

## THE BREAD IN GREEK LANDS DURING THE OTTOMAN RULE

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The grain trade gives a revealing picture of economic life in general in the Ottoman empire. Although the state did not have a monopoly of the grain market it nonetheless set limits and guidelines that ensured the provision of food for its population and protected the interests of the producers. Herein lied the smooth functioning of the Ottoman system. The necessary regulations and adjustments by the state concerning commercial practice, as expressed in legislation and in local regulations, constituted one of the most characteristic features of the Ottoman system, a feature that was closely linked with state provisions for the supply of the army and for the supply of the major centres of consumption in the empire.

The present paper attempts to examine the grain trade with regard to the supply for bakers and the food provisions and payment in kind of members of the guard with wheat or rusks as part of their wage<sup>1</sup>.

The study will focus on:

a) the ways in which grain supplies were secured for the urban centres,

b) the prices of grain and of bread and to what extent the increase in the price of the latter represents a change in the cost of living, in other words increases in the price of bread will be compared with the level of wages,

(\*) A preliminary version of this paper was presented at the "Conference for the Bread" (Greece, April 1992). The present version has been thoroughly revised. I would like to thank Mrs. Loukia Droulia and Mr. Sp. Asdrachas for their helpful comments on the draft of this paper.

(1) N. Stavriniadis, *Translations of Turkish Documents concerning the History of Crete* (in Greek), t. II, (Herakleion of Crete 1976), p. 171 and t. III (Herakleion of Crete 1978), p. 31. See also I. Vasdravellis, *Historical Archives of Macedonia II, Archives of Verroia-Naoussa, 1598-1886* (in Greek), (Thessaloniki 1959), p. 189.

c) the operation of the mechanisms which determined prices in the internal market, an important component of which was the bakers guild whose economic and social status will also be examined.

### I. Sources

On account of the availability of their records Candia (modern Herakleion) and Salonica (two cities for which we have a series of kadi registers) were chosen as the field of observation. Candia, a city that verged on self-sufficiency, at least until the middle of the 18th century, combined with its hinterland, supplied the western part of Crete and in good years it even exported small amounts. Salonica, situated at the entrance of a grain producing area, constituted a large centre of consumption and export of grain. Both these cities, equipped with their guilds that controlled internal trade, enable us to examine economic activity on many levels.

The archive material studied was a) a set of tariffs, or price controls (*narh*)<sup>2</sup>, and b) records of the kadi's courts for affairs that concerned the bakers guild, such as demands for revaluation of the price of bread and the securing of grain supply at times of shortage. As should become clear this archive material refers to instances of state intervention in the mechanisms of the market. A wealth of translated documents is provided in the five-volume edition of N. Stavriniadis from the *sicils* of Herakleion which cover one century (mid-17th to mid-18th)<sup>3</sup>. Much more limited is the evidence for Salonica as published by I. Vasdravellis and as discussed by Sp. Asdrachas in his study of the markets and grain prices in Greece in the 18th century<sup>4</sup>. Direct investigation on the *sicils* and the *vakif defters* at the Historical Archives of Macedonia (Thessaloniki), covering the period from the late 18th to the mid-19th centuries,

- (2) H. Sahillioğlu, "Osmanlılarda Narh Müessesesi ve 1525 Yılı sonunda İstanbul'da Fiatları", *Belgelerle Türk Tarihi Dergisi* I / 1 (1967), p. 36-40; I / 2, p. 54-56; I / 3, p. 50-43. M. Kütükoğlu, *Osmanlılarda Narh Müessesesi ve 1650 Tarihli Narh Defteri*, (Istanbul 1983). All the price changes collected for my research from the *sicils* of three towns (Candia, Thessaloniki and Verroia) are presented in an appendix at the end of this study.
- (3) For the relevant material from the kadi records of Herakleion, see Maria Tsicalouraki, *Le marche de Candie, 1669-1765: Corporations et reglementations des prix*, Memoire de DEA, Université de Paris, I, Pantheon-Sorbonne Paris 1990), pp. 40-47.
- (4) I. Vasdravellis, *Historical Archives of Macedonia, I, Archives of Salonica. 172-912* (in Greek), (Thessaloniki 1952), Sp. Asdrachas, "Marches et prix du ble en Grece au XVIII siecle", *Südost-Forschungen XXXI* (1972), pp. 178-209.

supplemented the already published material. The research was also extended to include price regulations in Verroia (Karaferya)<sup>5</sup>.

## II. From Production to consumption

### 1. The securing of grain supplies to urban centres

It was first necessary to determine where the grain that supplied the urban populations came from. The three main sources were:

i) the surplus from small farmers<sup>6</sup>

ii) the tithe collected by the *sipahi* from his timar (this comprised the most important part of the local trade in grain)<sup>7</sup>. We know from the *kanunname* that the peasants were obliged either to bring their tithe to the granary stores of the timariote or to transport it themselves to the nearest market<sup>8</sup>. The sipahis, the owners of *mülks* and *vakifs* reaped in high revenues from the sale of the tithe in cereals. It was for this reason that the payment of the tithe in kind was continued for cereals as opposed to tithes of other agricultural produce<sup>9</sup>.

Apart from the tithe and the *salariye* there were a set of other emergency revenue measures which included the *nüzül*, *avariz*, *sürsat* and *istira*, that comprised the taxes of *avariz-i divaniye* or *tekâlif-i örfiye*, with which the state obliged the producers to supply foodstuffs or other raw materials at fixed prices<sup>10</sup>. The grain that was gathered

- (5) Microfilms of the sicils of Verroia are held in the Historical Archives of Macedonia. I would like to thank the archivist at the Historical Archives of Macedonia, Helen Karanastassis, who once again so kindly gave her assistance. Thanks to her academic acumen and enthusiasm I investigated the kadi records for Salonica and Verroia in a remarkably short space of time.
- (6) Suraiya Faroqi, *Towns and Townsmen of Ottoman Anatolia. Trade, Crafts and Food Production in an Urban Setting 1520-1650*, (Cambridge University Press 1984), p. 57
- (7) "At threshing tipe 2 kile of grain or 1 guruş will be collected from each taxpayer...", see N. Stavrinidis, *op. cit.*, t. II, p. 192.
- (8) L. Güçer, *XVI-XVII Asırlarda Osmanlı İmparatorluğunda Hububat Meselesi ve Hububattan Alınan Vergiler*, (Istanbul 1964), pp. 56-58. See also J. Kabrdrá, "Contribution a l'étude de la rente féodale dans l'empire ottoman, III, (La dime sur les produits agricoles)", *Sbornick Praci Filosoficke Fakulty Brnenske University* 13 (1966) pp. 59, 67. Vera Mutafcieva, *Agrarian Relations in the Ottoman Empire in the 15th-16th Centuries*, East European Monographs, Boulder, distributed by Columbia University Press, (New York 1988), p. 55.
- (9) N. Stavrinidis, *op. cit.*, t. I, p. 193 and t. II, p. 21. See V. Mutafcieva, *op. cit.*, p. 174-178
- (10) I. Vasdravellis, *op. cit.*, t. II pp. 41-42, 49-50, 115, 213. For the *İstira* see N. Svoronos, *Le commerce de Salonique au XVIIIe siècle*, (Paris 1956), pp. 45-52.

from such enforced tax measures was destined for the army at times of war and major campaigns, and above all for the capital of the empire.

iii) Imports. Although the export of grain outside the Ottoman empire was allowed only by permission of the grand vizier (its unauthorised export was punishable by death)<sup>11</sup>, the state does not appear to have intervened in the transfer of grain from regions of the empire with surplus production to others where there was not sufficient local supply. A ban had existed on the movement of grain even within the Ottoman empire, but the granting of official permission to engage in such trade had become a matter of routine. Moreover the state did take into account the proximity of provinces and the possibility of transfer of resources<sup>12</sup>. The needs of the particular grain producing district had to be met at first, and next the needs of other areas, of which first in importance was Istanbul. Having thus defined and allocated the regions and their basic production requirements the state granted the merchants the right to organize the market and the movement of grain. Beyond this, state intervention consisted solely of price control and delivery. The *kadi*, gave the merchant permission to procure the grain, and the permit had to be countersigned by the *kadi* of the district where the market was, The local *kadi* declared the quantity of grain bought, its price, the name of the ship and its captain, the date of loading and date of sailing. Since the selling price depended on the buying price, the latter was fixed by the *kadi* after negotiation with the bakers and merchants<sup>13</sup>.

## 2. *The Un Kapan and its system of operation*

The grain ended up at the *Un Kapan* (the flour market) in the various towns and cities where it supplied the bakers with flour<sup>14</sup>. In Can-

- (11) See for example the Chronicle of Papasynadinos: "In the same year (1623) Mehmet Yazadjis unjustly hung the wretched Adamis, Karapapas' son of Pravista, at the Feast of St Demetrios at Candia. He paid off some Turks to bear false witness against the man; they said that he had given wheat to the Franks." G. Kaphtantzis, *The Chronicle of Serres written by Papasynadinos* (in Greek), (Serres 1989), p. 42. See also I. Vasdravellis, *op. cit.*, t. II, pp. 250-253, 256-257.
- (12) L. Gücer, "Osmanlı İmparatorluğu dahilinde Hububat Ticaretinin Tabii olduğu Kayıtlar", *Istanbul Üniversitesi İktisat Fakültesi Mecmuası* 13 (1951-52), pp. 79-89.
- (13) N. Todorov, *The Balkan City (1400-1900)*, University of Washington Press. (Seattle and London 1983), p. 99. See also Br. Simon, "Le ble et les rapports veneto-ottomans au XVIIe siècle", *Contributions à l'histoire économique et sociale de l'empire ottoman*, ed. J.-L. Baque-Grapmont, P. Dumont, (Paris 1983), p. 273.
- (14) There were a number of *kapan* in the commercial centre of every town, ie. special

dia in 1671 (just two years after its conquest by the Ottomans) a flour market was constructed, and in the records an estimate of its cost is given<sup>15</sup>. There is mention of an Un Kapan in Salonica where a member of the bakers guild had the permission of the Ottoman authorities to sell "flour by weight"<sup>16</sup>. The millers and bakers of Istanbul were supplied exclusively by the Un Kapan of the city<sup>17</sup>.

The market regulations of Constantinople at the beginning of the 16th century<sup>18</sup> were particularly explicit about the grain and bread supply of the city: "Take care that Muslims are not troubled by shortage of flour ... and that there is enough bread distributed on time". For this reason, it goes on to say, every baker should ensure that he has two months' supply of flour in stock (or at least one month's supply)

Normally the bakers bought their flour from the *kapan* at a price approved by their guilds (see below, on the role of the bakers guild in setting a price) The price of wheat for breadmaking was set at the time of threshing, and it was on this price that the price of bread was fixed until the next harvest<sup>19</sup>. For times of low yield the figures used are ta-

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areas where manufactured and agricultural products were sold. R. Mantran gives the primary meaning of the word. It comes from the Arabic *qabban* which is the large Roman scales on which they weighed the most bulky tradeable items. It came to mean "selling in bulk", "warehouse", "market" etc. T. Mantran, *Istanbul dans la seconde moitié du XVII<sup>e</sup> siècle*, (Paris 1962), p. 302. And Suraiya Faroqui, *Towns*, pp. 37-38.

- (15) N. Stavrinidis, *op. cit.*, t. I, pp. 360-361.
- (16) I. VasdIavellis, *op. cit.*, t. I, p. 15, 384. See B. Dimitriadis, *A Topography of Thessaloniki under the Turks, 1430-1912* (in Greek), (Thessaloniki 1983), p. 192.
- (17) R. Mantran, *Istanbul*, p. 190 and "Un document sur l'iktisab de Stamboul a la fin du XVII<sup>e</sup> siècle", *Melanges Louis Massignon*, t. 3, Damas, Institut Français d'Etudes Arabes (1957), p. 146. For the role of the merchants in the Un kapan during the period 1793-1839, see T. Güran, "The State Role in the grain supply of Istanbul: the Frain Administration, 1793-1839", *International Journal of Turkish Studies* 3 / 1 (1984-5), p. 28 and passim.
- (18) The text of this regulation was published by Ö. L. Barkan in "XV Asrin Sonunda Bazı Büyük Şehirlerde Eşya ve Yiyecek Fiatlarının Tesbit ve Teftişi Hususlarını Tanzim Eden Kanunlar", *Tarih Vesikaları Dergisi* I / 5, pp. 326-340. For the translation see R. Mantran, "Teglements fiscaux ottomans: la police des marchés de Stamboul au début du XVI<sup>e</sup> siècle", *Cahiers de Tunisie*, IV / 4 (1956), pp. 213-241, and N. Beldiceanu, *Recherche sur la ville ottomane au XV<sup>e</sup> siècle. Etude et actes*, (Paris 1973), pp. 186-206. The most recent edition in A. Akgündüz, *Osmanlı kanunnameleri ve Hukukî Tahtilleri*, (Istanbul 1990), t. II, pp. 287-304.
- (19) I. Vasdravellis, *op. cit.*, t. I, p. 383 and N. Stavrinidis, *op. cit.*, t. V, p. 259. See the chapter "Tariffs" below.

ken mostly from Crete where the bakers, unable to find sufficient flour on the market, appeal to Ottoman authority a) to pressurise those who had hidden stock and were thus inflating prices<sup>20</sup>, and b) to make the centre provide them with supplies. This would occur:

i) shortly before the summer harvest when the previous year's stock was running out and there was a danger of racketeers exploiting short supply. Here the state intervened by distributing wheat to the bakers from the tithe stores, assisting them as well with payment. In May 1685 bakers bought grain from the state for twenty days' supply of bread on terms that allowed them to pay on the twentieth day<sup>21</sup>.

ii) In time of famine the Ottoman authorities distributed grain from state reserves and underground stores still known in Crete today as "gouves"<sup>22</sup>. Sometimes they obliged the state officials responsible for the collection of revenue -the *mukataa agasi*, the community elders- to supply the bakers. At a time of famine in 1621 / 2 in Macedonia, according to a description by Papasynadinos<sup>23</sup>, the Turkish authorities and the Christian notables gave grain to the bakers. In Crete in 1763, by an order of Elhacc Hasan pasa, the *mukataa agasi* were compelled to hand over a six month supply of wheat to the bakers, the latter being allowed to pay them back in installments<sup>24</sup>.

### III. *The bakers guilds*

Our knowledge of the bakers guilds in the various towns and cities of the Greek lands of the Ottoman empire is limited, even in those parts where we know that such guilds had long existed, as in Yannina or in towns that were centres of grain producing areas<sup>25</sup>. However, from the available evidence and bibliography it is clear that the number of people belonging to such associations remained surprisingly low, despite the increase in the population of the cities.

(20) N. Stavriniadis, *op. cit.*, t. V, p. 257.

(21) *Ibid.*, t. II, p. 269.

(22) *Ibid.*, t. IV, p. 178 and t. V, p. 210. On the location of *Miri Ambari* (State granary where the tithe was stored) see *ibid.*, t. I, p. 210.

(23) G. Kaftantzis, *The Cronicle of Serres*, pp. 37-38.

(24) N. Stavriniadis, *op. cit.*, t. V, pp. 221-222.

(25) G. Papageorgiou, *The Guilds in Yannina in the 19th and early 20th Centuries (beginning of the 19th C. to 1912)* (in Greek), (Yannina 1982), p. 40, where he notes that the number of members was very small (20). Later in the second decade of the 19th century, there were 48 bakers and in 1862 they amounted to 55. *Ibid.*, pp. 46 and 182.

In Candia, for the period from the late 17th century to the late 18th century 11–16 bakers are recorded<sup>26</sup>. The majority of them were Muslims and were represented by the *ekmekçi başı*<sup>27</sup>. Their names, descent, and the situation of their bakery are all recorded. For Salonica the information that we possess for the number of bakers and millers in the mid-19th century comes from registers which record the rent paid by the bakeries to the vakifs, as well as records of business permits granted to the bakers (*defter-i gedikân*)<sup>28</sup>. B. Dimitriadis from the property lists (*Esas Defterleri*) recorded the bakeries district by district in Salonica at the beginning of the twentieth century<sup>29</sup>.

### 1. The guilds and business practice

This was yet another closed profession. In the kadi's record of 1698 in Candia it is stated that "apart from the above fourteen bakers no one else has the right to open a bakery"<sup>30</sup>. The issue of a document such as this clearly derives from the activity of some association or

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In the fire of 1862 43 bakeries were destroyed. See D. Salamangas, "The Guilds and the Crafts during the Ottoman period" (in Greek), *Epeiroitiki Estia* 8 (1959), p. 485. Some scattered information on the bakers' guilds in Larissa can be found in H. Angelomati-Tsoungaraki, "Contribution to the Economic, Social and Educational History of Larissa during the Ottoman rule" (in Greek). *Mesaionika kai Nea Hellenika* 3 (1990), pp. 270, 274, 275 and 329. On Serres see G. Kaphtantzis, *The History of Serres and its region (from ancient times to today)* (in Greek), (Athens 1967), t. I, p. 163. On Kozani see M. Kalinderis, *The Guilds of Kozani in the Ottoman eripod* (in Greek), (Thessaloniki 1958), pp. 58–63.

- (26) In 1685 15 bakers, three of whom were Armenian and three Greek, put their signatures to the price proposals (N. Stavrinidis, *op. cit.*, t. II, pp. 269–270). In 1688 a list of muslim and other bakers was issued for Candia: they were 9 and 7 respectively (*Ibid.*, t. II, p. 310). In 1688 the elists of Candia include no less than 14 bakeries altogether. There of these produced only white bread (*has etmek*). Three were Christians and two Armenian (*Ibid.*, t. III, p. 147). In the kadi register of 1717 signatures of 11 bakers are recorded (*ibid.*, t. IV, p. 16), while in 1763 and 1765 15 and 13 bakers respectively are mentioned (*ibid.*, t. V, pp. 222 and 269).
- (27) *Ibid.*, t. II, p. 269.
- (28) Historical Archives of Macedonia (Thessalonici), Evkaf Defterleri no 9 (240), B 1, pp. 13–16 where 38 bakeries are noted for the year 1254 (1838–39). 38 bakeries are recorded along with their locations in no 29 (213), pp. 3–4, and also 12 flour millers in teh market, *op. cit.*, p. 9. Scattered information is contained in register no 47, p. 3 (where the rents of the *etmekçi bisküti* are also mentioned), pp. 35–36 (with the rents of eight bakeries), and pp. 55–57 (listing 14 millers). In no 62c (26), p. 9 and no 62a (29), p. 7 there is information on millers and flour merchants for the year 1254.
- (29) B. Dimitriadis, *A Topography of Thessaloniki*, p. 192.
- (30) N. Stavrinidis, *op. cit.*, t. III, pp. 146–147.

guild. In another document issued by the pasa after an application from a prospective baker, it was forbidden for a new bakery to open in a particular neighbourhood because, so it claimed, it would harm the business of another bakery nearby. This shows how effective the associations had become in protecting the interests of their members.

Certain rules of business conduct had to be observed:

a) The bakers had to sell pure, properly baked bread. This is frequently mentioned at the end of the Ottoman documents concerning the traiffs: "Bakers should ensure that the bread be well baked, and not burnt or poor in quality"<sup>31</sup>. The market code for the bakers of Constantinople at the beginning of the 16th century stipulated that "the workplace be clean, that the bread be correct in taste and weight and porperly baked... If a baker be caught with burnt or dirty bread he can be punished by caning on the soles of the feet"<sup>32</sup>.

b) The bakers had to work regularly<sup>33</sup>.

c) They had to have bread for sale from morning to evening, at least during the time of year when cereals were in plenty<sup>34</sup>. In Jerusalem they had to have bread available until the evening call to prayer<sup>35</sup>.

d) Inspections were carried out on the weight of a loaf of bread<sup>36</sup>, and sometimes the bakers were obliged to sell the bread having placed it on a set of scales. Any irregularities (which generally had to do with the weight of the bread) were refered to the *muhtesib* and the *kadi* and were punished severely<sup>37</sup>. "Bread that is underweight by up to 22 dirhems is not liable to a fine; bread that is more than 22 dirhems underweight is fined at a rate of 1 *akçe* per dirhem. If the bread has been burnt while baking the fine is 7 *akçe*, and if it is underbaked the fine is 5 *akçe*"<sup>38</sup>. From what we may judge of the bread law at the end of the 19th

(31) *Ib. d.*, t. II, p. 285 and t. IV, p. 276 and t. V, pp. 51 and 118.

(32) R. Mantran, "Reglements fiscaux Ottomans", pp. 220-231. Cf A. Akgündüz, *Osmanlı Kanunnameler.*, t. II, p. 292.

(33) N. Stavrinidis, *op. cit.*, t. III, p. 147.

(34) *Ibid.*, t. V, p. 133.

(35) A. Cohen, *Economic Life in Ottoman Jerusalem*, (Cambridge University Press 1989), p. 102.

(36) P. Stavrinidis, *op. cit.*, t. II, p. 285 and t. V, p. 51.

(37) *Ibid.*, t. V, p. 35.

(38) See the reply of Hanefiti imam in 1618 to the question of how much the fines could be increased in *Izvori za bulgarskata Istorija XXI, Turski Izviri za bulgarskata Istorija VI*, ed. N. Todorov, M. Kalitsin, (Dofia 1977), p. 267.

century it seems that little had changed with regard to the duties of the baker and "the methods of making and selling the bread"<sup>39</sup>. The penalties for contravention of the rules continued to be heavy.

According to N. Todorov foreign travellers in the region were highly impressed by the fact that the bakers were expected to supply fresh bread on a daily basis. He cites an extract from an account by H. Dernschwam about the bakers of Istanbul in the 16th century: "The Turks want freshly baked bread every day. The simple bakers, therefore, must always take care when they are baking that they are not left with any stale bread. Otherwise they would be obliged to sell three loaves for one asper, whereas normally two loaves of fresh bread cost one asper"<sup>40</sup>. Generally foreigners were impressed by the white bread made from wheat which prevailed throughout the Near and Middle East. It should also be noted that the bread in the Near and Middle East was nearly always from wheat, whereas in most European countries, at least up to the time of the Black Death, all social classes ate rye or barley bread<sup>41</sup>. Of course there was a belt of rye production in the Balkans and we know that the people of Bulgaria produced rye bread<sup>42</sup>

## 2. *The role of the guilds in setting prices*

It is worth examining for the role of the guilds in setting the prices of bread.

a) With respect to wheat prices there were two main approaches:

— The bakers association bought the wheat directly from the producers and then resold it to its members who were bound not to buy from outside the guild<sup>43</sup>.

- (39) D. Nikolaidis, *Ottoman Legal Codes, The Collected Laws, Degrees, Regulations, Instructions and Guide-lines of the Ottoman Empire* (in Greek), (Sonstantinople 1890), t. III, pp. 3183-3191.
- (40) N. Todorov, *The Balkan City*, p. 100.
- (41) E. Asthor, "Essai sur l'alimentation des diverses classes sociales dans l'Orient médiéval", *Annales ESC* 23 (1968), p. 1021.
- (42) "I ate loaves of good rye-bread, but when asking for white bread the Bulgarians swore at me" letter of Antonios Photialis to Samouel of Sliven, canon of Larissa (16.V. 1795). See I. Oikonomos Larissaïos, *Letters of various Greek men of learning, High Clerics, Turk Administrators, Merchants and Guilds (1759-1824)*, (in Greek), ed G.A. Antoniadis - U.M. Papaioannou, (Athens 1964), p. 33.
- (43) Document of 1802 from a collection of *sicils* for Salonica (I. Vasdravellis, *op. cit.*, t. I, pp. 383-385) which, as noted by S. Asdrachas; provides evidence that the guilds of

— The association bought wheat from the grain merchants but with the proviso that the merchants sell to other customers at higher prices<sup>44</sup>.

As will become clear below, in my discussion of the fluctuations in prices of wheat, flour and bread and the profit margins of the bakers, the most prosperous guilds were those that didn't limit their activity only to their manufacturing role. The guild of Salonica, for example, maintained its own ship in the *Un Kapan*, thus exercising complete control of the market price. It is important, however, to be clear about the role of the guild as grain trader. Sp. Asrachas has remarked that the guild "undertakes the role of grain merchant first and foremost in order to create harmony within its own corps, deflecting any market competition that could break out amongst its members from the moment that they buy their raw materials... The guild in its role as grain merchant absorbs potentially conflicting forces and compounds balance within its internal workings, thus enabling it to survive within the free market. Harmony within the guild is maintained through the do-

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bakers and millers in the city bought at threshing time, according to the old tradition certain amounts of wheat at the current prices. The market price is not indicated, but the price at which they supplied their members is mentioned. Both guilds shouldered the burden of acting simultaneously as grain trader and protector of the interests of their particular craft. See S. Asdrachas, "Marchés du ble", p. 193.

- (44) In a document of 1755 (Candia) the bakers, who were obliged to accept the price of the grain merchants, promised to sell their bread at a base price of 25 para. In order to protect their interests, however, the bakers secured guarantees from the grain merchants that the latter should not sell the wheat elsewhere for less than 30 para (N. Stavrinidis, *op. cit.*, t. V, p. 62). By the end of the 17th century evidence indicates that the guild of Candia was in the hands of the grain merchants. In 1699 the guild complained to the authorities that as it paid 1 gurus in exchange for 3 1/2 and 3 *muzurs* -earlier it had bought 4 *muzurs* for the same price- it could no longer find any customers. It therefore sought a corresponding adjustment of the price of bread (*ibid.*, t. III, p. 217). Again at the end of the 17th century the bakers requested permission from the authorities to obtain their supplies of wheat from elsewhere because, as they submitted in their claim, they were "experiencing difficulties in obtaining wheat for the production of bread, and wherever we go we are told that there is a monopoly of the wheat trade in Candia. In 1765 they were still buying wheat from the Kapan (*ibid.*, t. V, p. 259). The document mentions that they gave assurances and there follows a list of the names of the bakers and the statement that "they will buy a stamped muzu at the above determined price" with the clause that "if anyone is found to be buying or selling at another price, responsibility for their punishment is undertaken by common action", in other words both the guilds of bakers and grain merchants were responsible for ensuring that the established prices were observed by all.

mination of the commercial function of capital which is manifested by the commercialisation of wheat for breadmaking<sup>45</sup>.

b) the price of bread: the bakers come to agreement with the Turkish functionaries of the towns and cities, the kadi and other officials responsible for the determining of prices<sup>46</sup>. Their requests for increases in price are directed to the *paşa*, who in turn refers them to the kadi. The kadi invites the bakers and grain merchants to decide on the matter<sup>47</sup>. The expression that invariably appears the end of the *sicils* concerning the fixing of the price of wheat is "The price, as determined before the court in the presence of all the authorities of the town, *kethüda* of the guilds and of the other relevant bodies, and as accepted by the bakers"<sup>48</sup>. Their opinion was of vital importance for the increase in price of this consumer good. When they failed to reach agreement on the proposed increase in the price of bread they were obliged to agree on a reduction in the weight of a loaf of bread in order not to bring economic damage to the bakers<sup>49</sup>.

The set price was strictly observed. A regulation of the *esnaf* of Kozani in 1827 states: "It is hereby declared that the price of the bread be fourteen paras, namely 14 per okka, and it is prohibited for anyone to sell for more or less than this price; and whoever infringes this rule will be liable to a payment of 200 guruş to the church of St. Nikolaos of this district, or 100 guruş in *zabit*, without any right of excuse or appeal"<sup>50</sup>. In a kadi record of Candia, the bakers accuse some shop owners who have produced their own bread of selling at a different price, presumably lower, to that which has been agreed by the guild<sup>51</sup>. This goes to show how much, on the one hand, the guild serves to protect the interests of its members from the competition of those who trespassed into its territory, and on the other how much importance the authorities assigned to the observance of the set price of the bread, the which comprised a kind of social contract, whose infringement might entail disorder.

(45) S. Asdrachas, "Marchés du blé", p. 196.

(46) N. Stavrinidis, *op. cit.*, t. II, pp. 269, 310, and t. III, p. 147.

(47) *Ibid.*, t. III, pp. 217, 243 and t. IV, p. 190. This procedure is discussed in detail in the market rules and regulations of Proussa (1502), See N. Beldiceanu, *Recherche*, pp. 208-9.

(48) I. Vasdravellis, *op. cit.*, t. I, p. 316.

(49) N. Stavrinidis, *op. cit.*, t. IV, pp. 190, 196.

(50) M. Kalinderis, *The Guilds of Kozani*, p. 60.

(51) N. Stavrinidis, *op. cit.*, t. V, p. 153

### 3. *The economic and social status of the bakers*

Excepting the investigation of the profit margin of the bakers, the archive material does not allow us to reach many conclusions about the economic and social status of the bakers. Therefore just a few observations will be made here. A. Cohen demonstrated that the economic and social status of bakers on the 16th century in Jarusalem was lower than that of the millers, judging from evidence in the *sicils*. The millers are recorded with full names and often bear the title "efendi", while the bakers are recorded just by their first names -an indication of humble social status<sup>52</sup>. For the second half of the 19th century, from counts made by N. Todorov, we gather that the bakers in towns and cities of the northern Balkan peninsula were an economically weak social class. In a statistical sample where professions are represented by more than fifty individuals and have an annual income of less than 1000 gurus, the bakers account for 66.7 % of the total. They are twelfth in the list of thirteen professions<sup>53</sup>. The same historian, drawing on the evidence in the *yabancı tezkere* (business permits granted by the Ottoman government to immigrants) in the National Library of Sofia demonstrates that the bakers belonged to the second category of crafts, after the masons, who emigrated to the north eastern areas of the Balkan peninsula in the 1860s in search of a living. A large number of these came from Macedonia and Thrace. The majority of them worked as apprentices and journeymen who assisted master bakers in the local bakeries<sup>54</sup>,

### 4. *Working conditions*

We have little knowledge of the working conditions in the bakeries. In a kadi record in the Herakleion Archives (dated to the first half of the 18 th century) in which the bakers of Candia plead for a new price -in this case they propose a loaf that weighs less- instead of invoking the increase in the price of wheat they give as justification their general expenditure including running costs and the expense of paying employees<sup>55</sup>. In comparing the proportion of independent and full time workers in ten towns in the Danub vilayet in the second half of the 19th century N. Todorov has observed that one of the most solid groups

(52) A. Cohen, *Economic Life on Ottoman Jerusalem*, pp. 103-4.

(53) N. Todorov, *The Balkan City*, pp. 406, 376.

(54) *Ibid.*, p. 372.

(55) N. Stavrinidis, *op. cit.*, t. IV, p. 190.

of workers with a high degree of hired labour were the bakers, the tailors and the tanners. A proportion of one to one in the case of the bakers and the tailors simply reflects the nature of the two crafts since they necessarily demanded many working hands. "Only the poor baker didn't have a paid assistant, and this only in the case where he couldn't rely on the help of another member of the family"<sup>56</sup>.

#### IV. Prices

##### 1. Tariffs

The *narhs* in the kadi registers provided the evidence for an examination of the price fluctuations of wheat and bread. It is difficult to tell how often such tariffs were compiled. Their renewal, according to R. Mantran, was generally due to a variety of factors such as the crop yield, the financial situation and political changes<sup>57</sup>. It is apparent from the kadi registers of Verroia (see Appendix, table 5), which have suffered a lot of damage during their life in the archive, that a revision of the set price of bread occurred frequently. The same seems to be the case for certain years in the *sicils* of Salonica (see Appendix, table 4). It appears that a revision of the price of bread took place at least twice a year (*ruz-i Hizir* and *ruz-i Kasim*), in other words on the first day of the spring and autumn equinoxes, according to the archive material of both Salonica and Candia<sup>58</sup>.

The tables show the market price of the wheat (alawys in relation to bread) for the bakers guild, and this is followed by the cost of an ordinary loaf (the bread of 70 % pure flour), which is here cited as *nan-i aziz* ("holy" or "sacred" bread). Then follow the prices of the *has etmek* (white bread) and the *harci etmek* (black bread). In some cases the prices of various "quality" bakers' products are recorded<sup>59</sup>,

(56) N. Todorov, *The Balkan City*, pp. 394-395.

(57) R. Mantran, *Istanbul*, p. 327 f. Also M. Kütükoğlu, *Osmanlılarda Narh Müessesesi*, p. 9 f.

(58) N. Stavrinidis, *op. cit.*, t. IV, p. 12 and t. V, p. 51. Cf. also *ibid*, t. V, p. 221-222 where the market price of cheap and the selling price of bread are fixed for the six months from 1st Rebiyulahir until the end of Ramazan 1117, ie. from the autumn to the spring equinox (9X.1763—2.IV.1764). See also I. Vasdravellis, *op. cit.*, t. I, p. 297 and 467 where he translates the *ruz-i Hizir* and the *ruz-i Kasim* for the days of the feast of St George and St Demetrios.

(59) Various bakers products are listed such as *cörek*, *helva* and other sweets. In Istanbul in the 18th century, after a lawsuit prosecuted by the bakers' guild, it was forbidden

such as the *simit-i etmek*<sup>60</sup> and the *francala* which weighed less than an ordinary loaf. Likewise the lables also record the quality of the flour, which is sold by the okka<sup>61</sup>.

The price of bread nominally remains the same, according to the century, one asper or one para, and for this reason it is generally not recorded. It is only much later that the actual monetary value of the bread starts to be recorded, when the price of a loaf eventually exceeded one para. The fluctuation in price is generally expressed in terms of the change in weight of a loaf. Thus when the price of wheat rises the weight of a loaf falls (see Appendix, table 3 and 4)<sup>62</sup>. "In essence it is a camouflaging of the price increase. By keeping the price unchanged the actual increase is less perceptible and thus popular dissatisfaction is averted", writes W. Kula<sup>63</sup>.

As our data does not cover long periods and is chronologically broken it is not possible to determine accurately the changes in price. In other words, the gaps in the years in our sample do not leave much room for an examination of the rises and falls in price. This is made even more difficult when the information we do have does not always coincide with the corresponding information we possess for years of wheat shortage<sup>64</sup>, abundance, or demand, and for years of high or low crop

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for all those who produced *cörek*, *helva*, *gevrek* and so on to sell bread. See G. Bear, "Monopolies and Restrictive Practices of Turkish Guilds", *Journal of the Economic and Social History of the Orient*, XIII / 2 (1970), p. 151, note 5.

- (60) From the Arabic 'semiz', meaning fine white flour.
- (61) In the fixing of prices translated by Stavrinidis we come across the price of flour twice (t. II, pp. 273 and 372 where for the years 1686 and 1691 1 okka was equal to 4 aspers). In the prices of the bakers' guild in the sicils for Salonica the price of flour is always recorded as well, a fact which could be interpreted as the result of a blurring of distinctions between the guilds of the millers and the bakers.
- (62) "Ottoman bakers had ways, at times, of "disadjusting" the official bread price, for example, by decreasing loaf size" . . . Carter Vaughn Findley, *Ottoman Civil Officialdom. A Social History*, (Princeton University Press 1989), p. 306.
- (63) W. Kula, *Les mesures et les hommes*, (Paris 1983), p. 77.
- (64) Recorded here are some notes and chronographical information on the occurrence of famine in Greek lands. Also recorded are the prices of cereals at that time.  
1621 / 22: Famine in Macedonia and Constantinople, see G. Kaftatzis, *The Chronicle of Serres*, pp. 36-38.  
1655: N. V. Tomadakis, "Chronicle of the famine of 1655" (in Greek), *Kritika I* (1930), pp. 16-17.  
1670: Famine in Crete. See N. Stavrinidis, *op. cit.*, t. II, p. 170.

yields<sup>65</sup>. Moreover we do not possess a clear picture of seasonal variations in prices before and after threshing. Lastly in order for all these changes in price to acquire meaning it is necessary for them to be related to precise data concerning the devaluation of the currency and to

1729: "From January onwards there was no wheat to be found and so I went to the monastery and bought five and a half okka of wheat for twelve paras on the 25th of February the day before Shrove Tuesday". See Sp. Kambros, "First Collection of Chronical Notes, No 1-562" (in Greek), *Neos Hellenomnemon* 7 (1910), p. 218.  
1731: Famine in Chios. Grain was shipped in from Salonica. See I. Vasdravellis, *op. cit.*, t. II, p. 143.

1738: Famine in Central Greece. "There was famine with Constantinopolitan wheat selling for 2 guruş a kile and 3 guruş a kile in the continent". See L. Politis, *Catalogue of the Manuscripts held in the National Library of Greece, mss. nos. 1857-2500*, (in Greek), ed. Maria Politis, Athens 1991, p. 235.

1740: Famine and disease in Salonica. See S. Kissas, "On the History of Salonica during the 18th Century. The lost manuscript of St. Constantinos" (in Greek), *Grigorios Palamas* 737 (1991), pp. 254-5 where is also included the relevant bibliography. See also L. Politis, *Catalogue of the Manuscripts*, p. 225, and S. Kadas, "Notes in the Manuscripts of the Monasteries of Mount Athos, Monastery Xeropotamou" (in Greek), *Byzantina* 14 (1988), p. 345. In the same year there was famine in the islands as well as in Roumeli, see Sp. Lambrou, "First Collection", p. 224.

1746: Famine in Greece and the Near East. "On 1st May 1746 there began the famine in the East and one okka of flour was selling for 8 paras, here in Skopelos it was going for 5 paras and on the mainland for 4 paras. The reason was that there was no rain in the East throughout the whole winter". See L. Politis, *Catalogue of the Manuscripts*, p. 235.

1747: Famine in the East. Grain was brought in from Salonica. See I. Vasdravellis, *op. cit.*, t. II, pp. 154-5.

1756, 1760, 1764: Famine in Crete. See N. Stavrinidis, *op. cit.*, t. V, pp. 77, 125 and 257-8. On the grain shortages and the measures taken to alleviate the problem in Crete in the 18th century see Y. Triandaphyllidou-Baladié, *The Trade and the Economic Situation of Crete (1669-1795)* (in Greek), (Herakleion of Crete 1988), pp. 173, 184-5 where evidence is cited from French consular reports of the time.

For the famines of 1766, 1767 and 1786 see S. Asdrachas, "Marchés du blé", pp. 192-3.

1776: Famine in Thessaly: "And having come to this humbl evdiocese in 1776... I lived in the greatest hardship (1795)... and everyone was in great distress on account of the high price of bread that reached half a gros and eleven paras per oka, and everything whether edible or for wearing was tripled in price." See L. Politis, *Catalogue of the Manuscripts*, p. 236 and D. Papazisis, "Prices of goods and wages in Greek Lands during the Ottomen Rule", *Epeirotikiki Estia* 22 (1973), p. 209.

2783: famine in Epirus. "On 20 th March 1783 prices soared and the famine was so bad in the *Arvanitluk* that parents were reduced to selling their children". See L. Politis, *Catalogue of the Manuscripts*, p. 203.

(65) We have evidence for years of good harvest on Crete in 1674 and 1747. See respectively. N. Stavrinidis, *op. cit.*, t. II, p. 170 and IV, pp. 314 and 318 (the weight of

changes in the financial system of the empire, and to the variations in price from one part of the empire to another<sup>66</sup>.

## 2. Profit margins in the cycle Wheat-Flour-Bread

Our lack of sources, which is due on the one hand to their very nature<sup>67</sup>, and on the other to the tribulations of their archival history, almost excludes from the outset the possibility of a systematic study of the subject, but the evidence does allow us to draw some conclusions about those instances where we know the market price of wheat and the set price of bread. In order to calculate the profit earned by the bakers it is necessary to compare the price of bread and that of wheat. Essentially we need to examine the whole process from the sale of wheat to the production of flour and then the bread, since, as we have already remarked, we are dealing with an economy that was under close state control. The state required the bakers to sell bread of a particular weight, which was determined each time by the price of wheat. In other words by thus setting limits on the profits the state also determined the price of bread. The evidence of the *narh* allows us to pose some questions, for example to look into the changes in the price of wheat for breadmaking and the price of the bread, or to investigate the share of the profits among those who intervened between the stages of the sale of the wheat to the final product.

For Crete, in eleven cases we know the market price of the wheat and the price and weight of the bread (see Appendix, table 3). The measure of the weight of wheat was the *muzur* (15 okkas) and its value was

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bread was increased from 80 to 90 dirhems in 1747). In Macedonia in 1641 there was an abundant harvest according to Papasynadinos: "In this year the yield was so high in Macedonia that a quarter of the crops was not even threshed and the wheat stacks were left standing on the threshing floors all winter until the following summer when 8 kile of wheat was sold for 25 aspers, the rye and the millet for 12 and barley for 8." See G. Kaftatzis, *The Chronicle of Seres*, p. 88.

- (66) H. Sahillioğlu, "XVII Asrın İlk Yarısında İstanbul'da Tedâvüldeki Sikkelerin Râici", *Belgeler I* / 2, 227-234. And "Osmanlı Para Tarihinde Dünya Para ve Maden Hareketlerinin Yeri (1300-1750)", *Gelişme Dergisi* (1978), Özel sayısı 1-38. This article is translated into English as "The role of International Monetary and Metal Movements in the Ottoman Monetary History, 1300-1750" in *Precious Metals in the later Medieval and early Modern Worlds*, (ed.) J. F. Richards, (Durham 1982), pp. 269-304. Cf. L. Berov, *Dvizeniето na tsenite na Balkanite prez XVI-XIX v. i Evropeiskata Revolutsia na tsenite*, (Dofia 1976).
- (67) The sources vary considerably. For Crete we have no evidence for the price of flour (see note 61.) In Verroia only the pricing of bread is recorded.

the gurus or para. The bread was measured in dirhems and its value was expressed in terms of aspers. In table I I have shown the prices of wheat and of bread in aspers per okka, taking into account the value ratio of 1:120 between the kurus and the aspers<sup>68</sup>. The price of bread lags behind the increase of the price of wheat. The table shows the changes in the prices of wheat and bread during the year 1685. In the first five cases the price of bread per okka is higher than the market price of wheat, while in the remaining cases the price of an okka of wheat and the price of bread are in line with each other.

Table 1. Movements of Prices of Wheat and Bread in Sandida (aspers / okka)

DATE	WHEAT		BREAD		DIFFERENCE	
	(a)	%	(a)	%	of prices	%
1685	2.7	100	3.08	100	0.38	14.07
1686	3.2	118.52	3.64	118.18	0.44	13.75
1688	4	148.15	4.44	144.16	0.44	11.00
1689	3.2	118.52	3.64	118.18	0.44	13.75
1717	4.3	159.26	4.44	144.16	0.16	3.26
1744	4	148.15	4	129.87	0	0.00
1752	4	148.15	4	129.87	0	0.00
1755	5	185.19	5	162.34	0	0.00
1756	8	296.30	8	259.74	0	0.00
1763	5.4	200.00	5.4	175.32	0	0.00
1765	8	296.30	8	259.74	0	0.00

This match of prices, which can be observed from the mid-18th century onwards when the price of wheat generally increased, cannot be a matter of chance<sup>69</sup>. It was rather deliberate state policy. The state exercised pressure to keep the price of bread low. But was it possible that this policy was to the detriment of a category of craft? The duration of this phenomenon extends to the next five cases in our sample from Candia, and it indicates clearly a reduction in the profits of the bakers, though not a complete elimination of profit, as far as we can gather from a first glance at the price chart. In order to determine the profits of the bakers (here I do not mean pure profit, since it is not possible to calculate the running costs such as wood for fuel, labour and rent) I resorted to the following method which was based on the relationship a) 280 dirhes of flour per 1 okka of bread<sup>70</sup>. From a sample test it appeared that a certain quantity of wheat yields about 11.25 %

(68) In 1717 the para was *çörük*, ie. 1 para = 4 aspers. See N. Stavrinidis, *op. cit.*, t. IV, p. 16.

(69) See below.

-20 % less flour (in terms of weight) from which is produced a 30 % -40 % greater quantity of bread<sup>71</sup>. b) in a document from 1686 in the Herakleion Archives, it is stated that 2.5 *Muzurs* of wheat give 30 okkas of flour, after some loss of weight through the cleaning of the wheat of the husk (2.5 okkas) and the miller's right to a percentage of the flour (5 okkas) is taken into account. From this remaining quantity of flour 133 loaves of 120 dirhems each are produced<sup>72</sup>. From this analysis it seems that the profit of the bakers in Candia varied between 6.5 % and 7.7 %<sup>73</sup>.

When examining the wheat price variations (see Appendix, table 1) in the Candia market we observed that the period from the late 17th to the late 18th centuries (for which evidence exists) is divided into two parts. In the first (1685-1729) wheat price remain unchanged for about forty years, which during these years fluctuates between 4.5 and 2 *muzurs*. It is nominally the same, ie. 1 gurus. Real changes in the price of bread are due to the rise and fall in the weight or volume of a loaf. The bakers then pay a price amounting on average to about 1 *muzri*

- (70) Istanbul 1873: 0.7 okka of flour = 1 okka of bread (Ayniyat Defteri 1046). Correspondingly 900 g of flour provide 1 kg (see H. Neveux, "L'alimentation du XlVe au XVIIIe siecle, Essai de mise au point", *Revue d'Histoire Economique et Sociale* 51 (1973), p. 352, note 45b.
- (71) We mention here the various ratios of wheat to flour and bread that are recorded for Constantinople. I would like to thank my colleague Mehmet Genç for making this unpublished archival evidence of the Başbakanlık Arşivi available to me.
- 1501: müd (= 20 kile) of wheat gives 17.75 kile of flour, ir. 88.97 % (Ö. L Barkan. "XV Asrın Sonunda", p. 331. And R. Mantran, "Teglements fiscaux ottomans", pp. 220-222.
- 1799: 100 kile of wheat give 85.98 kile of flour (Maliyeden Müdevver Defter 8571 / p. 6).
- 1826: 100 kile of wheat give 80 kile of flour 100 kile of wheat give 2159.8 okka of bread, while 100 kile of flour give 2700 okka of bread (MAD 8918 / doc. 286).
- 1827: 1 kile of wheat = 22 ikkas and 82.5 % of this amount is flour (MAD 8893 / p. 133).
- 1834: 1 kile of wheat = 17 okkas of flour = 27.5 okkas of bread (MAD 8891 / p. 221).
- 1840: 1 kile of flour, depending on its quality, gives the following quantities of bread (in okkas): 29.09, 27.06 and 25.08 (Cevdet, *Iktisat* 331).
- (72) 37.5 okkas of wheat for breadmaking produce 30 okkas of flour and 48 okkas of bread. See N. Stavrinidis, *op. cit.*, t. II, p. 285.
- (73) For these counts I kept the maximum correspondences, ie. -20 % for the conversion of wheat into flour and +30 % for the conversion of flour into bread. The profits of the bakers of Candia can be calculated to have been as follows: 1685 = 7.7 %; 1686 = 7.5 %; 1688 = 7.3 %; 1589 = 7.5 %; 1717 = 6.9 %; 1744 and 1752 = 6.5 %; 1756 = 6.6 %; 1763 % 6.75 %; 1765 = 6.6 %.

(15 okkas) for 43 aspers. During these same years Crete exported a small amount of cereals to various eastern Mediterranean countries<sup>74</sup>.

After 1715, and especially after 1720 and a significant increase in the population, Crete had to start importing in order to cover its needs<sup>75</sup>. In the second period (1744-1765) one muzur of wheat cost the bakers on average 89 aspers. From 1744 onwards Candia and Salonica display a steady increase in the price of wheat as confirmed by the data presented by N. Svoronos<sup>76</sup>. This increase can also be seen on the table showing the price of bread in Verroia (see Appendix, table 5) where from 1748 onwards the weight of a loaf becomes significantly lower than that of the previous years, and which is proof of a significant increase in the price of wheat for bread making. This fact is not only due to the devaluation of the Ottoman currency but also to the increased demand for wheat on a worldwide scale.

Table II. Movements of Prices of Wheat, Flour and Bread in Salonica (aspers/okka)

DATE	WHEAT		FLOUR		BREAD		DIFFERENC		DIFFE
	(a)	%	(a)	%	(a)	%	wheat-flour (a)	%	
1777	5.71	100	7.50	100	6.15	100	1.79	31.25	0.44
1781	12	210.2	12	160	12.00	195.1	0.00	0	0.00
1783	10	175.1	12.5	166.7	10.91	177.4	2.50	25	0.91
1783	8.57	150.1	10.5	140	9.02	146.7	1.93	22.5	0.45
	8.57	150.1	11.5	153.3	9.38	152.4	2.93	34.19	0.81
1785	8.57	150.1	10.5	140	8.11	131.8	1.93	22.52	-0.46
1785	8.57	150.1	9	120	7.14	116.1	0.43	5.02	-1.43
1786	7.14	125.1	9	120	7.14	116.1	1.86	26	0.00
1786/7	4.29	75.06	7	93.33	6.00	97.56	2.71	63.33	1.71
1797	10	175.1	12.5	166.7	10.34	168.2	2.50	25	0.34
1800	17.14	300.2	22	293.3	16.44	267.3	4.86	28.33	-0.70
1802	18.57	325.2	23.5	31.33	20.00	325.2	4.93	26.54	1.43
1806	28.57	500.4	37.5	500	30.00	487.8	8.93	31.25	1.43
1807	22.86	400.3	30	400	24.00	390.2	7.14	31.25	1.14
1807	14.29	250.2	18	240	15.00	243.9	3.71	26	0.71
1810	28.57	500.4	38	506.7	30.00	487.8	9.43	33	1.43
1820	36.71	625.5	37.5	500	37.50	609.8	1.79	5	1.79
1820	42.86	750.6	48	640	45.28	736.3	5.14	12	2.43
1823	43.57	763.1	60	800	54.00	878	16.43	37.70	10.43
1824	43.57	763			48.00	780.5			4.43
1825	35.71	625.5	37.5	500	37.5	609.8	1.79	5	1.79
1826	28.57	500.4			30.00	487.8		0	1.43

(74) Y. Triandaphyllidou-Baladié, *The Trade*, pp. 169-170.

(75) *ibid.*, pp. 171-2.

(76) S. Asdrachas, "Marchès du blé", p. 189.

In table II we compare the changes in price of wheat for bread-making, flour and bread per okka in Salonica. The calculations based on the price of ordinary flour and the price of bread. In only four of the twenty cases that were able to be compared the price of flour increased more than the price of wheat<sup>77</sup>. It is reasonable to assume that in the years where the increase in the price of wheat is greater we are witnessing a shortage of cereals. Discrepancies in the relative changes in price of flour and bread show that the Ottomans exerted pressure on the price of flour in order to keep the price of bread at acceptable levels. We see the same happen when comparing the prices of wheat and of bread. The bakers' profits, calculated in the same way as we used for Crete, are about 7 %<sup>78</sup>. The price level of wheat in relation to the price of flour in Thessalonica shows how the guilds of bakers and millers were able to ensure profit making chiefly through the protectionism of the guild system.

If the picture that emerges from the tariffs here is valid then we can see that of the total number of stages that intervene between the marketing of the cereals up to the sale of the bread, the bakeries seem to hold the lowest position as regard the share in profits. The lowest profits for the grain merchants ranged around 10 %<sup>79</sup>, the millers' profits (judging by the evidence from Candia) were around 13.3 %<sup>80</sup>, while the gross profit of the bakers does not exceed 7% without taking into account their costs for woods and labour. Thus the prosperity of the guilds was linked to the re-selling of wheat.

### 3. *Bread and wages*

Evidence for wages is meagre in the extreme. There are just two references to wages in the translations of N. Stavrinidis and both ins-

(77) The years 1783, 1786 / 7, 1810 and 1823. The price of bread rises correspondingly more in the years 1783, 1786 / 7, 1823 and 1824.

(78) Basing calculations on the market regulation for Adrianople at the beginning of the 16th century the profit of the bakers was 9 %. 1 kile of wheat costing 11 aspers, produced bread worth 15 aspers. Costs were reckoned to be 3 aspers. See N. Beldiceanu, *Recherche*, 0. 252.

(79) R. Mantran, *Istanbul*, p. 326.

(80) See note 72.

tances refer to the daily wage of builders<sup>81</sup>. In 1746 it is stated that "for years" their wages were set at 30 aspers per day, until just two years previously when they were increased to 40. The same wage applied in 1761 with the condition, however, that the wage without food was 40 aspers per day, but with food it was 30<sup>82</sup>. In Crete we see that a day's wages remained stable but that during the years 1744–61 the price of bread rose by 57.7 %. In 1744 one okka of bread was priced at 4 aspers, while in 1761 it was priced at 6.3 aspers<sup>83</sup>.

Similar calculations for the Peloponnese from the late 18th and early 19th centuries show that the price of wheat more than tripled between the years 1793 and 1821 while a farm labourer's wage does not seem to have risen by more than 50 %. The small manufacturer's wage did rise more significantly, though again not as much as the price of wheat<sup>84</sup>.

Sp. Asdrachas has produced counts that give some indication of the buying power of wage earners in certain Greek areas at the end of the 18th and in the early 19th centuries<sup>85</sup>. The buying power of a farm labourer's daily wage at the end of the 18th century was about 6.5–8 kg of bread, while that of an artisan was between 9.5 and 13 kg. While these figures probably tend to show the lowest levels, they do indicate that the wage level was significantly higher than a mere subsistence level. If they are considered alongside the number of working days, which was low, and alongside that proportion of the wage which was deducted in kind and was supposed to correspond to the daily food requirements of the worker, then the figures would seem to indicate that changes in daily wage levels did not keep up with the change in price of the most important consumer product, ie. wheat, or at least alterations in wage level occurred at a very much delayed pace. In the last few years of the 18th and the first two decades of the 19th century the alignment of wages to wheat prices seems to have been particularly unfavourable to the wage earner<sup>86</sup>.

(81) N. Stavrinidis, *op. cit.*, t. IV, p. 308.

(82) "With three aspra for the price of a loaf", ie. 1 paras as defined by the price fixed for bread. See *ibid.*, t. V, pp. 157–7.

(83) See Appendix, Table 2 (prices of bread in Crete).

(84) V. Kremmydas, *Trade in the pre-Independence Peloponnese, 1793–1821* (in Greek), Athens 1980), pp. 115–123 and 129. For the tripling of the price of grain during this same period cf. T. Güran, "The State Role in the Grain Supply", p. 35.

(85) Sp. Asdrachas, *The Greek Society and Economy, 18th–19th Centuries*, (Athens 1982), pp. 28–30, see Tables 6 and 8.

(86) *Ibid.*, p. 31.

This study has dealt purely with the commercial phase of the circulation of wheat, the phase, in other words, that begins from the moment that a surplus of local production leads to its availability for marketing and it consequently acquires financial exchange value at the Un Kapan of a town or city. We examined the progress of this basic consumer product up to the final stage, where it becomes a loaf of bread in the hands of the consumer. As far as the nature and the availability of the sources allowed, we attempted to calculate the price of the product (from wheat to bread) at its various stages of production, and it has been shown that increases in the price of bread were disproportionately smaller than the increases in the price of wheat. The cost of a loaf of bread, for socio-political reasons, had to be kept as low as possible, and so it tended to be reduced in weight, while at the same time we see a squeezing of the profits of the bakers.

Table 1. Prices of wheat in Candia

Data	kile	muzur	akçe	guruş	paras
1670		1	80		
1671	1		85		
1671		1	54	=18	
1684		2	66		
1685		3		1	
1686		2.5		1	
1688		2	=146	1	=44
1689		2.5		1	
1698		3.75		1	
		4-4.5	1		
1696-1698		3	1		=45
1699		3-3.5		1	
1709		3	1		
1714		2.25		1	
1717		2.5		1	
1729		2		1	
1744		1			20
1752		1			20
1755		1			25-30
1756		1			40
1756		1			31
1756		1			34
1759		1			30
1763		1			2
1764		1			24
1765		1			40

Source: N. Stavrinidis, *Translations of Turkish Documents concerning the History of Crete*, t. I-V, (Heracleion of Crete 1975-1985). (1670; t. I, p. 193), (1671; t. II, pp. 6, 21), (1684; t. II, p. 217), (1685; t. II, p. 269), (1686; t. II, p. 285), (1688; t. II, p. 310), (1689; t. II, p. 320), (1698; t. III, pp. 147, 197), (1699; t. III, p. 217), (1709; t. III, p. 366), (1714; t. III, p. 379), (1717; t. IV, p. 16), (1729; t. IV, p. 178), (1744; t. IV, p. 276), (1752); t. IV, p. 382), (1755; t. V, p. 62), (1756; t. V, pp. 77, 76), (1759; t. V, p. 118), (1763; t. V, p. 221 (1764; t. V, p. 243), (1765; t. V, p. 258).

Table 2. Prices of bread in Candia

Date	dirhem	aspers	paras
1672	120	1	
1685	130	1	
1686	110	1	
1688	90	1	
1689	110	1	
1691	125	1	
	100	1	
1698	115	1	
	136	1	
1701	80	1	
	90	1	
1709	100	1	
1717	90	1	
1717	90	1	
1733(?)	100	1	
1733	96	1	
1736	94	1	
1744	100	1	
1747	90	1	
1748	90	1	
1749	80	1	
1752	100	1	
1752	100	1	
1753	100	1	
1755	95	1	
1755	80	1	
1756	150		1
1759	200		1
1760	70	1	
1760	80	1	
1761	80	1	
1761	240		1
	190		1
1763	74	1	
1765	150		1

Source: N. Stavrinidis, *op. cit.*, (1672; t. II, p. 54), (1657; t. II, p. 269), (1686; t. II, p. 285), (1688; t. II, p. 310), (1689; t. II, p. 320), (1691; t. II, p. 372), (1698; t. III, p. 147), (1701; t. III, p. 260), (1709; t. III, p. 366), (1717; t. IV, pp. 12, 16), (1733; t. IV, pp. 190, 196), (1736; t. IV, p. 217), (1744; t. IV, p. 276T), (1747; t. IV, p. 318), (1748; t. IV, p. 328), (1749; t. IV, p. 354), (1752; t. IV, p. 382 and t. V, p. 5), (1753; t. V, p. 35), (1755; t. V, pp. 51, 62), (1756; t. V, p. 77), (1759; t. V, p. 118), (1760; t. V, p. 126), (1760; t. V, p. 133), (1761; t. V, pp. 145; 154), (1763; t. V, p. 221), (1765; t. V, p. 259).

Tablo 3. Prices of cheat and bread in Candia

DATE	CHEAT			BREAD		
	muzurs	guru	paras	dirhem	aspers	paras
1685	3	1		130	1	
1686	2.5	1		110	1	
1688	2	1		90	1	
1689	2.5	1		110	1	
1717	2.5	1		90	1	
1744	1		20	100	1	
1752	1		20	100	1	
1755	1		25	80	1	
1756	1		40	150		1
1763	1		27	74	1	
1765	1		40	150		1

Source- N. Stavrinidis, *op. cit.*, (1685; t. II, p. 269), (1686; t. II, p. 285), (1688; t. II, p. 310), (1689; t. II, p. 320), (1771; t. IV, p. 16), (1744; t. IV, p. 276), (1752; t. IV, p. 382), (1755; t. V, p. 62), (1756; t. V, p. 77), (1763; t. V, p. 222), (1765, t. V, p. 258).

Table 4. Prices of cheat, flour and bread in Salonica

DATE	WHEAT			FLOUR			BREAD			
	kile	okka	gruuş	aspers	okka	aspers	paras	dirhem	aspers	paras
1777	1		4.5		1	9				
	1		4		1	8				
	1		4		1	7.5		65	1	
1781		1		12	1	14		66		1
					1	13		66		1
					1	12		100		1
1783	1		7		1	14		72		1
					1	13				
					1	12.5		110		1
1783	1		6		1	11.5				
					1	11				
					1	10.5		133		1
1783					1	12.5				
					1	12				
			6		1	11.5		128		1
1785	1		6							
1785					1	17		95		1
					1	11		95		1
					1	10.5		148		1
1785					1	10.5		112		1
					1	9.5		112		1
					1	9		168		1
1786	1		5		1	10.5		112		1
					1	9.5		112		1
					1	9		168		1
1786-7	1		4		1	8.5				
	1		3		1	7.5				
	1		3		1	7		200		1
1797	1		7		1	15.5		74		1
					1	14		74		1
					1	12.5		116		1
1800	1		12		1	25		48		1
					1	22		73		1
1802	1		13		1	28.5		42		1
					1	23.5		60		1
1806	1		20		1		13	43		2
					1		12.5	80		2
1807	1		16		1		11	67		2
					1		10	100		2
1807	1		10		1	20		54		1
					1	19		54		1
					1	18		80		1
1810	1		20		1	13.5		50		1
					1	12.7		80		2

1820	1	25	1	20	66	1
			1	12.5	128	4
1820	1	30	1	22	64	4
			1	16	106	4
1823	1	30.5	1	22.5	55	44
			1	22.5	66	4
			1	20	100	45.
1824	1	30.5			100	4
1824/5	1	25	1	20	80	4
			1	20	85	4
			1	12.5	128	4
1825	1	25	1	20	70	4
			1	20	85	4
			1	12.5	128	4
1826	1	20			53	2
					80	2
1834/5					64	4
					90	4
1835					100	8

Sources: a) I. Vasdeavellis, *Historical Archives of Macedonia, t. I. Archive of Salonica*, 1695-1912, (Thessaloniki 1952): (1777; p. 297), (1781; pp. 314-315), (1783; pp. 315-316), (1786/7; p. 316), (1797; p. 351), (1802; p. 384), (1806; p. 390), (1823; p. 467), (1825; p. 490), (1826; p. 497 and kadi record of Salonica no 216; p. 147). The data was supplemented and amended by first-hand examination of the *sicils*. These data is presented and discussed in the study of Sp. Asdrachas, "Marched et prix du ble en Grece au XVIIIe siecle", *Südost-Forschungen XXXI* (1972), p. 195. b) Historical Archives of Macedonia, Kadi records of Salonica: (1785; no 148, p. 1), (1786; no 150, p. 74), (1800; no. 175, p. 1), (1807; no 186, p. 85), (1810; no 190 and no 192, p. 1), (1820; no 205, p. 1 92), (1824; no 211, p. 122), (1824/5, no 214, p. 154), (1834/5; no 116; pp. 89, 100).

Table 5. Tariffs of various qualities of bread in Verroia (dirhem / akçe)

Date	nan-i aziz	has etmek	simit
1649			180
1650	350		220
			200
1699			160
1700			125
			110
	240	170	130
	150		115
1701		120	80
1706		180	80
1707			130
	220	200	120
1708-1709	210	190	140
1713	170		
1723			106
1723			150
1727	240	180	120
1748	85		57
1749	90		60
	100		67
	115		78
	120		80
	130		87
1750	125		
	120		
1751	150		
1762	65		
	70		
	110		
	85		
1782	95		60
			50
			55
			60
	90		
			55
1783	80		
	75		
	65		

Source: Kadi records of Verroia (Not all sicils have been paginated) (1649, 1650; no 19 pp.51-52), (1699-1700; no 42), (a701; no 41, pp. 38-39), (1706 / 7; no 49, p. 631), (1708 / 9; no 50, p. 47), (1713; no 53, p. 342), (1723; no 58, p. 978), (1727; no 62), (1748 / 9; no 74; p. 2), (1750 / 1; no 75), (1762; no 84, p. 2), (1782 / 3; no 32, p. 118).