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*The Economic History of Byzantium:
From the Seventh through the Fifteenth Century*

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Prices and Wages in the Byzantine World

Cécile Morrisson and Jean-Claude Cheynet

Although G. Ostrogorsky's pioneering work has been supplemented by that of H. Antoniadès-Bibicou, E. Patlagean, and J. Irmscher, as well as by our own research for *Hommes et richesses*, the time for presenting detailed results is not yet ripe. The sources, which grow more numerous from the thirteenth century on, must still be thoroughly investigated.¹ As it is, we have space here for no more than a selection of the data that we have gathered. Accordingly, we have merely dipped into Badoer, to whom we shall return in a forthcoming volume of *Réalités byzantines*.

We have supplemented our previous findings by adding a few items and some data about commodities (wine) and objects (luxury clothing and precious objects) not previously examined. As is well known, our information about units of measurement² and the nature of the coins referred to in documents is not certain. However, the orders of magnitude given below do possess a certain coherence, though economists and even economic historians of the later Middle Ages in the West will deem them very disparate and unreliable. Aware as we are of the inadequacies of our documentation, we have restricted ourselves to a few, very cautious, comments.

Agricultural Prices

Land and Wheat

We have deliberately omitted transactions concluded in circumstances that prevented the free operation of the market (e.g., contracts between partners of unequal status) and cases involving klasmatic land, which has been discussed by others.³ On the other

This chapter was translated by Sarah Hanbury Tenison.

¹ On prices, see G. Ostrogorsky, "Löhne und Preise in Byzanz," *BZ* 32 (1932): 292–333; H. Antoniadès-Bibicou, "Démographie, salaires et prix au XI^e siècle," *Annales ESC* 27 (1972): 215–46; E. Patlagean, *Pauvreté économique et pauvreté sociale, 4^e–7^e siècle* (Paris, 1977); J. Irmscher, "Einiges über Preise und Löhne im frühen Byzanz," in *Studien zum 8. und 9. Jahrhundert in Byzanz*, ed. H. Köpstein and F. Winkelmann (Berlin, 1983), 23–33.

² This is why we have not used figures concerning arable land and vineyards expressed in *stremmata*, the more so in that the contemporary data expressed in *modioi* are sufficient.

³ N. Oikonomides, "Das Verfalland im 10.–11. Jahrhundert: Verkauf und Besteuerung," *FM* 7 (1986): 161–68.

Table 1
Monetary Equivalencies

Date	Unit	Value
before 1092	1 dinar	1 nomisma
1092–1204	1 hyperpyron	$\frac{4}{5}$ nomisma
after 1092	1 trachy	$\frac{1}{3}$ hyperpyron
ca. 1190	1 Saracen besant	$\frac{5}{6}$ hyperpyron
after 1250	1 gold ducat	1 hyperpyron
after 1250	1 silver grosso (or ducat)	$\frac{1}{12}$ hyperpyron
after 1250	1 pound of grossi	10 hyperpyra
after 1250	1 exagion	$\frac{1}{6}$ hyperpyron
after 1250	1 uncia of ducats	1 hyperpyron
ca. 1300	1 asper barichatus	$\frac{1}{17}$ hyperpyron
ca. 1315	1 asper comnenatus	$\frac{1}{14}$ hyperpyron
ca. 1315	1 white besant	$\frac{1}{5}$ hyperpyron
after 1328	1 gold ducat	24 silver grossi
after 1350	1 gold ducat	2 hyperpyra
ca. 1375	1 asper barichatus	$\frac{1}{6}$ hyperpyron
ca. 1375	1 asper comnenatus	$\frac{1}{6}$ hyperpyron
ca. 1400	1 liter of small denarii	$\frac{1}{2}$ hyperpyron
ca. 1400	14 Ottoman aspri	1 hyperpyron
	1 ducat	3 hyperpyra

Table 2
Intrinsic Values for the Byzantine Gold Coin of Constantinople (Average Rates)

Date	% (Gold)	Carats*	Index*
6th–9th centuries	98	23 $\frac{1}{2}$	103
late 10th century	95	23	100
mid-11th century	80	19 $\frac{1}{4}$	84
1071	70	17	73
1078	50	12	52
1085	12	3	12
12th century	82	20	86
mid-13th century	73	17 $\frac{1}{2}$	76
1261–82	65	15 $\frac{1}{2}$	68
1282–94	59	14 $\frac{1}{4}$	62
1294–1303	56	13 $\frac{1}{2}$	58
1303–53	47	11 $\frac{1}{2}$	49

continued

Table 2
(continued)

Value of the silver hyperpyron (hyperpyron of account)**

Date	1 hyperpyron = ducat	Index*
1367	0.5	49
1382–91	0.4	39
1397–1411	0.30 (official exchange rate)	29
1413–20	0.26 (for the galleys)	25
1432–52	0.33 to 0.28 (various data from account books, including <i>Badoer</i>)	32 to 27

Sources: Bertelè-Morrisson, *Numismatique byzantine*; C. Morrisson et al., *L'or monnayé*, vol. 1 (Paris, 1985).

*approximate value

**1367: 2 stavrata of ca. 8.5 g silver represented the value of a gold hyperpyron of 1353 of 1.9 g fine gold and 1 gold (or “silver”) hyperpyron of the years 1350–60 = ca. 2 ducats. The later values have been “deflated” by taking account of the rate of exchange of the “silver” hyperpyron in Venetian gold ducats, whose weight and title were stable.

Table 3
Measures

Volume

Aggeion = 7 xestai (Casson, 5)

Amphora (measure of wine) 601 liters (Schilbach, *Metrologie*, 144)

Artaba = 4.5 modii italici = 38.78 liters

The value of the artaba in modioi is disputed, and various rates have been proposed, from 2 or less (Schilbach, *Metrologie*; Kaplan; and Irmischer), to 2½ (Bagnall, *Currency* = 2½ modioi = slightly more than 30 kg; Rathbone: “almost 40 l.”) to 3½ (cf. comments by J. Gasco, “La table budgétaire d’Antaeopolis [*P. Freer* 08.45 c–d],” in *Hommes et richesses*, 1: 286–87).

Laina = 5.6 liters

Metron (measure of wine) (thalassion) (= 30 pound) 10.25 liters (Schilbach, *Metrologie*, 112–13)

Metron (measure of oil) (thalassion) 9.1 liters (Schilbach, *Metrologie*, 116–17)

Metron (early Byzantine Egypt) ca. 10 xestai according to Casson, 8 according to texts from the Arab period = 5 xestai according to Jördens in *SB XVI* 12488 (cf. *PHeid* V, p. 111, n. 2)

Mistato = measure (of wine or oil)

Modios (thalassios) (40 liters) 12.8 kg = 17.084 liters (Schilbach, *Metrologie*, 95)

Large modios (politikos “Handelsmodios”) ca. 322.3 liters = 18 modioi thalassioi

Mouzourion = a modios

continued

Table 3
(continued)

Pinakion = a quarter modios

Sextarius (setier, xestes) ca. 0.55 liter

Values for the vaselo and the vegeta still elude us.

Area

Aroura 2,523.34 or 2,760 m² (Schilbach, *Metrologie*, 77 or Rathbone)

Table 4
The Price of Land

Date	Place	Area (in modioi)	Price	Price per Unit of Area	Source
Tenth–Eleventh Centuries					
942	Hierissos	1,000	33 nomismata	$\frac{1}{33}$ nomisma	<i>Iviron</i> , 1: no. 4 ⁴
1007	Chalkidike	12	6 nomismata	$\frac{1}{2}$ nomisma	<i>Iviron</i> , 1: no. 13
1010	Chalkidike	—	1 hyperpyron	$\frac{1}{3}$ nomisma	<i>Iviron</i> , 1: no. 16
1056	Macedonia	8	10 hyperpyra	>1 hyperpyron	<i>Dionysiou</i> , no. 1 ⁵
Thirteenth Century					
1207	Miletos	20	7 nomismata	$\frac{1}{3}$ nomisma	MM 6:152
1213	Miletos	26	13 nomismata	$\frac{1}{2}$ nomisma	MM 6:159
1213	Miletos	22	11 nomisma trikephala	$\frac{1}{2}$ nomisma	MM 6:161
1213	Miletos	8	1 hyperpyron	$\frac{1}{8}$ nomisma	MM 6:63
1213	Miletos	9	6 nomisma trikephala	$\frac{2}{3}$ nomisma	MM 6:164
1225	Smyrna	4	4 hyperpyra	1 nomisma	MM 4:191
1233	Smyrna	$2\frac{1}{8}$	$2\frac{1}{2}$ hyperpyra	1 hyperpyron	MM 4:198
1236	Miletos	12	2 hyperpyra	$\frac{1}{6}$ hyperpyron	MM 6:187
1240	Smyrna	2	$2\frac{1}{4}$ hyperpyra	$1\frac{1}{8}$ hyperpyra	MM 4:195–96
1247	Philadelphia	20	4 hyperpyra	$\frac{1}{5}$ hyperpyron	<i>Vatopédi</i> , 1: no.15
1247	Philadelphia	100	20 hyperpyra	$\frac{1}{5}$ hyperpyron	<i>Vatopédi</i> , 1: no.15
1250	Smyrna	2	$1\frac{1}{2}$ hyperpyra	$\frac{3}{4}$ hyperpyron	MM 4:205

continued

⁴ This land had originally been klasmatic and had been acquired by the monastery of Kolovou. The act, dated 942, concerns the sale of half the land, that is, 1,000 modioi, by Kolovou to the peasants of Hierissos, at a very low price, which is probably explained by the abundance of available land.

⁵ This price is abnormal for fiscal reasons.

Table 4
(continued)

Date	Place	Area (in modioi)	Price	Price per Unit of Area	Source
1250	Smyrna	3½	3 hyperpyra	6⁄7 hyperpyron	MM 4:205
1251	Miletos	30	7 hyperpyra	¼ hyperpyron	“Xèrochôraphion,” 37
1254	Smyrna	50	5 hyperpyra hexagion	⅒ hyperpyron	MM 4:152–53
1255/56	Miletos	60	8⅓ hyperpyra	⅓ hyperpyron	“Xèrochôraphion,” 38
1256	Smyrna	100	11 hyperpyra	⅒ hyperpyron	MM 4:163
1273	Kotzakion	1,000	265 hyperpyra	¼ hyperpyron	<i>Iviron</i> , 3: no. 61
1290	Hierissos	5	10 hyperpyra	2 hyperpyra	<i>Lavra</i> , 2: no. 83
1290	Hierissos	4	4 hyperpyra	1 hyperpyron	<i>Lavra</i> , 2: no. 84
1290	Hierissos	20	20 hyperpyra	1 hyperpyron	<i>Lavra</i> , 2: no. 85
1290	Hierissos	4½	9½ hyperpyra	2 hyperpyra	<i>Lavra</i> , 2: no. 86
1290	Hierissos	6	5 hyperpyra	5⁄6 hyperpyron	<i>Lavra</i> , 2: no. 87
1290	Hierissos	3	10 hyperpyra	3⅓ hyperpyra	<i>Lavra</i> , 2: no. 88
late 13th century	Thrace?	500	18 hyperpyra	⅒ hyperpyron	<i>Lips</i> , 132 ⁶
late 13th century	Thrace?	1,400	42 hyperpyra	⅓ hyperpyron	<i>Lips</i> , 132–33
late 13th century	Thrace?	700	28 hyperpyra	⅒ hyperpyron	<i>Lips</i> , 133
Fourteenth Century					
1301	Hierissos	25	35 hyperpyra	1⅔ hyperpyra	<i>Esphigménou</i> , no. 10
1302	Hierissos	20	12 nomismata	⅔ hyperpyron	Vatopedi, unpubl.
1307	Hierissos	5½	6 hyperpyra	1 hyperpyron	Vatopedi, unpubl.
1308	Hierissos	10	14 hyperpyra	1⅔ hyperpyra	Vatopedi, unpubl.
1308	Hierissos	5	2⅗ nomismata	½ hyperpyron	Vatopedi, unpubl.
1308	Hierissos	8	4½ hyperpyra	½ hyperpyron	Vatopedi, unpubl.
1308/12	Hierissos	15	7 hyperpyra	½ hyperpyron	Vatopedi, unpubl.
1308/12	Hierissos	6	4 hyperpyra	⅔ hyperpyron	Vatopedi, unpubl.
1308/12	Hierissos	12	10½ hyperpyron	5⁄6 hyperpyron	Vatopedi, unpubl.
1309	Hierissos	12	5 hyperpyra	½ hyperpyron	Vatopedi, unpubl.
1309	Hierissos	13	8 hyperpyron	⅔ hyperpyron	Vatopedi, unpubl.
1309	Hierissos	7	6 hyperpyra	6⁄7 hyperpyron	Vatopedi, unpubl.
1311	Hierissos	20	23 hyperpyra	1 hyperpyron	Vatopedi, unpubl.
1312	Hierissos	6	6 hyperpyra	1 hyperpyron	Vatopedi, unpubl.
1312	Chalkidike	6	6 unciae*	1 hyperpyron	<i>Xèropotamou</i> , no. 16

continued

⁶ This was *exaleimmatike* (abandoned) land.

Table 4
(continued)

Date	Place	Area (in modioi)	Price	Price per Unit of Area	Source
1312	Chalkidike	7	6 unciae	$\frac{6}{7}$ hyperpyron	<i>Xèropotamou</i> , no. 16
1321	Chrysoupolis	15	15 hyperpyra	1 hyperpyron	<i>Zographou</i> , no. 19
1324	Serres	300	36 hyperpyra	$\frac{1}{9}$ hyperpyron	"Ménécée," no. 57
1325	Berroia	3	4 hyperpyra	$1\frac{1}{3}$ hyperpyra	<i>Vatopedi</i> ⁷
1325	Berroia	4	5 hyperpyra	$1\frac{1}{4}$ hyperpyra	<i>Vatopedi</i>
1325	Berroia	5	7 hyperpyra	$1\frac{2}{5}$ hyperpyra	<i>Vatopedi</i>
1325	Berroia	8	11 hyperpyra	$1\frac{1}{4}$ hyperpyra	<i>Vatopedi</i>
1325	Berroia	90	122 hyperpyra	$1\frac{1}{3}$ hyperpyra	<i>Vatopedi</i>
1325	Berroia	600	300 hyperpyra	$\frac{1}{2}$ hyperpyron	<i>Vatopedi</i>
1325	Berroia	90	66 hyperpyra	$\frac{5}{7}$ hyperpyron	<i>Vatopedi</i>
1337	Serres	—	—	$\frac{1}{3}$ hyperpyron ⁸	Vatopedi, unpubl.
1355	Zichna	23	12 unciae	$\frac{1}{2}$ hyperpyron	<i>Chilandar</i> , no. 142
1356	Serres	885	160 unciae	$\frac{1}{3}$ hyperpyron	"Ménécée," no. 57
1365	Serres	200	24 hyperpyra	$\frac{1}{8}$ hyperpyron	<i>Lavra</i> , 3: no. 143
1384	Thessalonike	>3,500	871 hyperpyra	$<\frac{1}{4}$ hyperpyron ⁹	<i>Docheiariou</i> , no. 49
1399	Constantinople	44	800 hyperpyra	20 hyperpyra	MM 2:304 ¹⁰
1401	Constantinople	8	160 hyperpyra	20 hyperpyra	MM 2:558

*Note: uncia: uncia of ducats.

hand, prices in times of famine or crisis that affected the entire population have been retained.

Estates and Villages There is not much information on this subject, particularly with regard to the area and quantity of the farms. During the early Byzantine period, the *Liber Pontificalis* enumerated the properties donated to the church by Emperor Constantine, along with their revenues, but did not record their value. We have distinguished between farms whose incomes were a few tens of solidi and estates that generally yielded between 100 and 300 solidi.

⁷ A document mentioning seven sales at Berroia: G. Theocharides, *Μία διαθήκη και μία δίκη Βυζαντινή* (Thessalonike, 1962), 17–28.

⁸ Average calculated from 110 transactions.

⁹ This price has been deduced from the accounts for the dowry of Maria Deblitzene. In the event of her husband's death, she was to receive, among other properties, lands worth 871 hyperpyra; she was given fields amounting to a total area of 3,500 modioi, along with others that were not measured.

¹⁰ In the mid-14th century, an unspecified area of wheat-growing land was sold at Constantinople for the enormous sum of 300 hyperpyra (H. Delehaye, *Deux typica byzantins de l'époque des Paléologues* [Brussels, 1921], 104). This land was definitely situated within the city walls.

The later transactions involved smaller properties. In 1024 George Charzanos sold his monastery for 210 nomismata. It was built on an *agridion* that he had purchased shortly beforehand for 132 nomismata (*Lavra*, 1: no. 25). A few years later, in 1081, the domain of Platanos was sold for 24 litrai of gold to the monastery of the Amalfitans (*Lavra*, 1: no. 42). During the first half of the twelfth century, the village of Gastibelea was repurchased for 16 pounds of gold by the monastery of the Pantokrator (Petit, *Kosmosotira*, 68–69).

On reaching the age of the Palaiologoi, our knowledge is once again limited—mainly through the intermediary of the fiscal procedure for calculating the *posotes*—to the revenues produced by the estates.¹¹ In 1280–81, for instance, Emperor Michael VIII gave several villages to Mourinos: Goggyles in Paphlagonia was assessed for a *posotes* of 200 hyperpyra, Hermileia for 202 hyperpyra, Krabbata for 109 hyperpyra, and Antigoneia for 104 hyperpyra (*Docheiariou*, no. 9).

The Price of Land Land acquires value through peasant labor. This is why abandoned land lost the greater part of its value, as is demonstrated by the price of klasmatic land in the tenth century or of *exaleimmatike* land in the fourteenth century. Of the two principal factors of production, land and labor, the latter is undoubtedly the most important.¹²

Land prices appear to conform to those provided in a fiscal instruction from the mid-eleventh century, which cites 1 nomisma for first-quality land, $\frac{1}{2}$ nomisma for second-quality land (which features most frequently since this designation normally applied to arable land), and $\frac{1}{3}$ nomisma for the poorest land. In Thrace and Bithynia, economic growth certainly occurred earlier than in the country around Thessalonike, which remained exposed to Bulgarian incursions for many years, and land values must have risen sooner, though we have no documentary evidence to prove this hypothesis.

At the beginning of the fourteenth century, nominal prices more than doubled in relation to the eleventh century; when the monetary devaluation is taken into account, this corresponded to a slight rise. Thus we learn how, in Berroia in 1325, several fields (not necessarily of the first quality) cost noticeably more than 1 hyperpyron per modios. Though the peasant population had grown to peak levels, which would normally have resulted in higher prices on account of the reduced marginal productivity of labor, the actual increase remained very moderate. Once this peak had been passed, land values dropped again except in the case of small parcels of land that were purchased for exorbitant prices, undoubtedly because they were protected from enemy incursions. Thus prices recorded in Constantinople in 1399–1400 can be explained by both situation and circumstances, since Bayezid's siege of the city increased land values *intra muros*.

¹¹ One exception to note is the sale of a *zeugelateion* at Kaisaropolis for 210 hyperpyra in 1321: *Actes de Chilandar*, ed. L. Petit (= *VizVrem* 17 [1911]; repr. Amsterdam, 1975), no. 69.

¹² M. Kaplan started from a pessimistic hypothesis but reached the same conclusion. See his *Les hommes et la terre à Byzance du VIe siècle au XIe siècle: Propriété et exploitation du sol* (Paris, 1992), 479–80.

Table 5
Wheat Prices

Date	Place	Price	Price of a modios thalassios	Source
Fourth–Seventh Centuries				
361–362	Antioch	$\frac{1}{15}$ nomisma (largesse); $\frac{1}{10}$ or $\frac{1}{5}$ nomisma (scarcity) $\frac{1}{10}$ or $\frac{1}{5}$ nomisma (scarcity)	$\frac{1}{15}$ nomisma	Julian, <i>Misopogon</i> , 41
494	Edessa	$\frac{1}{30}$ nomisma (abundance)	$\frac{1}{30}$ nomisma	Jos. Styl., 17
541	Egypt	$\frac{1}{40}$ nomisma	$\frac{1}{40}$ nomisma	<i>PCairo Masp</i> 67320
6th century	Egypt	14 artabai = 1 nomisma	$\frac{1}{46}$ nomisma	<i>PSI</i> 46
6th century	Egypt	$3\frac{1}{2}$ artabai = 14 carats	$\frac{1}{13}$ nomisma	<i>SB VI</i> 9051 ¹³
6th century	Egypt	8–12 artabai for 1 nomisma; on average 10 artabai for 1 nomisma	$\frac{1}{26}$ – $\frac{1}{40}$ nomisma; $\frac{1}{33}$ nomisma, on average	Bagnall, <i>Currency</i> , 6
late 6th century	Egypt	1 nomisma for 2 modioi (high prices) 12 xestai for 1 nomisma	$\frac{1}{2}$ nomisma $\frac{1}{12}$ nomisma	Moschos, PG 87.3: 2941 Moschos, Latin version
late 6th century	Nessana	15 modioi for 1 nomisma 1 nomisma for 3 modioi (scarcity)	$\frac{1}{15}$ nomisma $\frac{1}{3}$ nomisma	<i>PNess</i> 64, 65, 69 <i>Vita Epiph.</i> 53 ¹⁴
655	Kherson	1 nomisma for 3 or 4 modioi (scarcity)	$\frac{1}{3}$ to $\frac{1}{4}$ nomisma	PL 87:203
Eighth–Eleventh Centuries				
766/767	Constantinople	60 modioi, 1 nomisma	$\frac{1}{60}$ nomisma	Nikephoros, 160 ¹⁵
867–886	Constantinople	2 medimnoi, 1 nomisma (crisis)	$\frac{1}{2}$ nomisma	Skylitzes, 278
Basil I 960	Constantinople	12 medimnoi, 1 nomisma 4 modioi	$\frac{1}{12}$ nomisma ¹⁶ $\frac{1}{4}$ nomisma	Skylitzes, 278 Sym. Mag., 759

continued

¹³ See commentary by N. Kruit, *Tyche* 9 (1994): 81.

¹⁴ Cited in a review of J. Durliat, *De la ville antique à la ville byzantine: Le problème des subsistances* (Rome, 1990), by R. Delmaire, *Antiquité tardive* 1 (1993): 257.

¹⁵ *Nikephoros, Patriarch of Constantinople, Short History*, ed. C. Mango (Washington, D.C., 1990), 160. According to this chronicler, the low price was a consequence of the deflation caused by imperial hoarding, but one sector of public opinion thought that the low price was due to the fertility of the soil and the abundant harvest. In the 8th century, in Iraq, wheat was sold for the equivalent of $\frac{1}{65}$ nomisma per modios. E. Ashtor, *Histoire des prix et des salaires dans l'Orient médiéval* (Paris, 1969), 42–43). The explanation for this low price could be a shortage of coin.

¹⁶ In 878, when the Arabs were besieging Syracuse, 1 modios of wheat was worth 150 nomismata. *ODB*, s.v. “Theodosios the Monk,” 2053).

Table 5
(continued)

Date	Place	Price	Price of a modios thalassios	Source
960	Constantinople	8 modioi	$\frac{1}{8}$ nomisma (normal price)	Sym. Mag., 759
ca. 963	Constantinople	load for 2 mules, 1 nomisma	$\frac{1}{15}$ nomisma	Skylitzes, 278
968–969	Constantinople	light load for one man (3 to 4 modioi), 2 nomismata ¹⁷	$\frac{1}{2}$ or $\frac{2}{3}$ nomisma (crisis prices)	Skylitzes, 278
968	Constantinople	1 gold piece not sufficient for 2 measurements of Pavia	(crisis prices)	Liutprand, <i>Legatio</i> , chap. 44
968	Constantinople	3 coins not sufficient for meals for 25 companions and 4 guards		Liutprand, <i>Legatio</i> , chap. 34
late 10th century	Syria	2 or 3 modioi, 1 nomisma ¹⁸	$\frac{1}{2}$ to 1 nomisma	Ouranos, <i>TM</i> , 296–97
Eleventh Century				
1073	Miletos	12 modioi, 1 nomisma	$\frac{1}{12}$ nomisma	<i>Patmos</i> , 2:20
before 1075	Rhaidestos	18 modioi or 1 nomisma	$\frac{1}{8}$ – $\frac{1}{18}$ nomismata	Attaleiates, 203 ¹⁹
1076	Rhaidestos	1 modios, 1 nomisma (crisis)	1 nomisma	Attaleiates, 203
ca. 1076	Constantinople	1 modios, less 1 pinakion, 1 nomisma	1.33 nomismata	Skyl. Cont. 162
1077/78	Constantinople	1 medimnos, 3 nomismata (crisis)	3 nomismata	Attaleiates, 258
Twelfth Century				
ca. 1101	Melitene	1 modios, 1 dinar (famine)	ca. 1 nomisma	Michael the Syrian, 189
ca. 1170	Constantinople	1 modios of quality, 1 trachy	$\frac{1}{3}$ hyperpyron	<i>Iviron</i> , 2:10
1161	Crete	700 modioi, 2 litrai of nomismata trikephala ²⁰	$\frac{1}{5}$ hyperpyron	<i>Patmos</i> , 1: no. 22

continued

¹⁷ When questioned by Nikephoros Phokas, an old man on active military service replied that he could easily carry on his shoulders the quantity of wheat that 1 nomisma could buy, whereas previously this had required two mules (amounting to around 15 modioi, given that one mule could carry around 7.5 modioi). See E. Schilbach, *Byzantinische Metrologie* (Munich, 1970), 170.

¹⁸ These are high prices, which even climbed to 1 nomisma per modios.

¹⁹ Commenting on these prices is tricky; see *Hommes et richesses dans l'Empire byzantin*, 2 vols. (Paris, 1989–91), 2:361–63.

²⁰ On the difficulties involved in identifying trikephala nomismata, cf. T. Bertelè and C. Morrisson, *Numismatique byzantine* (Wetteren, 1978), 105–6; in this instance, we think that it is a case of the hyperpyron, worth $\frac{4}{5}$ of the old, heavier, nomisma; if it had been the electrum coin worth $\frac{1}{3}$ hyperpyron, the price of a modios of wheat would have been $\frac{1}{15}$ hyperpyron.

Table 5
(continued)

Date	Place	Price	Price of a modios thalassios	Source
Thirteenth Century				
1227	Dyrrachion	1 staio, 25 solidi	$\frac{1}{7}$ – $\frac{1}{8}$ hyperpyron	Ducellier ²¹
1265	empire	1 kentanarion wheat, < 50 hyperpyra	$< \frac{1}{36}$ hyperpyron? ²²	MM 3:81
1271	Crete ²³	10 mouzouria, 1 hyperpyron of Crete	$\frac{1}{10}$ hyperpyron	Scardon
1277	empire	100 modioi, < 100 hyperpyra	$< \frac{1}{18}$ hyperpyron ²⁴	MM 3:92
1278	Constantinople	$\frac{3}{4}$ modios, 1 hyperpyron	$\frac{1}{13}$ hyperpyron ²⁵	Tafel and Thomas, 3:172
1278–81	Crete	1 mouzourion	$\frac{1}{8}$ – $\frac{1}{6}$ hyperpyron	Marcello
1282–84	Venice	1 staio of wheat from Crete or the Romania transported to Venice	ca. $\frac{1}{4}$ – $\frac{1}{3}$ hyperpyron	Thiriet, <i>Délibérations</i> , 1:42–46
1289–90	Kaffa	1 modios, 16 asperi barichati	$\frac{1}{18}$ hyperpyron	Balard, <i>Outre-mer</i> , 1: nos. 335, 419
1289–90	Trebizond	1 modios, 20 or 22 aspra comenata	$\frac{1}{9}$ hyperpyron	Balard, <i>Outre-mer</i> , 1: nos. 417, 430
1290–94	Stremula	1 modios, 1 hyperpyron 14 carats	$\frac{1}{12}$ hyperpyron	Bertolotto, 526
1290–94	Scrimula	300 modioi, 1,700 hyperpyra	$\frac{1}{14}$ hyperpyron	Bertolotto, 516
1290–94	Rhaïdestos	2,000 modioi, 1,800 hyperpyra	$\frac{1}{20}$ hyperpyron	Bertolotto, 511

continued

²¹ A. Ducellier, *La façade maritime de l'Albanie au Moyen Age: Durazzo et Valona* (Thessalonike, 1981), 277. This was the maximum price at which the Venetians were authorized to purchase wheat in Dyrrachion. In 1281, prices had increased; a staio of barley was worth 29 solidi.

²² The treaty concluded between Michael VIII and Venice allowed the Venetians to export grain freely as long as the price of 1 centenarium did not exceed 50 hyperpyra in Constantinople.

²³ On fluctuation in wheat prices in Crete, see the comprehensive work by D. Tsougarakis, “Η σιτική πολιτική της Βενετίας στην Κρήτη τὸν 13ο–14ο αἰώνα,” *Μεσαιωνικά καὶ νέα Ἑλληνικά* 3 (1995): 333–85.

²⁴ This relates to the renewal in 1277 (and again in 1310) of the treaty with Venice. Several points were modified in 1277. The particular reference to the price in the capital was dropped, the measure was no longer expressed in kentanaria (but in modioi), and the price limit was raised to 100 hyperpyra.

²⁵ This price (*modius unus minus quarta ad hyperpyronum*, or 1.33 hyperpyra per large modios) is cited as normal by a Venetian trader operating in the Black Sea. He regrets the fact that the emperor has forced him to sell his wheat in the capital at $1\frac{1}{4}$ modios per nomisma.

Table 5
(continued)

Date	Place	Price	Price of a modios thalassios	Source
1291/92	Venice	1 staio of wheat from Thrace or the Black Seat transported to Venice	$\frac{1}{4}$ – $\frac{1}{3}$ hyperpyron	Thiriet, <i>Délibérations</i> , 1:62–64
1292	Crete	100 mouzouria, 15½ then 16 hyperpyron	ca. $\frac{1}{6}$ hyperpyron	Thiriet, <i>Délibérations</i> , 1:66
1296	Cyprus	1 modios, 1 besant	$\frac{1}{13}$ hyperpyron	Richard ²⁶
1299	Venice	1 staio from the Romania delivered to Venice, 18 grossi	$\frac{1}{3}$ hyperpyron	Thiriet, <i>Délibérations</i> , 1:76
Fourteenth Century				
early 14th century?	Constantinople	5,000 large political modioi, 20,000 hyperpyra	$\frac{2}{9}$ hyperpyron	<i>Diegesis</i>
early 14th century?	Constantinople	1 political modios, 1 hyperpyron, 9 carats	$\frac{1}{13}$ hyperpyron	Vogel ²⁷
early 14th century?	abroad	1 political mod., 2 hyperpyra, 2 carats	$\frac{1}{6}$ hyperpyron	Vogel
1300	Crete	1 mouzourion	$\frac{1}{8}$ – $\frac{1}{6}$ hyperpyron	<i>Pizolo</i> , nos. 112, 115
1301	Crete	100 mouzouria, 16 hyperpyra, instead of 17	$>\frac{1}{6}$ hyperpyron	Thiriet, <i>Délibérations</i> , 1: no. 7
1301–2	Crete	1 mouzourion	$\frac{1}{6}$ hyperpyron	<i>Brixano</i> , nos. 89, 239
1303	Ragusa	1 staio, 1 hyperpyron	ca. $\frac{1}{5}$ hyperpyron	Krekić, no. 72
1303	Ragusa	1 staio, 14 grossi	$<\frac{1}{4}$ hyperpyron	Krekić, no. 73
1307	Crete	100 mouzouria, 16 hyperpyra	$\frac{1}{6}$ – $\frac{1}{7}$ hyperpyron	Borsari, <i>Creta</i> , 81–82
1312	Ragusa	1 staio, 14 grossi	$<\frac{1}{4}$ hyperpyron	Borsari, <i>Creta</i> , 93
1317	Negroponte	1 staio, 30 grossi (scarcity)	$\frac{1}{2}$ hyperpyron	Thiriet, <i>Délibérations</i> , 1: no. 379
1317	Crete	100 mouzouria, 16 hyperpyron	$<\frac{1}{6}$ hyperpyron	Thiriet, <i>Délibérations</i> , 1: no. 381

continued

²⁶ J. Richard, “L’ordonnance de décembre 1296 sur le prix du pain à Chypre,” *Ἐπετηρίς* 1 (1967–68): 45–51, repr. in idem, *Orient et Occident au Moyen Age: Contacts et relations, XIVe–XVe siècles* (London, 1976), art. 20. The Cyprus modios was equal to 40 litrai. In this case, the price is the one that was considered normal. When the harvest was bad, the price could increase fourfold, meaning that it could reach the equivalent of $\frac{1}{3}$ hyperpyron per modios.

²⁷ K. Vogel, *Ein byzantinisches Rechenbuch des frühen 14. Jahrhunderts* (Vienna, 1968), 70. We do not know where these transactions are supposed to have taken place. The text stipulates that when wheat is sold in a foreign country, the price is higher: 2 hyperpyra 2 carats per modios.

Table 5
(continued)

Date	Place	Price	Price of a modios	
			thalassios	Source
1320	Philadelphia	1 large modios, 1 drachma (silver piece)	$\frac{1}{48}$ hyperpyron? (low price) ²⁸	Gregoras, 3:362
1322/27	Venice	1 staio, 12 to 13½ grossi (wheat from Thrace, Macedonia, and the Black Sea)	ca. $\frac{1}{5}$ hyperpyron	Thiriet, <i>Délibérations</i> , 1: nos. 434, 440, 447, 456
1324	Ragusa	1 staio, 18 grossi (penury)?	$\frac{1}{3}$ hyperpyron	Krekić, no. 120
1335	Spinarizza ²⁹	100 staia, 20 hyperpyra	$\frac{1}{25}$ hyperpyron	Krekić, no. 171
1339	Ragusa	1 staio, 26 grossi	$>\frac{1}{3}$ hyperpyron	Krekić, no. 186
1339	Crete	11,112 mouzouria, 2,000 hyperpyra	$\frac{2}{11}$ hyperpyron	Thiriet, <i>Régestes</i> , no. 85
1341	Constantinople	50 modioi of Pera, 6 florins 9 grossi (= ca. 13½ hyperpyra)	$\frac{1}{66}$ hyperpyron (aberration)?	Belgrano, 939 ³⁰
1343	Constantinople	1 modios, 5 hyperpyra	$>\frac{1}{4}$ hyperpyron ³¹	Zachariadou, "Céréales," 303
1344	Crete	4 mouzouria, 1 hyperpyron	$\frac{1}{4}$ hyperpyron	Zachariadou, "Céréales," 303
1345–55	Serbia	1 modios, 1 hyperpyron	$\frac{1}{18}$ hyperpyron	Novaković ³²
1346	Ragusa	1 staio, 20 grossi	$\frac{1}{3}$ hyperpyron	Krekić, no. 214
1346–47	Romania	1 modios, 8 or 9 hyperpyra	$<\frac{1}{2}$ hyperpyron	Zucchello ³³
1347	Romania	1 modios, 5 or 6 hyperpyra	ca. $\frac{1}{3}$ hyperpyron	Zucchello
1347	Palatia	1½ modioi, 1 florin	ca. $\frac{1}{3}$ hyperpyron	Zucchello
1347	Crete	100 mouzouria, 25 hyperpyra (minimum prices for wheat and barley)	$\frac{1}{4}$ hyperpyron	Thiriet, <i>Délibérations</i> , 1: no. 534

continued

²⁸ Interpreting the term *drachma* is a tricky business. Was it a coin from neighboring emirates, or the Byzantine silver piece called *basilikon*, which was worth $\frac{1}{12}$ hyperpyron? We prefer the latter theory because, although isolated, Philadelphia had maintained its links with the empire. We have assumed that the modios referred to was the modios of Palatia (60 litrai), because the price would otherwise have been inexplicably low.

²⁹ Spinarizza was situated in present-day Albania and remained in Byzantine hands for a long time. The region was said to be wheat producing.

³⁰ L. T. Belgrano, *Atti della Società ligure di storia patria* 13 (1877–84).

³¹ Entries for wheat prices between 1343 and 1405, with no references to sources, have been taken from E. A. Zachariadou, "Prix et marchés des céréales en Roumanie (1343–1403)," *Nuova rivista storica* 61 (1977): 292–306.

³² S. Novaković, "Le prix normal du blé à Constantinople pendant le Moyen Age et le Code de Stephan Dušan, empereur des Serbes," *Archiv für slavische Philologie* 27 (1905): 173–74.

³³ R. Morozzo della Rocca, *Lettere di mercanti a Pignol Zucchello, 1336–1350* (Venice, 1957), 73.

Table 5
(continued)

Date	Place	Price	Price of a modios thalassios	Source
1352	Crete	1 mouzourion	$\frac{1}{5}$ hyperpyron	<i>Zacharia de Fredo</i> , no. 1
1355	Turkey	16,000 modioi, 1,200 hyperpyra	$\frac{1}{13}$ hyperpyron	Thiriet, <i>Délibérations</i> , 1: no. 285
1360	Kilia	10 modioi, 1 sommo	$\frac{1}{16}$ hyperpyron	Balard, <i>TM</i> , 40
1361	Crete	100 mouzouria, 27 hyperpyra	$> \frac{1}{4}$ hyperpyron	Thiriet, <i>Délibérations</i> , 1: no. 282
1366	Constantinople	1 modios, 6 hyperpyra, 18 carats	$\frac{3}{8}$ hyperpyron	Santschi ³⁴
1366	Constantinople	1 modios, 4½ hyperpyra (inferior quality)	$\frac{1}{4}$ hyperpyron	Santschi
1366	Constantinople	1 modioi, 4 hyperpyra (rotten wheat)	$> \frac{1}{5}$ hyperpyron	Santschi
1384	Crete	100 mouzouria, 26 hyperpyra	$> \frac{1}{4}$ hyperpyron	Thiriet, <i>Régestes</i> , 1: no. 674
1385	Crete	100 mouzouria, 40 hyperpyra	$\frac{2}{5}$ hyperpyron	Thiriet, <i>Régestes</i> , 1: no. 705
1390	Panidos	1 modios, 6 or 7 hyperpyra	$> \frac{1}{4}$ hyperpyron	<i>Italiens à Byzance</i> , 40
1390	Constantinople	1 modios, > 20 hyperpyra (penury)	> 1.1 hyperpyra	Doukas, 85
1397	Crete	100 mouzouria, 35 hyperpyra	$\frac{1}{3}$ hyperpyra	Thiriet, <i>Régestes</i> , 1: no. 937
1398	Romania	200 modioi, 6¾ ducats	ca. 1 hyperpyron	Gioffrè ³⁵
1399	Crete	100 mouzouria, 35 hyperpyra	$> \frac{1}{3}$ hyperpyron	Thiriet, <i>Régestes</i> , 1: no. 965
Fifteenth Century				
1400	Constantinople	8 mouzouria, 10 hyperpyra (penury)	$1\frac{1}{4}$ hyperpyra	MM 2:474, 482
1401	Romania	1 modios, 24 hyperpyra	1.33 hyperpyra	Zachariadou, "Céréales," 303
1401	Kaffa	1 modios, 100 asperi barichati	$> \frac{1}{4}$ hyperpyron	Zachariadou, "Céréales," 303

continued

³⁴ These figures are derived from E. Santschi, "Quelques remarques sur le change et le pouvoir d'achat des monnaies à Byzance pendant la crise économique du XIIIe au XVe siècle et dans l'Orient latin durant la même période" (diss., Université de Lausanne, 1963), 37. These high prices were accepted by Amadeus of Savoy, who was not fully aware of the real situation in the empire.

³⁵ D. Gioffrè, "Atti rogati in Chio nella seconda metà del XIV secolo," *Bulletin de l'Institut historique belge de Rome* 34 (1962): 401–3. This wheat was purchased by the governor of Chios to safeguard the island's provisions.

Table 5
(continued)

Date	Place	Price	Price of a modios thalassios	Source
1402	Constantinople	1 modios, 31 hyperpyra	$1\frac{3}{4}$ hyperpyra	Balard, <i>Romanie</i> , 758
1402	Pera	1 modios, 8 hyperpyron	$< \frac{1}{2}$ hyperpyron	
1402	Constantinople	1 modios, 7 or 8 hyperpyra	$\frac{2}{5}$ hyperpyron	
1409	Korone	1 staio, 4 pounds of small denarii	$> \frac{1}{2}$ hyperpyron	Thiriet, <i>Régestes</i> , 2: no. 1338
1412	Crete	1 mouzourion, 10–11 solidi	$\frac{1}{3}$ hyperpyron	Thiriet, <i>Régestes</i> , 2: no. 1441
1414	Crete	100 mouzouria, 38 hyperpyra	$> \frac{2}{5}$ hyperpyron	Thiriet, <i>Régestes</i> , 2: no. 1551
1420	Crete	100 mouzouria, 45 hyperpyra	$> \frac{1}{2}$ hyperpyron ³⁶	Thiriet, <i>Régestes</i> , 1: no. 1786
1436	Constantinople	140 modioi = 875 hyperpyra [1 = $6\frac{1}{4}$ h]	$\frac{1}{3}$ hyperpron	<i>Badoer</i> , 103, 17
1436	Constantinople	4–6 hyperpyra for 1 modios	$\frac{1}{4}$ – $\frac{3}{8}$ hyperpyron	<i>Badoer</i> , 108, 4
1436	Constantinople	6 hyperpyra for 1 modios	$\frac{1}{3}$ hyperpyron	<i>Badoer</i> , 108, 4
1437	Amisos	85 aspra for 1 modios	$\frac{1}{4}$ hyperpyron	<i>Badoer</i> , 306, 12
1444	Pera	8 hyperpyra for 1 modios	$\frac{4}{9}$ hyperpyron	Roccatagliata, 1: no. 16

*Note: From 1213 on, the term *modios* designated the modios politikos, except in Pera.

Table 6
Prices for Barley and Other Cereals

Barley prices and wheat prices were generally in the ratio of 3:2. See below for prices in Constantinople during the tenth century and in Crete.³⁷

Date	Place	Price	Price of a modios thalassios	Source
after 430	Egypt	1 artaba, 2 carats	$\frac{1}{36}$ solidus	Bagnall, <i>Currency</i> , 65
6th–7th centuries	Egypt	11 artabai, $\frac{1}{3}$ solidus	$\frac{1}{100}$ solidus	<i>PHeid</i> V, 359

continued

³⁶ The text states that from then on the Cretan hyperpyron was worth $\frac{1}{4}$ ducat instead of $\frac{1}{2}$ or $\frac{1}{3}$ ducat.

³⁷ The ratio (5:3) is almost identical in Diocletian's Edict on Prices. In Egypt, it was probably 2:1. R. Bagnall, *Currency and Inflation in Fourth-Century Egypt* (Atlanta, 1985).

Table 6
(continued)

Date	Place	Price	Price of a modios thalassios	Source
743	Constantinople	1 modios, 12 nomismata (siege)	12 nomismata	Theophanes, 1:419–20
766–767	Constantinople	70 modioi barley, 1 nomismata	$\frac{1}{70}$ nomisma	Nikephoros, 160
960	Constantinople	6 modioi, 1 nomisma (penury)	$\frac{1}{6}$ nomisma	Sym. Mag., 759 ³⁸
before 964	province	30 modioi, 1 nomisma	$\frac{1}{30}$ nomisma	<i>Epistoliers</i> , 146
early 12th century	Chalkidike	2 modioi, 2 drakhani	$\frac{1}{3}$ hyperpyron	<i>Iviron</i> , 2: app. 2: 29
1271	Crete	60 measures, 4 hyperpyra	$\frac{1}{15}$ hyperpyron	<i>Scardon</i> , no. 85
1271	Crete	30 measures, 2 hyperpyra	$\frac{1}{15}$ hyperpyron	<i>Scardon</i> , no. 158
1271	Crete	100 measures oats, 5 hyperpyra	$\frac{1}{20}$ hyperpyron	<i>Scardon</i> , no. 342
1290	Kaffa	millet	$\frac{1}{30}$ hyperpyron	Balard, <i>Outre-mer</i> , 1: no. 505
1290–94	Stremula	1 modios barley, 1 hyperpyron	$\frac{1}{18}$ hyperpyron	Bertolotto, 526
1307	Crete	100 measures, 7 hyperpyra	$\frac{1}{14}$ hyperpyron	<i>Brixano</i> , no. 13
1307	Crete	30 measures, 2 hyperpyra	$\frac{1}{15}$ hyperpyron	<i>Brixano</i> , no. 49
1307	Crete	100 mouzouria barley, 10 hyperpyra	$\frac{1}{10}$ hyperpyron	Borsari, <i>Creta</i> , 81–82
1330	Peloponnese	1 modios barley and millet, 4 grossi	$> \frac{1}{7}$ hyperpyron	Krekić, no. 151
1367	Crete	4 measures, 1 hyperpyron ³⁹	$\frac{1}{4}$ hyperpyron	Santschi, <i>Mémoires</i> , no. 274
1408	Pera	50 modioi, 200 hyperpyra	$\frac{2}{9}$ hyperpyron	Roccatagliata, 1: no. 2
1439	Constantinople	$6\frac{1}{2}$ modioi, $40\frac{1}{2}$ hyperpyra	$\frac{1}{3}$ hyperpyron	<i>Badoer</i> , 604, 21
1439	Constantinople	$5\frac{1}{2}$ modioi, 28 hyperpyra	$\frac{5}{18}$ hyperpyron	<i>Badoer</i> , 716, 7

Bread For the early Byzantine period, all we know is the annual price of “political bread”: 4 nomismata in 578, according to John of Ephesos, and 3 nomismata in 618, according to the *Paschal Chronicle* (either $\frac{1}{90}$ or $\frac{1}{120}$ nomisma per day). When we take the gold:copper ratio for those two dates into account, this daily ration, estimated at ca. 1 kg of second-quality bread (Durliat, 61–63), was equivalent to 5–8 folles, as indirectly confirmed by the *Paschal Chronicle* (p. 716) concerning the rise in the price of the *scholai*

³⁸ The normal price was probably 1 nomisma for 12 modioi of barley; *ibid.*

³⁹ The cost of 20,000 measures of barley for the soldiers’ horses, at the rate mentioned above, was subtracted from their pay in June.

bread from 3 to 8 folles in 625. The price of bread in the capital is not known for the later period. Our only information comes from Thessalonike: when the Normans took the town, they sold bread “that formerly was worth one obol for three bronze staters,”⁴⁰ but the weight is not recorded. If the stater was equivalent to the stamenon and the obol to the tetarteron, the increase would be about 1,200–1,800%. The normal price of 1 tetarteron for bread recorded here (let us suppose for 2 pounds a day) suggests the same rates as in Constantinople, where, according to the well-known extract from Tzetzes, a pound of bread and ten mackerel could be had for the same sum.⁴¹

The Price of Cereals Grain crises could be caused by drought, town sieges, or epidemics, resulting in abruptly escalating prices, multiplied by a factor of ten or more (as in Edessa ca. 500 and Constantinople in 1077/78), which, in turn, drastically increased the death rate.⁴² Such short-term movements apart, the rise in prices (from $\frac{1}{30}$ to $\frac{1}{12}$ solidus per modios) between the sixth and ninth centuries appears definitive, although this rise was not regular because prices seem to have been lower during the reign of Constantine V than they were in the sixth century. This rise is exaggerated by the fact that the sixth-century prices relate to the regions of production,⁴³ whereas the later prices refer to the capital. Although the extent of the possible rise cannot be estimated accurately, it may be explained by the loss of the most fertile province and perhaps by an improvement in the remuneration of peasant labor.

From the ninth to the eleventh century, wheat was normally sold in Constantinople for $\frac{1}{12}$ nomisma per modios, up to the critical period of revolts and invasions during Michael VII's reign. From the end of the eleventh century to the advent of the Palaiologoi, we possess only random data that is difficult to compare or to deflate. The few known prices for the twelfth century are hard to interpret, since the *synodikon* of Iveron refers to one gold piece (*drakhani*) for a modios without stipulating which trachy (hyperpyron or electrum coin) was involved. Likewise, we do not know whether the trikephala nomismata, which were donated to the monastery of Patmos to replace the previous gift of modioi of grain, were made of electrum, which would have reduced the price by a factor of three. Neither do we know when the large modios that was eighteen times superior to the thalassian modios was introduced. It was used in the thirteenth century, but may well have been in use during the previous century if this can be related to the development of Italian trade. According to our hypothesis of a small modios, prices would have been rising, whereas the hypothesis of an early use of the large modios would result in very reduced prices, which seems unlikely.

⁴⁰ Eustathios of Thessalonike, *La Espugnazione di Tessalonica*, ed. S. Kyriakidès (Palermo, 1961), 124.

⁴¹ John Tzetzes, *Epistulae*, ed. P. A. M. Leone (Leipzig, 1972), 81–82.

⁴² Durliat, *De la ville antique*, 407–8, 498–502; *Hommes et richesses*, 1:257. The information provided by Pseudo-Joshua the Stylite about the famine that was raging in Edessa at the beginning of the 6th century has often been commented on. A multiplication factor of above three and even higher is also observed during the siege of Constantinople in the winter of 1077/78 (without taking the creation of the *foundax* of Rhaidestos into account). During the siege of the capital by Bayezid, the price of wheat rose by a factor of three.

⁴³ Egypt in the case of the lower one and Edessa in the other.

From the end of the thirteenth century, references to prices become more numerous, and it is possible to trace their development. In Constantinople, the price of wheat was initially lower than under the Macedonians, but it then gradually increased following a trend that was paralleled at a higher level in Crete.⁴⁴ Constantinople was harder hit by crises because of its heavy dependence on the freedom of the seas, as was the case in the mid-fourteenth century, during the Genoese blockade⁴⁵ and during Bayezid I's siege ca. 1400.

What do these prices tell us about the productivity of capital invested in the cultivation of wheat during the eleventh century? A farm of 80 modioi of average quality required a capital of 40 nomismata for the land, to which must be added equipment and a pair of oxen, worth perhaps 10 nomismata. We must include the seed grain that had to be stored, ca. 50 modioi, that is, 4 nomismata. Assuming that the yield ranged from 1 to 5 and that three-eighths of the land lay fallow each year, production would have amounted to 250 modioi of wheat with a theoretical value of 20 nomismata (not taking crop failures into account). Given this margin of uncertainty, we cannot calculate the return on capital investment very precisely, but it was certainly high and in excess of 30%.⁴⁶ This is not incompatible with what we know about the charges levied on the farm. With the *pakton* set at 1 nomisma for 10 modioi of first-quality land, and thus for 20 modioi of average-quality land, the charge on a farm of 80 modioi would be 4 nomismata, equivalent to 48 modioi of wheat, that is, one-fifth of the cereal production. This levy was bearable once the farm's other resources (vineyards, orchards, gardens, etc.) are taken into account.

⁴⁴ The price of wheat doubled in Crete during the 14th century, from 16 hyperpyra per 100 measures (or modioi thalassioi) to 35 (Tsougarakis, table 6).

⁴⁵ During the blockade of the capital by the Genoese fleet, the price of wheat doubled in a few days (*Nicephori Gregorae Byzantina historia*, ed. I. Schopen and I. Bekker, 3 vols. (Bonn, 1829–55), 3:92).

⁴⁶ See J. Lefort, "The Rural Economy, Seventh–Twelfth Centuries," *EHB* 299–305, for an estimate of the possible revenue of peasant cereal exploitation.

Vineyards and Wines

Table 7
Prices for Vineyards

Date	Place	Area (modioi)	Price	Price per unit	Source
985	Macedonia ⁴⁷	90	360 nomismata	4 nomismata	<i>Iviron</i> , 1: no. 7
early 11th century	unknown	4,000 feet	72 nomismata	5–6½ nomismata ⁴⁸	<i>Peira</i> , 1: no. 18.6
1097	Macedonia	abandoned vineyard		3 nomismata	<i>Lavra</i> 1: no. 53
1142	Macedonia	3	17 hyperpyra	6½ hyperpyra	<i>Pantocrator</i> , no. 3
1193	Crete	1.5	8 nomismata trikephala	5.5 hyperpyra	MM 6:125
1250	Smyrna	1	7½ hyperpyra	7½ hyperpyra	MM 4:201
1259	Smyrna	½	3 hyperpyra	6 hyperpyra	MM 4:201
1271	Thessaly	2	15 hyperpyra	7½ hyperpyra	MM 4:404–5
1271	Thessaly	1	9 hyperpyra	9 hyperpyra	MM 4:402–3
1271	Thessaly	1	10 hyperpyra	10 hyperpyra	MM 4:400–401
1272	Thessaly	⅔	6⅔ hyperpyra	10 hyperpyra	MM 4:410–11
1283	Smyrna	2 (abandoned)	11 hyperpyra hexagion	5½ hyperpyra	MM 4:131–32
1295	Chalkidike	6	91 hyperpyra	15 hyperpyra	<i>Xèropotamou</i> , no. 12
1295	Macedonia	18	300 hyperpyra	16⅔ hyperpyra	<i>Iviron</i> , 3:67
1314	Thessalonike	5	72 hyperpyra	14½ hyperpyra	<i>Chilandar</i> , no. 28
1314	Thessalonike	5	72 hyperpyra	14½ hyperpyra	<i>Chilandar</i> , no. 29
1384	Thessalonike	14	144 hyperpyra	10 hyperpyra	<i>Docheiariou</i> , no. 49
1384	Thessalonike	14 (abandoned)	94 hyperpyra	6⅔ hyperpyra	<i>Docheiariou</i> , no. 49 ⁴⁹
1396	Thessalonike	4	100 hyperpyra	25 hyperpyra	<i>Vatopedi</i> , unpubl.

continued

⁴⁷ Once again, the examples earlier than the 12th century have been drawn from the Athonite archives. There is nothing to indicate that the vineyards of Thrace and Bithynia were not valued more highly. The fiscal surveyors were given special instructions for measuring them (*Géométries du fisc byzantin*, ed. J. Lefort et al. (Paris, 1991), 124 for Thrace, 126 for Opsikion, 128 for Chios, Katabolon, and Pythia, 170 for the Gulf of Nikomedeia).

⁴⁸ It is difficult to estimate the planted area from the number of vinestocks. The treatises of fiscal geometry explain clearly what a chalias was, but they do not all provide the same definition. The likeliest solution proposed corresponds to an area comprising between 2 modioi 32 litrai and 3 modioi 18 litrai (*Géométries*, 217).

⁴⁹ The same vineyard as before is involved, though henceforth abandoned.

Table 7
(continued)

Date	Place	Area (modioi)	Price	Price per unit	Source
1397	Constantinople	16 $\frac{2}{3}$ mouzouria	500 hyperpyra	30 hyperpyra	MM 2: 349 ⁵⁰
1400	Constantinople	3 mouzouria	120 hyperpyra	40 hyperpyra	MM 2: 558

The data are very dispersed before the Palaiologan period.⁵¹ When we exclude abandoned vineyards, prices range from 4 nomismata to 6 $\frac{1}{3}$ hyperpyra per modios.

Table 8
Wine Prices⁵²

Date	Place	Quantity	Price	Price per unit	Source
301	empire	1 xestes	30 denarii	$\frac{2}{3}$ solidus ⁵³	Diocletian, <i>Edict on Prices</i>
340	Egypt	1 xestes	1–1 $\frac{3}{4}$ talants	$\frac{1}{20}$ – $\frac{1}{30}$	Bagnall, <i>Currency</i> , 66
6th century	Egypt	1 xestes	$\frac{1}{500}$ solidus	$\frac{1}{25}$ solidus	<i>PCol VIII</i> 245
6th century	Egypt	63 angeia = 441 xestai	18 carats	$\frac{1}{32}$ solidus = $\frac{3}{4}$ carat	<i>PCairo</i> 67145
6th–7th centuries	Egypt	1,000 xestai	2 solidi–11 $\frac{1}{2}$ carats	$\frac{1}{32}$ solidus	<i>PSI X</i> 122
6th–7th centuries	Egypt	2,575 xestai	6 solidi–2 carats	$\frac{1}{21}$ solidus	<i>PMich XV</i> 743
606–608	Egypt	525 xestai	1 solidus–1 $\frac{1}{2}$ carats	$>\frac{1}{30}$ solidus	<i>SB I</i> 4505
613	Egypt	175 xestai	$\frac{1}{3}$ solidus– $\frac{1}{4}$ carat	$\frac{1}{30}$ solidus	<i>SB I</i> 4504
7th century	Egypt	220 xestai	22 $\frac{1}{2}$ carats	$\frac{1}{13}$ solidus	<i>PWisc I</i> 11

continued

⁵⁰ 16 $\frac{2}{3}$ mouzouria = modioi. This high price is explained by the date and the fact that the vineyard was close to the cistern of St. John Prodromos.

⁵¹ E. Schilbach (*Metrologie*, 254) provides some information about vineyard prices, but always using the same method—that of assuming the tax was set at $\frac{1}{24}$ of the price, which is only an indirect and uncertain indicator. Furthermore, the data supplied by the appendix of the *typikon* of Kecharitomene do not date from 1118, but from the first half of the 15th century (cf. P. Gautier, “Le typikon de la Théotokos Kécharitôménè,” *REB* 43 (1985): 148–49).

⁵² These calculations are based on an approximate rate of 20 xestai = one measure.

⁵³ First-quality wine is involved; second-quality wine was worth only $\frac{1}{3}$ solidus and the more ordinary kind $\frac{1}{6}$ solidus.

Table 8
(continued)

Date	Place	Quantity	Price	Price per unit	Source
743	Constantinople	1 xestes	½ nomisma (siege)	10 nomismata	Theophanes, 1:419–20
12th century	Constantinople	15 measures	10 manuelata	½ hyperpyron	Theodore Prodromos, v. 407 (see below, note 72)
1199	Constantinople	35 measures	9 hyperpyra, 2 keratia	¼ hyperpyron	Müller, <i>Documenti</i> , 77b
1271	Crete	200 mistati	20 hyperpyra	⅒ hyperpyron	<i>Scardon</i> no. 2
1271	Crete	100 mistati	10 hyperpyra	⅒ hyperpyron	<i>Scardon</i> no. 5
1278/81	Crete	50 mistati	5 hyperpyra	⅒ hyperpyron	<i>Marcello</i> , no. 252
1278/81	Crete	400 mistati	40 hyperpyra	⅒ hyperpyron	<i>Marcello</i> , no. 323
1278/81	Crete	100 mistati	8 hyperpyra	⅓ hyperpyron	<i>Marcello</i> , no. 112
1278/81	Crete	150 mistati	12 hyperpyra	⅓ hyperpyron	<i>Marcello</i> , no. 350
1289	Kaffa	3 vegeti	500 asperi	10 hyperpyra	Balard, <i>Outre-mer</i> , 1:390
1289	Kaffa	23 vegeti	6,750 asperi	17¼ hyperpyra	Balard, <i>Outre-mer</i> , 1:393
1290	Kaffa	28 vegeti	3,815 asperi	8 hyperpyra	Balard, <i>Outre-mer</i> , 1:352
1300	Crete	20 mistati	6 hyperpyra	⅓ hyperpyron	<i>Pizolo</i> , no. 1
1300	Crete	46 mistati	4 hyperpyra	⅒ hyperpyron	<i>Pizolo</i> , no. 78
1300	Crete	100 mistati	4 hyperpyra, 8 grossi	⅕ hyperpyron	<i>Pizolo</i> , no. 137
1300	Crete	60 mistati	5 hyperpyra	⅓ hyperpyron	<i>Pizolo</i> , no. 220
1300	Crete	110 mistati	9 hyperpyra	⅓ hyperpyron	<i>Pizolo</i> , no. 279
1300/1302	Crete	635 mistati	65 hyperpyra	⅒ hyperpyron	<i>Brixano</i> , no. 472
1300/1302	Crete	50 mistati	5 hyperpyra	⅒ hyperpyron	<i>Brixano</i> , no. 27
1300/1302	Crete	100 mistati	15 hyperpyra	⅓ hyperpyron	<i>Brixano</i> , no. 200
mid-14th century	Chalkidike	540 measures	180 hyperpyra	⅓ hyperpyron	Schreiner, <i>Finanz</i> , 82
1350	Constantinople	100 mistati (Triglia)	67 hyperpyra	⅓ hyperpyron	<i>Italiens à Byzance</i> , 122
1367	Crete	102 mistati ⁵⁴	25 hyperpyra	¼ hyperpyron	Santschi, <i>Mémoriaux</i> , no. 104
1368	Crete	1,873 mistati	374 hyperpyra	⅓ hyperpyron	Santschi, <i>Crète</i> , no. 41
1372	Crete	ca. 1,500 mistati	94 hyperpyra	⅓ hyperpyron	Santschi, <i>Crète</i> , no. 276

continued

⁵⁴ Half of the wine was Malvasia. The price of barrels is known: 30 barrels of 1,200 mistati = 108 hyperpyra (1368; E. Santschi, *Régestes des arrêts civils et des mémoriaux (1363–1399) des archives de Crète* [Venice, 1976], no. 98); 100 empty barrels were worth 186 besants (1368; *ibid.*, no. 129).

Table 8
(continued)

Date	Place	Quantity	Price	Price per unit	Source
1372	Crete	100 mistati	20 hyperpyra	$\frac{1}{5}$ hyperpyron	Santschi, <i>Crète</i> , no. 735
1394	Crete	100 mistati (Malvasia)	27 hyperpyra	$\frac{1}{4}$ hyperpyron	Santschi, <i>Crète</i> , no. 1423
1394–95	Crete	100 mistati	60 hyperpyra	$\frac{3}{5}$ hyperpyron	Santschi, <i>Crète</i> , no. 1610
early 15th century	unknown	540 metra	180 hyperpyra	$\frac{1}{3}$ hyperpyron	Schreiner, <i>Finanz</i> , 82
early 15th century (?)	unknown	100 metra	670 aspra	$\frac{2}{5}$ hyperpyron	Schreiner, <i>Finanz</i> , 201
1436	Constantinople	9 mistati (Chios)	4 hyperpyra	$\frac{4}{9}$ hyperpyron	<i>Badoer</i> , 47, 21
1436	Constantinople	12 mistati (Greek wine)	6 hyperpyra	$\frac{1}{2}$ hyperpyron	<i>Badoer</i> , 82, 38
1437	Constantinople	100 mistati	45 hyperpyra	$\frac{4}{9}$ hyperpyron	<i>Badoer</i> , 199, 2
1439	Constantinople	100 mistati (Malvasia)	40 hyperpyra	$\frac{2}{5}$ hyperpyron	<i>Badoer</i> , 604, 3

Although we have no prices for vineyards during the early Byzantine period, they appear to have been stable from the end of the tenth to the end of the thirteenth century, with a tendency to rise slightly during the fourteenth century in the region of Thessalonike. This seems to have been a normal development, given the contemporary rise in wine prices and the role this metropolis played in the wine market.

The wine market depended on several factors: age, type of vine, and, above all, provenance. During the early Byzantine period, Diocletian's Edict on Prices distinguished three qualities of wine, which varied in price from 1 to 2. During the later period, the Malvasia vintage enjoyed, as might be expected, a premium of 25% or more. Indeed, any overall analysis of the evolution of wine prices must take these quality differences into account. Moreover, any comparison of prices in late antiquity with those in the Middle Ages is hampered by the long gap that extends from the seventh to the twelfth century, and even to the thirteenth, should one be trying to compare prices in different wine-producing regions.

The average price of Egyptian wine mentioned in papyri works out at $\frac{1}{500}$ solidus per xestes, that is, ca. $\frac{1}{25}$ solidus per 10 metric liters,⁵⁵ whereas by the end of the thirteenth century, Cretan wine was worth 1 hyperpyra for 10 measures. However, one cannot conclude that this constituted a price rise, given that the currency was depreciated and, especially, that the quality of the wine was very likely not the same. After

⁵⁵ L. Casson, "Wine Measures and Prices in Byzantine Egypt," *TAPA* 70 (1939): 1–16; Durliat, *De la ville antique*, 505–9.

1300, prices clearly did rise. Cretan wine tripled in price in the course of a century. In the mid-fourteenth century, the wines of Chalkidike and Bithynia (Triglia, though this appears to have been a vintage wine) were even more expensive, with the former costing $3\frac{1}{2}$ hyperpyra and the latter $6\frac{7}{10}$ hyperpyra for 10 measures. The rise was even more spectacular in the case of wine than of wheat. During the first half of the fifteenth century, prices at Constantinople remained high, between 4 and 6 hyperpyra for 10 measures, according to quality.

It is difficult to calculate the revenue from a vineyard without knowing its yield. However, one example taken from the notarial archives in Crete suggests a high gross income: John Salagari owed money to Peter Venerio, who, to repay him, sold a vineyard with a house and winepress for 550 hyperpyra. The vineyard was purchased by a third party, Signolo, for 301 hyperpyra. The latter stated that he was prepared to return the property if Salagari repaid him, once the value of the grape harvest had been deducted; this amounted to 205 hyperpyra, leaving 96 hyperpyra to be paid ($301 - 205 = 96$ hyperpyra).⁵⁶

This may not be a representative example, but we are able to make another calculation. We know from an eleventh-century document that a vineyard worth 100 nomismata produced 124 measures of wine. The price of wine at that date is not known. If we take into account the only known price prior to 1204, that of 35 measures for 9 hyperpyra 2 keratia, this works out at a production worth 32 hyperpyra, that is, at an income:capital ratio of 1:3.⁵⁷ Of course, the price listed in 1199 represents a retail price in Constantinople, and prices in the wine-producing regions were lower. However, given that the monasteries on Mount Athos had their own boats, we can see what profits they derived from their vineyards.

The gross yield of a capital investment of 100 nomismata in a vineyard is not perceptibly higher than the yield from the same capital invested in arable land, but the cultivated area was far smaller; a vineyard measuring 15–20 modioi brought in as much as 200 modioi of land sown with wheat.

⁵⁶ End of the 14th century, Santschi, *Crète*, no. 1140.

⁵⁷ Vineyard yields would need to be known. Starting from the above figures, a vineyard worth 100 nomismata would comprise an area of, at most, 15 modioi, with a production of 12 hectoliters, in other words, a yield of less than 10 hl/ha. This yield seems low compared with what we otherwise know. In *PCairo Masp* I 67104 (530), a leasing contract for a vineyard at Aphrodito for ten years stipulates an annual rent of 126 angeia of 7 xestai each per aroura. If the Italic xestes of 0.54 liters was meant, this would have corresponded to 17.3 hl/ha and if, as with other *karponia* contracts, the harvest was divided into shares of $\frac{2}{3}$ for the landowner and $\frac{1}{3}$ for the tenant, the overall yield would have been 26 hectoliters per hectare. D. Rathbone, *Economic Rationalism and Rural Society in Third Century A. D. Egypt* (Cambridge, 1991), 247 n. 51. Cf. data in A. Tchernia, *Le vin de l'Italie romaine: Essai d'histoire économique d'après les amphores* (Rome, 1986), 359–60, and R. Duncan Jones, *The Economy of the Roman Empire: Quantitative Studies*, 2d ed. (Cambridge, 1982), 44–45).

Olive Trees and Oil

Table 9
Prices for Olive Trees⁵⁸

Date	Place	Quantity	Price	Price per unit	Source
13th century	Asia	22 olive trees	16 nomismata kaina	$\frac{2}{3}$ hyperpyron	MM 4:201
1231	Asia	18 olive trees	5 hyperpyra	$\frac{1}{3}$ – $\frac{1}{4}$ hyperpyron	MM 4:61
1232	Asia	24 olive trees	7 hyperpyra	$\frac{1}{3}$ hyperpyron	MM 4:135
1232	Asia	27 olive trees	8 nomismata hexagia	$\frac{1}{3}$ hyperpyron	MM 4:78
1247	Asia	11 olive trees	7 trikephala	$1\frac{1}{10}$ hyperpyra	<i>Vatopédi</i> , 1: no.15
1247	Asia	15 olive trees	17 trikephala	$1\frac{1}{10}$ hyperpyra	<i>Vatopédi</i> , 1: no.15
1259	Asia	11 olive trees	4 hyperpyra hexagia	$\frac{2}{5}$ hyperpyron	MM 4:133
1263	Asia	3 olive trees + field	3 hyperpyra	1 hyperpyron	MM 4:124
1274	Asia	44 olive trees	42 nomismata	1 hyperpyron	MM 4:116
1279	Asia	7 olive trees	5 hyperpyra hexagia	$\frac{5}{7}$ hyperpyron	MM 4:137
1281	Asia	40 olive trees + field	36 hyperpyra	$\frac{9}{10}$ hyperpyron	MM 4:135
1281	Asia	10 olive trees	9 hyperpyra	$\frac{9}{10}$ hyperpyron	MM 4:136
1281	Asia	14 olive trees + oaks	10 hyperpyra	$\frac{2}{3}$ hyperpyron	MM 4:122–23
1282	Asia	7 olive trees	6 hyperpyra hexagia	$\frac{6}{7}$ hyperpyron	MM 4:130

Table 10
The Price of Oil

Date	Place	Quantity	Price	Price of one measure of 10 liters	Source
?	Egypt	45 xestai	1 nomisma	$\frac{1}{2}$ nomisma	<i>POxy</i> I 1920
6th century	Egypt	1 kentenaarion	4 or 5 nomismata	1 nomisma	<i>PLond</i> IV 1375
	Egypt	40 xestai	1 nomisma	$\frac{1}{2}$ nomisma	<i>POxy</i> XIV 1753
579	Egypt	33 xestai (ἐλαίον σπάνιον)	19 carats	ca. $10\frac{1}{2}$ carats	<i>POxy</i> XIV 2052

continued

⁵⁸ Information provided in Schilbach, *Metrologie*, 260.

Table 10
(continued)

Date	Place	Quantity	Price	Price of one measure of 10 liters	Source
7th century	Egypt	80 xestai	40 carats	ca. 9 carats	<i>PBaden</i> 95
6th century	(Hermopolites)	12 xestai	6 carats	ca. 9 carats	<i>PBaden</i> 95
(according to Gascon)		43 xestai	22 carats	ca. 9 carats	<i>PBaden</i> 95
		37 xestai	12½ carats	ca. 6 carats	<i>PBaden</i> 95
743	Constantinople	5 litrai	1 nomisma (very severe siege)	18 nomismata	Theophanes 1:419
late 9th century	Constantinople	1 litra	1 obol	[1/16 nomisma] = 1½ carats	Genesios, 4:34 ⁵⁹
1201	Constantinople	34 migliaia	1,000 hyperpyra	>½ hyperpyron	Morozzo della Rocca and Lombardo, 2: no. 456
1300	Crete	1 migliaia ⁶⁰	44 hyperpyra	2/3 hyperpyron	<i>Pizolo</i> , no. 156
1300	Crete	46 vaxieli	<250 hyperpyra	unknown	<i>Pizolo</i> , no. 556
1301–1302	Crete	42 vaxieli	692 hyperpyra	unknown	<i>Brixano</i> , no. 201
1436	Constantinople	1 laina	1 hyperpyron, 10 carats	2% hyperpyra	<i>Badoer</i> , 79, 31
1437	Constantinople	133.5 laina (Messina)	194 hyperpyra	2% hyperpyra	<i>Badoer</i> , 194, 19
1438	Constantinople	49.5 laina	55 hyperpyra	1% hyperpyra	<i>Badoer</i> , 412, 9

Oil Oil prices were always perceptibly higher than those for wine regardless of the period and the quality under consideration.⁶¹ The lowest price in the late period would have allowed no more than 20 liters to be purchased for 1 hyperpyron, which corresponds to average prices during the early Byzantine period.⁶² An olive tree's productivity depends on its age, on the density of its plantation, and on irrigation. During antiq-

⁵⁹ An exceptionally low price. In fact, one litra at about 0.571 for one "obol," that is, a follis at 1/288 nomisma, would have meant the measure was worth 1/16 nomisma.

⁶⁰ One migliaia was worth 683 liters.

⁶¹ In Diocletian's Edict on Prices, one may find variations on the order of one to four, according to quality.

⁶² Taking the devaluation of the coinage into account, it is one of those rare products that fell in price over the long term, though the regions involved (Egypt, Crete) were very different. In Jerusalem in the 10th century, a ratl of oil (2 kg?) was worth one dirham (Ashtor, *Prix et salaires*, 248). During times of high prices, 100 kg of oil in 1382 were worth 6 dinars in Alexandria, where imported Greek oil was sold in times of scarcity for 6.5 dinars a quintar, as opposed to 7.5 for Italian oil (*ibid.*, 318).

uity, a tree provided 1–4 liters of oil per year, depending on conditions.⁶³ If we suppose that the most expensive olive trees were also the most productive, this means that an olive tree costing 1 hyperpyron could produce 4 or 5 liters of oil worth at least ¼ or ½ hyperpyron, for an annual yield of 20–25%, an added bonus being that maintaining the trees was less labor-intensive than work in vineyards, for instance.

Livestock and Animal Produce

Table 11
The Price of Livestock

Date	Type	Price	Source
	<i>Bovidae</i> (cattle)		
10th century	cattle	3 nomismata	<i>De cer.</i> 1:695
1067	buffalo	2–3 dinars	Bianquis, <i>Syrie</i> , 585
1155/56	10 cows	1 nomisma	Kinnamos, 154 ⁶⁴
late 12th century	pair of oxen	7 hyperpyra	<i>Iviron</i> , 2:9
1271	draft ox	9 hyperpyra	MM 4:403
1271	cattle	16 hyperpyra	<i>Scardon</i> , no. 196
1271	cattle	13½ hyperpyra	<i>Scardon</i> , no. 306
1271	cattle	55 hyperpyra	<i>Scardon</i> , no. 307
1278/81	cattle	15–20 hyperpyra	<i>Marcello</i> , nos. 327, 337, 559
1290	cow about to calve	5 hyperpyra	<i>Lavra</i> , 2: no.87
1290	cow and calf	10 hyperpyra	<i>Lavra</i> , 2: no. 88
1300	cattle	16–20 hyperpyra	<i>Pizolo</i> , nos. 47, 108, 120, 121, 215, 216
early 14th century	cattle	10 hyperpyra	<i>Diegesis</i>
1321	ox	4 hyperpyra	<i>Zographou</i> , no. 19
	<i>Ovidae</i> (sheep)		
7th–8th centuries	ewe	½–⅓ nomisma	<i>Plond</i> IV 1447, 1448 ⁶⁵
11th century	sheep	⅙ nomisma	Schilbach, <i>Quellen</i> , 60 ⁶⁶
11th century	lamb	⅒ nomisma	Schilbach, <i>Quellen</i> , 60
1155/56	sheep	⅓ of one cow	Kinnamos, 154
1278	sheep	½ hyperpyron	Tsirpanlis, 153, no. 26

continued

⁶³ Average figure, taking into account the fact that the trees produce every two years. Cf. *La production du vin et de l'huile en Méditerranée*, ed. M.-C. Amouretti and J.-P. Brun (= *BCH*, suppl., 26) (Athens, 1993), 553–54.

⁶⁴ Very low price, the result of a massive influx of animals following the spate of pillages in southern Italy.

⁶⁵ And *PLond* IV 1375.

⁶⁶ This was a fiscal estimate, which could not have been very different from the market price.

Table 11
(continued)

Date	Type	Price	Source
1278/81	sheep	$\frac{2}{5}$ hyperpyron	<i>Marcello</i> , nos. 291 and 326
1292	sheep (Constantinople)	$\frac{7}{8}$ hyperpyron	Embassy of Edward I
1292	lamb (Trebizond)	$\frac{1}{3}$ – $\frac{2}{5}$ hyperpyron	Embassy of Edward I
1300	ewe in lamb	$\frac{1}{3}$ hyperpyron	<i>Pizolo</i> , nos. 478, 623, 662
1302	ewe	$\frac{2}{5}$ hyperpyron	<i>Brixano</i> , 248 and 403
early 14th century	sheep	1 hyperpyron	<i>Diegesis</i>
early 14th century	lamb	$\frac{3}{5}$ hyperpyron	<i>Diegesis</i>
	<i>Capridae</i> (goats)		
1292	goat	8 carats	Embassy of Edward I
	<i>Porcidae</i> (pigs)		
early 5th century	pig	$\frac{1}{2}$ solidus	PL 41:841
7th–8th centuries	pig	$\frac{2}{3}$ –1 nomisma	<i>PLond IV</i> 1448, 13–33
1199	pig	2 hyperpyra, 4 keratia	Müller, <i>Documenti</i> , 78a
1292	piglet	$\frac{1}{8}$ – $\frac{1}{3}$ hyperpyron	Embassy of Edward I ⁶⁷
April 1438	pig (+ various)	$3\frac{2}{3}$ hyperpyra	<i>Badoer</i> , 280, 39
	<i>Equidae</i> (horses)		
late 4th century	horse for army	18–23 solidi	Jones ⁶⁸
4th–5th centuries	donkey	3 solidi	<i>POxy</i> 1905
6th–7th centuries	donkey	3–8 solidi	<i>POxy</i> 922
late 6th century	donkey	3 solidi	PG 87:2968
749	“horse at 60 solidi”	12 nomismata	Farfa 2: no. 24 ⁶⁹
10th century	mule	15 nomismata	<i>De cer.</i> , 1:458/459
10th century	draft horse	12 nomismata	<i>De cer.</i> , 1:458/459
early 12th century	mule	17 hyperpyra	<i>Iviron</i> , 2:7
late 12th century	mule	15 hyperpyra	<i>Iviron</i> , 2:9
early 12th century	donkey	$2\frac{1}{6}$ hyperpyra	Chomatianos, no. 84
1245	“horse at 180 aspra” [$\frac{1}{12}$ hyperpyron?]	15 hyperpyra	<i>Vazelón</i> , no. 84

continued

⁶⁷ The only price for pork provided by Ashtor (*Prix et salaires*, 315) is $\frac{1}{2}$ ducat in 1484.

⁶⁸ A. H. M. Jones, *The Later Roman Empire, 284–602: A Social, Economic, and Administrative Survey*, 3 vols. (Oxford, 1964), 1:625–26. This was the commuted price for horses intended for the army and supplied by Numidia, the horse-breeding region.

⁶⁹ “Cavallos VI pro solidos LX et aurum coctum pensans solidos CCCXI.” If solidi struck in Rome at a title of ca. 20% at this date are intended, the value corresponds to that given in *De ceremoniis aulae byzantinae*, ed. J. J. Reiske, 2 vols. (Bonn, 1829–30).

Table 11
(continued)

Date	Type	Price	Source
1270/74	mule	>3 hyperpyra	<i>Xèropotamou</i> , no. 9
1276	warhorse	>20 hyperpyra (Crete) ⁷⁰	Thiriet, <i>Délibérations</i> , 1:38
1289	warhorse	72 hyperpyra	Thiriet, <i>Délibérations</i> , 1:58
1289	warhorse	90 hyperpyra	Thiriet, <i>Délibérations</i> , 1:58
1300	horse	20 hyperpyra	<i>Pizolo</i> , no. 428
1300	horse	25 hyperpyra	<i>Pizolo</i> , no. 522
1300	horse	33 hyperpyra	<i>Pizolo</i> , no. 534
1300/1302	packhorse	16 hyperpyra	<i>Brixano</i> , no. 75
1300/1302	horse	65–91 hyperpyra	<i>Brixano</i> , nos. 126, 157, 229
1300/1302	horse	60 hyperpyra	<i>Brixano</i> , no. 357
1321	horse	16 hyperpyra	<i>Chilandar</i> , no. 59
1321	horse	12 hyperpyra	<i>Chilandar</i> , no. 69
1384	horse	14 hyperpyra	<i>Docheiariou</i> , no. 49, 1.34
1384	<i>parhippin</i> (draft horse)	6 hyperpyra	<i>Docheiariou</i> , no. 49, 1.34
1413	warhorse	>90 hyperpyra (Crete)	Thiriet, <i>Délibérations</i> , 2:1505
1419/26	female mule	70–88 hyperpyra (Crete)	Maltézou, 341
1436	bay horse belonging to Badoer	30–40 hyperpyra	<i>Badoer</i> ; 81, 17; 82, 11
1438	the same, sold	21 hyperpyra 18 carats	<i>Badoer</i> ; 374, 13; 377, 2
1438	gray horse belonging to Badoer	60 hyperpyra	<i>Badoer</i> ; 355, 2
1438	the same, sold with saddle, cloth, etc.	36 hyperpyra	<i>Badoer</i> ; 763, 13–14

The accounts drawn up by the embassy that Edward I sent to the Ilkhan of Persia provide a few supplementary prices for poultry. When in Constantinople, the English travelers procured a hare for 3 $\frac{1}{3}$ carats, a swan for 8 carats, a duck for 3 carats, a partridge for 2 carats, some chickens for 2 $\frac{1}{3}$ carats each,⁷¹ and some geese for 9 $\frac{1}{3}$ carats each. Geese were a little less expensive at Trebizond (5–8 carats).

Livestock prices developed along the same lines as other prices, with a rise at the start of the fourteenth century. Cattle were expensive, but their price also varied according to region. In Macedonia, near Thessalonike, they were cheaper than in Crete,

⁷⁰ Feudatories in Crete were not supposed to own a horse worth less than 20 hyperpyra.

⁷¹ *PLond* IV 1375 and 1414 give a price of $\frac{1}{20}$ nomisma per chicken.

Table 12
Prices for Animal Products

Date	Place	Quantity	Price	Source
Meat				
301	empire	1 pound	12 denarii (1 pound = $\frac{1}{83}$ solidus)	<i>Edict on Prices</i>
after 430	Egypt	1 pound	$\frac{1}{114}$ solidi	<i>PAmst</i> I 77
May 1439	Constantinople	1 cantar of salt meat (pork)	3 hyperpyra (1 pound = $\frac{3}{100}$ hyperpyron)	<i>Badoer</i> , 324, 651, 2
Fish				
12th century	Constantinople	10–12 mackerel	1 “follis” (= tetarteron)	Tzetztes, <i>Ep.</i> 57
12th century	Constantinople	8 or 9 small tunny fish	1 follis (minimum price)	Theodore Prodrornos ⁷²
1436	Amisos	2 bote (barrels) of mackerel prior to salting or 19 <i>mieri</i> (at 1 hyperpyron 18 carats for 1 <i>miere</i>) =	$33\frac{1}{4}$ hyperpyron + salt = 3 hyperpyra 1 carat. Wholesale price	<i>Badoer</i> , 88, 13
1437	Constantinople	1 bota of 1,170 salted mullet	purchased 16 hyperpyra 14 carats = 1 mullet \pm $\frac{1}{70}$ hyperpyron = $2\frac{3}{4}$ tornese	<i>Badoer</i> , 117, 2
1437	Amisos	1 bota of 6,000 salted mackerel	est. 20 hyperpyra 19 carats = 1 mackerel = $\frac{1}{288}$ hyperpyron = 2 folari	<i>Badoer</i> , 334, 13–14
Cheese				
1278/81	Crete	1,000 pounds	23 hyperpyra	<i>Marcello</i> , no. 129
1278/81	Crete	700 pounds (+ 300 pounds of wool)	19 hyperpyra	<i>Marcello</i> , no. 93
1300	Crete	1,000 pounds	17 hyperpyra	<i>Pizolo</i> , nos. 170, 332
1300	Crete	1,000 pounds	19 hyperpyra	<i>Pizolo</i> , no. 617
1301	Crete	180 pounds	2 hyperpyra	<i>Brixano</i> , no. 420
1388	Crete	100 pounds	51 hyperpyra	Santschi, <i>Mémoriaux</i> , no. 1223

continued

⁷² *Poèmes prodromiques en grec vulgaire*, ed. D.-C. Hesselting and H. Pernot (Amsterdam, 1910), 3: v. 269–72.

Table 12
(continued)

Date	Place	Quantity	Price	Source
Wool				
1300	Crete	500 pounds	6 hyperpyra 7 grossi	<i>Pizolo</i> , no. 16
1300	Crete	1,000 pounds	13 hyperpyra	<i>Pizolo</i> , no. 170
Hides, Cattle				
1281	?	200 hides	>165 hyperpyra	Bratianu, <i>Notaires</i> , no. 67
1281	?	13 hides	>10 hyperpyra	Bratianu, <i>Notaires</i> , no. 98
1289	Kaffa	100 pounds of hides	66–73 asperi	Balard, <i>Outre-mer</i> , 1: nos. 366, 367, etc.
1352	Crete	100 pounds (buffalo)	18 hyperpyra	<i>Zaccharia de Fredo</i> , no. 15
1352	Crete	100 pounds	10½ hyperpyra	<i>Zaccharia de Fredo</i> , no. 102
1352	Crete	100 pounds ⁷³	9 hyperpyra	<i>Zaccharia de Fredo</i> , no. 104
1352	Crete	100 pounds	10 hyperpyra	<i>Zaccharia de Fredo</i> , no. 111
Hides, Sheep				
1271	Crete	60 hides	4 hyperpyra	<i>Scardon</i> , no. 37
1271	Crete	50 hides	3½ hyperpyra	<i>Scardon</i> , no. 72
1271	Crete	50 lambskins	2 hyperpyra	<i>Scardon</i> , no. 140
Hides, Various				
1289	Kaffa	1,000 vair skins	2,400 asperi	Balard, <i>Outre-mer</i> , 1: nos. 53 and 132
1290	Kaffa	1 dyed goatskin	9 asperi barichati	Balard, <i>Outre-mer</i> , 1: no. 893
Silk				
1020	Italy	1 pound raw silk	2½ dinars	Guillou ⁷⁴

continued

⁷³ Given that the contract provided for delivery of 41 hides weighing 600 pounds, we deduce that one hide weighed ca. 15 pounds and was worth 1½ hyperpyra.

⁷⁴ A. Guillou, "Production and Profits in the Byzantine Province of Italy (Tenth to Eleventh Centuries): An Expanding Society," *DOP* 28 (1974): 94 n. 8, according to the Cairo Geniza documents.

Table 12
(continued)

Date	Place	Quantity	Price	Source
1289	Sougdaia	1 pound genoese	<4 hyperpyra	Balard, <i>Outre mer</i> , 1: nos. 118, 151, 152
1300	Crete	1 pound	4 hyperpyra 8 grossi	<i>Pizolo</i> , no. 296
1300	Crete	4 pounds 1 ounce	18 hyperpyra 18 grossi	<i>Pizolo</i> , no. 470
1300/1302	Crete	1 pound	3 hyperpyra 4 grossi	<i>Brixano</i> , no. 61
1300/1302	Crete	2 pounds + 1 sacco	8 hyperpyra 1 grosso	<i>Brixano</i> , no. 150
1300/1302	Crete	2 pounds	7 hyperpyra	<i>Brixano</i> , nos. 319 and 563
1352	Crete	10 pounds	55 hyperpyra	<i>Zaccharia de Fredo</i> , no. 35
1381	Peloponnese	1 pound	6 hyperpyra	Jacoby ⁷⁵
1436/37	Trebizond	1 pound "stravai" or "talani" silk	153 asperi = 4¼ hyperpyra	<i>Badoer</i> , 42, 19; 308, 29
1437	Constantinople	1 pound "lezi" silk	4½ hyperpyra	<i>Badoer</i> , 166, 36
1437	Constantinople	1 pound "talani" silk	4½ hyperpyra	<i>Badoer</i> , 166,39

which, when we compare the natural conditions, was only normal. Sheep were worth twenty or twenty-five times less than cattle. The few pig prices from the medieval period show that these were fairly expensive animals, given that they had no use apart from being butchered. Horses were quite another matter, since their value depended on how they were used. Draft horses could be found for 10 hyperpyra or more, whereas warhorses or parade horses were worth more than 50 hyperpyra, though no prices have been found to compare with those offered by Arab amirs for exceptional horses.⁷⁶ Note that the price of warhorses in the fourth century is not perceptibly different from that for similar animals during the Palaiologan period. The accounts of Edward I's embassy in 1292 suggest that prices for provisions were lower in a small provincial town such as Trebizond than in the capital.

Conclusion

While the gross return on capital invested in agricultural enterprises seems to have been high, it is difficult to calculate the level of net revenues when we know little about the amounts invested by the peasants. However, we can say that in the thirteenth and fourteenth centuries, a Cretan who wanted to possess a pair of oxen paid the equiva-

⁷⁵ D. Jacoby, "Silk Production in the Frankish Peloponnese: The Evidence of Fourteenth-Century Surveys and Reports," in *Travellers and Officials in the Peloponnese: Descriptions, Reports, Statistics. In Honor of Sir Steven Runciman* (Monemvasia, 1994), 56.

⁷⁶ An Iraqi amir's horse was worth 1,000 dinars; Ashtor, *Prix et salaires*, 60.

lent of 150 measures of wheat (about 30 hyperpyra). When the beasts died, he recovered their hides, worth 2 hyperpyra. We also know the price of a plowshare: in 1352 Nicholas Syrianos ordered 100 plowshares (*vomerii*) from ironworkers in Candia, each to weigh between 5 and 6 pounds. Given that 100 pounds of worked iron cost as much as 14 hyperpyra 8 grossi, the price of one plowshare can be calculated as 1 hyperpyron.⁷⁷ Unfortunately, we do not know how many modioi of land this type of plowshare was capable of plowing.

Prices for Nonagricultural Products

Prices Paid for People

Table 13
Ransoms for Persons of Rank and for Common People

Persons of Rank				
Date	Person/Place	Status	Price	Source
528	Constantiolos	<i>magister militum</i>	10,000 nomismata	Malalas, 438
614–615	Palestine	“200 men and women”	12,000 nomismata (60 each)	Vie S. Jean l’Aum, §9
ca. 806	Cyprus	archbishop	2,000 dinars	<i>al-Tabari</i> , 30:262
925	Oria/Apulia	governor	5,000 dinars	Sharf ⁷⁸
998	Antioch	son of Dalassenos	6,000 dinars	Canard ⁷⁹
1014	Aleppo	Mansur b. Lulu	50,000 dinars	Bianquis, <i>Syrie</i> , 317 ⁸⁰
1032	Antioch	axiarch	500 dinars	Yahya of Antioch, PO 47:350–51
1066	Edessa	<i>doux</i> of the city	20,000 nomismata	Bar Hebraeus, 217–18
ca. 1073	Isaac Komnenos	<i>doux</i> of Antioch	thousands of nomismata	Bryennios, 155
ca. 1075	Isaac Komnenos	<i>doux</i> of Antioch	20,000 nomismata	Bryennios, 207
after 1081	G. Maurokatakalon	<i>doux</i>	40,000 hyperpyra	<i>Alexiade</i> , 2:84

continued

⁷⁷ *Zaccharia de Fredo, notaio in Candia (1352–1357)*, ed. A. Lombardo (Venice, 1968), no. 22. We also know the price of raw iron. A blacksmith who had to manufacture plowshares purchased 1,047 pounds of iron at a price of 70 hyperpyra per 100 pounds (*ibid.*, no. 44, price confirmed in no. 49 and by another Cretan document of 1368: Santschi, *Crete*, no. 70; 75 hyperpyra per 100 pounds). We note that the value added by the craftsman’s labor was twice the price of the primary materials. Furthermore, we note that a small axe for splitting wood was worth 2/3 hyperpyron in 1438 (G. Badoer, *Il libro dei conti di Giacomo Badoer*, ed. U. Dorini and T. Bertelè (Rome, 1956), p. 280, 40).

⁷⁸ A. Sharf, “Shabbetai Donnolo as a Byzantine Jewish Figure,” in *Jews and Other Minorities in Byzantium* (in Hebrew) (Jerusalem, 1995), 162.

⁷⁹ M. Canard, “Les sources arabes de l’histoire byzantine aux confins des Xe et XIe siècles,” *REB* 19 (1961): 300.

⁸⁰ To this sum were added 120 pounds of silver metal (in pounds of Aleppo) and 500 items of clothing.

Table 13
(continued)

Date	Person/Place	Status	Price	Source
ca. 1100	Bohemond	prince of Antioch	100,000 besants	Albert of Aix, RHC, HOcc, 612
before 1118	C. Gabras	<i>doux</i> of Chaldia	30,000 hyperpyra	Bar Hebraeus, 249
1119	Arbantenos	<i>strategos?</i>	15,000 besants	Orderic Vitalis ⁸¹
mid-12th century	unknown	son of a <i>wali</i>	2,000 dinars	Usāmah, trans. Hitti, 109 ⁸²
1183	Isaac Komnenos	<i>doux</i> of Cyprus	30,000 besants	Rudt de Collenberg ⁸³
1185	Eustathios	metropolitan of Thessalonike	4,000 hyperpyra	Eustathios of Thessalonike ⁸⁴
ca. 1200	M. Kamytzes	<i>doux</i>	14,400 hyperpyra	Choniates, 533
ca. 1300	Notaras	<i>sebastokrator</i>	6,050 hyperpyra	<i>Brixano</i> , no. 215
late 14th century	anonymous	son of sultan	100,000 hyperpyra	Gregoras, 3:505
2d half of 14th century	anonymous	governor of Adrianople	10,000 gold pieces	Mélikoff-Sayar, <i>Destan</i> , 105
Common People				
Date	Person/Place		Price	Source
447	prisoners redeemed from Attila		8–12 solidi	Priscos, <i>FHG</i> , 1:277
late 6th century	ransom for a monk captured in Egypt		25 nomismata	Moschos, PG 87.3:2796–97
late 6th century	ransom for 12,000 prisoners of the Avars		1 nomisma, reduced to 1/6	John of Antioch, frg. 106
966	3,000 soldiers redeemed by Sayf ad Dawla		80 dinars each	Yahya, PO 18:803
1010	man of Macedonia, prisoner of the Arabs		15 nomismata	<i>Iviron</i> , 1: no. 16
1369	3 prisoners of the Turks		25–90 ducats	Santschi, <i>Crète</i> , no. 170.

There are two quite distinct levels. Common people were redeemed in accordance with their abilities, for a few tens of gold pieces at most, in the period spanning antiquity and the end of the empire. Their price was on a par with that of slaves. Ransoms

⁸¹ Cited by P. Gautier, "L'obituaire du typicon du Pantocrator," *REB* 27 (1969): 261.

⁸² By way of comparison, the ransom for a Bedouin amounted to 50 gold pieces.

⁸³ Isaac was finally freed for twice this sum; see Rudt de Collenberg, "La Damsel de Chypre," *Byzantion* 38 (1968): 133–34; repr. in *Familles de l'Orient latin XIIe–XIVe siècle* (London, 1983), art. 1.

⁸⁴ The metropolitan found that the Normans were demanding 4,000 gold coins on the pretext that his metropolis had an income of 100 kentenaria (= 72,000 hyperpyra) (Eustathios of Thessalonike, *Espugnazione*, 108).

for high-ranking persons, however, were reckoned in thousands, even tens of thousands of gold pieces, in line with their personal wealth or their importance to the state. There appears to have been some inflation in prices from the eleventh century on, though antiquity is, admittedly, represented by only one figure.

Table 14
Prices for Slaves

Date	Place	Person	Price	Source ⁸⁵
Tenth Century				
944	empire	Russian fugitive	20 nomismata	Antoniadès-Bibicou
962	Aleppo	Arab adult male	36 nomismata	Kamal ad din ⁸⁶
962	Aleppo	Arab adult female	20 dinars	Kamal ad din
962	Aleppo	young Arab, male or female	16 dinars	Kamal ad din
before 963	empire	lost slave	>6 nomismata 4 miliaresia	Antoniadès-Bibicou
962	eastern frontier	Greek adult male	30 dinars	Antoniadès-Bibicou
962	eastern frontier	adolescent male or female	15 dinars	Antoniadès-Bibicou
before 1000	eastern frontier	Muslim prisoner	33 $\frac{1}{3}$ dinars	Muqqadasi ⁸⁷
Eleventh Century				
11th century	Syria	young girl	2 dinars (abundance)	Bianquis, <i>Syrie</i> , 585
before 1050	empire	slave	20 nomismata	Peira, Zepos, <i>Jus</i> , 4:83–84
before 1059	East	slavewoman	400 nomismata	Will of Boilas
1059	Ephesos	slave	24 nomismata	Grumel ⁸⁸
Twelfth Century				
1134	southern Italy	affranchisement	13 nosmimata of Michael VII	Trinchera, 513
before 1200	empire	any slave	<1 pound of hyperpyra	Rhalles and Potles, <i>Σύνταγμα</i> , 2:500

continued

⁸⁵ Unless stated otherwise, references to slave prices prior to the 13th century are derived from H. Antoniadès-Bibicou, “Démographie, salaires et prix au XIe siècle,” *AnnalesESC* 27 (1972): 227–29.

⁸⁶ Cited in *Leonis Diaconi Caloënsis Historiae libri X*, ed. C. B. Hase (Bonn, 1828), 393. The prices are expressed in “denarii romani,” i.e., nomismata.

⁸⁷ *La meilleure répartition pour la connaissance des provinces*, trans. A. Miquel (Damascus, 1983) 209.

⁸⁸ V. Grumel, *Les registres des actes du patriarcat de Constantinople*, vol. 1.3 (Paris, 1989), no. 887.

Table 14
(continued)

Date	Place	Person	Price	Source
Thirteenth Century				
1281	Pera	slavegirl (age 10)	14 hyperpyra	Bratianu, <i>Notaires</i> , no. 69
1281	Pera	white slavewoman	31 hyperpyra	Bratianu, <i>Notaires</i> , no. 87
1281	Pera	white slave	23 hyperpyra	Bratianu, <i>Notaires</i> , no. 88
1281	Pera	slavegirl (age 12)	25 hyperpyra	Bratianu, <i>Notaires</i> , no. 100
1281	Pera	freed slave	17 hyperpyra	Bratianu, <i>Notaires</i> , no. 114
1281	Pera	slave (age 12)	28 hyperpyra	Bratianu, <i>Notaires</i> , no. 115
1281	Pera	Abkhazi slavewoman	28 hyperpyra	Bratianu, <i>Notaires</i> , no. 120
1281	Pera	white slavewoman	29 hyperpyra	Bratianu, <i>Notaires</i> , no. 126
1281	Pera	boy (age 6–7)	6 hyperpyra 12 carats	Bratianu, <i>Notaires</i> , no. 132
1281	Pera	boy (age 6–7)	20 hyperpyra	Bratianu, <i>Notaires</i> , no. 143
1281	Pera	slavegirl (age 5–6)	7 hyperpyra	Bratianu, <i>Notaires</i> , no. 144
1281	Pera	boy (age 8–9)	16 hyperpyra	Bratianu, <i>Notaires</i> , no. 148
1289/90	Kaffa	slave	25–40 hyperpyra	Balard, <i>Outre-mer</i> , 1: (average)
1297	Ragusa	slave	22 hyperpyra	Krekić, no. 49
Fourteenth Century				
1300	Crete	slavewoman	18 hyperpyra	<i>Pizolo</i> , no. 173
1300	Crete	slave	24 hyperpyra (affranchisement)	<i>Pizolo</i> , no. 340
1300	Crete	slave	20 hyperpyra	<i>Pizolo</i> , no. 349
1300	Crete	2 affranchised slaves	80 and 50 hyperpyra	<i>Pizolo</i> , nos. 448, 449
1300	Crete	3 Turkish slaves	65 hyperpyra for all 3	<i>Pizolo</i> , no. 539
1300–1302	Crete	a batch	18–22 hyperpyra	<i>Brixano</i> , nos. 264–72

continued

Table 14
(continued)

Date	Place	Person	Price	Source
1317	Crete	Greek slave	11 hyperpyra	Rubió i Lluçh, 107
1350	Constantinople	Tatar slavewoman	49 hyperpyra	<i>Italiens à Byzance</i> , 115
1350	Constantinople	Tatar slave	26 hyperpyra	<i>Italiens à Byzance</i> , 126
1350	Constantinople	Tatar slavewoman	60 hyperpyra	<i>Italiens à Byzance</i> , 131
1350	Constantinople	Tatar slave	36½ hyperpyra	<i>Italiens à Byzance</i> , 132
1350	Constantinople	Tatar slavewoman	63 hyperpyra	<i>Italiens à Byzance</i> , 132
1350	Constantinople	Tatar slavewoman	55 hyperpyra	<i>Italiens à Byzance</i> , 133
1350	Constantinople	slavewoman	63 hyperpyra	<i>Italiens à Byzance</i> , 135
1350	Constantinople	Tatar slavewoman	50 hyperpyra	<i>Italiens à Byzance</i> , 136
1350	Constantinople	Tatar slavewoman	45 hyperpyra	<i>Italiens à Byzance</i> , 136
1350	Constantinople	Tatar slavewoman	36 hyperpyra	<i>Italiens à Byzance</i> , 137
1350	Constantinople	Tatar slavewoman	40 hyperpyra	<i>Italiens à Byzance</i> , 137
1350	Constantinople	Tatar slavewoman	42 hyperpyra	<i>Italiens à Byzance</i> , 139
1350	Constantinople	Tatar slavewoman	32 florins	<i>Italiens à Byzance</i> , 139
1350	Constantinople	2 Tatar slavewomen	99 hyperpyra	<i>Italiens à Byzance</i> , 140
1350	Constantinople	Tatar slave	27 hyperpyra	<i>Italiens à Byzance</i> , 143
1350	Constantinople	Tatar slavegirl (age 10)	48 gold hyperpyra	Balard, <i>Outre-mer</i> , 2: no. 10
1360	Kilia	Tartar and other slave girls (aged 12–20)	24–60 hyperpyra	Balard, <i>Outre-mer</i> , 2: nos. 17, 50, 56
1360/61	Cyprus	slaves	25–30 hyperpyra	<i>Boateriis</i> (average)
1357/63	Cyprus	Turkish slave	90 besants	Richard ⁸⁹

continued

⁸⁹ J. Richard, "Les comptes du collecteur apostolique en Chypre (1357–1363)," *Ἐπετηρὶς τοῦ Κέντρου Ἐπιστημονικῶν Ἑργῶν* 13/16 (1984–87): 1–47.

Table 14
(continued)

Date	Place	Person	Price	Source
1357/63	Cyprus	Greek slave	123 besants 12 denarii	Richard
1362	Constantinople	slavewoman	70 hyperpyra	<i>Italiens à Byzance</i> , 94
1362	Constantinople	slavewoman	52 hyperpyra	<i>Italiens à Byzance</i> , 94
1362	Constantinople	slave	50 hyperpyra	<i>Italiens à Byzance</i> , 94
1381	Crete	slavewoman (average)	96 hyperpyra	Verlinden ⁹⁰
1381	Crete	slave (average)	64 hyperpyra	Verlinden
1382	Crete	slavewoman (average)	95 hyperpyra	Verlinden
1382	Crete	slave (average)	71 hyperpyra	Verlinden
1383	Crete	slavewoman (average)	95 hyperpyra	Verlinden
1383	Crete	slave (average)	90 hyperpyra	Verlinden
1390	Pera	emancipation of slavewoman	50 hyperpyra	<i>Italiens à Byzance</i> , 37
before 1400	Ragusa	slave	120–150 hyperpyra ⁹¹	Krekić, “Contributo”
Fifteenth Century				
1436/37	Constantinople	slavewoman	>100 hyperpyra	<i>Badoer</i> , 90, 13
		Abkhazi slavewoman	(91 hyperpyra)	<i>Badoer</i> , 90, 13
1436/37	Constantinople	slave	70–90 hyperpyra	<i>Badoer</i> , <i>passim</i>
		Tatar slave	(82 hyperpyra)	<i>Badoer</i> , 91, 6–7
		Russian slave	(88 hyperpyra 14 carats)	<i>Badoer</i> , 578, 3
		Tatar slave	(100 hyperpyra)	<i>Badoer</i> , 272, 26
1443	Pera	Tatar adult male	98 hyperpyra	Roccatagliata, 1: no. 12
1443	Pera	Greek adult male	2,200 asperi	Roccatagliata, 1: no. 53

When one takes the devaluation of the hyperpyron into account, slave prices are seen to have remained remarkably stable from the Justinianic period until the beginning of the fourteenth century. This stability was all the more remarkable in that these prices were the outcome of a real market, partly international in nature. Prices subsequently rose, particularly after 1350, perhaps due to the effect of the plague on the population, despite the pirate warfare in which Turks and Latins were actively engaged.

⁹⁰ All these references are derived from C. Verlinden, *L'esclavage dans L'Europe médiévale* (Ghent, 1977), 2:840–68.

⁹¹ B. Krekić, “Contributo allo studio degli schiavi levantini e balcanici a Venezia (1388–1398),” in *Studi in memoria di Federigo Melis*, vol. 2 (Naples, 1978).

Prices of Luxury Products

Table 15
Prices of Luxury Products and Movable Goods

Date	Type of Object	Price	Source
Clothes			
late 6th century	silk clothes	72 solidi	John of Ephesos, chap. 55, PO 19:193
early 7th century	cover	36 solidi	Vie S. Jean l'Aum., chap. 19
940	purple belts and imitations	1½, 1, and ¾ nomismata	<i>De cer.</i> , 470 (App.)
940	silk tunics (δωδεκὰ πῶλα, δεκάλια, ἐζαλια, ἐζήπῶλα)	12–6 nomismata	<i>De cer.</i> , 1:473 and <i>Book of the Eparch</i> , chap. 8
1022	veil with silver clasp	2 gold pieces	<i>Mastaura</i> , 124
1022	one cover and one cloak	1 gold piece	<i>Mastaura</i> , 124
1022	two women's dresses	1 gold piece	<i>Mastaura</i> , 124
1022	embroidered woman's gown (?)	2 gold pieces	<i>Mastaura</i> , 124
1057	coat presented to the abbey of Farfa	100 pounds of silver	Guillou, 109 ⁹²
	<i>scaramangion</i> embroidered with gold thread	20 nomismata	Petrucci, <i>Codice diplomatico</i> , no. 79
1199	gray surcoat	6¾ hyperpyra	Müller, <i>Documenti</i> , 77a
1199	<i>fustano</i> (one or several?) for squires	4 hyperpyra 20 carats	Müller, <i>Documenti</i> , 77b
early 13th century	3 silk caftans	72 hyperpyra	Chomatianos, no. 19
early 13th century	a τζόχα	50 hyperpyra	Chomatianos, no. 19
early 13th century	saffron-colored garments	10 hyperpyra	Chomatianos, no. 84
early 13th century	a coat and a saffron-colored garment	6 hyperpyra	Chomatianos, no. 84
early 13th century	a coat and a small hat	4½ hyperpyra	Chomatianos, no. 84
13th century	a woolen coat	several hyperpyra	Karpozilos
13th century	a coat from Trebizond with fur trimming	12 nomismata	Karpozilos
1272	Sandals (<i>kaligia</i>)	2 aspra	<i>Vazelôn</i> , no. 86, p. 50
1272	caftan	12 aspra	<i>Vazelôn</i> , no. 86, p. 50

continued

⁹² Argyros, duke of Italy, offered the abbey of Farfa a precious coat, made entirely of silk shot with gold thread (*holosericum auroque textum*) worth more than 100 pounds of very fine silver: *Il Chronicon Farfense di Gregorio di Catino*, cited in Guillou, "Production and Profits," 109.

Table 15
(continued)

Date	Type of Object	Price	Source
1292	a wolfskin pelisse	4 hyperpyra 12 carats	Embassy of Edward I
1292	a rabbitskin pelisse	2 hyperpyra	Embassy of Edward I
1292	a red fur	6 hyperpyra	Embassy of Edward I
1292	a lambskin fur	1 hyperpyron 12 carats	Embassy of Edward I
1292	4 sheets	5 hyperpyra 15 carats	Embassy of Edward I
1292	a pair of common shoes	17 carats	Embassy of Edward I
14th century	some shoes	4 ducats	Schreiner, <i>Finanz</i> , no. 3, § 136
1292	a pair of shoes for a chaplain	1 hyperpyron 15 carats	Embassy of Edward I
1292	shoes	8–22 carats	Embassy of Edward I
1292	boots for a cook	9 carats	Embassy of Edward I
1300	a <i>chlamyda</i>	14 hyperpyra	<i>Pizolo</i> , no. 258
14th century	two garments	12 ducats	Schreiner, <i>Finanz</i> , no. 3, § 136
14th century	garment (τσούπα)	40 hyperpyra	Schreiner, <i>Finanz</i> , no. 8, § 2
14th century	linen garment (καβάδης)	7 hyperpyra	Schreiner, <i>Finanz</i> , no. 8, § 2
1365	a new τσουπά and a new φουστάνη	3 hyperpyra	Ferrari, "Vatican," 265
1384	a silk φουστάνιον	6 hyperpyra	<i>Docheiariou</i> , no. 49, l. 17
1384	2 <i>roucha</i>	18 hyperpyra	<i>Docheiariou</i> , no. 49, l. 17
1394	ambassador's garment (Mistra)	50 gold ducats	Thiriet, <i>Régestes</i> , 2:77
1424	a dress (τσούπα)	10 hyperpyra	Schreiner, <i>Finanz</i> , no. 35, § 4
1436	a hat (<i>bereta negra</i>) from near Venice	6 hyperpyra	<i>Badoer</i> , 280, 9; 329, 5
1436	cloth for a coat (Badoer)	33 hyperpyra	<i>Badoer</i> , 13, 23
1436	a black coat (Bragadin)	15 hyperpyra	<i>Badoer</i> , 53, 5
1437	making a coat (Badoer)	4 hyperpyra	<i>Badoer</i> , 280, 23
1438	100 <i>panze</i> for its fur trim	8 hyperpyra	<i>Badoer</i> , 485, 25
1439	for having it lined	6 hyperpyra	<i>Badoer</i> , 716, 8–9
1437	cloth and sewing for 5 shirts for slaves	5½ hyperpyra (1 = 1½ hyperpyra)	<i>Badoer</i> , 346, 22–25
	1 shirt each at	1 hyperpyron 6 carats	<i>Badoer</i> , 346, 31

continued

Table 15
(continued)

Date	Type of Object	Price	Source
1437	14 <i>pichi</i> of cloth for 3 shirts for slaves	2 hyperpyra (1 = 1 hyperpyron)	<i>Badoer</i> , 273, 31
1437	3 <i>pelize</i> , 3 <i>sciavine</i> (jackets), 3 pairs of shoes for slaves	13 hyperpyra (for one slave = 4 $\frac{1}{3}$ hyperpyra)	<i>Badoer</i> , 272, 32
1438	1 <i>peliza</i> , 1 <i>sciavina</i> (jacket), 1 <i>bereta</i> , and 1 pair of shoes for slavegirl (age 12)	3 hyperpyra 15 carats	<i>Badoer</i> , 362, 13
1439	1 <i>sciavina</i> , 1 <i>gonela</i> , and 1 pair of shoes for slave (age 13)	2 hyperpyra 15 carats	<i>Badoer</i> , 624, 7
1453	3 coats (marten, fox)	230 hyperpyra of Pera	Roccatagliata, I: no. 35
Household Goods ⁹³			
1022	small cauldron	1 gold piece	<i>Mastaura</i> , 124
1365	cauldron	1 hyperpyron	Ferrari, "Vatican," 265
1022	cooking pot with feet	1 gold piece	<i>Mastaura</i> , 124
1384	2 cooking pots	4 hyperpyra	<i>Docheiariou</i> , no. 49, l. 30
1292	kitchen knife	6 carats	Embassy of Edward I
1384	3 wine carafes	2 hyperpyra	<i>Docheiariou</i> , no. 49, l. 30
1384	mortar and vase	2 hyperpyra	<i>Docheiariou</i> , no. 49, l. 31
1384	one new and one worn carpet	5 and 9 hyperpyra	<i>Docheiariou</i> , no. 49, l. 31
1300–1302	featherbed	20 hyperpyra	<i>Brixano</i> , no. 449
1393	featherbed	25 hyperpyra	Santschi, <i>Crète</i> , no. 1425
14th century	bedcover	20 hyperpyra	Schreiner, <i>Finanz</i> , no. 8, § 2
15th century	2 bedcovers	28 and 26 hyperpyra	Schreiner, <i>Finanz</i> , no. 35
1365	2 covers (1 linen and silk, 1 Egyptian)	2 hyperpyra	Ferrari, "Vatican," 265
1365	2 linen sheets	2 hyperpyra	Ferrari, "Vatican," 265
1365	2 pillows	4 hyperpyra	Ferrari, "Vatican," 265
15th century	2 pillows	5 hyperpyra	Schreiner, <i>Finanz</i> , no. 35
15th century	2 pillows	12 hyperpyra	MM 2:406

continued

⁹³ For the late period, there are some documents from Frankish Cyprus containing very precise information about the furnishings and equipment in one house: J. Richard, "Guy d'Ibelin, O.P., évêque de Limassol," *BCH* 74 (1950): 108–33; idem, "Les comptes" (as above, note 89).

Table 15
(continued)

Date	Type of Object	Price	Source
1384	3 cotton pillows	8–18 hyperpyra	<i>Docheiariou</i> , no. 49
14th century	some bolsters (μαξελάρια)	11 ducats	Schreiner, <i>Finanz</i> , no. 34 ⁹⁴
1436	Badoer's furniture: 1 cypresswood table, 2 stools, 1 cathedra	4 hyperpyra 11 carats	<i>Badoer</i> , 45, 12
1438	cypresswood coffin	13 hyperpyra	<i>Badoer</i> , 376, 4
1436	3 <i>carpete bianche</i> (tablecloths ?)	3 hyperpyra	<i>Badoer</i> , 47, 20
Jewels and Silver Goods			
9th century	2 pairs of earrings	10 liters of gold	<i>DAI</i> , 244
1365	2 pairs of earrings and 2 rings	12 hyperpyra	Ferrari, "Vatican," 265
1384	earrings (pearls and precious stones)	48 hyperpyra	<i>Docheiariou</i> , no. 49, l. 27
1384	pendants (pearls and precious stones)	36 hyperpyra	<i>Docheiariou</i> , no. 49, ll. 26–7
15th century	4 pairs of earrings, each weighing 4 exagia	?	Schreiner, <i>Finanz</i> , no. 6, § 27
9th century	silver table decorated with gilt animals	10 liters of gold	<i>DAI</i> , 244
1022	silver bracelet	2 gold pieces	<i>Mastaura</i> , 124
1022	2 bracelets (weight 18 sicla)	2 gold pieces	<i>Mastaura</i> , 124
1098	gold bracelet weighing 2 liters and 12 exagia	?	<i>Iviron</i> , 2: no. 47
1365	silver bracelets (19 exagia)	4 hyperpyra	Ferrari, "Vatican," 265
15th century	pendants	> 150 hyperpyra	MM 2:559
1098	a medallion (<i>enkolpion</i>) of 24 exagia	?	<i>Iviron</i> , 2: no. 47
late 11th century	silver cup of 60 exagia	?	<i>Iviron</i> , 2: <i>Synodikon</i> , 7, no. 115
1096	silver cup	130 staters	<i>Alexiade</i> , 2: 220
1300	silver cup with 37 nebrates	13 hyperpyra	<i>Pizolo</i> , no. 648
1314	silver-gilt belt	8 hyperpyra	<i>Chilandar</i> , no. 27
1364	silver belt	18 hyperpyra	Santschi, <i>Crète</i> , no. 14
1366	belt	300 hyperpyra	<i>Vatopedi</i> , ed. Mošin, no. 1

continued

⁹⁴ Also to be found are silk coverlets for a price of 10–16 ducats, 4 pairs of sheets worth 16 ducats, and mattresses (στρώματα) at 10 ducats (gold or silver ?).

Table 15
(continued)

Date	Type of Object	Price	Source
1370	2 silver belts (together 49½ uncie)	> 61 hyperpyra	Santschi, <i>Crète</i> , no. 188
14th–15th centuries	belt	4 nomismata	Schreiner, <i>Finanz</i> , no. 75
15th century	“Frankish” belt	50 hyperpyra	MM 2:419
15th century	belt weighing 8 uncie (213 g)	?	Schreiner, <i>Finanz</i> , no. 6, § 27
1368	ring with diamond	40 hyperpyra	Santschi, <i>Crète</i> , no. 91
14th century	one balas ruby	1,522 hyperpyra	Thiriet, <i>Régestes</i> , 1: no. 1410 ⁹⁵
15th century	a collar	90 hyperpyra	MM 2:563
1314	2 gold rings of 4 exagia	?	<i>Chilandar</i> , no. 27
1384	6 rings	10 hyperpyra	<i>Docheiariou</i> , no. 49
15th century	2 gold rings weighing 4 exagia	?	Schreiner, <i>Finanz</i> , no. 6, § 27
14th–15th centuries	one ring	2 nomismata 19 kokkia	Schreiner, <i>Finanz</i> , no. 75
1436	5 silver spoons weighing 4 ounces 6 solidi at 28 hyperpyra per pound	10 hyperpyra 12 carats	<i>Badoer</i> , 13, 20
1436	8 silver spoons weighing 6 ounces 5 solidi at 30 hyperpyra per pound	17 hyperpyra 2 carats	<i>Badoer</i> , 44, 2
1437	2 small cups and 2 spoons	25 hyperpyra	<i>Badoer</i> , 300, 19–21
Icons and Liturgical Objects			
514–523	gold paten weighing 5 pounds ⁹⁶	360 nomismata	<i>LP</i> , 1:271 ⁹⁷

continued

⁹⁵ T. Bertelè, “I gioielli della corona bizantina dato in pegno alla Repubblica Veneta nel secolo XIV e Mastino II della Scala,” in *Studi in onore di Amintore Fanfani*, 6 vols. (Milan, 1962), 2:89–177. The crown jewels were pawned to Venice for the sum of 33,000 ducats in 1343. Constantine XI also pawned a ruby for 9,000 hyperpyra (*ibid.*, 138).

⁹⁶ Justin I presented Pope Hormisdas with a paten decorated with hyacinths, and many other precious objects.

⁹⁷ As we know, the *Liber Pontificalis* provides an impressive list of gifts presented by Constantine and his successors and various popes to the churches of Rome, thereby supplying their liturgical equipment, and also itemizes the nature and weight of the metal involved. See the commentary by M. Mundell Mango, “The Monetary Value of Silver Revetments and Objects Belonging to Churches, A.D. 300–700,” in *Ecclesiastical Silver Plate in Sixth-Century Byzantium*, ed. S. A. Boyd and M. M. Mango (Washington, D.C., 1992), 123–36.

Table 15
(continued)

Date	Type of Object	Price	Source
523–526	gold paten weighing 20 pounds	1,440 nomismata	<i>LP</i> , 1:272
523–526	gold chalice weighing 5 pounds	360 nomismata	<i>LP</i> , 1:272
625–638	revetments and chandeliers for St. Peter's	1,224 pounds of silver	<i>LP</i> , 1:323
687–701	cross (with emeralds)	20 pounds	<i>LP</i> , 1:375 ⁹⁸
687–701	gold chalice of 20 pounds	1,440 nomismata	<i>LP</i> , 1:375
1143	lamp of 20 gold pounds (Holy Sepulcher)	1,440 hyperpyra	Kinamos, 25
late 13th century	2 candlesticks	1,000 hyperpyra ⁹⁹	Delehay, <i>Typika</i> , 94–95
late 13th century	chandelier	5 pounds of silver	Delehay, <i>Typika</i> , 95
11th century	gilt icon	30 nomismata	Petrucci, <i>Codice diplomatico</i> , no. 76
early 13th century	icon	7 nomismata	Chomatianos, no. 84
1384	7 icons	2–7 hyperpyra	<i>Docheiariou</i> , no. 49
14th century	one icon at 24 uncie of ducats	24 hyperpyra	<i>Lavra</i> , 3: no. 147, l. 3
14th–15th centuries	2 icons and 4 books	78 hyperpyra	Schreiner, <i>Finanz</i> , no. 36
15th century	icon	10 hyperpyra	MM 2:504

Garments, Jewels, and Icons

We have assembled here everything of value from a couple's possessions. Our knowledge is very limited, given that there are no inventories containing estimates of goods, apart from a few documents that are more detailed: one marriage contract involving Jews of Mastaura on the Meander dated 1022; the inventory of a minor's possessions at the beginning of the thirteenth century; a dowry preserved in a Vatican manuscript; the inventory of the reconstituted dowry of a widow named Maria Deblitzene (1384), and a marriage contract from the fifteenth century. Except for the third document, which concerns the Thracian aristocracy, these sources relate to ordinary citizens.

In 1022, each item of the wife's property, her luxury vessels, dresses, veil, coverlet, rings, and earrings, was valued at between half and two gold pieces. In 1384, the possessions that reverted to Maria Deblitzene were not fundamentally different, with the

⁹⁸ The gift to St. Peter's in Rome also included a silver dais weighing 120 pounds and six silver lamps weighing 170 pounds.

⁹⁹ Two others for 500 hyperpyra.

exception of her icons. The prices given were higher than in 1022, but it is difficult to work out what corresponds to a possible price increase and what is due to the superior quality of the objects, reflecting the lady's higher social standing. We see that most of the objects that adorned Maria's home—chests, coverlets, carpets, and even the icons—were each worth less than 10 hyperpyra. Only one silk coverlet was valued, when new, at 32 hyperpyra, though, being worn, it was worth only half its original value. Jewels were more expensive, although ordinary rings were worth 1–2 hyperpyra, sometimes less. Earrings, pendants, and brooches were reckoned in tens of hyperpyra and did not lose value over time. According to the *Book of the Eparch*, a goldsmith was not allowed to acquire more than a pound of unminted gold without declaring it to the eparch.¹⁰⁰

Books also belonged within the category of precious objects and were valued most frequently at between one and ten gold pieces. One gold piece would buy the commonest Psalter, and bargains could be found for less. Intellectuals, however, were the greatest consumers and would lend each other books and copy them if they were unable to buy.¹⁰¹

Items of exceptional quality obviously commanded exceptional prices, such as parade clothing of the kind presented by Argyros, which was worth ca. 600 nomismata.¹⁰² The imperial jewels of the Palaiologoi that were pawned to the Commune of Venice included precious stones, notably balas rubies worth more than 1,000 hyperpyra. Church treasure included very valuable items, such as the altar front in Monte Cassino that was worth 36 pounds of gold in the eleventh century,¹⁰³ or the gold cross decorated with precious stones and five pieces of the True Cross that was made for Helen, mother of Milutin, and cost 3,000 hyperpyra.¹⁰⁴ Michael Attaleiates gave his foundation a more modest endowment of furnishings including two lamps weighing 2 pounds of silver (ca. 12 nomismata). The monastery of the Kecharitomene was wealthier, having been founded by Empress Irene Doukaina, and possessed chalices and patens weighing a total of 35 pounds of silver, as well as a variety of other items used in the liturgy and worth several hundred hyperpyra.¹⁰⁵ In the first half of the twelfth century, a wealthy Georgian gave the monastery of Iveron 250 tetartera derived from the sale of a gold cross. As might be expected, churches were able to acquire more expensive icons than those owned by individuals.

¹⁰⁰ J. Koder, ed., *Das Eparchenbuch Leons des Weisen* (Vienna, 1991), 2.8.

¹⁰¹ V. Kravari, "Note sur le prix des manuscrits (IXe–XVe siècle)," in *Hommes et richesses* (as above, note 19), 2:375–84 (table of known prices, 381–82; the Paris. gr. 1475 of 126 *regata* = grossi, worth 12½ hyperpyra and not 21). In any case, we would need to relate the prices to the length of the manuscripts, as Follieri has done for the manuscripts of Arethas. None of them cost more than a pound of gold, but we do not know the price of manuscripts ordered by the emperor.

¹⁰² With a gold-silver ratio of 1:12.

¹⁰³ *Chronica Monasterii Casinense*, ed. H. Hoffmann, MGH SS 7 (Hannover, 1980), 439.

¹⁰⁴ Stojanović, *Stari Srpski Zapisi i Natpisi*, no. 45. This cross was so valuable that its price was engraved on it: 2,000 hyperpyra for the relics and 1,000 hyperpyra for making the gold cross decorated with precious stones.

¹⁰⁵ Gautier, "Kécharitôménè," 155.

Conclusion on Prices

When some of the temporary or seasonal fluctuations that were sometimes significant¹⁰⁶ are excluded, it appears that many prices expressed in gold remained fairly stable from the sixth to the eleventh century and even at the beginning of the fourteenth century, the most notable being the price of land, wheat—to a lesser degree—and slaves. In Constantinople this apparent stability sometimes conceals temporary variations because the emperor, with the eparch as his intermediary, would try to maintain the apparent stability of basic food prices by modifying the quantity supplied for a given price (thus the weight of a loaf would vary according to the price of wheat).

Over and above these exceptional measures, we need to understand the mechanisms that were responsible for this enduring stability. In the case of wheat, given the importance in political terms of keeping the capital supplied, Basil I's policy clearly demonstrates his constant preoccupation with regulating the market, by opening the imperial stores in the event of a shortage to maintain the "normal" rate of $\frac{1}{12}$ nomisma per modios. This concern is also apparent in the way the state set limits on the profits that guilds were allowed to earn in the food trade, as recorded in the *Book of the Eparch*.¹⁰⁷ However, though public opinion attached great importance to the "just price" threshold, price rises were not kept wholly under control because market mechanisms tended to intervene in times of scarcity. Thus it is tempting to speculate that the production of the principal foodstuffs—as with the supply of the slave market—evolved in line with the growth in demand during this period. Though there was no marked rise in productivity, both the area of cultivated land and the volume of commercialized production increased, enabling it to meet the growing needs of a larger population.¹⁰⁸

The situation gradually changed with the advent of the thirteenth century, when the price rises observed in the case of several products coincided with the opening up of the Mediterranean market. From then on, the availability of new land for cultivation was limited. It may be concluded that the expanded trade had not been accompanied by adequate specialization and that the increase in productivity was not sufficient to meet the increased demand, from both the growing population and the developing urban centers in the East, as in the West.

Revenues

Most of our information relates to the salaries and payments that represented the main expense bearing on the state budget. Coins formed only part of these revenues; soldiers especially were paid in rations and, possibly, with a share of the booty. Thus,

¹⁰⁶ This is the situation that Psellos evoked in his version of the life of St. Auxentios (*Démonologie populaire, démonologie critique au XIe siècle, la vie inédite de S. Auxence*, ed. P. P. Ioannou [Wiesbaden, 1971], 74–75); cf. A. E. Laiou, "Exchange and Trade, Seventh–Twelfth Centuries," *EHB* 745.

¹⁰⁷ Cf. comments by A. E. Laiou, "Exchange and Trade, Seventh–Twelfth Centuries," *EHB* 735.

¹⁰⁸ Cf. Lefort, "Rural Economy," 310, and C. Morriison, "Byzantine Money: Its Production and Circulation," *EHB* 959–62.

though the tables below do not represent the entire revenues of officials, especially in the case of the military, they do offer a glimpse at the hierarchy of wages; the lacuna is due to the absence of sources between the tenth and thirteenth centuries.

Wages of Officials

Table 16
Wages and *Rogai*, Sixth–Tenth Centuries

Annual Wages in the African Prefecture, according to Justinian's Edict of 534 ¹⁰⁹	
prefect	100 pounds of gold = 7,200 solidi
<i>consilarii</i>	20 pounds of gold = 1,440 solidi
<i>cancellarii</i>	504 solidi
officials of the <i>officium</i> of the first office	
<i>numerarius</i>	46 solidi
his second	23 solidi
the 4th–6th, individually	11.5 solidi
the 7th–10th, individually	7 solidi
other heads of office (and heads of the <i>scholae</i> of the <i>exceptores</i> and the <i>chartularii</i>)	23 solidi
heads of other <i>scholae</i>	16 or 14 solidi
<i>nomenculatorii</i> (ushers) (12)	
head	16 solidi
subordinates (11)	9 solidi
<i>mittendarii</i> (tax collectors)	
head	14 solidi
the 2d–4th	11.5 solidi
the 46 others	9 solidi
<i>singularii</i> (bodyguards)	
head	14 solidi
the 2d–4th	14 solidi
the 46 others	9 solidi
doctors (5)	
chief doctor	99 solidi
partner	70 solidi
others	35 solidi
<i>grammatici</i> (2)	70 solidi
<i>sophistae: oratores</i> (2)	70 solidi

continued

¹⁰⁹ CIC 27.

Table 16
(continued)

Military Wages in the Sixth Century	
<i>dux</i> of Tripolitania and his men (same for <i>dux</i> of Byzacena)	1,582 solidi
their assessors, individually	56 solidi
the <i>primicerius</i>	33 solidi
the <i>numerarius</i>	28 solidi
each of their 4 <i>ducenarii</i>	23.5 solidi
each of the 6 <i>centenarii</i>	16.5 solidi
the 8 <i>biarchii</i> and 9 <i>circitores</i>	14 solidi
each of the 11 <i>semisales</i>	11.5
Wages of Important Officials in the Sixth Century ¹¹⁰	
the count of Armenia	700 solidi
<i>moderator</i> of Helenopontos	720 solidi
<i>moderator</i> of Phoenice Libanesis	720 solidi (10 pounds of gold)
<i>praetor</i> of Paphlagonia	725 solidi
<i>praetor</i> of Pisidia	800 solidi
the count of Isauria	800 solidi
<i>praetor</i> of Thrace	800 solidi
<i>moderator</i> of Arabia	1,080 solidi (15 pounds of gold)
proconsul of Cappadocia	1,440 solidi (20 pounds of gold)
a governor's assessor	72 solidi (1 pound of gold)
an <i>augustalis</i> of Alexandria	2,880 solidi (40 pounds of gold) ¹¹¹
Wages of <i>Strategoï</i> in the Ninth and Tenth Centuries	
<i>strategos</i> of the first category (Anatolikoi, etc.)	40 pounds of gold
<i>strategos</i> of the second category (Opsikion, etc.)	30 pounds of gold
<i>strategos</i> of the third category (Boukellarion, etc.)	20 pounds of gold
<i>strategos</i> of the last category (Seleukia, etc.)	5 pounds of gold

continued

¹¹⁰ All references are to E. Stein, *Histoire du Bas-Empire*, 2 vols. (Paris, 1949), 2:466–67.

¹¹¹ *Ibid.*, 478–79.

Table 16
(continued)

Annual Rogai of Soldiers of the <i>Tagmata</i> in 911 ¹¹²	
commander	144 nomismata
<i>topoteretes</i>	72 nomismata
count	36 nomismata
<i>kentarchoi</i>	24 nomismata
<i>pentekontarchos</i>	24 nomismata
<i>bandophoroi</i>	12 nomismata
<i>mandator</i>	12 nomismata
soldier	9 nomismata
Rogai of Sailors and Soldiers in 949 ¹¹³	
<i>tourmarches</i>	30 nomismata
<i>komestes kortes</i>	20 nomismata
<i>chartoularios</i> of the theme	20 nomismata
<i>domestikos</i> of the theme	20 nomismata
<i>droungarios</i>	20 nomismata
count	6 nomismata
soldier	3 nomismata
<i>naukleros</i> of the galleys	4 nomismata
sailor	3 nomismata

Alongside these payments were those attached to titles granted by the emperor, and other gratuities, notably gifts of land. Such titles were remunerative, since a simple *protospatharios* received 72 nomismata per year and a *magistratos* perhaps 16 or 20 pounds of gold (1,152 and 1,440 nomismata respectively) (*De cer.*, 696).

The soldiers and sailors of the *tagmata*, or central fleet, were distinctly better paid, as were the combatants of the Rus *tagma*, ca. 9 nomismata per person. The higher officers were well remunerated, according to rank and their theme's seniority, but they probably had to maintain a numerous following at their own expense, as was subsequently the case with the Venetian *bailo*. Our knowledge of the Byzantine military's revenues is limited due to our lack of information about the role of payments in kind (grain, clothes) and the numerous gratuities that some people received. However, it does seem clear that Byzantine soldiers were less well remunerated than their Muslim adversaries, although the actual length of a "month" of pay in Baghdad is not certain.

¹¹² These conjectural but likely figures have been established by W. Treadgold, "The Army in the Works of Constantine Porphyrogenitus," *RSBN*, n.s., 29 (1992): 106.

¹¹³ *De cer.*, 1:662.

Table 17
Levels of Pay in the Romania and in the Ottoman Empire in the 12th–15th Centuries

Date	Type of Fighter	Circumstances/ Place	Pay (hyperpyra/year)	Source
1259	soldier (<i>akrites</i>)	Asia Minor	oikonomia 40 hyperpyra	Oikonomides ¹¹⁴
1261	sailor	Asia Minor	21 hyperpyra	Oikonomides
1261	officer	Asia Minor	at least 36 hyperpyra	Oikonomides
1272	<i>stratiotes</i>	Asia Minor	24–36 hyperpyra	Oikonomides
1281	<i>crossbow man</i>	Pera	40 pounds Genoa	Bratianu, <i>Notaires</i> , no. 105
1286	<i>crossbow man</i>	Crete	120 hyperpyra	Borsari, <i>Crete</i> , 58
early 14th century	cavalryman of the great <i>allagion</i> of Thessalonike	obliged to bring 1 or 2 men	oikonomia 70–80 hyperpyra	Oikonomides
early 14th century	4 <i>stratiotai</i>	<i>pronoia</i> of 600 hyperpyra	150 hyperpyra	Vogel ¹¹⁵
1303	Catalan cavalryman	obliged to equip himself	288 hyperpyra ¹¹⁶	Oikonomides
1303	Catalan cavalryman	obliged to feed himself	144 hyperpyra	Oikonomides
1303	Catalan infantryman	as above	72 hyperpyra	Oikonomides
1342	<i>klazomenites</i> soldiers	on top of their pay	oikonomia 10–12 hyperpyra	Oikonomides
1344	mounted captain	Crete	240 hyperpyra	Thiriet, <i>Délibérations</i> , no. 508
ca. 1350	superior officers	empire	oikonomia 150–400 hyperpyra	Oikonomides
1358	plain captain	Crete	168 hyperpyra	Thiriet, <i>Délibérations</i> , no. 640
1358	mounted captain	Crete	240 hyperpyra	Thiriet, <i>Délibérations</i> , no. 640
1387	mounted sergeant	Crete	35 hyperpyra	Thiriet, <i>Régestes</i> , no. 717

continued

¹¹⁴ N. Oikonomides, "A propos des armées des premiers Paléologues et des compagnies de soldat," *TM* 8 (1981): 353–71.

¹¹⁵ K. Vogel, *Ein byzantinisches Rechenbuch des frühen 14. Jahrhunderts* (Vienna, 1968), no. 32. The *stratiotai* referred to here were undoubtedly officers.

¹¹⁶ We have one reference from an earlier period dealing with military equipment. In April 1205 a Latin count undertook to pay the sum of 800 hyperpyra in Constantinople, providing as surety 10 horses, 10 saddles, 10 shields, 10 breastplates, etc.; in other words, the equipment for 10 cavalymen. Thus each of them had to spend at least this sum in order to go to war. R. Morozzo della Rocca and A. Lombardo, *Documenti del commercio veneziano nei secoli XI–XII* (Torino, 1940; repr. 1971), no. 473).

Table 17
(continued)

Date	Type of Fighter	Circumstances/ Place	Pay (hyperpyra/year)	Source
1387	officer	Crete	200 hyperpyra	Thiriet, <i>Régestes</i> , no. 723
1387	<i>crossbow man</i>	Butrinto	144 hyperpyra	Thiriet, <i>Régestes</i> , no. 730
1394	<i>crossbow man</i>	Argos	168 hyperpyra	Thiriet, <i>Régestes</i> , no. 861
1394	sergeant	Argos	96 hyperpyra	Thiriet, <i>Régestes</i> , no. 861
1394	<i>crossbow man</i>	Crete	>120 hyperpyra	Santschi, <i>Mémoriaux</i> , no. 1533
1395	head <i>crossbow man</i>	Athens	216 hyperpyra	Thiriet, <i>Régestes</i> , no. 873
late 14th century	sergeant	Pera	84 hyperpyra	Balard, <i>Romanie</i> , 446
late 14th century	sergeant	Kaffa	54 hyperpyra	Balard, <i>Romanie</i> , 446
late 14th century	specialized soldier	Chios	104 hyperpyra	Balard, <i>Romanie</i> , 446
late 14th century	specialized soldier	Kaffa	144 hyperpyra	Balard, <i>Romanie</i> , 446
1401	sailor	Crete	102 hyperpyra	Thiriet, <i>Régestes</i> , no. 1012
1401	oarsman	Crete	78 hyperpyra ¹¹⁷	Thiriet, <i>Régestes</i> , no. 1012
1404	<i>crossbow man</i>	Crete	144 hyperpyra	Thiriet, <i>Régestes</i> , no. 1166
1404	archer	Crete	108 hyperpyra	Thiriet, <i>Régestes</i> , no. 1166
1423	soldiers	Thessalonike	72 hyperpyra	Thiriet, <i>Régestes</i> , no. 1898
1425	officer	Thessalonike	21 hyperpyra	Thiriet, <i>Régestes</i> , no. 1995
1425	soldier	Thessalonike	9 hyperpyra ¹¹⁸	Thiriet, <i>Régestes</i> , no. 1995

continued

¹¹⁷ The text states that the sailors had hitherto received only 7½ hyperpyra per month and the rowers 5½, with the result that these men were fleeing to Turkey, and Crete was being depopulated.

¹¹⁸ The pay for the “gentilhomme” and the “stratiote” guarding the walls of Thessalonike are expressed in aspra, 300 and 120 for one year, respectively. We have attributed a value of 14 aspra to

Table 17
(continued)

Levels of Pay in the Ottoman Army (Late Fifteenth Century)¹¹⁹

<i>aga</i> of the janissaries	> 100 aspra/day	3,600 hyperpyra/year
ordinary <i>aga</i>	> 60 aspra/day	2,000 hyperpyra
<i>spahioglu</i>	average: 20–25 aspra/day	> 1,000 hyperpyra
<i>silihdar</i>	10–20 aspra/day	240–480 hyperpyra
<i>garib</i>	5–6 aspra/day	180 hyperpyra
janissary	3–5 aspra/day ¹²⁰	72–120 hyperpyra

After 1261, soldiers on active service in the Romania enjoyed good incomes, which appear to have been higher than those previously available to the military, although we do need to take account of the fact that benefits in kind and gifts were growing scarcer. Specialized soldiers, such as the Catalans, were much in demand, and the state was prepared to go to exorbitant lengths to recruit them. Taking their cue from the Byzantines, the Ottomans granted their élite troops comparable levels of pay. In addition to these substantial fees, the Catalans, janissaries, and others also profited from loot in an age when there was no shortage of such opportunities for acquiring wealth.¹²¹

Table 18
Examples of Civilian Wages (6th–15 Centuries)

Date	Occupation	Place	Annual Wage	Source
?	worker	Egypt	12 nomismata	Irmischer
?	worker	Egypt	6½ nomismata	?
ca. 570	stone cutter	Egypt	< 12 nomismata	<i>ROC</i> 5 (1900): 256
576	notary	Egypt	28 nomismata	SPP, 8, 970
early 7th century	water carrier	Egypt	3 nomismata	Vie S. Jean l'Aum., 345
ca. 620	shopkeeper	Constantinople	15 nomismata	<i>Doctrina Jacobi</i> , V, 20

continued

the hyperpyron (believing that we are dealing with Turkish aspra; cf. Bertelè and Morriison, *Numismatique byzantine*, 88–89.

¹¹⁹ All references in P. Schreiner, "Eine zweite Handschrift des 'Ordo Portae' und der Wegbeschreibung in das Gebiet des Uzun Hasan," *SudöstF* 41 (1981): 15–16.

¹²⁰ To this sum were added one kaftan, one coat, and 3 aspra (2 hyperpyra) to purchase a bow.

¹²¹ E. Zachariadou, "S'enrichir en Asie Mineure au XIVe siècle," in *Hommes et richesses* (as above, note 19), 2:215–24.

Table 18
(continued)

Date	Occupation	Place	Annual Wage	Source
ca. 700	<i>misthios</i>	empire	[10 nomismata] ¹²²	<i>Farmer's Law</i> , § 22, 62
709	<i>naupegos</i>	Egypt	24 nomismata	<i>PLond</i> 14, 1910
709	carpenter	Egypt	16 nomismata	<i>PLond</i> 14, 1910
709	caulker	Egypt	18 nomismata	<i>PLond</i> 14, 1910
10th century	<i>protoasekretes</i>	Constantinople	> 30 nomismata	<i>De cer.</i> , 693
10th century	notary of the <i>asekretes</i>	Constantinople	> 20 nomismata	<i>De cer.</i> , 693 ¹²³
1047	<i>nomophylax</i>	Constantinople	288 nomismata	<i>ODB</i> , 1491
1136	chief doctor	Constantinople	7½ hyperpyra + 38 modioi of grain	"Pantocrator," 101
1136	doctor	Constantinople	3–6 hyperpyra + 30 modioi	"Pantocrator," 101
1136	servant	Constantinople	6 hyperpyra + 30 modioi	"Pantocrator," 103
1136	baker	Constantinople	5 hyperpyra + 30 modioi	"Pantocrator," 103 ¹²⁴
1182–85	provincial judge ¹²⁵	?	13–26 pounds of gold	Choniates, 330 ¹²⁶
1281	doctor ¹²⁷	Pera	40 hyperpyra	Bratianu, <i>Notaires</i> , no. 31

continued

¹²² "12 folles per day." Here the annual salary is estimated by assuming 288 folles to the nomisma and a minimum 20 days per month.

¹²³ The text of *De cerimoniis* explains that the *roga* secured by the *asekretes* and his notaries was in relation to the payment they had made. This *roga* was certainly quite inferior to their real income. The *asekretes* paid 12 pounds of gold, or as much as a *protospatharios*, who obtained in return an annual income of 1 pound of gold. These notaries were probably paid for each act, as were those attached to provincial judges (novel of Constantine VII, Zepos, *Jus*, 1:228) and the private notaries in the capital. On the latter group's honoraria, see above.

¹²⁴ The foundation was comprised of numerous personnel, whose salaries and doles are stipulated, but who were not necessarily employed full-time. The numerous and substantial gratifications awarded on the occasion of solemn feast days should also be taken into account.

¹²⁵ For the purposes of comparison, let us cite the 15 to 20 dinars that a judge earned every month at the beginning of Abbasid rule, a salary that was subsequently increased. A *muwtasib* in Baghdad received 100 dinars per month. Famous doctors, for their part, could earn as much as 1,000 dinars monthly. Ashtor, *Prix et salaires*, 65–69.

¹²⁶ Choniates gives the income of judges appointed by Andronikos I in mnai of silver coins. We have followed the conversion rates proposed in M. Hendy, *Studies in the Byzantine Monetary Economy, c. 300–1450* (Cambridge, 1985), 181.

¹²⁷ We do not know about druggists' revenues, but a Genoese man who required treatment spent 3 hyperpyra on medication in 1199. G. Müller, *Documenti sulle relazioni delle città toscane coll'Oriente critiano e coi Turchi fino all'anno MDCXXXI* (Florence, 1879), 77a.

Table 18
(continued)

Date	Occupation	Place	Annual Wage	Source
late 13th century	cook	Constantinople	10 hyperpyra	Delehay, <i>Typika</i> , 134
late 13th century	domestic servant	Constantinople	10 hyperpyra	Delehay, <i>Typika</i> , 134
late 13th century	doctor	Constantinople	16 hyperpyra	Delehay, <i>Typika</i> , 134 ¹²⁸
early 14th century	domestic servant	Constantinople?	9 or 10 hyperpyra ¹²⁹	Vogel, no. 93
1309	clerk	Crete	18 hyperpyra	Thiriet, <i>Délibérations</i> , 1: no. 1:196
1313	clerk	Crete	12 hyperpyra	Thiriet, <i>Délibérations</i> , 1: no. 1:289
1348	caulker, mason	Modon	50–65 hyperpyra	Thiriet, <i>Régestes</i> , 1: no. 209
1350	domestic servant	Constantinople	14 hyperpyra	<i>Italiens à Byzance</i> , 124–25
1351	blacksmith	Crete	150 hyperpyra	Thiriet, <i>Délibérations</i> , 1: no. 589
1351	doctor	Crete	250 hyperpyra	Thiriet, <i>Délibérations</i> , 1: no. 589
1352	construction worker	Crete	100 hyperpyra	Thiriet, <i>Délibérations</i> , 1: no. 591
1355	blacksmith	Crete	155 hyperpyra	Thiriet, <i>Délibérations</i> , 1: no. 621
1362	doctor	Crete	250 hyperpyra	Thiriet, <i>Délibérations</i> , 1: no. 689
1369	coral diver	Ragusa	4 hyperpyra/month	Krekić, no. 278
1369	coral diver	Kotor	5 hyperpyra/month ¹³⁰	Krekić, no. 278
1371	domestic servant	Ragusa	44 hyperpyra + wheat	Krekić, no. 287
1375	master stonecutter	Korone	50 hyperpyra + wheat	Thiriet, <i>Régestes</i> , 1: no. 559
1387	doctor	Corfu	200 hyperpyra	Thiriet, <i>Régestes</i> , 1: no. 730
1387	notary	Corfu	40 hyperpyra	Thiriet, <i>Régestes</i> , 1: no. 731

continued

¹²⁸ The same text informs us about the wages of the hospital staff. They varied from 14 hyperpyra (the director) to 5 (the laundress) and even 4 (*phlebotomos*).

¹²⁹ The servant received a pound in silver, which, given a gold-silver ratio of 1:12, would have been worth 6 old nomismata, or 9–10 current hyperpyra.

¹³⁰ The fisherman of Ragusa, who received 1 hyperpyron less each month than his counterpart in Kotor, was fed. This hyperpyron could thus represent the cost of feeding an adult for a month. Given that fishermen were employed during the summer months, it is not possible to estimate their annual incomes.

Table 18
(continued)

Date	Occupation	Place	Annual Wage	Source
1387	interpreter	Corfu	100 hyperpyra	Thiriet, <i>Régestes</i> , 1: no. 733
1391	doctor	Negroponte	200 hyperpyra	Thiriet, <i>Régestes</i> , 1: no. 801
1395	doctor (<i>phisicus</i>)	Corfu	260 hyperpyra	Thiriet, <i>Régestes</i> , 1: no. 890
1395	doctor (<i>chirurgicus</i>)	Corfu	100 hyperpyra	Thiriet, <i>Régestes</i> , 1: no. 890
1395	master of the works	Crete	450 hyperpyra	Thiriet, <i>Régestes</i> , 1: no. 894
1398	mason	Cerigo	44 hyperpyra + 48 modioi	Thiriet, <i>Régestes</i> , 1: no. 943
1398	carpenter	Cerigo	34 hyperpyra + 48 modioi	Thiriet, <i>Régestes</i> , 1: no. 943
1421	worker	Thessalonike	[72 hyperpyra] ¹³¹	<i>Iviron</i> , 4: no. 97
1425	doctor	galley of Thessalonike	144–192 hyperpyra	Thiriet, <i>Délibérations</i> , 2: no. 1283
1425	carpenter	galley of Thessalonike	ca. 100 hyperpyra	Thiriet, <i>Délibérations</i> , 2: no. 1283
1437	a woman to gut the fish	Constantinople	4 duchatei/day [at 240 d. per year/ca. 60 hyperpyra]	<i>Badoer</i> , 116, 6

We know the prices of a few services. In the sixth to seventh centuries, a medical consultation cost 1 tremissis, follow-up treatment cost a solidus, and a hernia operation at least 8 solidi.¹³² In 1292 a visit to the doctor cost $\frac{2}{3}$ hyperpyron.¹³³ In 1370 an abortion cost the party concerned a coat, an Alexandrian glass vase, and 5 hyperpyra.¹³⁴ In 1436 the expenses that Badoer recorded during his assistant Bragadin's illness, which lasted a month and proved fatal, included: nurse, 1 hyperpyron; barber to bleed him, $2\frac{1}{2}$ hyperpyra; burial, 10 hyperpyra 19 $\frac{1}{2}$ carats.¹³⁵ Between 1437 and 1438, Badoer consulted a doctor three times, spending between 6 and $7\frac{1}{2}$ hyperpyra.¹³⁶

Furthermore, we know that the cost of employing the grand interpreter at the end

¹³¹ The daily salary was 4 aspra. We have calculated the annual salary over 250 working days.

¹³² V. Crisafulli and J. W. Nesbitt, *The Miracles of St. Artemios: A Collection of Miracle Stories by an Anonymous Author of Seventh-Century Byzantium* (Leiden, 1997), 32, pp. 166–67; 23, pp. 138–39; 36, pp. 166–67. See other early Byzantine sources cited by H. Evert-Kappesowa, “The Social Rank of a Physician in the Early Byzantine Empire (IVth–VIIth Centuries A.D.),” in *Byzance et les Slaves: Etudes de civilisation. Mélanges Ivan Dujčev* (Paris, 1979), 150.

¹³³ “I conti dell’ambasciata al chan di Persia nel MCCXCII,” ed. C. Desimoni, *Atti della Società ligura di storia patria* 13 (1879).

¹³⁴ M.-H. Congourdeau, “Un procès d’avortement à Byzance au 14e siècle,” *REB* 40 (1982): 105.

¹³⁵ J. Lefort, “La brève histoire du jeune Bragadin,” in *Aetos: Studies in Honour of Cyril Mango*, ed. I. Ševčenko and I. Hutter (Stuttgart, 1998), 210–19.

¹³⁶ *Badoer*, p. 82, 19; p. 82, 30; p. 376, 31.

Table 19
Incomes of Ecclesiastics

Date	Position	Place	Salary (hyperpyra/year)	Source
10th century	copy clerk		32 hyperpyra	<i>Hommes et richesses</i> , 2:379
10th century	clerk	Chalke (Constantinople)	30 hyperpyra	Papagianni, 73–74
10th century	clerk	Hagia Sophia	24–28 hyperpyra	Papagianni, 75 ¹³⁷
1077	<i>hegoumenos</i>	Constantinople	15 nomismata + 48 modioi	Attaleiates, 69
1077	monastery bursar	Constantinople	10 nomismata + 36 modioi	Attaleiates, 79
1077	monk	Constantinople	6–7 nomismata + 30 modioi	Attaleiates, 69
late 11th century	<i>hegoumenos</i>	Bachkovo	12 hyperpyra	Pakourianos, 68
early 12th century	nun	Constantinople	7 hyperpyra + food	Gautier, “Kécharitôméné,” 115
early 12th century	<i>didaskalos</i>	Constantinople	6–9 nomismata ¹³⁸	Gautier, <i>REB</i> 31 (1975)
1136	priest (Eleousa)	Constantinople	15 hyperpyra + 25 modioi	“Pantocrator,” 79
1136	chanter	Constantinople	12 hyperpyra + 20 modioi	“Pantocrator,” 79
1136	priest (hospital)	Constantinople	7 hyperpyra + wheat + wine	“Pantocrator,” 103
late 13th century	priest	Constantinople	28 hyperpyra + 12 modioi	Delehayé, <i>Typika</i> , 110
late 13th century	hospital priest	Constantinople	12 hyperpyra + 24 modioi	Delehayé, <i>Typika</i> , 110
1305	clerk	Constantinople	6–8 hyperpyra ¹³⁹	Pachymeres, 2:559–61

¹³⁷ The priests and deacons in charge of the church of the Virgin founded by Eustathios Boilas received 26 nomismata. However, we do not know how many of them had to share this sum (P. Lemerle, *Cinq études sur le XIe siècle byzantin* [Paris, 1977], 23). In the countryside, priests who officiated in a village of more than 30 hearths were entitled to collect, as *kanonikon*, 1 nomisma, two silver coins, one sheep, 6 modioi of barley, six measures of wine, six measures of flour, and thirty fowls, the whole lot being worth less than six gold coins. A less important village meant a correspondingly smaller income (Zepos, *Jus*, 1:275–76). The priest was often a farmer as well.

¹³⁸ These *didaskaloi* received “3 pounds of nomismata lepton,” corresponding to a sum of 6 to 9 nomismata of good weight. Each one was also given 50 modioi of wheat.

¹³⁹ The clerks in the capital, who were “spoliated” by Athanasios, deemed the sum they received ridiculous.

of the twelfth century was entered as 3 hyperpyra in the list of expenses for the compilation of a bilingual chrysobull,¹⁴⁰ and, for work of a more frequent nature, the interpreter to the English embassy was paid 16 $\frac{2}{3}$ hyperpyra for four months, that is, 4 $\frac{1}{6}$ hyperpyra per month.¹⁴¹ Finally, we know that the notaries' honoraria, according to the *Book of the Eparch* (1.25), amounted to 12 keratia ($\frac{1}{2}$ nomisma) for an act relating to a sum not in excess of 100 nomismata, rising to one gold piece, and even two for the most important acts (Koder, *Das Eparchenbuch Leons des Weisen*, 1.25). Two keratia of every gold coin earned by a notary reverted to his scribe. We have a few rare prices for acts. The compiler of the will of Kale Pakouriane received 36 nomismata trachea (1098, *Iviron*, 2: no. 47). In Candia, a will was drawn up for 10 hyperpyra (in 1300, Pizolo, no. 646).

The distribution of both civilian salaries and ecclesiastical *rogai* reveals a strong hierarchy, with differentials of 1 to 10, even 15 or more.¹⁴² By comparing the salaries of different categories, we observe that civilian officials seem to have been at a disadvantage compared to the military. This impression is confirmed when we compare the patrimony worth 100 to 150 pounds of gold that Attaleiates accumulated in the course of his lengthy career as a judge, with the eight to ten times greater wealth of a military man such as Gregory Pakourianos, who was not initially more favored. However, Boilas fared no better than Attaleiates. With regard to the church, during the middle Byzantine period, metropolitans were lower in the scale of payments than high-ranking lay officials, such as judges, but we do not know how the incomes of dioceses evolved in relation to the expansion of the economy. The well-known case of the metropolitan of Thessalonike who had accumulated 33 kentenaria (247,600 nomismata) (Skylitzes, 402) is unique. In the private sector, craftsmen were paid scarcely less than specialists such as doctors and appear to have enjoyed incomes fairly similar to those of professional soldiers.

The more modest salaries hover at around 1 nomisma a month or 10 nomismata a year, though employment was not assured throughout the year. The permanent nature of this order of magnitude over a long period, from the sixth to the thirteenth century, corresponds to the stability that we observed with regard to the price of basic foodstuffs. This is not surprising, given that these prices served to determine the level of base salaries, the bulk of which was spent on food (ca. 80%). So we need to inquire into the living standards that they secured.

¹⁴⁰ P. Wirth, "Zur Frage der Herstellungskosten eines byzantinischen Chrysobulls," *JÖB* 42 (1992): 209–11 (the redactor received 4 hyperpyra and overall expenses amounted to 10 hyperpyra). Note, too, that these emoluments per act did not constitute the entire income of the people involved. The same document reveals that an interpreter, who had rendered service to numerous Pisans, received 20 hyperpyra on the occasion of his daughter's marriage in 1199. Müller, *Documenti*, 77a.

¹⁴¹ Embassy of Edward I.

¹⁴² We do not know about the income of bishops, but the rules relating to the liberalities offered by a newly elected bishop suggests that these revenues were, in the mid-Byzantine period, slightly inferior to those of contemporary *strategoï*. The legislation distinguished between several classes, according to whether the bishops received 10–30, 5–10, 3–5, 2–3, or less than 2 pounds of gold. E. Papagianni, *Τά οικονομικά του έγγαμου κλήρου στο Βυζάντιο* (Athens, 1986), 146.

Table 20
Examples of Regulation Rations

Early Byzantine Military Rations

<i>CPL</i> 199a (399) and <i>POxy</i> XVI, 2046 (563) ¹⁴³		<i>PFreer</i> 08 45c–d (Antaeopolis 533–543) ¹⁴⁴	
Daily Ration	Annual Equivalent	Daily Ration	Annual Equivalent
3 pounds bread [$\frac{1}{12}$ modios]	30 modioi wheat	6 pounds bread	60 modioi wheat
1 xestes wine	20 $\frac{1}{3}$ measures	1 xestes wine	20 $\frac{1}{3}$ measures
1 pound meat	365 pounds	$\frac{1}{2}$ pound meat	182 pounds
$\frac{1}{10}$ xestes oil	≤ 2 measures		

*Adelphata*¹⁴⁵

	<i>Lavra</i> , 1: no. 19 (1016)		<i>Lavra</i> , 1: no. 54 (1101–2)	<i>Esphigménou</i> , no. 29 (1388)	<i>Docheiariou</i> , no. 48 (1381)	
	For 2 persons	[1 person]			3 persons ¹⁴⁶	[1 person]
<i>wheat</i>	30 modioi	15 modioi	12 modioi	12 tagaria = 27 modioi	24 tagaria	[18 modioi]
<i>wine</i>	50 measures	25 measures	40 measures	24 measures	16 tagaria wheat instead of wine	[12 modioi]
<i>vegetables</i> (<i>dried</i>)	6 modioi		3 modioi	2 tagaria = 5 modioi	4 tagaria	[3 modioi]
<i>oil</i>	6 nomismata for clothing ¹⁴⁷		12 litrai 1 megarikon of honey	6 measures 30 pounds of cheese	2 tetartia 50 pounds of cheese	[$\frac{2}{3}$ tetartia] [16 $\frac{2}{3}$ pounds]

continued

¹⁴³ C. Zuckerman, “*Legio V Macedonica* in Egypt: *CPL* 199 Revisited,” *Tyche* 3 (1988): 279–87. The same rations of wine and meat occur in *POxy* 2046: cf. Jones, *The Later Roman Empire, 284–603*, 3:191 n. 44—the ration for *bucellarii*, which also indicates total quantities of bread and oil, shown here.

¹⁴⁴ J. Gascou, “La table budgétaire d’Antaeopolis,” in *Hommes et richesses* (as above, note 19), 1:290–92.

¹⁴⁵ On the *adelphata*, cf. M. Živojinović, “Adelfati u Vizantiji i srednovjekovnoj Srbiji,” *ZRVI* 11 (1968): 241–70. The author estimates at 100 hyperpyra, the value of the capital offered to secure an income of this type for life.

¹⁴⁶ The document states that these rations are less than the norm. The tagarion was worth 28.8 kg or 2 $\frac{1}{4}$ modioi. The value of the tetartion in this act is still unknown.

¹⁴⁷ And for additional food.

Table 20
(continued)

Monastic Rations			
	<i>Diataxis</i> of Attaleiates, 69 (1077) (before 1118)	Gautier, “Kécharitôménè,” 115 old men’s rations	“Pantocrator,” 91 (1136)
<i>wheat</i>	24 modioi	18 modioi	20 modioi
<i>wine</i>	24 measures	12 measures	18 measures
<i>vegetables (dried)</i>	3 modioi	1 modios	2 modioi
<i>oil</i>	1 nomisma [\pm 2 measures ?]	1 measure	
<i>cheese</i>	50 pounds	50 pounds	

These rations cannot easily be compared, since none of them can really be considered to approximate the minimum required for survival by an individual. As we know, some military rations were, in fact, supposed to feed a whole family and many others constituted a supplementary form of pay, while the *adelphata* could be the result of negotiations, depending on how much capital was involved or some other conditions, which could vary. Thus monastic rations are undoubtedly the most representative, and some of the amounts are similar to the military ration of 30 modioi of wheat and 20 measures of wine. A rough estimate of the latter in coin produces the following total:

Military rations				
	<i>POxy</i> 2046		<i>Diataxis</i> of Attaleiates	
<i>wheat</i>	30 modioi at $\frac{1}{30}$ nomisma	1 nomisma	24 modioi	$1\frac{9}{10}$ nomismata
<i>wine</i>	365 xestai at $\frac{1}{32}$ carat	$\frac{1}{2}$ nomisma	24 measures	$4\frac{8}{10}$ nomismata
<i>meat</i>	365 pounds at $\frac{1}{114}$ nomisma	$3\frac{1}{4}$ nomisma		
<i>oil</i>	$\frac{1}{10}$ xestes per day, $36\frac{1}{2}$ per year	ca. $\frac{3}{4}$ nomisma		1 nomisma
<i>vegetables (dried)</i>			3 modioi	$\frac{1}{12}$ nomisma ?
<i>cheese (or vegetables)</i>			50 pounds	1 nomisma
<i>Total</i>		$5\frac{1}{2}$ nomismata		$8\frac{3}{4}$ nomismata

Though very approximate, these estimates do show that the proportion of essential foodstuffs amounted to between three-quarters and two-thirds of the basic middle Byzantine salary and that this did indeed play a part in determining the rate of pay.

It is difficult to establish total levels of pay, given that payment was not exclusively

in coin and, in the case of employees of both the state and pious foundations, often included provisions in grain, even clothes, and numerous gifts, the value of which is hard to determine. However, we will venture the following observations.

With regard to nonagricultural jobs and the urban population, with the exception of beggars and marginals (though they must have comprised 10–20% of the urban population), three levels of income can be distinguished: (1) unqualified workers who were able, over a long period, to earn at most 1 nomisma per month, when not unemployed; (2) qualified workers, professional soldiers, and craftsmen, who enjoyed a wide margin of income, three to ten times more than that of unqualified workers; and (3) important officials, judges or *strategoï*, as well as the wealthiest merchants and bankers, whose incomes differed from the first category by a factor of 150 or more.

These levels of income would have given rise to very different capacities for consumption and saving. The most modest would have possessed jewels or clothes¹⁴⁸ worth at most one or two gold pieces, and would have lived in houses rented for no more than one or two gold pieces a year. The middle classes (*mesoi*) definitely feature more prominently in the sources after 1204, though they had already emerged in the great towns of the empire in the twelfth century; they were able to buy furnishings, jewels costing more than 10 hyperpyra, and possibly books and icons. They earned several tens of hyperpyra per year, paid considerable rents for their shops, and could pay pensions of 20–50 hyperpyra to their wives when they abandoned them, in Crete at least. Their daughters' dowries sometimes exceeded 100 hyperpyra. The wealthiest ones, such as the Deblitzenoi, owned jewels worth hundreds of hyperpyra, while others possessed important libraries. However, apart from a few exceptions such as the emperor's close relatives and favorites, the Byzantine aristocracy, the great landowners, and high officials did not have the means of maintaining a very numerous household. In fact, an income of a few litrai or even a few tens of litrai allowed for the upkeep of no more than ten or a few dozen household members, as demonstrated by the case of Kale Pakouriane and her twenty to twenty-five servants.

It was not too difficult to survive in Constantinople, since a follis or a tetarteron could, in normal times, secure a pound of bread and ten mackerel, or two kilos of fish, though meat would have been proportionally more expensive. One nomisma seems to have represented the normal monthly wage for an unqualified (and unfed) worker, which was certainly sufficient to feed and even clothe a family. Rents were extremely variable, but seem to have been low in the case of small houses.¹⁴⁹

To sum up, a person with a job, in a period when food supplies were operating normally, did not need to worry about malnutrition. Nor should we forget that we know nothing about the belt of gardens that surrounded the capital and constituted

¹⁴⁸ Any garment not in tatters is a luxury and a precious possession in preindustrial economies. Cf. the examples cited in C. Cipolla, *Before the Industrial Revolution* (London, 1993), 25–26.

¹⁴⁹ For instance, the annual rents that were drawn by the monastery of Theotokos Kecharitomenè in the 15th century at Constantinople: in the order of one gold piece or less. Gautier, "Kécharitô-ménè," 150–51.

an additional source of nutrition for numerous inhabitants.¹⁵⁰ Even the unemployed, meaning the poorest people, could survive on charitable distributions from monasteries and wealthy individuals. As might be expected, though, the slightest crisis caused food prices to surge in a spectacular manner, playing havoc with small family budgets. In the capital, the population at risk was generally rescued from starvation by the emperor's intervention. However, during the winter of 1077–78, Michael VII was unable to prevent the high death rate following the influx of refugees from Asia Minor and the civil wars. In similar circumstances, during the fourteenth century, Patriarch Athanasios vigorously petitioned Emperor Andronikos II to ensure the survival of a large proportion of the population.¹⁵¹ However, these were exceptional episodes, because even when the city (albeit with a reduced population) was being besieged by Avars, Arabs, or a variety of rebels, the prevailing indigence did not become so intense as to cause masses of people to die.

As for the peasants' living standards, every estimate or assessment, however hypothetical, must take a number of aspects into account: the extent of the tax, the *pakton*, the yields and possible improvements in productivity (see the relevant commentary by J. Lefort).¹⁵² The increase in the number of craftsmen in the countryside under the Palaiologoi constitutes a phenomenon familiar to economists as an indicator of growth. We conclude, while making due allowances and every kind of appropriate reservation, with the proposition that, in general terms, during the Byzantine period as a whole, or at least until the situation was reversed by the crisis in the 1350s, there occurred a relative rise in the living standards of the middle and lower social categories, excluding marginals.

List of Abbreviations

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¹⁵⁰ J. Koder, "Fresh Vegetables for the Capital," in *Constantinople and Its Hinterland*, ed. C. Mango and G. Dagron (Aldershot, 1995), 49–56.

¹⁵¹ A. Laiou, "The Provisioning of Constantinople during the Winter of 1306–1307," *Byzantion* 37 (1967): 91–113.

¹⁵² Lefort, "Rural Economy," 299–305.

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