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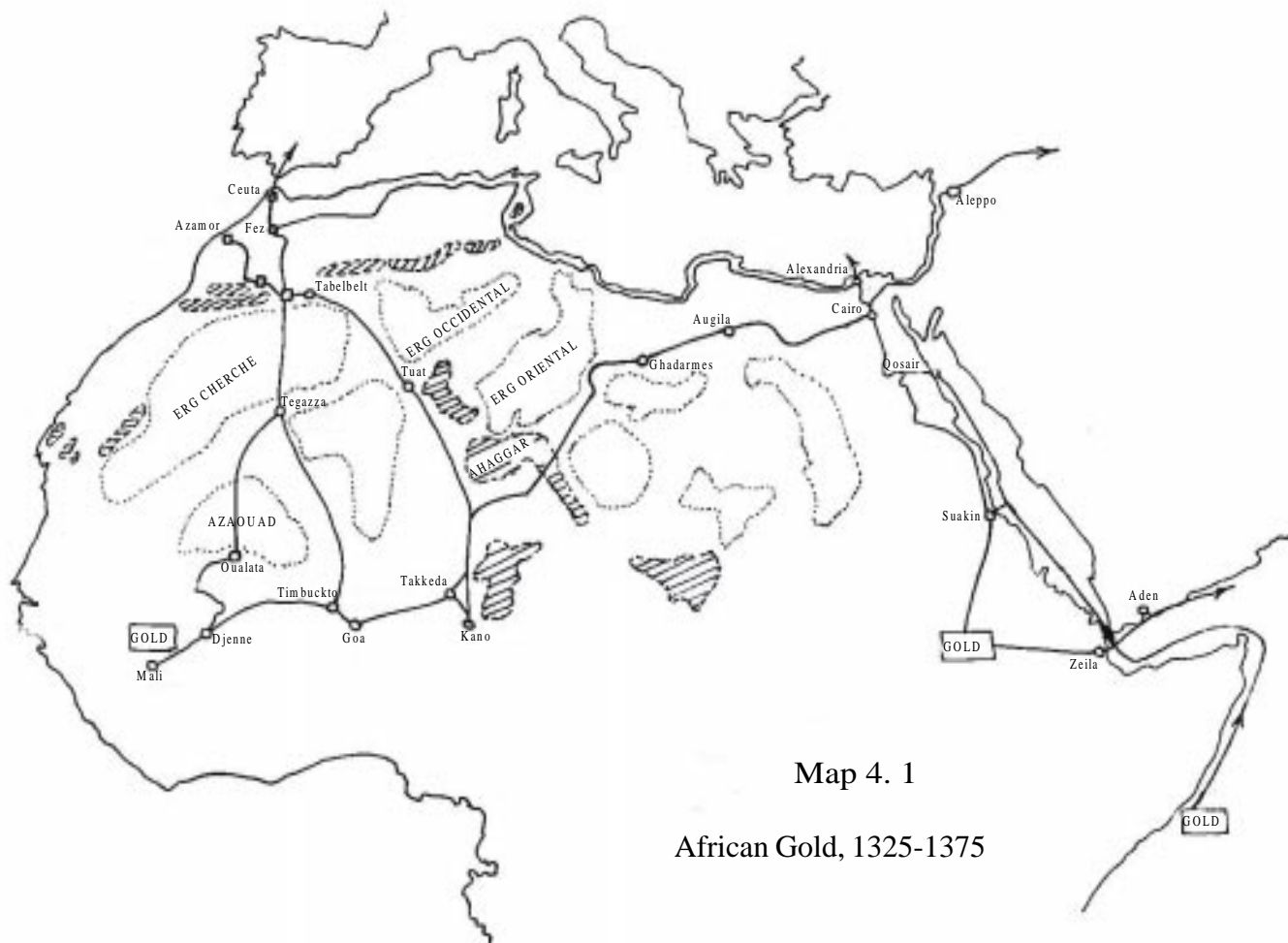
Translation

The Egyptian Specie Market and the Gold Crisis of the Fifteenth Century

The years 1375-1434 witnessed an acute dislocation of European gold markets which assumed crisis proportions during the period 1392-1412. After half a century of remarkable stability in the price of gold from 1325-1375, during which market disorders were both ephemeral and localised, mint masters were confronted with a situation of acute instability which ushered in an era of endemic enhancement in the price of the precious metal. For more than half a century (appendix figures 4.1-3), gold prices continually increased. In order to maintain a supply of coins commensurate with the requirements of a stable commodity price level and sufficient to avoid the evils of a protracted deflation mint masters and legislators were forced to either raise mint prices, or, to impose restrictions on the trade in bullion. Thereby they attempted to maintain the level of national specie stocks in a dwindling European total. Nor, as Professor Day has shown, were they entirely unsuccessful. By using these methods the supply of coin diminished much less rapidly than the supply of specie and proved sufficient to ensure stable commodity prices throughout the fifteenth century. Their frenzied activities, as they assumed the role of market equilibrators, however, were symptomatic of a fundamental supply crisis as European gold stocks rapidly diminished.

Afro-European Specie Markets. The long-term stability in gold prices, which characterised European specie markets during the mid-fourteenth century, 1325-1375, rested upon the existence of a delicately balanced bi-metallic equilibrium within and between a series of autonomous specie markets. Each maintained the level and composition of its precious metal stock from independent, indigenous supply sources of silver and gold.

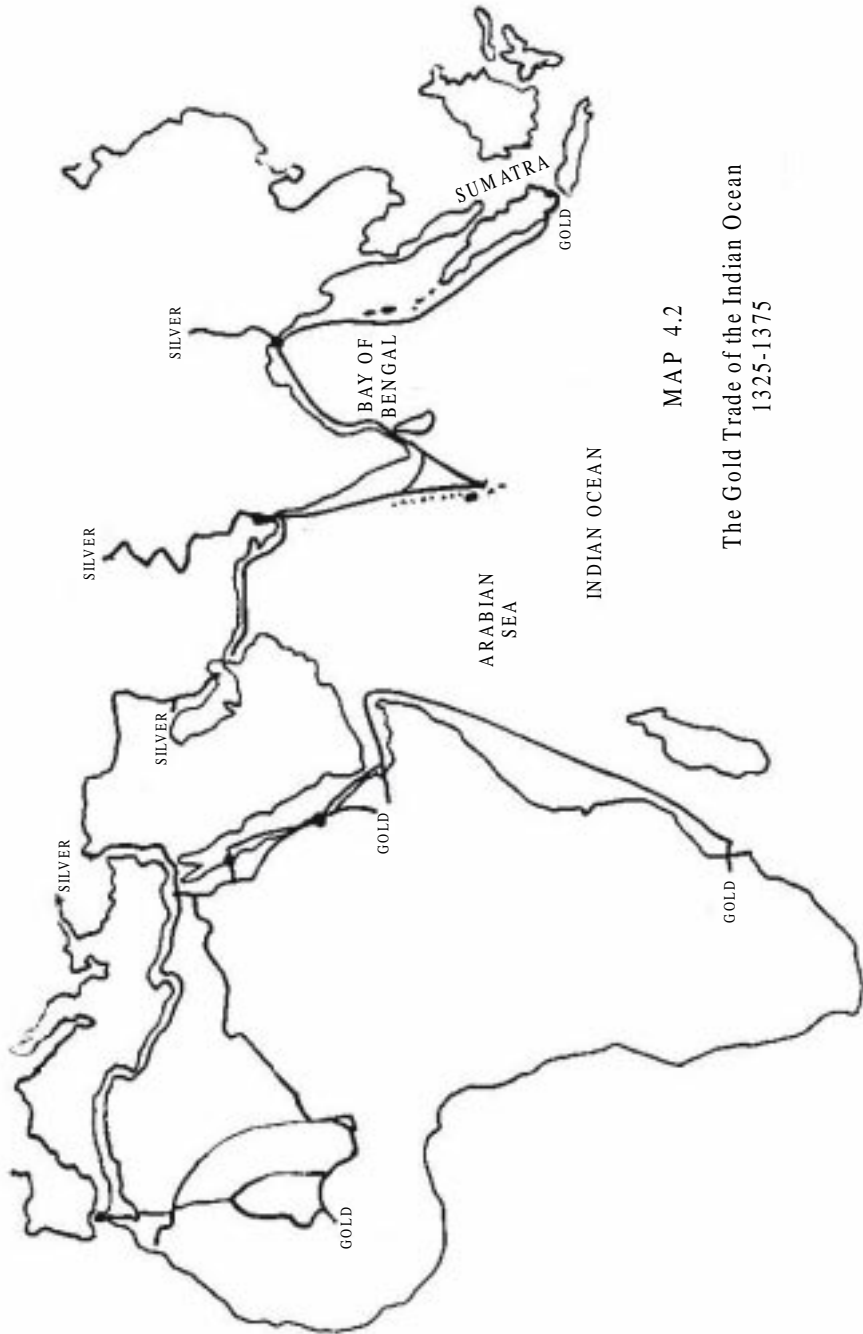
The first of these, north of the Alps, possessed plentiful supplies of gold emanating from Hungarian mines, which when exchanged against silver initially produced in England (Bere Ferrers, Devon) and Bohemia (Kutna



Map 4. 1
African Gold, 1325-1375

Hora) during the years 1290-1345 and subsequently in Saxony (Freiberg-in-Meissen), created a stable monetary stock characterised by an abundance of gold. Further south, two similar autonomous markets existed on the basis of an efficient inter-continental exchange network, facilitating the exchange of African gold for silver from Europe and Asia Minor (map 4.1). Driving directly northward from the gold fields of the Niger Bend across the deserts of the central Sahara, caravans carried gold each year to the refining and minting centres of Morocco providing the basis for an abundant circulation of “heavy” single and double dinars in the western Mahgreb. Further east caravans travelling via Ghadames, conjoining with those taking the east African routes, brought forth similar supplies to Egypt for minting into those miscellaneous gold pieces, which found currency in the lands of the Circassian Sultanate, the regions of the Muslim East, the Hidjaz and the Yeman. Two distinct zones thus emerged, each with cheap and plentiful supplies of gold, which were juxta-positioned against equivalent areas of abundant silver thereby encouraging an active interchange of the two metals. In the west the profitability of this exchange was such that for half a century trade in goods was subordinated to trade in specie. From 1325-1375 gold *doblas* regularly passed north bring forth a countervailing supply of European silver southward. In response to these flows a distinctive market structure evolved in the western-Tyrrhenian- basin of the Mediterranean characterised by a long-term stability in gold prices and an “anticyclonic” distribution of the two metals between the continental littorals. Although relatively scarcer as one moved northward gold was abundant to customers within a unitary market in which the African product reigned supreme. Nor was the situation significantly different within the eastern zone where gold arriving in Egypt, after minting was distributed in a similar market structure receiving small amounts of European silver and large quantities from the mines of the Isaurian Taurus (Gümüş, Saraÿ, Lu’lu’a and Babürt). Within the area spanned by European commercial networks there were thus three distinct and autonomous specie markets. Each of these had a similarly balanced stock of precious metals conforming to a common bi-metallic standard, and thus, whilst retaining their autonomous character, was united into a homogeneous and unitary system.

The unitary “European” system existed, moreover, on terms of bi-metallic parity with another of similar character, which encompassed the lands bordering the Indian Ocean (map 4.2). This “Asiatic” specie distribution system was



MAP 4.2

The Gold Trade of the Indian Ocean
1325-1375

also divided into a series of autonomous elements which, existing in conditions of bi-metallic equilibrium, were conjoined within a unitary system. Here Sumatran gold held pride of place being distributed by Muslim and Chinese through a commercial system which, extended from the source of supply to Ormuz on the Persian Gulf and drew a countervailing flow of silver through three distinct points of access. In the west it was Irânian silver, from the Elburz mountains (Rayy and Dāmghān), traded through Ormuz, which laid the foundations of a bi-metallic system. Further to the east silver, drawn from the once mighty workings of the Pamir and Hindu Kush, passing through Cambay and Chittagong, played a similar role in the markets of the Arabian Sea and Bay of Bengal. Autonomous yet united by a common bi-metallic standard these markets thus formed a single system, which co-existed with its “European” counterpart, bringing conditions of specie price stability and bi-metallic uniformity to a “world” trading network, divided by religion and politics, but united in its monetary mechanisms.

European Gold Production. From about 1375, however, the first signs began to appear of the disintegration of this monolithic edifice. Gold prices began to rise on European markets but NOT universally (appendix figures 4.1-3). Some regions remained able to acquire adequate supplies whilst others suffered acute shortages as the once universal market split into atomistic elements.

The primary cause of these changes, as far as the “European” market was concerned, was rooted in the vicissitudes of indigenous gold production. Until the introduction of Afro-Asiatic techniques of separating gold from auriferous quartz by mercury amalgamation in the 1440s, this was largely confined to small-scale placer working of European gold bearing gravel. Such placer workings, during the balmy days of overpopulation and low wages in the early fourteenth century, were thronged with workmen who sustained an annual output of about four tonnes of the yellow metal. From about the 1380s, however, a combination of labour shortages and resource depletion caused production to fall to below three tonnes a year, causing producers to cast around for new sources of gold. In the event they lighted upon the exploitation of copper and lead ores containing auriferous silver.

Deposits of the former were found in Hungary to the north of Banská Bystrica (Neusohl) but, because of their low metallic content, their exploitation was dependent on a new technology – the *Saigerprozess* – and a

favourable conjuncture of primary metal (copper and silver) prices. Slovak gold production, accordingly, became tied to the fortunes of the silver industry and was most pronounced in the boom conditions – in 1391-1399, 1412-1418 and 1431-1439- affecting that sector. Thus during the 1390s the deposits of argentiferous copper of the Kingdom of Hungary and the Polish lead fields attracted the attention of two Nürnberg corporations – the Kammerer-Seiler and Flextorfer-Zenner – and the Genoese house of Gallici and until the end of the decade the pickings were rich. Falling copper and silver prices from 1399-1412, however, posed difficulties from which the first German house emerged victorious, thanks to its collaboration with the Venetian and Florentine agents of the Medici. From 1412 therefore, secure in the purchase of Polish lead and with control over Hungarian copper supplies, the Italians and Nürnbergers now profited from the boom years 1412-1418. The *Spleiss-Saigerhütten* and *Hammerwerke* established at Neusohl produced some 2,000-2,500 zentners of refined copper and some 8,000 – 10,000 zenters of unrefined “black” copper, which was exported to Venice together with an indeterminate amount (perhaps 2,500 zentners) sent to Nürnberg. Nor was their contribution to specie markets unimportant. The 900-1,000 tonnes of copper yielded some 15 tonnes of silver and 140 kg. of gold. Hungarian production from auriferous silver thus played a not insignificant role in European gold supply during the crisis years of the early fifteenth century. As silver prices rose ever upwards, moreover, its contribution became ever greater, attaining at the beginning of the next boom in the early 1430s an annual output of about 400 kg. Yet whilst it made a contribution to the long-term stabilisation of European gold stocks it was an erratic one due to the primary role of silver and copper prices in determining production levels in plant using the new technology.

Such was not the case, however, with the other major source of European auriferous silver – the *argenta indorata* found in the lead ores of Novo Brdo, Serbia. Here the much higher gold content of the silver, amounting to as much as a sixth, made it, at prevailing prices relative prices, the primary object of exploitation. Production thus moved counter-cyclically to that of Slovakia. Established during the crisis of 1280-1320 the workings were neglected until the gold boom of 1418-1432 when production rose to 6.1 tonnes of silver and 108 kg. of gold. With the fall in gold prices after 1432, however, production fell from even this diminutive level amounting to no more than sixty per cent of its former size in the early 1450s.

Table 4.1

European Gold Production, 1325-1450
(metric gold)

Date	Placer-lode gold (Hungary)	Auriferous silver (Slovakia & Serbia)	Gold quartz (Rhineland)	Total ^a
1325-1375	4.0	4.00
1375-1400	2.9	0.04	...	2.94
1400-1425	3.5	0.04	...	3.54
1425-1450	3.7	0.36	2.0	6.06

NOTE. Augmented until the late fourteenth century by African gold imports of about 2.0-2.5 tonnes annually.

Together, therefore, the Slovak and Serbian producers exploiting copper and lead ores containing auriferous silver made a small but growing contribution to European gold supply. During the critical years 1375-1425, however, their contribution was slight and as Hungarian placer production declined, so gold prices rose. Yet the decline in indigenous supplies was sufficient only to explain some one third of the price increase during the years 1375-1425. Other factors were at work, which were of far greater significance.

The Alexandrian Specie Market. Of primary importance amongst these non-indigenous influences was a fundamental restructuring in the patterns of trans-Saharan trade. As early as the 1390s basic structural changes may already be discerned in the transport network used by merchants. Caravans increasingly avoided the direct routes across the arid dune zones, where nomadic attacks and increasing difficulties in securing adequate water supplies rendered the transients' life precarious. They turned instead to the aqueous gravel at the foot of the Ahaggar and the Adrar des Iforas (map 4.3). A major restructuring of the trans-Saharan trade routes was underway. During the next half-century

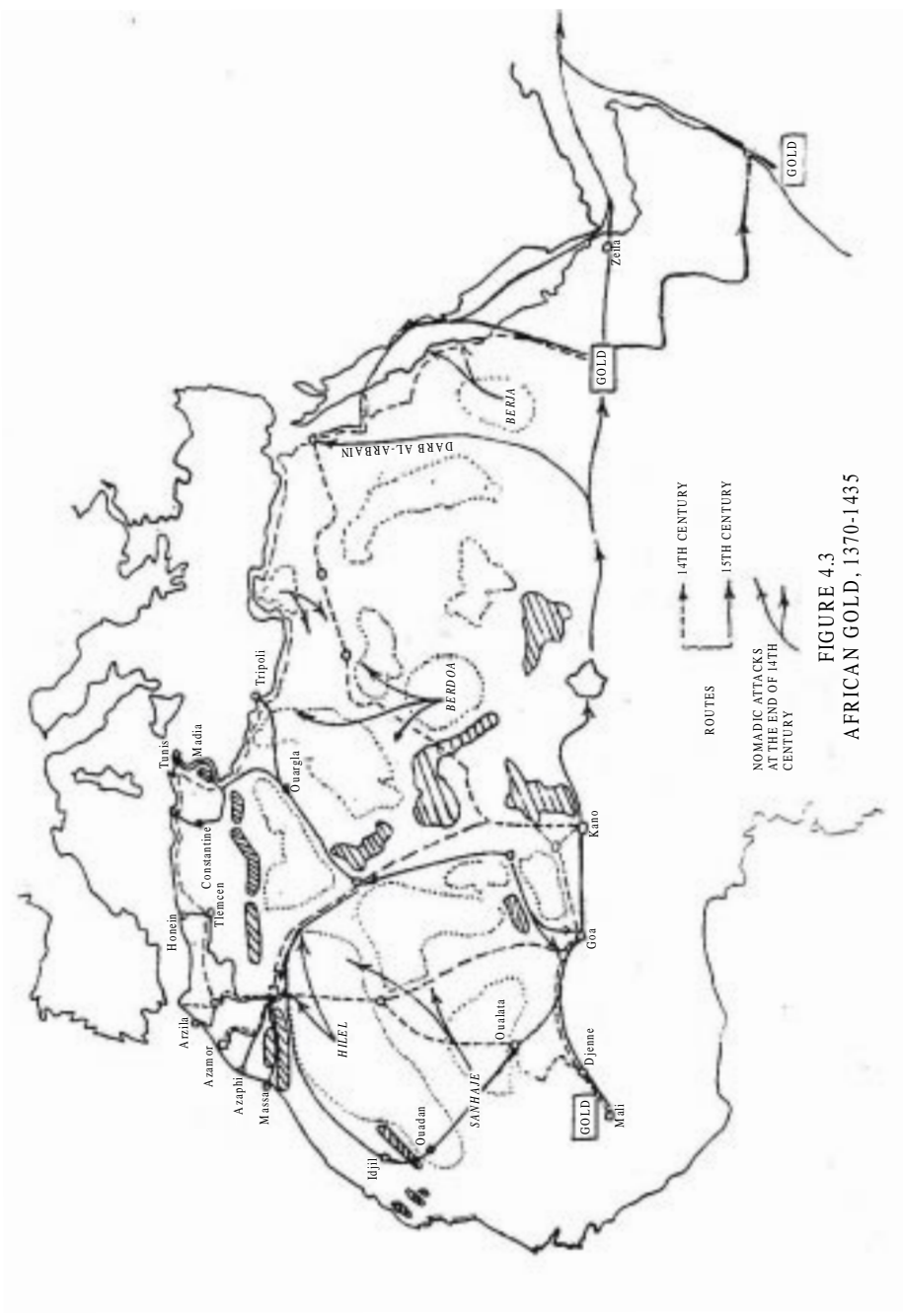
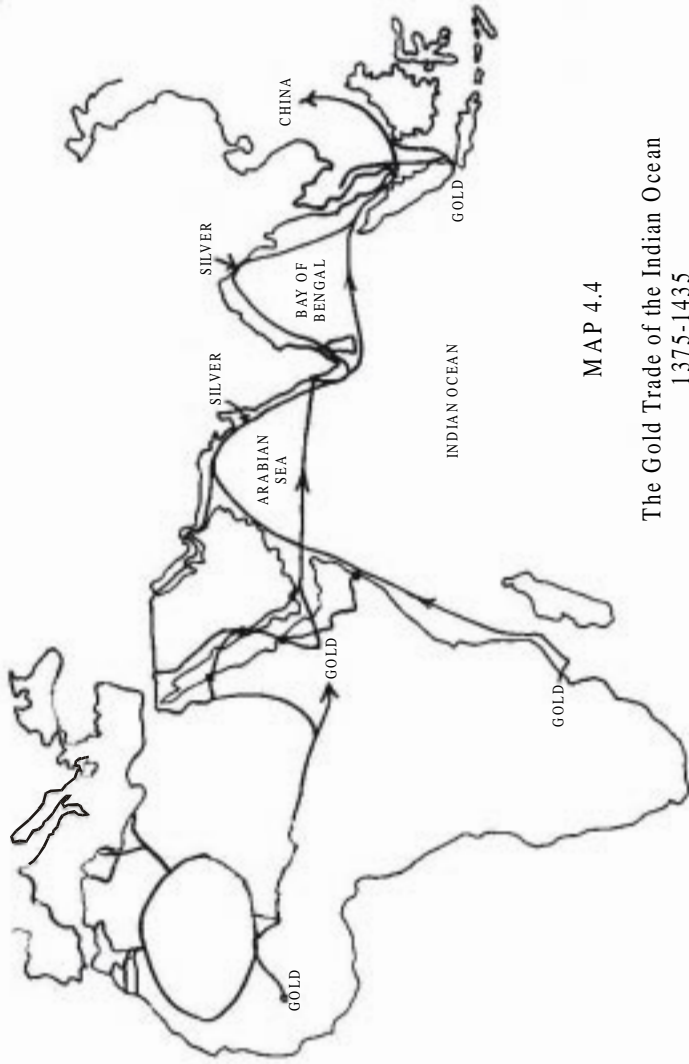


FIGURE 4.3
AFRICAN GOLD, 1370-1435

(1385-1435) this resulted in the emergence of a completely new commercial network within which merchants avoided the dangers of desert transport and sought the greater security of the circumlocutious way of the Sahel and the central highlands.

The effect of these changes on the supply of gold to North African and Middle Eastern specie markets was dramatic. Within the Mahgreb supplies continued unabated and the price of gold (appendix figure 4.4) continued, after a brief dislocation from 1370-1394, to fall to 1435. Yet this stability was achieved only by a basic restructuring of inter-Mahgrebian supply networks. The once active Marinid mints strung out along the western routes of the mid-fourteenth century, after a brief period of debasement from 1373-1394 during which coins became more barbaric in design, ceased minting entirely during the opening decade of the fifteenth century. In their place a new network of Hafsids mints arose strung out along the new routes which emerged during the years 1395-1435. If route reorientation thus ensured intra-regional price stability within the Mahgreb such was not the case further east in Egypt. Here gold had regularly arrived in the mid-fourteenth century. It passed from either East African sources, via Qusair or Suakīn, or from the Niger Bend by the trans-Saharan Ghadames route, or when this was disrupted, as during the years 1348-1366, via the Mahgreb and the coastal route to Alexandria. Again this had resulted in a steady fall in the price of the yellow metal. With the change in route alignment during the years 1375-1435, however, this was completely changed. Cut off from the Mahgreb and confined to the protracted *darb-al-arbaīn*, where they were forced to compete with Ethiopian merchants who, channelling supplies eastward through Zeila and Mogadishu, were laying the foundations of a new “Asiatic” system, Egyptian merchants found themselves able to secure a dwindling amount of gold (map 4.4). An acute supply crisis, accordingly, emerged at Egyptian mints and gold prices rose sharply (appendix figure 4.5).

A basic dualism thus emerged between African specie markets between a plentifully supplied Mahgreb and a specie-short Egyptian market which, during the years 1375-1435, was to have serious implications for European consumers. The abundance of gold in the Mahgreb ensured a continuity of market structure in the western Mediterranean, although this was only achieved by a reorientation of routes within the basin mirroring the changes taking place in the Mahgreb. Catalans, Genoese, Provençal-es and Malagasi



MAP 4.4

The Gold Trade of the Indian Ocean
1375-1435

increasingly abandoned the old marts of Ceuta and the ports of the north-west Atlantic seaboard for the easterly ports of the Hafsid kingdom of Ifraquia, termini of the new African trade routes. Along these new routes an old trade continued: Hafsid *doblas* passed north in exchange for European silver. Ensured by the “defensive” policies of the mint masters in the towns of the northern Tyrrhenian Sea, the high returns obtainable by exporting gold north ensured that throughout the western basin of the Mediterranean the tranquillity of the fourteenth century remained largely undisturbed (appendix figures 4.3-4). The corollary, however, was that, save during the years 1408-1412, only small quantities of Hafsid gold was transhipped eastward. Cut off from East African and trans-Saharan supplies, and with little compensation provided by transhipments from the Mahgreb, acute shortages, accordingly, began to emerge on Egyptian markets. Gold prices rose (appendix figure 4.5) and conditions prevailing in inter-continental exchanges were totally altered. Gold became relatively scarce in relation to both the unit of account and silver. Henceforth from 1374 rising gold prices, by enhancing the bi-metallic ratio (figure 4.6) relative to those prevailing in Europe attracted gold eastward. Yet these movements in 1385-1390, 1399-1412 and 1418-1430 created a marked instability in the market. Each rise in gold prices, reflecting stock wastage without compensatory supply increase, resulted in an enhanced bi-metallic ratio making it attractive to export gold from Europe and Asia Minor to Alexandria. Lacking indigenous sources of silver, however, each gold boom led to a cessation of silver imports and as stocks diminished, through natural wastage and a reversal of the specie flow, prices rose, lowering the bi-metallic ratio until gold imports ceased and the pattern was reversed. Silver flowed east and as gold stocks diminished its price increased... From 1375, therefore, cycle followed cycle AND in the absence of compensatory supply inputs, stock wastage took its toll of the metal shuttling back and forth across the Mediterranean, resulting in a gradual enhancement in specie price levels.

As both metals steadily increased in price, each upward movement, first in gold and then silver drew the precious metal east and depleting stocks raised prices on European markets. The years after 1375 thus saw the emergence of an extended market network, which alternatively channelled gold – in 1385-1390, 1399-1412 and 1418-1432 – and silver – in 1374-1384, 1391-1399, 1413-1417 and 1431-1439- east to Alexandria. Each of the major ports of the northern Mediterranean formed a focus within which the impact of this specie

trade was proportional to the size of its Levantine commerce. Each gold boom enhanced market prices, each silver boom resulted in an abatement of gold price, the general upward trend being most pronounced in the northern extensions of the supply network. Here disproportionate decreases in stocks, exacerbated by the emergence of a direct gold trade from Central Europe to the Middle East across the steppes of Tartary, led to an abnormally rapid rise in prices.

As precious metals shuttled back and forth across the Mediterranean in conditions of gradual stock depletion, however, a much more fundamental change was taking place, which totally altered relations between the two trading blocks, a change centred on the years 1392-1412. As already noted 1392/3 marked the beginning of a phase of rising gold prices on the Egyptian markets. Yet this rise brought forth no compensatory export of gold to Alexandria and European specie markets remained largely unaffected. The reason lay in the emergence of an acute crisis in the Egyptian monetary system (see numismatic notes, section 1). Until that date the standard of the whole system was the silver dirham to which was related gold, the value of which fluctuated with market conditions and in 1392 exchanged at 20 silver dirhams per dinar, and copper, exchanged by tale at 24 coins of 4.25 grams per silver dirham. In such circumstances the rise in gold prices to 26½ dirhams in 1394 and 30 in 1399, shifted the bi-metallic ratio from 9.3-12.3 to 14.1. With Genoese and Venetian ratios of 10 and 11.4 respectively, therefore, Venetian exporters were offered potential profits of 7.8 and in 1399 22.8 profit, which should have resulted in a reverse flow. In the event, however, it was not to be. At the low prevailing price of copper (0.25+ riṭl per dirham) it was initially more profitable to take that metal to the mint and receive silver (12.5 per cent). The result was obvious. As Maqrizi later described the situation prevailing during the years 1392-1395,

“The Franks carried away the silver dirhams because of the increase in Egypt of the use of copper which they themselves had imported there”

In these circumstances the canonical standard collapsed. From 1392 to mid-1395 silver was exported and its price rose rapidly to a level incompatible with the official exchange. Accordingly, high-grade dirhams disappeared into hoards or were sold in the bazaars like other precious wares. Dirhams were found being worn as ornaments. Others were used in the manufacture of silver luxury articles such as saddles or vases. The effect was to demonetize the classical dirham. In their place debased coins came to dominate the circulating media, which passed by the derogatory nomenclature – *dirham fulūs* (copper dirham) – whose silver content reflected market prices. Doubly depleted by export (1392-1395) and hoarding, prices rocketed upward. In 1397/8 coins of only one third silver content comprised the major element of the circulating media (i.e. half the standard of the canonical dirham) exchanging at a de facto rate of fifteen to one (or a bi-metallic ratio of 7:1). In such circumstances the import of copper ceased. That of silver resumed, allowing the restoration of the silver coinage at the price level of 1392, some 30 coins of two-thirds canonical standard being declared equivalent to 20 canonical dirhams and being exchanged against one dinar, thereby establishing a bi-metallic ratio of 9.3:1. Yet this stabilisation of silver was only achieved at the expense of the gold coinage. Copper imports from 1392-1395 had prevented the alleviation of the crisis whilst exports of gold 1395-1399 had aggravated the situation. The coinage accordingly deteriorated, heavily worn coins displacing high-grade dinars in circulation, compensated only in 1398 by the first appearance of European gold from Genoa – florins which circulated at a discount in relation to the dinar in circulation (numismatic notes, section 2). By 1399 a new equilibrium had been achieved between the two metals, exchanging at a bi-metallic ratio of 11.2:1, and between the Egyptian and Venetian currencies, but only at the cost of a 20 per cent depletion of gold stocks.

At this point, however, the administration of Yashbak ash Sha'bani with its financial ghuru Ibrahim ibn Ghurāb, which had come to power under the new Sultan Faraj, determined to defend gold and reform the monetary system, which had been reduced to chaos. A standard of 30 canonical dirhams to one canonical dinar was affirmed, establishing a bi-metallic ratio of 14:1 which was more than sufficient to attract European gold and the actual coins in circulation were related to this standard. The debased gold and imported coins were set at intrinsic value: the dinar at 26 and the ducat at 25 silver dirhams, the “copper dirhams” again at intrinsic value, 1.5 coins exchanging for one

silver dirham. The effect was dramatic. Gold flooded in. Looking back on this period Abu'l Mahasin recorded,

“The use of the *dinar ifrantī* (ducat) became general in our commerce in the 800s (i.e. 1398-1409) in the principal towns of the world such as Cairo, Fostāt, the regions of Syria, the principal lands of the Greeks, the regions of the Muslim East, the Hidjaz, the Yeman, to the point of becoming the current money and the most sought after in commercial transactions”

Without following in detail the vicissitudes of the reform suffice to report that as long as the firm hands of ibn Ghurāb and his protégé al-Biri were at the helm gold was successfully defended and the canonical standard reaffirmed.

The stability of gold, however, was only achieved through the debilitation of silver. For the population the remedy was more disastrous than the disease. With the raising of the bi-metallic ratio silver ceased to flow in and, indeed, in exchange for the inflow of ducats was exported. As a result of this export and the process of natural wastage, prices rose, reflected in a diminution of the intrinsic value of the *dirham fulūs*. By 1403/4 the fractional currency of white metal was reduced to chaos. Coins of only one fifth the canonical standard circulating at Cairo whilst at Alexandria, where the impact of the gold inflow was acutely felt, the normal coins in circulation contained only half that amount of silver (numismatic notes, section 3). Nor was the other popular base of the monetary system – copper – immune. The flood of coins entering circulation of the years 1392-1395 came to an end with the de facto rise in silver prices already noted. From 1395, with the cessation of imports, a new age began of “high copper, because little arrived and merchants exported coin from the country”. Prices rose from 4 dirhams per riṭl in 1392 to 4¼ in 1397, 4½ in 1403 and 6 in 1404. In response to these changes and the rising price of silver, the actual copper coinage, which continued to pass by tale, was continually lightened as small and worn coins displaced the heavier issues of an earlier age. By 1403/4 the mithqāl-weight (i.e. 4.25 grams) coins had disappeared, replaced by quarter-dirham weight (i.e. 0.74 grams) pieces, which exchanged at 24 to the actual *dirham fulūs* in circulation.

The popular coinage was in chaos, causing great resentment amongst the population. Whether this contributed to the fall of Yashbak is uncertain, but the opposition party was clearly aware of the tensions in society and the period August 1404 to June 1405 saw a return to the populist policies, which had characterised Faraj's father's sultanate. In the first month of the new administration the coinage was called down to 100 *dirham fulūs* accepted at their intrinsic value per dinar, representing at Cairo a bi-metallic ratio of 9.3: 1, involving the merchant community in great losses and threatening the integrity of gold.

This populism, however, soon came to an end. In September 1405 Yashbak and ibn Ghurāb once more came to power and the primacy of gold was restored. Within the year the old standard was re-established and the debilitation of silver continued apace as there was a gradual spread of the Alexandrine coins containing one-tenth silver (numismatic notes, section 3). Thereafter, month after month, they gained ground. In recognition of the decline in the intrinsic value of the *dirham fulūs* in circulation against the ducat and newly introduced *Nasīri* dinar, there was a shift in the exchange rate from 150 to 250 in 1407, when Yashbak fell from office.

From the fall of Yashbak, however, there was an increasing reluctance to acknowledge these changes by the new populist administration, which succeeded him. As the ten-percent coins thus continued to spread, the de facto exchange rose to 264 in 1410 and 300 in 1412. The official rate, however, was frozen at 250 and the standard maintained, as Maqrizi explained "by the alteration of the *Nasīri* and *Ifrantī* by those who struck them, the Sultan on the one part and the Venetians on the other." Counterfeit and debased gold thus appeared in 1408, the coins being lightened from their standard of 3.55 grams to 2.94 grams. The system was once more reduced to chaos, reflecting the deplorable state of precious metal stocks, which steadily dwindled from 1392 (numismatic notes, section 4). Reform following the death of Faraj once more established the primacy of silver, lowering the bi-metallic exchange within a restructured system to 11.9: 1. This change, however, was overshadowed in the new environment of the 1410s by problems arising from Egyptian monetary stock depletion.

Commodity and Specie Trades. The years 1392-1412 witnessed, as a result of the diminution of Egyptian monetary stock, a complete alteration in the

purchasing power of specie in terms of commodities within the two trading area, fundamentally altering the nature of trade (table 4.2). European goods became increasingly uncompetitive in relation to Levantine rivals as their relative price increased by 40-70 per cent in the years after 1412. Trade in specie displaced trade in goods eastwards, fluctuations in bi-metallic ratios merely placing a premium on one metal and then the other in the specie outflow. Moreover, the trade could be highly profitable for, in free market conditions, oriental wares were correspondingly cheaper. Accordingly, the pattern of exchange of specie against specie, which had characterised the years 1374-1412, now from 1412 was displaced by an exchange of specie against goods.

Table 4.2

Amount of specie required to buy a basket
of commodities (1380-1389=100)

Date	A. Egypt		B. Europe		Relative Purchasing Power
	1. Consumables & manufactures	2. Spices	1. Consumables & manufactures		
1380-9	100	100	100		100
1390-9	100	109	100		100
1400-9	92	98	105		114
1410-9	47	160	75		160
1420-9	52	120	73		140
1430-9	47	118	81		172

How far European merchants benefited from this situation, however, depended on the reaction of indigenous traders to the new market environment. Where the Europeans operated in a competitive environment, as in the market for consumables and raw materials, on finds them buying up the country with alien gold and silver. On the other hand, where they faced an organised group, like the Karīmī merchants in the spice trade, whom with the encouragement of the Sultan, were capable of a positive response, their position was weaker.

Faced with a decline in specie returns for their goods, the Karīmī merchants simply restricted supplies of specie. Their first venture in 1412 was over hasty, their price increase from 60 to 220 dinars per sporta grotesquely overshot the mark and they were left with spices on their hands. Within two years, however, they had learnt to manage the monopoly effectively, maintaining domestic prices at about twenty per cent above the level of the 1390s. These changes both within the international situation and the Egyptian economy were to have profound effects on the European specie export trade and on those who participated in it.

Structurally there was a major displacement in the foci of the rapidly growing trade. For Venice, heavily tied to the specie trade, the ability of the Karīmī merchant to maintain the specie price of spices ensured that they gained no advantage from the new situation. Indeed as relative prices in Europe were enhanced by almost two-thirds the trade declined. They reacted by diversifying into unrestricted markets for commodities like cotton and potash.

Table 4.3

Venetian Shipping and Trade

Date	Galleys		Cogs and Roundships		Total Value
	Number	Value of Cargo	Number	Value of Cargo	
1390-1410	7	450,000	2	24,000	474,000
1430-1439	5.7	350,000	7	100,000	450,000

Yet this could do little more than maintain a stable outflow of specie from the city, equivalent to 1.5 tonnes of gold annually. Having played a major role in the gold export boom of 1385-1390 and a paramount one in that of 1399-1412, Venice subsequently played only a small part in the unfolding drama of the gold export trade. Tied to the spice trade the volume of specie exports did not grow, and with a bi-metallic ratio hovering constantly just above that of Egypt to 1433 gold played little role in what outflow there was.

In contrast Genoa, which had lagged behind Venice in the boom of 1385-1390 and had been totally ousted from the final stages of the following boom by not having, during the years 1405-1412, a marketable product in the florin, now came to the fore. Its merchants, always more committed to the bulk commodity trade, took full advantage of the new market situation. Tapping a constantly widening market in Egypt their commodity export trade from there grew rapidly engendering a corresponding import trade in specie from Europe. Moreover, with a bi-metallic ratio, which constantly remained below that of Egypt, each gold boom registered significantly in the market place. Genoa had become the motor of Europe. Tapping specie supplies from the European heartland as well as Spain and the Mahgreb, although the latter were of relatively small importance, it channelled specie east in return for a burgeoning volume of bulk commodities. The Genoese market was transformed, the slow rise, which had characterised gold prices in the period when metals had shuttled back and forth in conditions of gradual stock depletion, gave way to a rapid increase as the metal outflow grew without any compensatory reciprocal flow.

A burgeoning gold export trade, increasing from about a third of a tonne net annually during the last quarter of the fourteenth century to 1.89 tonnes from 1400-1425 and perhaps as much as 4.5 tonnes annually from 1425-1432, as a result of Egyptian monetary disorders, denuded European gold stocks. Eclipsing the effects of the mining crisis of 1375-1400, the specie outflow became the principal cause of the gold crisis during the years 1400-1432. Only with the fall in gold prices, concomitant upon the establishment in the 1440s of mercury-amalgamation gold production in the Rhineland, and the increase in silver prices as a result of the contemporary mining crisis, did the specie outflow come to end. Bi-metallic equilibration between the two trading blocs allowed a resumption of commodity trades.

Appendix

International Gold Price Movements

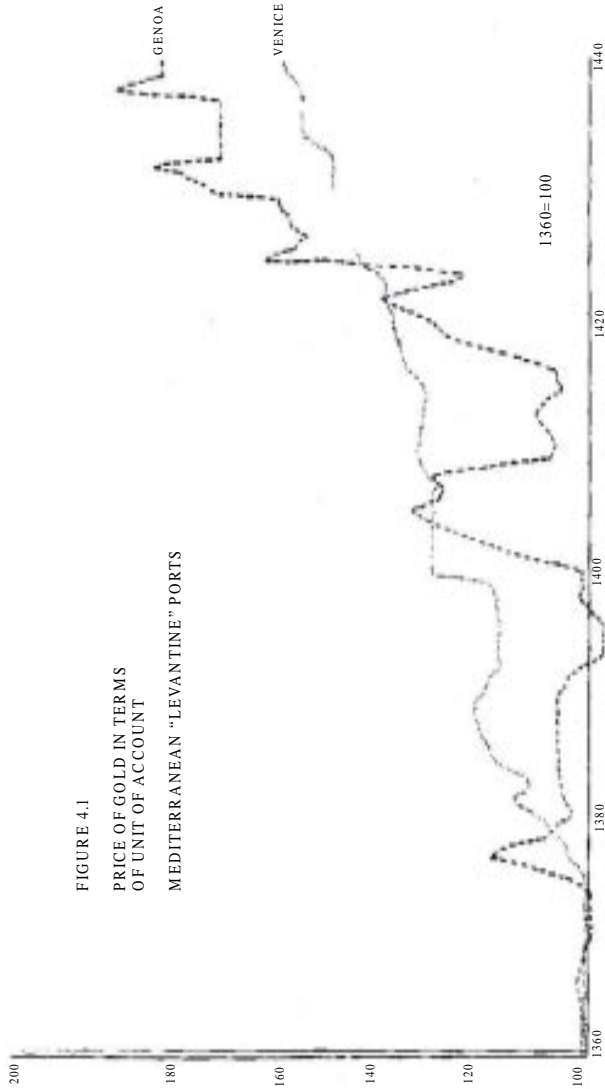


Figure 4.2
Price of Gold in Terms of Unit of Account
Northern Europe
1360=100



Figure 4.3
Price of Gold in Terms of Unit of Account
The Western Mediterranean
1360=100

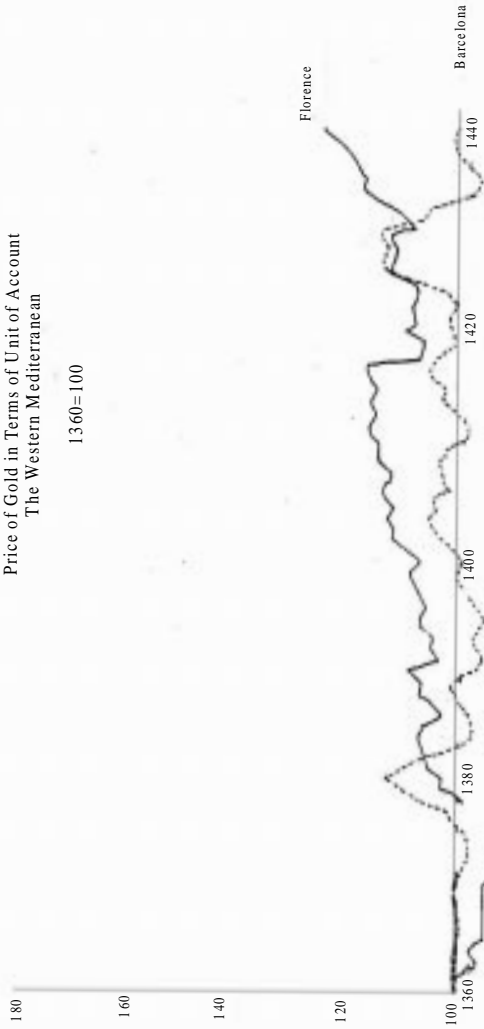
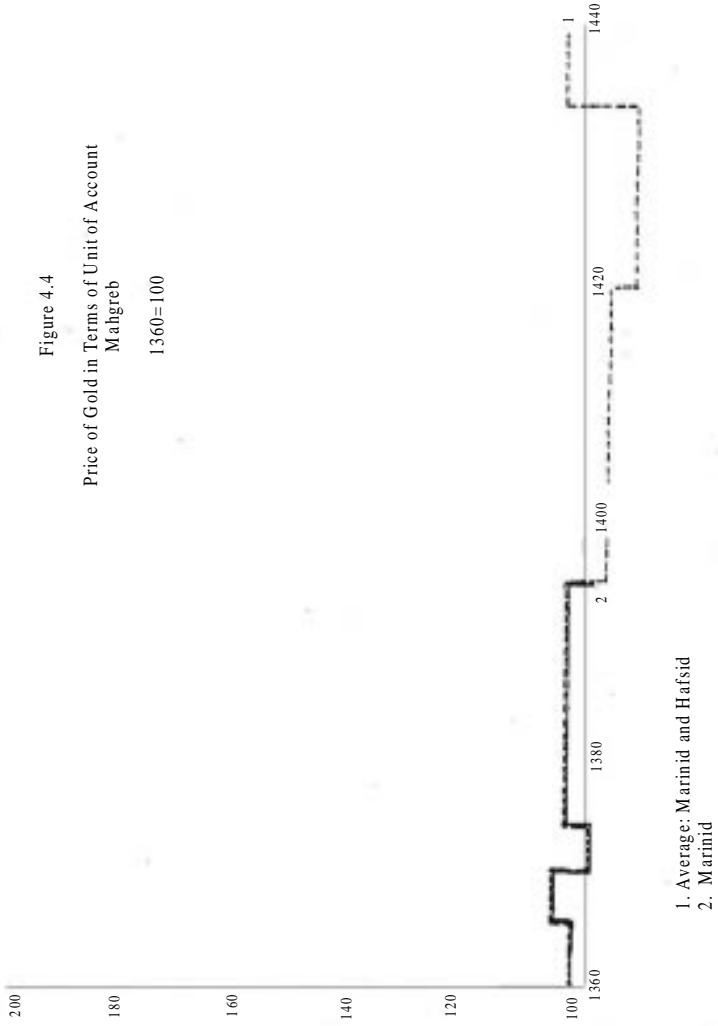


Figure 4.4
Price of Gold in Terms of Unit of Account
Mahgreb
1360=100



1. Average: Marinid and Hafsid
2. Marinid

Figure 4.5
Price of Gold and Silver
in Terms of Unit of Account
Egypt

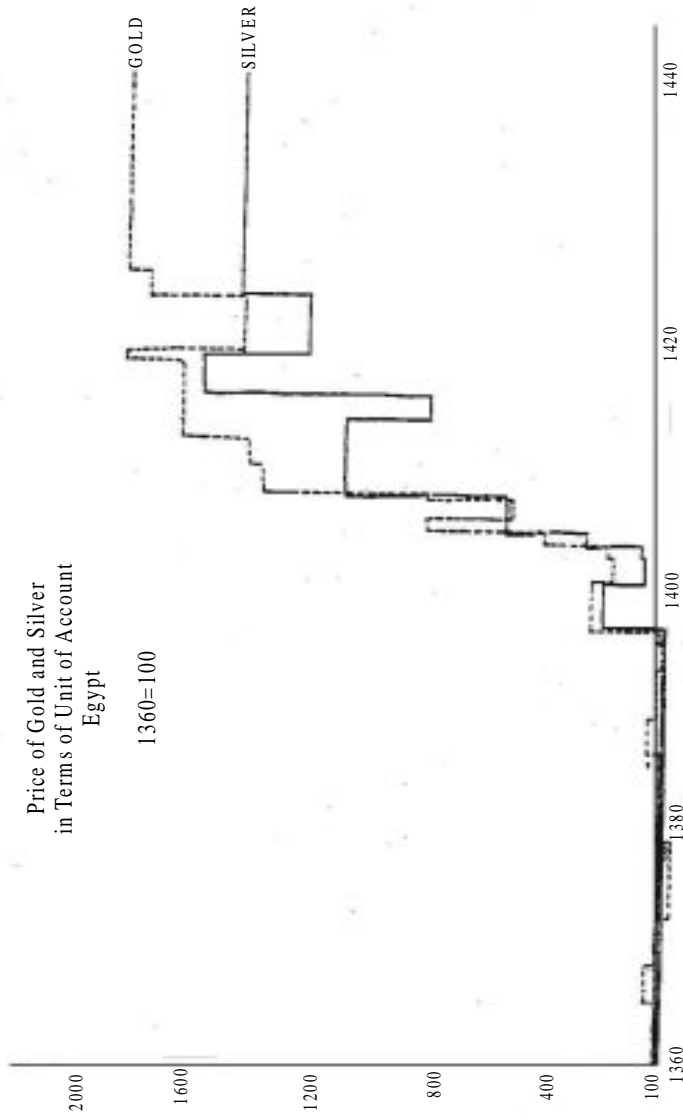


Figure 4.6

Bi-Metallic Ratios: Venice, Genoa and Cairo

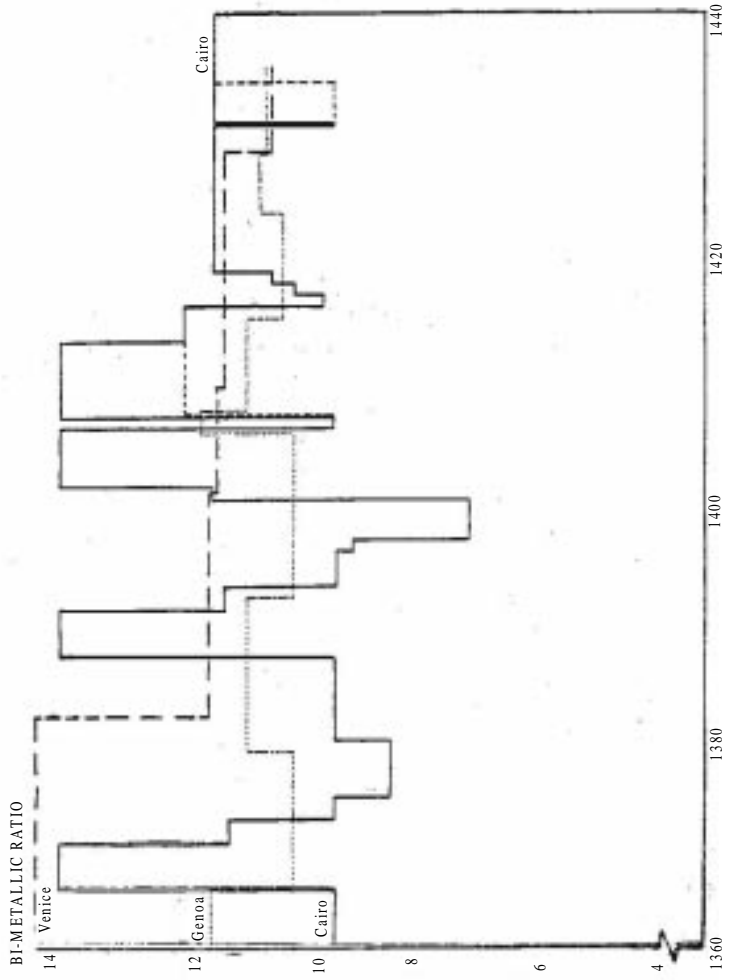
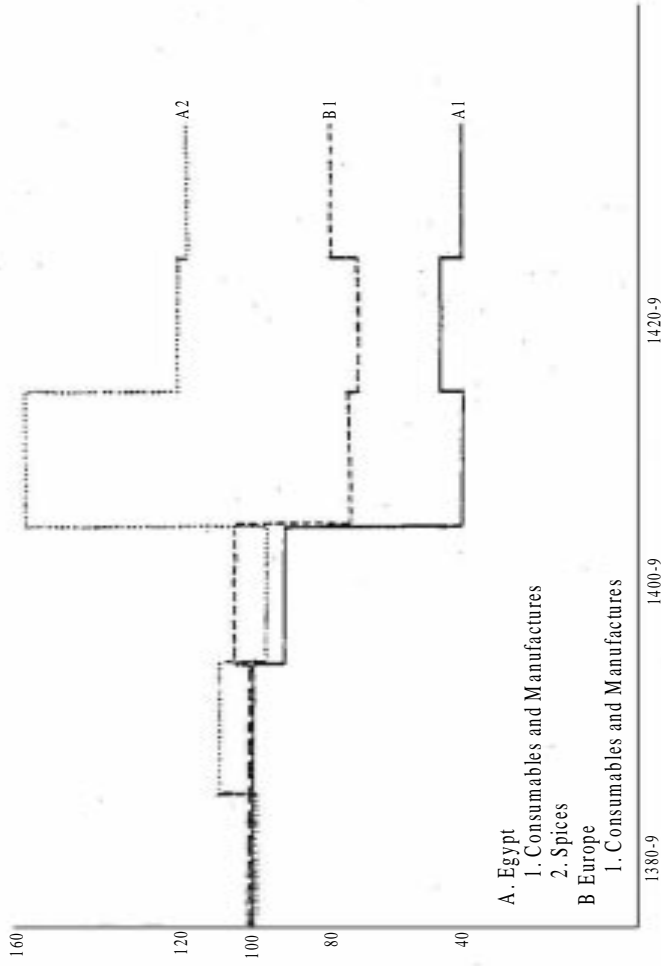


Figure 4-7 Amount of Specie Required to Buy a "Basket" of Commodities
(1380-9=100)



Numismatic Notes

I. Canonical Standard

Standard of whole system

Silver dirham weighing 2.975 grams 67% silver

to which was related

Gold, the value of which fluctuated with market conditions and in 1392 exchanged at 20 silver dirhams per dinar weighing 4.25 grams 97.9% gold.

Copper, exchanged by tale at 24 coins of 4.25 grams to the silver dirham (0.22 Egyptian lb [riṭl]=1 silver dirham)

II. Weight of Gold in Circulation

1392	4.25 grams dinar
1399	3.56 grams dinar = 30 silver dirham
	3.32 grams florin= 28 silver dirham

III. Deterioration of Silver

Date	Number of dirham fulūs to canonical dirham	to canonical dinar	Intrinsic silver content (% of canonical standard	
Yashbak {	1399	1.5	45	66.7
	1401	1.6	48	62.5
	1402	2.6	78	38
	1403/4	5	150	20
	Alexandria	10	300	10

Date	Number of dirham fulūs		Intrinsic silver content (% of canonical standard)	
	to canonical dirham	to canonical dinar		
1404	3.3	100	30	
1405	3.3	100	30	
Yashbak	1405	5	150	20
	1406	8.3	250	12
	1410	8.8	(265)	11
	1412	10	(300)	10

IV. Monetary Stocks

	Gold	Silver	Copper	Total
1392	100	100	100	100
1399	80	100	90	90
1412	76	15	30	40