the last Julio-Claudian emperors, there were few changes to the political system, but important changes to coin production within the Roman Empire did happen. The production of denarii, Antiochene tetradrachms, and cistophori continued as normal. The mint at Alexandria resumed production of silver tetradrachms, and the mint at Caesarea of Cappadocia continued to produce drachms after this kingdom came under Roman control. Similarly, the expansion of the empire’s territory must be considered in the West. The additions of the Mauretanian kingdom and the province of Britannia to the empire resulted in the end of silver coin production in these regions. There were, though, two major changes that ultimately led to the creation of the High Empire’s empire-wide system of coordinated mints. First, during the reign of Caligula, the western civic mints ceased producing bronze coins and closed entirely. Second, during the reign of Nero, the silver content in the empire’s major silver coinages changed, as will be argued, in order to maintain the exchange rates among the various gold and silver coinages of the empire. These changes, as well as some continuity, at mints throughout the empire will be discussed in chronological order.

5.2. The Continuation of Silver Production in Cappadocia

In A.D. 17, Archelaus, king of Cappadocia, died and his kingdom became a Roman province (Tac. Ann. 2.42). The mint in the capital of the kingdom, Caesarea, remained open after Tiberius annexed the kingdom. The mint had produced silver drachms for the Cappadocian kings since the fourth century B.C., and the silver content of these drachms increased from
approximately 50% silver bullion under earlier kings to approximately 70% during the reign of either Archelaus or Tiberius, as shown by Table 5.1. This table records the average percent of silver bullion in the Cappadocian drachms analyzed by Kevin Butcher and Matthew Ponting, the average weight of these coins, and the amount of silver by weight of each of these coins. Only the reigns for which data is available are included in Table 5.1.

<table>
<thead>
<tr>
<th>Date</th>
<th>Average % Silver Bullion</th>
<th>Weight of coin (g)</th>
<th>Weight of silver (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ariarathes X (42 – 36 B.C.)</td>
<td>49%</td>
<td>3.70g</td>
<td>1.81g</td>
</tr>
<tr>
<td>Tiberius (A.D. 17-37)</td>
<td>71%</td>
<td>3.75g</td>
<td>2.66g</td>
</tr>
<tr>
<td>Caligula (A.D. 37-41)</td>
<td>74%</td>
<td>3.75g</td>
<td>2.59g</td>
</tr>
<tr>
<td>Claudius (c. A.D. 43-48) - didrachms</td>
<td>71%</td>
<td>7.50g</td>
<td>5.36g</td>
</tr>
<tr>
<td>Nero, (c. A.D. 58-65)</td>
<td>72% - didrachm</td>
<td>7.50g</td>
<td>5.40g</td>
</tr>
<tr>
<td></td>
<td>59% - drachm</td>
<td>3.55g</td>
<td>2.38g</td>
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</tbody>
</table>

The increase in the Cappadocian drachm’s silver content could affect the circulating medium in several different ways, according to the scenarios outlined in Appendix 1, “Gresham’s Law, Legal Tender Laws, and Other Scenarios.” First, according to Gresham’s Law, if a legal tender law existed, the less pure coins could have prevented the purer coins from circulating. Secondly, a legal tender law could have demonetized the older, less pure coins and required the use of the new, purer coins. Alternatively, according to Rolnick and Weber’s Law, without a legal tender law, the inhabitants of Cappadocia, as part of their commercial transactions, could have decided whether to use the less pure, older coins or the purer, new coins.

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1 Data from Butcher and Ponting 2015, pp. 507-519. Similar data are obtained when figures are based on the average elemental silver content of two drachms minted under the Cappadocian king Ariarathes X (Butcher and Ponting 1997, p. 170); the average elemental silver content of Cappadocian drachms from the Roman period as calculated from Butler and Ponting 2009, p. 68 (but excluding one coin of Caligula which had skewed results because of fire damage (Butcher and Ponting 2009, p. 70)); and the average weights of Cappadocian coins as calculated from Wroth 1899, p. 43 and the online database of the collection of the American Numismatic Society (http://numismatics.org/search/) (Ariarathes X), Walker 1976, p. 37 (Tiberius) and Burnett, Amandry, and Ripollès 1992, p. 554-557 (Caligula and Nero).
Unfortunately, even though legal tender laws are known from the Roman Empire, it is not clear whether the Kingdom of Cappadocia had legal tender laws so their presence cannot clarify which of these scenarios happened.

The hoarding pattern in Cappadocia, though, can narrow down the options and it also suggests that a recoinage happened along with the change in the drachms’ silver content. The table in Appendix 9 lists the contents of thirteen hoards buried in Cappadocia between c. 100 B.C. and A.D. 300. Hoards No. 1-8 contained coins that had been struck under Archelaus and his predecessors, so the drachms of the Cappadocian kings circulated until at least c. 15/14 B.C. when hoard No. 8 was buried. Even though some of the Cappadocian coins had been in circulation for nearly 150 years when they were buried in 55 B.C. (hoard No. 7), the drachms of Archelaus’s predecessors were not found in hoards No. 9-13. These five hoards contain coins struck under Archelaus, Tiberius, and the subsequent Roman emperors. This change in hoarding patterns, therefore, suggests that a recoinage happened at the same time that the silver bullion standard was raised from 50% to 71% silver bullion.

The recoinage and new silver standard should be able to be dated by the earliest coins in hoards No. 9-13 and by the appearance of a new coin type—the latter of these is another indication of a recoinage—but this hoard evidence is difficult to interpret. Hoards No. 9 and 10 both began with coins struck under Tiberius, so they indicate that the recoinage would have happened during Tiberius’s reign. Hoard No. 12, though, suggests otherwise. It contained nine coins struck under Archelaus, eleven coins struck under Tiberius, and coins struck under each subsequent emperor. The nine Archelean coins and eleven Tiberian coins together comprised

\(^2\) This set of hoards was compiled from Thompson, Mørkholm, and Kraay 1973, the Coin Hoards series, and lists of coin hoards with Cappadocian drachms in Burnett, Amandry, and Ripollès 1992, p. 550; Bland 1996, p. 65; and Abramzon 2003, pp. 245-247.

\(^3\) The earliest coin in hoard No. 11 was from the reign of Nero and the earliest coin in hoard No. 13 was unclear.
about 10% of all Cappadocian drachms in Hoard No. 12, and separately were similar in number to the coins struck under other emperors in the hoard. 4 These amounts and the presence of coins from each emperor suggest that the Archelean and Tiberian coins were not residual and may have been part of the normal circulating medium. The evidence of two hoards (No. 9 and 10 which suggest a Tiberian recoinage), therefore, must be weighed against the evidence of one hoard (No. 12 which suggests an Archelean coinage). Given the low number of hoards involved, it is best to cautiously suspect that the silver standard was raised and drachms began to be recoined under Archelaus, because the earliest coins in the hoards were from his reign, but to know that this is only speculation.

As with the hoards, a drastic change in coin types also fails to help date the recoinage of Cappadocian drachms because the Cappadocian drachm’s types changed significantly under both Archelaus and Tiberius. Prior to Archelaus’s reign, the Cappadocian coins featured a portrait of the king on the obverse and the image of Athena holding a spear, shield, and Nike on the reverse (Fig. 5.1). 5 During Archelaus’s reign, the drachms continued to show the king’s portrait on the obverse, but the reverse featured a club surrounded by the legend ΒΑΣΙΛΕΩΣ ΑΡΧΕΛΑΟΥ ΦΙΛΟΠΑΤΡΙΔΟΣ ΚΤΙΣΤΟΥ (Fig. 5.2). 6 The types changed again under Tiberius. In the first issue under Tiberius, the obverse showed the emperor’s portrait, and the reverse first featured an image of the local Mt. Argaeus with a statue atop (Fig. 5.3). 7 Later issues continued to change coin types, in imitation of the habit at the mint in Rome. The coin types for either ruler would have aided the recoinage, so the change cannot be dated more precisely than the reign of either ruler.

4 Baldwin 1927.
5 Wroth 1899, pp. 31-43.
6 Wroth 1899, pp. 44.
7 Wroth 1899, p. 46; RPC I 3620.
Because of its uncertain date, the recoinage offers no clues as to the degree to which the Roman state’s power affected the mint at Caesarea of Cappadocia. The subsequent coin types, on the other hand, suggest that Roman power influenced the choice of coin types. After the first issue of Mt. Argaeus drachms, the legends changed from Greek to Latin in the second issue of A.D. 33 – 34. The coin types then featured portraits of Tiberius and the deified Augustus on the obverse and portraits of Drusus and Germanicus on the reverse. The mint was honoring the imperial household of the dynasty that now controlled Cappadocia. The state’s infrastructural minting capacity in Cappadocia was low.

5.3. The Resumed Production of Alexandrian Tetradrachms

To the south, according to Section 4.7.1, no silver coins were struck at Alexandria during the reign of Augustus because a large issue of tetradrachms was struck as part of a Cleopatran recoinage. Instead, only bronze coins were produced in Egypt during the entirety of Augustus’s reign and the beginning of Tiberius’s reign. The mint issued three bronze denominations in A.D.

\footnote{RPC I 3621-3623.}
17/8, two denominations in 18/9, and one in 19/20.\(^9\) This meant that no silver had been struck in Egypt for nearly fifty years when the mint in Alexandria resumed production of tetradrachms in A.D. 20/1. The new tetradrachms, which were issued in A.D. 20/1, 27/8, and 31/2 – 36/7, featured a portrait of Tiberius on the obverse and a portrait of the deified Augustus on the reverse.\(^10\) They were issued again in order to produce more coins for use within Egypt.

Coin hoards suggest that the number of Cleopatran tetradrachms in circulation declined and needed to be augmented by a large issue of Tiberian tetradrachms. If the relative number of coins in the hoards listed in Appendix 8 is an indication of the relative number of coins struck in each issue,\(^11\) a large number of tetradrachms were produced under Tiberius. Two hoards show that the Tiberian tetradrachms were produced on a larger scale than other issues. In hoard No. 11, Tiberius’s tetradrachms were nearly twice as numerous as Cleopatra’s earlier issues. This hoard, especially, indicates that there was a need for more coins in Egypt during Tiberius’s reign. In hoard No. 13, most of the nearly 160 tetradrachms were minted under Tiberius while only some were struck under Claudius and Nero.\(^12\) During Tiberius’s reign, then, the Alexandrian mint most likely struck a relatively large number of tetradrachms. This interpretation, though, is based on the consistent picture presented by a few hoards and should be accepted with a certain amount of caution.

\(^9\) RPC I 5075-5087.
\(^10\) RPC I 5089-5105. For a comparison of the coin types on, and the messages of, Alexandrian tetradrachms and the denarii, see O’Neill 2011, pp. 156-158.
\(^11\) Section 1.6.4.
\(^12\) Christiansen 1985, p. 93.
Table 5.2. Comparison of Elemental Silver Content in Alexandrian Tetradrachms and Contemporaneous Denarii in the Julio-Claudian Period

<table>
<thead>
<tr>
<th>Date</th>
<th>Alexandrian Tetradrachm</th>
<th>Contemporaneous Denarius</th>
<th>Ratio of tetradrachm silver weight to denarius silver weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average % Elemental Silver</td>
<td>Weight of coin (g)</td>
<td>Weight of silver (g)</td>
</tr>
<tr>
<td>Ptolemy XII Auletes, 80-53/2 B.C.</td>
<td>89.4%</td>
<td>13.52g</td>
<td>11.91g</td>
</tr>
<tr>
<td>Ptolemy XII Auletes, 53/2–51 B.C.</td>
<td>46.3%</td>
<td>14.31g</td>
<td>6.63g</td>
</tr>
<tr>
<td>Cleopatra VII</td>
<td>34.0%</td>
<td>12.66g</td>
<td>4.30g</td>
</tr>
<tr>
<td>Tiberius</td>
<td>25.3%</td>
<td>12.88g</td>
<td>3.25g</td>
</tr>
<tr>
<td>Claudius</td>
<td>20.2%</td>
<td>12.77g</td>
<td>2.58g</td>
</tr>
<tr>
<td>Nero, A.D. 56/7</td>
<td>23.0%</td>
<td>13.12g</td>
<td>3.02g</td>
</tr>
<tr>
<td>Nero, A.D. 58/9</td>
<td>19.0%</td>
<td>13.09g</td>
<td>2.49g</td>
</tr>
<tr>
<td>Nero, A.D. 63/4 (Pre-reform in Rome)</td>
<td>17.9%</td>
<td>12.99g</td>
<td>2.33g</td>
</tr>
<tr>
<td>Nero, A.D. 63/4 (Post-reform in Rome)</td>
<td>17.9%</td>
<td>12.99g</td>
<td>2.33g</td>
</tr>
</tbody>
</table>

The average silver content of the Alexandrian tetradrachms is calculated from Hazzard and Brown 1984, p. 239 (Ptolemy XII Auletes, 80-53/2 B.C.), Gölitzer 2004, p. 32 (Ptolemy XII Auletes, 53/2-51 B.C. and Cleopatra VII) and p. 50 (Cleopatra VII), and Butcher and Ponting 2005a, p. 124 (Tiberius-Nero), and similar results for the Julio-Claudians were obtained by Gölitzer 2004 whose results are summarized on p. 58. The average silver content of denarii is calculated from Herrmann 2000, p. 167 (50s B.C.) and pp. 167-169 (40s B.C.), Butcher and Ponting 2005b, pp. 175-178 (Tiberius-Nero). The data from Hermann 2000 (marked with *) are probably slight overestimates because they were obtained though XRF (Cowell and Ponting 2000, p. 51, who compared the results of X-ray fluorescence (XRF) obtained by Hermann and Prohl with the results of Atomic Absorption Spectrophotometry (AAS) for issues of Roman coins from the third century B.C.). The overestimates are probably only a few percentage points high because the silver content was likely above 90% based on earlier and later coins analyzed by AAS (Hermann 2000, pp. 174-175 and Butcher and Ponting 2005b, pp. 176-177). This possible overestimation has been slightly controlled for by using the lower of the two values given for each coin in Hermann 2000, p. 167. The average weight of Alexandrian tetradrachms is calculated from Walker 1976, p. 141 (Ptolemy XII Auletes, 80-53/2 B.C.), Gölitzer 2004, p. 32 (Ptolemy XII Auletes, 53/2-51 B.C. and Cleopatra VII) and p. 50 (Cleopatra VII), Milne 1933, p. 2-7 (Tiberius-Nero). The average weight of denarii is from Walker 1976, p. 18 (Augustus-Claudius) and Mattingly 1923, pp. 200-214; Roberston 1962, pp. 108-116; and Giard 1988b, pp. 118-119 and 141-145 (Nero). The “Ptolemy XII Auletes, 80-53/2 B.C.” tetradrachms and the “Ptolemy XII Auletes, 53/52-51 B.C.” tetradrachms are compared to denarii struck at Rome in the 50s B.C. The “Cleopatra VII” tetradrachms are compared to denarii struck at Rome in the 40s B.C. The “Nero, A.D. 63/4 (Pre-reform in Rome)” tetradrachms are compared to the denarii struck at Lugdunum between A.D. 62 and 64. The “Nero, A.D. 63/4 (Post-reform in Rome)” tetradrachms are compared to the denarii struck at Rome from MacDowall group 3b because Alexandrian tetradrachms’ metal content changed to 18% silver in A.D. 63/4 and remained at that level until the end of Nero’s reign (Gölitzer 2004, p. 58).
This large Tiberian issue was most likely part of another, at least partial recoinage. Table 5.2 records the elemental silver content of Egyptian tetradrachms, and it shows that the silver content of the tetradrachm dropped from 34.0% under Cleopatra to 25.3% under Tiberius. As noted in Section 1.6.5, and as shown in the previous section, a change in a coinage’s silver standard can be part of a recoinage. Additionally, the chemical analyses performed by Butcher and Ponting indicate that some Cleopatran tetradrachms were recycled into some of the new Tiberian tetradrachms. The large quantity of tetradrachms from the Tiberian partial recoinage was most likely necessary in order to increase the available coin supply in Egypt, which had dwindled during the fifty years that tetradrachms had not been produced. The response to the provincial coin supply suggests that the decision to change the tetradrachm’s silver content was made by an official located in and with power over Egypt. Additionally, no other mint changed the silver standard for its coinage at this time, so there is additional reason to believe the decision was made in Egypt.

Along with the silver content, the exchange rate between the Alexandrian tetradrachm and the denarius also changed during the reign of Tiberius. Under Augustus, papyrological evidence indicates that the exchange rate equated 1 Alexandrian tetradrachm and 1.25 denarii.

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14 Hazzard 1994, pp. 60-62; and Göltzer 2004, pp. 51-52. This discussion of Alexandrian coins’ silver content is in terms of “elemental silver” because that is how the data is reported by Hazzard and Göltzer. Butcher and Ponting 2015, on which other discussions of coins’ silver content is based, reported data in terms of percentages of “silver bullion,” but they were not able to test earlier Hellenistic coins on which this section depends. Butcher and Ponting 2005a and 200b reported results in terms of both “elemental silver” and “silver bullion,” so the data from these articles is used here for the Julio-Claudian period. Butcher and Ponting 2015, pp. 613-618 similarly report the silver bullion content of two of Cleopatra’s tetradrachms at 31% and 32.1% and argued (based on their analysis of nine tetradrachm’s and Göltzer 2004, pp. 14-15 and 32’s analysis of five tetradrachms) that the Tiberian tetradrachms had a silver bullion standard of approximately 25%.


As suggested by Table 5.2, this is related to the debasement of the tetradrachm under Cleopatra that lowered the ratio of the amount of elemental silver in the coins from 1.82 to 1.07, a little less than the actual exchange rate. Under Tiberius, papyrological evidence shows that the exchange rate now equated 1 Alexandrian tetradrachm to 1 denarius.\textsuperscript{17} As suggested by Table 5.2, this is related to a slight debasement of the tetradrachm under Tiberius that lowered the ratio of silver from 1.07 to 0.88, a little less than the new exchange rate. During subsequent reigns, the amount of silver in the Alexandrian tetradrachm fluctuated, most likely because of difficulties in obtaining silver to mint coins in Egypt.\textsuperscript{18} Despite these fluctuations, the Julio-Claudian coins were still equivalent to the coins of Cleopatra with which they circulated,\textsuperscript{19} and the ratio of silver remained close to slightly less than 1:1 so the exchange rate did not change.

\textbf{5.4. Continued Production at the Empire’s Major Mints}

\textit{5.4.1. Tiberius (A.D. 14 – 37)}

Coin production at the other major Tiberian mints—Nemausus, Lugdunum, Rome, Antioch, and Tyre—continued much as it had during Augustus’s reign. As the coin types show, the mints were not coordinated but the choice to honor the emperor indicates that the Roman state’s power over the mints was low. Early in Tiberius’s reign, the mint at Nemausus finished striking the last series of coins featuring the portraits of Augustus and Agrippa on the obverse,

\textsuperscript{17} Mitthof 2009, esp. pp. 201-207.
\textsuperscript{18} In his survey of metal sources exploited in antiquity, Craddock 2008, p. 96 said that gold was the only metal obtained from Egypt.
\textsuperscript{19} Hazzard 1994, pp. 62-63. It is unclear whether the Cleopatran tetradrachms circulated at a premium, but they did not disappear from circulation in accordance with Gresham’s Law. The continued use of Cleopatran tetradrachms may be related to the absence of legal tender laws (for which no evidence is available in Tiberian Egypt) or to Rolnick and Weber’s Law. For more on Gresham’s Law and Rolnick and Weber’s Law, see Appendix 1.
and a crocodile chained to a palm tree on the reverse. Then, the mint ceased production. The mint at Lugdunum continued to issue denarii and aurei with the portrait of Tiberius on the obverse and an image of Tiberius driving a triumphal four-horse chariot on the reverse. These coins were issued for the first two years of Tiberius’s reign. In the first five years of Tiberius’s reign, the mint at Lugdunum struck aurei featuring the portrait of Tiberius on the obverse and a portrait of a deified Augustus on the reverse. Later in the reign, the mint intermittently struck aurei, aurei quinarii, and denarii. The aurei quinarii used their usual types of a portrait of the emperor on the obverse and an image of Victory sitting on a globe on the reverse. The aurei and denarii featured a portrait of the emperor on the obverse and the image of a woman sitting on a chair and holding a spear in one hand and an ear of grain in the other hand. The reverse legend reads PONTIF MAXIM.

The mint at Rome operated in three distinct periods: (1) A.D. 15 – 16, (2) c. 18 – 23, and (3) 34 – 37. Asses were issued in the first period; asses, dupondii, and sestertii in the second period; and sestertii and asses in the third period. These coins contained a variety of types: one featuring a woman sitting on a stool and holding a patera and scepter; two with shields decorated with a portrait and the label CLEMENTIAE or MODERATIONIS; several honoring Tiberius himself, Drusus, Livia, Divus Augustus, the goddess Salus, the goddess

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20 RIC I² Aug. 159-161=RPC I 525.
21 RIC I² 1-4.
22 RIC I² 5-6; Sutherland 1987a.
23 RIC I² 5-22.
25 RIC I² 33-36.
26 RIC I² 38-40. Sutherland 1938 dated the coins to c. A.D. 16-22, but their legend contains IMP VIII to record Tiberius’s eighth imperatorial acclamation, which happened in A.D. 18 (Sutherland 1938, p. 130).
27 RIC I² 42, 45.
28 RIC I² 44 and 57.
29 RIC I² 50-51.
Justitia,\textsuperscript{32}\, the goddess Pietas,\textsuperscript{33}\, and Tiberius’s aid to the earthquake-striken province of Asia;\textsuperscript{34}\, a type showing Victory with a shield,\textsuperscript{35}\, another with a domed temple;\textsuperscript{36}\, a type featuring an altar labeled with the legend PROVIDENT;\textsuperscript{37}\, one with the letters SC within a corona civica;\textsuperscript{38}\, another featuring an empty quadriga;\textsuperscript{39}\, one illustrating the Temple of Concord;\textsuperscript{40}\, another with a globe and rudder;\textsuperscript{41}\, and a final type featuring a caduceus.\textsuperscript{42}

In Syria, the production of coinage was sporadic at Antioch but very regular at Tyre. At Antioch, tetradrachms featuring the reverse portrait of a deified Augustus were struck at some point between A.D. 14 and 35.\textsuperscript{43}\, In A.D. 35/6, the reverse type returned to the image of Tyche holding a palm branch and sitting on a rock before the river god Orontes.\textsuperscript{44}\, There were also infrequent issues of bronze coins from the mint at Antioch.\, In A.D. 14/5 and 33/4, there was an issue of the legate series of bronze coins, and an issue of the SC series of bronze coins was struck in A.D. 31/2.\textsuperscript{45}\, Nearby, the mint at Tyre continued to strike shekels and half-shekels featuring the god Hercules/Melqart on the obverse and an eagle on the reverse. This production was

\begin{footnotes}
\footnote{R\textsuperscript{IC} I\textsuperscript{2} 49, 56, 62-63, and 68-69.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 47.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 46.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 43.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 48. On the earthquake of A.D. 17 in Asia, Strabo 13.4.8, Plin. \textit{NH} 2.86, and Tac. \textit{Ann.} 2.47.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 77-78. Sutherland 1941, pp. 105-112.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 74-76. Sutherland 1941, pp. 105-112.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 80-81. Sutherland 1941, pp. 111-112.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 79. Sutherland 1941, pp. 105-112.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 54, 60, and 66.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 55, 61, and 67.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 52, 58, and 64.} \footnote{R\textsuperscript{IC} I\textsuperscript{2} 53, 58, and 65.} \footnote{RPC I 4161.} \footnote{RPC I 4162.} \footnote{RPC I 4270-4275. For a description of the legate and SC series of coins, see Section 4.8.} 
\end{footnotes}
usually annual, but there are no known specimens of Tyrian coins from many years in the late 20s and early 30s A.D.\textsuperscript{46}

At all these major mints, the same coin type was not used at more than one mint during Tiberius’s reign, and there was no change to the coin’s metal or weight standards. Based on the lack of coordination among the mints, the coin production decisions at these mints seem to have been made within each mint throughout Tiberius’s reign. Despite this lack of coordination, every mint except Tyre used coin types that honored the emperor and his family. These choices attest to the Roman state’s low infrastructural minting capacity in these regions.

\textit{5.4.2. Caligula (A.D. 37 – 41)}

During Caligula’s short reign, the major mints were either active at the beginning and end of the reign or their coins cannot be dated. The mint at Lugdunum struck a series of aurei, aurei quinarii, and denarii in A.D. 37 – 38 at the beginning of the reign, and these celebrated Augustus and Caligula’s parents: Agrippina the Elder and Germanicus. Another series of aurei, aurei quinarii, and denarii with the same types were issued in A.D. 40 – 41 at the end of the reign.\textsuperscript{47} At Rome, a small issue of aurei and denarii featuring a portrait of Divus Augustus flanked by two stars was produced at the beginning of the reign.\textsuperscript{48} This was the only issue of gold and silver coins struck at Rome after 12 B.C. and before Nero’s reign. The mint in Rome began regularly producing gold and silver coins again under Nero, and this will be discussed in Section 5.9. The Gaian mint in Rome also issued sestertii, dupondii, asses, and quadrantes at the beginning of the

\textsuperscript{46} RPC I 4655-4666, 4655A-B, 4661A, and 4662A (shekel) and RPC I 4688-4695, Supp 4688A-B, 4691A, 4692A, and 4693A (half-shekel).

\textsuperscript{47} RIC I\textsuperscript{2} 3-20 (beginning) and 21-31 (end). Szaivert 1984’s dates for aurei and denarii for Caligula’s reign are generally rejected for the reasons given in Metcalf 1988b, which reviewed the book.

\textsuperscript{48} RIC I\textsuperscript{2} 1-2. Metcalf 1989, pp. 52-58.
reign in A.D. 37 – 38 and at the end of the reign in A.D. 39 – 41.\textsuperscript{49} The mint of Antioch issued tetradrachms celebrating Caligula’s parents in A.D. 37 – 38/9.\textsuperscript{50} Nearby, the mint of Tyre’s annual production of shekels, which used the Hercules/Melqart obverse type and eagle reverse type, continued throughout the entire reign.\textsuperscript{51} In Alexandria, only a single denomination was issued: a bronze coin with a diameter of 10mm from A.D. 38/9.\textsuperscript{52} It showed the emperor’s radiate portrait on the obverse and a crescent on the reverse.\textsuperscript{53} Finally, the single issue of drachms struck at Caesarea in Cappadocia cannot be firmly dated within Caligula’s brief reign.\textsuperscript{54} These drachms featured the portrait of Caligula on the obverse, and a lituus and simpulum on the reverse. Again, the same coin types were not used at multiple mints in the same year, so the choice of coin types continued to be made within each mint. The choices of types honoring the emperor and his parents again showed the low infrastructural minting power of the Roman state.

5.4.3. \textit{Claudius (A.D. 41 – 54)}

The major mints again struck intermittently during the reign of Claudius. In A.D. 41/2, an issue of aurei quinarii from Lugdunum used the types of Victory and a globe, which were the usual types for this denomination.\textsuperscript{55} Most of the denarii and aurei struck at Lugdunum from Claudius’s reign used the same six types: one featuring the goddess Constantia Augusti, another showing a triumphal arch for Claudius’s victory in Germany, a third showing a \textit{corona civica} around the phrase \textit{EX SC OB CIVES SERVATOS}, a fourth featuring the goddess Pax using a

\textsuperscript{49} \textit{RIC I} \textsuperscript{2} 32-38 (beginning) and 39-54 (end).
\textsuperscript{50} \textit{RPC I} 4163-4168.
\textsuperscript{51} \textit{RPC I} 4667-4669 and Supp 4669A (shekel), and \textit{RPC I} 4696-4698 (half-shekel).
\textsuperscript{52} \textit{RPC I} 5106. Savio 1988, pp. 9-19; and Burnett, Amandry, and Ripollès 1992, pp. 698-699.
\textsuperscript{53} O’Neill 2011, p. 166 asserts that this coin’s radiate portrait is the first implication in Egypt that a living emperor was deified.
\textsuperscript{54} \textit{RPC I} 3624 = \textit{RIC I} \textsuperscript{2} 63.
\textsuperscript{55} \textit{RIC I} \textsuperscript{2} 17-18.
caduceus to point towards a snake, and two types honoring the Praetorian Guard for helping
Claudius obtain the throne. Coins with these types were struck in A.D. 41/2, 43/4, 44/5, 46/7,
49/50, 50/1, and 51/2. In A.D. 46/7, the architrave on the arch celebrating the German victory
changed so that it now celebrated a British victory. There were also two sets of undated coins
celebrating members of Claudius’s family. The aurei and denarii honoring his parents Antonia
and Drusus could have been issued at any time during Claudius’s reign. The coins honoring
Agrippina the Younger and Nero would only have been issued between the adoption of Nero in
A.D. 50 and the death of Claudius in A.D. 54. Finally, the mint at Lugdunum struck a small
issue of bronze coins in A.D. 41 that featured Claudius’s portrait on the obverse and an image of
the Altar of the Three Gauls on the reverse.

The bronze coins from Rome can be separated into two chronological groups based on
the presence of PP in the coins’ legends. The sestertii, dupondii, and asses without PP in their
legend can be dated to A.D. 41 before Claudius accepted the title Pater Patriae, “Father of the
Fatherland.” The coins of the same denominations with PP were all issued after A.D. 41, but
they cannot be more precisely dated. The coins are unable to be dated because they tend to
refer to Claudius’s family members—Antonia, Drusus, Agrippina the Elder, Germanicus, Divus
Augustus, Agrippina the Younger, or Nero—rather than a specific event. Claudius’s marriage to

56 RIC I² 2-16 and 19-64.
57 RIC I² 30, 33, and 34.
59 RIC I² 75-83.
60 RIC I² 1.
61 RIC I² 84-101.
attempted to date coins based on the finds from Roman military forts along the Rhine.
Agrippina the Younger and the adoption of Nero date the coins featuring these imperial family members to after A.D. 50.\textsuperscript{63}

In the East, the major mints’ coins also featured the members of the imperial family, but they also continued to have a local significance. The mint at Ephesus began producing cistophori again. One cistophorus, dated by Claudius’s tribunician year to A.D. 50/1, featured a portrait of Claudius on the obverse and a portrait of Agrippina the Younger on the reverse.\textsuperscript{64} Two other coins were from between A.D. 50 and 54: (1) a cistophorus with jugate portraits of Claudius and Agrippina the Younger on the obverse, and the statue of the Artemis of Ephesus on the reverse; and (2) a cistophorus with a portrait of Nero on the obverse, and on the reverse, a wreath circling a shield inscribed COS DES PRINC IVVENT.\textsuperscript{65} Since the two final types of cistophori shared some obverse dies, we know they were issued contemporaneously, but their precise date is unknown.\textsuperscript{66} The obverses both had a bare-headed portrait of Claudius, and the reverses were either (1) an depiction of the Temple of Rome and Augustus at Pergamum or (2) a depiction of the Temple of Artemis at Ephesus.\textsuperscript{67}

A little further to the east, the mint in Caesarea of Cappadocia also honored the imperial family and used types relevant primarily to eastern Asia Minor. Between A.D. 43 and 48, the mint struck a new denomination—didrachms—featuring a portrait of Claudius, Messalina, or Drusus on the obverse. Reverse images related to the imperial family: Claudius driving a quadriga with the legend DE BRITANNIS, the \textit{corona civica}; and the children Octavia, Britannicus, and Antonia; and an image of a triumphal arch with the inscription DE GERMANIS

\textsuperscript{63} \textit{RIC} I \textsuperscript{2} 103 and 107-108. On the marriage, Tac. \textit{Hist}. 9.25.
\textsuperscript{64} \textit{RIC} I \textsuperscript{2} 117 = \textit{RPC} I 2223.
\textsuperscript{65} \textit{RIC} I \textsuperscript{2} 119 and 121 = \textit{RPC} I 2224-2225.
\textsuperscript{66} Fischer 1967, p. 49 n. 61; and Burnett, Amandry, Ripollès 1992, p. 379.
\textsuperscript{67} \textit{RIC} I \textsuperscript{2} 118 and 120 = \textit{RPC} I 2221-2222.
Additionally, after A.D. 43, the mint honored Claudius’s brother Germanicus with both a didrachm and a drachm, which used the same types. On the obverse, there were a portrait of Germanicus and a legend referring to his second consulship. The reverse featured an image of Germanicus crowning the Armenian king Artaxias.

In Syria, the mint at Antioch struck much more intermittently than the mint at Tyre. Legate and SC series bronze coins were issued from the mint at Antioch in A.D. 41/2, 47/8, and 48 – 54. At the end of Claudius’s reign, between A.D. 50 and 54, the mint at Antioch produced tetradrachms and didrachms. The tetradrachms featured a portrait of Claudius on the obverse and a portrait of Nero on the reverse. There were two varieties of didrachms. One had the portrait of Agrippina the Younger on the obverse and a portrait of Nero on the reverse. The other had a portrait of Nero on the obverse and a depiction of a simpulum and lituus on the reverse. In Tyre, the mint struck a shekel, a half-shekel, or both a shekel and half-shekel in each year except A.D. 53/4. The Tyrian coins continued to feature a bust of Hercules/Melqart on the obverse and an image of an eagle on the reverse.

Finally, the mint at Alexandria struck tetradrachms, didrachms, and drachms referring to the imperial family and bronze coins with types often focused on Egypt. Between A.D. 41 and 46, the Alexandrian mint issued tetradrachms featuring reverse images of either Messalina or Antonia. In A.D. 42/3, the mint produced a didrachm with a reverse type showing crossed cornucopiae and the busts of three children—Britannicus, Claudia Octavia, and Claudia.

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68 RIC I² 122-126 = RPC I 3625-3628.
70 RPC I 4276-4280. For a description of the legate and SC bronze coins, see Section 4.8.
71 RPC I 4169-4171.
72 RPC I 4170.
73 RPC I 4171.
74 RPC I 4670-4677, I Supp 4669A-B, 4672A (shekel) and RPC I 4699-4703, I Supp 4701A, 4702A, and 4703A (half-shekel).
Antonia—and it struck a drachm with the bust of Sarapis on the reverse. Between A.D. 41 and 47, many of the bronze coin types referred to Egypt or were animals. For example, the crocodile, hippopotamus, and six ears of wheat types referred to Egypt; and the butting bull, ibis, and frog types represented other animals. Many of the same coin types were used again on bronze between A.D. 49/50 and 53/4, but there were a few new types. For example, the clasped hands, hands holding grain ears and poppies, and the bundle of ears of wheat accompanied by a winged caduceus were all new types for the bronze coins.

During Claudius’s reign, just as during the two earlier reigns of Tiberius and Caligula, the same coin types were not clearly used at two or more mints in the same year. Similar coin types were used in the same general period, but because of the imprecise dating, they cannot provide secure evidence for contemporaneous, coordinated production. The coin types from Claudius’s reign, like those from the reigns of Augustus, Tiberius, and Caligula, indicate the Roman state’s low infrastructural minting power over the major silver mints. Their types consistently honored the emperor and his family, and they often made topical and timely references to the emperor’s wars, his marriage to Agrippina the Younger, and the adoption of Nero.

5.5. Creation of New Silver Denominations

As noted in the previous section, during the 40s and 50s A.D., three major silver mints added new denominations to their coinage systems. The mint in Alexandria added a didrachm and drachm in A.D. 42/3. The mint in Cappadocia added a didrachm between A.D. 46 and 48 and a hemidrachm, a 24-as piece, and a 12-as piece between A.D. 58 and 60. The mint at

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75 For all Alexandrian bronze between A.D. 41 – 47, RPC I 5119-5130, 5137-5144, 5148-5161, 5167-5173.
76 For all Alexandrian bronze between A.D. 49/50 – 53/4, RPC I 5174-5199. O’Neill 2011, pp. 173-179 discusses the fertility theme of many coin types and the mint’s focus on the imperial family.
Antioch added a didrachm between A.D. 50 and 54 and revived the drachm in A.D. 54?/55. The lack of contemporaneous action suggests that the new denominations were uncoordinated and responded to the needs of each region’s inhabitants.

5.5.1. Alexandria

The reasons for the introduction of these new silver denominations further support the idea that the decision to create these new denominations was made without coordination or direct control from Rome. The mint in Alexandria was the only mint to provide coinage for Egypt during the Julio-Claudian period, and it had struck only a few bronze denominations and a silver tetradrachm before the addition of the drachm and didrachm in A.D. 42/3. The new smaller units were issued at a time when Egypt had not received much new small change for a long time. Six series of bronze coins had been struck under Augustus, and a few issues were made under subsequent emperors. Under Tiberius, bronze coins were only struck in A.D. 17/8, 18/9, and 19/20. In A.D. 20/1, the mint began to focus on producing tetradrachms. Under Caligula, a small bronze issue was struck in A.D. 38/9. If the relative size of issues can be estimated from the relative number of coins from those issues in hoards, the Tiberian and Gaian issues of bronze were small. They are not even represented in the eleven known, documented hoards of bronze coins. In A.D. 42/3, Egypt most likely needed to add small change to the circulating medium. The mint did so by striking more bronze coinage and two new silver denominations—the didrachm and the drachm—that were smaller than the routinely produced tetradrachm. The mint

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77 RPC I 5001-5074 (Augustan issues). Milne 1927a; and Gölitzer 2004, pp. 64-66.
78 RPC I 5075-5087.
80 On the estimation of the size of issues based on hoards, Section 1.6.4.
81 For a table compiling the relative numbers of bronze coins from known Egyptian hoards, see Christiansen 1985, p. 86.
struck several denominations of bronze coins between A.D. 41 and 47, and it produced the new silver didrachm and drachms.\textsuperscript{82} Based on the survival of Claudian bronze coins in hoards, this was a moderate issue to help replenish the supply of small change. A.D. 42/3 was the only year that drachms were produced. The didrachm was struck again in A.D. 56/7 and A.D. 57/8.\textsuperscript{83} These two new silver denominations were introduced to solve an Egyptian problem: a lack of small change in the province’s coin supply.

This explanation for the new denominations applies only to the production of the new coins, and it does not necessarily mean that the new small change denominations were readily accepted and used. An analogy with the one-dollar coin struck by the mint of the United States of America illustrates this point well. In 2005, the United States Congress passed a law directing the mint to issue one-dollar coins featuring portraits of the nation’s presidents and bullion coins featuring the portraits of First Spouses. The first reason mentioned by Congress to explain this new coin issue was: “There are sectors of the United States economy, including public transportation, parking meters, vending machines, and low-dollar value transactions, in which the use of a $1 coin is both useful and desirable for keeping costs and prices down.”\textsuperscript{84} Congress wanted to facilitate trade and maintain low prices, but the coin was not widely used. Despite taking steps to encourage demand for the $1 coin (except ceasing to produce the $1 banknote), the public’s demand for it was very low. In 2013, the Federal Reserve Bank, which manages coin inventory and places freshly minted coins into circulation, had enough $1 coins on hand to

\textsuperscript{82} RPC I 5119-5130, 5137-5144, 5148-5161, 5167-5173 (bronze) and RPC I 5135 (didiachm) and 5136 (drachm).

\textsuperscript{83} RPC I 5211 (A.D. 56/7) and 5220 (A.D. 57/8).

meet demand for forty years. In this case, as was most likely the case in Julio-Claudian Egypt, the new coins were issued in order to facilitate trade, but this does not necessarily mean that they were commonly used in commerce.

5.5.2. Caesarea in Cappadocia

During the reigns of Claudius and Nero, the mint at Caesarea in Cappadocia added several new denominations, only two of which continued to be produced later. The mint had produced mainly drachms and a few hemidrachms under Archelaus, the last Cappadocian king. The mint produced only one denomination after Tiberius acquired the province in A.D. 17: the drachm. Between A.D. 43 and 48, the mint first issued a didrachm. In A.D. 48, the mint resumed production of bronze coins, which had not been issued since Archelaus’s reign. Then, between A.D. 58 and 60, the mint issued several silver denominations: a didrachm, a 24-as piece, a drachm, a 12-as piece, and a hemidrachm. Only the drachm, didrachm, and hemidrachm were produced again under Nero or later emperors.

The new denominations created a wide range of denominations with which to make payments. In Claudius’s reign, the mint struck a silver denomination worth twice the typical drachm and four denominations of bronze coins worth less than the drachm. The additional Neronian denominations were also meant to widen the range of denominations, even though the relationship between the drachm-based coins—the didrachm, the drachm, and the hemidrachm—

86 RPC I 3601-3608.
87 RPC I 3620-3624. On Tiberius’s acquisition of the province, Tac. Ann. 2.42.
88 RPC I 3625-3629.
89 RPC I 3609-3619 (Archelaus) and 3655-3658 (A.D. 48).
90 RPC I 3631-3646.
91 RPC I 3647-3653 (Nero).
and the as-based coins—the 24-as piece and the 12-as piece—is unclear. These new ranges of
denominations were meant to facilitate trade with both large and small coins. Cappadocia had
been limited in this regard since it had relied primarily on a single denomination: the drachm.

Nor was the desire for more denominations limited to just the mint in Caesarea; other
Cappadocian cities thought there was a need for a broader set of coins and began striking coins.
During Nero’s reign, two other Cappadocian mints—Hierapolis and Tyana—also struck bronze
coins to further facilitate trade. In A.D. 55, Hierapolis struck a 22mm/6.06g bronze coin
featuring the portrait of Nero on the obverse and a mountain on the reverse. In A.D. 66, Tyana
struck two denominations: (1) a 23mm/10.89g coin and (2) a 19mm coin. Both featured Nero’s
portrait on the obverse and the image of the seated goddess Tyche, possibly with a river god
below her chair. Significantly, these were the first mints outside Caesarea to issue coins in
Cappadocia. The new denominations, then, were attempts to help trade and exchange within the
province where a limited range of denominations had prevailed for decades.

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92 The didrachms weighed 7.36g (*RPC I* 3631-3634), the drachms 3.48g (*RPC I* 3637-3642), and the
hemidrachms 1.67g (*RPC I* 3644-3646). These are 2, 1, and 0.5 times the weight of the drachm,
respectively. The 24-as coins weigh 5.25g (*RPC I* 3635-3636), and the 12-as coins 2.50g (*RPC I* 3643).
These are 1.5 and 0.75 times the weight of the drachm, respectively. The elemental silver content of a 24-
as or 12-as coin is 77% (Butcher and Ponting 2015, pp. 514-515 who do not specify which denomination
the coin was). The silver bullion content of Neronian didrachms was 72% and drachms was 59%
(*RPC I* 3661). Even though the weights of the coins fit a nice 2 (dindrachm),
1.5 (24-as), 1 (drachm), 0.75 (12-as), and 0.5 (hemidrachm) pattern, the alloys among the coins were
different, so the exact relationship among the coins is unclear. While coin denominations produced at the
same mint may have different silver contents (cf. Burnett 2000, pp. 107-108 on the early denarius coinage
and its greater purity than the victoriate also produced at Rome; Stahl 2000, pp. 82-83 on the early
fifteenth century Venetian mint and its denominations of different purities), normally, the largest
denomination has the highest silver content and the smallest denomination has the lowest silver content.
This would not have been the case in Cappadocia, further confusing the relationship between the coins.
93 *RIC I* 3661.
94 *RIC I* 3659-3660.
5.5.3. Antioch

The mint at Antioch introduced a new denomination—a didrachm—and revived the drachm at the end of Claudius’s reign or the beginning of Nero’s reign. The mint had been northern Syria’s major mint for tetradrachms for centuries, it had produced drachms during the Seleucid period, and it also produced a large bronze coinage under the Julio-Claudians. In fact, the mint at Antioch had been one of a few mints that produced the largest bronze denomination circulating in Syria: the 25-28mm denomination. This denomination was part of the SC series of bronzes, the Augustan archieratic series, and, starting with Tiberius, the legate series of bronzes. One of these series, the SC bronzes, circulated throughout northern Syria. The mint at Antioch, then, was the major mint responsible for providing some of the largest denominations of coins circulating in northern Syria. Against this backdrop, the mint introduced the new didrachm and revived the drachm. In A.D. 50 – 54, the mint struck a silver coin featuring a lituus, simpulum, and the legend ΔΙΔΡΑΧΜΟΝ on the reverse. Both the legend and the number of priestly implements indicate that the coin was worth two drachms. Possibly also at the end of Claudius’s reign, but certainly by the end of A.D. 55, the mint issued a drachm. Even though the value of the drachm was not identified by its coin types or legend, the drachm had been issued occasionally under the Seleucids so it would not have been so unfamiliar to need a

96 Burnett, Amandry, Ripollès 1992, p. 624. The other cities that struck this denomination were Seleucia (RPC I 4330), Apamea (RPC I 4376), Berytus (RPC I 4543 and 4545-4546), and Ptolemais (RPC I 4749-4750). Only the mints at Berytus and Ptolemais struck this denomination more than once, but not nearly as often as the mint at Antioch which struck this denomination frequently and in large numbers.
97 For a description of these series, see Section 4.8.
99 RPC I 4171.
value mark. The mint struck both denominations again in A.D. 56/7 and the drachm in A.D. 62/3.

The new smaller denominations produced at Antioch were meant to facilitate trade within Syria. The didrachm and the drachm fit into Antioch’s denomination scheme as smaller denominations than the tetradrachm, which had been the focus of the mint’s silver production. The coins, therefore, functioned somewhere between the small change of the bronze coins and the large transaction denomination of the silver tetradrachm. The mint at Antioch was well positioned to provide these intermediate denominations. The mint had produced larger denomination small change for the whole province in the past—in the form of the SC coinage and the Seleucid drachm. The new didrachm and revived drachm, then, are best seen as attempts to facilitate trade and exchange through the production of two smaller silver denominations.

The mints in Alexandria, Caesarea of Cappadocia, and Antioch therefore created new denominations, or revived old Hellenistic denominations, in order to facilitate trade within their respective provinces. The decentralized nature of these decisions is emphasized by the fact that the Egyptian, Cappadocian, and Syrian coinages were regional and not compatible. Alexandrian silver coins only circulated within Egypt, Caesarean silver only within Cappadocia, and Antiochene silver only within northern Syria. The new denominations, then, fit into the existing provincial system and only affected the provinces in which they circulated—if the

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100 RPC I 4172-4173. On the Seleucid drachm, Houghton 2013, pp. 235-238.
101 RPC I 4176-4179 (A.D. 56/7) and 4187 (A.D. 62/3).
102 Lo Cascio 1981 argued that the state was intimately involved in making sure that the coin supply was adequate and that the coins’ metal content conformed to supposedly frequently changing prices of metals, but his argument (especially the second part) is overstated because of his reliance on Walker 1976. Howgego 1990b, pp. 21-24 described instances when it is clear that the government took care to make sure the coin supply was adequate, in part to make sure that taxes would be paid. Contra Crawford 1970 who argued that the state struck and used coin to pay its expenses related to the military and that it was not interested in economic factors or uses of coin.
denomination was even accepted and used. The new denominations’ goal of facilitating trade within each province in response to regional needs, the circulation of the new denominations only within the area near the mints, and the lack of synchronous action mean that the decisions to issue new silver denominations were made by officials at multiple mints.

5.6. End of Civic Bronze Coinages in the West

During the reign of Caligula, the production of bronze coins by civic mints in the West—those in Italy, Sicily, Gaul, Iberia, and Africa—came to an end. The number of civic mints in the western half of the empire declined during the Julio-Claudian period, as shown by Table 5.3 which records how many civic mints struck coins in each region during this period. The mint of Lugdunum is excluded because of its role as a major mint for gold and silver coins. The only civic mint to possibly have struck coins during the reign of Claudius was on the island of Ebusus (also known as Ibiza), which had its own denomination pattern. The table demonstrates that the number of civic mints declined under Tiberius and civic coin production ceased under Caligula.

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104 On its denomination pattern, Table App7.3. On the dates of the Ebusan coins, Burnett, Amandry, and Ripollès 1992, pp. 144.
105 Ripollès 2005, p. 93; Burnett 2005, pp. 177-178; Burnett 2011, p. 11; and Amandry 2013, p. 395 discuss possible reasons for why these mints closed. Ripollès favors a political explanation. Burnett argues for a cultural explanation in which the people of the western provinces wanted their coins to resemble (or be) Roman coins as much as possible. Amandry seems more sympathetic to Burnett’s idea but favors the idea that, with an increase in the number of coins coming from Rome, the people of the western provinces thought it was better to use Roman bronze coins than to strike their own. Given the brief nature of these comments, further detailed study is necessary to better understand the end of western civic minting.
Table 5.3. Number of Civic Mints Striking per Reign, by Region¹⁰⁶

<table>
<thead>
<tr>
<th>Emperor</th>
<th>Italy</th>
<th>Sicily</th>
<th>Gaul¹⁰⁷</th>
<th>Iberia</th>
<th>Africa Proconsularis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Augustus</td>
<td>0</td>
<td>7</td>
<td>4</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td>Tiberius</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Caligula</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Claudius</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Nero</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

While the number of civic mints in the western provinces declined, the mint at Rome gradually became the only mint to provide these provinces with bronze coinage. The coins and denominations of coins produced at Rome were so widely accepted that, during Claudius’s reign, people in the western provinces created a large number of imitations of the coins produced in Rome. Forgeries and imitations of official bronze coins had been made in the western provinces before Claudius’s reign; but in his reign, an epidemic of forging bronze coins developed.¹⁰⁸ Claudian coins produced in Rome were imitated on a large scale in order to compensate for the lack of small change within the empire, and the forgeries circulated widely.¹⁰⁹ For example, in Britain and Iberia, about 20% of Claudian bronze coins were imitations.¹¹⁰ Once new Neronian coins from the mints in Rome and Lugdunum appeared in circulation, the Claudian forgeries were no longer tolerated and were quickly discarded.¹¹¹

The closure of the western civic mints and the forging of Claudian coins suggest a gradual shift towards the direct provision of bronze from the mints in Rome and Lugdunum.

This change can be shown by the qualitative graph in Chart 5.1. As argued in Section 4.5, during

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¹⁰⁶ Data based on Burnett, Amandry, and Ripollès 1992, p. 17 and pp.147-156; and Ripollès 2010, p. 15.
¹⁰⁷ The number of mints in this column is based on Nash 1987, pp. 34-36 and Haselgrove 1999, pp. 163-164, and it also includes the mint in Nemausus.
¹⁰⁸ Boon 1988, p. 116 for the use of the word “epidemic” to describe the Claudian imitations and pp. 118-124 for the Claudian imitations.
the reign of Augustus, the mints in Italy, southern Gaul, Iberia, and Sicily were influenced by the Roman state because most of them produced coins on the semuncial standard, like the reformed coins produced at Rome. Gradually, the mints in these regions and Africa closed, and the new coins for these regions came from the mints of the Roman state: those in Rome and Lugdunum. These mints, however, were unable to satisfy the demand for small change during the reign of Claudius so a large number of coins were forged. These forgeries imitated the denominations and the types of coins from Rome, so Rome’s infrastructural capacity over coin production for Iberia, Gaul, Britain, and Italy was medium-high. In the reign of Nero, a large number of bronze coins were produced by the mints in Rome and Lugdunum, and the imitations were discarded. At that point, the Roman state had a high infrastructural capacity regarding bronze coins in Iberia, Gaul, Sicily, and Africa Proconsularis. The Roman state’s direct provision of bronze coins for the western provinces was part of the High Empire’s minting system. From the reign of Caligula until the end of the third century A.D., only the mint at Rome (and briefly that in Lugdunum) produced copper asses, semisses, and quadrantes as well as orichalcum dupondii and sestertii for the western half of the empire, and civic mints produced bronze coins for the eastern provinces.\footnote{On the end of bronze coin production in the East during the third century A.D., Crawford 1975, p. 569.}
5.7. End of the Production of Silver Coinage in Numidia and Mauretania

After bronze coins were no longer produced at civic mints in the West, the production of silver coins in the new western provinces in Numidia, Mauretania, and Britain also ended. In Africa, silver and bronze coins had been produced under Juba I (r. c. 60 – 46 B.C.).\textsuperscript{113} This silver coinage was issued with the same weight and size as the Roman denarius so that they would be equivalent to each other.\textsuperscript{114} In 25 B.C., Augustus appointed Juba II king over Mauretania and Numidia.\textsuperscript{115} Juba II and his successor Ptolemy did not maintain the equivalence between the African silver coins and the Roman denarii. Under Juba II, who reigned until A.D. 23, the weight of the silver began its gradual decline in purity and weight from 2.94-4.20g and

\textsuperscript{113} Alexandropoulos 2007, p. 173-174.
\textsuperscript{114} Burnett 1987, pp. 176-177. Juba I’s coins circulated as denarii outside of Africa (e.g. the hoards \textit{RRCH} 465 = \textit{CH} 10, 186 and Sidiropoulos 2011 in Achaea).
\textsuperscript{115} Whittaker 1996, p. 592.
90.5% silver under Juba I to 1.52-2.55g under Ptolemy.\textsuperscript{116} As a result of this debasement, between A.D. 17 and 38, only coins minted under Juba II and Ptolemy circulated within the kingdom, as shown by hoards No. 4-7 in Table 5.4. This table lists fourteen coin hoards from Numidia and Mauretania and the number of coins from these hoards that were struck under the African kings or at Roman mints. In A.D. 40, Caligula ordered Ptolemy of Mauretania to be executed and revolts broke out in Mauretania.\textsuperscript{117} The revolts were quelled and the kingdom was split into two provinces—Mauretania Caesariensis and Mauretania Tingitana—by Claudius in A.D. 44.\textsuperscript{118} The production of silver coins in Numidia and Mauretania ceased with the death of Ptolemy of Mauretania.

<table>
<thead>
<tr>
<th>Citation</th>
<th>Closure Date</th>
<th>Numidian and Mauretanian coins before Juba II (Including coins of Juba I)</th>
<th>Coins of Juba II</th>
<th>Coins of Ptolemy of Mauretania</th>
<th>Roman Denarii, Quinarii, and Antoniniani</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RRCH 395</td>
<td>44 B.C.</td>
<td>0</td>
<td>0</td>
<td>944 denarii, 5 quinarii</td>
</tr>
<tr>
<td>2</td>
<td>RRCH 544</td>
<td>c. 2 B.C.-4 A.D.</td>
<td>0</td>
<td>0</td>
<td>2 denarii</td>
</tr>
<tr>
<td>3</td>
<td>Salama and Besombes 2002</td>
<td>c. 2 B.C.-4 A.D.</td>
<td>0</td>
<td>0</td>
<td>66 denarii</td>
</tr>
<tr>
<td>4</td>
<td>IGCH 2307</td>
<td>AD 17-18</td>
<td>0</td>
<td>4000 AR, 1 AE</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>IGCH 2308</td>
<td>c. AD 18</td>
<td>0</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>CH I, 115</td>
<td>c. AD 35</td>
<td>0</td>
<td>10+</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>IGCH 2309</td>
<td>AD 38</td>
<td>0</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>8</td>
<td>CH VI, 98</td>
<td>AD 122</td>
<td>0</td>
<td>0</td>
<td>105 denarii</td>
</tr>
<tr>
<td>9</td>
<td>CH VI, 139</td>
<td>AD 255</td>
<td>0</td>
<td>0</td>
<td>2 denarii, 495 Antonin.</td>
</tr>
</tbody>
</table>

\textsuperscript{116} Müller 1862, p. 184. Alexandropoulos 2007, p. 217 and p. 236 recorded that the purity declined but does not provide the amount of silver in the coins of Ptolemy or through what type of analysis these data were obtained.

\textsuperscript{117} Malloch 2004 with relevant citations of ancient sources.

\textsuperscript{118} Whittaker 1996, p. 598.
Table 5.4. Hoards from Numidia and Mauretania, 50 B.C. – A.D. 300

<table>
<thead>
<tr>
<th>Citation</th>
<th>Closure Date</th>
<th>Numidian and Mauretanian coins before Juba II (Including coins of Juba I)</th>
<th>Coins of Juba II</th>
<th>Coins of Ptolemy of Mauretania</th>
<th>Roman Denarii, Quinarii, and Antoniniani</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>CH VI, 140</td>
<td>AD 255</td>
<td>0</td>
<td>0</td>
<td>7 denarii, 44 Antonin.</td>
</tr>
<tr>
<td>11</td>
<td>CH VI, 147</td>
<td>AD 270</td>
<td>0</td>
<td>0</td>
<td>26 Antonin.</td>
</tr>
<tr>
<td>12</td>
<td>CH VI, 148</td>
<td>AD 270</td>
<td>0</td>
<td>0</td>
<td>1 denarii, 32 Antonin.</td>
</tr>
<tr>
<td>13</td>
<td>CH VI, 149</td>
<td>AD 270</td>
<td>0</td>
<td>0</td>
<td>64 Antonin.</td>
</tr>
<tr>
<td>14</td>
<td>CH VI, 160</td>
<td>c. AD 280</td>
<td>0</td>
<td>0</td>
<td>73 Antonin., 2 AE</td>
</tr>
</tbody>
</table>

The hoard evidence following Ptolemy’s death is uneven. The earliest published hoard from the Roman provinces of Mauretania Caesariensis and Mauretania Tingitana was deposited nearly eighty years after the king’s death. It included only denarii (No. 8). The next six hoards were buried during the third century A.D., and they too included only coins of the Roman coinage system: denarii and Antoniniani (No. 9-14). The large lag of time between the creation of the Roman provinces and the first recorded hoards make it difficult to form a perfectly reliable model. Nevertheless, the dominance of the denarius and Antoniniani within the coin supply of the provinces suggests that the Roman state eventually developed a high infrastructural capacity regarding the production of coins for the region of Mauretania. Since the African mint closed with the death of Ptolemy, it is most likely that the mint at Rome began providing this infrastructure for Mauretania soon after the provinces were created. This proposed date must remain tentative as long as the Mauretanian hoard evidence for the latter half of the first century A.D. is lacking.
5.8. End of Iron Age Coinage in Britain

Not only did the production of silver end when Numidia and Mauretania became part of the empire during Claudius’s reign, but all coin production in Britain ended before A.D. 60 – 61. Coin production on the island had begun in the last half of the second century B.C. with potin coins, which were modeled on the coins of central Gaul.\(^{119}\) During or after the reign of Augustus, British Iron Age coins began imitating Roman coin types and symbols.\(^{120}\) After Claudius’s invasion, a few, small issues of silver coins were most likely produced and Roman coinage was used extensively soon after the invasion. The introduction of Roman coins to Britain was facilitated by the strong presence of the Roman army and administrators, a few traders, Roman colonists’ predilection for Roman coinage, and loans made by Claudius to prominent Britons.\(^{121}\) Production of coins in Britain had certainly ceased by the end of Boudicca’s revolt in A.D. 60 – 61.\(^{122}\)

Several factors obscure the reason for the end of coin production in Britain. On the one hand, as in Gaul, the people of Britain transitioned from an Iron Age regime of value, coin use practices, and coinage systems to the Roman regime of value, coin use practices, and coinage system.\(^{123}\) The Iron Age regime of value used coinage primarily in a religious, ceremonial context as dedications and coins may have been used as part of gift exchange or in the hiring of

\(^{119}\) Haselgrove 1993, pp. 33-38.  
\(^{120}\) Haselgrove 1993, pp. 44.  
\(^{121}\) For the Roman army and administrators, see Walton 2015, p. 113. For the loans to prominent Britons, see Cassius Dio 62.2.1.  
\(^{122}\) Haselgrove 2006, pp. 105-109.  
\(^{123}\) On these changes, Howgego 2013, pp. 26-37. Walton 2015 analyzes the distribution pattern of coins found in archaeological excavations and registered with the Portable Antiquities Scheme in order to suggest that the south of Britain adopted Roman coin-use practices earlier and more than the north (“North” and “South” are defined as relative to the Fosse Way). Both Haselgrove 2006, pp. 106-109 and Walton 2015, pp. 113-114 and pp. 117-118 acknowledge that the transition from Iron Age coin-use practices was not necessarily immediate and Roman coins did not necessarily spread to areas where Iron Age coins had not been used earlier. Cf. Section 4.6 which includes a definition of “regime of value.”
mercenaries, but rarely as a commercial medium of exchange.\textsuperscript{124} The Roman regime of value involved a trimetallic coinage system that was used as a medium of exchange, included the extensive use of credit, and involved limited ritual deposition of coins.\textsuperscript{125} The diffusion of these Roman practices and conceptions of coins suggests the decisions to close mints were made locally as a result of their changing practices and ideas. On the other hand, the injection of large amounts of Roman coinage into Britain through the military and Claudius’s loans to prominent Britons suggest that the emperor and his staff may have been attempting to replace the British coinages. Additionally, several uncertainties prevent certain knowledge. The chronology for the end of British coinages is imprecise, so synchronous action and major events, such as Boudicca’s revolt, are unable to explain or offer clues about the end of British minting. Even though British and Roman coins circulated alongside each other, the equivalencies between British and Roman coins are also unknown, so that too offers no clues.\textsuperscript{126} Therefore, it is unclear why the Iron Age coinages of Britain ceased to be struck, but it is clear that the denarius and its fractions replaced them, eventually giving the Roman state a high infrastructural minting power over coin production for Britain.

5.9. New Weight and Silver Standards under Nero

Numismatists have long known about new weight and silver standards for the Roman denarius and the empire’s other silver coinages introduced during the reign of Nero, and they have developed a wide range of interpretations for this phenomenon. This section reviews the evidence for the changes to the weight and metal standards (5.9.1), summarizes and critiques the

\textsuperscript{124} Howgego 2013, pp. 26-31.
\textsuperscript{125} Howgego 2013, pp. 31-34.
\textsuperscript{126} Haselgrove 2006, p. 107, Table 2. Cf. Sections 2.2.2 and 5.7 where known equivalencies helped explain the end of minting on the Iberian Peninsula and in Numidia.
interpretations of previous scholars, and offers a new interpretation (5.9.2). It concludes with an estimation of the importance of these changes and their long-lasting effects (5.9.3).

5.9.1. The Changes

During Nero’s reign (A.D. 54 – 68), the silver standards for the empire’s major coinages were reformed. Table 5.5 records the percentage of silver bullion in the coins struck at each mint. Not all mints issued coins in every year, so a blank cell indicates that the mint did not issue silver coins in that year. A bolded entry represents a significant change in the silver standard of the coins from that mint. In A.D. 63, the mint for denarii and aurei at Lugdunum closed and the mint at Rome resumed producing gold and silver coins in A.D. 64. At the same time, the purity of denarii dropped from pure silver bullion to 80% fine. Following Butcher and Ponting, this new 80% silver standard will be referred to as the First Neronian Standard. Also in A.D. 64, the weight of the aureus and denarius stopped declining to match the weight of coins becoming worn in circulation, and their weights stabilized at 3.45g for the denarius and 7.35g for the aureus. In A.D. 68, the purity of the denarius rose from the First Neronian Standard of 80% silver bullion to, what Butcher and Ponting have called, the Revised Neronian Standard of 90% silver bullion, but the weight standard stayed at 3.45g.

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127 The data is based on data from Butcher and Ponting 2015, esp. pp. 489, 514-519, 603, 659, and 701. These data are similar to that in Gölitzer 2004, p. 58; Butcher and Ponting 2005a, p. 124; Butcher and Ponting 2005b, pp. 176-179; Butcher and Ponting 2009, pp. 67-68.
128 Metcalf 1989. Butcher and Ponting 2005b, pp. 190-191 interpreted the chemical analyses of denarii to mean that the mint at Rome resumed production of denarii and aurei earlier during a pause in production at the mint in Lugdunum, but Butcher and Ponting 2015, pp. 220-224 have reinterpreted this data to suggest that the mint at Lugdunum merely adjusted its refining technique.
131 Butcher and Ponting 2015, pp. 219-220.
Table 5.5. Percent of Silver Bullion in Coins of Major Neronian Mints

<table>
<thead>
<tr>
<th>Year</th>
<th>Rome</th>
<th>Lugdunum</th>
<th>Antioch</th>
<th>Tyre</th>
<th>Alexandria</th>
<th>Caesarea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Nero</td>
<td>100%</td>
<td>50%</td>
<td>97%</td>
<td>23%</td>
<td>71%</td>
<td></td>
</tr>
<tr>
<td>54 (Y1)</td>
<td>100%</td>
<td>50%</td>
<td>97%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 (Y2)</td>
<td>100%</td>
<td>50%</td>
<td>97%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56 (Y3)</td>
<td>100%</td>
<td>50%</td>
<td>97%</td>
<td>19%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57 (Y4)</td>
<td>100%</td>
<td>50%</td>
<td>97%</td>
<td>19%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58 (Y5)</td>
<td>100%</td>
<td>50%</td>
<td>97%</td>
<td>72%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59 (Y6)</td>
<td>100%</td>
<td>70%</td>
<td>97%</td>
<td>19%</td>
<td>72%</td>
<td></td>
</tr>
<tr>
<td>60 (Y7)</td>
<td>100%</td>
<td>70%</td>
<td>97%</td>
<td>72%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61 (Y8)</td>
<td>100%</td>
<td>70%</td>
<td>97%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>62 (Y9)</td>
<td>100%</td>
<td>70%</td>
<td>97%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63 (Y10)</td>
<td>100%</td>
<td>70%</td>
<td>97%</td>
<td>18%</td>
<td>72%</td>
<td></td>
</tr>
<tr>
<td>64 (Y11)</td>
<td>80%</td>
<td>70%</td>
<td>97%</td>
<td>18%</td>
<td>72%</td>
<td></td>
</tr>
<tr>
<td>65 (Y12)</td>
<td>80%</td>
<td>70%</td>
<td>97%</td>
<td>72%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66 (Y13)</td>
<td>80%</td>
<td>70%</td>
<td>97%</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>67/8 (Y14)</td>
<td>90%</td>
<td>70%</td>
<td>17%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil War of 69</td>
<td>90%</td>
<td>72%</td>
<td>19%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the eastern provinces, two of the four mints changed their coins’ silver content. In A.D. 56/7, the mint at Alexandria reduced the purity of its tetradrachm from 23% silver bullion to 19% silver bullion.\textsuperscript{132} The initial change in purity was met with heavy production of tetradrachms in A.D. 56/7 (year 3 of Nero’s reign) but the mint’s output was much greater in A.D. 63 – 68 (years 10 – 14).\textsuperscript{133} To the northeast, in A.D. 59/60, the mint at Antioch raised the purity of its coins from approximately 50% silver bullion to 70% silver bullion.\textsuperscript{134} Several years later, the last Tyrian shekel was produced in A.D. 64/5 and the last half-shekel was struck in A.D. 65/6.\textsuperscript{135} The other two major mints—Ephesus and Caesarea—did not adjust their coinages

\textsuperscript{132} Butcher and Ponting 2015, pp. 632-633.
\textsuperscript{133} Christiansen 1988, pp. 93-94; and Butcher and Ponting 2015, pp. 631-632 and pp. 638-639.
\textsuperscript{134} Butcher and Ponting 2015, pp. 560-567.
\textsuperscript{135} RPC I Supp. 4680E (Shekel) and RPC I 4706 (Half-shekel).
during the reign of Nero, but their later adjustments will be incorporated into the discussion below.\textsuperscript{136}

As a result of these new silver standards, the circulation patterns in Egypt and Syria changed. In Egypt, the Ptolemaic and all earlier Julio-Claudian tetradrachms were removed from circulation during Nero’s reign.\textsuperscript{137} Similarly, papyri only attest the presence of Ptolemaic coins until A.D. 64, so it is likely that they were removed from circulation during Nero’s reign.\textsuperscript{138} The tetradrachms issued during Nero’s reign dominated the circulating medium in Egypt for centuries.\textsuperscript{139}

Kevin Butcher’s careful examination of the Syrian hoards, the interpretation of which is less straightforward, demonstrates the change in Syria. In the first century B.C., the silver issues of Antioch dominated the circulating medium of northern Syria, and the silver issues of Tyre dominated the circulating medium of southern Syria. There are no adequately published Syrian hoards from the Julio-Claudian period, but a change in circulation patterns is evident during Nero’s reign. In the north, Antiochene tetradrachms from early in Nero’s reign and earlier Republican and Julio-Claudian tetradrachms disappeared from hoards. In the south, Tyrian shekels were hoarded during Nero’s reign, but they were gradually removed from circulation over the next few decades. The shekels were no longer present in hoards buried during the reigns of Trajan and Hadrian. Throughout Syria, all hoards buried after the middle of Nero’s reign were dominated by Antiochene tetradrachms. As noted in Section 1.6.5, a recoinage is

\textsuperscript{136} In A.D. 95, under Domitian, the weight of the cistophorus declined from a weight of 11.10g under Claudius and Titus to a weight of 10.15g (Butcher and Ponting 2015, p. 474). During the reign of Vespasian, the purity of the drachms and didrachms struck at Caesarea in Cappadocia dropped from 72% silver bullion to 48% silver bullion. (Butcher and Ponting 2015, pp. 518-519 and 523).

\textsuperscript{137} Christiansen 1985, pp. 80-84.

\textsuperscript{138} Christiansen 1984, pp. 292-296. Oddly, the chemical analyses of Neronian tetradrachms do not clearly indicate that they were made from Ptolemaic coins (Butcher and Ponting 2015, pp. 629-630 and 644). This does not mean these coins were not removed from circulation during these years.

\textsuperscript{139} Christiansen 1985, pp. 80-84.
indicated by the earliest coins in hoards. The earliest coins in these tetradrachm hoards were from the middle of Nero’s reign and had a reverse type featuring an eagle, which type also began in the middle of Nero’s reign. Butcher, therefore, convincingly suggests that, starting in Nero’s reign, the Tyrian shekels and the Seleucid, posthumous Philip, and Julio-Claudian tetradrachms were removed from circulation and replaced with Antiochene tetradrachms. This process continued until about A.D. 100. when the circulation patterns for the tetradrachm were established for the next century.\textsuperscript{140} Also according to the hoards, the denarius certainly circulated in Syria during the reign of Hadrian. Unfortunately, no hoards from the Julio-Claudian period are adequately reported, there are relatively few hoards from the Flavian period, and most of the published hoards were deposited during or after the reign of Trajan. This limited documentation makes it difficult to determine if denarii had circulated in the region before the reign of Hadrian, but it is likely that they began circulating in the region during Nero’s reign.\textsuperscript{141}

5.9.2. The Reason for the Changes

According to the standard interpretation, the Neronian government was financially ruined and the denarius was debased in order to help the state pay its expenses.\textsuperscript{142} In A.D. 64, the Great Fire burned Rome for seven days and six nights (Suet. Nero 38.2). Of the fourteen districts of the city, four were unharmed, seven were mostly destroyed, and three were utterly razed (Tac. Ann. 15.40). Nero, who was alleged to have been responsible for the fire, exploited the destruction and built the opulent \textit{Domus Aurea} which was covered in gold and jewels and in which forests grew and boats could sail (Suet. Nero 31.1-2; Tac. Ann. 15.42). As a result of the

\textsuperscript{140} Butcher 2004, pp. 180-182.
\textsuperscript{141} Butcher 2004, pp. 192-193.
\textsuperscript{142} For a survey of these opinions, see Butcher and Ponting 2015, pp. 201-203 and pp. 229-237.
large financial burdens following the Great Fire, the denarius was debased in A.D. 64. This interpretation holds that old coins were melted down at the mint in order to produce more coins of a lower purity. The mint would have made a greater than normal profit which would help make up for the fiscal deficit. Erik Christiansen also noted that the Neronian government was plagued by more than just the fire and the construction of the *Domus Aurea* in Rome. Wars in Britain and Armenia would also have drained the treasury to such an extent, he proposed, that the Neronian government also debased Alexandria’s tetradrachms in order to gain even more coins and silver to pay their expenses.  

Butcher and Ponting, however, object to this fiscal explanation for the Neronian debasement for several reasons. First, not all evidence suggests that Nero and the Roman state were necessarily destitute. In A.D. 58, Nero contemplated eliminating indirect taxes, but his advisors persuaded him that this would be financially ruinous for the state. The emperor settled for easing some of the taxes and consistently favoring claims against the *publicani* (*Tac. Ann.* 13.50-51). Additionally, Nero made several large transfers of money to the public treasury during his reign (*Tac. Ann.* 13.29, 13.31, 15.18). These transfers were most likely money accumulated by taxation in the “imperial” provinces that was necessary to fund the “senatorial” provinces or other government services paid for with funds from the *aerarium Saturni*. The

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143 E.g. MacDowall 1979, pp. 136-149; and Wilson 2007, pp. 116-117.
144 Christiansen 1988, pp. 98-110 proposed this interpretation with estimates about the size of the Alexandrian mint’s output in A.D. 63/4. Based on criticism of his methods to develop the estimates, which were not based on published or commonly accepted formulae (*Burnett* 1989; and *Howgego* 1990a), Christiansen 1996 and 2004, pp. 92-97 no longer support the estimates but rightly maintain that there is sufficient evidence, such as hastily struck coins, to support the idea of a massive recoining of Alexandrian tetradrachms in A.D. 63/4 and later years. Gölitzer 2004, pp. 98-105 reexamined the idea based on estimates of the maximum number of tetradrachms that could have been struck in one year and supports the idea of a massive recoining of Alexandrian tetradrachms in A.D. 63/4. Butcher and Ponting 2015, pp. 631-632 and 638-639 agreed with Christiansen 1988, pp. 93-94 that the relative numbers of coins in hoards indicate that large numbers of coins were produced in A.D. 63/4 until the end of Nero’s reign.
146 Wolters 2003.
increase in the silver bullion content in the denarius in A.D. 68 also does not indicate debilitating poverty and the need to raise money through a debasement.

Second, Christiansen proposed that the mint at Alexandria debased the tetradrachm and recoined earlier coins to produce extra silver, which was highly profitable and sent to Rome in order to be struck into new post-reform denarii. Christiansen’s ideas, however, were based on D. R. Walker’s erroneous estimates of coins’ silver content. Based on Butcher and Ponting’s more accurate analyses, there would have been a smaller profit margin, and so less fiscal gain than Christiansen had thought. Additionally, the chemical analyses of Alexandrian tetradrachms do not support this interpretation. Tetradrachms struck under Cleopatra and Tiberius were not recoined into Neronian tetradrachms or denarii. In addition to these persuasive critiques made by Butcher and Ponting, the rise in the purity of the Antiochene tetradrachm challenges the above fiscal interpretation.

In place of the fiscal interpretation, Butcher and Ponting propose that the changes in purity were made so that the aureus would remain equivalent to twenty-five denarii. During the reigns of Tiberius, Caligula, and Claudius, the mint in Lugdunum produced denarii and aurei of gradually decreasing weights both in order to match the weight of coins becoming worn in circulation and in order to maintain the exchange rate of one aureus equaling twenty-five denarii. The price of silver relative to gold, they say, rose so the production costs for denarii became

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147 Christiansen 1988, pp. 104-106.
150 Butcher and Ponting 2015, pp. 237 and pp. 434-441. Cf. Lo Cascio 1981 who, based on Walker 1976, proposed that the mint frequently altered the silver content of denarii in order to maintain the value ratios among the copper alloy, silver, and gold coinages produced by the mint at Rome.
prohibitively high.\textsuperscript{151} During these reigns, therefore, fewer denarii and more aurei than in earlier reigns were produced.\textsuperscript{152}

To produce more denarii and turn a profit, therefore, the denarius was debased to a 3.45g coin on the First Neronian Standard of 80\% silver bullion in A.D. 64. The weight of the aureus, however, was based on a theoretically pure denarius of 3.45g.\textsuperscript{153} Table 5.6 records the changing ratio of the weight of twenty-five denarii relative to one contemporary aureus to which they were equivalent. The italicized row is based on the theoretically pure denarius and has a silver to gold ratio of 1:11.73, which is slightly less than the pre-reform ratios under the earlier Julio-Claudian emperors. The debasement of the denarius, then, did not change the exchange rate between gold and silver in the Roman bimetallic system. Because the exchange rate was now based on a theoretically pure denarius, the exchange rate also did not change with the adoption of the Revised Neronian Standard of 90\% in A.D. 68. The silver content of the denarius could fluctuate, as long as the weight of the aureus was adjusted to be approximately 12.5 times the weight of the denarius.

<table>
<thead>
<tr>
<th>Time</th>
<th>Silver Standard</th>
<th>Weight of aureus (g)</th>
<th>Weight of silver in 25 denarii (g)</th>
<th>Ratio of silver to gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Julius Caesar</td>
<td></td>
<td>8.03</td>
<td>97.50</td>
<td>12.14</td>
</tr>
<tr>
<td>Augustus, Gaius and Lucius</td>
<td>Julio-Claudian</td>
<td>7.86</td>
<td>95.00</td>
<td>12.09</td>
</tr>
<tr>
<td>Tiberius to Claudius, AD 51</td>
<td>Julio-Claudian</td>
<td>7.78</td>
<td>93.75</td>
<td>12.05</td>
</tr>
<tr>
<td>Claudius, AD 51 to Nero, AD 64</td>
<td>Julio-Claudian</td>
<td>7.66</td>
<td>91.25</td>
<td>11.91</td>
</tr>
<tr>
<td>Nero, AD 64-68</td>
<td>First Neronian Standard</td>
<td>7.35</td>
<td>69.00</td>
<td>9.39</td>
</tr>
</tbody>
</table>

\textsuperscript{151} On the fluctuation of the price of gold and silver in relation to each other during the fourth through sixth centuries A.D., West and Johnson 1944, pp. 76-77 and 108. This is based on data from Egypt where papyri provide the best evidence for prices.

\textsuperscript{152} Butcher and Ponting 2015, p. 175 and p. 441.

\textsuperscript{153} Butcher and Ponting 2015, pp. 444-445.

\textsuperscript{154} Butcher and Ponting 2015, pp. 435 and p. 454.
Table 5.6. Ratio of Silver to Gold in Denarii and Aurei\textsuperscript{154}

<table>
<thead>
<tr>
<th>Time</th>
<th>Silver Standard</th>
<th>Weight of aureus (g)</th>
<th>Weight of silver in 25 denarii (g)</th>
<th>Ratio of silver to gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nero, AD 68</td>
<td>Revised Neronian Standard</td>
<td>7.35</td>
<td>77.63</td>
<td>10.56</td>
</tr>
<tr>
<td>\textit{Nero (post-reform)}</td>
<td>\textit{Theoretically pure}</td>
<td>7.35</td>
<td>86.25</td>
<td>11.73</td>
</tr>
<tr>
<td>Galba, AD 68-69</td>
<td>Revised Neronian Standard</td>
<td>7.35</td>
<td>77.63</td>
<td>10.56</td>
</tr>
<tr>
<td>Otho, AD 69</td>
<td>Revised Neronian Standard</td>
<td>7.35</td>
<td>77.63</td>
<td>10.56</td>
</tr>
<tr>
<td>Vitellius, AD 69</td>
<td>First Neronian Standard</td>
<td>7.33</td>
<td>69.00</td>
<td>9.41</td>
</tr>
<tr>
<td>Vespasian, AD 69-79</td>
<td>First Neronian Standard</td>
<td>7.30</td>
<td>68.00</td>
<td>9.32</td>
</tr>
<tr>
<td>Titus, AD 79-81</td>
<td>First Neronian Standard</td>
<td>7.34</td>
<td>69.00</td>
<td>9.40</td>
</tr>
<tr>
<td>Domitian, AD 81-82</td>
<td>First Neronian Standard</td>
<td>7.34</td>
<td>68.00</td>
<td>9.26</td>
</tr>
<tr>
<td>Domitian, AD 82-85</td>
<td>Julio-Claudian</td>
<td>7.75</td>
<td>88.75</td>
<td>11.45</td>
</tr>
<tr>
<td>Domitian, AD 85-96</td>
<td>Revised Neronian Standard</td>
<td>7.63</td>
<td>77.63</td>
<td>10.17</td>
</tr>
<tr>
<td>Nerva, AD 97-98</td>
<td>Revised Neronian Standard</td>
<td>7.62</td>
<td>74.25</td>
<td>9.74</td>
</tr>
<tr>
<td>Trajan, pre-reform AD 98-99</td>
<td>Revised Neronian Standard</td>
<td>7.60</td>
<td>76.50</td>
<td>10.07</td>
</tr>
</tbody>
</table>

The debasement, Butcher and Ponting argue, did allow denarii to be produced extensively at a profit. Assuming that the ratio of silver to gold in the denarii and aureii reflects the market price for the metals, they say that the new \textit{actual} prices of silver in terms of gold were considerably lower after the debasement. Charts 5.2 and 5.3 plot the ratios between silver to gold, and gold to silver, as if they were prices for the metals. The expensive Claudian price for silver, they say, declined during the reign of Nero. These new Neronian prices allowed the mint in Rome to acquire more silver for less money, so it allowed the mint in Rome to produce a larger amount of denarii after the debasements in A.D. 64, as shown by the relative numbers of surviving denarii struck under Nero and especially under Galba, Otho, Vitellius, and Vespasian in hoards.\textsuperscript{155} The continued use of the First Neronian Standard and Revised Neronian Standard until the time of Trajan, as recorded in Table 5.6, allowed the denarius to continue being produced profitably, or at least not at a loss, according to Butcher and Ponting.

Chart 5.2. Price of Gold, in Terms of Silver

Chart 5.3. Price of Silver, in Terms of Gold
Butcher and Ponting’s explanation for the debasement of the denarius is not satisfactory because it relies on several problematic assumptions and a misinterpretation of the data. They confuse the ratios between the coins. As shown by Charts 5.2 and 5.3, the price of gold declined from the reign of Claudius to the reign of Nero—the price of silver actually increased. This analysis of prices, though, is based on a potentially problematic assumption: that the ratio of silver in denarii to gold in aureii reflects the market price for the metals. Without independent evidence for the prices of the metals, any interpretations based on this assumption are speculation. Additionally, Butcher and Ponting assume that the quantity of new denarii depended primarily on the amount of metal or money that the mint devoted to each issue. However, it is unclear that the Roman state formulated and followed a fiscal budget, let alone one that would have specified how much metal or money to coin. Even though Butcher and Ponting’s interpretation is flawed, they did usefully and convincingly demonstrate that the value of the Neronian aureus depended on a theoretically pure denarius, and the aureus’s new weight standard was 1/12 the weight of twenty-five theoretically pure denarii.

Butcher and Ponting’s interpretation of the new silver standards for eastern coinages is also constructed on faulty foundations. In order to discuss problems in their interpretation and lay the proper groundwork for a reinterpretation of the data, it is necessary to review Butcher and Ponting’s argument. They propose that the post-reform weight and silver standards for the denarius were inspired by eastern coinages, which, like the new denarius, were comprised of alloys of silver and copper. This alloy made the face value of the coins more valuable than their constituent metals’ intrinsic value, so the coins were produced at a profit and production costs were less affected by changing prices of silver. The post-reform weight of the denarius

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(3.45g), they say, most likely derived from the weight of the Ptolemaic drachm (3.36g). This would have resulted in a coin containing 2.76g of silver on the First Neronian Standard and 3.11g of silver on the Revised Neronian Standard. Focusing on the amount of silver in the denarius with the First Neronian Standard, Butcher and Ponting propose that this amount of silver was inspired by the 2.5-2.6g of silver common in eastern coinages. The Cappadocian mint had produced a drachm with approximately this amount of silver under the Julio-Claudians, as had the mint in Egypt after Nero, and the Cypriot mint under Vespasian. Even though the mint at Antioch did not produce drachms from 94 B.C. until c. A.D. 55, based on the silver content of the Antiochene tetradrachm, a theoretical Antiochene drachm would have consistently contained 2.5-2.6g of silver. The eastern drachms, then, used “common standards underlying some of the apparent diversity.” The denarius, they say, became “a Roman drachm” in A.D. 64.

Butcher and Ponting’s interpretations of the role of the eastern silver coinages is problematic for several reasons, and these eastern coinages’ new silver standards must be reconsidered. First, while Butcher and Ponting are right that most of their examples for a common standard were in used before the First Neronian Standard of A.D. 64, the examples are not contemporaneous so they are not evidence for a common standard. Additionally, their idea requires treating the Egyptian tetradrachm as a drachm rather than a tetradrachm. It is, though, very well accepted that the Egyptian coin is actually a tetradrachm, and not a drachm. Therefore, interpretations of the coin should consider it to be a tetradrachm. Thirdly, their idea of a “Roman

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158 Butcher and Ponting 2015, p. 673.
159 Butcher and Ponting 2015, pp. 675-680.
160 Butcher and Ponting 2015, p. 676. SC 2430 (Last Seleucid, Antiochene drachm of 94 B.C., struck under Antiochus X Eusebes Philopator) and RPC I 4172-4173 (Drachms c. A.D. 55).
161 Butcher and Ponting 2015, p. 675.
163 Butcher and Ponting 2015, p. 676.
“Drachma” is inspired by a definition of Hesychius from the fourth century A.D.: Δραχμή, εἴδος μέτρου, κεράτια ἣ. Δραχμή, τὸ δήδουν τῆς οὐγγίας, “Drachma: a form of measure, 18 keratia. Drachma, an eighth of an ounce.” This quotation does not support their interpretation. The terms μέτρου and especially οὐγγίας suggest that the definition refers to measurements of weight, not to coins because there was no pre-Neronian coin called an uncia. Furthermore, Hesychius does not refer to a Roman drachm, so Butcher and Ponting have invented this concept. Additionally, they support their inspiration by showing that an eighth of a Roman ounce is 3.41g—close to the weight of the new Neronian drachm—but they themselves had said that the weight of the Roman pound (and therefore the ounce too) is uncertain and difficult to determine. Their interpretations are based on wishful and selective interpretations of the evidence.

Butcher and Ponting move to firmer ground when they point to the similarity among coinages by comparing the weight of silver in a drachm on each mint’s weight and metal standards. This comparison, however, is based on the assumption that all drachms are equivalent to the denarius in a one to one exchange. Furthermore, not all mints regularly produced drachms, if they even produced drachms, so Butcher and Ponting had to look at the weight of silver in hypothetical drachms for some mints. This section, on the other hand, contends that this approach is flawed and we ought to more strictly adhere to the ancient evidence. In order to look

165 Butcher and Ponting 2015, pp. 93-95, citing Boeckh 1838, p. 165 and Naville 1920, p. 42-46. On page 95, they concluded: “One might have hoped that a detailed study of the metrology of the coinage would provide a clear resolution to this problem of the Roman pound but it does not. The gold coinage tends to favour Naville’s estimate while the silver favours a heavier pound like Böckh’s.” They used Boeckh’s estimate to determine the weight of the “Roman drachm” on p. 668.
166 Butcher and Ponting 2015, p. 463.
167 Drachms were not produced in the mints at Ephesus or Tyre, rarely at Antioch (RPC I 4135, 4172-4173, 4179, 4187, Supp 4131A, and Supp2 4127A), and only once at Alexandria (RPC I 5136).
for and appreciate any potential coordination regarding the new weight and metal standards at the various mints, it is necessary to compare the weight of silver in the actual coins produced by each mint. Tetradrachms were the most commonly produced coins at most of these mints (except for the mint at Caesarea of Cappadocia which produced drachms). Therefore, this section will examine data derived from actual Antiochene, Alexandrian, and cistophoric tetradrachms; Tyrian shekels; and Caesarean drachms. It will not extrapolate this data to fictional drachms in order to understand the new standards. Additionally, each of these coinages was struck on its own weight and silver standards that dictated its value in relation to the other coinages. Therefore, we should take the exchange rates between these coinages into consideration when comparing the weights of silver in each coin.

First, the literary and documentary evidence regarding exchange rates between these coinages will be examined. The authors who provide these exchange rates often do so through references to talents, which could refer to either coins or a weight. Since each of the following quotations uses a word either for “coin” or “denarius,” which was primarily used to refer to coins or a unit of account, these quotations can safely be assumed to refer to talents of coins rather than talents measuring weights.168 In the late second century A.D., Festus abridged the late Augustan Verrius Flaccus’s work, and the former provides two possible exchange rates between the denarius and the cistophorus:169

Euboicum talentum nummo Graeco septem milium et quingentorum cistophorum est, nostro quattuor milium denario. 170

The Euboean talent is, in Greek coins, 7,500 cistophori and, in our coins, 4,000 denarii. (p. 78 ed. Müller = TN 592)

170 Text from Lindsay 1913, p. 69 and p. 492 respectively, which also listed the corresponding pages from Müller 1839.

There is not one kind of talent. The Attic is worth 6,000 denarii; the Rhodian and cistophoric is worth 4,500 denarii; the Alexandrian [bronze]\textsuperscript{171} is worth twelve denarii; the Neapolitan is worth six denarii; the Syracusan is worth three denarii; and the Rhegine is worth a \textit{victoriatus}.

(p. 329 ed. Müller = TN 586)

The first passage equates the Euboean talent to 7,500 cistophori and to 4,000 denarii, which would mean that fifteen cistophoric tetradrachms were equivalent to eight denarii (or 1 cistophoric drachm = 2/15 denarii, or 7 1/2 cistophoric drachms = 1 denarius). The second passage equates one cistophoric talent, or 6,000 cistophoric drachms, to 4,500 denarii, at a rate of one cistophoric tetradrachm to three denarii (or 1 cistophoric drachm = 3/4 denarii, or 1 1/3 cistophoric drachms = 1 denarius).\textsuperscript{172} These two quotations offer conflicting exchange rates between the denarius and the cistophoric tetradrachm, and the conflict can be resolved by reference to the Rhodian, Attic, and Euboean talents.

Since the second Festus passage equated the Rhodian and cistophoric talents, the exchange rate between the denarius and the two coinages should be the same, or roughly the same. The second passage equates one Rhodian tetradrachm to three denarii (or 1 Rhodian drachm = 3/4 denarii, or 1 1/3 Rhodian drachms = 1 denarius). An inscription of A.D. 72/3 from Kibyra provides another exchange rate between the Rhodian drachm and the denarius:

\textsuperscript{171} Milne 1951 explained that this is a bronze talent, not a silver talent.
\textsuperscript{172} This statement assumes that the cistophoric talent is equivalent to 6,000 drachmae, just as the Attic talent was equivalent to 6,000 drachmae. Pollux 9.86, a writer of the second century A.D., indicates that not all talents equaled 6,000 drachmae. The assumption that the cistophoric talent equals 6,000 drachmae is perhaps warranted because Attic weight tetradrachms circulated in Asia Minor prior to the introduction of the cistophorus (Le Rider 1986).
…with the Roman denarius being worth 16 assaria. The Rhodian drachm is worth 10 assaria of this denarius in Kibyra.

(I. Kibyra 42D = TN 374)

The denarius was worth sixteen assaria, and the Rhodian drachm was worth ten assaria. This simplifies to a Rhodian drachm being 5/8 of a denarius. This 5/8 Rhodian drachm to 1 denarius ratio is more comparable to the 1 1/3 cistophoric drachms to 1 denarius of the second passage of Festus than the 7 1/2 cistophoric drachms to 1 denarius ration of the first passage. This independent evidence hints that the exchange rate of three denarii for one cistophoric tetradrachm is more likely.

Additional independent evidence regarding the Attic talent suggests the same conclusion, if we accept the second passage’s equation of the Attic talent and 6,000 denarii. Pollux, a writer of the second century A.D., says that the Attic talent was comprised of 6,000 drachms (9.86). The combination of this statement of Pollux and the second passage of Festus means that the Attic drachm equaled a denarius. Additionally, according to Herodotus, the Babylonian talent equaled 70 Euboean minae (3.89), and the same talent equaled 72 Attic minae, according to Aelian. Since the Euboean talent is very close in value to the Attic talent, the Euboean talent should equal about 6,000 denarii. The first passage, however, equates the Euboean talent with 4,000 denarii, so it is not in accord with other evidence about exchange rates.

Since the second passage is more consistent with external evidence than the first passage, the rate of three denarii to one cistophoric tetradrachm was probably the ancient exchange

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173 Cf. Boeckh 1838, pp. 62-63 who supports the equation between the Attic drachm and the Roman denarius based on the weights of coins.
174 Hussey 1836, p. 28; and Boeckh 1838, p. 105.
Given the ambiguities of the evidence regarding this exchange rate, certainty is not possible. Conveniently for this section, cistophori were not struck during Nero’s reign. This exchange rate was discussed here in order to provide the evidence for the exchange rate between Attic drachms and denarii, and so that this possible exchange rate and later changes to the cistophoric silver standard can further illustrate the interpretation proposed for the reign of Nero.

The historian Josephus shares the value of the Tyrian shekel in terms of Attic tetradrachms:

Συνωνούμενος δὲ τοῦ Τυρίου νομίσματος, δὲ τέταρας Αττικὰς δύναται, τέταρας ἀμφορεῖς, …

“Purchasing four amphoras for a Tyrian coin, which is worth four Attic drachms,…”

(Jos. Bell. Jud. 2.21.2 = 2.592)¹⁷⁶

The reference to an Attic tetradrachm is problematic because, in the time of Josephus, the Attic mint had not struck silver coins for nearly a century. References to an “Attic talent” and “four Attic drachms” were part of a larger social movement among the educated elite of the empire. When writing in Greek, they tried to avoid the spoken Koine Greek and tried to incorporate elements of the revered Attic authors. Elites always sought to have the purest and noblest form of this Attic language,¹⁷⁷ so it is likely that the “Attic” talent and tetradrachm do not actually refer to coins produced at Athens. As mentioned above, the second quotation of Festus equates an Attic talent of 6,000 drachms with 6,000 denarii, so it suggests that the “Attic” talent and

¹⁷⁵ Boeckh 1838, pp. 100-107 (followed by Müller 1839, p. 538 note ad line 20 on p. 539; and Walker 1976, pp. 35-36). Cf. Kleiner and Noe 1977, pp. 17-18 who noted that when the cistophorus was created, it was equal in weight to three Attic drachms.
¹⁷⁶ Text from Naber 1895.
¹⁷⁷ Horrocks 2010, pp. 133-137.
drachms notionally refer to denarii.\textsuperscript{178} Josephus, therefore, suggests that the exchange rate between a Tyrian shekel and a denarius was 1 to 4.

The exchange rate between the Alexandrian tetradrachm and the denarius is known from papyri, ostraca, and an anonymous Alexandrian author of the imperial period. As noted in Section 5.3, a recently published papyrus indicates that 1 Ptolemaic tetradrachm equaled 1.25 denarii. During the reign of Augustus, no new tetradrachms were minted. In the reign of Tiberius, the Alexandrian mint resumed production of tetradrachms, and these new Tiberian tetradrachms were equal to one denarius, according to the same papyrus.\textsuperscript{179}

An anonymous Alexandrian author, who lived during the Roman Imperial period and wrote about talents of coins,\textsuperscript{180} also indicates the exchange rate between the Alexandrian tetradrachm and the denarius:

\begin{quote}
Τὸ Ἀττικὸν τάλαντον ἰσοτάσιον μὲν τοῖς Πτολεμαϊκῶι καὶ Ἀντιοχικῶι καὶ ἱσάριθμον ἐν πάσι, δυνάμει δὲ τοῦ μὲν Πτολεμαϊκοῦ κατὰ τὸ νόμισμα τετραπλάσιον, ἑπτάριτον δὲ τοῦ Ἀντιοχικοῦ, τοῖς δὲ Τυρίωι ἰσον.
\end{quote}

The Attic talent is equivalent in weight to the Ptolemaic and Antiochene talent, and equal in number to all; but in power, it is four-times as much as the Ptolemaic coin, one-and-one-third-times as much as the Antiochene coin, and equivalent to the Tyrian coin.\textsuperscript{(TN 587.2)}\textsuperscript{181}

Since an Attic tetradrachm has the value of four Ptolemaic tetradrachms, and since a notional “Attic drachm” is a denarius, a denarius is equal to one Alexandrian tetradrachm. Unfortunately little is known about this author, but it is important to understand when he wrote because he also mentions the exchange rate for the Antiochene tetradrachm. Since the author also mentions the 1 to 1 exchange rate between Alexandrian tetradrachms and denarii, the author wrote after A.D.

\begin{itemize}
\item \textsuperscript{178} Cf. Galen, \textit{De compositione medicamentorum secundum locos} 8.3, ed. Kühn 1827, p. 160; Hultsch 1864, p. 204, no. 31, lines 21-23 and p. 228, no. 51, line 19 and p. 234, no. 60, line. 13 and p. 254, no. 78, line 22 which record the equivalence of a Roman denarius and an unnamed drachm.
\item \textsuperscript{179} Mitthof 2009, esp. pp. 201-207.
\item \textsuperscript{180} For more on this author and similar Alexandrian authors, see Hultsch 1864, pp. 4-5.
\item \textsuperscript{181} Text from Boeckh 1838, p. 69; Mommsen 1860, p. 30; and Hultsch 1864, p. 300.
\end{itemize}
20/1 when Tiberius resumed production of Alexandrian tetradrachms. The author’s use of the word Πτολεμαίκοι to refer to coins suggests a possible *terminus ante quem* for the author. In Egyptian papyri, this word was used to describe coins only until A.D. 64 and between A.D. 281 and 300. In the latter period, the word referred to “old coins” rather than a specific set of coins that might have a specific exchange rate with denarii. The author, therefore, was probably writing between A.D. 20/1 and A.D. 64.

Additional evidence for the exchange rate between the denarius and Alexandrian tetradrachms comes from ostraca and papyri. After the Jewish Revolt in Palestine, Vespasian required that Jews pay the Roman state a tax which had previously been paid to the Temple in Jerusalem. Ostraca from Egypt recorded payment of this tax, and they indicate that the Alexandrian tetradrachm is equivalent to one denarius. Later papyri recording the payment of soldiers also contained this exchange rate. The documentary evidence, therefore, demonstrates that the denarius continued to be exchanged for one Alexandrian tetradrachm after the reign of Nero.

The anonymous Alexandrian author, who wrote between A.D. 20/1 – 64, also mentioned the exchange rate between the Antiochene tetradrachm and the denarius. The “Attic talent” was equivalent to one and one third Antiochene talents, or 6,000 Attic drachms equals 8,000 Antiochene drachms. Since a notional Attic drachm is a denarius, 6,000 denarii equal 8,000 Antiochene drachms. When these numbers are simplified, the exchange rate for the denarius to the Antiochene drachm is three denarii equaled four Antiochene drachms.

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No ancient evidence provides the exchange rate between the Caesarean drachm and any other coinage.\textsuperscript{184} The above exchange rates are summarized in Table 5.7.

<table>
<thead>
<tr>
<th>Coinage</th>
<th>Cistophoric tetradrachm</th>
<th>Antiochene tetradrachm</th>
<th>Tyrian shekel</th>
<th>Alexandrian tetradrachm</th>
<th>Caesarean drachm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equivalent Number of Denarii</td>
<td>3? (A.D. 20/1 – 64)</td>
<td>3</td>
<td>4</td>
<td>1.25 (Cleopatra) 1 (Tiberius and later)</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

The same anonymous author mentioned that coins could weigh the same but have different values. Therefore, it is best not to examine the weight of the coins. Usefully, the exchange rates approximated the relative amounts of silver in the various coinages. Table 5.8 records the ratios of the weight of silver bullion in the eastern coinages to the weight of silver bullion in the denarius during the first century A.D. Table 5.9 records these ratios during each year of the reign of Nero. Cistophori are included in Table 5.8 but not in Table 5.9 because no cistophori were struck during Nero’s reign. In both tables, as in Table 5.5, a bold number indicates that the silver content of the coinage significantly changed in that year. The bold number does not indicate that the ratios of silver bullion content changed.

Table 5.8. Ratios of the Weight of Silver Bullion in Eastern Coinages to the Weight of Silver Bullion in the Denarius During the First Century A.D.\textsuperscript{185}

<table>
<thead>
<tr>
<th>Year</th>
<th>Standard of Denarius</th>
<th>Cistophoric tetradrachm</th>
<th>Antiochene tetradrachm</th>
<th>Tyrian shekel</th>
<th>Alexandrian tetradrachm</th>
<th>Caesarean drachm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Augustus, 2 BC–AD 4</td>
<td>Julio-Claudian</td>
<td>2.52</td>
<td>2.65</td>
<td>3.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tiberius, AD 14–37</td>
<td>Julio-Claudian</td>
<td></td>
<td></td>
<td>3.66</td>
<td>0.92</td>
<td>0.71</td>
</tr>
<tr>
<td>Caligula, AD 37–41</td>
<td>Julio-Claudian</td>
<td>2.00</td>
<td></td>
<td>3.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claudius, AD 41–51</td>
<td>Julio-Claudian</td>
<td>2.37</td>
<td>3.66</td>
<td>0.81</td>
<td>0.71</td>
<td></td>
</tr>
<tr>
<td>Claudius, AD 51–52</td>
<td>Julio-Claudian</td>
<td>2.43</td>
<td>3.76</td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{184} For speculation on this exchange rate, see Butcher 1992.

\textsuperscript{185} Data in the table is based on Butcher and Ponting 2015, pp. 489, 506-537, 603, 658, and p. 701.
Table 5.8. Ratios of the Weight of Silver Bullion in Eastern Coinages to the Weight of Silver Bullion in the Denarius During the First Century A.D.\textsuperscript{185}

<table>
<thead>
<tr>
<th></th>
<th>Standard of Denarius</th>
<th>Cistophoric tetradrachm</th>
<th>Antiochene tetradrachm</th>
<th>Tyrian shekel</th>
<th>Alexandrian tetradrachm</th>
<th>Caesarean drachm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nero, AD 54-68</td>
<td>See Table 5.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Galba, AD 68-69</td>
<td>Revised Neronian Standard</td>
<td>3.47</td>
<td></td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Otho, AD 69</td>
<td>Revised Neronian Standard</td>
<td>3.47</td>
<td></td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Otho, post-reform, AD 69</td>
<td>First Neronian Standard</td>
<td>3.96</td>
<td></td>
<td>0.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitellius, AD 69</td>
<td>First Neronian Standard</td>
<td>3.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vespasian, AD 69-79</td>
<td>First Neronian Standard</td>
<td>3.80</td>
<td></td>
<td>0.92</td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>Titus, AD 79-81</td>
<td>First Neronian Standard</td>
<td>3.22</td>
<td></td>
<td>0.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domitian, pre-reform, AD 81-82</td>
<td>First Neronian Standard</td>
<td></td>
<td></td>
<td>0.97</td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>Domitian, reform period I, AD 82-85</td>
<td>Julio-Claudian</td>
<td></td>
<td></td>
<td>0.74</td>
<td>0.46</td>
<td></td>
</tr>
<tr>
<td>Domitian, reform period II, AD 85-96</td>
<td>Revised Neronian Standard</td>
<td>2.62</td>
<td>3.41</td>
<td>0.85</td>
<td>0.53</td>
<td></td>
</tr>
<tr>
<td>Nerva, AD 96</td>
<td>Revised Neronian Standard</td>
<td>2.62</td>
<td></td>
<td>0.79</td>
<td>0.49</td>
<td></td>
</tr>
<tr>
<td>Nerva, AD 97</td>
<td>Revised Neronian Standard</td>
<td>2.73</td>
<td></td>
<td>0.83</td>
<td>0.51</td>
<td></td>
</tr>
<tr>
<td>Trajan, pre-reform, AD 98-99</td>
<td>Revised Neronian Standard</td>
<td>2.59</td>
<td></td>
<td></td>
<td>0.56</td>
<td></td>
</tr>
</tbody>
</table>
Table 5.9. Ratios of the Weight of Silver Bullion in Eastern Coinages to the Weight of Silver Bullion in the Denarius During Nero’s Reign

<table>
<thead>
<tr>
<th>Year</th>
<th>Standard of Denarius</th>
<th>Antiochene tetradrachm</th>
<th>Tyrian shekel</th>
<th>Alexandrian tetradrachm</th>
<th>Caesarean drachm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Nero</td>
<td>Julio-Claudian</td>
<td>2.00</td>
<td>3.76</td>
<td>0.83</td>
<td>0.73</td>
</tr>
<tr>
<td>54 (Y1)</td>
<td>Julio-Claudian</td>
<td>2.00</td>
<td>3.76</td>
<td>0.83</td>
<td>0.73</td>
</tr>
<tr>
<td>55 (Y2)</td>
<td>Julio-Claudian</td>
<td>2.00</td>
<td>3.76</td>
<td>0.83</td>
<td>0.73</td>
</tr>
<tr>
<td>56 (Y3)</td>
<td>Julio-Claudian</td>
<td>2.03</td>
<td>3.76</td>
<td>0.68</td>
<td>0.73</td>
</tr>
<tr>
<td>57 (Y4)</td>
<td>Julio-Claudian</td>
<td>2.03</td>
<td>3.76</td>
<td>0.68</td>
<td>0.73</td>
</tr>
<tr>
<td>58 (Y5)</td>
<td>Julio-Claudian</td>
<td>2.03</td>
<td>3.76</td>
<td>0.68</td>
<td>0.73</td>
</tr>
<tr>
<td>59 (Y6)</td>
<td>Julio-Claudian</td>
<td>2.84</td>
<td>3.76</td>
<td>0.68</td>
<td>0.73</td>
</tr>
<tr>
<td>60 (Y7)</td>
<td>Julio-Claudian</td>
<td>2.84</td>
<td>3.76</td>
<td>0.68</td>
<td>0.73</td>
</tr>
<tr>
<td>61 (Y8)</td>
<td>Julio-Claudian</td>
<td>2.84</td>
<td>3.76</td>
<td>0.68</td>
<td>0.73</td>
</tr>
<tr>
<td>62 (Y9)</td>
<td>Julio-Claudian</td>
<td>2.84</td>
<td>3.76</td>
<td>0.68</td>
<td>0.73</td>
</tr>
<tr>
<td>63 (Y10)</td>
<td>Julio-Claudian</td>
<td>2.84</td>
<td>3.76</td>
<td>0.65</td>
<td>0.74</td>
</tr>
<tr>
<td>64 (Y11)</td>
<td>First Neronian Standard</td>
<td>3.75</td>
<td>4.97</td>
<td>0.86</td>
<td>0.98</td>
</tr>
<tr>
<td>65 (Y12)</td>
<td>First Neronian Standard</td>
<td>3.75</td>
<td>4.97</td>
<td>0.89</td>
<td>0.98</td>
</tr>
<tr>
<td>66 (Y13)</td>
<td>First Neronian Standard</td>
<td>3.75</td>
<td>4.97</td>
<td>0.89</td>
<td>0.98</td>
</tr>
<tr>
<td>67/8 (Y14)</td>
<td>Revised Neronian Standard</td>
<td>3.34</td>
<td>0.70</td>
<td>0.70</td>
<td>0.70</td>
</tr>
</tbody>
</table>

These tables show that the exchange rates among the coinages generally approximated the relative amounts of silver bullion in the coinages. As shown in Table 5.8, the cistophorus always had 2.35-2.75 times the amount of silver bullion in a denarius, if we exclude the 3.22 times the amount under Titus. This is a little bit less than the three denarii that the cistophoric tetradrachm was likely nominally worth. Between A.D. 20 and 64, the Antiochene tetradrachm contained 2.00-2.84 times the amount of silver bullion as a denarius. This is just below or substantially under the exchange rate of 3 denarii for one tetradrachm, as recorded by the anonymous Alexandrian author. Since the ratio changed greatly in A.D. 64 and the author seems to have been writing before A.D. 64, there is insufficient evidence to say if this exchange rate continued with the new silver standard at the Antiochene mint. A little to the south, the Tyrian

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186 Data in the table is based on Butcher and Ponting 2015, pp. 489, 506-537, 603, 658, and p. 701.
shekel had 3.76 times the amount of silver bullion in the denarius until the silver content of the denarius changed in A.D. 64. This was close to the four denarii the shekel was worth. Then, for the next two years, it had 4.97 times the silver content of a denarius before the shekel ceased to be produced. To the southeast, in Egypt, under Cleopatra, the Alexandrian tetradrachm was nominally worth 1.25 denarii and it contained 1.07 times the elemental silver of a contemporaneous denarius. After Tiberius, the Alexandrian tetradrachm always contained 0.65-1.00 times the amount of silver bullion in the denarius when it was nominally worth one denarius.

This can be seen with both the First Neronian Standard of A.D. 64 and the Revised Neronian Standard of A.D. 68. Table 5.10 summarizes the exchange rates and the ratios of silver bullion content in A.D. 64 (when the First Neronian Standard was introduced), in A.D. 68 (when the Revised Neronian Standard was introduced), and in A.D. 85 (when the Revised Neronian Standard was reintroduced and more mints were active). With both sets of standards, the ratio of silver content in the Alexandrian tetradrachm and the denarius was very close to the one for one exchange rate. With the Revised Neronian Standard, the cistophorus contained a little less than three times as much silver bullion as the denarius. The cistophorus was possibly worth three denarii. The Revised Neronian Standard better approximates the pre-A.D. 64 exchange rate with the Antiochene tetradrachm. The tetradrachm had been worth three denarii, and it had 3.34 or 3.41 times as much silver bullion as the denarius on the Revised Neronian Standard. This similarity suggests that the Revised Neronian standard was chosen because it created silver content ratios more in line with the exchange rates among the coinages.

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187 On the measurement of the weight of (11.50g) and elemental silver (34.0%) in Cleopatra’s tetradrachms, Göltzer 2004, pp. 32 and 58-59. On the measurement of the weight of and elemental silver in contemporary denarii from the 40s B.C., Hermann 2000, pp. 167-169.
Table 5.10. Summary of Ancient Exchange Rates and Ratios in A.D. 64, 68, and 85

<table>
<thead>
<tr>
<th>Coinage</th>
<th>Cistophoric tetradrachm</th>
<th>Antiochene tetradrachm</th>
<th>Tyrian shekel</th>
<th>Alexandrian tetradrachm</th>
<th>Caesarean drachm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange rate (in terms of denarii)</td>
<td>3?</td>
<td>3?</td>
<td>4</td>
<td>1</td>
<td>Unknown</td>
</tr>
<tr>
<td>Ratio of Silver Bullion Content in A.D. 64</td>
<td>----</td>
<td>3.75</td>
<td>4.97</td>
<td>0.86</td>
<td>0.98</td>
</tr>
<tr>
<td>(First Neronian Standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ratio of Silver Bullion Content in A.D. 68</td>
<td>----</td>
<td>3.34</td>
<td>----</td>
<td>0.70</td>
<td>----</td>
</tr>
<tr>
<td>(Revised Neronian Standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ratio of Silver Bullion Content in A.D. 85</td>
<td>2.62</td>
<td>3.41</td>
<td>----</td>
<td>0.85</td>
<td>0.53</td>
</tr>
<tr>
<td>(Revised Neronian Standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The ratio of silver bullion content did not exactly correspond to the actual exchange rate for several reasons. First, it benefited the mint financially. If the face value of the coin was greater than the intrinsic value of the coin’s metal, the mint could earn a profit on the production of the silver coins. Alternatively, the difference between the face and intrinsic values of a coin could compensate for the production costs of that coin, such as the salaries or upkeep of the mint personnel. Second, this allowed the nominal value of the coin to withstand fluctuations in the price of silver or in the value of the coin in terms of denarii. For example, after the reign of Nero, the mint at Rome adjusted the purity of the denarius several times. The mints at Antioch and Alexandria, though, did not adjust, and did not need to adjust, the silver content of their tetradrachms in order to approximate the exchange rates with the denarius.

The ratios of silver bullion content also did not need to be exactly equivalent to the exchange rates. The value of the coins was determined partly by norms and regulations imposed by the state, such as legal tender laws and possibly exchange rates. The value was also partly determined by the process of socialization that taught ancient Greeks and Romans how much each coin was worth. These regulations and the socialization were reinforced by the ancient
belief in metallism. A belief in metallism assumes that a coin’s value is determined by the intrinsic value of the metal in the coin. Since the exchange rates approximated the ratios of the actual silver content in the coins, the ancient Romans acted as if their coins’ value was determined by the intrinsic value of the metal contained within the coins. Because metallism only reinforced—rather than dictated—the value and exchange rate of the coin, the coins did not need to have precisely the same metal content as the exchange rate might suggest. The new silver standards for the denarius, Antiochene tetradrachm, the Alexandrian tetradrachm, and later the cistophorus were chosen so that they and the exchange rates among the coinages approximated each other.

The First Neronian Standard, however, caused the exchange rates and the silver content ratios among the denarius, Antiochene tetradrachm, and the Tyrian shekel to diverge. This section proposes that the divergence was intentional and part of a long-term plan to eliminate and replace the Tyrian shekel with the Antiochene tetradrachm. The Tyrian shekel had been highly valued because, at 97% silver bullion, it was nearly pure silver. In order to replace the Tyrian shekel, an appealing alternative needed to be offered to the people of southern Syria. In A.D. 59/60, the mint at Antioch began regularly using only one reverse type on its tetradrachms: an eagle holding a thunderbolt in its talons and looking left (Fig. 5.4). A palm branch was in left field and the date was in right field. This choice was not chosen at random but was a deliberate choice to imitate the Tyrian shekel’s reverse type: an eagle looking left and standing on the prow of a galley (Fig. 5.5). Furthermore, for many years, the mint at Antioch stopped using multiple

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188 Verboven 2007, pp. 245-246.
189 On its high esteem, P. Dura 17D.1.41, 20.1.6, and 23.1.5; and Levy 1995, p. 33 who stressed that Jews needed pure silver to pay the tax to the Temple (and who states that after the production of the Tyrian silver ended, the tax could be paid in the best legal silver). On its silver bullion content, Butcher and Ponting 2015, p. 550.
190 RPC I 4180.
coin types and only used the eagle type.\(^{191}\) This consistency further indicated the choice was deliberate. This intentional imitation made the Antiochene tetradrachm more familiar and more appealing to the people of southern Syria.

![Image 1](image1.png)

**Fig. 5. 4.** Tetradrachm featuring Nero and an eagle, from Antioch, A.D. 59/60, *RPC* I 4180 (Burnett, Amandry, and Ripollès 1992, pl. 159, fig. 4180)

![Image 2](image2.png)

**Fig. 5. 5.** Shekel featuring bust of Hercules/Melqart and an eagle, from Tyre, A.D. 50/1, *RPC* I 4675 (Burnett, Amandry, and Ripollès 1992, pl. 171, fig. 4675)

Also in A.D. 59/60, the silver bullion content of the Antiochene tetradrachm increased from 50% to 70%. With a higher silver content, the Antiochene tetradrachm became more appealing to the people who preferred the high purity of the Tyrian shekel. The Antiochene tetradrachm was changed in A.D. 59/60 so that it would be more readily accepted by the people of southern Syria whose major mint would soon close.

The mint in Tyre closed because of the new silver content for the denarius. In A.D. 63, the Tyrian shekel had the same silver bullion content as 3.76 denarii. In A.D. 64, the shekel had the same silver bullion content as 4.97 denarii. The cost to strike a shekel increased by 1.21 denarii, almost one third of a shekel’s nominal value of four denarii. Tyrian coin production

\(^{191}\) *RPC* I 4180-4192.
became too costly. The mint struck its last shekel in A.D. 64/5. Since the half-shekel was half the size of the shekel, it was less expensive to produce. Nevertheless, the First Neronian Standard made even this coin too costly for the mint. The last half-shekel was struck in A.D. 65/6, the year that the Tyrian mint stopped producing silver coins. The First Neronian Standard eliminated the Tyrian shekel, and it offered a good alternative. In A.D. 64, the Antiochene tetradrachm had the same silver content as 3.75 denarii—almost exactly the 3.76 shekel to denarius silver bullion content ratio of A.D. 63. The Antiochene tetradrachm had also consistently featured the eagle on the reverse, as the Tyrian shekel had. Deprived of the shekel, the people of southern Syria began using Antiochene tetradrachms. The First Neronian Standard, therefore, was a key part of the plan to eliminate the Tyrian shekel and replace it with the Antiochene tetradrachm.

This new standard at Rome also approximated the other exchange rates throughout the empire, but the Revised Neronian Standard did so better. Once the Tyrian mint was closed, the Revised Neronian standard was adopted so that the relative silver content of the denarius and the other coinages reflected the exchange rates among the coinages. Therefore, the new weight and silver standard used in Rome, the new silver standard for the Antiochene tetradrachm, and the new Alexandrian tetradrachm were coordinated. The new reverse coin type employed by the mint at Antioch and the associated closure of the Tyrian mint were certainly not inadvertent and were also part of this coordination. The precision of these changes and the silver standards’ close correspondence to the exchange rates make it even more likely that the new standards were coordinated and carefully planned.

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192 RPC I Supp. 4680E.
193 RPC I 4706.
The mints in Rome and Lugdunum betray further signs of coordination. Not only was the production of denarii transferred from Lugdunum back to Rome, but the mints also produced remarkably similar copper alloy coins, in terms of changes to the metal used, the use of value marks, and coin types.\textsuperscript{194} In A.D. 64, both mints issued small change with marks indicating their value. The coins from Rome were all in \textit{orichalcum} and the coins from Lugdunum were mainly in \textit{orichalcum}. As usual, all sestertii and dupondii were \textit{orichalcum}, and some asses were struck in \textit{orichalcum} in addition to the normal copper asses.\textsuperscript{195} The following year, both mints reverted back to the normal pattern of sestertii and dupondii in \textit{orichalcum} and the other coins in copper. The value marks also mainly disappeared.\textsuperscript{196} The contemporaneous appearance of value marks and the change in the metal of the as at the two mints suggest that they were coordinated.

The coin types used by the mints in Rome and Lugdunum show signs that their work was coordinated, but that they also had some independence. The coins of the mint of Lugdunum were clearly indicated by a globe at the base of the neck on Nero’s portrait. No such mint mark existed on the Roman mint’s coins because the absence of Lugdunum’s mint mark could identify Rome’s coins.\textsuperscript{197} Some types, such as the types featuring Apollo and the Genius of Augustus in A.D. 64, were used by both mints in the same year.\textsuperscript{198} These types were so similar that C.H.V. Sutherland used the same descriptions for both mints’ coin types in his second edition of \textit{Roman Imperial Coinage}.\textsuperscript{199} Sometimes, the types were used by the mints in different years. For

\textsuperscript{194} Much of the following discussion about the coordinated and independent activity at the mints of Rome and Lugdunum is based on MacDowall 1979, pp. 129-131.

\textsuperscript{195} \textit{RIC I}^2 130-262 (Rome) and 371-385 (Lugdunum). MacDowall 1979, pp. 75, 101, and p. 130; and Sutherland 1984, pp.161-166 and pp. 173-174.

\textsuperscript{196} \textit{RIC I}^2 263-322 (Rome) and 386-488 (Lugdunum). MacDowall 1979, pp. 75, 101, and p. 130; and Sutherland 1984, pp.167-169 and pp. 174-179.

\textsuperscript{197} Grant 1955a; MacDowall 1979, pp. 27-30; and Duncan-Jones 1994, p. 121

\textsuperscript{198} \textit{RIC I}^2 205-220 (Rome) and 380-383 (Lugdunum).

\textsuperscript{199} Sutherland 1984, pp. 154-185.
example, the mint in Lugdunum imitated the arch on the Roman mint’s sestertii in order to design the type for the sestertii issued in Gaul.\textsuperscript{200}

Other types were peculiar to a specific mint and prove that the mints still chose some types independently. The Ara Pacis was only depicted on the asses of Lugdunum, and the mint of Rome used many more versions of the types featuring the goddess Roma or the Temple of Janus.\textsuperscript{201} Not only did this apply to the reverse types, but it also applied to the obverse types. Portraits of Nero were consistently used, except on the quadrantes. The mint at Rome, however, used a radiate portrait for dupondii and the mint at Lugdunum used a laureate portrait.\textsuperscript{202} The decisions regarding the coin types used by the mints at Rome and Lugdunum, therefore, were made independently in some instances and coordinated in others.

Taken with the contemporaneous changes in the metals used for small change and the use of value marks on this small change, the coordinated decisions regarding coin production at Rome and Lugdunum related primarily to metals and standards rather than to coin types. This coordination happened at the same time that the closure of the mint of Tyre and the new silver standards in Rome, Antioch, and Alexandria were coordinated. During the reign of Nero, especially in A.D. 64, therefore, the major mints of the empire were part of an empire-wide system of coordinated mints.

5.9.3. The Significance of the Neronian Coordination

In addition to the implications for this dissertation’s investigation of the Roman state’s use of power over coin production throughout its empire (Section 5.10), these coordinated acts

\textsuperscript{200} \textit{RIC I}\textsuperscript{2} 143-150 (Rome) and 392-393 (Lugdunum). Kleiner 1985, p.126.
\textsuperscript{202} MacDowall 1979, p. 130.
have a profound significance of their own. During Nero’s reign, the denarius became, or was reaffirmed as, the standard of value for all of the empire’s coins. The new weight of the aureus, 7.35g, was based on the weight of twenty-five hypothetically pure denarii weighing 3.45g. The aureus, then, continued to be anchored to the denarius. Additionally, the use of the denarius as a standard of value was key to the plan to eliminate the shekel. The new denarius was also debased so that the relative silver content of the denarius and the other coinages approximated the exchange rates among the coinages. Ancient Greeks and Romans understood these exchange rates as based on the denarius. The authors, who were quoted above, all expressed the value of other coinages in terms of denarii or Attic drachms, which only existed as notional equivalents to denarii. The denarius, therefore, was understood as the coin on which the value of other coinages depended. This new prominence afforded the denarius may have allowed the denarius to begin circulating in Syria.

This creation of a standard of value is a very rare event in the ancient world, especially in such a short time and especially on the geographic scale of the entire Roman Empire. The closest precedent for, and one might even say rival to, this deed comes from the beginning of the Hellenistic Period. While Alexander the Great conquered his empire, he imposed the Attic standard on the territory under his control. Afterwards, Attic standard tetradrachms circulated throughout his empire, but this system soon fell apart. Hellenistic monarchs, starting with the Ptolemies c. 306 B.C., created new standards within their kingdoms. The Ptolemaic standard was used in Egypt, the reduced Ptolemaic standard in southern Syria, the reduced Attic standard in northern Syria, the cistophoric standard in the Attalid kingdom, and various standards in mainland Greece. Each of these new Hellenistic standards, and the necessary subsequent events

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203 Butcher and Ponting 2015, p. 694.
204 Lorber 2013, pp. 212-213.
exchange rates with other standards and coinages, were determined by individual, isolated actions. Some of these coinages, especially in mainland Greece, were no longer produced in A.D. 54 when Nero assumed the throne. Others—the cistophorus, the Antiochene tetradrachm, the Tyrian shekel, and the Alexandrian tetradrachm—survived until the reign of Nero when their silver standards were changed, and the coinages were tied to the Roman denarius as a new standard of value for the empire, stretching from Britain, Iberia, and Mauretania to Asia Minor, the Cataracts of the Nile, and all of Syria.

5.10. Roman Infrastructural Minting Power in the Later Julio-Claudian Period (A.D. 14 – 68)

The later Julio-Claudian period saw the growth of Rome’s minting power over coin production in the entire empire. During the reigns of Tiberius, Caligula, and Claudius, the closed circulating areas of the Age of Augustus continued (Fig. 5.6). The Roman state’s mint at Lugdunum provided aurei for the entire empire, and it provided denarii to Italy, Sicily, Iberia, Africa Proconsularis, Achaea, Macedonia, and Gaul. During the reign of Claudius, this great infrastructural reach extended to Numidia, Mauretania, and Britain.

Outside of Europe, the province of Asia continued to use only cistophori that were struck again during the reign of Claudius. A little to the west, the kingdom of Cappadocia entered the empire during the reign of Tiberius. This new province continued to use only the drachms from Caesarea, which took on more Roman elements that showed the Roman state’s low infrastructural minting power over the mint. To the south, the mint of Antioch continued to produce tetradrachms for northern Syria, and the mint of Tyre continued to strike shekels for southern Syria. A little further south, in Egypt, the mint in Alexandria resumed production of
tetradrachms during the reign of Tiberius. All these mints, except Tyre, used coin types that honored the emperor, his family, and his accomplishments, and thereby show signs that the Roman state had a low infrastructural capacity in these regions.

The mints, though, continued to act autonomously. During the reign of Tiberius, the mint in Alexandria, and possibly also the mint in Cappadocia, adjusted its silver standards of its own accord. Also during the later Julio-Claudian period, the mints of Alexandria, Caesarea of Cappadocia, and Antioch autonomously added smaller denominations to their silver coinage systems. Despite signs of growing influence over coin production in these mints, the Roman state...
state continued to have low, or low-medium, infrastructural power over these mints until the death of Claudius.

The one exception to this is the production of bronze coinage. During the reign of Caligula, the western civic mints closed and the mints of Rome and Lugdunum became the sole providers of new copper alloy coins for Italy, Sicily, Gaul, Iberia, and Africa Proconsularis. This high infrastructural capacity regarding bronze coin production for these provinces continued throughout the High Empire, whereas the Roman state still had a low capacity regarding bronze coin production for the eastern provinces where civic mints continued to strike their own bronze coins until the third century A.D.

The reign of Nero saw the creation of an empire-wide system of coordinated mints characteristic of an increased infrastructural capacity (Fig 5.7). The production of denarii moved from Lugdunum back to Rome, and the mints in these two cities were coordinated regarding the production of copper alloy coins throughout Nero’s reign. The establishment of new silver standards at the mints of Antioch, Alexandria, and Rome was coordinated. As a result of these new silver standards, the mint at Tyre closed (so it is grey in Fig 5.7), and the denarius became the standard of value for the aureus and the empire’s other silver coinages. The Antiochene tetradrachm also began circulating in southern Syria, and the denarius began circulating throughout Syria. The mint at Rome was involved in all of this coordination, so the Roman state’s power over these major mints grew. The Roman state, though, allowed the mints to remain autonomous to some extent. As part of this coordination, only one coin type was determined for an eastern mint: the eagle reverse type for the mint at Antioch. This type was part of the well-executed plan to change silver standards, to close the mint of Tyre, and to coordinate the other mints of the empire.
This coordination did not yet extend to cistophori because no cistophori were struck during the reign of Nero. During the reign of Domitian, the denarius’s silver standard changed from the First Neronian Standard to the Revised Neronian standard, and the cistophori were struck on a new silver standard (Table 5.8). With these new standards, the exchange rate between denarii and cistophori approximated the likely exchange rate: three denarii for one cistophoric tetradrachm (Table 5.10). After the reign of Nero, it was only a matter of time before the production of cistophori became part of this empire-wide system of coordinated mints. It is
unclear when the mint at Caesarea of Cappadocia became part of this system because the exchange rate between the Cappadocian drachm and the denarius is unknown.

Despite this uncertainty, the reign of Nero saw the last step towards the minting system of the High Empire. The Roman state—through the mint of Rome (and occasionally that of Lugdunum)—had a high infrastructural capacity regarding bronze coin production for the western provinces, and the eastern civic mints provided bronze coins for the eastern provinces. The coin types of these eastern bronze coins show the influence of Rome (if only in the use of the emperor’s portrait), and so the Roman state’s low minting power over the mints. The Roman state provided denarii for Italy, Sicily, Iberia, Gaul, Africa, Achaea, and Macedonia. It also established the silver standards used at the mints in Egypt, Syria, and later Asia that produced tetradrachms and drachms for their own circulating areas. The path dependent nature of this decision meant that the Roman state continued to have a higher infrastructural minting power over these mints even after the numismatically important reign of Nero.
CHAPTER 6: CONCLUSION

This dissertation examined how the Roman state’s infrastructural capacity regarding the production of coins for Italy and the provinces changed between the Late Republic and the end of the Julio-Claudian period. In order to do this, the ideal types of hegemonic and territorial empires have been used as heuristic tools to measure the Roman state’s infrastructural minting power. In a hegemonic empire, the metropole indirectly governs the subject polities who provide the military defense for the metropole, pay tribute to the metropole, and provide the political and economic infrastructure, including media of exchange. Since the administrative infrastructure is that of the subject polity, a hegemonic empire has a low infrastructural power. In a territorial empire, the metropole provides the infrastructure, such as fortified military installations, tax officials, and a medium of exchange. A territorial empire has a high infrastructural power. In reality, empires are somewhere between these ideal types. Just as metropoles can have both hegemonic and territorial relationships with different polities at the same time, the relationships can change over time.

By accumulating many assessments of these relationships at various times—in 60 – c. 55 B.C., during the civil wars of the 40s and 30s B.C., during the reign of Augustus (27 B.C. – A.D. 14), and during the later Julio-Claudian period (A.D. 14 – 68)—this dissertation was able to chart how the Roman state’s infrastructural capacity regarding coin production evolved during the transition from Republic to Empire. Coordination between a mint and the mint at Rome was an indication that the Roman state’s infrastructural reach was extended. This coordination was detected when multiple mints made similar minting decisions at the same time. The minting decisions that were examined were:
1. whether to open or close a mint,
2. the coin’s denomination,
3. the coin’s metal standards,
4. the coin’s weight standard,
5. the coin’s type, and
6. the quantity of coins to be produced.

Additionally, most of these six decisions were involved in the decision to recoin all the coins within the area where a mint’s coins circulated. The decisions to open and close a mint, as well as changes to denomination patterns, metal standards, and recoinages, were always examined.

Episodes of coordinated coin type selection provided other case studies. Sometimes instances in which coin types were not coordinated were discussed in order to refute earlier ideas that the reign of Augustus represented a period in which the Roman state coordinated minting and/or that it took on a high infrastructural minting power regarding coin production for the entire empire. This dissertation’s findings suggest that a large extension of the empire’s infrastructural reach happened much later, in the reign of Nero.

This dissertation began examining the production of coins in 60 B.C. because most numismatic changes within the empire happened at this time or after this date. The Roman state—through the mint at Rome—provided denarii for Italy, Sicily, Iberia, and Africa at this time, so it had a high infrastructural minting capacity in these areas. The Iberian denarius mints had already closed, or were closing, because sufficient denarii from the mint at Rome circulated on the Iberian Peninsula. The Roman state’s minting capacity in Macedonia was rising because denarii were beginning to circulate there. Other than the denarius, the region used Athenian New Style tetradrachms and the AESILLAS tetradrachms. Both these tetradrachms were on the same
standard, and the coin types of the latter were a sign of the Roman state’s low infrastructural minting power over Macedonian coin production. To the south of Macedonia, the mint at Athens showed no signs of Roman influence while it provided northern and central Greece with tetradrachms. The mints of the Achaean League may have been coordinated—or used coin types that were a legacy of coordination—in their production of hemidrachms for the Peloponnese, also seemingly outside of Roman power. In the province of Asia, the cistophoric mints were certainly coordinated. Their depictions of buildings and use of Latin legends indicated that the Roman state had a low infrastructural minting power over these mints. Similarly, the mint of Antioch included monograms for the proconsuls’ names on the tetradrachms circulating in northern Syria, so the Roman state also had a low infrastructural minting capacity there. The mint at Tyre produced shekels for southern Syria, without any signs of Roman influence. Generally, the longer a region had been part of the empire, the greater was the Roman state’s infrastructural capacity regarding silver coin production for that area.

During the civil wars between 49 and 27 B.C., the Roman state fragmented into competing factions of warring generals, and the mint at Rome soon closed while imperatorial mints struck denarii. At almost the very beginning of the civil wars, Julius Caesar’s mint struck a gold coin. This aureus caught on because the Romans were suffering from a debt crisis and the Romans—not least the partisans of the civil wars—needed an intrinsically valuable medium of exchange to complete large-scale transactions. The aureus became a fixture of the Roman monetary system, and the Roman state’s imperatorial mints had a high infrastructural capacity for producing it. Additionally, many battles were fought between Roman armies in Achaea and Macedonia where the denarius became the main circulating medium, extending the infrastructural reach of the Roman state. The mints in Asia debased their cistophori and used
coin types that honored Antony, thereby showing that the Roman state’s minting power slightly increased in that province. The mint of Antioch stopped recognizing the proconsul on its coin types, so the Roman state seems to have exerted less power there. A similar apparent absence of Roman power continued to be evident at the mint in Tyre. Finally, the regions of Gaul and Egypt became part of the Empire. Mints in Gaul continued to produce Iron Age coinages, and the mint in Alexandria entered the empire at the very end of the civil wars after Octavian won the Battle of Actium and after Antony and Cleopatra committed suicide.

The reign of Augustus was, in many respects, a period of continuity. Imperatorial mints continued to strike aurei and denarii until the production of these coins became centered at the Roman state’s mint in Lugdunum. Some of these imperatorial mints were coordinated across provincial boundaries or to such an extent that dozens of types were coordinated but the mints remained free to expand upon these ideas and choose other types. The coordination of mints in multiple provinces seems connected to the development of a monarchy, which meant that there was now someone with power over multiple provinces at the same time. The Roman state continued to have a high infrastructural capacity in Italy, Africa Proconsularis, Achaea, and Macedonia where the denarius was used. Gradually, the denarius, and the Romans state’s infrastructural reach, spread to Gaul while the Iron Age mints closed and the inhabitants of Gaul transitioned to a Roman regime of value and coin use practices. The Roman state’s power over bronze coinage production also became clear. Between 23 and 19 B.C., the mint at Rome reopened and began producing a copper and orichalcum coinage on a semuncial standard. The mints in Italy, Lugdunum, Nemausus, Sicily, and parts of Iberia used this standard for the production of their own copper alloy coins; but the mints in the other regions where the denarius circulated did not. The Roman state had a high infrastructural minting power over the former
regions than the latter regions. To the east, the Roman state had a low, or low-medium, infrastructural power over the cistophoric mints in Asia, the mint in Antioch, and the mint in Alexandria because they chose coin types that honored the emperor. Only the cistophoric mints were coordinated amongst themselves. Finally, the mint at Tyre continued to appear to operate independently.

The Roman state continued to exercise its power over coin production in much the same way during the reigns of Tiberius, Caligula, and Claudius. The mint at Tyre, though, seems to have remained autonomous. After Cappadocia became a province during the reign of Tiberius, the Roman state had a low infrastructural capacity regarding the production of drachms for the new province. The Roman state’s infrastructural reach also did not yet extend to the mints in Ephesus, Antioch, and Alexandria. These four eastern mints operated relatively autonomously: changing their silver standards, choosing their own coin types, and striking new denominations. A few events, though, suggest that the Roman state began to exercise its infrastructural minting power to a greater extent. During the reign of Caligula, the civic mints in the western provinces closed, and the mints at Rome and Lugdunum were responsible for providing Italy, Iberia, Sicily, and Africa Proconsularis with bronze coins. After an initial coin shortage during the reign of Claudius, the Roman state’s high infrastructural capacity was effectively established during the reign of Nero. Around the same time, the denarius was adopted in Britain and Mauretania. This means that the Roman state’s had a high infrastructural capacity regarding silver coin production for Italy, Iberia, Gaul, Britain, Macedonia, Greece, Africa Proconsularis, and Mauretania.

The reign of Nero witnessed the greatest use of the Roman state’s minting power. The mints of Rome, Lugdunum, Antioch, and Alexandria were all coordinated as part of a detailed plan that included closing the mint in Tyre. In A.D. 56/7, the mint at Alexandria lowered its
silver standard. A few years later, in A.D. 59/60, the Antiochene mint raised its silver standard, and it deliberately imitated the eagle reverse type of the Tyrian mint, so that its tetradrachms were more appealing to the inhabitants of southern Syria. In A.D. 64, the production of denarii moved back to Rome, the denarius was debased from 100% silver bullion to 80% silver bullion (First Neronian Standard), and the mints in Rome and Lugdunum began coordinating the production of bronze coins for the western provinces. All the new silver standards were carefully chosen, so that the ratios of silver content among the coinages approximated the coinages’ exchange rate with the denarius, so that the denarius would become the standard of value throughout the empire, and so that the Tyrian shekel would become too expensive to produce and the mint at Tyre would close. In A.D. 68, the mint at Rome adjusted its silver standard to 90% silver bullion (Revised Neronian Standard) so that the silver content ratios and exchange rates better approximated each other. The mints at Rome, Lugdunum, Antioch, and Alexandria were now part of an empire-wide system of coordinated minting in which the mints retained some autonomy, especially regarding their choice of coin types. Later, when the mint at Rome reinstituted the Revised Neronian Standard during the reign of Domitian, the mint at Ephesus changed its silver content, so that its silver content ratio also approximated its likely exchange rate and the mint entered this empire-wide system.

The Neronian system had lasting effects. Many coinages began to be recoined. At the end of Hadrian’s reign, the earliest coins within the circulating media of Italy, Iberia, Gaul, Sicily, Africa, and Britain were from Nero’s reign. The earliest coins in Syria were Antiochene tetradrachms from Nero’s reign, and the denarius circulated there too. The earliest coins in Egypt were Neronian Alexandrian tetradrachms. The circulating areas of the empire remained relatively closed, but they were now tied together through coordinated mints.
The coordination only intensified after the reign of Nero when many mints struck coins for each other in what has been called “collaborative minting.” Under both Vespasian and Domitian, Antiochene tetradrachms featured both a local style and the style of the mint in Alexandria. Chemical analyses of these tetradrachms, however, are inconclusive for whether the Alexandria-style coins were minted in Syria or Egypt.¹ Under Titus, in A.D. 80 – 82, the mint at Rome probably struck cistophori for the province of Asia, or at the very least the mint in Rome produced the dies for the cistophori.² In A.D. 95, a mint produced both cistophori and Lycian drachms, and this mint used dies in the style of the mint of Rome.³ Under Domitian, dies were engraved at Rome and used elsewhere to produce didrachms for Cappadocia.⁴ During the reign of Nerva, the mint at Rome most likely made dies that were then used in Asia for the production of cistophori.⁵ Under Vespasian and Trajan, the mint at Rome produced coins for Cappadocia.⁶

The reign of Trajan seems to have been a high point of this “collaborative minting.” The styles of the mints at Rome, Antioch, and Alexandria have been detected on coins for Asia, Lycia, and Crete; and coins with the Roman and Alexandrian styles appeared in Syria.⁷ Metallurgical analyses of all these coins have not yet been published to determine where these coins were struck. Additionally, it is possible that the mint at Rome produced drachms and tetradrachms for the new province of Arabia while a local mint produced only drachms.⁸ Since much of our knowledge about this collaborative minting relies on metallurgical analyses paired

² Carradice 2013, p. 378; and Butcher and Ponting 2015, pp. 473-475 and p. 683.
³ Butcher and Ponting 2015, p. 473 and p. 479.
⁴ Butcher and Ponting 2015, p. 536.
⁵ Butcher and Ponting 2015, pp. 481-482; contra Woytek 2010, pp. 99-106 who argued based on stylistic grounds and based on the structure of the coin issues that the cistophori were struck in Rome.

276
with careful analysis of coins’ style, and since scholars have published few metallurgical analyses of coins from after Trajan’s reign, very little is known about subsequent collaborative minting. Nevertheless, this collaborative minting makes the most sense within the context of the empire-wide system of coordinated silver mints established during the reign of Nero.

Chart 6.1. The Roman State’s Infrastructural Minting Power Regarding Silver Coin Production for the West
During the Julio-Claudian dynasty, the use of Roman power changed and the Roman state’s power grew more quickly. Whereas the cistophoric mints gradually showed more and more influence from Rome, the Cappadocian drachms very quickly changed and began honoring the imperial family to the same degree that other eastern mints were. The Roman state appears to have assumed a high infrastructural capacity regarding silver coin production for Mauretania once it entered the empire under Claudius. Also, later in the Julio-Claudian period, the Roman state began exercising the same degree of power over many mints, regardless of how long Romans had controlled the territory in which the mint was located. During the reign of Claudius, the mints in Ephesus, Caesarea of Cappadocia, Antioch, and Alexandria all honored the emperor, Agrippina the Younger, and Nero to the same degree. In the reign of Nero, the Roman state
became involved in coin production at many mints when their new silver standards were coordinated.

This represents a change in the use of Roman minting power. During the Republic, power was exercised to different degrees in different areas, and the Roman state’s use of power over each region was gradually shifting from low towards high. During the Empire, the Roman state’s infrastructural capacity grew more quickly and became more uniform. In the Latin West, the Roman state developed a high infrastructural power regarding both silver and bronze coin production. It also had a high capacity regarding silver coin production for Achaea and Macedonia. In the Greek East, the Roman state developed a moderate, or moderate-high, infrastructural capacity because production for eastern provinces was coordinated with the mint in Rome and because the mint in Rome was involved in collaborative minting for several eastern provinces.

Just as the beginning of coordinated minting on a large geographic scale is likely related to the rise of powerful men and the advent of monarchy, the accelerated growth and standardization of Roman infrastructural capacity also relates to the advent of monarchy and the development of an imperial ideology. This ideology was specific to the imperial period. From c. 125 B.C. until c. 60 B.C., the cistophori showed no signs of influence from Rome. During the Republic, the Roman influence on the major mints was limited to the proconsuls’ names and symbols on the cistophori of the 50s B.C. and to a monogram of governors’ names on Antiochene tetradrachms in the 50s B.C. Starting with the civil wars of the 40s and 30s B.C., the mints began honoring and celebrating the accomplishments of the warring generals. For example, the cistophoric mints honored Antony. This Antonian episode was a prelude to the imperial period. Once Octavian was victorious and the Julio-Claudian dynasty was established,
the emperor’s portrait became a regular coin type on denarii, aurei, and the tetradrachms of Asia, Antioch, and Alexandria. Commemoration of the emperor’s deeds and portraits of the imperial family soon followed. Coins communicated and helped spread the developing imperial ideology, which in turn reinforced the infrastructural power of the Roman state. While the state’s ideological power grew, the state’s infrastructural capacity grew. Whereas other numismatists had proposed that this transition happened quickly during the reign of Augustus, the transition happened gradually in some regions and more quickly in others. The empire’s mints, together, took the last step towards an empire-wide system of coordinated mints, showing the Roman state’s now high infrastructural minting power in the West and modest capacity in the East, during the reign of Nero.
Glossary

Antoninianus: A Roman silver coin introduced in the second century A.D. that was most likely worth 2 denarii.

As: A bronze coin minted by the Romans. It was initially worth 1/10 of a denarius, and later in the Republic it became worth 1/16 of a denarius.

Aureus: A gold coin worth 25 denarii or 100 sestertii.

Belief in Metallism: The belief that a coin’s value is determined by the amount of precious metal in the coin.

Circulating Medium: The coins used in a given region.

Coin: An object, often of metal, carrying a commonly accepted value within an area whose ruler or state is responsible for the coin’s production. A coin’s value can be supported by a belief in metallism, legal tender laws, and social norms.¹

Coin, Base Metal: A coin struck in a copper alloy. They are often referred to generically as “bronze coins.”

Coin, Precious Metal: A coin struck in gold or silver.

Coin Legend: The words inscribed into the face of a coin.

Coin Type: The legend/inscription and the image on the coin’s face.

Control, Direct: Person A has direct control over person B, if A tells B to do something and B does it.

Control, Indirect: Person A has indirect control, or influence, over person B, if A wants something to happen, if B knows that A wants this but is not told do it, and B does it.²

¹ This definition is adapted from Christiansen 2004, p. 14 and Verboven 2007, pp. 245-246.
² Doyle 1986, p. 34.
Countermark: A design or letters punched into the face of an already circulating coin by a minting or political authority, usually a city.

Debasement: An event that lowered the metal standard of a coinage.

Denarius: A silver coin struck by the mint in Rome that was worth 16 asses or 4 sestertii or 1/25 of an aureus.

Denomination: A set value of a coin.

Denomination Pattern: A set of denominations used by a mint in which there is a clear exchange rate among each of the coins.

Die: Metal objects, like stamps, that press the coin types into the face of a flan.

Didrachm: A silver coin struck by a Greek mint worth two drachms.

Drachm: A silver coin struck by a Greek mint.

Emergency Coinage: An issue of coins struck in an unusual metal when no other sources of payment are forthcoming.

Empire: A relationship, formal or informal, in which one state, the metropole, controls the domestic and international affairs of another polity.³

Empire, Hegemonic: An empire in which the metropole exercised indirect control over subject polities. It is characterized by a low cost-low extraction strategy and delegated rule through local elites who are clients of the metropole’s elite.

Empire, Territorial: An empire in which the metropole exercised direct control over subject polities. It is characterized by a high cost-high extraction strategy and rule through imperial elites or bureaucrats.

Fabric: A broad category of characteristics describing a coin that includes its metal, size, weight, diameter, thickness, and method of producing the flan.

³ Doyle 1986, p. 45.
**Flan:** The disk of metal onto which the types were struck.

**Free Coinage:** The phenomenon whereby private individuals can bring precious metals to the mint and have it struck into new coins.

**Gresham’s Law:** See Appendix 1.

**Hoard:** Deposits of “‘at least two coins (or at least one coin and another object of value) apparently purposefully buried together’ or lost – and … found together.”

**Imperatorial Mint:** A mint operating for a military campaign.

**Imperial Ideology:** A set of beliefs that supported the reign of the Roman emperor. See also “Power, Ideological.”

**Influence:** See “Control, Indirect.”

**Legal Tender:** Coins that are authorized and guaranteed for use by the state.

**Legal Tender Law:** Laws that authorize coins for use, dictate their value, and say what coins must be accepted in commercial transactions.

**Mint Mark:** An indication, through a monogram, legend, or symbol, that a coin was struck at a certain mint.

**Mintmaster:** The traditional name for people who manage a mint.

**Module:** The diameter of a coin.

**Obol:** A bronze coin worth 1/6 of a drachm.

**Obverse:** The face of a coin that was imprinted by the die fixed in an anvil. It usually featured the bust of a god or the portrait of a monarch. It is sometimes called the “heads.”

**Orichalcum:** Brass, in Latin.

**Potin:** A copper alloy with a high tin content.

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4 For this definition of a hoard, Christiansen 2004, p. 14, quoting (for the first two thirds of my quotation) Christiansen 1985, p. 78.
**Power:** “The ability to pursue and attain goals through mastery of one's environment.”\(^5\)

**Power, Despotic:** “The range of actions which the elite is empowered to undertake without routine, institutionalized negotiation with civil society groups.”\(^6\)

**Power, Economic:** Economic power relates to the production, transformation, exchange, distribution, and consumption of goods and services.\(^7\)

**Power, Ideological:** Ideological power relates to the beliefs that exist within a network of power. It derives from socially constructed interpretations of sense perceptions, social norms, and rituals. Ideological power often relates to religion, but it can also relate to a sense of social morale among a group of individuals. This morale encourages certain behaviors, group cohesion, and confidence.\(^8\)

**Power, Infrastructural:** “The capacity of the state actually to penetrate civil society, and to implement logistically political decisions throughout the realm.”\(^9\)

**Power, Military:** Military power relates to the use of force, both offensive and defensive.\(^10\)

**Power, Political:** Political power is centralized and territorial and relates to the regulation of social relations. Political power is institutionalized in the form of a state, which has a defined territory and is centrally administered.\(^11\)

**Recoinage:** The recall of old coins, which are then melted down by the mint and restruck into new coins, which are now considered legal tender.

\(^5\) Mann 1986, p. 6.
\(^6\) Mann 1984, p. 113.
\(^7\) Mann 1986, pp. 24-25.
\(^8\) Mann 1986, pp. 22-24.
\(^9\) Mann 1984, p. 113.
\(^11\) Mann 1986, pp. 26-27. The Romans began to understand the word *provinciae* as a reference to a geographic space during the time of Cicero (Richardson 2008, pp. 80-85). Since the time of Cicero is contemporaneous with the beginning of the period discussed by this dissertation, this theoretical definition is not problematic for this study.
**Regime of Value:** An understanding of value based “not in economic and monetary terms, but rather through the broadest range of social and cultural links people have to the material world.”\(^{12}\)

**Reverse:** The face of a coin imprinted with the die struck by a hammer. It is sometimes called the “tails.”

**Rolnick and Weber’s Law:** See Appendix 1.

**Seigniorage:** The profit made by the mint from producing coins.

**Sestertius:** A Roman coin originally of silver, and of *orichalcum* beginning in the reign of Augustus, that was worth 1/4 of a denarius. Originally it was worth 2.5 asses and later in the Republic worth 4 asses.

**Standard, Metal:** The amount of various metals that the mint workers believed was ideal to include in each coin.

**Standard, Semuncial:** A weight standard for the Roman as in which the ideal as weighed half an *uncia*.

**Standard, Uncial:** A weight standard for the Roman as in which the ideal as weighed an *uncia*.

**Standard, Weight:** The weight for a coin that the mint workers believed was ideal.

**State:** “A differentiated set of institutions and personnel, embodying centrality, in the sense that political relations radiate outwards from a centre to cover a *territorially demarcated area*, over which it exercises a monopoly of authoritative binding rule-making, backed up by a monopoly of the means of physical violence.”\(^{13}\)

**Talent:** A measure of weight or a quantity of coins. Not all talents contained the same number of drachms.

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\(^{12}\) Gosden 2004, p. 18, followed by Howgego 2013, esp. p. 17.

\(^{13}\) Mann 1984, p. 112, italics in the original.
**Tetradrachm**: A silver coin struck by a Greek mint worth four drachms.

**Tresviri aere argento auro feriundo flando (sing. triumvir aere argento auro feriundo flando)**: “The Board of Three for Casting and Striking Bronze, Silver, and Gold.” Three Roman magistrates who had responsibility over coin production at the mint in Rome.

**Tresviri monetales**: See Tresviri aere argento auro feriundo flando.

**Uncia**: A measurement of weight equivalent to 1/12 of a Roman pound.

**Value, Intrinsic**: The value of an object based on the worth of its constituent metal.

**Value, Nominal**: The value of a coin dictated by its face value or law.
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313


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Appendix 1: Gresham’s Law, Legal Tender Laws, and Other Scenarios

App. 1.1. Scenarios Following a New Metal Standard

Sections 3.4, 5.2, 5.3, and 5.9 refer to changes in the metal standards of coins, often as part of a recoinage. These changes in the coins’ metal content created two groups of coins in circulation within the mints’ respective regions: (1) “good” or purer coins and (2) “bad” or less pure coins. When “good” and “bad” coins circulate among a people with a belief in metallism, according to Gresham’s Law, the “bad” money drives the “good” money out of circulation. Less pure coins will cause purer coins to leave circulation through one of three ways: (1) purer coins are exported outside a country’s borders, (2) purer coins are melted in order to produce less pure coins, and (3) purer coins are hoarded as a more valuable commodity than the less pure coins. This is the common explanation of the law, but it requires qualification. First, it only applies to coins of the same metal. It does not necessarily apply to “good” and “bad” coins of different metals.\(^1\) Second, as noted and clearly explained by George Selgin, the applicability of Gresham’s Law often depends on the strictness of legal tender laws, which define the coins that must be accepted in transactions. Thirdly, it does not account for every reaction to the creation of “good” and “bad” coins (possibly due to a change in a coinage’s metal standard), so we must be aware of other possible scenarios.

To illustrate these last two points, it is helpful to review Andrew J. Rolnick and Warren E. Weber’s explanation for what happens without strict legal tender laws.\(^2\) In this situation, sellers are free to declare prices in any unit of account that they would like: the “good” or the “bad” coins. If the seller asks for “good” coins, buyers will pay with “good coins.” Then, the

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\(^1\) Giffen 1891, p. 304; and Selgin 1996, pp. 646-647; contra Rolnick and Weber 1986.
\(^2\) Rolnick and Weber 1986.
“good” coins will trade at face value and the “bad” coins will be discounted, if they are used at all. If the seller asks for “bad” coins, the “bad” coins will trade at face value and the “good” coins will trade at a premium or will stop circulating. The coins in circulation, then, depend on what the sellers use as a unit of account. If it is easy and inexpensive to exchange “good” coins for “bad” coins—i.e. trade “good” coins at a premium or trade “bad” coins at a discount—both “good” and “bad” coins will circulate. However, if it is costly to exchange “good” coins for “bad” coins, one of them will drive the other out of circulation. The coin that remains in circulation is the unit of account used by most sellers. Because Rolnick and Weber proposed this scenario as a revision of Gresham’s Law, Selgin (and this dissertation) calls this Rolnick and Weber’s Law.

An illustrative example of Rolnick and Weber’s Law happened in the United States of America during the 1860s. Before the American Civil War, gold coins and bank notes were equivalent. California and Oregon preferred to use gold coins, and the eastern states preferred to use bank notes. During the American Civil War, the Union government no longer equated bank notes and gold coins, and their values separated. Since bank notes were used as the unit of account in the east, these states used paper money. Since gold coins were the unit of account in the Pacific states, Oregon and California used gold coins.\(^3\)

Without strict legal tender laws, Selgin notes, a pure coordination game happens; but with strict legal tender laws, a “prisoner’s dilemma” is set up.\(^4\) A strict legal tender law requires that all coins—“good” and “bad”—be accepted at face value. The seller cannot legally ask for only “good” coins because the seller must accept both “good” and “bad” coins. The seller, then, uses “bad” coins as the unit of account. If the buyer pays in “good” coins, the seller profits at the

---

\(^3\) Rolnick and Weber 1986, p. 19; and Selgin 1996, pp. 639-640.
\(^4\) Selgin 1996, pp. 640-642
expense of the buyer because the seller gains more money from a “good” coin than he would have from a “bad” coin. Rather than losing money, the buyer should pay in “bad” coins. A legal tender law enforcing the acceptance of both “good” and “bad” coins, therefore, favors the continued use of “bad” money as both a unit of account and as a medium of exchange. This scenario is Gresham’s Law. Section App. 1.2 shows that legal tender laws did exist in the Greco-Roman world.

As part of Gresham’s Law, as mentioned above, “good” money disappears from circulation into hoards, as an export from the region where the coins circulate, and/or at the mint. The mint would be producing “bad” money by melting down and recoining the “good” money, thereby making a profit. If the mint allowed people to bring “good” coins to the mint in order to be exchanged, possibly at a premium, for “bad” coins, this would be called “free minting.” Section App. 1.3 examines whether or not free minting happened in the Greco-Roman world.

Selgin notes a possible exception to Gresham’s Law: “good” coins can sometimes replace “bad” coins if “bad” coins are demonetized by a law. King Henry VIII and Edward VI of England had debased the country’s gold coins so that their metal standard was a fraction of what it was under Henry VII. Upon Queen Elizabeth’s accession to the throne in 1558, Sir Thomas Gresham warned her that “bad” money cannot circulate with “good” money and that “good” gold coins were being exported out of England. Gresham advised the queen to restore the purity of the gold coins, and eventually the queen followed this advice. In order to replace less pure “bad” coins with purer “good” coins, the queen revoked the legal tender status of the less pure coins and insisted that taxes be paid in new “good” coins. Legal tender laws, therefore, can make “good” coins replace “bad” coins.  

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In sum, there are five possible reactions to “good” and “bad” coins, and they depend on whether strict legal tender laws exist. (1) Gresham’s Law applies when strict legal tender laws are in place. (2) Legal tender laws may also lead to the exact opposite of what Gresham’s Law normally prescribes: the “good” replacing the “bad.” (3) When legal tender laws are not in place, a variety of outcomes are possible. If it is not costly to exchange between the “good” and the “bad,” both might circulate. (4 and 5) If it is costly to exchange between them, the buyers and sellers writ large, in a scenario of pure coordination, will determine whether the “good” or the “bad” are used.

App. 1.2. Legal Tender Laws in the Greco-Roman World

These five scenarios raise the question: were there legal tender laws in antiquity? Scattered evidence indicates that some regions had legal tender laws at various times. Around 425 B.C., the Clearchus Decree (also known as the Coinage Decree) required the cities of the Athenian Empire to use Athenian silver coins and not their own silver coins. An Athenian decree of 375/4 B.C. required Athenians to accept coins approved by money-changers operating either in Athens or in the Piraeus. Additionally, a papyrus from 258 B.C. records a Ptolemaic decree (prostagma) that replaced the trichrysa gold coin with a new gold denomination: the mnaieia. As a result of the decree, people from abroad and within Egypt brought their old, worn gold coins into the mint to be restruck so that they could be accepted as a medium of exchange.

---

6 IG I 3 1453 = ATL II D14 = M&L 45 = Fornara 97. Mattingly 1970, pp. 142-145; Mattingly 1992, pp. 136-137; and Rhodes 2008, p. 503 date the Clearchus decree to c. 425 B.C. based on well-dated coin hoards, historical arguments, and the resolution of the three-bar sigma debate; contra Meiggs 1972, pp. 167-172 who dates the decree to c. 447/6 B.C. based on the losing side of the three-bar sigma controversy, the marble of the stone, and similar phraseology about the Delian League. The three-bar sigma debate was decisively resolved by Chambers, Galluci, and Spanos 1990.

7 Stroud 1974.

If the coins were not recoined, they would not be accepted as a medium of exchange (lines 9-14 and 20-30). The decree changed what was considered legal tender.

Among the Romans, the first known legal tender law was carried around 85 B.C. At this time, the value of coins was uncertain. A large number of new, fresh denarii had been struck for the Social War, and they circulated alongside old, worn denarii. The socii in the Social War had struck coins on the same weight and metal standards as the Roman denarius and these coins looked similar to the Roman denarius. The value of the bronze coins had also recently been readjusted by the lex Papiria of 91 B.C., so that old coins were nominally worth the same as new coins of half the size. There may also have been a large number of counterfeit coins circulating at the time. All these coins were circulating at the same time without clear relationships to each other. This confusion caused the praetor M. Gratidianus to take action—Cicero says through an edict requested by the tribunes of the plebs (De Off. 3.80), but Pliny the Elder says through a plebiscitum (N.H. 33.132). Gratidianus’s legislative action clarified the official exchange rates between Rome’s silver and bronze coinages (Cic., De Off. 3.80), included unclear anti-forgery measures (Plin., N.H. 33.132), and provided punishments for not following this edict or law (Cic., De Off. 3.80). Together these actions established what was legal tender and punishments for not accepting this definition.

Soon thereafter, a Sullan law made it illegal to reject struck coins other than forgeries and prescribed punishments for creating forgeries of gold and silver coins (Sententiae Pauli 5.25). Suetonius records that Nero asked for payments in freshly minted coins, but it is unclear when in

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9 The interpretations of Gratidianus’s measures in c. 85 B.C. are based on Lo Cascio 1979; and Verboven 1994. Crawford 1968 rejects Pliny’s emphasis on forgeries, but his objections do not hold up to scrutiny (Verboven 1994, pp. 119-121). Lo Cascio 1979 places more emphasis on forgeries and notes Gratidianus’s measure was the first legal tender law at Rome (pp. 235-236).

10 Sydenham 1952, no. 617-643.

11 Crawford 1974b, 611.

his reign he did so (44.2). Arrian, who records the discourses of Epictetus, who lived in the middle of the first century A.D. and in the second century A.D., says that it was unlawful for a moneychanger or a grocer to refuse a coin of Caesar (Arr. Epic. 3.3.3). Legal tender laws, therefore, existed in some of the best documented ancient states.

**App. 1.3. Free Minting in the Greco-Roman World?**

Free minting, or free coinage, (i.e. the phenomenon whereby private individuals can bring precious metals to the mint and have it struck into new coins) is known in a few instances, even though it was not a standard practice at mints in the Greco-Roman world. In the aforementioned papyrus of 258 B.C., the people of Egypt needed to bring gold coins to a mint in order for them to be exchanged for the new legal tender. During Hadrian’s reign, cistophori originally struck under Antony, Augustus, and Claudius were overstruck at many mints so that they could be revalidated as legal tender. These two ancient examples suggest a connection between recoinages and free minting, and the latter suggests that the use of many mints may be characteristic of a recoinage with free minting. During a ninth century recoinage ordered by Charlemagne’s son, Louis the Pious, people were ordered to take earlier coins into one of nine mints for reminting. Furthermore, Anglo-Saxon kings of the tenth and eleventh centuries frequently ordered recoinages in order to profit from the recoinage, and they operated many mints throughout England.

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14 Metcalf 1980, pp. 115-120.
15 Spufford 1988, pp. 43-44.
16 Spufford 1988, pp. 93-94. Instead of a debasement, the Anglo-Saxons regularly returned three coins for every four brought in for reminting.
A recoinage, however, does not necessarily require free minting. During the Neronian recoinage of denarii, it is a priori unlikely that free minting was used. Denarii circulated throughout the Iberian Peninsula, Gaul, Italy, Sicily, Africa, and Achaea, but denarii were only struck at the mint in Rome after A.D. 64. Free coinage would have been an impractical way for the old coins to be replaced by new coins in this situation.\footnote{de Callataÿ 2005b, p. 216.}

\footnote{Section 5.9.}
APPENDIX 2: THE TRESVIRI MONETALES OF THE 50s B.C.

Michael Crawford used coin hoards to determine the years in which each of the tresviri aere argento auro feriundo flando issued coins from the Republican mint in Rome.¹⁹ After Crawford’s landmark study, a hoard was found at Mesagne, near Brindisi, in 1979 or 1980 that allowed numismatists to refine the chronology for the 70s – 50s B.C.²⁰ Several scholars have proposed chronologies for the tresviri monetales, and these are presented in Table App2.1, and this dissertation’s chronology is also included. When this dissertation disagrees with recent proposals, explanations of the proposed dates are included in footnotes.

¹⁹ Crawford 1969b and 1974b.
Table App2.1. Various Proposed Chronologies of the *Tresviri Monetales* of the 50s B.C.

<table>
<thead>
<tr>
<th>Moneyer</th>
<th>RRC #</th>
<th>Authorized by SC</th>
<th>Crawford’s Dates</th>
<th>Hersh/Walker’s Dates</th>
<th>Hollstein’s Dates</th>
<th>Mattingly’s Dates</th>
<th>My Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lent. Cur. X. F(I)</td>
<td>393.1b</td>
<td>X</td>
<td>76-75</td>
<td>76-75</td>
<td>76-75</td>
<td>58</td>
<td>76-75&lt;sup&gt;21&lt;/sup&gt;</td>
</tr>
<tr>
<td>L. Cassi Longin IIIv</td>
<td>413</td>
<td>63</td>
<td>60</td>
<td>c. 60</td>
<td>--</td>
<td>c. 60</td>
<td></td>
</tr>
<tr>
<td>L. Rosci Fabati</td>
<td>412</td>
<td>64</td>
<td>59</td>
<td>c. 59</td>
<td>--</td>
<td>c. 59</td>
<td></td>
</tr>
<tr>
<td>M. Scaurus aed. cur.; P. Hypsaeus aed. Cur.</td>
<td>422</td>
<td>X</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>M. Lepidus</td>
<td>419</td>
<td>61</td>
<td>58</td>
<td>c. 59</td>
<td>58</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>M. Piso M. f. Frugi</td>
<td>418</td>
<td>61</td>
<td>58</td>
<td>c. 58</td>
<td>58</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Philippus</td>
<td>425</td>
<td>56</td>
<td>57</td>
<td>c. 56</td>
<td>58</td>
<td>c. 57&lt;sup&gt;22&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>P. Hypsaeus</td>
<td>420</td>
<td>X</td>
<td>60</td>
<td>57</td>
<td>c. 66</td>
<td>57</td>
<td>57&lt;sup&gt;23&lt;/sup&gt;</td>
</tr>
<tr>
<td>Sufenas</td>
<td>421</td>
<td>X</td>
<td>59</td>
<td>57</td>
<td>c. 58</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td>M. Plaetorius Cestianus</td>
<td>405</td>
<td>X</td>
<td>69</td>
<td>57</td>
<td>c. 57</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td>C. Memmius C. f.</td>
<td>427</td>
<td>56</td>
<td>56</td>
<td>c. 57</td>
<td>56</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>Q. Pomponius Musa</td>
<td>410</td>
<td>66</td>
<td>56</td>
<td>c. 56</td>
<td>52</td>
<td>56&lt;sup&gt;24&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Faustus</td>
<td>426</td>
<td>56</td>
<td>56</td>
<td>c. 56</td>
<td>56</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>C. Considius Nonianus</td>
<td>424</td>
<td>X</td>
<td>57</td>
<td>56</td>
<td>c. 57</td>
<td>56</td>
<td>56&lt;sup&gt;25&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>21</sup> Mattingly [1995] 2004, pp. 284-285 speculates that the *curator denarioorum flandorum* was appointed by Clodius, but there is no evidence for this speculation and the hoards presented in Hersh and Walker 1984, Table 2 support the date 76-75 B.C.

<sup>22</sup> The hoards presented in Hersh and Walker 1984, Table 2.

<sup>23</sup> Hollstein 1993, p. 240 follows Mattingly 1982, p. 13 in arguing that P. Hypsaeus was Pompey’s quaestor, but the hoards presented in Hersh and Walker 1984, Table 2 more convincingly suggest a date of 57 B.C. Mattingly [1995] 2004, p. 283 points out that there may have been multiple men in the late Republic with the name P. Hypsaeus, so there could be confusion between the moneyer and the quaestor.

<sup>24</sup> Mattingly [1995] 2004, pp. 286-287 rejects the Ancona hoard as evidence without justification and speculatively associates the Grazzanise hoard with a military campaign. If one rightly allows the Ancona hoard as evidence and does not speculate about the reason of deposition for the Grazzanise hoard, one finds that Q. Pomponius Musa served as *triumvir monetalis* in 56 B.C., as suggested by the hoards presented in Hersh and Walker 1984, Table 2.
Table App2.1. Various Proposed Chronologies of the *Tresviri Monetales* of the 50s B.C.

<table>
<thead>
<tr>
<th>Moneyer</th>
<th>RRC #</th>
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<th>Hersh/Walker’s Dates</th>
<th>Hollstein’s Dates</th>
<th>Mattingly’s Dates</th>
<th>My Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q. Cassius</td>
<td>428</td>
<td></td>
<td>55</td>
<td>55</td>
<td>c. 55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>P. Fonteius C.f. Capito IIIvir</td>
<td>429</td>
<td></td>
<td>55</td>
<td>55</td>
<td>54</td>
<td>55</td>
<td>55&lt;sup&gt;26&lt;/sup&gt;</td>
</tr>
<tr>
<td>P. Crassus M.f.</td>
<td>430</td>
<td>X</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Cn. Plancius aed. cur.</td>
<td>432</td>
<td>X</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>54</td>
<td>54&lt;sup&gt;27&lt;/sup&gt;</td>
</tr>
<tr>
<td>A. Plautius aed. cur.</td>
<td>431</td>
<td>X</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td>L. Vinicius</td>
<td>436</td>
<td></td>
<td>52</td>
<td>52</td>
<td>c. 52</td>
<td>54</td>
<td>54&lt;sup&gt;28&lt;/sup&gt;</td>
</tr>
<tr>
<td>Brutus</td>
<td>433</td>
<td></td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td>Q. Pompei Rufus</td>
<td>434</td>
<td></td>
<td>54</td>
<td>54</td>
<td>55</td>
<td>54</td>
<td>54&lt;sup&gt;29&lt;/sup&gt;</td>
</tr>
<tr>
<td>Messala f.</td>
<td>435</td>
<td>X</td>
<td>53</td>
<td>53</td>
<td>c. 53</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>C. Serveilius C.f.</td>
<td>423</td>
<td></td>
<td>57</td>
<td>53</td>
<td>c. 54</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>Caldus IIIvir</td>
<td>437</td>
<td></td>
<td>51</td>
<td>53</td>
<td>c. 51</td>
<td>51</td>
<td>c. 51&lt;sup&gt;30&lt;/sup&gt;</td>
</tr>
<tr>
<td>Ser. Sulpicius</td>
<td>438</td>
<td></td>
<td>51</td>
<td>51</td>
<td>c. 51</td>
<td>51</td>
<td>51</td>
</tr>
<tr>
<td>Marcellinus</td>
<td>439</td>
<td></td>
<td>50</td>
<td>--</td>
<td>c. 50</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

<sup>25</sup> Hollstein 1993, p. 265 bases his date on speculation regarding the date of the *senatus consultum* that authorized C. Considius Nonianus to issue coins. If one does not speculate and follows the hoards presented in Hersh and Walker 1984, Table 2, one finds that C. Considius Nonianus served as *triumvir monetalis* in 56 B.C.

<sup>26</sup> The date is based on the hoards presented in Hersh and Walker 1984, Table 2. *Contra* the speculation in Hollstein 1993, p. 318 about the meaning of P. Fonteius Capito’s coin types.


<sup>28</sup> Mattingly [1995] 2004, p. 286 points out that the issue is rare, so hoards are less helpful in dating the term of this *triumvir monetalis*. Mattingly’s date of 54 B.C. is a more convincing interpretation of Vinicius’s coin type emphasizing Concordia after Pompey and Caesar renew their friendship in 54 B.C. rather than in 52 B.C. when Pompey marries the daughter of Caesar’s political opponent instead of Octavia (the latter interpretation is in Hollstein 1993, pp. 359-360).

<sup>29</sup> Hollstein 1993, pp. 351-352 argues for a date of 55 B.C. as if the coin type of a *sella curulis* with the letters COS under the chair refers to the second consulship of Pompey the Great in 55 B.C., but nothing links the chair to Pompey the Great as clearly as the legend SVLLA COS labeling the curule chair on the other side of the coin (*RRC* 434/2). The hoards presented in Hersh and Walker 1984, Table 2 support the date of 54 B.C.

<sup>30</sup> The hoards presented in Hersh and Walker 1984, Table 2 support a date of 53 B.C. or later. Caldus must have served as *triumvir monetalis* before serving as quaestor in 50 B.C. (Hollstein 1993, p. 363).
APPENDIX 3: SILVER COIN HOARDS FROM ASIA (C. 125 B.C. – A.D. 117)

Nineteen hoards from Asia, after the Aristonicus revolt, allow us to examine the circulating medium of Asia and see when the cistophori were recoined. This data set has been assembled from the *Inventory of Greek Coin Hoards*, the *Coin Hoards* series, and the lists of imperial cistophori hoards in *Roman Provincial Coinage, vol. 1* and William Metcalf’s *The Cistophori of Hadrian*.\(^{31}\) This list was checked against the list of cistophoric hoards compiled by François de Callataÿ.\(^{32}\) Two hoards from this list were excluded because insufficient data about the contents of the hoards could be obtained.\(^{33}\) The hoards are listed in Table App3.1 and their contents are recorded according to the period in which the coins were struck.

In a recent article, Andrew Meadows attempts to redate two hoards containing cistophori to the first century and to deduce the existence of additional cistophoric hoards from coins found at auction.\(^{34}\) The contents of the redated hoards are not sufficiently known and so are not included in this analysis. Since the other two hoards are reconstituted from auctions, it is not certain that they represent only one hoard. Therefore, they too are excluded from the analysis. It is worth noting, though, that Meadows revises the contents for hoard No. 11 (*CH* 8, 526). Neither these revisions nor the additional hoard (Meadows proposed a reconstruction of *CH* 8, 447 = *CH* 8, 525) would affect the conclusions reached in section 3.4 if indeed they were actually hoards.

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\(^{32}\) De Callataÿ 2013a, pp. 241-244.

\(^{33}\) *IGCH* 1466 which may not have been a single hoard and which was published with little detail about the coins’ dates (Milne 1927b, p. 189) and *IGCH* 1467 which entered trade.

\(^{34}\) Meadows 2015.
<table>
<thead>
<tr>
<th>Hoard</th>
<th>Date of deposition</th>
<th>Early Cistophori (c. 180/60 – 128 B.C.)</th>
<th>Late Cistophori (127 – 59 B.C.)</th>
<th>Proconsular Cistophori (58/7 – 48 B.C.)</th>
<th>Cistophori of Antony (39 B.C.)&lt;sup&gt;35&lt;/sup&gt;</th>
<th>Cistophori of Augustus (27 – c. 18 B.C.)</th>
<th>Cistophori of Flavians (A.D. 69 – 96)</th>
<th>Other coins</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. IGCH 1456</td>
<td>c. 105-100 B.C.</td>
<td>3</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. IGCH 1458</td>
<td>c. 100 B.C.</td>
<td>24</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. IGCH 1459</td>
<td>c. 95 B.C.</td>
<td>7</td>
<td>225</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. IGCH 1460</td>
<td>c. 95-90 B.C.</td>
<td>13</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. CH 10, 341</td>
<td>89/8 B.C.</td>
<td>5</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. IGCH 1461</td>
<td>c. 88 B.C.</td>
<td>2</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. IGCH 1462</td>
<td>c. 85-80 B.C.</td>
<td>2</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. IGCH 1358 = CH 5, 52</td>
<td>c. 75 B.C.</td>
<td>271</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>35</sup> Metcalf 2009, p. 207 states that the Atratinus issue of cistophori does not appear in any first century B.C. hoards.
Table App3.1. Hoards of Cistophori from Asia (c. 125 B.C. – A.D. 117)

<table>
<thead>
<tr>
<th>Hoard</th>
<th>Date of deposition</th>
<th>Early Cistophori (c. 180/60 – 128 B.C.)</th>
<th>Late Cistophori (127 - 59 B.C.)</th>
<th>Proconsular Cistophori (58/7 – 48 B.C.)</th>
<th>Cistophori of Antony (39 B.C.)&lt;sup&gt;35&lt;/sup&gt;</th>
<th>Cistophori of Augustus (27 – c. 18 B.C.)</th>
<th>Cistophori of Flavians (A.D. 69 – 96)</th>
<th>Other coins</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td><em>IGCH</em> 1359</td>
<td>c. 79-65 B.C.</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>1 Byzantine Lysimachus tetradr.; 14 Athenian New Style tetradr. (and 2 imitations); 1 tetradr. of Nicomedes II-III; 1 tetradr. of Mithridates VI; 15 dr. of Chios</td>
</tr>
<tr>
<td>10.</td>
<td><em>CH</em> 9, 560</td>
<td>c. 70 B.C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td><em>CH</em> 8, 526</td>
<td>c. 65 B.C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td><em>CH</em> 8, 536 = 9, 568</td>
<td>c. 50 B.C.</td>
<td></td>
<td>61</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td><em>IGCH</em> 1464</td>
<td>c. 50-40 B.C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td><em>CH</em> 8, 537</td>
<td>After 48 B.C.</td>
<td>3</td>
<td>58</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td><em>CH</em> 8, 539&lt;sup&gt;36&lt;/sup&gt;</td>
<td>c. 45 B.C.</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td></td>
<td></td>
<td>1 denarius (54 B.C.)</td>
</tr>
</tbody>
</table>

<sup>35</sup> I thank David Hill, Archivist, American Numismatic Society for providing these data from the Bankhaus Aufhäuser auction on 9 Oct. 1990.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16. CH6, 86&lt;sup&gt;37&lt;/sup&gt;</td>
<td>c. 40 B.C.</td>
<td>4</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>62 denarii (90/89-41 B.C.); 1 dr. of Kibyra (2&lt;sup&gt;nd&lt;/sup&gt;/1&lt;sup&gt;st&lt;/sup&gt; Cent. B.C.)</td>
</tr>
<tr>
<td>18. CH2, 130&lt;sup&gt;39&lt;/sup&gt;</td>
<td>After 18 B.C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Yalvac, 1905&lt;sup&gt;40&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cistophori of Vespasian, Titus, Domitian, Julia, Domitia</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Denarii of Nero, Otho, Vitellius</td>
</tr>
</tbody>
</table>

<sup>37</sup> Overbeck 1978.
<sup>38</sup> Sutherland 1970, pp. 1-11.
<sup>39</sup> De Roquefeuil 1975.
<sup>40</sup> Imhoof-Blumer 1905, pp. 168 and 272.
APPENDIX 4: TABLES FOR THE EFFECTS OF THE ANTONIAN FLEET COINAGE

The data for the analysis in Section 3.5 on the effects of the Antonian Fleet Coinage on the eastern bronze coinage denominations (Section 3.5) is presented in a series of tables, one table for each area in which the fleet coinage circulated. In the tables, each row represents a single issue from a mint. All the issues of a mint are grouped together within a box. For these issues, the first column reports the location of each mint, and the second column records the date of each issue with the earliest date in the top row and the latest date in the bottom row. If no date is known, no date is recorded in the second column. The third column records the citation for that row’s issue from Roman Provincial Coinage or another source. The other columns record the denominations of the coins. If denominations of bronze coins exist for that province, the column is labeled with the coins’ module. Within the columns, the module and average weights of the coins, as provided by or determined from the data in Roman Provincial Coinage or other sources, are given. If the mints produced coins that do not fit the province’s denomination pattern, these coins are listed in an unlabeled column. The tables include only mints which clearly struck bronze coins before and after the fleet coinage of 38 – 37 B.C. in order to determine whether the fleet coinage affected the production of bronze coinage in the future province of Achaea.
## Table App4.1. Diameter and Average Weights of Copper Alloy Coinage Struck by Civil War Legates in Achaea

<table>
<thead>
<tr>
<th>Legate</th>
<th>Date</th>
<th>Citation</th>
<th>Quadrans</th>
<th>Semis</th>
<th>As</th>
<th>Dupondius</th>
<th>Tressis</th>
<th>Sestertius</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atratinus</td>
<td>38-37 BC</td>
<td>(RPC\ I) 1453-58</td>
<td>13-17/2.90</td>
<td>15-16/4.75</td>
<td>22-24/9.29</td>
<td>24-31/11.99</td>
<td>30-35/17.02</td>
<td>33-38/20.36</td>
</tr>
<tr>
<td>Atratinus</td>
<td>38-37 BC</td>
<td>(RPC\ I) 1459-61</td>
<td>17-20/4.95</td>
<td>21-23/7.55</td>
<td>27-32/11.72</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capito</td>
<td>38-37 BC</td>
<td>(RPC\ I) 1462-67</td>
<td>11-14/2.53</td>
<td>14-16/2.96</td>
<td>20-23/8.06</td>
<td>22-28/14.75</td>
<td>28-32/22.15</td>
<td>33-39/31.67</td>
</tr>
<tr>
<td>Capito</td>
<td>38-37 BC</td>
<td>(RPC\ I) 1468-70</td>
<td>14-17/3.91</td>
<td>16-26/7.55</td>
<td>24-28/12.74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proculeius</td>
<td>31-28 BC</td>
<td>(RPC\ I) 1359</td>
<td>21-22/6.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proculeius</td>
<td>31-28 BC</td>
<td>(RPC\ I) 1360-61</td>
<td>12-13/1.87</td>
<td>15-16/2.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proculeius</td>
<td>31-28 BC</td>
<td>(RPC\ I) 1362</td>
<td>18/2.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

0.75 Asses 1.5 Asses

## Table App4.2. Diameter and Average Weights of Copper Alloy Coinage Struck in Achaea, After 50 B.C.

<table>
<thead>
<tr>
<th>Mint</th>
<th>Date</th>
<th>Citation</th>
<th>Denominations: Diameter (mm) / Average Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sparta</td>
<td>44-31 BC</td>
<td>(RPC\ I) 1101</td>
<td>15-16 mm 18-22 mm 19/4.88</td>
</tr>
<tr>
<td>Sparta</td>
<td>32-1 BC: Aes</td>
<td>(RPC\ I) 1102-1107</td>
<td>15/2.57 20/10.69 27/10.69</td>
</tr>
<tr>
<td>Sparta</td>
<td>32-1 BC: LB</td>
<td>(RPC\ I) 1102-1107</td>
<td>15/2.46 16/3.05</td>
</tr>
<tr>
<td>Sparta</td>
<td>7-2 BC</td>
<td>(RPC\ I) 1108</td>
<td>19/5.46</td>
</tr>
</tbody>
</table>
Table App4.2. Diameter and Average Weights of Copper Alloy Coinage Struck in Achaea, After 50 B.C.

<table>
<thead>
<tr>
<th>Mint</th>
<th>Date</th>
<th>Citation</th>
<th>Denominations: Diameter (mm) / Average Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>15-16 mm</td>
</tr>
<tr>
<td>Sparta</td>
<td>2BC-AD 31</td>
<td><em>RPC I</em> 1109-12</td>
<td>15/4.20</td>
</tr>
<tr>
<td>Claudian: Aes</td>
<td>41</td>
<td><em>RPC I</em> 1113-15</td>
<td></td>
</tr>
<tr>
<td>Claudian: Cu</td>
<td>42 or 41</td>
<td><em>RPC I</em> 1113-15</td>
<td></td>
</tr>
<tr>
<td>Corinth</td>
<td>44 or 43</td>
<td><em>RPC I</em> 1116</td>
<td>22-24/9.22</td>
</tr>
<tr>
<td></td>
<td>43 or 42</td>
<td><em>RPC I</em> 1117</td>
<td></td>
</tr>
<tr>
<td></td>
<td>42 or 41</td>
<td><em>RPC I</em> 1118-21</td>
<td>17-20/4.44</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td><em>RPC I</em> 1122-23</td>
<td>15-20/4.45</td>
</tr>
<tr>
<td></td>
<td>39-36</td>
<td><em>RPC I</em> 1124-26</td>
<td>16-17/3.99</td>
</tr>
<tr>
<td></td>
<td>34-31</td>
<td><em>RPC I</em> 1127-28</td>
<td>21-22/7.63</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td><em>RPC I</em> 1129-31</td>
<td>14-16/3.33</td>
</tr>
<tr>
<td></td>
<td>27/6 or 26/5</td>
<td><em>RPC I</em> 1132</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17/6</td>
<td><em>RPC I</em> 1133</td>
<td>15-16/2.77</td>
</tr>
<tr>
<td></td>
<td>10/9-5/4</td>
<td><em>RPC I</em> 1134-35</td>
<td>15-16/3.23</td>
</tr>
</tbody>
</table>

41 The denominations in Amandry 1988 are followed here, even when they differ slightly from the modules. Amandry determined the denominations from weights and countermarks. The modules reported in Amandry 1988, pp. 82-84 differ slightly from the modules in Burnett, Amandry, and Ripollès 1992, pp. 250-257, which are used here because they provide a range for the coins’ modules, just as at other mints.
Table App4.2. Diameter and Average Weights of Copper Alloy Coinage Struck in Achaea, After 50 B.C.

<table>
<thead>
<tr>
<th>Mint</th>
<th>Date</th>
<th>Citation</th>
<th>Denominations:</th>
<th>Diameter (mm) / Average Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15-16 mm</td>
</tr>
<tr>
<td>Corinth</td>
<td>2/1 BC</td>
<td><em>RPC I</em> 1136-37</td>
<td>15/3.39</td>
<td>20/6.57</td>
</tr>
<tr>
<td>AD 1/2</td>
<td></td>
<td><em>RPC I</em> 1138</td>
<td>21/6.97</td>
<td></td>
</tr>
<tr>
<td>4/5</td>
<td></td>
<td><em>RPC I</em> 1139-44</td>
<td>21/6.50</td>
<td></td>
</tr>
<tr>
<td>12/3-15/6</td>
<td></td>
<td><em>RPC I</em> 1145-48</td>
<td>20/6.88</td>
<td></td>
</tr>
<tr>
<td>21/2</td>
<td></td>
<td><em>RPC I</em> 1149-50</td>
<td>20-21/6.45</td>
<td></td>
</tr>
<tr>
<td>32/3 or 33/4</td>
<td></td>
<td><em>RPC I</em> 1151-71</td>
<td>15-16/3.41</td>
<td>20/7.03</td>
</tr>
<tr>
<td>37/8</td>
<td></td>
<td><em>RPC I</em> 1172-79</td>
<td>20/7.02</td>
<td></td>
</tr>
<tr>
<td>42/3-45/6</td>
<td></td>
<td><em>RPC I</em> 1180-81</td>
<td>19-20/6.55</td>
<td></td>
</tr>
<tr>
<td>50/1</td>
<td></td>
<td><em>RPC I</em> 1182-88</td>
<td>15/3.59</td>
<td>20-21/7.01</td>
</tr>
<tr>
<td>54/5 or 55/6</td>
<td></td>
<td><em>RPC I</em> 1189-1200</td>
<td>20/7.22</td>
<td></td>
</tr>
<tr>
<td>57/8 or 58/9</td>
<td></td>
<td><em>RPC I</em> 1201-02</td>
<td>20/7.16</td>
<td></td>
</tr>
<tr>
<td>66/7</td>
<td></td>
<td><em>RPC I</em> 1203-06</td>
<td>19-20/6.73</td>
<td></td>
</tr>
<tr>
<td>67/8</td>
<td></td>
<td><em>RPC I</em> 1207-09</td>
<td>19/6.90</td>
<td></td>
</tr>
</tbody>
</table>
### Table App4.2. Diameter and Average Weights of Copper Alloy Coinage Struck in Achaea, After 50 B.C.

<table>
<thead>
<tr>
<th>Mint</th>
<th>Date</th>
<th>Citation</th>
<th>Denominations: Diameter (mm) / Average Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyme</td>
<td>280 BC</td>
<td>Imhoof-Blumer 1883, pp. 162-164</td>
<td>15-16 mm / 14-17 / 3.69</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Imhoof-Blumer 1883, pp. 162-164</td>
<td>18-22 mm / 15-16 / 2.40</td>
</tr>
<tr>
<td></td>
<td>40 BC</td>
<td><em>RPC</em> I 1283-84</td>
<td>15-16 mm / 17-20 / 4.46</td>
</tr>
<tr>
<td></td>
<td>39-36 BC</td>
<td><em>RPC</em> I 1285</td>
<td>18-22 mm / 20-21 / 4.51</td>
</tr>
<tr>
<td></td>
<td>31-27 BC</td>
<td><em>RPC</em> I 1286</td>
<td>21-5.68</td>
</tr>
<tr>
<td>Augustan</td>
<td></td>
<td><em>RPC</em> I 1287-88</td>
<td>18-20 mm / 19/4.51</td>
</tr>
<tr>
<td></td>
<td>Tiberian</td>
<td><em>RPC</em> I 1289</td>
<td>18-20 mm / 5.95</td>
</tr>
<tr>
<td>Athens</td>
<td>c. 45 BC</td>
<td>Kroll 1972, no. 164-181</td>
<td>18-21 mm / 9.24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kroll 1972, no. 182-213</td>
<td>18-20 mm / 8.67</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kroll 1972, no. 214-230</td>
<td>18-19 mm / 8.54</td>
</tr>
<tr>
<td></td>
<td>39-37 BC</td>
<td>Kroll 1972, no. 231-259</td>
<td>16-19 mm / 6.36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kroll 1972, no. 260-274</td>
<td>17-19 mm / 5.84</td>
</tr>
<tr>
<td></td>
<td>c. 31-20s BC</td>
<td><em>RPC</em> I 1306-08</td>
<td>19-8.50</td>
</tr>
</tbody>
</table>
Table App.4.2. Diameter and Average Weights of Copper Alloy Coinage Struck in Achaea, After 50 B.C.

<table>
<thead>
<tr>
<th>Mint</th>
<th>Date</th>
<th>Citation</th>
<th>Denominations: Diameter (mm) / Average Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>15-16 mm / 18-22 mm</td>
</tr>
<tr>
<td>Athens</td>
<td>late 20s BC</td>
<td><em>RPC I</em> 1309-11</td>
<td>19-20/7.63</td>
</tr>
<tr>
<td></td>
<td>c. 10s BC</td>
<td><em>RPC I</em> 1312</td>
<td>18/6.30</td>
</tr>
<tr>
<td>Chalcis</td>
<td>1st Cent. BC</td>
<td><em>RPC I</em> 1343</td>
<td>23/7.37</td>
</tr>
<tr>
<td></td>
<td>Augustan</td>
<td><em>RPC I</em> 1344</td>
<td>20/6.39</td>
</tr>
<tr>
<td></td>
<td>Neronian</td>
<td><em>RPC I</em> 1345-46</td>
<td>21/7.07</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>RPC I</em> 1347-48</td>
<td>17/4.95</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>RPC I</em> 1349-51</td>
<td>21/6.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>RPC I</em> 1352-54</td>
<td>20/5.84</td>
</tr>
</tbody>
</table>
APPENDIX 5: SILVER COIN HOARDS FROM ACHAEA (146 B.C. – A.D. 300)

Table App5.1 lists seventy-eight hoards buried after 146 B.C. in the region that became the province of Achaea.\footnote{These hoards were collected from Crawford 1969b; Thompson, Mørkholm, and Kraay 1973; and Lockyear 2007.} This corpus of seventy-eight hoards does not include five hoards from this period containing only coins from Peloponnesian mints.\footnote{IGCH 301; IGCH 266; IGCH 267 = CH X, 159; and CH II, 91.} These hoards have been excluded because their dates have not been updated to account for Christof Boehringer’s new chronology for coins struck by mints that were a part of the Achaean League.\footnote{Boehringer 1997 states that a new dating of all the hoards continues to be a desideratum.} These coins ceased to be produced before 40 B.C., and the exclusion of these five hoards will not affect the argument in Section 3.6.

In addition to Boehringer’s new chronology for Peloponnesian mints, two other updated chronologies are used to determine the closing dates of these hoards. The chronology of denarii minted during the 70s, 60s, and 50s B.C. was updated based on a hoard found at Mesagne, near Brundisium in 1979 or 1980.\footnote{Hersh and Walker 1984; Hollstein 1993; Mattingly [1995] 2004; and Appendix 3.} Secondly, Otto Mørkholm definitively established the low chronology as the proper chronology for Athenian New Style tetradrachms, but he did not re-date each moneyer’s issue of the “late period” tetradrachms. The dates for hoards closing with “late period” tetradrachms are based on the chronology resulting from Christian Habicht’s prosopographical arguments, which may or may not be individually fully convincing, but are here used for convenience.\footnote{Habicht 1991. On the dangers of using prosopography to date the terms of the Athenian mint magistrates, Thompson 1962, pp. 306-308.}

The documentation of the coin hoards is also not always complete. Sometimes the record of the hoard did not include the number of specimens from a single mint. For example, hoard No. 9 includes eight silver coins from mints in Thessaly, Corinth, and Macedonia; but Coin Hoards
did not indicate how many coins were produced by each mint. If no further documentation of this hoard could be obtained, AR indicates that silver coins were found in that hoard. If any gold coins were also in the hoard, the number of gold coins is indicated and followed by the letters AU. If any bronze coins were in the hoard, the letters AE indicate this fact. With these caveats, Table App5.1 lists the number of Roman denarii in each hoard, the number of non-Roman coins in the hoard, and the percentage of silver coins that were from a denarius mint.

<table>
<thead>
<tr>
<th>Citation</th>
<th>Findspot</th>
<th>Closing Date</th>
<th>Roman Denarii</th>
<th>Non-Roman Coins</th>
<th>Percentage of Silver Coins from Denarius Mints</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGCH 327</td>
<td>Epirus, before 1847</td>
<td>2nd-1st Cent. B.C.</td>
<td>0</td>
<td>24</td>
<td>0.0%</td>
</tr>
<tr>
<td>CH II, 80</td>
<td>Patrae?, 1970</td>
<td>2nd Cent B.C.</td>
<td>0</td>
<td>17</td>
<td>0.0%</td>
</tr>
<tr>
<td>CH VIII, 369</td>
<td>Elis, 1973</td>
<td>196-30 B.C.</td>
<td>0</td>
<td>6 AR, AE</td>
<td>0.0%</td>
</tr>
<tr>
<td>CH I, 83</td>
<td>Thessaly, 1970</td>
<td>Mid-2nd Cent B.C.</td>
<td>0</td>
<td>50+</td>
<td>0.0%</td>
</tr>
<tr>
<td>CH IV, 56</td>
<td>Thessaly, 1938</td>
<td>Mid-2nd Cent B.C.</td>
<td>0</td>
<td>158</td>
<td>0.0%</td>
</tr>
<tr>
<td>CH III, 56</td>
<td>Greece, 1970-1977</td>
<td>150 B.C.</td>
<td>0</td>
<td>8+</td>
<td>0.0%</td>
</tr>
<tr>
<td>CH III, 57</td>
<td>Thessaly, before 1973</td>
<td>150 B.C.</td>
<td>0</td>
<td>38</td>
<td>0.0%</td>
</tr>
<tr>
<td>CH V, 44</td>
<td>Patras environs</td>
<td>150 B.C.</td>
<td>0</td>
<td>8</td>
<td>0.0%</td>
</tr>
<tr>
<td>CH VIII, 450</td>
<td>Arta, 1982</td>
<td>150-100 B.C.</td>
<td>0</td>
<td>AR</td>
<td>0.0%</td>
</tr>
<tr>
<td>CH VIII, 453</td>
<td>Unknown find spot, before 1937, part of IGCH 260?</td>
<td>c. 146 B.C. or later</td>
<td>0</td>
<td>65</td>
<td>0.0%</td>
</tr>
<tr>
<td>CH VIII, 455</td>
<td>Demetrias, 1985</td>
<td>c. 146 B.C. – 1st Cent. B.C.</td>
<td>0</td>
<td>AR</td>
<td>0.0%</td>
</tr>
<tr>
<td>CH VIII, 454</td>
<td>Patras, 1973</td>
<td>c. 146 B.C.</td>
<td>0</td>
<td>117</td>
<td>0.0%</td>
</tr>
<tr>
<td>IGCH 271 = RRCH 158</td>
<td>Agrinion, 1959</td>
<td>Soon after 129 B.C.</td>
<td>39</td>
<td>1268</td>
<td>3.0%</td>
</tr>
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</table>
Table App5.1. Silver Coins Hoards from Achaea, 146 B.C. – A.D. 300

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<tr>
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<th>Percentage of Silver Coins from Denarius Mints</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>CH IX, 265</td>
<td>Unknown find spot, 1996</td>
<td>123-100 B.C.</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>15</td>
<td>CH VIII, 473</td>
<td>Peloponnese?, before 1957</td>
<td>c. 120 B.C.</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>16</td>
<td>IGCH 317</td>
<td>Naupactus environs, 1967</td>
<td>c. 114 B.C.</td>
<td>3</td>
<td>1</td>
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<tr>
<td>17</td>
<td>IGCH 272</td>
<td>Delos, 1959</td>
<td>c. 110 B.C.</td>
<td>0</td>
<td>36</td>
</tr>
<tr>
<td>18</td>
<td>CH VIII, 480</td>
<td>Unknown find spot, 1982 or earlier</td>
<td>c. 108 B.C.</td>
<td>0</td>
<td>≈ 13</td>
</tr>
<tr>
<td>19</td>
<td>IGCH 284</td>
<td>Delos, 1905</td>
<td>c. 104 B.C.</td>
<td>0</td>
<td>249</td>
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<tr>
<td>20</td>
<td>IGCH 288</td>
<td>Salamis, 1936</td>
<td>c. 100 B.C.</td>
<td>0</td>
<td>36</td>
</tr>
<tr>
<td>21</td>
<td>CH VIII, 483</td>
<td>Unknown find spot, 1993</td>
<td>c. 100 B.C.</td>
<td>0</td>
<td>AR</td>
</tr>
<tr>
<td>22</td>
<td>IGCH 325</td>
<td>Delos, 1968</td>
<td>Late 2nd-early 1st Cent. B.C.</td>
<td>0</td>
<td>7</td>
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<tr>
<td>23</td>
<td>IGCH 319</td>
<td>Delos, 1906</td>
<td>Late 2nd-early 1st Cent. B.C.</td>
<td>0</td>
<td>2 AR, AE</td>
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<tr>
<td>24</td>
<td>IGCH 322</td>
<td>Delos, 1910</td>
<td>Late 2nd-early 1st Cent. B.C.</td>
<td>0</td>
<td>1 AR, AE</td>
</tr>
<tr>
<td>25</td>
<td>IGCH 315 = CH V, 45 = CH IX, 263 = CH X, 137</td>
<td>Near Volos, 1966</td>
<td>Late 2nd Cent. B.C.</td>
<td>0</td>
<td>84</td>
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<tr>
<td>26</td>
<td>IGCH 313</td>
<td>Larissa, c. 1954 or earlier</td>
<td>Late 2nd Cent. B.C.</td>
<td>0</td>
<td>1199</td>
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<tr>
<td>27</td>
<td>IGCH 314</td>
<td>Lamia, 1956</td>
<td>Late 2nd Cent. B.C.</td>
<td>0</td>
<td>36</td>
</tr>
<tr>
<td>28</td>
<td>IGCH 328</td>
<td>Delos, 1910</td>
<td>Early 1st cent. B.C.</td>
<td>0</td>
<td>3 AR, AE</td>
</tr>
<tr>
<td>29</td>
<td>CH IX, 291</td>
<td>Nr. Pharsalos, 1994</td>
<td>100-50 B.C.</td>
<td>3+</td>
<td>187+</td>
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</table>
Table App5.1. Silver Coins Hoards from Achaea, 146 B.C. – A.D. 300

<table>
<thead>
<tr>
<th>Citation</th>
<th>Findspot</th>
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<th>Roman Denarii</th>
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<th>Percentage of Silver Coins from Denarius Mints</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>IGCH 287</td>
<td>Oreus (anc. Histiaea), before 1950</td>
<td>c. 97 B.C.</td>
<td>0</td>
<td>AR</td>
</tr>
<tr>
<td>31</td>
<td>IGCH 289</td>
<td>Halmyros, near anc. Larissa Cremaste, 1929</td>
<td>c. 90 B.C.</td>
<td>0</td>
<td>969</td>
</tr>
<tr>
<td>32</td>
<td>IGCH 291 = CH IX, 311</td>
<td>Carystus, 1957</td>
<td>c. 90 B.C.</td>
<td>0</td>
<td>≈ 62</td>
</tr>
<tr>
<td>33</td>
<td>CH VIII, 506</td>
<td>Northwest Greece, 1988/9</td>
<td>c. 90 B.C.</td>
<td>0</td>
<td>119</td>
</tr>
<tr>
<td>34</td>
<td>IGCH 335</td>
<td>Delos, 1908</td>
<td>c. 88 B.C.</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>35</td>
<td>IGCH 285</td>
<td>Delos, 1911</td>
<td>c. 88 B.C.</td>
<td>0</td>
<td>≈ 250</td>
</tr>
<tr>
<td>36</td>
<td>IGCH 286</td>
<td>Delos, 1905</td>
<td>c. 88 B.C.</td>
<td>0</td>
<td>123</td>
</tr>
<tr>
<td>37</td>
<td>IGCH 290</td>
<td>Delos, 1906</td>
<td>c. 88 B.C.</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>38</td>
<td>IGCH 294</td>
<td>Delos, 1907</td>
<td>c. 88 B.C.</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>39</td>
<td>IGCH 295</td>
<td>Delos, 1910</td>
<td>c. 88 B.C.</td>
<td>0</td>
<td>92</td>
</tr>
<tr>
<td>40</td>
<td>IGCH 336</td>
<td>Delos, 1964</td>
<td>c. 88 B.C.</td>
<td>0</td>
<td>59 AR, 5 AU</td>
</tr>
<tr>
<td>41</td>
<td>CH IX, 312</td>
<td>Eretria, 1974</td>
<td>88/7 B.C.</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>42</td>
<td>IGCH 333</td>
<td>Delos, 1909</td>
<td>88 B.C. or later</td>
<td>0</td>
<td>11 AR, AE</td>
</tr>
<tr>
<td>43</td>
<td>IGCH 334</td>
<td>Delos, 1967</td>
<td>88 or 69 B.C.</td>
<td>0</td>
<td>13</td>
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<tr>
<td>44</td>
<td>IGCH 292</td>
<td>Delos, 1881</td>
<td>c. 87 B.C.</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td>45</td>
<td>IGCH 293</td>
<td>Delos, 1894</td>
<td>c. 87 B.C.</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>46</td>
<td>IGCH 337</td>
<td>Piraeus, 1937</td>
<td>c. 87 B.C.</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>47</td>
<td>IGCH 296</td>
<td>Greece?, date unknown</td>
<td>After 87 B.C.</td>
<td>0</td>
<td>48+</td>
</tr>
<tr>
<td>48</td>
<td>IGCH 345</td>
<td>Chalcis, c. 1955</td>
<td>c. 86-84 B.C.</td>
<td>0</td>
<td>AR</td>
</tr>
<tr>
<td>49</td>
<td>CH IX, 314</td>
<td>Unknown find spot, before 1960</td>
<td>86 B.C.</td>
<td>0</td>
<td>7</td>
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<tr>
<td>50</td>
<td>RRCH 242</td>
<td>Piraeus, 1927</td>
<td>86 B.C.</td>
<td>42</td>
<td>0</td>
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<tr>
<td>51</td>
<td>IGCH 339</td>
<td>Athens (Dipylon), 1875</td>
<td>c. 86 B.C.</td>
<td>0</td>
<td>36</td>
</tr>
<tr>
<td>52</td>
<td>IGCH 344</td>
<td>Carystus, 1883</td>
<td>c. 86 B.C.</td>
<td>0</td>
<td>90-100</td>
</tr>
<tr>
<td>53</td>
<td>IGCH 346</td>
<td>Greece, c. 1921</td>
<td>c. 85-80 B.C.</td>
<td>≈ 50</td>
<td>34</td>
</tr>
</tbody>
</table>
Table App5.1. Silver Coins Hoards from Achaea, 146 B.C. – A.D. 300

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>54 IGCH 348</td>
<td>Delos, 1907</td>
<td>c. 84 B.C.</td>
<td>0</td>
<td>12</td>
<td>0.0%</td>
</tr>
<tr>
<td>55 IGCH 349</td>
<td>Delos, 1909</td>
<td>c. 83-82 B.C.</td>
<td>0</td>
<td>11</td>
<td>0.0%</td>
</tr>
<tr>
<td>56 IGCH 270</td>
<td>Olympia, 1939</td>
<td>c. 84 B.C.</td>
<td>0</td>
<td>680+ and other AR</td>
<td>0.0%</td>
</tr>
<tr>
<td>57 IGCH 262</td>
<td>Diakofta, 1965</td>
<td>c. 80-50 B.C.</td>
<td>1</td>
<td>2902</td>
<td>0.0%</td>
</tr>
<tr>
<td>58 CH VIII, 371 = CH X, 168</td>
<td>Vellies (Monemvasia), Greece</td>
<td>80-50 B.C.</td>
<td>0</td>
<td>78</td>
<td>0.0%</td>
</tr>
<tr>
<td>59 IGCH 347</td>
<td>Delos, 1905</td>
<td>c. 78 B.C.</td>
<td>0</td>
<td>96+</td>
<td>0.0%</td>
</tr>
<tr>
<td>60 CH VIII, 517</td>
<td>North of Larissa, 1985</td>
<td>c. 75 B.C.</td>
<td>0</td>
<td>943+</td>
<td>0.0%</td>
</tr>
<tr>
<td>61 IGCH 297</td>
<td>Delos, 1912</td>
<td>c. 69 B.C.</td>
<td>0</td>
<td>50</td>
<td>0.0%</td>
</tr>
<tr>
<td>62 IGCH 260</td>
<td>Western Greece, 1936</td>
<td>c. 50 B.C.</td>
<td>0</td>
<td>677</td>
<td>0.0%</td>
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<tr>
<td>63 CH VIII, 530</td>
<td>Near Nekromantion, 1982</td>
<td>c. 50 B.C.</td>
<td>2</td>
<td>1 AR, AE</td>
<td>66.6%</td>
</tr>
<tr>
<td>64 CH IX, 320</td>
<td>South Thessaly, 1983</td>
<td>Mid-1st Cent. B.C.</td>
<td>0</td>
<td>56</td>
<td>0.0%</td>
</tr>
<tr>
<td>65 CH IX, 321</td>
<td>Thessaly, 1963</td>
<td>Mid-1st Cent. B.C.</td>
<td>0</td>
<td>94</td>
<td>0.0%</td>
</tr>
<tr>
<td>66 CH IX, 322</td>
<td>Thessaly, 1964</td>
<td>Mid-1st Cent. B.C.</td>
<td>0</td>
<td>24</td>
<td>0.0%</td>
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<tr>
<td>67 CH IX, 323</td>
<td>Thessaly, 1969</td>
<td>Mid-1st Cent. B.C.</td>
<td>0</td>
<td>42</td>
<td>0.0%</td>
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<tr>
<td>68 Lockyear 252</td>
<td>Athens</td>
<td>49 B.C.</td>
<td>47</td>
<td>0</td>
<td>100.0%</td>
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<tr>
<td>69 CH X, 184</td>
<td>Demetrias, 1993</td>
<td>46/5-27 B.C.</td>
<td>0</td>
<td>68</td>
<td>0.0%</td>
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<tr>
<td>70 IGCH 351 = RRCH 376</td>
<td>Aidona, 1955</td>
<td>c. 46 B.C.</td>
<td>4</td>
<td>0</td>
<td>100.0%</td>
</tr>
<tr>
<td>71 RRCH 465 = CH X, 186</td>
<td>Delos, 1905</td>
<td>32/1 B.C.</td>
<td>649</td>
<td>1</td>
<td>100.0%</td>
</tr>
<tr>
<td>72 RRCH 467</td>
<td>Euboea 1948</td>
<td>32/1 B.C.</td>
<td>97</td>
<td>0</td>
<td>100.0%</td>
</tr>
<tr>
<td>73 RRCH 473</td>
<td>Preveza, 1960</td>
<td>32/1 B.C.</td>
<td>41</td>
<td>0</td>
<td>100.0%</td>
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</table>

Table App5.1. Silver Coins Hoards from Achaea, 146 B.C. – A.D. 300

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</thead>
<tbody>
<tr>
<td>74 CH VII, 226 = CH VIII, 542</td>
<td>Preveza, 1982</td>
<td>32/1 B.C.</td>
<td>122</td>
<td>2</td>
<td>98.4%</td>
</tr>
<tr>
<td>75 RRCH 533</td>
<td>Greece</td>
<td>c. 2 B.C.-4 A.D.</td>
<td>424</td>
<td>0</td>
<td>100.0%</td>
</tr>
<tr>
<td>76 Sidiropoulos 2011</td>
<td>Messene, 2009</td>
<td>c. 2 B.C.-4 A.D.</td>
<td>62</td>
<td>1</td>
<td>100.0%</td>
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<tr>
<td>77 CH IV, 108</td>
<td>Acarnania, 1976/7</td>
<td>A.D. 97</td>
<td>39</td>
<td>0</td>
<td>100.0%</td>
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<tr>
<td>78 CH V, 128</td>
<td>Krani, Cephalonia</td>
<td>c. 175 A.D.</td>
<td>355</td>
<td>0</td>
<td>100.0%</td>
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</tbody>
</table>
APPENDIX 6: THE AUGUSTAN TRESVIRI MONETALES

The chronology of the tresviri monetales, who were responsible for overseeing the mint at Rome, during the reign of Augustus has been much debated. The most recent and most convincing contribution to this debate is Alexa Küter’s Zwischen Republik und Kaiserzeit: die Münzmeisterprägung unter Augustus, but some of her chronology can be improved upon. Table App6.1 provides Küter’s chronology and the chronology used in this dissertation. This appendix explains the disagreements and the new, proposed chronology. Where no comments are made, it should be assumed that Küter’s chronology is followed.

Table App6.1. Comparison of Chronologies of Augustan Tresviri Monetales

<table>
<thead>
<tr>
<th>Date</th>
<th>Tresviri Monetales</th>
<th>Metals</th>
<th>Date</th>
<th>Tresviri Monetales</th>
<th>Metals</th>
</tr>
</thead>
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<tr>
<td>23 B.C.</td>
<td>C. Asinius Gallus,</td>
<td>AE</td>
<td>c. 23 B.C.</td>
<td>C. Asinius Gallus,</td>
<td>AE</td>
</tr>
<tr>
<td></td>
<td>C. Cassius Celer,</td>
<td>AE</td>
<td></td>
<td>C. Cassius Celer,</td>
<td>AE</td>
</tr>
<tr>
<td></td>
<td>C. Gallius Lupercus</td>
<td>AE</td>
<td></td>
<td>C. Gallius Lupercus</td>
<td>AE</td>
</tr>
<tr>
<td></td>
<td>L. Naevius Surdinus,</td>
<td>AE</td>
<td></td>
<td>L. Naevius Surdinus,</td>
<td>AE</td>
</tr>
<tr>
<td></td>
<td>C. Plotius Rufus</td>
<td>AE</td>
<td></td>
<td>C. Plotius Rufus</td>
<td>AE</td>
</tr>
<tr>
<td>21 B.C.</td>
<td>Q. Aelius Lamia,</td>
<td>AE</td>
<td>19 or 18 B.C.</td>
<td>Q. Rustius</td>
<td>AU, AR</td>
</tr>
<tr>
<td></td>
<td>C. Marcus Censorinus,</td>
<td>AE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T. Quinctius Crispinus Sulpicianus</td>
<td>AE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 B.C.</td>
<td>Q. Rustius</td>
<td>AU, AR</td>
<td>19 or 18 B.C.</td>
<td>Q. Rustius</td>
<td>AU, AR</td>
</tr>
<tr>
<td>18 B.C.</td>
<td>P. Petronius Turpilianus,</td>
<td>AU</td>
<td>19 or 18 B.C.</td>
<td>P. Petronius Turpilianus,</td>
<td>AU, AR</td>
</tr>
<tr>
<td></td>
<td>L. Aquilius Florus,</td>
<td>AR</td>
<td></td>
<td>L. Aquilius Florus,</td>
<td>AR, AE</td>
</tr>
<tr>
<td></td>
<td>M. Durmius</td>
<td>AR</td>
<td></td>
<td>M. Durmius</td>
<td>AR, AE</td>
</tr>
<tr>
<td>17 B.C.</td>
<td>M. Sanquinius,</td>
<td>AU, AR</td>
<td>17 B.C.</td>
<td>M. Sanquinius,</td>
<td>AU, AR</td>
</tr>
<tr>
<td></td>
<td>P. Licinius Stolo,</td>
<td>AE</td>
<td></td>
<td>P. Licinius Stolo,</td>
<td>AE</td>
</tr>
<tr>
<td></td>
<td>Ti. Sempronius Craccus</td>
<td>AE</td>
<td></td>
<td>Ti. Sempronius Craccus</td>
<td>AE</td>
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</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Küter’s Chronology</th>
<th>My Chronology</th>
<th>Date</th>
<th>Küter’s Chronology</th>
<th>My Chronology</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 B.C.</td>
<td>L. Vinicius,</td>
<td>AR</td>
<td>16 B.C.</td>
<td>L. Vinicius,</td>
<td>AR</td>
</tr>
<tr>
<td></td>
<td>L. Mescinius Rufus,</td>
<td>AU, AR</td>
<td></td>
<td>L. Mescinius Rufus,</td>
<td>AU, AR</td>
</tr>
<tr>
<td></td>
<td>C. Antistius Vetus</td>
<td>AU, AR</td>
<td></td>
<td>C. Antistius Vetus</td>
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</tr>
<tr>
<td>16 B.C.</td>
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<td></td>
<td>16 B.C.</td>
<td>AR</td>
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<tr>
<td></td>
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<td>AU, AR</td>
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<td></td>
<td>AU, AR</td>
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<td></td>
<td>AU, AR</td>
<td></td>
</tr>
<tr>
<td>c. 15 -12</td>
<td>Q. Aelius Lamia,</td>
<td>AE</td>
<td>13 or 12</td>
<td>C. Antistius Reginus,</td>
<td>AU, AR</td>
</tr>
<tr>
<td>B.C.</td>
<td>C. Marcius</td>
<td>AE</td>
<td></td>
<td>C. Marius,</td>
<td>AU, AR</td>
</tr>
<tr>
<td></td>
<td>Censorinus</td>
<td>AE</td>
<td></td>
<td>C. Suplicius Platorinus</td>
<td>AU, AR</td>
</tr>
<tr>
<td></td>
<td>T. Quinctius Crispinus</td>
<td>AE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 B.C.</td>
<td>C. Antistius Reginus,</td>
<td>AU, AR</td>
<td>13 or 12</td>
<td>C. Antistius Reginus,</td>
<td>AU, AR</td>
</tr>
<tr>
<td></td>
<td>C. Marius,</td>
<td>AU, AR</td>
<td></td>
<td>C. Marius,</td>
<td>AU, AR</td>
</tr>
<tr>
<td></td>
<td>C. Suplicius Platorinus</td>
<td>AU, AR</td>
<td></td>
<td>C. Suplicius Platorinus</td>
<td>AU, AR</td>
</tr>
<tr>
<td>12 B.C.</td>
<td>AR</td>
<td></td>
<td>13 or 12</td>
<td>C. Antistius Reginus,</td>
<td>AU, AR</td>
</tr>
<tr>
<td></td>
<td>L. Aelius Lamia,</td>
<td>AE</td>
<td></td>
<td>C. Marius,</td>
<td>AU, AR</td>
</tr>
<tr>
<td></td>
<td>P. Silius,</td>
<td>AE</td>
<td></td>
<td>C. Suplicius Platorinus</td>
<td>AU, AR</td>
</tr>
<tr>
<td></td>
<td>Annius</td>
<td>AE</td>
<td></td>
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<td></td>
<td>AR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>After 12 B.C.</td>
<td>AE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 B.C.</td>
<td>AE</td>
<td></td>
<td>c. 10 B.C.</td>
<td>AE</td>
<td></td>
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<tr>
<td></td>
<td>AE</td>
<td></td>
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<td>AE</td>
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<td></td>
<td>AE</td>
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<td>AE</td>
<td></td>
</tr>
<tr>
<td>10 B.C.</td>
<td>AE</td>
<td></td>
<td>c. 10 B.C.</td>
<td>AE</td>
<td></td>
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<td></td>
<td>AE</td>
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<td></td>
<td>AE</td>
<td></td>
<td></td>
<td>AE</td>
<td></td>
</tr>
<tr>
<td>9 B.C.</td>
<td>AE</td>
<td></td>
<td>c. 10 B.C.</td>
<td>AE</td>
<td></td>
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<td></td>
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<td>AE</td>
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<td></td>
<td>AE</td>
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<td>AE</td>
<td></td>
</tr>
<tr>
<td>8 B.C.</td>
<td>AE</td>
<td></td>
<td>c. 10 B.C.</td>
<td>AE</td>
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<td></td>
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<td></td>
<td>AE</td>
<td></td>
<td></td>
<td>AE</td>
<td></td>
</tr>
<tr>
<td>7 B.C.</td>
<td>AE</td>
<td></td>
<td>After 12</td>
<td>AE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AE</td>
<td></td>
<td>B.C.</td>
<td>AE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AE</td>
<td></td>
<td>(7 B.C.?)</td>
<td>AE</td>
<td></td>
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<tr>
<td></td>
<td>AE</td>
<td></td>
<td></td>
<td>AE</td>
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<td>AE</td>
<td></td>
<td></td>
<td>AE</td>
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</tr>
</tbody>
</table>
Table App6.1. Comparison of Chronologies of Augustan *Tresviri Monetales*

<table>
<thead>
<tr>
<th>Date</th>
<th>Küter’s Chronology</th>
<th>My Chronology</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 B.C.</td>
<td>A. Licinius Nerva</td>
<td>Date</td>
</tr>
<tr>
<td></td>
<td>Silianus,</td>
<td><em>Tresviri Monetales</em></td>
</tr>
<tr>
<td></td>
<td>Sextus Nonius</td>
<td>AE</td>
</tr>
<tr>
<td></td>
<td>Quinctilianus,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volusus Valerius</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Messalla</td>
<td>AE</td>
</tr>
</tbody>
</table>

**App. 6.1. *Tresviri Monetales* Producing Gold and Silver Coins**

*App. 6.1.1. Tresviri Monetales of 19 or 18 B.C.*

The content of the types allow us to date these two colleges. P. Petronius Turpilianus, L. Aquillius Florus, and M. Durmius all refer to Augustus’s successful handling of the Parthians and Armenians, so they can be dated to either 19 or 18 B.C. which are the most suitable years for the immediate celebration of Augustus’s successful negotiations with the Parthians and Tiberius’s military victory over the Armenians in 20 B.C. Q. Rustius portrays the Altar of Fortuna Redux, which was vowed and dedicated in 19 B.C., so his coins can be dated to 19 or 18 B.C. Both colleges, then, are dated to either 19 or 18 B.C. There is, however, nothing that indicates which college belongs to which year, so it is better to leave the question open.

*App. 6.1.2. Colleges of 13 or 12 B.C.*

Similarly, the colleges of (1) C. Antistius Reginus, C. Marius, and C. Suplicius Platorinus and (2) Cossus Cornelius Lentulus, L. Cornelius Lentulus, and L. Caninius Gallus have been dated to 13 or 12 B.C. because their types refer to the renewal of Agrippa’s tribunician power in 13 B.C., and possibly the return of Augustus from Gaul in 13 B.C. or the election of Augustus to the post

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49 *RIC* I² 287-292 (Turpilianus), 304-307 (Florus), and 314 (Durmius). On the negotiations with the Parthians, Dio 54.8. On the victory over the Armenians, Dio 54.9.4-7.

50 *RIC* I² 322. On vow of Altar of Fortuna Redux, Dio 54.10.3.
of *Pontifex Maximus* in 12 B.C.\(^{51}\) The veiled image of Augustus on a denarius of C. Marius resembles the image of Augustus on the *Ara Pacis Augustae* but it could also refer to him as the leading religious figure for the Roman state.\(^{52}\) It, then, is not a clear reference to the election of a new *Pontifex Maximus*. There are also several possible references to the death of Agrippa in 12 B.C.\(^{53}\) The references to Augustus’s election to be *Pontifex Maximus* and the death of Agrippa—both happened in 12 B.C.—though, are not clear. Therefore, there is nothing to clearly determine which of the two colleges struck coins in 13 B.C. and which college struck in 12 B.C.

**App. 6.2. Tresviri Monetales Producing Bronze Coins**

Unlike with the gold and silver coins produced at Rome, an exact chronology (like that espoused by Küter) is not possible, but a relative chronology is possible. This lack of precision is largely because of the consistent types that provide few clues to date the coins. On the obverses, the sesterius features the oak-wreath of the *corona civica* with the legend OB CIVIS SERVATOS, the dupondius features the legend AVGVSTVS TRIBVNIC POTEST within a wreath, and the as features the portrait of Augustus with a legend identifying the portrait. The reverses of all these denominations include the letters SC surrounded by a legend identifying a *triumvir monetalis*. A few exact dates are determined from coins’ types and legends, but most of the relative chronology is revealed from hoards or chemical analyses of the coins.

In a few instances, the types vary and allow for a more precise dating of the coins.

\(^{51}\) Coins referring clearly to Agrippa and his family, *RIC* \(I^2\) 397, 400, 404-409 (Marius and Sulpicius Platorinus) and 412 and 414 (Cossus Cornelius Lentulus). *RIC* \(I^2\) 417 (Caninius Gallus) features an empty chair with a staff on it that may refer to Agrippa’s death. On the extension of Agrippa’s tribunician power, Dio 54.28.

\(^{52}\) *RIC* \(I^2\) 398. Fullerton 1985, p. 476.

On some of the coins of P. Lurius Agrippa, M. Salvius Otho, and M. Maecilius Tullus a small Victory crowns a portrait of Augustus wearing a laurel crown.\textsuperscript{54} Numismatists have long associated this type with Tiberius’s triumph in 7 B.C., but this connection is not necessarily convincing so the date remains only a possibility.\textsuperscript{55}

The legends provide more helpful information for dating the coins of the \textit{tresviri monetales}. The legend of the dupondius referred to Augustus’s tribunician power which is counted from and advertised starting in 23 B.C.\textsuperscript{56} The mint at Rome, then, could not have reopened before 23 B.C. Tacitus confirms this date when he says that Gn. Calpurnius Piso, who was a member of one of the early colleges of \textit{tresviri monetales}, had been in government service since 25 B.C. (Tac. \textit{Ann.} 3.16). The mint could not have started producing bronze coins before 25 or 23 B.C. In addition to the dupondius’s legend, the legend of the as for several years includes the title \textit{Pontifex Maximus} for Augustus. Since Augustus was elected to this position in 12 B.C., these \textit{triumviri} could not have struck before this date. These \textit{tresviri} include the college of P. Lurius Agrippa, M. Salvius Otho, and M. Maecilius Tullus and the college of A. Licinius Nerva Silianus, Sextus Nonius Quinctilianus, and Volusus Valerius Messalla.

In addition to the legends, hoards also help refine the relative chronology of the \textit{tresviri monetales} responsible for bronze coin production. A hoard from Livno in Bosnia and Herzegovina was deposited in 16 or 15 B.C. and contains the coins of five \textit{tresviri}: Gn. Calpurnius Piso, L. Naevius Surdinus, C. Asinius Gallus, M. Sanquinius, and P. Licinius Stolo.\textsuperscript{57} Since the hoard contained coins from only three colleges—(1) C. Asinius Gallus, C. Cassius

\begin{footnotes}
\item[54] \textit{RIC} I\textsuperscript{2} 426, 429, and 433.
\item[55] On Tiberius’s triumph, Dio 55.8.2. On the association between these coins and Tiberius’s triumph, Mattingly 1923, p. xcvi. Kraft [1951] 1978, p. 48-49 proposed that the coins should be associated with the 2 B.C. dedication of Mars Ultor where triumphs ended.
\item[56] On the tribunician power, see \textit{Res Gestae} 4 and Dio 55.32.4-6.
\item[57] Burnett 1977, p. 49.
\end{footnotes}
Celer, and C. Gallius Lupercus; (2) Cn. Calpurnius Piso, L. Naevius Surdinus, and C. Plotius Rufus; and (3) M. Sanquinius, P. Licinius Stolo, and Ti. Sempronius Craccus — these colleges should be the first three colleges of *tresviri* responsible for bronze coin production.

Conveniently, M. Sanquinius and P. Licinius Stolo struck in all three metals and provided the tribunician dates for 17 B.C. on their gold and silver coins, so the other two colleges likely struck before 17 B.C. The Velia hoard from before 19 B.C. clarifies that the colleges of Asinius Gallus and Cn. Calpurnius Piso were the first two colleges. This hoard includes only coins struck by all three members of Piso’s college and the moneyer Gallius Lupercus, who was a colleague of Asinius Gallus.  

Chemical analyses of the copper coins struck at Rome clarify the order of the first two colleges. The coins of the college of C. Asinius Gallus, C. Cassius Celer, and C. Gallius Lupercus have more impurities than the coins of Cn. Calpurnius Piso, L. Naevius Surdinus, and C. Plotius Rufus. Subsequent colleges have fewer impurities than both these colleges. Since the mint at Rome first struck copper coins under these *tresviri*, it makes sense that the coins’ flans would become more refined as the mint workers become more adept at and used to working with copper. Therefore, the college of Asinius Gallus is first, and the college of Piso is second. Sabine Klein and Hans-Markus von Kaenel, who published these analyses of the coins, though, caution against using the data to refine the chronology for the other colleges.

Finally, the colleges of *tresviri* who struck quadrantes are all consistently dated by numismatists to the time-period around 10 B.C. but there is no way to determine their relative order. These colleges are all best dated to c. 10 B.C.

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58 Burnett 1977, p. 50.
60 Klein and von Kaenel 2000, pp. 70-71.
61 Robertson 1962, xxxvi surveys past opinions which all attribute the coins to this date range.
Therefore, the relative chronology of the colleges of bronze tresviri monetales, with the relevant *termini ante quem* and *post quem*, is:

1. (After 23 B.C. – Grant of Tribunician Power): C. Asinius Gallus, C. Cassius Celer, and C. Gallius Lupercus

2. Cn. Calpurnius Piso, L. Naevius Surdinus, and C. Plotius Rufus

3. (17 B.C. – dated from the coins’ legends): M. Sanquinius, P. Licinius Stolo, and Ti. Sempronius Craccus


5. (After 12 B.C. – Pontifex Maximus Election): A. Licinius Nerva Silianus, Sextus Nonius Quinctilianus, and Volusus Valerius Messalla


7. c. 10 B.C.: Quadrantes moneyers, in no particular order
   - Claudius Pulcher, T. Statilius Taurus, and Livieius Regulus
   - L. Aelius Lamia, P. Silius, and Annius
   - L. Apronius, Galus Sulpicius, Valerius Messalla, and Cornelius Sisenna
   - P. Betilienius Bassus, C. Naevius Capella, C. Rubellius Blandus, L. Valerius Catullus
APPENDIX 7: TABLES FOR THE EFFECTS OF THE AUGUSTAN COPPER ALLOY COINAGE

REFORM AT ROME

The data for the analysis of the effects of the Augustan reform of Rome’s copper alloy coinage in Section 4.5 are presented in a series of tables, one table for each province. Just like for the analysis of the effects of Antony’s fleet coinage (Section 3.5 and Appendix 4), in the tables, each row represents a single issue from a mint. All the issues of a mint are grouped together within a box. For these issues, the first column reports the location of each mint, and the second column records the date of each issue with the earliest date in the top row and the latest date in the bottom row. If no date is known, no date is recorded in the second column. The second column may also include an abbreviation for the metal of the coin, if the metallic composition of the coins is known. Copper is abbreviated with “Cu,” orichalcum with “Or,” and leaded bronze coins will be noted with “LB.” The third column records the citation for that row’s issue from Roman Provincial Coinage or another source. The other columns record the denominations of the coins. If a pattern of denominations of bronze coins exist for that province, the column is labeled with the coins’ module. Within the columns, the module and average weights of the coins, as provided by or determined from the data in Roman Provincial Coinage, are given. If the mints produce coins that do not fit the province’s denomination pattern, these coins are listed in an unlabeled column.
Table App7.1. Diameter and Average Weights of Copper Alloy Coinage Struck in Italy, After 23 – 19 B.C.

<table>
<thead>
<tr>
<th>Mint</th>
<th>Date</th>
<th>Citation</th>
<th>Denominations: Diameter (mm) / Average Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Quadrans</td>
</tr>
<tr>
<td>Rome⁶²</td>
<td>c. 23-10 BC: Cu</td>
<td></td>
<td>15-17/3.13</td>
</tr>
<tr>
<td></td>
<td>c. 23-10 BC: Or</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AD 10: Cu</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AD 11: Cu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paestum⁶³</td>
<td>After 69 B.C.</td>
<td></td>
<td>16/2.92</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>13/3.43</td>
</tr>
<tr>
<td></td>
<td>Pre-Augustan</td>
<td></td>
<td>13-14/3.72</td>
</tr>
<tr>
<td>Tiberian</td>
<td>RPC 604-618</td>
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<td>16-17/4.04</td>
</tr>
</tbody>
</table>

Table App7.2. Diameter and Average Weights of Copper Alloy Coinage Struck in Gaul, After 23 – 19 B.C.⁶⁴

<table>
<thead>
<tr>
<th>Mint</th>
<th>Date</th>
<th>Citation</th>
<th>Denominations: Diameter (mm) / Average Weight (g)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Semis 20-21mm</td>
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<tr>
<td>Nemausus</td>
<td>c. 40</td>
<td>RPC I 519-521</td>
<td>13-14/1.19</td>
</tr>
<tr>
<td></td>
<td>c. 28 BC</td>
<td>RPC I 522</td>
<td></td>
</tr>
<tr>
<td>(Series Ia)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. 19-10 BC</td>
<td>RPC I 523</td>
<td></td>
</tr>
<tr>
<td>(Series Ib)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

⁶² The weights are averaged from Giard 1988a and the diameters are measured from the plates of the same volume.

⁶³ The weights of the Republican and pre-Augustan coins are from Crawford 1971 and the diameters are measured from the plates of that conference volume. The weights of the Tiberian issue are from Crawford 1976-1977 and the diameters are from Amandry, Burnett, and Ripollès 1992.

⁶⁴ The chronology for the Germanus Indutilli L, the AVAVCIA, and Bellovaci? coins is from Haselgrove 1999, pp. 162-164. The average weights of these coins are determined from Scheers 1983, and the diameters are measured from the plates in this volume or Haselgrove 1999.
Table App7.2. Diameter and Average Weights of Copper Alloy Coinage Struck in Gaul, After 23 – 19 B.C.\textsuperscript{64}

<table>
<thead>
<tr>
<th>Mint</th>
<th>Date</th>
<th>Citation</th>
<th>Denominations:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Diameter (mm) / Average Weight (g)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Semis 20-21mm</td>
</tr>
<tr>
<td>Nemausus</td>
<td>9-3 BC (Series II)</td>
<td>\textit{RPC I} 524</td>
<td>27/13.27</td>
</tr>
<tr>
<td></td>
<td>AD 10 – Early Tiberian (Series III)</td>
<td>\textit{RPC I} 525</td>
<td>28/12.85</td>
</tr>
<tr>
<td>Lugdunum\textsuperscript{65}</td>
<td>43 BC</td>
<td>\textit{RPC I} 511</td>
<td>15/3.00</td>
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<tr>
<td></td>
<td>43 BC, 2nd series</td>
<td>\textit{RPC I} 512</td>
<td>12/1.70</td>
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<td>42 BC</td>
<td>\textit{RPC I} 513</td>
<td>12/1.71</td>
</tr>
<tr>
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<td>38? BC</td>
<td>\textit{RPC I} 514</td>
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</tr>
<tr>
<td></td>
<td>36? BC</td>
<td>\textit{RPC I} 515-516</td>
<td>17/5.31</td>
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<tr>
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<td>10-c. 7 BC: Cu</td>
<td>\textit{RIC I}\textsuperscript{2} 227-230</td>
<td>22-27/10.03</td>
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<td>10-c. 7 BC: Or</td>
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<tr>
<td></td>
<td>AD c. 9-14: Cu</td>
<td>\textit{RIC I}\textsuperscript{2} 231-248</td>
<td>20-21/4.58</td>
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<td>AD c. 9-14: Or</td>
<td></td>
<td>22-28/12.46</td>
</tr>
<tr>
<td>Germanus Indutilli L</td>
<td>c. 10 BC</td>
<td>\textit{RPC I} 506</td>
<td>17-18/2.79</td>
</tr>
</tbody>
</table>

\textsuperscript{65} The weights are averaged from Giard 1988a and the diameters are measured from the plates of the same volume.
### Table App7.2. Diameter and Average Weights of Copper Alloy Coinage Struck in Gaul, After 23 – 19 B.C.\(^6^4\)

<table>
<thead>
<tr>
<th>Mint</th>
<th>Date</th>
<th>Citation</th>
<th>Denominations:</th>
<th>Denomination</th>
<th>Diameter (mm)</th>
<th>Average Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20-21mm</td>
<td>22-28mm</td>
</tr>
<tr>
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Table App7.3. Diameter and Average Weights of Copper Alloy Coinage Struck in Hispania Tarraconensis, After 23 – 19 B.C.

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Table App7.3. Diameter and Average Weights of Copper Alloy Coinage Struck in Hispania Tarraconensis, After 23 – 19 B.C.

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Table App7.3. Diameter and Average Weights of Copper Alloy Coinage Struck in Hispania Tarraconensis, After 23 – 19 B.C.

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384
Table App7.3. Diameter and Average Weights of Copper Alloy Coinage Struck in Hispania Tarraconensis, After 23 – 19 B.C.

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386
### Table App7.5. Diameter and Average Weights of Copper Alloy Coinage Struck in Lusitania, After 23 – 19 B.C.

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### Table App7.6. Diameter and Average Weights of Copper Alloy Coinage Struck in Sicily, After 23 – 19 B.C.

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66 The weights are from Cebrián Sánchez 2006 who used more specimens than Burnett, Amandry, and Ripollès 1992. The diameters are from Burnett, Amandry, and Ripollès 1992. The denominations for Emerita Augusta are grouped following Cebrián Sánchez 2006.
Table App7.6. Diameter and Average Weights of Copper Alloy Coinage Struck in Sicily, After 23 – 19 B.C.

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Table App7.7. Diameter and Average Weights of Copper Alloy Coinage Struck in Africa Proconsularis, After 23 – 19 B.C.

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388
### Table 7.7. Diameter and Average Weights of Copper Alloy Coinage Struck in Africa Proconsularis, After 23 – 19 B.C.

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Table 7.7. Diameter and Average Weights of Copper Alloy Coinage Struck in Africa Proconsularis, After 23 – 19 B.C.

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<td><em>RPC I 1566-71</em></td>
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<td>26/14.66</td>
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<td>16/3.93</td>
<td>23/8.04</td>
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<td>16/2.83</td>
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Table App7.8. Diameter and Average Weights of Copper Alloy Coinage Struck in Macedonia After 23 – 19 B.C.

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<td>RPC I 1593-96</td>
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<td>RPC I 1599-1600</td>
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<td>Macedonian Koinon</td>
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<td>RPC I 1610-12</td>
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<td>RPC I 1613-1614</td>
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<td>Neronian</td>
<td>RPC I 1610-12</td>
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<td>Amphipolis</td>
<td>Augustan</td>
<td>RPC I 1626</td>
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<td>RPC I 1627-28</td>
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<td>RPC I 1631</td>
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<td>RPC I 1637-38</td>
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<td>RPC I 1642</td>
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396
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<td></td>
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<td>14-17mm 21-23mm 26-28mm 30mm</td>
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<tr>
<td>Philippi</td>
<td>42 BC</td>
<td><em>RPC I 1646-49</em></td>
<td>14/3.09 17/4.04 21/7.17 25/8.55</td>
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<tr>
<td>Augustan</td>
<td></td>
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<td>Claudian: Cu</td>
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<td><em>RPC I 1653-1654</em></td>
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<td><em>RPC I 1655</em></td>
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<td><em>RPC I 1656</em></td>
<td>16-18/4.59</td>
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<td><em>RPC I 1658</em></td>
<td>17/5.23</td>
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<td><em>RPC I 1659</em></td>
<td>16/4.94</td>
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<td>Claudian</td>
<td><em>RPC I 1660</em></td>
<td>16/4.17</td>
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APPENDIX 8: SILVER COIN HOARDS FROM EGYPT (C. 60 B.C. – A.D. 64)

This table lists the contents of thirteen Egyptian hoards of Alexandrian tetradrachms from c. 60 B.C. until the Neronian debasement of Alexandrian tetradrachms. When an uncertain number of coins struck by a ruler is known, AR or the relative number of coins are listed.

Table App8.1. Hoards from Egypt (c. 60 B.C. – A.D. 64)*

<table>
<thead>
<tr>
<th>Citation</th>
<th>Date</th>
<th>Earlier Ptolemy</th>
<th>Ptolemy XII</th>
<th>Cleopatra VII</th>
<th>Tiberius</th>
<th>Claudius</th>
<th>Nero</th>
<th>Uncertain</th>
<th>Coins of Side</th>
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<tbody>
<tr>
<td>1</td>
<td>IGCH 1718</td>
<td>c. 58 B.C.</td>
<td></td>
<td></td>
<td>8+</td>
<td></td>
<td></td>
<td></td>
<td>5?</td>
</tr>
<tr>
<td>2</td>
<td>IGCH 1719</td>
<td>c. 58 B.C.</td>
<td>AR</td>
<td></td>
<td>AR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>IGCH 1720</td>
<td>c. 50 B.C.</td>
<td>AR</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4</td>
<td>IGCH 1721</td>
<td>mid-1st Cent. B.C.</td>
<td></td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>43</td>
</tr>
<tr>
<td>5</td>
<td>IGCH 1722 = CH 9, 698</td>
<td>46/5 B.C.</td>
<td>4</td>
<td>137</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>6</td>
<td>CH 10, 464</td>
<td>39 B.C.</td>
<td>18</td>
<td>13</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>7</td>
<td>IGCH 1723</td>
<td>30 B.C.</td>
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<td>3</td>
<td>94</td>
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<td>303</td>
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<td>8</td>
<td>IGCH 1724</td>
<td>c. 30 B.C.</td>
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<td></td>
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<td>47</td>
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<tr>
<td>9</td>
<td>IGCH 1725</td>
<td>30 B.C.?</td>
<td></td>
<td></td>
<td>900 of P12 and/or C7</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10</td>
<td>CH 8, 699</td>
<td>30 B.C.</td>
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<td>32</td>
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<tr>
<td>11</td>
<td>IGCH 1732 = CH 7, A14</td>
<td>A.D. 20-21</td>
<td></td>
<td></td>
<td>65</td>
<td>136</td>
<td></td>
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<tr>
<td>12</td>
<td>CH 7, A17</td>
<td>A.D. 55-56</td>
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<td>17</td>
<td>23</td>
</tr>
<tr>
<td>13</td>
<td>CH 7, A18</td>
<td>A.D. 64-65?</td>
<td></td>
<td></td>
<td>Mostly</td>
<td>Some</td>
<td>Some</td>
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</tbody>
</table>

* No tetradrachms were struck during the reign of Caligula, so his reign is not included in this table.

---

67 This data set was assembled from Thompson, Mørkholm, and Kraay 1973 and the Coin Hoards series. On the Neronian debasement, see Section 5.9.

APPENDIX 9: SILVER COIN HOARDS FROM CAPPADOCIA (C. 100 B.C. – A.D. 300)

The table in this appendix records the contents of thirteen hoards buried in the province of Cappadocia between c. 100 B.C. and A.D. 300. This data set was assembled from the Inventory of Greek Coin Hoards, the Coin Hoards periodical, and lists of coin hoards with Cappadocian drachms in Roman Provincial Coinage, vol. 1, an article by Roger Bland, and an article by Mikhail Abramzon.\(^69\) The dates of the coins are given in parentheses following the number of coins from each mint or kingdom.

The table does not contain any hoards from Colchis which was part of the kingdom of Cappadocia under Archelaus and the other Cappadocian kings, but which only became a part of the Roman province of Cappadocia under Nero and Vespasian.\(^70\)


\(^70\) Braund 1994, pp. 174-178.
<table>
<thead>
<tr>
<th></th>
<th>Citation</th>
<th>Location</th>
<th>Burial Date</th>
<th>Cappadocian Kings</th>
<th>Caesarea of Cappadocia (Roman)</th>
<th>Denarii</th>
<th>Athens</th>
<th>Pontus</th>
<th>Other Coins</th>
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<tbody>
<tr>
<td>1</td>
<td><em>IGCH</em> 1417</td>
<td>Cappadocia, c. 1935</td>
<td>c. 100 B.C.</td>
<td>99 (163-100 B.C.)</td>
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<tr>
<td>2</td>
<td><em>IGCH</em> 1418</td>
<td>Adatepe, 1935</td>
<td>c. 98-97 B.C.</td>
<td>47 (163-95 B.C.)</td>
<td>2 (138/7 -134/3 B.C.)</td>
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<tr>
<td>3</td>
<td><em>IGCH</em> 1419 = <em>CH</em> 10, 331</td>
<td>Cappadocia, 1959</td>
<td>c. 80 B.C. (IGCH); 100 BC (CH X)</td>
<td>748+ (163-c. 63 BC)</td>
<td>7+ imitations; ≈145 unidentified coins</td>
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<tr>
<td>4</td>
<td><em>IGCH</em> 1383 = <em>CH</em> 2, 113</td>
<td>Giresun, 1933</td>
<td>c. 77 B.C.</td>
<td>3 (130-c. 63 BC)</td>
<td>18 (132/1 -87/6 B.C.)</td>
<td>22 (c. 96-84/3)</td>
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<td></td>
<td>3 cistophori (c. 120-80 B.C.); 2 Seleucid tetradrachms (138-129 B.C.); 7 Bithynian tetradr. (149-94 BC)</td>
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<td>5</td>
<td><em>CH</em> 1, 102</td>
<td>Turkey</td>
<td>c. 60 B.C.</td>
<td>208 (95-c.63 BC)</td>
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<td>6</td>
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<td>Tepebaughlar</td>
<td>Mid-1st Cent. B.C.</td>
<td>16 (c. 63-36 BC)</td>
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Table App9.1. Hoards from Cappadocia in Anatolia (c. 100 B.C. – A.D. 300)

<table>
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<th>Citation</th>
<th>Location</th>
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<th>Cappadocian Kings</th>
<th>Caesarea of Cappadocia (Roman)</th>
<th>Denarii</th>
<th>Athens</th>
<th>Pontus</th>
<th>Other Coins</th>
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<td>8.</td>
<td><em>RPC</em> I, p. 550, no. 1</td>
<td>Sheikler, before 1930</td>
<td>c. 15/14 B.C.</td>
<td>12 (c. 63-15/4 BC)</td>
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<td>15 (Republican-Augustus)</td>
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<td>9.</td>
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<td>Caesarea, 1972</td>
<td>c. A.D. 50</td>
<td>61 (Tiberius-Claudius)</td>
<td>1 (Tiberius)</td>
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<td>10.</td>
<td>Sydenham 1932</td>
<td>Caesarea, before 1932</td>
<td>Neronian</td>
<td>22 (Tiberius-Nero)</td>
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<tr>
<td>11.</td>
<td>Mattingly 1932</td>
<td>Asia Minor, before 1932</td>
<td>Trajanic</td>
<td>18 (Nero-Trajan)</td>
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<td>13.</td>
<td><em>CH</em> 7, 156</td>
<td>Sor, Caesarea, 1980</td>
<td>185 A.D.</td>
<td>1870+ (To Hadrian, Aurelius and Verus, Commodus)</td>
<td>100+ (no dates available)</td>
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<td>2 Lycian League (Trajan)</td>
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