THE MULTIPLICATION OF MONEYS OF ACCOUNT

i. THE SEPARATION OF “A ORO” FROM “A MONETE”

DOUBTS AS TO WHETHER the basic coin of the lira di grossi was the silver grosso or the gold ducat may have occurred to some merchants and administrators even before 1328; but as long as their relative value was constant at about 24 grossi to a ducat, as it was for about two decades, accountants had no serious problems. They could keep the value of both coins constant in their books, recording both 1 ducat and 24 grossi coins as worth 2 soldi di grossi.

The disappearance of grossi coins from common use and their replacement by mezzanini and soldini necessitated a change. Bookkeepers had to decide whether they would consider gold coin or the new silver coins as the basis of the money of account they were using. Many merchants and administrators who handled gold coins daily thought of the ducat as the basic coin. They continued to record payments or receipts of ducats as 2 soldi di grossi given or received and varied the values they set on silver coins such as the soldini in accord with the fluctuating rates being given by moneychangers. To make clear that the lire, soldi, and denari that they were using were linked to the ducat, they called them lire, soldi, denari “a oro.” Other merchants and administrators may have decided for a silver base, either because their business gave them more reason to handle silver coins or because their official position made it more essential that they follow the legal regulations concerning the values of silver coins. Since the new silver coins were collectively referred to as “monete,” they
called the money of account they were using lire, soldi, and denari “a
monete” to make clear that their lire, soldi, and denari were linked to the
silver or partly silver coin. They recorded mezzanini and soldini at con-
stant values and varied the value they recorded for ducats paid or received,
adding the amount of lazio being allowed by the moneychangers and
bankers.\footnote{Cessi’s interpretation was similar in that he wrote in \textit{PMV}, lxxxi: “nell’ambito della lira di
grossi si era verificato una differenza di valore tra quello argentoo rappresentato dal mezzanino e dal soldino, fermo al rapporto 1:32 [lire di grossi a monete] e quello aureo aderente al
ducato, giusta la posizione di duc. = gr. 24, anche quando il grosso effettivo si era scostato di
tale parità.” We differ in emphasizing the divorce immediately after 1331 of the old grossi
coins from the grossi of account, that is, from both the grosso a oro and the grosso a monete.\footnote{Piccoli appear as the smallest units of account of the lira di grossi in documents of 1311,
1312, and 1318 in Tiepolo, ed., \textit{Domenico prete di S. Maurizio}, docs. 55, 199, 543 (p. 356); they are
used in the fourteenth-century mathematical treatise \textit{Trattato di Arimetica}, at the BMV, Ms.
It., cl. IV, cod. 497 (5163). On the identity of the “piccoli” of the lire di piccoli and the
“piccoli” of the lira di grossi a monete see below, n. 15.}

In this way, two moneys of account came to be clearly distinguished:

1. A lira di grossi a oro was tied to the ducat by considering 1 denaro
grosso of account as 1/24 of a ducat. One lira di grossi a oro accordingly
equaled 10 ducats, 1 soldo di grossi a oro equaled 1/2 of a ducat, and 24
denari grossi a oro equaled 1 ducat.

2. A lira di grossi a monete, in contrast, became tied to the soldino,
which had the legal value of 12 piccoli (1 soldo), by considering 1 “grosso”
of the lira di grossi a monete as 2.67 (32/12) soldini, since 1 grosso was here
valued at 32 piccoli. One soldo di grossi a monete thus equaled 32 soldini
coins (12 $\times$ [32/12]), and 1 lira di grossi a monete equaled 640 soldini (240
$\times$ [32/12]).

As units of account, piccoli had become the smallest subdivision of
the lira di grossi, and thus with 32 piccoli still reckoned as 1 denaro grosso
for accounting purposes, the lira di grossi contained 7,680 (240 $\times$ 32) of
these piccoli. In value these piccoli were identical with the piccoli of the
lira di piccoli, so that 1 soldo di grossi a monete equaled 32 soldi di piccoli.
When the soldino was issued with the legal tender value of 1 soldo di
piccoli, it was thereby made equal to 12 of the piccoli of account of which
7,680 constituted a lira di grossi.

The ducat, meanwhile, besides being used as a means of payment,
became a standard of value and gave its name to a money of account.
Soon that money of account split just as the lira di grossi had. When the
ducat of account was equated with the gold coin, it was called a ducato a
oro or ducato d’oro and was divided for accounting purposes into 24
grossi a oro. Thus, the value of 1 of these grossi a oro was 1/24 of a gold
ducat. When the ducat of account was equated with silver coin, it was
called the ducato a monete and was equated with 64 soldi di piccoli, worth
64 soldini coins (that is, 1 lira di grossi a monete equaled 640 soldini or 10
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ducats; thus 1 ducat equaled 64 soldini, or 64 soldi of the lira di piccoli, or 24 denari grossi). The ducato d’oro was equal to 2 soldi di grossi a oro. The ducato a monete was equal to 2 soldi di grossi a monete, that is, to 24 denari grossi a monete, and to 768 (24 × 32) piccoli a monete. The 768 piccoli a monete were of course equal to 64 soldi di piccoli (768/12), since the piccoli of the lira di grossi a monete and the piccoli of the lira di piccoli were the same.

Although “ducato a oro” may make a reader think first of all of the gold coin, to a Venetian merchant working on his books it meant 24 grossi a oro. The grosso a oro was a money of account in the narrow sense; that is, it was a denomination of account for which there was no corresponding coin. The ducato a oro of the accountant was also a money of account, but in the broad sense explained in our opening chapter—that is, a denomination of account for which there was a corresponding coin and which was used as a standard of value.

Accounts clearly referring to the ducato a monete are mostly relatively late, as in a will of 1365, in the Talenti accounts of the 1380s analyzed below, in a list of retail prices of 1381, and in regulations about seamen’s wages at the beginning of the fifteenth century. Florentines sometimes referred to it as the Venetian “ducat of 64 soldi” and calculated with a soldo that was 1/64 of the “ducat of 64 soldi,” a reflection perhaps of the practice of considering 1 soldo a fiorini to be 1/29 of a fiorino a oro.

3The legacies in a will dated 2 December 1363—except for a small sum in lire di piccoli—are all specified in “ducati in monede,” “ducati di monede,” or “ducati a monede,” without any apparent difference in meaning between these terms (Antonino Lombardo, ed., Nicola de Botteriis, notaio in Famagosta e Venezia [1358–1366], FSV [Venice, 1973], 214–15).

4See below, n. 15.

5The list of sensationailly high prices printed in Papadopoli, 1:209n, confirmed in BMV, Ms. It., cl. IV, cod. 342. There is a similar list in the “Cronaca di Venezia sino al 1385,” in BMV, Ms. It., cl. VII, cod. 324 which also gives the ducat as 3 lire 4 soldi (64 soldi) per ducat. Papadopoli, not recognizing that the lira di grossi had split and that the ducato a monete had also separated from the ducato a oro, for which he gives higher quotations (1:210–11), interprets the low quotation on the price list as evidence that the ducat coin had kept the value of 64 soldi until 1381. For evidence of the earlier rise of the coin and the ducato a oro see below, table D.3.

6In the listing of the pay provided for men of various ranks on the merchant galleys ca. 1400, the pay for bowmen, for example, is given as 6 ducats “in monetis,” although for many ranks it is given in lire di piccoli (see ASV, Senato, Commissioni, Formulari, reg. 4, fol. 51, cap. 4). That the ducati referred to were the money of account divided into 64 soldi is indicated by comparison with the treatise on navigational matters by Pietro de Versi, BMV, Ms. It., cl. IV, cod. 170, fols. 79v and 85v (of ca. 1440). He gives the same rate of pay for bowmen but quotes it as 19 lire and 5 soldi di piccoli, which is 385 soldi, whereas 64 times 6 is similarly 384 soldi.

7Pietro Sella and Giuseppe Vale, eds., Rationes Decimarum Italei nei secoli XIII e XIV, Venetiae-Histria-Dalmatia, Studi e testi, 96 (Vatican City, 1941), contains accounts of papal tax collectors kept in the years 1349 and 1351 in florins equated with ducats each composed of 64 soldi (371, 459), as well as in lire di piccoli (“lib. bag.” on 366–70) and in florins equated

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earlier references to “ducati . . . in monetis” and “ducati auri” may refer to
the kind of coin in a particular shipment or payment, but in mid-century
already the distinction between the worth of a gold ducat coin and that of
a ducat “in monetis” was recognized officially.8

Very much later, after two generations of stability, from 1456 to
about 1517, the ducat again split off as a money of account (worth in that
period 124 soldi), and it then clung to the name ducat so tightly that a new
name, “zecchino,” was needed to designate the gold coin.9 In fourteenth-
century Venice, in contrast, the gold coins were called simply “ducati a
oro” or “ducati d’oro”; no other name was applied to distinguish the gold
ducat from the ducat of account based on silver and called “a monete.”
More often than not, “ducati” without other appellation meant simply
gold ducats.

ii. LINK COINS AFTER THE SEPARATION

For both the lira di grossi a oro and the ducato a oro the metallic
base was unchanging and clearly defined (35.5 and 3.55 grams of gold,
respectively), and that was not true for the lira and ducato a monete. The
silver content of the soldino was changed several times, and in some
periods other coins helped determine the metallic equivalents of the silver-
based moneys of account. It is useful initially to distinguish three periods:
1331–53, in which piccoli and mezzanini as well as soldini were important;
1353–79, when the soldino’s determining role was most clear; and after
1379, when a new grosso received a new role.

In all three periods the metallic value of the lira di grossi a monete
was meshed with that of the lira di piccoli. The base of that ancient money
of account was also changed by the new issues of silver coins, and the same
three periods are to be distinguished in determining the metallic value of
the lira di piccoli after 1331.

Before 1331 the silver equivalent of the lira di piccoli had been deter-
dined by the silver content of 240 of the piccoli coins of which the

8In 1363 the Avogaria di Comun was authorized to spend on travel allowances “ducatos
quattuor in monetis in die” (ASV, Avogaria di Comun, reg. 2, Capitolarc, fol. 95v, cap. 27J
[30 March]). There are references to “grossi in monetis” in 1342 (in MC, Spiritus, copia, fols.
298, 299) and in 1327 and 1329, even before the coinage of the new silver coins in 1331, “soldos
parvorum ad monetas” and “grossos ad monetas” appear in Monticolo, ed., I capitolarl delle
arti, 1:221, where “monetas” probably refers to foreign coins then circulating. Cf. below, n.
18; and above, chap. 15, n. 55.

9Nicolo Papadopoli-Aldobrandini, “Le monete trovate nelle rovine del Campanile di San
Marco,” Atti dell’Istituto Veneto di Scienze, Lettere ed Arti, 20 March 1904 (Reprint, Venice,
1905); idem, Le monete di Venezia, vol. 2.
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TABLE 10.
Silver Equivalents of the Lira di Piccoli, 1282–1391:
Grams of Fine Silver in Piccoli, Soldini, and Mezzanini

| Dates of Issue | Piccoli | | Soldini<sup>a</sup> | | Mezzanini<sup>b</sup> |
|----------------|---------|-----------------|---------|-----------------|
|                | In 1 Coin | In 240 Coins | In 1 Coin | In 20 Coins | In 1 Coin | In 15 Coins |
| 1282–1331      | 0.058   | 13.92          | —         | —              | —         | —           |
| 1331-46        | 0.058   | 13.92          | 0.641    | 12.82          | 0.969     | 14.34       |
| 1346–53        | 0.063   | 15.12          | —         | —              | 0.744     | 11.61       |
| 1353–69        | 0.054   | 12.96          | 0.533    | 10.66          | —         | —           |
| 1369–79        | 0.041<sup>c</sup> | 9.84<sup>c</sup> | 0.488    | 9.76           | —         | —           |
| 1379–85        | 0.027<sup>d</sup> | 6.48<sup>d</sup> | 0.472    | 9.44           | —         | —           |
| 1385–91        | 0.027   | 6.48           | 0.472    | 9.44           | —         | —           |


<sup>a</sup>No soldini were coined before 1331. The extent to which soldini were coined in 1346–53 is doubtful.

<sup>b</sup>No mezzanini were coined before 1331 or after 1353.

<sup>c</sup>Authorized but no specimen in Papadopoli or CNI; all piccoli recalled in 1379.

<sup>d</sup>Authorized but not issued.

Production was accelerated in 1318. With only 0.058 grams of silver in each, 240 piccoli gave 1 lira di piccoli the silver value of 13.92 grams.

When soldini worth 12 piccoli were minted in large numbers, as they were in 1331–35, a lira di piccoli could be paid with 20 soldini each containing only 0.64 grams of fine silver, a total of 12.8 grams, less than the amount in 240 piccoli (see table 10). The comparison shows that the soldino was the coin with the lowest metallic value compared with its value as legal tender. It held that position relative to the piccolo for many decades. The mezzanino was even more legally overvalued in some years, but only a few. It was the soldino that remained—for about a half-century—the link coin of the lira di piccoli.

Not only its silver content but also the attention focused on the soldino in the monetary legislation of the mid-fourteenth century indicates that the soldino became the basic coin of the lira di piccoli. Reductions in the silver content of the soldino, rather than changes in the piccolo, com-

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<sup>10</sup>See above, chap. 10, sec. v. To judge from the number of surviving specimens, there was also extensive coinage of piccoli under Doge Pietro Gradengho (1289–1311). For decades thereafter, there are more surviving examples of coins of lower denominations made entirely or almost entirely of copper—bianchi, quartaroli, and torneselli (CNI, 7:54–110. See also below, app. B; and above, chap. 10).

<sup>11</sup>Papadopoli, 1:35.

<sup>12</sup>See below, chap. 18, sec. 1, on the quantity of soldini minted; see also app. A. On identifying link coins see above, chap. 5, sec. 1.
bine with the variations in the bimetallic ratio to explain the variations in the price of a ducat. The soldino became so identified with the soldo di piccoli that the name soldino disappeared from decrees and the coin was called simply a soldo.

When it became the basic coin of the lira di piccoli, the soldino became also the basic coin that determined the metallic value of the lira di grossi a monete, because the piccoli that were the lowest common denominator of both the lira di piccoli and the lira di grossi a monete had the same value. The piccoli of which 240 equaled a lira di piccoli and 7,680 equaled a lira di grossi a monete each had the metallic value of 1/12 of a soldino.

The above explanation of the separation of “a oro” from “a monete” ignores the lira a grossi, while focusing on the lira di piccoli and the lira di grossi. Awkward fractions (fractions explained above, in chapter 8, section 13 Tables 10, 12, 14–22, and D.3. Between 1320 and 1369 the fine silver content of the piccolo was lowered only from 0.058 to 0.054 grams. Because there was a general fall in the bimetallic ratio in that period of about 30 percent, the value of the ducat in soldi di piccoli would have fallen by a somewhat similar amount if the value of the soldo di piccoli had been based on the silver content of the piccolo coin. But despite the considerable change in the bimetallic ratio, the ducat fell only from 70 soldi to 64 (about 9 percent) because the lira di piccoli was based on soldini coins and the fine silver content of those coins was lowered by the mint from 0.641 to 0.533, a drop of 16.8 percent. Between 1369 and 1390 the silver content of 240 piccoli dropped to half of what it had been, while the silver content of 20 soldini dropped by only 10 percent. The rise of the ducat in that period was approximately proportional to the drop in the silver content of the soldino, not to that of the piccolo.

13“Soldino” is used in the documents in Papadopoli, I:347, 348, and “soldo” in those on pp. 350, 352, and 362.

The identity of these piccoli of account is demonstrated conclusively in an entry of 1380 in the account book in which Petrarch’s “friend” Tommaso Talenti and his brother Zaccaria kept the accounts of their grain business (PSM, Circa, b. 141, fol. 2or, below in app. G, doc. 6). The account with the Provveditori delle Biave, reads: “E de avere dicta dl £ 78 di grossi a monete le qua! me fe' prometere a ser Gabriele Sovranw, posti a suo conto a c. 21 che debia dar, val as. 64 per ducato in summa di piccoli, £ IIIMIIIICLXXXXVI.” His reference to “s. 64 per ducato” suggests that his way of figuring was as follows:

1 lira di grossi a monete = 10 ducati a monete
1 ducato a monete = 64 soldi di piccoli
78 lire di grossi a monete = 78 × 10 × 64 soldi di piccoli
= 78 × 32 (640/20) lire di piccoli
= 2,496 lire di piccoli

The identity of the piccoli of the lira di piccoli with the piccoli of the lira di grossi a monete is confirmed by the conformity of the following equations to his calculations:

78 lire di grossi (each of 7,680 piccoli) = 599,040 piccoli
2,496 lire di piccoli (each of 240 piccoli) = 599,040 piccoli

In a passage written around the time of the above account book, the Manuale de’ Ricci (A. Borlandi, ed., 99–100) distinguishes between a “lira di moneta di soldi 64 il fiorino” and a “lira di baghatini di s. 80 il fiorino.”
MULTIPLICATION OF MONEYS OF ACCOUNT

iii) impede stating accurately the relation of the lira a grossi to the lira di piccoli. The split between “a oro” and “a monete” occurred also in the lira a grossi, but that money of account, although in many ways the most important, came to be used less and less as its relation to the new coins involved more and more fractional computations. Many accounts and prices previously recorded in lire a grossi were converted in the late fourteenth century to lire di grossi. For such conversions the lira a grossi was generally divided by 26.16

The tendency to drop the awkward fraction 1/9 in the conversion 1 lira di grossi = 26 1/9 lire a grossi reduced the significance of the earlier distinction between the lira di grossi complida (240 grossi) and the lira di grossi manca, representing 239 grossi or 26 lire a grossi. This must have hastened the demise of the lira manca. Born about 1254, the lira manca was used around 1300, as we know from the arithmetical exercises in the Zibaldone da Canal. Sometime later it was adopted probably as a gold-based money of account by the foreign exchange market in quoting exchange rates between Florence and Venice. In that role it was widely used in the late 1330s, as evidenced by the Libro giallo dei Covoni and as explained by Giulio Mandich. The lira manca seems to have dropped out of use by about 1350, partly because of the accounting problems involved and partly because the lira di grossi became anchored to the gold ducat, most definitely so when the grosso was no longer minted, beginning in 1356.17

In the second of the three periods distinguished above—1353–79—the silver content of the soldino was clearly decisive in determining the silver equivalent of the lira di piccoli and the lira a monete. Before 1353 the situation was not so simple. In some years during that earlier period other coins may have been of equal or even greater importance in determining the metallic equivalent of the lire based on silver (see table 21). “Monete” was a generic term for silver coins less valuable than the grosso. It certainly included mezzanini and almost certainly included also the foreign silver coins that the soldini and mezzanini were intended to replace. Lire di grossi a monete were referred to in notarial documents even before the coinage of soldini or mezzanini. Both before and after 1331, lire a monete

16The lira di grossi complida, equated with 10 ducats, was worth 26 1/9 lire (or 26 lire 2 soldi 2 denari) a grossi. The lira a grossi may not have been well understood by many foreigners who came to the Venetian market. In ordering conversions in 1390, the change was supported by the statement that when foreigners paid ro ducats and this amount was written down as 26 lire 2 soldi 2 denari, they suspected trickery (PMV, doc. 183).

17See above, chap. 8, sec. iii; and Lane, “Le vecchie monete di conto,” 53–57. The accounts of the Covoni partnership, which dealt extensively in exchange between Venice and Florence, specified carefully that the lira di grossi in which they recorded payments and receipts in Venice was the lira di grossi manca and equated it not with 10 ducats but with 9 ducats 23 grossi ([9 x 24] + 23 = 239 grossi) (Mandich, “Per una ricostruzione,” cvii, cix, cxii; and below, chap. 19, sec. iv).
are referred to in Latin as “libre” (or “solidi”) parvorum “ad monetas.” They are mentioned in contexts implying that “monete” meant some other kind of coin than piccoli, probably foreign groats. These usages of “ad monetas” indicate that the lira di grossi was showing signs of splitting even before 1331. Or to say the same thing differently, even before 1331 not all the lire di grossi referred to in contracts were assumed to be based on the grosso coin, even if based on silver. The metallic base of the lira di grossi was already in doubt before 1331. After 1331 the metallic base of the lira di grossi a monete may well have been even more in doubt for a couple of decades, there being some question both as to which were its link coins and what their fine silver content was.

To be sure, the piccolo and its fractions, the biancho and the quartarolo, which together constituted Venice’s black money, were issued in amounts sufficiently small that there was no danger in the fourteenth century that they would displace the more purely silver coins in the payment of prices and obligations recorded in lire di piccoli or in lire di grossi a monete. Moreover, until the silver content of the piccolo was drastically reduced after 1379, piccoli contained enough intrinsic value that they supported rather than weakened the value of the lira di piccoli compared with that of the other moneys of account. On the other hand, piccoli worn down by use were likely to be more than 8 percent underweight, so that the coining of the soldino probably did not occasion an extensive culling out of piccoli for hoarding or export.

The relative values of the moneys of account were clouded between 1331 and 1353 by the varied finenesses of the coins issued. The mezzanino of 1331 was only 0.78 fine, so that although it weighed more than half as much as the grosso (which was 0.965 fine), it contained less than half as much silver. On the other hand, the soldino was at best 0.67 fine, and the

18Bondi Sebellico, ed., Felice de Merlits, docs. 288, 297, 303, 357; see also above, chap. 15, n. 55.

19The actual or intended role of the first mezzanino as a basic coin is doubtful. When first coined in 1331 or 1332, the mezzanino contained 0.969 grams of silver and was valued at 16 piccoli, so that the 15 mezzanini required to equal in value 240 piccoli contained 14.5 grams of silver, more silver than 240 piccoli of that date. But if, as its name implies (it was also called the mezzo grosso), it was intended to be a basic coin of the lira di grossi, it would have lowered the silver equivalent of that money of account, for the 480 mezzanini required to pay the equivalent of 240 grossi (a lira di grossi) contained only 465.1 grams (0.969 × 480) of silver, whereas 240 grossi contained 504 grams (2.1 × 240). When a smaller, finer mezzanino was coined in 1346, it probably functioned for a few years as the basic coin of the lira di piccoli, for it too was given the official value of 16 piccoli, and it contained only 0.774 grams of silver, so that 15 mezzanini contained not only somewhat less silver than 240 piccoli of that time but less silver than 20 of the soldini then functioning as the basic coin of the lira di piccoli (table 10). If any effort was made to have the mezzanino accepted as worth 1/2 of an old grosso so that 480 would pay a debt of 240 grossi, the creditor could have objected. He would have been receiving only 371.5 grams of silver (0.774 × 480), whereas he was due 504 grams (2.1 × 240).
piccolo 0.2 or 0.19 fine. With so much variation in fineness and with individual coins varying in weight as a result both of the imperfect techniques used in minting and of wear and tear, sweating and clipping, moneychangers could profit while Venice’s reputation suffered.

In general it may be said that never during the Middle Ages did Venice debase its coinage, not in the narrow sense of the term “debase.” That is, it did not lower the percentage of precious metal by increasing the amount of copper or lead used as alloy while maintaining the former legal value of the coin and even its weight and general appearance. The new issues that came from the Venetian mint in 1331 or 1332 did not constitute debasement in that sense, for neither the mezzanino nor the soldino had a sufficiently close resemblance to any previous Venetian coin or any coin issuing from a neighboring mint. But neither the mezzanino nor the soldino was close to the standard of fineness that had previously characterized silver coin bearing the insignia of Venice, even though each contained a percentage of silver sufficiently high to make it clearly distinguishable from black money. Their issuance lowered the metallic equivalents of the Venetian moneys of account to which they were linked, and they may have been presented as worth more than their silver content justified. In that sense the new Venetian coinage of 1331–32 had some of the characteristics of a debasement.

iii. COINAGE UNDER ANDREA DANDOLO

With the circulating currency in this dubious condition and the good old grossi disappearing because they were officially undervalued, it must have been galling to some Venetians proud of their country’s monetary tradition to realize that Venice lacked silver coins of the old Venetian standard. It was at that juncture that the Venetians chose as their doge a noble remembered for legal and historical studies which reflected just that kind of pride. Andrea Dandolo (1343–54) was esteemed not for military victories, but for the chronicle that Venetians accepted as the authoritative account of their past. As doge he added a sixth book to the five in which Venetian statutory law had been codified a century before. He had personal family—or clan—reasons to be especially interested in the operations of the mint, for all the principal innovations in Venetian coinage bore the imprint of doges named Dandolo: the grosso that of Enrico Dandolo (1192–1205); the gold ducat that of Giovanni Dandolo (1280–89); and the first mezzanini and soldini that of Francesco Dandolo (1329–39).

20 A soldino with a fine silver content of 0.625 is mentioned in 1353 (PMV, doc. 115). On the others see below, table A.2.
21 See above, chap. 15, sec. iii; and below, in chap. 19, sec. ii. For comparisons with Florence see ibid., sec. iv.
22 See above, chap. 8, n. 33.
MEZZANINO, TYPE I

On the mezzanino introduced by Francesco Dandolo (1329–39) the doge is shown holding a banner, the symbol of military command.

*Obv.*: .FRA.DAN. .DVLO.DVX The doge, facing left, holds the banner in both hands.

*Rev.*: .SMARC/. . VENETI. Bust of St. Mark, facing front, holding the gospel in his left hand, his right hand raised in blessing.

*AR, 17.3 mm, 1.260 gr. Museo Bottacin, inv. no. 136 (Papadopoli, 1: 164, no. 7).
MEZZANINO, TYPE 2

On the new type of mezzanino, smaller but of finer silver, issued under Andrea Dandolo (1343–54) the doge is shown receiving a candle from St. Mark. 

*Obr.*: ANDADVLM SMVENE. DVX. St. Mark, facing three-quarters right, presents a candle to the doge, who, facing left, receives it with both hands; M below the candle. 

*Rev.*: XPERES VRESIT. Christ with nimbus rising from the tomb; in the right hand a banner, in the left a cross. 

*AR, 16.7 mm, 0.76 gr. Museo Bottacin, inv. no. 164 (Papadopoli, 1: 181 no. 3).*
Conditions during the dogeship of Andrea Dandolo (1343–54) gave him exceptional opportunities to use his office to shape the development of Venetian coinage. Those years almost coincided with the period 1342–50, during which the amount of “servile silver,” the 1/5 of all silver imported that merchants were obliged to sell to the mint at the mint’s traditional low price, was reduced to 1/10. Partly for that reason and partly because of changes in trade routes, those were years of intense minting and large shipments of gold and silver through Venice, as will be described in the next chapter. Chronicles ascribe to Andrea Dandolo the merit for introducing the new coins issued during his dogeship. That by itself would be poor evidence for his having had a personal influence, since chroniclers customarily attribute to an incumbent doge actions taken by the governing councils during his reign. But the attendant circumstances indicate his personal interest.

Under his predecessor no mezzanini had been coined. Within a few years of Andrea’s election, the Quarantia voted on a proposal for a new issue of mezzanini which were to be of the same fineness as the traditional grosso; 27 members voted for the purer silver, 7 for the mixture that had been used under Francesco Dandolo. Although little more than half the size of the old grosso, Andrea’s mezzanino was a handsomer coin and of equally fine silver (0.965), although it weighed much less than half as much (0.802 grams compared with 2.178). Officially valued at 16 denari di piccoli, the new issue reduced the silver content of the lira di piccoli by 9 percent (from 12.82 grams of pure silver to 11.61).

The design of Andrea Dandolo’s mezzanino was strikingly distinct from that of other Venetian coins. The obverse bore the doge’s name and a scene resembling that on Venetian ducats and grossi, yet significantly different. The doge, not kneeling as on the ducat, but standing, is receiving from St. Mark, not the flag, symbolizing military authority, but a candle, a symbol of moral, spiritual, or ecclesiastical bonds. The symbolism of the candle is not easily defined precisely, but a candle must have

23BMCV, Ms. Cicogna 2831, fols. 49v–50. Two chronicles report that soldini were made less easy to clip than the previous silver coins or “monete” (BMV, Ms. It., cl. VII, cods. 1275 and 50 [9275]). For other chronicle accounts see ibid., cod. 38, fol. 35; London, British Library, Kings 148, Giustinian Chronicle, fol. 99v; Roberto Cessi and Fanny Bennato, eds., Venetiarum historia vulgo Petro Justiniano Justiniani filio adiudicata, Monumenti storici, n.s., 18 (Venice: Deputazione di Storia Patria, 1964), 231; Lorenz de Monacis, Chronicon de rebus venetis . . . (Venice, 1758), 310–11 (written in the 1420s); and Sanuto, Vite de’ Duchi, col. 616.

24Marino Sanuto’s notes (ASV, Quarantia Criminal, b. 14bis, fol. 14) preserve the decision of 24 January 1345/46 to name eleven experts to deal with “ista negotia . . . de mutatione monete,” and that of 9 February: “Cum differentie que hie ponuntur in construtione monetarum sit solum in faciendo monetam puram de argento grosso vel mista cum ramine,” on which the voting was as follows: “Quod sit pura de argento,” 27; “Quod sit mista cum ramine,” 7; “non,” 3; “non sinceri,” 0.

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seemed—to his friend Petrarch, for example, who praised Andrea’s humane qualities—more appropriate for Andrea than a banner of military command.26 For a half-dozen years these mezzanini were minted in large numbers and at high profit, competing successfully with the new “guelfo” which Florence had issued in 1345.27

During those same years, soldini were still being minted with the much inferior fineness of 62–67 percent. In 1353, in the midst of Venice’s Third Genoese War, proposals were made to reduce the silver content of the soldino in a way that would have reduced further still the silver equivalent of the lira di piccoli. Opinion was divided in the Quarantia as to how to do it. A drafting committee was appointed, and each of its three members had a different opinion. Andrea Gabriel, probably the former banker of that name, wished to achieve the reduction by minting soldini that would be only about 5/8 silver, like those previously coined, and of lighter weight. The other two members of the drafting committee, Donato Honorado and Michele Duodo, although they differed on the price to be paid for free silver, both proposed giving the new issue of soldini the same fineness as the old grosso and the new mezzanino. On the first balloting on 29 March, Gabriel’s motion received the most votes, but the doge himself and one of his councillors intervened successfully to move postponement. When a vote was taken on 8 April, after Honorado and Duodo had agreed on the price for free silver bullion, their unified motion passed, 26 to 9.28 All servile silver was henceforth to be used for soldini.29 Thus in the last year of Andrea Dandolo’s dogeship the minting of his distinctive mezzanini ceased and a soldino of fine silver was left as the basic coin of the lira di piccoli.

The refinement of the soldino reestablished the sharp distinction that had prevailed in Venetian coinage before 1331 between coins of less than 1/3 silver and those that were of almost pure silver. The piccoli coined

26 According to Papadopoli’s description (1:181–82) the saint is receiving the candle from the doge, but the similarity of the obverse of this mezzanino to the obverse of the ducat suggests that the saint is giving and the doge receiving, as in the miniature of about the same date pictured in Agostino Pertusi, “Quedam regalia insignia,” Studi veneziani 7 (1965), on p. xxxvii and identified on p. 36. On the frequent use of the candle in Venetian ceremonies as a symbol of a moral, religious bond see Edward Muir, Civic Ritual in Renaissance Venice (Princeton, 1981), s.v. “candles.” The presentation of a white candle by the pope to the doge had acquired a firm place in the legend of Venice’s defense of the pope and reconciliation of pope and emperor in 1177. In Andrea’s own chronicle, the white candle, presented as soon as the pope reached Venice, seems a symbol of gratitude for Venice’s offer of protection (Dandolo, Andreae Danduli Chronica, vol. 12, pt. 1, p. 263). On the coin, the candle, presented not of course by a pope but by St. Mark, may have symbolized the doge’s authority as protector of the body of the saint and of the Venetian Church.

27 See below, app. A, sec. vi; and chap. 19, sec. iv.


29 PMV, doc. 118.
under Andrea Dandolo, although somewhat heavier than those coined under his predecessors, contained a slightly higher proportion of copper. 30 Also of a relatively low grade of billon—in fact more than 85 percent copper—was a new type of coin first coined in the last years of Andrea’s dogeship, the torresello. Since torreselli were intended for use in the Venetian dependencies in Greece, not within Venice, their characteristics and function will be described in connection with Levantine monetary exchange rates. 31

The sharp distinction thus reestablished in the output of the Venetian mint between silver coins, more than 95 percent fine, and billon coins, less than 20 percent fine, did not apply to all the coins used within Venice. Several kinds of foreign groats of intermediate fineness were allowed to circulate legally, but an effort was made to ban pieces that were below the standards established at the places where they were minted (“in locis ubi consuetum est cuni et laborari dictas monetas”). Thus, all pieces of xxii that were less than 7/8 silver or weighed less than 204 coins to the mark were made subject to confiscation in 1354. If they were found in the hands of a moneychanger, he received no compensation for the coins confiscated and was fined 50–55 percent of their face value. If they were found in the hands of someone who was not a moneychanger, the fine was only 25 percent of the face value, in addition to confiscation, and even that penalty could be waived if he not only was not a moneychanger nor connected with a moneychanger but also was judged by the inspecting official not to be a “persona suspecta.” But in any case, the coins of inferior fineness or weight were to be cut up and melted down. Similar decrees were issued concerning Paduan carrarini that were not of the fineness of grossi and concerning friesianers that did not contain 50 percent fine silver. 32 The explicitness with which the standards for these foreign coins were specified makes clear the legality and wide use of those that could meet the standard.

The reforms made under Andrea Dandolo set the pattern of Venetian coinage for several decades. The three separate types—gold, fine silver, and low-grade billon—continued to be sharply distinguished. Of greater importance in future years than in his own time was the provision introduced in 1353 requiring mintmasters to coin into soldini at a price specified by law all the silver offered. Although since the previous century the mintmasters had been required to accept for casting into certified bars all silver offered, the regulation concerning soldini in 1353 is the first surviving record of an order to the mintmasters to accept for coinage, at a specified price and charge, all silver offered. The silver thus voluntarily

30 Papadopoli, i:183; CNI, 7:69–75.
31 See below, chap. 19, sec. ii.
32 ASV, Commissioni, Capitulare Officii de Levante (ex Brera 263), fols. 19–21.
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offered was called free silver to distinguish it from the servile silver of the quinto or the decimo. The mint charge set on free silver in 1353 was high—7.4 percent—although not nearly as high as the charge on servile silver. It was soon set even higher—at 13.8 percent—so that the free silver attracted immediately was probably slight, but it was lowered in later years to 2.5 percent, so that the charge barely covered the costs. The provision for unlimited coinage of silver contained in the law of 1353 proved an important step towards letting the initiative of silver merchants determine the amount of silver coined. It limited the discretion of the mintmasters in acquiring silver and increased the extent to which private enterprise determined the amount of coinage.

Taken as a whole, the monetary policies pursued under Andrea Dandolo seem well designed to expand and make profitable the operations of Venetian dealers in bullion. The import tax on silver was lowered by reducing the quinto to a decimo. The role of market conditions in determining the amount of coinage was strengthened by providing for the unlimited coinage of silver. The three kinds of coin—gold, silver, and billon—were again sharply distinguished, and in a way likely to enhance or at least restore the reputation of Venetian silver coins. The voyages of the merchant galleys, which will be described in chapter 17, were adjusted precisely in order to meet the needs of the bullion trade. The reductions in weight of the silver coins, to be analyzed more thoroughly in chapter 18, were consistent with the flexible, resilient bimetallic standard that had been introduced in 1331-32. According to that standard, 1 lira di grossi was supposed to equal both 10 gold ducats and 640 silver soldini, but the ducat was allowed to fluctuate freely. It did so at prices a little above 64 soldini. No effort was made to impose the exchange of gold and silver at a rate determined by the government.

iv. COMPLICATIONS ARISING FROM MULTIPLE STANDARDS

Andrea Dandolo was the last doge to issue an appreciable number of the old Venetian grossi. None survive bearing the name of his ill-fated successor, Marino Falier; the last of the old grossi was issued by the latter’s successor, Giovanni Gradenigo, 1355–56. No doubt some grossi minted under earlier doges continued to circulate and many more lay in treasure chests within Venetian palaces, in spite of the large numbers that had been exported. But during twenty-odd years, 1356–79, no grossi of any kind issued from the Venetian mint.

Their discontinuance marks the end of the first of the three periods mentioned above (1332–53; 1353–79; and after 1379), periods which coin-

33PMV, doc. 117; and below, app. A, table A.5.
ACCOUNTING ENTRIES INVOLVING CONVERSIONS

Examples from 1397–1400 in the ledger consigned by the executors of the estate of Domenego da Pozzo to the Procuratori di San Marco for their administration of the estate of Domenego’s son Andrea. The entries involve converting lire a oro into lire a monete.

ASV, PSM, Misti, b. 80A, Commissaria Andrea da Pozzo. Photograph by ASV, Sezione di fotoriproduzione.
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cided with three stages in the process by which Venetian money of account bifurcated into lire a oro and lire a monete. In 1331 the ducat was quoted at 70, and again in 1345 it was nearly that high, but in the years between it dipped, and in 1349–51 it was back down to 64 soldi di piccoli.35 So long as fluctuations were within that range, probably many accounts were kept on the assumption that there was a single bimetallic monetary standard in which 1 gold ducat equaled 64 silver soldini.36 Adjustment to commercial reality was made by allowing for the extent to which the ducat was priced above 64 soldi di piccoli through the addition of the lazzo.37 Use of such a variable lazzo treated the silver coins, called "monete," as the basic coins of the traditional lira di grossi and lira a grossi.

After 1353, in the second period, the lazzo increased as the ducat again rose. When its price reached 74, it stabilized at about that level, so that the lazzo remained at about 8–10 soldi from 1362 to 1374. If in spite of the large lazzo a ledger was still kept in lire di grossi a monete, the accounting became cumbersome, as is illustrated by an explanation of the entries in a small ledger of the Da Pozzo family reproduced here.

The first entry in the lefthand column, while crediting the estate of Domenego, debits a company in which he had been a partner for a sum taken from the ledger which Domenego had kept "in his own hand" in which debits and credits had been recorded in lire di grossi a monete, as are most of the debits and credits in this ledger. It reads:

La Chompagnia de ser Simon da Pozo e la commessaria de ser Domenego de dar a di primo Setembre che resta a dar a la commessaria de ser Domenego da Pozo in fin questo di, chomo apar in el quaderno scrito de soa man; meto la commessaria del dito de aver a k. £ 501 s. 5 d. 3 p. 4 de monede

In the righthand column, the fourth entry, while debiting a "ship account," credits that same partnership for transferring to the estate one share in the ownership of a cog, a share that had been valued in lire di grossi a oro. The entry reads:

35 Below, table D.3; Zanetti, Nuova raccolta, 4:169–76; PMV, lxxxi; Papadopoli, 1:210; Mandich, "Per una ricostruzione," cvii n. 1.
36 Mandich, "Per una ricostruzione," cv, concluded that the transactions in Venice of the Covoni were usually recorded (1336–40) in "la lira 'di grossi manchi' (o lira 'manca') senza mai precisare [expressis verbis] a quale effettiva moneta veneziana essa la riferisce, se al grosso d'argento, o al ducato d'oro."
37 On the lazzo on the ducat see above, chap. 15, sec. iii.
The accountant had converted from lire a oro in order to make his entry in lire a monete. He had converted by adding to the gold value the difference between the legal value of the ducat (64 soldi) and the day’s market valuation. We can find the latter (namely, 90 soldi per ducat) by reducing both figures to piccoli, then dividing the amount “de monete” by the amount “a oro” and multiplying the result by 64 ([59,328/42,190] × 64 = 89.997).

The fifth righthand entry records an investment of 200 ducats in cash. Using the same procedure reveals that the market rate of the ducat on 12 February 1400 was 85 soldi. The entry reads:

a di 12 frever che de contadi
ser Simon da Pozo, messo la
botega de dar a k. 6, ducati
200 d’oro val de monete

The accountant who made the conversions took off from a knowledge of the current price of the ducat. But he also had to calculate by reducing figures in lire to figures in piccoli, since piccoli were the lowest common denominator of both the lire a oro and the soldi di piccoli in which ducats were priced. For the entry of 12 February 1400, when the ducat was quoted at 85, its price equaled 1,020 piccoli (85 × 12). Since each denaro grosso of the lire di grossi a monete contained 32 of these piccoli, the 1,020 piccoli equaled 31.875 denari grossi a monete (1,020/32). Two hundred gold ducat coins, valued at 31.875 denari grossi each, gave a total of 6,375 denari grossi a monete (200 × 31.875), which he recorded as 26 lire 11 soldi 3 denari a monete, having calculated that 26 × 240 denari = 6,240 denari, which leaves 135 denari; and 11 × 12 = 132 denari, which leaves 3 denari for the total of 6,375 denari.

A shortcut is difficult to imagine. The procedure of conversion must have consumed time and energy and added to a businessman’s transaction costs!

Increasingly, merchants and officials who handled ducats kept their books in lire di grossi a oro.38 They avoided use of the lazio by treating the

38 The accounts of the estate of Tommaso Querini, kept by the Procurators of San Marco
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ducat as the basic coin, always valuing it at 2 soldi di grossi, that is, 24 denari grossi, or 768 piccoli a oro. They then varied the valuation of silver coins. For example, if the moneychangers gave 85 soldi for a ducat, when a merchant who kept his books in lire a oro received a cash payment of 17 soldini, he would value each soldino as \( \frac{1}{85} \) of a ducat. Since 2 soldi di grossi a oro always equaled 1 ducat, each soldino would be valued as \( \frac{2}{85} \) soldi di grossi a oro, so that the 17 soldini coins were worth \( \frac{2}{5} (17 \times \frac{2}{85}) \) of a soldo di grossi a oro, which was the same as \( \frac{2}{5} \) of 12 grossi a oro and also the same as \( \frac{2}{5} \) of 384 piccoli a oro, that is, 153.6 piccoli a oro (384 \( \times \) \( \frac{2}{5} \)). He would record that valuation as 4 denari 25 or 26 piccoli a oro, having calculated that \( 32 \times 4 \) grossi = 128 piccoli, which leaves 25.6 piccoli of the total of 153.6 piccoli.

With the development of these two contrasting ways of keeping accounts, the lira di grossi a oro became clearly distinct from the lira di grossi a monete during the second period (1353–79).

It is possible that while those lire, which were both clearly detached from the grosso coin, were bifurcating, a third kind of lira di grossi, called a “lira di grossi di zecca,” remained tied to the old grosso of 2.1 grams fine. Among the assets recorded in the estate of Giovanni Stornado in 1353 were “libras xii grossorum di zecca.” Did that merely mean that the estate administrators had found 2,880 freshly minted grossi coins (12 \( \times \) 240) in the deceased’s treasure chest? Or does it mean that alongside the lira di grossi a oro and the lira di grossi a monete should be placed a third kind of lira di grossi also used as a standard of exchange value? If so, this lira would deserve being called “una vera lira di grossi.” The appellation has been applied to the lira di grossi a oro, perhaps because its comparative value rose when the amount of silver in the soldino and other “monete” was reduced and the lira a monete fell. But since grossi coins were always silver, never gold, calling a lira di grossi based on gold a “true lira di grossi” carries the anachronistic implication that gold was the only “real money.”

During the mid-fourteenth century, silver was rising in value and gold was falling, so that the old grosso rose in value compared not only with the soldino but also with the ducat. A “true lira di grossi” worth 240 old, full-weight grossi coins would have represented 504 grams of silver (240 \( \times \) 2.1). That was not only much more than the 410 grams of silver (640 \( \times \) 0.641) then represented by the 640 soldini in a lire di grossi a

(PSM, Citra, b. 260), before 1341 convert sums entered originally in libre parvorum or libre grossorum into libre ad grossos. Beginning in 1341 all sums are converted into libre grossorum in monetis. Only in the 1350s are there signs that sums recorded in lire di grossi a monete were later converted into lire di grossi a oro. The accounts of the estate of Jacobello Gabriel (ibid., Misti, b. 67) from 1361 on clearly convert sums initially recorded in other lire into lire di grossi a oro.

39Mandich, “Per una ricostruzione,” cviii.
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monete. It was also worth much more in 1353 than the 35.5 grams of gold which were the metallic equivalent of the lira di grossi a oro, the bimetallic ratio being at that date only about 11 to 1. Indeed, Stornado’s estate managers evaluated the 12 lire di grossi di zecca as 15 lire 8 soldi di grossi a oro, allowing a laziø, they said, of 5 soldi 8 denari (28 percent). In that case the “lazio” was in fact a premium allowed for old, full-weight silver grossi by an accountant keeping books in lira di grossi a oro!

While one may not exclude the possibility of the use of a third lira di grossi linked to the old grosso, the kinds of lire di grossi clearly distinguished in common use were two: the lira a oro (equal to 10 ducati a oro) and the lira a monete (equal to 10 ducati a monete). As a subdivision, the grosso a oro was similarly quite distinct from the grosso a monete, which was more explicitly called a denaro of the lira di grossi a monete, for 24 grossi a oro was understood to mean 1 gold ducat, whereas 24 grossi a monete was understood to mean 64 silver soldini. The market value of the denominations of the lira and ducato a monete varied in gold coin, perhaps as often as week to week. In contrast, the value in silver coin of the denomination of account of the lira and ducato a monete remained invariable as follows:

\[
\begin{align*}
1 \text{ lira di grossi a monete} &= 640 \text{ soldini} \\
1 \text{ ducat a monete} &= 64 \text{ soldini} \\
1 \text{ grosso a monete} &= 2 \frac{2}{3} \text{ soldini} \\
1 \text{ piccolo a monete} &= \frac{1}{12} \text{ soldino}
\end{align*}
\]

During this second period, 1353–79, the soldino was the basic coin tying together three moneys of account: the lira di piccoli, the lira di grossi a monete, and the ducato a monete.

In the third period—after 1379—the three were similarly tied together by both the soldino and a new grosso. This new grosso, in contrast to the old grosso, when issued was made—by law—a link coin of the lira di piccoli. Its coinage was physical, numismatic recognition of the way the moneys of account had been transformed since 1331.

The new grosso was distinguishable visually from the old grosso chiefly by the star added beside the figure of Christ risen and was only slightly (about 2/10 of a gram) lighter, but it had an entirely different relation to Venice’s money of account. In spite of their name, the new grossi had a legal value stated not in lire di grossi but in lire di piccoli. The

\[40\] PSM, Misti, b. 62A, estate of Giovanni Stornado, register for 1348–1428, fol. 3. The laziø of 5 soldi 8 denari means that for each 240 grossi di zecca the administrators added 5 soldi 8 denari to the 20 soldi in a lira a oro, since 15 lire 8 soldi = 308 soldi = 240 + 68 = \((12 \times 20) + (12 \times 5 \frac{2}{3})\) soldi. On new grossi di zecca see above, chap. 15, sec. i. On the speculation in silver by the administrators of the Stornado estate see Mueller, “The Procurators of San Marco,” 151–52.
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law governing their coinage specified that they were to be worth 4 soldini and also specified that each soldino was worth 12 piccoli.41 Thus the new grosso was given the value of 48 piccoli as legal tender. Since these piccoli were the lowest denomination of account of the lira di piccoli, the lira di grossi a monete, and the ducato a monete,42 the new grosso was able to function as a basic coin of all three of these moneys of account.

(The fiscal and commercial situation leading up to the coinage of this new type of grosso with a changed weight and slightly changed design but with a relation to Venice’s moneys of account entirely different from that of the old grosso will be explained below, in chapter 18, section ii.)

The coining of a grosso having four times the legal and metallic value of the soldino accentuated the artificial, antiquated, or abstract meanings of all the denominations of account in use. As a denomination of account, the piccolo of which 240 made 1 lira di piccoli had long been distinct from the piccolo coin.43 When the soldino had become the basic coin of the lira di piccoli, a “piccolo” as a denomination of account equaled in value, not a piccolo coin nor an average of piccolo coins, but 1/12 of a soldino.44 A similar contrast between the tangible metallic coin and the denomination of account with the same name was extreme in the case of “grosso.” The new grosso was not a physical embodiment of the “denaro grosso” of either of the two lire di grossi; that is, it did not have the same value as either. It was not of the same value as the denaro grosso of the lira di grossi a oro, for the metallic value of the latter depended on its being 1/24 of a gold ducat. The new coins were not of the same value as the denaro grosso of which 240 constituted a lira di grossi a monete, for the latter denaro grosso was merely an accounting unit equal to 32 piccoli and derived its metallic value from the equivalence of 12 piccoli with 1 soldino. The new grosso coin authorized in 1379 (type 2) with the legal tender value of 48 piccoli was accordingly worth 1.5 denari grossi (48/32) of the lira di grossi a monete.

41 The decree (in PMV, doc. 163, p. 157) reads: “Qui vero grossi esse debeant pondens soldorum quatuor et eiusdem finece et currere debeant ad dictum precium soldorum quatuor et soldini predicti pro parvis duodceim pro quolibet; et predicte monete currere debeant in Venecis et in omnibus terris et locis subditis Comuni Veneciarum, nec refutari possint per aliquem.” The weight was 1.987 grams, the fineness 0.952. The mint charge was the same percentage in 1379 for grossi as for soldini (see below, app. A, sec. vii).

42 See above, n. 15.

43 Mandich has emphasized that when the old grosso still determined the value of the lira di grossi, the full-weight grosso coin was worth 36, not 32, piccoli coins. At that time the piccoli referred to in accounts kept in lire di grossi were not of the same value as real piccoli coins (“Per una ricostruzione,” cvii).

44 Mandich did not analyze the effects of the new silver coins of 1331 and the displacement of the piccolo coin by the soldino coin as the basic coin of the lira di piccoli. Whether that shift occurred in the 1330s or 1340s is indeed doubtful, but it seems certainly to have occurred before 1333. Papadopoli records no piccoli minted between 1368 and 1382.
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One can summarize as follows the relations after 1379 of the denominations “a monete” to the silver soldini and to the new type of silver grossi coins:

1 lira di grossi a monete = 640 soldini = 160 grossi
1 ducato a monete
   (1/10 of a lira a monete) = 64 soldini = 16 grossi
1 denaro grosso a monete
   (1/24 of a ducato a monete) = 2 2/3 soldini = 2/3 grosso
1 denaro a monete
   (32 piccoli a monete) = 1/12 soldino = 1/48 grosso

Inverting the picture shows the relation of the new grosso coin to the moneys of account in the 1380s as follows: 1 silver grosso coin, type 2 = 48 of the denari piccoli of the lira di piccoli = 1.5 denari grossi of the lira di grossi a monete = 1.2 grossi a oro when 1 gold ducat was priced at 80 soldi di piccoli (24 × [4/80] = 1.2) < 1.2 grossi a oro when the gold ducat was priced at more than 80 soldi di piccoli.

**v. CHOICES AMONG MONEYS OF ACCOUNT**

With so many different moneys of account linked some to one coin, some to another, it is often difficult for a modern reader of old Venetian records to know which lira or soldo is meant in a particular document. The Venetians who used those moneys of account every day also had difficulties unless the kind of lira or soldo was specified or unless, as was the case in most official governmental accounts, the kind of lira meant could be assumed because of the long established practice of a particular office.

When doubt arose regarding private contracts, the courts of civil justice could be called on to decide on the correct interpretation. Even if the kind of lira or soldo was not in question, a dispute was possible over whether coins offered in payment should be valued as they were at the time the contract was made or at the rate prevailing at the time the payment was due. In the long run the latter interpretation may be said to have favored debtors. Generally if coins kept their full weight, in the course of time they acquired values higher in money of account than they had had when first issued. As a result, fewer coins would be needed to pay a sum stated, for example, in lire di piccoli. Paying a debt of 640 soldi di piccoli in ducats in 1383 would have required 10 ducats if the coins were valued at the old rate of 64 soldi but only 8 ducats if the coins were valued

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at their market price in 1383, which was 80 soldi. In the sixteenth century and earlier the Venetian courts were more likely to decide in favor of the creditors and require payment at the rate that was legally established at the time the contract was made.\textsuperscript{46}

Long after the ducato a monete was separated from the ducato a oro, and long after the ducat coin and the ducato a oro had risen far above 64 soldi, a court could still rule that an obligation that had been formulated in lire di piccoli and was being paid in ducat coins required paying 1 ducat for each 64 soldi due. An example of such a decision is a case of 1396 concerning an annual legacy of 50 lire di piccoli made in 1338 by Marsilio of Carrara to three Venetian monasteries. The administrators of the estate, the Procuratori of San Marco, wished to pay by valuing ducats at 84 soldi di piccoli, that is, at the market rate in 1396. The judges declared that as a general rule when a will read “50 lire” without further specification, 50 lire a grossi was to be understood. But since lire di piccoli had been specified in this case, the bequest should be paid by giving ducats the value they had in lire di piccoli at the time of the bequest. That meant a difference of almost 4 ducats (24 percent of the annual bequest) for each of the beneficiaries.\textsuperscript{47} The case exemplifies one of the many disadvantages of a monetary system with multiple monetary standards expressed in several moneys of account linked now to one coin, now to another, with changing metallic contents.

While courts decided in doubtful cases about payments due between private parties, administrative officials or higher councils decided what moneys would be used in various aspects of Communal affairs. For example, the special police court concerned mainly with the illicit carrying of weapons, the Cinque alla Pace, imposed fines stated in lire di piccoli but then collected part of the fines “ad aurum” and part “ad monetam.” They had different rules for men fined less than 5 lire and men fined 5 lire and more. The latter paid the first 64 soldi they owed by paying 1 ducat, but they were allowed before 1403 to pay all the rest of the fine in monete. The Ducal Councillors changed the rules in 1403 to require that all fines larger than 3 lire be paid entirely in ducats, valuing them at only 64 soldi. Only fines of less than 3 lire could be paid in silver coin. The Ducal Councillors made the change, they said, in order to increase Communal revenue.\textsuperscript{48}

Increasing Communal revenue was also the reason given in 1361 for changing the kind of coin in which naval officials paid themselves their

\textsuperscript{46}Tucci, “Le monete in Italia,” 527.


\textsuperscript{48}ASV, Collegio, Notatorio, reg. 3, fol. 100 (16 May 1403). The same rule held as late as 1438 (see ASV, Petizion, Sentenze a Giustizia, reg. 82, fol. 6v).
share of the fines they imposed on seamen or ship operators. The officials had at one time been paid "ad monctas," but just before 1361 they began to receive payment partly in ducats. Since the ducat had reached a new high of 73 soldi in mid-1361, after some years at about 64, the loss to the Commune was noteworthy, and the Avogadori ruled in December of 1361 that because of the "magnis laziis," the officials were to get their share in ducats only if the penalty had been paid in ducats, in silver if it had been paid in silver coin.49

As late as 1348 a sweeping conversion of import duties from ad valorem to ad pondus specified rates in lire a grossi,50 but the lira a grossi, which in the thirteenth century had been used more than the lira di grossi, became much less popular during the course of the fourteenth century. In 1386 the brokerage fees were being calculated on some deals in lire di piccoli, on others in lire a grossi. It was then ordered that thereafter they all be calculated in lire di piccoli counting 64 soldi to a ducat.51 The disuse of the lira a grossi is quite understandable in view of the arithmetically difficult relation of the lira a grossi to the new silver coins. On the other hand, the difficulties of converting regulations, debts, penalties, and balances recorded in lire a grossi into lire di grossi delayed the change even after it had become public policy.

One customs office, the Tabula Maris, which collected the freights on most costly merchandise, the kind brought by galleys, undertook the conversion of its accounts from lire a grossi to lire di grossi under orders from the Senate at some date prior to December 1390. On 12 December of that year, the Senate expressed its satisfaction with the results of the conversion, which had perhaps been undertaken as an experiment, and ordered all other "tabule" and revenue-collecting offices still using the old money of account to convert similarly but to proceed in such a manner that no customs duties ("datii") would be either raised or lowered. The proponents of the measure asserted that keeping accounts in lire a grossi "inducit confusionem et intacamentum" in those bureaus and implied that the conversion, which would expedite matters, would also make superfluous a certain number of employees (scribani, ratiocinati, massarii, et famuli), who could as a result be dropped from the payroll.52

In 1409 another customs bureau, the Tabula Ternaric, still had not carried out the order; it continued to keep its accounts "in lire a grossi and in various kinds of perperi." The old system was probably more conve-

49 ASV, Avogaria di Comun, reg. 2, fol. 96, cap. 271.
50 BG, 1:61–62; and the decree raising taxes in 1350 in RES, docs. 217–20.
51 This is probably the first official change from lire a grossi to ducati a monete (ASV, Senato, Misti, reg. 40, fol. 15 [25 January 1385/86]).
52 Ibid., reg. 41, fol. 120.
MULTIPLICATION OF MONEYS OF ACCOUNT

TABLE II.

Moneys of Account and Measures Used in Quotations of Wholesale Prices before 1404

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Money of Account</th>
<th>Unit of Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepper</td>
<td>Lire a grossi</td>
<td>Carica (&quot;cargo&quot;) = 400 libbre sottili</td>
</tr>
<tr>
<td>Refined silver</td>
<td>Lire a grossi</td>
<td>Mark</td>
</tr>
<tr>
<td>Silk</td>
<td>Lire a grossi</td>
<td>Libbra sottile</td>
</tr>
<tr>
<td>Sugar, ginger, wax, etc.</td>
<td>Ducati</td>
<td>100 libbre sottili</td>
</tr>
<tr>
<td>Cloves, nutmeg, saffron, etc.</td>
<td>Grossi “of 24 per ducat”</td>
<td>Libbra sottile</td>
</tr>
<tr>
<td>Cotton</td>
<td>Lire di grossi</td>
<td>Migliaio sottile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1,000 libbre sottili)</td>
</tr>
<tr>
<td>Wool, metals (copper, tin, etc.)</td>
<td>Lire di grossi</td>
<td>Migliaio grosso</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1,000 libbre grosse)</td>
</tr>
<tr>
<td>Wheat</td>
<td>Lire di piccoli</td>
<td>Staio</td>
</tr>
</tbody>
</table>

NOTE: All the accounting units are oro except for the lire di piccoli used for wheat. Letters that circulated through the Datini agencies were accompanied by price lists called "valute." They specified that the lira a grossi was "di s. 52 al duchato," showing that this money of account is also oro. Market operators regularly made conversions using the equation: 26 lire a grossi = 1 lira di grossi = 10 ducats; that is, dropping the awkward fraction 1/9. There is one exception, a valuta of 1396 (ASP, Datini, b. 1171). The price of pepper is there given as "lire 183, di s. 52, d. 2 ducato." This appears to be an attempt to recuperate the 1/9, although it undershoots the mark slightly. In this case, 26.11 lire a grossi = 1 ducat; 2.61 lire a grossi = 52.22 soldi = 1 ducat; and 0.22 × 12 denari = 2.667 denari, so that 1 ducat = 52 soldi 2.667 denari, whereas here they figured 52 soldi 2 denari (or 52.167 soldi) per ducat. This method seems to have been an exception, however, and it is likely that most calculations were made without the fraction, a convenience that involved a difference of only 0.43 percent (0.222/52).

73MC, Leone, fol. 184.

74ASV, Senato, Misti, reg. 53, fol. 48 (1 June 1420). That the new rates were ad aurum was specifically stated. The freight rates were specified also in 1424 (ibid., reg. 55, fols. 26–27).
the period around 1400 can be reconstructed with help from Venetian private account books and from letters sent from Venice to a rich merchant of Prato, Francesco di Marco Datini, and to his factors in various cities. Table II presents selected commodities prominent in long-distance trade.

Finally, in 1404 the lira a grossi was officially replaced in quoting the prices of pepper, silver, and (presumably) silk. No trace of an order to change the practice has remained in the deliberations of the major Venetian governing bodies, but a letter written in Venice on 22 March 1404 informed the Florentine branch of the Datini firm of the change, in a manner clearly indicating approval: “It has been arranged here that pepper no longer be quoted in lire a grossi but be priced in ducats, which is better and more expeditious. Accordingly henceforth the quotation will be so many ducats per load.” The change is reflected in the market quotations. In the price series gathered from the same correspondence, the last quotation of pepper in lire a grossi dates from 15 March, the first in ducats from 12 April. The change is clear also in the accounts for refined silver kept by the banker and bullion merchant Guglielmo Condulmer: the last occasion on which silver is quoted in lire a grossi dates from 20 February; the first in ducats from 11 April. No relapse to the old system has been found, which indicates that the abandonment of the lire a grossi was welcomed, as it had probably been prompted, by all operators on the Rialto, foreign and Venetian alike.

One of the last important government bureaus to remove all traces of the lira a grossi was the Loan Office (Camera degli Imprestiti). In 1380 it received specific orders to change from using lire a grossi to using lire di grossi. But it continued until after 1403 at least to keep the record of the

55 A useful example of a “valuta” (1393) is in Melis, Documenti per la storia economica, doc. 86. The valuta of 1396 is mentioned by Jacques Heers in “Il commercio nel Mediterraneo alla fine del secolo XIV e nei primi anni del XV secolo,” Archivio storico italiano 113 (1955): 184, and 202, where Heers, however, mistook the lira of 52 soldi 2 denari as a lira di piccoli. In this he is followed by Spufford and Wilkinson, Interim Listing, 141. For silver, finally, see the accounts of Guglielmo Condulmer in PSM, Misti, b. 189.

56 It is not in the “deliberazioni” of the Great Council, the Senate, or the Collegio. It is possible that the regulation was lost in the archive of the Collegio, whose register for 1403–4 is very confused. More likely, the order was issued by a lesser office such as the Provveditori di Comun or the Consoli dei Mercanti, whose records are not extant.

57 “È si fatto qui che di pepe non si ragiona più a lire a grossi, ma facisi el pregio a ducati, ch’è meglio e più spaziativo; sicch’è ogimai si dirà tanti ducati el charico” (ASP, Datini, b. 714, Commissaria Gaddi to Florence, misdated 22 April 1403 for 22 March 1403 [1404 modern]: in fact, the letter arrived in Florence on 28 March 1404, after the Florentine new year [25 March]).

58 PSM, Misti, b. 189, for silver. ASP, Datini, all letters from Venice, including b. 929, Paoluccio to Barcelona.
assessments, the basis for its collection of forced loans, in lire a grossi, although it made its record of payments in lire di grossi. Changing the record of assessment was particularly difficult because part of the assessments were made by applying fixed relations between artificial valuations, stated in lire a grossi, and estimated real income, stated in ducats. Payments of interest by the Loan Office were made partly in gold, partly in silver. Considering it unfair that some bondholders received gold and others silver, the Senate in 1434 ordered that all payments of 5 ducats or more be made 3/4 in gold, 1/4 “ad monetas.” But the proportion to be observed was changed from time to time, as was the way the silver money was to be valued. The Loan Office, in fact, usually paid 2–4 soldi less per ducat than the market rate, thus applying a kind of withholding tax.

Elsewhere the lira a grossi lived on only in the old statutes and in routinely repeated formulae. One legal situation where it seems to have remained was that of the “augmentum doctis” of 12 1/2 lira a grossi for mourning garb (“pro suis indumentis vidualibus”), to which a widow had rights on the estate of her deceased husband on the basis of the statutes of the early thirteenth century. Other examples appear in the Promissioni Ducali, such as the paragraph that assigns to the newly elected doge 3,000 lire a grossi for the expenses of taking office. Finally, the nominal salaries for positions of prestige, such as that of the Procurators of San Marco, in this case 200 lire a grossi per year, were fixed and continued to be quoted in the money of account used when the office was established.

All the conversions described above were conversions into lire di grossi a oro. The one important governmental use of the lira di grossi a monete was by the grain magistracies. There were two grain magistracies: the Provveditori alle Biave, directly involved in buying and selling wheat and flour, and the Camera del Frumento, which specialized in the financial side and acted in many ways like a public bank. Although wheat prices were quoted in lire di piccoli, it seems that around 1400 both offices kept their accounts in lire di grossi, the former a monete, the latter a oro.

One can conclude that the Provveditori alle Biave kept their accounts

59 Luzzatto, Il debito pubblico, 146–49, 151; cf. PRV, lxxix, cxxxvii, cxxi, cxxviii, docs. 176, 184.
60 PRV, doc. 233.
61 Luzzatto, Storia, 216, 218; PRV, docs. 265, 270; MC, Ursa, fols. 91, 109. In 1455 all payments “in monetis” were ordered made at 124 soldi per ducat, by then the current rate (BG, vol. 1, doc. 109 and p. xlviii).
63 ASV, Senato, Terra, reg. 4, fol. 57v (23 November 1437).
64 See the salary cuts of 11 January 1411/12 in ASV, Senato, Misti, reg. 49, fol. 71; see also PSM, late capitolari of the sixteenth century.
BIMETALLISM

in lire di grossi a monete, that is, in terms of a ducat of account worth 64 soldi, on the basis of the account opened in their name by the merchant Tommaso Talenti in 1380.65 That the Camera del Frumento kept its accounts in gold appears in a regulation of 1408 ordering the office to change its accounts from gold to silver. The order probably aimed at improved coordination of accounts between the two offices. In fact, the officials of the Camera del Frumento at the Rialto honored the orders to pay (“polize”) sent them from the warehouse at San Marco by the Provveditori. Furthermore, it happened, especially in times of crisis, that grain importers could not be paid in cash; instead, they would agree to be credited with the amount due on the books of the Grain Office’s depository, where it earned interest at 3–5 percent, as will be explained below, in volume 2.

An important general reform of the accounting procedures of the Camera del Frumento, prepared by a special commission and approved by the Collegio on 1 March 1408, contained specific monetary provisions. They stated that one source of the existing “confuxion” would be eliminated by keeping cash accounts in silver rather than in gold: “che le soe chasse se tegna a monede e non mentoava plui oro.” All deposit accounts were to be checked and converted “a monede” at 96 soldi per ducat, the then current rate, or close to it, such that 2 lire di grossi (a oro) were equal to 3 lire di grossi a monete \(2 \times 96 = 3\). In the course of the conversion, however, reference to the gold value was to be retained in the body of the entry, in this way: “Ser Tai die aver per j° depossito ducati M d’oro, val a monede lire 150 de grossi” \(150 \times 96 = 1,500\) ducati a monete. Current income and expenditures, however, were to distinguish gold from silver. Accounts payable were to be rendered half in silver and half in gold, as was then generally the case regarding the interest paid out by the Bond Office. The example given is this: if a person is owed 100 lire di piccoli, he should be paid with 52 1/2 lire di piccoli, that is, in silver, and with 10 ducats, which at 95 soldi per ducat comes in fact to 47 1/2 lire di piccoli, the balance. The ducats were to be valued in the body of the accounting entry at the day’s market quotation and then debited to cash (“la cassa de’ aver”) in lire di grossi a monete at that rate. At the same time, the account was to be balanced to the separate ducat account (“raxon de ducati”). Finally, the ducats to be paid out as interest on the deposits were to be calculated at 96 soldi for accounting purposes, “even though it was ducats that were both received and expended.” In this way, it was affirmed, the Commune gained 1 soldo per ducat, “e piu quanto el lazo chalasse.”66 Just how long this regulation remained in effect is not known.

66The commission was formed in 1407 as the “tres sapientes super quinquè officiis” (MC,
vi. SOME TEMPORARY SIMPLIFICATION

Once the adjustment to the new silver coinage of the fourteenth century was completed, the complexity arising from the moneys of account “a monete” gradually subsided. Just two moneys of account were in very general use throughout the fifteenth century—the lira di piccoli and the lira di grossi a oro, of which the ducato a oro was in effect a subdivision. The ducato a monete of 64 soldi di piccoli was overshadowed and then pushed out of use altogether by these simpler moneys of account.

The government made no attempt to impose the old official value of the ducat at 64 soldi. In the early fifteenth century it occasionally applied to the gold ducat for specific purposes values very different from the 64 soldi and 24 grossi decreed in 1328. The specific values sometimes corresponded to current market quotations but other times were lower or higher, reflecting a desire to impose a kind of withholding tax on some or perhaps to give the benefit of a premium. Such an official value for the ducato a oro—96 soldi di piccoli—appears clearly in the regulation of 1408 regarding the accounts of the Camera del Frumento. In 1417 an official price of 100 soldi for a gold ducat was envisaged in planning a reform in the silver coinage. In the next year the Bond Office announced that it would make its payments of interest on the public debt at that rate.

On protest from the Avogadori that the current value of the ducat was 104 soldi, the Signoria ordered payment at the higher rate. In setting wages

Leona, fol. 165). Examples are from (and assumptions based upon) ASV, Collegio, Notatorio, reg. 4, fols. 29v–30r, esp. pars. 3–6. The essential text follows:

Quarto, per redurre a chiareza questi chonti el plui che se porà, volemo che tuti i depositi che sono a la chamera che i se incontrano chon I libri e che tute siano redute a monede a soldi 96 per ducato e per fare la chossa pui stricta, perché lire 2 de grossi a soldi 96 per duchato fa lire 3 de grossi a monede. Ma dentro de la posta scriva, ‘Ser Tal die aver per j° depossito ducati M d’oro, val a monede lire 150 de grossi.’

Quinto, per i ducati che fosse ricevuti per i diti signori, se chaxo sera che uno debia dare lire C de piccoli, el ge dia lire 52 1/2 de piccoli e ducati 10 d’oro, che valeria a soldi 95 [sic] per ducato lire 47, s. 10 piccoli, Volemo che dentro de la posta el scriva j° ducato al preixio ch’à in qual di lo averà abudi, ma subbito el scriva al’incontro che la cassa de’ aver per tanti ducati al preixio lo j averà abudi, E portar quelli in raxon de ducati e de questi tegnir conto separado.

Sesto, quando j vignerà a pagar algun pro’, che j conta j diti ducati s. 96 l’uno, E questo non monta niente perché debiando aver ducati e pagandoli de quelli, la raxon sta ben; El chomun avanza in questo chonto s. 1 per ducato, e più quanto el lazo chalasse.

67 Papadopoli, 1:360–61.
68 ASV, Collegio, Notatorio, reg. 5, fol. 192v.
and salaries for seamen on war galleys in 1422–27, the Collegio specified some of them in lire di piccoli and some in ducats. It ordered the use of an exchange rate of 106 soldi to the ducat in 1422, 105 soldi in 1425–27.\footnote{Ibid., regs. 5, fol. 160v, and 6, fols. 17–19, 23v, 38; Freddy Thiriet, ed., Délibérations des assemblées vénitiennes concernant la Romanie, 2 vols., EPHE-6, Documents et recherches, ed. P. Lemerle, 8, 11 (Paris, 1966–71), vol. 2, nos. 584, 1250. These domestic exchange rates contrast with the valuing of a ducat at 64 soldi in traditional formulae used in earlier commissions for commanders of galley fleets mentioned above, in n. 5. If the ducats used in that case had meant a unit worth nearly 100 soldi, as the gold ducat was in those decades, the 6 ducats per month given as the pay of bowmen would have been equal to 30 lire di piccoli a month (6 × \[\frac{100}{20}\]), very much more than any recorded rate for bowmen in those decades.}

While those rates were slightly above the market rate, in 1428 it was decided to pay out the salaries of Venetian rectors and provincial administrators at 100 soldi when the market rate was 104 soldi.\footnote{Francesco Semi, Capris, Justinopolis, Capodistria (Trieste, 1975), 165.}

Such divergences were largely eliminated in mid-century, for the ducat stabilized at 124 soldi (6 lire 4 soldi di piccoli) in 1456 and remained at that rate until about 1510. During the monetary crisis of 1472 the tron, representing one lira or 20 soldi di piccoli, and the soldo, or marchetto, were coined in such a way as to maintain the exchange at 124 soldi per ducat. After 1518 the gold ducat coin, renamed the “zecchino,” resumed its rise to 130 soldi and beyond.\footnote{Papadopoli, 2:91, 100.} A ducato valued at the long-maintained rate of 124 soldi developed as a much-used money of account. The term “ducatto d’oro,” says Papadopoli, sometimes referred to this silver-based money of account worth 124 soldi. To indicate the gold coin it became necessary to say “zecchino” or “ducatto d’oro in oro.”\footnote{Ibid., 2:111: “ducato, grossi, e piccoli, che continuarono a chiamarsi ducato d’oro, grossi a oro, piccoli a oro anche quando non corrispondevano più alla moneta d’oro effettiva ma al ducato ideale di 124 soldi.”}

In 1562 a silver ducat worth 124 soldi was coined, giving real form to that ducato of account. In time, still another ducato of account, called the “ducato a monete” and worth 120 soldi, was born and materialized as a silver coin, the “ducato mozzo,” minted under Doge Marino Grimani (1591–1605), with its value indicated by the figure 120 incorporated in its design.\footnote{Nicolo Papadopoli-Aldobrandini, “Sul valore della moneta veneziana,” Atti del R. Istituto Veneto di Scienze, Lettere ed Arti, 6th ser., 3 (1884–85):690; idem, Le monete di Venezia, vol. 2.}

But the fifteenth century was spared these developments. The term “ducato” meant the gold coin or the money of account based on gold, which was used for wholesale and international trade and some salaries, while the lira di piccoli, based on silver, was used for wages and retail
trade. Paradoxically, the lira di grossi, being based on gold, had no con-
nection with the grossi coins that passed from hand to hand. Paradoxically
also, the silver grossi coins that were minted after 1379 supplemented the
soldini in determining the metallic equivalent of the lira di piccoli, which
did not depend for its value on the piccolo coin.