

RURAL ECONOMY AND *VAKIF* FINANCES
IN SIXTEENTH-CENTURY ANATOLIA:
A STUDY ON ÇELEBİ SULTAN MEHMED VAKFI IN BURSA, 1558-1591

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BOĞAZİÇİ UNIVERSITY

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Thesis Abstract

Rural Economy and *Vakıf* Finances

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This study analyzes the dynamics of sixteenth-century economic growth and the following crisis at the end of the century in Anatolia as reflected in the finances of Çelebi Sultan Mehmed Vakfi in Bursa.

The main resource of the study is the account registers which contain the records of annual revenues and expenditures of the aforesaid pious foundation. These registers, which constitute an almost uninterrupted series between 1558 and 1591, provide information about economic variables that reflect trends on a larger scale in addition to the foundation's finances. This in turn allows for the construction of statistical series on trends in grain production in the foundation's villages, prices of a number of goods in Bursa and peasants' tax liabilities. A detailed presentation and interpretation of these quantitative data along with discussions of methodological problems encountered in the use of resources comprise the frame of the study.

The main argument of this study is that the original causes of the economic crisis at the end of the sixteenth century, at least as observed in Bursa and Sultan Mehmed Vakfi, lied in the economic developments in the countryside. After the mid-1570s, demographic pressure and successive years of poor harvests forced the peasants to shift towards subsistence agriculture and triggered an increase in the general level of prices. Price increase and decline in tax revenues due to the fall in the level of agricultural output in turn led to a decrease in the incomes of surplus-extracting classes.

Tez Özeti

On Altıncı Yüzyıl Anadolu'sunda

Kırsal Ekonomi ve Vakıf Maliyesi:

Bursa Çelebi Sultan Mehmed Vakfı Üzerine bir Çalışma, 1558-1591

Bu çalışma, Anadolu'da on altıncı yüzyıl boyunca görülen iktisadî büyümenin ve yüzyıl sonundaki buhranın dinamiklerini Bursa Çelebi Sultan Mehmed Vakfı'nın malî durumundaki yansımaları üzerinden incelemektedir.

İncelemenin ana kaynağı, bahsedilen vakfın gelir ve giderlerinin kaydedildiği yıllık muhasebe defterleridir. 1558-1591 yılları arasında düzenli bir seri halinde devam eden bu defterler, vakfın maliyesinin yanı sıra daha geniş ölçekteki eğilimleri yansıtan ekonomik değişkenler hakkında da detaylı bilgi içermektedir. Bu sayede vakfın köylerindeki tahıl üretimi, Bursa'da önemli sayıda gıdanın fiyatları ve köylülerin vergi yükümlülükleriyle alakalı devamlılık arz eden istatistik dizilerinin elde edilmesi mümkün olmuştur. Çalışmanın ana gövdesini, kaynakların kullanılmasında karşılaşılan metodolojik sorunların tartışılmasıyla bu nicel verilerin tafsilatlı bir dökümü ve yorumlanması oluşturur.

Bu çalışmanın ana savı Bursa Sultan Mehmed Vakfı'nda gözlemlendiği biçimiyle on altıncı yüzyıl sonu iktisadî krizinin esas sebeplerinin kırdaki ekonomik gelişmelerde aranması gerektiğidir. 1570'lerin ikinci yarısından itibaren artan nüfus baskısı ve birbirini izleyen kötü hasat yılları, köylüleri geçimlik üretime dönmeye zorlamış ve gıda fiyatlarında genel bir artışı tetiklemiştir. Fiyat artışı ve üretimdeki düşüşe bağlı vergi kayıpları ise iktisadî artığa el koyan sınıfların gelirlerinde azalmaya neden olmuştur.

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CHAPTER I

INTRODUCTION

Ottoman society in the late sixteenth and the first half of the seventeenth centuries confronted a general economic crisis, which was in fact part of a phenomenon common to the Mediterranean geography.¹ In the Ottoman Empire as elsewhere social unrest, political turmoil and institutional transformation accompanied the economic crisis. The crisis manifested itself in the transformation of the *timar* system², the Celâlî rebellions from the late sixteenth century onwards,³ the dissolution of rural society and the consequent massive flight of peasants from their lands in the early decades of the seventeenth century – the so-called ‘great flight’ (*büyük kaçgun*).⁴ While the scholars generally agree upon the presence of an

¹ There is a vast literature on the so-called ‘seventeenth-century crisis’ in Europe, the scope of which by far exceeds the few representative examples cited here: Trevor Aston ed. *Crisis in Europe, 1560-1660* (London: Routledge and Kegan Paul Ltd., 1965); Geoffrey Parker and Lesley M. Smith ed. *The General Crisis of the Seventeenth Century* (London: Routledge and Kegan Paul Ltd., 1978); Jan de Vries, “The Economic Crisis of the Seventeenth Century after Fifty Years”, *Journal of Interdisciplinary History* 40, no. 2, (Autumn 2009), pp. 151-194. A useful introduction to the crisis as experienced in the Ottoman Empire is Suraiya Faroqhi, “Crisis and Change: 1590 – 1699”, *An Economic and Social History of the Ottoman Empire*, vol. 2, ed. Halil İnalçık and Donald Quataert (Cambridge: Cambridge University Press, 1994), pp. 433-474.

² Ömer Lütfi Barkan, “Timar”, *Türkiye’de Toprak Meselesi, Toplu Eserler I* (İstanbul: Gözlem Yayınları, 1980), pp. 852-870; Faroqhi, “Crisis and Change”, pp. 434-437; Bruce McGowan, *Economic Life in Ottoman Europe: Taxation, Trade and the Struggle for Land, 1600-1800* (Cambridge: Cambridge University Press, 1981), pp. 56-67; Douglas Howard, *The Ottoman Timar System and its Transformation, 1563-1656* (PhD. Diss., Indiana University, 1987), pp. 17-30.

³ Faroqhi, “Crisis and Change”, pp. 416-417, 433-438; Halil İnalçık, *The Ottoman Empire: The Classical Age, 1300-1600* (London: Phoenix, 2000 [1973]), pp. 50-51; Mustafa Akdağ, “Celâlî İsyânlarının Başlaması”, *Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi Dergisi* 4, no. 1, (1945), pp. 25-37; *Idem*, *Türk Halkının Dirlik ve Düzenlik Kavgası: Celâlî İsyânları* (İstanbul: Yapı Kredi Yayınları, 2009 [1963]); William J. Griswold, *The Great Anatolian Rebellion, 1000-1020/1591-1611* (Berlin: K. Schwartz Verlag, 1983).

⁴ Akdağ, *Celâlî İsyânları*, pp. 423-465; Çağatay Uluçay, *XVIII. ve XIX. yüzyıllarda Saruhan’da Eşkıyalık Hareketleri* (İstanbul: Berksoy Matbaası, 1955), pp. 140-141; Lütfi Güçer, *XVI. ve XVII.*

economic crisis, they suggest various causes to explain the nature of the crisis and transformation in the late sixteenth and the seventeenth centuries. Early studies emphasized the role of exogenous factors such as the rise of the Atlantic trade or the influx of American silver to the Ottoman lands in the economic crisis.⁵ Or, they claimed that the corruption and decline of the *timar* system led to the dissolution of economy and order in the countryside.⁶ However, these early explanations have arguably become outdated and are at best able to influence the contemporary perspectives on the crisis in the late sixteenth century to a limited extent.

A generic theme employed in the hypotheses to explain the crisis as a Mediterranean-wide phenomenon has been population pressure since the publication of Braudel's classic, *The Mediterranean*.⁷ The first effort to apply the Braudel thesis to the Ottoman Empire came in the early 1970s: Michael A. Cook's attempt to test the validity of this explanation for the Ottoman case in the light of evidence attained from the fiscal surveys (*tahrir defterleri*) ended with a favoring but inconclusive judgment.⁸ Population pressure was to retain its significance as an explanatory factor

Asırlarda Osmanlı İmparatorluğu'nda Hububat Meselesi ve Hububattan Alınan Vergiler (İstanbul: İstanbul Üniversitesi İktisat Fakültesi, 1964), p. 20.

⁵ Mustafa Akdağ, *Türkiye'nin İktisadi ve İçtimai Tarihi 2 (1453-1559)* (İstanbul: Cem Yayınevi, 1995), p. 135; Mustafa Cezar, *Osmanlı Tarihinde Levendler* (İstanbul: İstanbul Güzel Sanatlar Akademisi Yayınları, 1965), pp. 65-74; Ömer Lütfi Barkan, "The Price Revolution of the Sixteenth Century: A Turning Point in the Economic History of the Near East", *Journal of Middle East Studies* 6, no. 1 (January 1975), pp. 5-6.

⁶ Barkan, "Timar", 852-870; İncalcık, *The Ottoman Empire: The Classical Age*, 47-49; Mustafa Akdağ, "Timar Rejiminin Bozuluşu", *Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi* 3, no. 4 (1945), pp. 419-431.

⁷ Fernand Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II*, vol. 1 (London: University of California Press, 1995), pp. 394-415, 453-457, 570-604. Braudel's population-driven explanation was adopted by various monographers later on: for distinguished examples, see Emmanuel le Roy Ladurie, *Peasants of Languedoc* (Urbana: University of Illinois Press, 1976); Pierre Goubert, *Beauvais et le Beauvaisis de 1600 à 1730: Contribution à l'Histoire Sociale de la France du XVII^e Siècle* (Paris : Publications de la Sorbonne, 2013 [1977]).

⁸ Michael A. Cook, *Population Pressure in Rural Anatolia, 1450-1600* (London: Oxford University Press, 1972), p. 43.

for the agricultural crisis in the Ottoman countryside with the accumulation of monographs on different regions of the Ottoman geography, but its immediate impact arguably remained limited. The reason was probably the publication of an article that was to have a great influence on early modern Ottoman studies by Halil İnalçık.⁹

İnalçık discussed the population-driven explanation suggested by Cook, but attributed it a role of secondary importance.¹⁰ Instead, he proposed a model of transformation where he ascribed the primary role in triggering major structural changes that the society went through to the state's initiatives. He argued that the decisive factor that drove the peasants away from agriculture was not demographic pressure or economic breakdown, but the state's recruitment of peasants in increasing numbers as irregular troops.¹¹ In that, he drew attention to the appearance of landless vagrant peasants recruited as mercenaries by the state: *levends* and *sekbans*.¹²

The state's novel demand for these irregular troops stemmed from the military challenge that came from the Ottomans' rivals in the Western front. The so-called 'military revolution' in the second half of the sixteenth century gradually reduced the importance of cavalry and increased the role of infantry equipped with hand-guns.¹³

⁹ Halil İnalçık, "Military and Fiscal Transformation in the Ottoman Empire, 1600-1700", *Archivum Ottomanicum* 6 (1980), pp. 283-337.

¹⁰ *Ibid*, pp. 285-286.

¹¹ *Ibid*, p. 287.

¹² *Ibid*, p. 283. The word *levend* literally meant a male uprooted peasant. For their origins, see Cezar, *Osmanlı Tarihinde Levendler*. On the other hand, *sekban* signifies irregular troops equipped with muskets. Halil İnalçık, *An Economic and Social History of the Ottoman Empire* vol 1, ed. Halil İnalçık and Donald Quataert (Cambridge: Cambridge University Press, 1994), p. 1.

¹³ *Ibid*, p. 286. On the military revolution, see Geoffrey Parker, *The Military Revolution: Military Innovation and the Rise of the West, 1500-1800* (Cambridge: Cambridge University Press, 1988);

Furthermore, the prolonged wars with Iran on the eastern front and with Austria on the western front exacerbated the need for these soldiers.¹⁴ The government responded to these developments by both extending the ranks of Janissaries and recruiting mercenaries from among the landless peasantry.¹⁵ On the other hand, the halt of conquests and the expenditures for continuous warfare increased the state's need for cash. The rise in inflation further augmented this demand, which consequently forced the state to introduce new taxes on its subjects (*re'âyâ*¹⁶).

The erosion in the state's cash revenues due to price increase was aggravated by unfavorable conditions for direct tax collection in the countryside, which dried the traditional sources of tax revenues. The timariots in general and holders of smaller *timars* in particular, who had to spend years on campaign, were hardly able to collect taxes from their fiefs on a regular basis.¹⁷ Furthermore, competition over *timar* offices was becoming more heated, as the prolongation in bestowal periods indicated.¹⁸ As a result, the ordinary tithe, which made up the backbone of rural

Carlo Cipolla, *Guns, Sails and Empires: Technological Innovation and the Early Phases of European Expansion, 1400-1700* (New York: Minerva Press, 1965).

¹⁴ Faroqhi, "Crisis and Change", pp. 420-423.

¹⁵ İnalçık, "Military and Fiscal Transformation", p. 288-292. On the other hand, Baki Tezcan challenged the priority attributed to the state as the foremost source of demand for *sekbans* by İnalçık. He drew attention to the fact that many local governors sought to recruit these mercenaries even if they were not involved in battles. Tezcan argued that the rise of the *sekbans* was a product of the competition for political power in the provinces, made possible by the wave of monetization in the urban economy. See Baki Tezcan, *The Second Ottoman Empire: Political and Social Transformation in the Early Modern World*, (New York: Cambridge University Press, 2012), pp. 141-152.

¹⁶ *Ra'iyet* (pl. *Re'âyâ*): All those groups, Muslim or non-Muslim, outside the 'askeri elite, engaged in economic activities and thus subject to taxes. İnalçık, *Economic and Social History*, p. 1. For the main taxes imposed on *re'aya*, see *idem*, "Osmanlılar'da Raiyyet Rûsumu".

¹⁷ Barkan, "Timar", pp. 853; Oktay Özel, "The Reign of Violence: the Celalis, c. 1550-1700" in *The Ottoman World*, ed. Christine Woodhead (London-New York: Routledge, 2011), p. 185; Metin Kunt, *Sancaktan Eyalet: 1550-1650 Arasında Osmanlı Ümerası ve İl İdaresi* (İstanbul: Boğaziçi Üniversitesi, 1978), pp. 76-77; *idem*, *The Sultan's Servants: The Transformation of Ottoman Provincial Government, 1550-1650* (New York: Columbia University Press, 1983).

¹⁸ Howard, *The Ottoman Timar System*, pp. 113-125.

revenues in the Ottoman Empire, ceased to constitute a major revenue item by the end of the sixteenth century. The state responded to these developments by regularizing the extraordinary cash levies called ‘*avâriz-ı dîvâniyye*,¹⁹ which gradually came to be collected periodically in the seventeenth century. The instant need for liquidity further enforced the application of tax-farming (*iltizam*) on a considerably wider scale: from the late sixteenth century onwards, tax farming replaced *timar* distribution as the state’s predominant practice of revenue distribution.²⁰

On the whole, İnalçık’s model to explain the seventeenth-century crisis and transformation brought the initiatives and responses of the state to the forefront and analyzed economic crisis and social change in the countryside in reciprocal relation with the government policies implemented. As such, his article stands as a very sophisticated hypothesis that combined various factors in a consistently integrated narrative. However, the article’s significance for historiography primarily stems from its place at the crossroads of mainstream and revisionist traditions in scholarship. Indeed, this work in some respects exemplified the scholar’s commitment to the notion of a ‘classical empire’ that preceded the transitions so aptly described in the article.²¹ At the same time, it is possible to detect the embryonic or even well-developed predecessors of some themes that would be widely employed in the

¹⁹ “*Avâriz*: Extraordinary levies or services introduced by the state on emergency situations, mostly to support the navy.” İnalçık, *Economic and Social History*, p. xlv. Also see Ömer Lütfi Barkan, “*Avâriz*”, *İslam Ansiklopedisi* vol. 2 (İstanbul Milli Eğitim Basımevi, 1979); İnalçık, “Military and Fiscal Transformation”, pp. 313-317.

²⁰ *Ibid*, pp. 327-333; also see Mehmet Genç, “*İltizam*”, *Türkiye Diyanet Vakfı İslam Ansiklopedisi* vol. 22 (Ankara: TDV Yayınları, 2000), pp. 154-158.

²¹ For a critical evaluation of the notion of ‘classical era’, see Oktay Özel, “Modern Osmanlı Tarihyazımında ‘Klasik Dönem’: Bir Eleştirel Değerlendirme”, *Tarih ve Toplum, Yeni Yaklaşımlar* 4 (2006), pp. 273-294.

following twenty years by a generation of scholars whose principal aim has been to dismantle the so-called ‘decline paradigm’.²²

A widespread tendency among some of the scholars who conceived the late sixteenth and the seventeenth centuries as a period of transformation rather than decline has been an emphasis on the state’s ability to adapt itself to economic and social transformations in a pragmatic manner.²³ Salzmann’s studies exemplify this tendency peculiarly well. Following İnalçık, she argued that the Ottoman state was the initiator of the transformation in the fiscal structure from the *timar* system to tax-farming of the revenues from state lands (*mîrî arâzi*). In other words, the state was by no means a passive force that had to accept the realities of this transformation. On the contrary, the state’s increasing demand for cash triggered a process of limited privatization on land that eventually brought about the life-long tax farming (*mâlikâne-mukâta‘a*) agreements in the end of the seventeenth century.²⁴ While this development led to a realignment of political powers in the center and the provinces, the central government affectively controlled the autonomy of provincial actors via

²² A brilliant summary of the revisionist scholarly challenge to decline paradigm is found in Dana Sajdi, “Decline, its Discontents and Ottoman Cultural History: By Way of an Introduction” in *Ottoman Tulips, Ottoman Coffee: Leisure and Lifestyle in the Eighteenth Century*, ed. Dana Sajdi, (New York: I.B. Tauris Academic Studies, 2007), pp. 1-40.

²³ A few examples are Şevket Pamuk, “Institutional Change and the Longevity of the Ottoman Empire, 1500-1800”, *The Journal of Interdisciplinary History* 35, no. 2, (Autumn 2004), pp. 225-247; Gabor Agoston, “A Flexible Empire: Authority and its Limits on the Ottoman Frontiers”, *International Journal of Turkish Studies* 9, no. 1-2, (2003), pp. 15-31; idem, “Firearms and Military Adaptation: the Ottomans and the European military Revolution, 1450-1800”, *Journal of World History* 25, no. 1, (March 2014), pp. 87-88; Suraiya Faroqhi, *The Ottoman Empire and The World Around It* (New York: I.B. Tauris Academic Studies, 2004), pp. 2-4; Linda Darling, “Ottoman Fiscal Administration: Decline or Adaptation?”, *The Journal of European Economic History* 26, no. 1, (Spring 1997), pp. 157-158. A critique of the notion of Ottoman pragmatism is found in Murat Dağlı, “The Limits of Ottoman Pragmatism”, *History and Theory* 52, no.2, (May 2013), pp. 194-213.

²⁴ Ariel Salzmann, “An Ancien Régime Revisited: “Privatization” and Political Economy in the Eighteenth-Century Ottoman Empire”, *Politics and Society* 21 (December 1993), pp. 293-323.

various mechanisms such as confiscation, corruption and sales of offices.²⁵ In brief, Ottoman institutions were able to adapt themselves to the novel requirements of a monetized and limitedly privatized economy by the inclusion of a series of emergent actors.²⁶ By the same token, Karen Barkey underlined the Ottoman state's ability to respond to changing circumstances and to incorporate the discontented strata of society. Co-optation through negotiating and bargaining was a trait of Ottoman state making that distinguished it from its European counterparts – hence the imperial center was able to cope with the vagrant peasants by recruiting them as mercenaries.²⁷

A second vein in the scholarship that bore resemblance to the analytical perspective proposed by the authors cited above nevertheless differed from the latter in that it shifted focus from the state as an institution to different social groups within the sovereign elite and sought the origins of the late-sixteenth/early-seventeenth century transformation in the struggle among these groups. Rifa'at Abou El-Haj's studies pioneered the development of this peculiar tendency within the revisionist history writing, which particularly accentuated the parallels between the

²⁵ Ariel Salzman, *Tocqueville in the Ottoman Empire: Rival Paths to the Modern State* (Leiden: E.J. Brill, 2004), pp. 75-118.

²⁶ *Ibid*, pp.102-110, 139-150. The inclusion of provincial elites in the mechanisms of surplus redistribution and the networks of political negotiation has become a frequently-coincided theme in Ottoman studies. See Hülya Canbakal, *Society and Politics in an Ottoman Town: 'Ayntâb in the 17th Century* (Leiden: E.J. Brill, 2007), pp. 5-6.

²⁷ Karen Barkey, *Bandits and Bureaucrats: the Ottoman Route to State Centralization* (New York: Cornell University Press, 1994). A critical review of Barkey's conception of inclusive state is Aslıhan Aksoy Sheridan, "Celaliler/Eşkiyalar: Gayesiz Asiler miyiz ki Hepimiz Biz?", *Kebikeç: İnsan Bilimleri için Kaynak Araştırmaları Dergisi* 33 (2012), pp. 111-126.

transformation that the Ottoman Empire went through in the early modern era and the European experience.²⁸

El-Haj conceived the narrative of decline and corruption employed by contemporary Ottoman *literati* as a deflection of the actual realities of the time by the very groups who produced this literature. The advice to princes (*nasihâtnâme*) literature produced by the traditional elite in the seventeenth century in fact represented their discontent with the transformation in the constitution of the sovereign political elite, which they perceived as a decline in state authority.²⁹ In fact, from the second half of the sixteenth century onwards, a heated scramble over tax revenues characterized the political arena both in the imperial capital and the provinces. The maximization of revenue extraction gradually became the typical concern of factions within the ruling elite³⁰ as well as the emergent autonomous parties who benefited from the increased economic prosperity and commercialization during the sixteenth century.³¹ Another feature of the search towards revenue-raising

²⁸ Rifâ‘at ‘Ali Abou El-Haj, *Formation of the Modern State: The Ottoman Empire, Sixteenth to Eighteenth Centuries* (New York: Syracuse University Press, 2005 [1991]); idem, *The 1703 Rebellion and the Structure of Ottoman Politics* (New York: ACLS History E-Book Project, 1984).

²⁹ *Nasihâtnâme* is a genre of advice-to-princes literature which became particularly fashionable in the seventeenth century. For the traditional reading of *nasihâtnâmes* as documents of decline and corruption, see Barkan, “Timar”, pp. 855-858. For a general introduction to the topic, see Mehmet Öz, *Osmanlı’da Çözülme ve Gelenekçi Yorumları: XVI: Yüzyıldan XVIII. Yüzyıl Başlarına* (İstanbul: Dergâh Yayınları, 1997). It should be noted that Abou el-Haj is among the first to analyze the advice literature from a critical distance. See Abou El-Haj, *Formation of the Modern State*, pp. 29-40. For a similar analysis of the discontent of a member of traditional elite, see Cornell Fleischer, *Bureaucrat and Intellectual in the Ottoman Empire: the Historian Mustafa Âli, 1541-1600* (Princeton, N.J.: Princeton University Press, 1984). For another similar evaluation, see Baki Tezcan, “The Politics of Early Modern Ottoman Historiography” in *The Early Modern Ottomans: Remapping the Empire*, ed. Virginia H. Aksan and Daniel Goffman, (Cambridge and New York: Cambridge University Press, 2007). See Kafadar’s employment of the term ‘decline’ in a similarly limited fashion for the traditional elite: Cemal Kafadar, “The Question of Ottoman Decline”, *Harvard Middle East and Islamic Review* 4 (1997-1998), pp. 30-75; idem, “The Ottomans and Europe, 1450-1600”, *Handbook of European History, 1400-1600* Vol. 2, ed. Thomas A. Brady et al., (Leiden: E.J. Brill, 1994), pp. 613-617.

³⁰ Abou El-Haj, *Formation of the Modern State*, p. 14.

³¹ *Ibid*, p. 88.

was a tendency to shift from tax collection in kind to cash-extraction due to the monetization of economic transactions.³² The struggle over tax revenues found its echoes in the intensified class conflict in the countryside, where peasants responded to over-exploitation by attempting to establish an alliance with central government, outright resistance or ultimately fleeing the land on massive scale. Hence, rural society in the late sixteenth and the early seventeenth centuries entered into a period of economic crisis and political unrest that reduced the state's capacity of direct revenue extraction³³ while paving the ground for the emergence of a local class of revenue-holders who could impose terms of agreement upon the center.³⁴ On the other hand, Abou El-Haj insisted on placing the early modern Ottoman experience within the general schema provided by European historiography. He argued that the gradual 'privatization' of tax revenues via tax-farming from the late sixteenth century onwards brought about a differentiation between the dominant classes and state power, which meant a greater autonomy of the latter from the former at the same time.³⁵ This, as in the European case, signified the birth of the modern state with its efficient and autonomous institutions.³⁶ Abou El-Haj's effort to integrate the early modern transformation in the Ottoman Empire into the wider narrative of European history continues to enjoy wide acceptance among scholars due to the widespread

³² *Ibid*, p. 15.

³³ *Ibid*, pp. 13-15.

³⁴ *Ibid*, pp. 15-16.

³⁵ *Ibid*, pp. 7-8.

³⁶ *Ibid*, p. 9.

adoption of concepts such as shared modernities or global history.³⁷ Variants of the argument carried El-Haj's perspective to its logical extremes and underlined the aspects of resemblance between the Ottoman and the English early modern experiences.³⁸

On the other hand, the 1980s and the 1990s also saw an explosion of regional monographs that ultimately came to cover most of Anatolia based on the fiscal surveys.³⁹ The accumulation of a serious amount of information attained from the surveys contributed to the development of demographic studies as well, which led to a revival of the population pressure thesis in explaining the seventeenth-century economic crisis. The earlier applications of this hypothesis was thoroughly criticized on the grounds that the *tahrir* surveys could document only the phase of population increase, while the extent of demographic decline was measured by poll tax (*cizye*) or 'avârız registers of the seventeenth century, which posed serious obstacles to a reliable estimation of the total number of taxpayers.⁴⁰ However, with the discovery

³⁷ Huricihan İslamoğlu and Peter C. Perdue ed., *Shared Histories of Modernity: China, India, and the Ottoman Empire* (New Delhi: Routledge, 2009); for a recent evaluation of the discussions around the Notion of 'shared modernities', see the special issue of *The American Historical Review* on modernity: *The American Historical Review*, no.3, (June 2011), vol. 116.

³⁸ Baki Tezcan, *The Second Ottoman Empire*.

³⁹ Tayyib Gökbilgin, *XV.-XVI. Asırlarda Edirne ve Paşa Livası: Vakıflar-Mülkler Mukataalar* (İstanbul: İstanbul Üniversitesi Edebiyat, Fakültesi Yayınları, 1952); Nejat Göyünç, *XVI. Yüzyılda Mardin Sancağı* (İstanbul: Edebiyat Fakültesi Basımevi, 1969); Zeki Arıkan, *XV – XVI. Yüzyıllarda Hamit Sancağı* (İzmir: Ege Üniversitesi Yayınları, 1988); Hanefi Bostan, *XV-XVI. Asırlarda Trabzon Sancağı'nda Sosyal ve İktisadi Hayat* (Ankara: Türk Tarih Kurumu, 2002); Geza David, *Osmanlı Macaristan'ında Toplum, Ekonomi ve Yönetim: 16. Yüzyılda Simontornya Sancağı* (İstanbul: Tarih Vakfı Yurt Yayınları, 1999); Gyula Kaldy-Nagy, *Kanuni Devri Budin Tahrir Defteri (1546-1562)* (Ankara: Ankara Üniversitesi Dil Tarih-Coğrafya Fakültesi Yayınları, 1971); Mehmet Taştemir, *XVI. Yüzyılda Adıyaman (Behisni, Hısn-ı Mansur, Gerger ve Kahta Sosyal ve İktisadi Tarihi)* (Ankara: Türk Tarih Kurumu, 1999); Mehmet Ali Ünal, *XVI. Yüzyılda Çemişgezek Sancağı* (Ankara: Türk Tarih Kurumu, 1999); idem, *XVI. Yüzyılda Harput Sancağı (1518-1566)* (Ankara: Türk Tarih Kurumu, 1989); Bahaettin Yediyıldız, *Ordu Kazası Sosyal Tarihi (1455-1613)* (Ankara, Kültür ve Turizm Bakanlığı, 1985).

⁴⁰Huricihan İslamoğlu, *Osmanlı İmparatorluğu'nda Devlet ve Köylü* (İstanbul: İletişim Yayınları, 2010), pp. 107-117; Maria N. Todorova, "Was There a Demographic Crisis in the Ottoman Empire in the Seventeenth Century?", *Etudes Balkaniques* 2 (1988), pp. 55-63. For *cizye* and 'avârız registers,

of the detailed ‘*avârız registers*’⁴¹ and their subsequent employment for demographic calculations in some regional monographs⁴² the proponents of population pressure hypothesis has arguably gained the upper hand in this old debate.⁴³

Recently, a contribution to the debates on the causes of seventeenth-century crisis came from climatologists and historians of climate. Under the influence of the increasing interest in the impact of climate on agricultural history,⁴⁴ specialists of Ottoman history also drew attention to the possibility that the eastern Mediterranean in general, and Ottoman geography in particular might also have suffered from the ‘Little Ice Age’ that negatively affected the agricultural production in Western Europe from the sixteenth century onwards.⁴⁵ Although subsequent research revealed

see Oktay Özel, “Avarız ve Cizye Defterleri” in *Osmanlı Devleti’nde Bilgi ve İstatistik*, ed. Halil İnalçık and Şevket Pamuk (Ankara: Devlet İstatistik Enstitüsü, 2000), pp. 33-50.

⁴¹ Oktay Özel, "17. Yüzyıl Osmanlı Demografi ve İskan Tarihi İçin Önemli Bir Kaynak: 'Mufassal' *Avârız Defterleri*", Paper presented at XIIth International Congress of Turkish History /Uluslararası XII. Türk Tarih Kongresi (12-17 Eylül 1994 Ankara), published in *XII. Türk Tarih Kongresi, Kongreye Sunulan Bildiriler*, III. Cilt, Ankara: TTK Basımevi, 2000, pp. 736-743.

⁴² Oktay Özel, *Changes in Settlement Patterns, Population and Society in Rural Anatolia: A Case Study of Amasya (1576-1642)*, unpublished Ph.D. Thesis, Manchester, Department of Middle Eastern Studies, 1993; Ali Açık, *Changes in Settlement Patterns, Population and Society in North Central Anatolia: A Case Study of the District (Kaza) of Tokat (1574-1643)* (Ph.d diss. Manchester University, 1999).

⁴³ For a review of discussions, see Oktay Özel, “Population in Ottoman Anatolia during the 16th and 17th Centuries: The ‘Demographic Crisis’ Reconsidered”, *International Journal of Middle East Studies* XXXVI, no. 2 (2004), pp. 183-205.

⁴⁴ The writings on climate history in seventeenth-century Europe and Mediterranean have by now come to comprise a vast literature. See Emmanuel Le Roy Ladurie, “Histoire et Climat”, *Annales: Économies, Sociétés, Civilisations* 14, no. 1 (1959), pp. 3-34 ; *idem*, *Times of Feast, Times of Famine : a History of the Climate since the Year 1000* (New York, Doubleday: 1971); Christian Pfister, “An Analysis of the Little Ice Age Climate in Switzerland and Its Consequences for Agricultural Production,” in *Climate and History: Studies in Past Climates and Their Impact on Man*, ed. M. L. Wigley et al. (Cambridge: Cambridge University Press, 1981), pp. 214-48; Robert I. Rotberg and Theodore K. Rabb ed., *Climate and History: Studies in Interdisciplinary History* (Princeton: Princeton University Press, 1982).

⁴⁵ William J. Griswold, “Climatic Change: A Possible Factor in the Social Unrest of Seventeenth Century Anatolia” in *Humanist and Scholar, Essays in Honor of Andreas Tietze* ed. Heath W. Lowry and Donald Quataert (Istanbul: The Isis Press and the Institute of Turkish Studies, 1993), pp. 37-57; Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire* (Cambridge: Cambridge University Press, 2011); *idem*, “The Little Ice Age Crisis in the Ottoman Empire: A Conjuncture in Middle East Environmental History,” in *Water on Sand: The Environmental History of the Middle*

that a pattern of transition from warmer to cooler climate conditions was hardly detectable in the Eastern Mediterranean,⁴⁶ the study of climate nevertheless considerably extended the scholarly knowledge about the relation between weather events and output level in Anatolia in the sixteenth and seventeenth centuries.

In fact, explanations that depend on the social-institutional changes as primary causes of the seventeenth-century crisis and those that put forward the demographic and climatic factors are not necessarily mutually exclusive.⁴⁷ Yet, there seems to be a persistent gap between the macro-analyses of crisis and change in the empire and the research that focuses on the regional economies based on the survey registers. One reason for the lack of interaction between the two scholarly literatures is the monographers' apparent reluctance to discuss the same phenomena at a higher level of theoretical abstraction.⁴⁸ On the other side of the coin, the ongoing traditional premise about the persistence of a high land/labor ratio in Ottoman geography arguably prevents the integration of demographic factors to larger theoretical models. Indeed, for a long time historians and sociologists specialized in the field of Ottoman studies assumed that the Ottoman lands in general and Anatolia in particular was characterized by a relative scarcity of labor, which gave the upper hand in class balances to the peasantry. The peasants were able to conserve their relative freedom

East, ed. Alan Mikhail (New York: Oxford University Press, 2012).

⁴⁶ Murat Türkeş, "İklim Değişiklikleri: Kambriyen'den Pleyistosen'e, Geç Holosen'den 21. Yüzyıla", *Ege Coğrafya Dergisi* 22, no. 1 (2013), pp. 1-25.

⁴⁷ An exemplary amalgamation is Jack A. Goldstone, "East and West in the Seventeenth Century: Political Crisis in Stuart England, Ottoman Turkey, and Ming China", *Comparative Studies in Society and History*, 30/1, (January 1988), pp. 103-142.

⁴⁸ Of course, there are valuable exceptions to this general tendency: see Özel, "Population in Ottoman Anatolia"; Mehmet Öz, *XV-XVI. Yüzyıllarda Canik Sancağı* (Ankara: Türk Tarih Kurumu Yayınları, 1999); Açikel, *Changes in Settlement Patterns*; Bruce McGowan, "Food Supply and Taxation on the Middle Danube (1568-1579)" *Archivum Ottomanicum I* (1969), pp. 139-196; İslamoğlu, *Devlet ve Köylü* among others.

against the local surplus extractors, as they held the threat of fleeing the land in case of over-exploitation and thereby achieved to gain the support of central authority which sought to assure the regular flow of tax revenues to the imperial treasury. Hence, the structural labor scarcity in Anatolia constituted one of the pillars on which the alliance between the bureaucratic elite and the small peasantry was founded.⁴⁹

However, there is arguably another reason for the resistance to the wider acceptance of demographic pressure and the subsequent population crisis as a reality of Ottoman history in the late sixteenth and the seventeenth centuries. That is the inability of the traditional sources of Ottoman economic history to supply a bulk of statistical data on a number of significant variables that would corroborate an otherwise incomplete narrative aimed to explain the seventeenth-century crisis with primary reference to internal dynamics of economy. For instance, price history – a sub-field of primary significance for economic history – remained at a preliminary level until the increasing exploitation of *vakıfs*' account books in the last fifteen years. Furthermore, measuring the volume of production or the levels of productivity, or at least detecting production trends has hitherto proved very difficult based on fiscal surveys. Indeed, even though survey registers are valuable resources for the study of demographic history that suffices to vindicate the hypothesis of population pressure, they provide woefully inadequate data regarding production, while the limited statistics they offer hardly stand tests of reliability. On the other

⁴⁹Çağlar Keyder, *Türkiye'de Devlet ve Sınıflar* (İstanbul: İletişim Yayıncılık, 1989); idem, *Toplumsal Tarih Çalışmaları* (İstanbul: İletişim Yayınları, 1983); idem, "Introduction: Large-Scale Commercial Agriculture in the Ottoman Empire?" in *Landholding and Commercial Agriculture in the Middle East*, ed. Çağlar Keyder and Faruk Tabak (Albany: State University of New York Press, 1991), pp.1-17; Halil İncalcık, "The Emergence of Big Farms, Çiftlik: State, Landlords, and Tenants" in *Landholding and Commercial Agriculture in the Middle East*, ed. Çağlar Keyder and Faruk Tabak (Albany: State University of New York Press, 1991); Halil İncalcık, "Köy, Köylü ve İmparatorluk" in *Osmanlı İmparatorluğu: Toplum ve Ekonomi* (İstanbul: Eren Yayıncılık, 1993).

hand, there is no need to say that the statistics of demographic trends are not sufficient for an analysis of population pressure unless supported by reliable figures for food supply and productivity.

This study has no *a priori* preference for any of the different perspectives that the scholars hitherto proposed to explain the nature of economic crisis in the seventeenth century, nor does it aim to support or discredit any of these hypotheses based on the findings that will be presented in the following pages. Although it inevitably bends the stick towards economic causes in the narrower sense behind the crisis, this is rather a product of the fact that the scope of research undertaken here is restricted to archival material of primarily quantitative nature. The principal aim of the study is to contribute to the bulk of knowledge concerning the economic aspects of the developments in the second half of the sixteenth century that eventually led to a crisis. Throughout the discussion, emphasis remains on the empirical evidence and possible interpretations of it. Occasionally, however, I discuss their implications for the debates over the economic causes of the seventeenth-century crisis and try to place the evidence within the greater narrative of the late sixteenth- and seventeenth-century transformations as well.

In this study, I aim to examine the causes and the roots of the late sixteenth-century agricultural crisis in Ottoman Anatolia as reflected in the account registers of Çelebi Sultan Mehmed Vakfi in Bursa. The account registers of the aforesaid pious foundation (*vakıf*) cover the period between the years 1558 and 1591. An analysis of the statistical data attained from these registers does not only elucidate the impact of the general economic developments during the period on the finances of this *vakıf*, but also reveals the patterns of change in the rural economy on the micro scale of the villages from which the foundation collected revenues.

The Sources

This study primarily depends on the account registers of Çelebi Sultan Mehmed Vakfi in Bursa. A bunch of earlier studies that exploited the *vakıf* account registers for the purposes of economic history inspired me to undertake a research into the account books of pious foundations,⁵⁰ while an earlier study by Kayhan Orbay that drew attention to the particular opportunities which the account books of Sultan Mehmed Vakfi proposed helped me determine the specific material used here.⁵¹ Indeed, the fact that the account registers of the foundation constitute an almost continuous series from 1558 to 1591 – a period of critical significance to comprehend the dynamics behind the subsequent crisis and transformation – makes them extremely if not uniquely valuable for the student of Ottoman economic history. The following description will demonstrate that the content of the registers does not only reveal the impact of economic growth and succeeding crisis on an imperial *vakıf*, but also provides a variety of data on the dynamics of the agricultural economy unequaled by any other archival material.

⁵⁰ Suraiya Faroqhi, *Towns and Townsmen of Ottoman Anatolia* (Cambridge: Cambridge University Press, 1984); *idem*, “Agricultural Crisis and the Art of Flute-Playing: The Worldly Affairs of the Mevlevi Dervishes”, *Turcica* 20 (1988), pp. 43-69; *idem*, “Vakıf Administration in Sixteenth Century Konya: The Zaviye of Sadreddin-i Konevi”, *Journal of the Economic and Social History of the Orient* 27, no. 2, (1974), pp. 145-172; Tevfik Güran, *Ekonomik ve Mali Yönleriyle Vakıflar* (İstanbul: Kitabevi, 2006); Amy Singer, *Palestinian Peasants and Ottoman Officials: Rural Administration Around Sixteenth-century Jerusalem* (Cambridge and New York: Cambridge University Press, 1994); Beshara Doumani, “Endowing Family: Waqf, Property Devolution, and Gender in Greater Syria, 1800 to 1860” *Comparative Studies in Society and History*, 40/1 (1998), pp. 3-41; Kayhan Orbay, “Bursa’da Sultan II. Murad Vakfi’nin Mali Tarihi (1608-1641)”, *İstanbul Üniversitesi İktisat Fakültesi Mecmuası* 61 (2011), pp. 293-322; *idem*, *The Financial Administration of an Imperial Waqf in an Age of Crisis: A Case Study of Bayezid II’s Waqf in Amasya (1594-1657)*, (Master’s Thesis, University of Bilkent, 2001).

⁵¹Kayhan Orbay, “16. Ve 17. Yüzyıllarda Bursa Ekonomisi: Sultan Çelebi Mehmed Yeşil İmaret’inin Mali Tarihi (1553-1650)”, *OTAM* (Ankara: 2007).

We learn from the endowment deed (*vakfiye*) that the pious foundation was established by Sultan Mehmed I in April 1419 (*Rebîu'l-evvel* 822 in Islamic Calendar).⁵² Although the *vakfiye* stated that the founder of the *vakıf* and his lineage was to conduct the tasks of the trustee as well, the account registers make explicit that the business affairs of the foundation were carried out by appointed trustees, which was the common practice in imperial *vakıfs*. The foundation had approximately 100 workshops, two inns named İpek Hanı (the silk inn) and 'İvaz Paşa Hanı in Bursa, a bathhouse at Bergama and 14 villages recorded in the *vakfiye*.⁵³ The foundation employed a considerable number of people including a prayer caller (*muezzin*), a cleaner (*ferrâş*), a doorkeeper (*bevvâb*), a teacher (*müderriş*), a scribe (*kâtib*), two architects, five cooks and thirty students among others, whose salaries were all determined in the deed.⁵⁴ The *vakfiye* also determines the amount of food that would be distributed by the foundation's kitchen everyday as well as on special days,⁵⁵ though these figures usually do not overlap with the actual expenditures recorded in the account books.

The annual account registers of Sultan Mehmed Vakfı are found in the Prime Ministry Ottoman Archive in the folder with the code number BOA.MAD 5470.⁵⁶ While the *vakfiye* records the initial wealth as well as some of the expenses of a pious foundation, the *vakıf*'s actual financial affairs, revenues and expenditures were

⁵² Doğan Yavaş, Hasan Basri Öcalan, Sezai Sevim and Hakan Aydın, *Bursa Vakfiyeleri-1* (Bursa: Bursa Kültür Sanat ve Turizm Ticaret A.Ş., 2013).

⁵³ *Ibid*, p. 300. On the other hand, the account registers record a total of 17 villages. See pp. 20-24 below.

⁵⁴ *Ibid*, pp. 300-301.

⁵⁵ *Ibid*, p. 300.

⁵⁶ Başbakanlık Osmanlı Arşivi, Maliyeden Müdevver Defterler 5470.

kept in its annual account books. A typical account register contains the revenue and expense items of an accounting year as well as the surplus or deficit at the year's closing. The account books open with a brief script that specifies the genre of the book, the endower and the place of the *vakıf*, the names of the trustee and the scribe and finally the time period that the account book covered. Many of the account books of Sultan Mehmed Vakfi cover a whole accounting year, but a number of them span only part of the full accounting year (see Table 1.1, 1.2 and 1.3).

The records begin with the amount transferred from the last year (*asl-ı mâl ma'a bakıyye-i muhâsebe-i mâziyye*). The total revenues of the foundation in the current accounting year (*'an mahsûlât-ı evkâf ma'a bahâ-yı gallât*) come next, which consist of the revenues collected in cash (*'ani'l-nükûd*) and the stock sales (*bahâ-yı gallât*). The particular items of revenues follow these total figures.⁵⁷

One of the significant sources of revenue for the *vakıf* was the monthly revenues (*'ani'l-müşâherât*), which included the rent revenues from the foundation's inns and workshops. In cases where the foundation's administrators leased the monthly revenues, the records included advance payments (*mu'accele*) as well. These records in the account books in general can be considered representative of the rent levels in the city where the foundation's real estates were located.

The agricultural revenues in cash (*'an mahsûl-i mirî*) were the most significant item among the *vakıf*'s revenues. The account books recorded the cash levies collected from each village separately. Furthermore, they recorded each item of revenue within a village also separately, which allowed for a detailed analysis of the composition of agricultural revenues of the *vakıf* as well as the changes in levels of

⁵⁷ Also see Table 4.1.

each in time. As such, the agricultural revenues in cash constituted one of the most promising data pools supplied by the registers for the study of rural economy.

The next item, the miscellaneous revenues (*'an mahsûl-i emvâl-i müteferrik*), included either irregular incomes or those who did not belong to any other item. The amount of the miscellaneous revenues remained negligible for the *vakîf*'s balance sheet.

The revenues of the foundation ended with the stock sales (*'ani'l-mebiât*). The records of annual grain sales from the stock made up another significant data source for the purposes of this study. For they not only allow the calculation of the sales prices for grains, but also provided insight to the economic strategies adopted by the *vakîf* management.

The casting of expenditures followed the revenues. The account books recorded the aggregate expenditures under the title 'reduced from this' (*vuzi 'a min zâlike*), after which came the salary payments of the *vakîf*'s employees (*el-vezâ'if*), who were classified according to their services. The account books also included records of the payments to the pensioners (*zevâ'idhorân*) of the foundation.

The total expenses (*el-ihracât*) followed the payments, among which the most significant item was the kitchen expenditures (*be cihet-i harc-ı matbah-ı 'âmire*). The *vakîf*'s records of kitchen expenditures are probably the most important archival resource for price history and indeed formed the backbone of previous studies which tried to construct the price series for certain goods. Needless to say, these records provided the data for the analysis of price levels in this study as well.

Miscellaneous expenditures (*be cihet-i harc-ı sâ'ire*), which consisted of relatively negligible expenses of the foundation, followed the kitchen expenditures. Transportation expenses constituted the next item. They involved the costs of

transporting the grain from the villages to the foundation's granary and from there to the mill and back,⁵⁸ and occasionally reached considerable volumes. The following item was the repair expenses (*meremmât*). The repair of the *vakıf* buildings and real estates was among the foundation's liabilities and this item occasionally amounted to considerable sums as well.

After the casting of revenues and expenses, the account registers recorded the surplus of the accounting year, or the money left in the *vakıf*'s safe after the expenditures (*el-bâki*). However, the foundation was occasionally unable to collect the recorded revenues completely, and in that case the amount receivable (*der-zimem*) was reduced from the surplus in order to calculate the real surplus (*sahîhü'l-bâki*). At the end of a year's detailed account book, the scribe recorded the date of the preparation of the register. After the trustee and the scribe sealed it, the account book was sent to the Office of Chief Black Eunuch in İstanbul.⁵⁹

The account registers of Sultan Mehmed Vakfi contained an addendum of granary accounts attached at the end of the detailed account book, which showed grain intakes to and outflows from the foundation's storages. Besides, the archives contain summary versions (*icmâl*) of the annual registers which do not exceed one or two pages. The dates of preparation for detailed and summary registers generally differed. Summary account registers, which were drafted later, sometimes revealed significant transactions that were not included in the detailed account book of a year but which nevertheless considerably altered the financial position of the *vakıf* (A list of the account books used in this study is available in Appendix A, in Tables 1.1, 1.2 and 1.3).

⁵⁸ Orbay, "16. Ve 17. Yüzyıllarda Bursa Ekonomisi", p. 133.

⁵⁹ *Ibid*, p. 129.

In addition to the account registers, I benefited from the records of the foundation's villages contained in survey registers. There are two surveys that contain information about the villages of Sultan Mehmed Vakfi. The earlier one dates back to the year 1521 (928 in Islamic Calendar)⁶⁰ – a survey of imperial pious foundations (*defter-i evkâf-ı selâtin*) today kept in the Prime Ministry Ottoman Archive under the classification of survey registers (*Tapu Tahrir Defterleri*). The exact date of the second survey found in the Cadastral Archive in Ankara⁶¹ is not known, but the dates of the two corresponding *timar* surveys of Hüdâvendigâr (981 and 982 in Islamic Calendar) which were recorded and compiled probably at the same time with the *evkâf* survey allow us to assume that the *defter* was compiled and presented to the palace in the early 1570s – i.e. during the later years of the reign of Sultan Selim II. In addition to these main sources of statistical calculation, I benefited from two summary surveys of the Province of Anadolu for the year 1530 (937 in Islamic Calendar)⁶², which turned out to be summaries based on statistics received and reproduced from the fiscal survey of 1521.

Last but not least, I made use of fifteenth- and sixteenth-century Ottoman provincial codes (*livâ kânûnnâmeleri*) compiled and published by Ömer Lütfi Barkan

⁶⁰ Başbakanlık Osmanlı Arşivi Tapu Tahrir Defterleri 113.

⁶¹ Tapu Kadastro Müdürlüğü Kuyud-ı Kadime Arşivi 0570. Part of the data from this and the previous survey for the villages studied here were formerly transliterated in Ömer Lütfi Barkan and Enver Meriçli, *Hüdâvendigâr Livası Tahrir Defterleri* (Ankara: Türk Tarih Kurumu Yayınları, 1988). In addition, the survey with the code TK.KKA 0541 includes data concerning the *vakıf*'s villages located in Bilecik.

⁶² 166 Numaralı Muhasebe-i Vilayet-i Anadolu Defteri (937-1530): *Dizin ve Tıpkıbasım* (Ankara: T.C. Başbakanlık Devlet Arşivleri Genel Müdürlüğü, 1995); 438 Numaralı Muhasebe-i Vilayet-i Anadolu Defteri I (937-1530): *Dizin ve Tıpkıbasım* (Ankara: T.C. Başbakanlık Devlet Arşivleri Genel Müdürlüğü, 1993).

in 1943.⁶³ The provincial codes constitute perhaps the most important primary sources about the regulations concerning labor organization, taxation and land possession in early Ottoman history.⁶⁴ The provincial codes are generally found at the beginning of the detailed survey of the corresponding provinces, since they were written by the imperial official (*tahrir emîni*) obliged to survey the settlements of a certain area to prepare the aforementioned registers.⁶⁵ The content of the provincial codes was determined with reference to the local customs of a region in addition to the standards of the general legal framework of land tenure in the Ottoman Empire. Hence, these documents make up a mixture of a variety of legal practices encountered in different geographies of the empire rather than a standardized written law applied everywhere.⁶⁶

The Villages

The account registers record seventeen villages from which the *vakıf* held the right to collect revenues. Most of these villages were fairly close to the center of the foundation in the urban center of Bursa, although a number of them were relatively remote. The map in the appendix shows the locations of the *vakıf* – the physical complex of mosque, tomb, poorhouse, soup kitchen etc. – and a number of its

⁶³ Ömer Lütfi Barkan, *XV. ve XVI. Asırlarda Osmanlı İmparatorluğunda Ziraî Ekonominin Hukukî ve Malî Esasları Birinci Cilt: Kanunlar* (İstanbul: İstanbul Üniversitesi İktisat Fakültesi Yayınları, 2001 [1943]).

⁶⁴ Heath W. Lowry, “The Ottoman Liva Kanunnames Contained in the Defter-i Hakani” in *Studies in Defterology Ottoman Society in the Fifteenth and Sixteenth Centuries* (İstanbul: The Isis Press, 1992).

⁶⁵ Ömer Lütfi Barkan, “Kanunname”, *İslam Ansiklopedisi*, vol.6 (Eskişehir, M.E.B. Devlet Kitapları, 2001), pp. 185-197.

⁶⁶ *Ibid*, p. 193.

villages. I was not able to determine the exact place of the villages which I did not come across in modern maps in their old or new names. Of course, it is probable that some of these settlements have either disappeared or have been incorporated into larger administrative units by now. Indeed, some villages appear to have become quarters in the city or county centers.

Excluding the imperial capital, which was then the most crowded urban center in the Mediterranean, Bursa was the largest city in Ottoman Anatolia in the sixteenth century.⁶⁷ The city was located in the northern piedmonts of Uludağ and as such, stood at the southern end of the flat lands made up of low plateaus and plains that lie between the coastal mountains of Marmara in the north and Uludağ in the south. The massive body of Uludağ inevitably prevented any opportunity of transportation of Bursa to its immediate south and southeast, which restricted the hinterland of the city in that direction.⁶⁸ The geography was more favorable in the east-west direction and allowed relatively easy transportation from the mountainous zones of the Biga Peninsula in the west all the way to the western edges of the vast plateaus of grain cultivation in interior Anatolia.⁶⁹ In the northeast, the hinterland of the city seems to have been restricted by the limits of animal transaction and the presence of other urban centers rather than geographical obstacles. The fact that districts such as Beypazarı and Sivrihisar in this direction were included in the *Sancak* of

⁶⁷ Faroqhi, *Towns and Townsmen*, p. 303.

⁶⁸ Özer Ergenç, *XVI. Yüzyılın Sonlarında Bursa: Yerleşimi, Yönetimi, Ekonomik ve Sosyal Durumu Üzerine bir Araştırma* (Ankara: Türk Tarih Kurumu Yayınları, 2006), p. 14.

⁶⁹ Sırrı Erinç and Necdet Tunçdilek, “The Agricultural Regions of Turkey”, *Geographical Review* 42, no. 2, (April 1952), pp.186-188.

Hüdâvendigâr probably indicates the administrative effort for the efficient provisioning of Bursa.⁷⁰

The micro-climate of the valley in which Bursa was established is favorable for cultivation. Although the city is not located next to an important water stream, the annual rainfall abounds in the immediate foothills of Uludağ because of the orographic cloud formation in the mountain.⁷¹ Hence in the foothills as well as in the immediate rich plain climatic conditions allowed and continue to allow a diversified agricultural production. However, the wider region that made up the city's hinterland, the contours of which was described above, showed the characteristics of a semi-arid agricultural zone with inadequate amount of moisture and insufficient means of irrigation.⁷² The definitive form of agricultural activity in the region was therefore dry-farming.⁷³

In consistency with the necessities of geography described above, most of the villages from which Sultan Mehmed Vakfi collected revenues were located on a line that extended from the west of the city to its east and north-east. The account registers show that the principal economic activity in the villages was the cultivation of subsistence cereals that required dry farming. On the other hand, a number of large and small streams watered the wider hinterland of the city especially in the east

⁷⁰ Ergenç, *XVI. Yüzyılın Sonlarında Bursa*, pp. 121-122. Also see Halime Doğru, *XVI. Ve XVII. Yüzyıllarda Sivrihisar Nâhiyesi* (Ankara: Türk Tarih Kurumu Basımevi, 1997).

⁷¹ Haim Gerber, *Economy and Society in an Ottoman City: Bursa, 1600-1700* (Jerusalem: The Hebrew University, 1988), p. 3.

⁷² Erinç and Tunçdilek, "The Agricultural Regions of Turkey", p. 198-199.

⁷³ Gerber, *Economy and Society*, p. 3.

and north-east, which allowed for the adoption of irrigated rice cultivation.⁷⁴ The peasants in four of the *vakıf*'s villages studied here also engaged in rice growing.

To the west of the city, in the *nâhiye*⁷⁵ of Kite, lay a cluster of settlements from which the foundation collected taxes. The largest two among them were Görükle and Tansarı (today's İrfaniye) in the north, whereas the village Kite (today's Ürünlü) in the southeast was a little smaller. On the other hand, the settlements in the southeast were considerably minor in comparison to the former three. Kayapa was a modest village where the peasants engaged in rice cultivation in addition to the traditional subsistence activities. Kızılıklı was probably not more than an irregularly cultivated parcel of land, which appears as a distinct village in the survey of 1521 and in the early account registers of the *vakıf*. After the early 1570s, however, both the account registers and the *vakıf* survey of Selim II included its taxes in Kayapa. I was not able to identify the location of Yenice, which also ceased to exist in the account books after the early 1570s. All these villages today fall in an industrial zone in Bursa, where primarily automotive and textile factories are located. Although agricultural activity in the villages continues albeit to a limited extent, their market-oriented fruit and vegetable production not surprisingly does not give a clue about the conditions of the sixteenth century.

Another cluster of four villages of the foundation were located in the plains of İnegöl and Yenişehir. The vast flat land on which these four villages were founded was a dry-farming zone, which was nevertheless watered by the tributaries of Sakarya River. The creek Göksu, which originated from Sakarya flowed through the

⁷⁴ For the regions of rice cultivation in the *sancak* of Hüdâvendigâr, see Halil İncılık, "Rice Cultivation and the *Çeltükçi-Reaya* System in the Ottoman Empire", *Turcica* XIV (1982), 59-141.

⁷⁵ *Nâhiye* is the smallest administrative unit in the Ottoman system. It consisted of a number of villages as well as a *nâhiye* center and often had an appointed local judge (*kadi*) or his deputy (*nâ'ib*).

plain of Yenişehir, while one of its tributaries, Kocadere passed through the flat lands of İnegöl. In İnegöl, the villages Şib ‘Ali and Adıbini (today’s Alanyurt) probably used irrigation in the fields alongside Kocadere and its streams to engage in rice cultivation. To the north, Çeltükçi and Boğaz lay alongside the banks of Göksu. Although the name of the former settlement as well as certain customary levies recorded in the account books suggest that peasants in these two villages had also practiced rice growing in the past, by the second half of the sixteenth century rice cultivation in the area had been abandoned.

To the east of Yenişehir Plain, the foundation had the revenues of another group of villages. Among them, Kara-omca (Karaamca today) was located in Yarhisar, while Küplü, Aleksî and Bahadır⁷⁶ were near the town center of Bilecik. Probably because of the distance that made transportation difficult, the foundation leased the right to collect tithes from these villages. By the same token, the *vakıf* had only leased revenues in cash from Darıcı (Darıca today) in Gebze, which fell considerably remote from the city of Bursa.

The other two villages the revenues of which belonged to the foundation, Erdek and Ulu Köyü, were located in Kapıdağı Peninsula in today’s Balıkesir. These two were the farthest settlements to the center among the *vakıf*’s villages and paid all their tax liabilities in cash, since transportation costs would render the transfer of revenues in kind infeasible. They made up a very significant portion of the foundation’s total agricultural revenues in cash. Both the economic activities recorded in the tax items in the account registers and the quarters registered in fiscal surveys indicate that Erdek was a small town rather than a village. I was not able to

⁷⁶ I was unable to locate Bahadır and Aleksî on the map since they no longer exist today; but the account registers record them under the *nâhiye* of Küplü, which suggests that they were nearby the village with the same name. See Map.

detect the precise location of Ulu, but the account registers and fiscal surveys imply that it was a village nearby Erdek. The taxes collected from the village reveal that in Ulu as well the peasants engaged in rice growing.

Finally, the *vakıf* collected revenues from a village called Mü‘min-Ece in Bursa. The village does not exist today, nor could I detect its place. It had a very small population, but the revenues from there reached considerable amounts. Tax items recorded in the account books suggest that the residents of this village had orchards and vegetable gardens, where they probably engaged in market-oriented production and profited from vicinity to the urban center of Bursa.

The Status of Peasants

The *sancak* of Hüdâvendigâr in general and the agricultural zone that comprised the hinterland of Bursa in particular were among the first lands that the Ottomans had captured. As such, the region had been a place for the earliest organizations of agricultural labor implemented in the empire; and continued to reflect them even in the sixteenth century, when these older practices had either faded by themselves or were consciously ended by the state authority elsewhere in the empire. In some of the villages of Sultan Mehmed Vakfi these old practices also continued, which makes a brief description of them necessary before proceeding with the study.

The records of the villages in fiscal surveys mention certain categories of peasant producers such as *ellicis*, *kesimcis* or *bağbânân*. These were in fact legal statuses that bore resemblance to another form of labor organization implemented in the earliest centuries of the empire: that of sharecropper-slaves (*ortakçı kullar*). Our

knowledge regarding the laws that regulate the special relations of production between the state and the sharecropper-slaves comes from the code of the district of imperial demesnes in İstanbul⁷⁷, based on which Ömer Lütfi Barkan produced his pioneering article on the subject.⁷⁸ The share-cropper slaves belonged to a legal category different from the ordinary peasant subjects (*re'âyâ*). Their status was closer to the serfs of medieval Europe, determined by their lineage rather than the land that they cultivated.⁷⁹ The sharecropper-slaves were mostly war captives or their children, and sometimes purchased slaves.⁸⁰ As the name suggests, they cultivated land based on a sharecropping contract whereby the revenue holder – in this case the slave's owner as well – provided the seed as well as the farming animals and equipment, and in return extracted a portion, generally half, of the produce.⁸¹ In addition, the sharecropper slave was obliged to perform a number of corvées.⁸²

Based on his research on the fiscal surveys of Hüdâvendigâr, Barkan pointed out to the existence of sharecropper slaves in this region in addition to a number of hybrid forms. The author concludes that categories such as *kesimcis* and *ellicis* apparently came into existence as a result of certain alterations in the status of sharecropper-slaves and supports his argument with evidences of transitivity between the former and the latter.⁸³ Indeed, an addendum to the provincial code of

⁷⁷ Barkan, *Kanunlar*, pp. 86-109.

⁷⁸ Ömer Lütfi Barkan, “XV. Ve XVI. Asırlarda Osmanlı İmparatorluğu’nda Toprak İşçiliğinin Organizasyonu Şekilleri I: Kulluklar ve Ortakçı Kullar”, *Türkiye’de Toprak Meselesi, Toplu Eserler I* (İstanbul: Gözlem Yayınları, 1980), pp. 575-716.

⁷⁹ *Ibid*, p. 578.

⁸⁰ *Ibid*, pp. 577-578.

⁸¹ *Ibid*, pp. 588-589.

⁸² *Ibid*, pp. 593-594.

⁸³ *Ibid*, pp. 617-622.

Hüdâvendigâr dated to ca. 1563 (971 in Islamic Calendar) about *kesimcis* makes explicit that the status of some former slaves in the region had later been changed into *kesimcis*.⁸⁴ That those peasants who belonged to such categories in the villages of Sultan Mehmed Vakfi were all non-Muslim subjects arguably increases the possibility that they were also of slave origin.

The *kesimcis* differed from the sharecropper slaves in that they supplied their own seed and equipment and paid the revenue holder a fixed amount of grain called *kesim* (share).⁸⁵ Contrary to the ordinary tithe (‘*öşr*’), which amounted to a predetermined proportion of output, the peasants paid – or at least were obliged to pay – the same amount of *kesim* regardless of the fluctuations in total produce. On the other hand, *ellicis*’ obligations differed from *kesimcis* in that they were liable to pay a fixed amount of cash –which was in some cases determined as 50 *akças* or its multiples, hence the name *ellici* – as opposed to a fixed amount of grain.⁸⁶ The records in fiscal surveys demonstrate that the *kesimcis* in the villages Görükle and Tansarı were in fact former *ellicis* whose status had been altered by imperial order. A third category encountered in the registers among the peasants of Karaomca is *bağbânân*, and as the name suggests they were viticulturists who were liable to pay a fixed amount of cash called *resm-i bağbânân*.⁸⁷

Finally, a fourth special regulation that governed the labor organization in the villages of Sultan Mehmed Vakfi concerned the rice-cultivating peasant subjects (*çeltükçi-re’âyâ*). The *çeltükçi-re’âyâ* had its origins in the class of sharecropper

⁸⁴ Barkan, *Kanunlar*, p. 106.

⁸⁵ Barkan, “Toprak İşçiliğinin Organizasyonu”, pp. 612-613.

⁸⁶ *Ibid*, pp. 638-645.

⁸⁷ *Ibid*, pp. 645-647.

slaves, from which several hybrid categories between the former and ordinary *re'âyâ* derived.⁸⁸ That the special status of rice cultivators involved forms of labor exploitation that had aspects similar to coerced labor is no surprise, considering the drudgery of work in rice cultivation. Indeed, there are archival documents that counted rice growing among the special tasks assigned to certain peasant or Turcoman nomad groups.⁸⁹ The provincial code of Malatya dated to 1528 had prohibited the governors' use of coerced labor to harvest and husk the rice and asked them to use wage labor instead.⁹⁰ On the other hand, the government itself had imposed a four-day *corvée* of rice work on every household in the provincial code of Amid dated to 1518.⁹¹ The trade-off between the requisition of intensive and organized labor more or less throughout the year and the peasants' threat of fleeing the land under the heavy burden of coerced work seems to have led to the development of a special share-cropping contract with special exemptions and privileges to the rice growers.⁹² This contract had variants dependent on the customs of the region where rice cultivation was adopted but nevertheless consisted of a few basic components.

⁸⁸ İnalçık, "Rice Cultivation", pp. 88-94; Ömer Lütfi Barkan, "Osmanlı İmparatorluğu'nda Çiftçi Sınıfların Hukukî Statüsü", *Türkiye'de Toprak Meselesi Toplu Eserler 1* (İstanbul: Gözlem Yayınları, 1980), p. 741.

⁸⁹ For instance, see the code at the beginning of the survey register concerning the Turcoman nomads of Kocacık, published in Tayyip Gökbilgin, *Rumeli'de Yürükler, Tatarlar ve Evlâd-ı Fâtihân* (İstanbul: İşaret Yayınları, 2008), pp. 244-246; Halil İnalçık, "Osmanlılar'da Raiyyet Rüsümü", *Osmanlı İmparatorluğu: Toplum ve Ekonomi* (İstanbul: Eren Yayınları, 1993 [1959]), p. 53.

⁹⁰ Barkan, *Kanunlar*, p. 113.

⁹¹ *Ibid*, p. 148.

⁹² İnalçık, "Rice Cultivation", p. 94. The scholar claims that the main components of the system came to predominate during Mehmed II's reign and continued to characterize the organization of rice fields after Bayezid II's restoration of the former freehold or *vakıf* properties confiscated by Mehmed II. *Ibid*, p. 93.

The party that was to claim a share on the rice output was to provide the seed as well as the water supply – a regulation to which the Ottoman codes had several references.⁹³ The output would be shared equally between the appropriator and the producer after the seed was reserved for the next year.⁹⁴ What determined the status of the extractor of half of the produce was not the property rights over the land on which rice was grown, but the provisioning of seed and water, that is the property rights over the water source and canals. When the owner of water and the owner of land (*sâhib-i 'arz*) were different persons, the former extracted half of the output harvested, while the latter took one tenth – the usual tithe – from what belonged to the producers.⁹⁵ If the owner of water held the revenue rights over the land as well, the peasants either paid only half of the produce to the landlord, or that and the common tithe from their shares as well.⁹⁶ Unfortunately, the fiscal surveys provide no data about the exact rates in the villages of Sultan Mehmed Vakfi.

The rice-cultivating subjects in the Ottoman Empire enjoyed a number of privileges or rather compensations for their intensive work. Like other special groups who produced for and under the control of the state, they were exempted from the '*avâriz-ı divaniyye*. Besides, they paid the subject-peasants' levy in cash equivalent

⁹³ An example is from Sis in southern Anatolia, see Barkan, *Kanunlar*, pp. 202-203; also see Ahmet Akgündüz, *Osmanlı Kanunnameleri ve Hukuki Tahlilleri*, vol. 5 (İstanbul: FEY Vakfı Yayınları, 1992), p. 138 for an example from Kütahya.

⁹⁴ Barkan, *Kanunlar*, pp. 202-203; Akgündüz, *Osmanlı Kanunnameleri*, p. 138; Ahmet Akgündüz, *Osmanlı Kanunnameleri ve Hukuki Tahlilleri*, vol. 6 (İstanbul: FEY Vakfı Yayınları, 1993), p. 621; İnalçık, "Rice Cultivation", p. 87 and 111.

⁹⁵ Two examples to this regulation appear in the provincial codes of Çukur-âbâd (Adana) and Özer (a settlement of Turcoman nomads between Adana and Aleppo). Barkan, *Kanunlar*, p. 205 and 228.

⁹⁶ İnalçık, "Rice Cultivation", p. 111.

to three *kulluks*⁹⁷ instead of seven, in other words, 6 to 9 *akças*. The rice-growing *re'âyâ* could not resign from their position at will, and their status passed from father to son.⁹⁸

Outline of the Study

The nature of the archival material exploited in this research inevitably determined the strong and weak aspects of the analysis proposed here. The geographical scale of the study remained minor due to the limited number of settlements about which the account registers employed here provided information. Consequently, any assertion regarding the representativeness of the findings of this study for wider trends in the region or in the empire would remain speculative. On the other hand, the registers were exceptionally generous in providing rich and detailed data on that limited scale, which allowed for a detailed analysis of the correlations between various economic trends in variables such as population, prices and production. I was also able to examine the responses of subjective decision makers to these trends. The registers provided insight primarily into the economic behavior of the *vakıf* management, but also – albeit to a lesser extent – into that of peasants.

The analysis of data proceeds simultaneously on three different layers. The first layer is that of objective economic variables such as prices or production levels, the

⁹⁷ *Kulluks* were feudal services to the Sultan, transformed into cash equivalents which made up the cash levies imposed on subject peasants (*ra'ıyyet rüsumu*). See İnalçık, “Osmanlılar’da Raiyyet Rüşümü”, pp. 34-37.

⁹⁸ An article concerning the hereditary status of *çeltükçis* is in the code of İç-İl. See Barkan, *Kanunlar*, p. 54. In accordance with the Islamic Law, the status of mother determined that of the child for the sharecropper slaves. See Barkan, “Toprak İşçiliğinin Organizasyonu”, pp. 614-615. On the other hand, Barkan’s proposition that in the evolution from slaves to *ellicis* and *kesimcis*, land rather than person came to determine the cultivator’s status is probably equally valid for the *çeltükçis* as well.

general trends encountered in the urban as well as rural economy. A second one is the finances of the pious foundation, which was an institution with a sophisticated financial structure as well as a surplus extractor in the countryside. Last but not least, the layer of economic activities at the level of peasant family should be taken into account. For the peasants were the ultimate decision makers regarding the productive process and their economic behavior therefore substantially affected the course of economic changes.

Although the data acquired from fiscal surveys posed problems of reliability due to the limited scale of research, two phenomena became visibly prevalent: first, almost all the settlements from which the *vakıf* collected revenues witnessed a population growth from the 1520s to the early 1570s; and second, the residents of at least some of these settlements confronted with demographic pressure on food supply, the severity of which apparently varied from place to place. Indeed, both the increase in the number of unmarried male adults recorded in survey registers and the decline in the average plot size per household signified the presence of a population pressure, which fitted the general demographic patterns in sixteenth-century Anatolia as well. On the other hand, the archival material does not provide conclusive evidence to measure the impact of demographic pressure on the economic developments in the late sixteenth century, or to determine whether it eventually brought about a demographic crisis explicable in Malthusian terms. In any case, what concerns this study is not the presence or absence of a population crisis, but the impact of demographic pressure on the behavior of economic actors and thereby the dynamics of rural and urban economy.

In this sense, the analysis of price formation plays a crucial role. Both Orbay's and my research on the *vakıf*'s kitchen expenditures reveal an upward trend in

general price levels, which vindicates the previous knowledge about the price increase in Anatolian towns in the sixteenth century. The asymmetric paces of change in the level of prices for agricultural and manufactured, or for basic and luxury goods point to production-related causes of real price increase in particular. I argue that in an economy where the natural sector prevailed over the monetary one, such a pattern of price increase may be interpreted as a sign of the peasants' increasing tendency to refrain from market transactions.

On the whole, the experience of peasants in the *vakıf*'s villages from 1558 to 1591 can be divided into two successive phases. In the first phase of the period covered here, the interval from 1558 to approximately the mid-1570s, growth was characteristic of production trends in the countryside. With the exception of a few years the harvests were abundant. Gross production continued to increase; peasants were able to pay their tithes and other taxes on time and they probably introduced more agricultural goods to the market as well. Consequently, grain prices either remained stable or rose slightly.

However, after the mid-1570s the tides for the rural economy seem to have changed. The shrinkage in the average plot sizes suggests that the peasant families had begun to feel the negative impact of demographic pressure on agricultural productivity. In the second half of the 1570s the peasants confronted a series of poor harvests, which probably aggravated the living conditions in the countryside. A comparative analysis of cereal tithes shows that in the decisive collapse of production in the last years of that decade, extreme weather events played a significant role. Nevertheless, places where population pressure was less severe before the crop failures of the late 1570s were able to partially recover from production crisis by the late 1580s.

Demographic pressure accompanied by climate change pushed the peasants to shift their production toward subsistence grains such as wheat and particularly barley. Accordingly, they constricted their grain supply to the market, which led to further excess of demand and consequently to a persistent upward trend in cereal prices. Indeed, after the mid-1570s price levels continuously increased.

However, despite the producers' efforts, in the late 1570s and the early 1580s agriculture apparently entered into a time of crisis where annual production dramatically fell and peasants failed to pay a considerable portion of their taxes to the *vakıf*. The peasants' efforts apparently prevented a prolongation of these years of total crisis in some villages, but even there the rural economy never achieved to restore the earlier levels of production. On the other hand, in the settlements where subsistence production had already been prevalent and demographic pressure more acute in the early 1570s, even in the absence of demographic data it was possible to detect a serious population loss due to either excessive deaths or massive flight from land.

The period from 1558 to the late 1570s was a phase of economic growth for the *vakıf* as well. The foundation was able to collect its agricultural revenues promptly and adequately, and price stability eliminated the possibility of inflation-driven erosion in cash revenues. By contrast, the phase from the mid-1570s to the end of 1580s was characterized by the dual negative effect of the increase in general price levels and the fall in the *vakıf*'s revenues from the villages in kind. The foundation's grain revenues suffered from the distress in rural economy which witnessed successive crop failures in the late 1570s. The account registers recorded unpaid tithes in these years, which decreased the grain in the foundation's stock and laid an additional burden on cash budget. On the other hand, the cash balances of the *vakıf*

also received its share from the downward trend in general economy. The real agricultural revenues of the foundation in cash fell considerably due to price increase – a pattern which was paralleled in the urban rents as well. The debasements in the late 1580s further aggravated the decline in real cash incomes. In the late 1570s and the 1580s, the foundation's account registers recorded annual deficits and uncollected revenues.

The *vakif* pursued a belt-tightening strategy to restore balance in finances. It had to cut down dramatically on kitchen expenditures and particularly the purchases of luxury items such as meat in addition to efforts for maximizing tax revenues from the villages. In the end, it was able to close the accounting year with a current surplus by 1591. The cost of this achievement, on the other hand, was significant shrinkage in the volume of economic activity.

The following chapter presents the demographic trends in the *vakif*'s villages. To be sure, population was by no means a completely 'extra-social' factor beyond the reach of human intervention. On the contrary, through collective patterns of behavior communities undoubtedly practiced significant control on the fertility and death rates in the sixteenth century as they do in the case of contemporary societies. However, the available resources hardly allow for the detection of such behavior patterns, in the absence of which population figures are indispensably treated as exogenous variables introduced into the dynamics of rural society. The examination of demographic trends is nevertheless crucial for the purposes of this study, as it sets the stage for the analysis of economic change in the countryside.

The third chapter deals with the phenomenon of price increase in the second half of the sixteenth century in the light of price series constructed based on the statistics attained from the account registers. The formation of price mechanism in

economies where the natural sector prevailed over the monetary one requires distinctive treatment, which necessarily relates the discussions of this chapter to the previous and following ones.

The fourth chapter engages in a detailed analysis of the finances of Çelebi Sultan Mehmed Vakfi from 1558 to 1591. As the discussion proceeds, the impact of general economic trends on the real revenues and expenses of the pious foundation becomes clear. On the other hand, the registers contain evidence on the economic strategies adopted by the foundation as well, a thorough examination of which nevertheless requires a comprehension about the specific mode of behavior of a *vakıf* management in the sixteenth century. A peculiar aim of this chapter is to gain insight into this mode of behavior through a detailed examination of the *vakıf*'s account books.

The fifth chapter uses the agricultural revenue records of the foundation to examine the production trends in its villages. While the statistical series attained from the registers bring forth methodological problems that render an integrated analysis difficult, they nevertheless serve to detect the basic patterns of agricultural production, which in turn is crucial to bring the different variables together in a complete depiction of economic change. Besides, patterns of production imply the economic decisions of peasants confronted with the changing economic environment. The conclusion summarizes the interplay of the different economic variables and actors studied in the previous chapters. It also discusses the relevance of both the set of archival material and the findings of the study to the general trends in Ottoman economy in the second half of the century.

CHAPTER II

POPULATION

Although the annual accounting registers of the pious foundations constitute the backbone of the bulk of primary sources exploited in this study, they do not provide evidence for the detection of demographic trends and land possession. Instead, the empirical evidence for population change comes from the *tahrirs* (fiscal surveys) – the traditional archival material for studies of historical demography of the empire in the early modern period. In addition to the survey registers presented in the previous chapters, the *vakıf*'s account book of 1588 paved the ground for partial comparison with the exceptionally detailed records it contained, which involved the number of *hânes* that paid poll-tax in the villages. Furthermore, this last resource has proved to be of crucial value to check the reliability of the fiscal surveys.

This chapter begins with a methodological discussion regarding the use of *tahrir* registers in the existing research of historical demography. After a brief exhibition of the trends of population growth and land possession for the *vakıf* villages in general, a lengthy section that discusses the statistics for each village in detail and an appendix (see Appendix B) that presents the quantitative component of the argument follow.

Tahrir Registers as Demographic Sources

As almost every single scholar who has carried out research on this set of archival material has emphasized with great caution, the *tahrir* registers are not modern censuses since the purpose of their compilation was not to learn about the number of all individuals inhabiting a certain selected and clearly-defined area but rather to create a data pool about the tax-paying population and their financial obligations before the state. In this sense, the *tahrirs* belong to the category of what the historical demographers call ‘enumeration’, that is, “any operation designed to yield a population total”⁹⁹ such as tax lists or land surveys. As such, they provide no insight into fertility and mortality rates or age structures, neither do they allow the application of any methodological procedure for family reconstitution like early modern England’s parish registers which contain baptism, marriage and burial records.¹⁰⁰ Nevertheless, the statistical information that the Ottoman fiscal surveys present hitherto encouraged various scholarly attempts from constructing the course of demographic patterns over a time period to estimating total population figures for local areas or the whole empire. The use of *tahrir* registers for the purposes of historical demography, which became widespread with the explosion of local monographs from the 1970s onwards with the impact of the *Annales* School, stimulated long debates about the value of *tahrirs* for population studies and possible difficulties and dangers for error that the researcher might confront in the following

⁹⁹ J. Dennis Willigan and Katherine A. Lynch, *Sources and Methods of Historical Demography* (New York: Academic Press, 1982), p. 79.

¹⁰⁰ For instance, see E. A. Wrigley and R. S. Schofield, *The Population History of England 1541 – 1871* (London: Cambridge University Press, 1989).

decades.¹⁰¹ Before going on to the evaluation of the surveys used in this study, it might be helpful to reassess some of the themes that these discussions brought about and the problems that troubled scholars.¹⁰²

To begin with, assessing the accuracy of a *tahrir* constitutes an obstacle for the researcher. First of all, unsystematic sources of error such as the lack of subjects' cooperation with the surveyor or their built-in tendency to hide themselves from the latter in addition to the collaboration or mistakes of the scribe tended to undermine the reliability of the surveys. Furthermore, the systematic exclusion of people who could amount to considerable percentage of the community raises doubt further about the ability of the *tahrir* registers to reflect actual population numbers. Based on these grounds, Heath Lowry, a scholar who himself formerly conducted demographic research on these surveys, questioned whether *tahrirs* by themselves provided "the basis for any kind of quantitative study, be it toponymy, topography, taxation, agricultural production or population".¹⁰³ Lowry apparently observed in his study on the detailed (*mufassal*) *tahrir* registers on Salonica that close to fifty per cent of the population in the area had not been mentioned in the *tahrirs*, but were recorded in the

¹⁰¹ Halil İnalçık, "The Impact of Annales School on Ottoman Studies and New Findings", *Review* 1, no. 3-4 (1978), pp. 69-99.

¹⁰² On the other hand, historians hitherto rarely attempted to evaluate *tahrirs* with reference to the issues posed by archival material of a similar nature from other historical times and places and possible answers proposed by their specialists. In fact, the debates over the uses and limits of *tahrir* registers show similarity to various discussions that revolve around *tahrir*-like archival resources from European, Chinese or other histories. For the administrative resemblants of *tahrir* in the Mediterranean – Eurasian geography, see Kemal Çiçek, "Osmanlılardan Önce Akdeniz Dünyasında Yapılan Tahrirler Hakkında Bazı Gözlemler", *OTAM*, sayı 6 (1995), pp. 51-89. For the discussion below, I benefited greatly from Willigan and Lynch, *Historical Demography*, pp. 79-109, an overview of scholarly approaches to enumerations with exemplary cases from various times and geographies which touches upon the Ottoman fiscal surveys as well.

¹⁰³ Heath Lowry, "The Ottoman *Tahrir Defterleri* as a Source for Social and Economic History: Pitfalls and Limitations" in *Studies in Defterology: Ottoman Society in the Fifteenth and Sixteenth Centuries* (İstanbul: ISIS Press, 1992), pp. 8.

vakif surveys of the Province of Salonica.¹⁰⁴ Here, it should be noted that the *vakif* surveys, which Lowry classified as an archival source of another kind, is in fact regarded as a variant of the mainstream fiscal surveys – those intended to record the revenues from the *vakifs* as opposed to *timars* and imperial demesnes. The scholar's argument nevertheless stands still, for settlements that we know from other types of material may occasionally be absent from the surveys at hand, regardless of their kinds.

In order to evaluate the accuracy of enumerations, scholars suggested various methods. One is to compare a multiplicity of enumerations of an area from different times –the dates of which may be known or unknown to the student – and evaluate their accuracy on the basis of their consistency with one another through a calculation of the coefficients of correlation between the population figures for the subunits of the area subject to enumeration at two different dates.¹⁰⁵ The application of this method, however, has a few prerequisites: the scale of study should be large enough so that the researcher will be able to divide the area enumerated into meaningful subunits, and the time interval between the undertaking of two sequential surveys should not be excessively long since it may conceal a migratory pattern that would affect the correlation coefficient through a disproportionate alteration in the population densities of the subunits. Thus, this method can be useful only for testing the comparative accuracy of *tahrirs* when the *defters* studied cover an adequately large area and the period between the compilations of successive *tahrirs* does not

¹⁰⁴ *Ibid.*, p. 9.

¹⁰⁵ Jean-Noel Biraben, “La Population de Reims et son arrondissement, et la vérification statistique des recensements numériques anciens”, *Population* 16, no. 4, (1998), pp. 722-730.

exceed around three decades. However, the procedure has no guarantee for a research that focuses on a few villages.

Another way to test the accuracy of a fiscal survey which introduces the element of empirical verification but may not be available to the researcher most of the time is to check the reliability of the data gathered from the surveys in the light of another set of archival resources. Fortunately, in the cases of this study, the account books of the religious *vakıf* partially provided the quantitative evidence needed to test the accuracy of the information that the fiscal surveys contained. The account register of the *vakıf* for the year 1588 – an exceptionally detailed and well-kept account book – involved the *hâne* (household) figures next to the records of the villages' revenues from poll tax, as well as the number of taxpayers liable to pay *resm-i bennâk* and *resm-i mücerred*.¹⁰⁶ Thus, especially in settlements where the non-Muslim subjects made up the majority of the population, it has been possible to compare the number of *hânes* with simultaneous reference to forecasted and accrued poll tax revenues from the surveys and the account book respectively. The comparisons in general vindicated the reliability of the survey statistics for most of the villages dealt with in this study; but for Görükle and Tansarı, two villages located in the district of Kite, the mismatch between the account books and the fiscal surveys suggested the strong possibility that close to 50 per cent of the population in these villages may not have been registered down in the *evkaf* surveys. I therefore had to drop the analysis for these two settlements altogether.

¹⁰⁶ A *bennâk* is a married male peasant who possesses less than half a *çift* or no land. A *mücerred* is an unmarried adult male.

The Meaning of “*Hâne*”

From the beginning, in the scholarship of Ottoman historical demography, many of the debates over the question of population in the empire in the early modern period stemmed from disagreements over the definition of *hâne*. Since *hâne* constituted the basic unit of taxation and thereby registration in land surveys, estimating an average size for *hâne* has meant the possibility to come up with an approximate population figure either for a given area determined by the *tahrirs* or the whole empire. To no surprise, this attracted the scholars who studied these registers to estimate the number of persons that make up an average *hâne*. The first such attempt belongs to Ömer Lütfi Barkan, the pioneer of demographic research on *tahrir* registers, who set the “*hâne* multiplier” as 5 and added another %10 for the ‘*askeri*’ class and other exempted groups.¹⁰⁷ Barkan’s estimation was accepted without criticism by many researchers¹⁰⁸, while others suggested rearrangements in the multiplier in their own studies.¹⁰⁹

While the category of *hâne* employed in the fiscal surveys often overlaps with the physical household comprised by the nuclear family – as opposed to the so-called ‘*avârız hânesi*’ which appears to be a fiscal unit that gathers multiple households¹¹⁰, it

¹⁰⁷ Ömer Lütfi Barkan, “Tarihi Demografi Araştırmaları ve Osmanlı Tarihi”, *Türkiyat Mecmuası*, no. 10 (1951), pp. 1-26. For another article on the subject that was published in English later, see Ömer Lütfi Barkan, “Research on the Ottoman Fiscal Surveys” in *Studies in the Economic History of the Middle East*, ed. Michael A. Cook (London: Oxford University Press, 1970), pp. 163-71.

¹⁰⁸ For instance, see Nejat Göyünç, *XVI. Yüzyılda Mardin Sancağı*.

¹⁰⁹ Cook, *Population Pressure* suggested 4,5 as the *hâne* multiplier, while Bruce McGowan, taking the tendency towards larger household sizes in the Balkans into account, determined a particular “household divisor” between 3,57 and 6 for each of the four *sancaks* located along the river Danube that he studied. McGowan, “Food Supply and Taxation”, pp. 139-196.

¹¹⁰ Oktay Özel, “Hane [Halkı]” in *Antropoloji Sözlüğü*, ed. Suavi Aydın and Kudret Emiroğlu (Ankara: Bilim ve Sanat Yayınları, 2003). For *avarız hânesi*, see Oktay Özel, “Avarız ve Cizye Defterleri”, pp. 33-50.

should still be distinguished from the physical household in that the *hâne* of the survey registers is also a fiscal and socio-juridical unit¹¹¹. In this sense, the term *hâne* resembles its European counterpart ‘hearth’¹¹² rather than its common translation ‘household’, although the latter became common in Ottoman studies and will continue to be employed in this study as well. The size of *hâne* as a unit of fiscal administration, in turn, seems to fluctuate considerably according to the time and place of the compilation as Göyünç’s research on nineteenth – century documents demonstrate.¹¹³ Furthermore, even if one assumes that the *hâne* of the fiscal surveys is equivalent to the nuclear family, Ottoman sources provide almost no insight to the average size of the household in the sixteenth century. Under these conditions, neither Barkan’s nor any other researcher’s attempts to set an approximate figure for the average household size seems to depend on firm ground, which explains many scholars’ reluctance to calculate total population figures based on *hâne* statistics.¹¹⁴

Some of those who remained suspicious of the use of household size suggested other methods to calculate the total population. The procedure that Leila Erder employs is the use of the total *nefer* (male taxpayer) figures to estimate the number of adult males within a certain community. This method has the advantage of eliminating problems concerning the definition of *hâne* as a category and in fact had

¹¹¹ Nejat Göyünç, “*Hane Deyimi Hakkında*”, *İÜEF Tarih Dergisi*, no. 32 (1979), pp. 331-348.

¹¹² For the nuances between the ‘*monnéage* hearth’ and the household in the example of the personal *taille* records from Normandy, see Guy Bois, *The Crisis of Feudalism: Economy and Society in Eastern Normandy, c. 1300-1550* (Cambridge: Cambridge University Press, 1984), pp. 33-39.

¹¹³ Göyünç, “*Hane Deyimi*”, pp. 334-45.

¹¹⁴ For instance, in Özel, “*Population in Ottoman Anatolia*” temporal comparison based on tax-paying population prevails over efforts to come up with approximate figures for total population.

been suggested in a somewhat simpler form by J. C. Russell earlier.¹¹⁵ On the other hand, the scale of the register – or a certain well-defined part of it – on which this method of calculation will be undertaken should be sufficiently large to eliminate significant random deviations from the common interval of the ratio of adult males to the total population. Hence, promising as it seems, Erder’s and Russell’s suggestions are not applicable to *nefer* totals exhibited in this study. In fact, the limited scale of the area that this research covers brings about a serious disadvantage in eliminating the element of contingency, which confronts the researcher at every step to come up with an estimation regarding the average sizes of categories that appear in fiscal surveys – be it *hâne* or *nefer*. Consequently, I calculated no approximate figure for the population and instead concentrated on patterns of demographic change via an inter-temporal comparison of statistics.

Patterns of Demographic Change and Land Possession

The demographic trends from 1521 to the early 1570s for every village will be discussed in detail below. On the whole, the villages whose revenues belonged to Sultan Mehmed Han Vakfi seem to have fitted into the wider trend of population growth encountered in the region as well as in Anatolia in general. The total number

¹¹⁵ Prof. Erder then uses earlier estimations of the percentage of adult males to aggregate population in agrarian societies to calculate an approximate population total. For Russell’s similar method, see Josiah C. Russell, “Late Medieval Balkan and Asia Minor Population”, *JESHO*, no. 3 (1960), 265-274. J. C. Russell, a seminal demographer whose work focuses on the medieval times, has offered another solution to the problem of estimating population totals from enumerations which yield limited data in a slightly different context: he argued that “a determination of the number of female-headed households in an enumerated population could give some insight into the type and size of households at any one time”. Willigan and Lynch, *Historical Demography*, pp. 82-83. See also Josiah C. Russell, “Recent Advances in Medieval Demography”, *Speculum*, no. 40:1, pp. 84-101. Although to my knowledge no scholars who worked on *tahrir* registers have taken this path to determine a more realistic *hâne*-multiplier yet, it can be promising especially for studies on the surveys that belong to the Balkans and contain a significant amount of *bîve* (widow) records.

of male tax payers enumerated in the survey of 1521 is 877, while about fifty years later the *vakıf* survey compiled during the reign of Selim II it amounts to 1686. Hence, a vague depiction of the demographic pattern reveals that on the whole, the population in the villages of the *vakıf* more than doubled in about half a century – a substantial, but not unexpected increase considering the overall demographic growth that Anatolia confronted in the second half of the sixteenth century. It is nevertheless important to remember once more that the mere increase in *nefer* or *hâne* figures may not appropriately reflect the actual changes in the population if the household structure in the settlement studied shows considerable deviation from the common features encountered in the larger geography or if the records conceal an exogenous factor that might affect the variables that are subject to demographic change like migration – phenomena which diminish the reliability of estimations as the size of unit studied decreases. On the other hand, the very presence of the *vakıf* account registers serves as a reference point to check the reliability of the fiscal surveys on multiple occasions. For the fact that they constitute a continuous chain with no more than a few interruptions from 1558 to 1591 allows observing any possible exogenous variable that would cause abrupt changes in the revenues of the *vakıf*. The parallel use of two distinct sets of archival sources thereby hopefully eliminates at least part of the element of contingency that inevitably derives from the limited scale of study.

A second finding of significance that research on *tahrirs* in this study revealed is the decline in the *çift/hâne* ratio, or the average plot size that the peasants possess in the villages between the successive surveys. A fall in the average amount of land that a peasant family holds is traditionally regarded as an indicator of population pressure through land subdivision. The *çift/hâne* ratios in the villages of the *vakıf* – at least the ones for which the surveys provided the data for calculation (Table 2.18) –

by the early 1570s in general seem to have shrunk to an extent comparable to ratios encountered in the Province of Rum (Table 2.19), a region where studies pointed to severe demographic pressure.¹¹⁶ Nevertheless, we should remember that the minimum amount of land required for subsistence production is not a mere function of the rate of labor – and in a modified version, the mouths to feed – to land, but the outcome of a mechanism affected by multiple factors, e.g.: productivity. Most of the villages and hence peasant holdings dealt with in this study diverge from the typical Mediterranean peasant family farm in that rice cultivation along the banks of rivers and creeks with irrigation is replaced by dry farming in semi-arid climates as the main economic activity. While studies have so far provided only fragmentary evidence on the level of labor productivity achieved in the rice fields in the Ottoman Empire,¹¹⁷ we nonetheless have reason to assume that the cultivation of rice accompanied by effective irrigation must have led to an increase in the yields from seeded grain. Furthermore, rice resembled a cash crop in the sense that it had a wide market demand accompanied by limited supply and the prices of this grain enjoyed a peculiarly sharp increase during the period covered in this study.¹¹⁸ All these factors increase the possibility that the rice-cultivating peasants ended up with more money to spend in the local market to meet basic needs than their wheat-seeding counterparts. As a result, the mere phenomena of demographic increase and diminishing plot size by no means allow for a decisive conclusion, but rather make up the objective economic environment and its dynamics which set the stage for

¹¹⁶ Özel, “Population in Ottoman Anatolia”. Also see Açıklı, *Changes in Settlement Patterns*. I here used the figures given by M. A. Cook, *Population Pressure*. The author assumes that in each 4 *bennâks* one possessed a quarter of *çifts*. Since in the registers that I studied, the *bennâks* appeared to hold negligible sizes of land in the few cases where any record is present, I decided to ignore the land that the *bennâks* might possess altogether.

¹¹⁷ İnalçık, “Rice Cultivation”.

¹¹⁸ See Chapter 3 below.

economic phenomena of another layer such as taxes and incomes as well as the subjective decisions of manifold actors affected by the economic conditions.

Demographic Trends in the Villages of Sultan Mehmed Han Vakfı

Erdek

Located in the south western coast of the Kapıdağı Peninsula, Erdek appears as the largest settlement among the administrative units from which the *vakıf* was entitled to collect revenues. Though the settlement was recorded in the *vakıf* registers as well as in the land surveys as a village subsidiary to the district of Aydınçık, both the sheer size of the settlement and the variety of economic activities registered in the records show that Erdek was more a small town than a village. Both the *vakıf*'s survey of 1521 and that of the early 1570s reveal a demographic composition made up mostly of non-Muslim subjects resident in multiple quarters of the town in addition to a minor Muslim populace. The statistics for the population of Erdek is given in Table 2.1.

In 1521, the Muslim population of the town appears to have consisted of 11 *hânes* – 10 of which are recorded as *bennâks* – and 4 *mücerreds*. These figures are identically reproduced in the summary-account register of 1530 (H. 937) 9 years later, which was probably formed based on the common land surveys held in the initial years of Süleyman I. In the 1570s, the number of Muslim *hânes* goes up to 43 while a similar dramatic increase occurs in the number of *mücerreds* to 26. The register records 11 *bennâks* among the 43 *hânes*, but without signifying the status of the *ra'ıyyet* except one that has 2 *çifts*. Since, as we shall see, similar problems

concerning the determination of the status of recorded *re 'âyâ* arise for almost every village, I prefer here to neglect the number of *bennâks* and concentrate solely on the categories of *hâne* and *mücerred*.

Under the title of non-Muslims (*Gebran*), the survey of 1521 enumerates 310 male taxpayers resident in eight different quarters. Below the names of each *nefer*, *cizye* liabilities ranging between 48 and 96 *akças* are written down. While the status of male taxpayers are not mentioned in the register, at the end of the records for Erdek, there is the expression “the total *hânes* of Erdek excluding the new liables and *mücerreds*” (*Cem'an Hâneha-yı Erdek gayr-ez nev yâfte ve mücerredan*) with the number 132. Probably based on this specific record, the summary register of 1530 too gives the number of non-Muslim *hânes* as 132 and the rest of the *nefers* are recorded as *mücerreds*.¹¹⁹

The dramatic increase in the number of non-Muslim male taxpayers encountered in the early 1570s similar to that of the Muslim populace attests to the existence of considerable demographic growth. While the number of *nefers* goes up by 120 per cent from 310 to 682¹²⁰, the lack of differentiation in the records kept in the latter survey makes a more detailed analysis difficult. Only 65 of male taxpayers have the symbol that signifies *mücerred* status below their names – a magnitude that is unlikely to cover all unmarried taxpayers in the town unless there was a strong wave of emigration of unmarried men, for which no concomitant archival data or parallel development in the rest of the settlements studied lends support. A novelty of the survey of Selim II for Erdek is that it includes people for whom no *cizye* liability

¹¹⁹ In the summary register the total number of male taxpayers is recorded as 313, whereas I counted 310 recorded *nefers*. The incongruence is probably due to a possible miscalculation of the scribe.

¹²⁰ These 682 *nefers* are resident in 8 quarters in addition to a certain *Cema'at-i Yorgi*.

is mentioned, and all the male taxpayers categorized as unmarried fall into those without *cizye* records. The number for those in turn adds up to 248 – a magnitude closer to the possible number of *mücerreds*. However, there is no way to check the actual proportion of unmarried to total male taxpayers.

Apart from the appearance of the *re'âyâ* who do not pay poll tax, the failure of the increase in the total *cizye* collected from the non-Muslims of Erdek to catch up with the demographic growth may testify to increasing poverty among the subjects due to possible population pressure. Indeed, while in 1521 the poll tax paid per liable male equals to 61,95 *akças*, in the early 1570s it amounts to 56,82 even when the names for whom no poll tax liability is written down are excluded.¹²¹ When all the *nefers* counted in the latter survey are included in the calculation, this amount goes down to 36,16 *akças*. Since the amount of poll tax to be collected from each liable subject is meant to be determined according to the livelihoods of subjects,¹²² one might expect the fluctuations in the poll tax per liable *nefer* to reflect with certain accuracy the changes in the level of livelihood of the non-Muslim subjects in a certain area. On the other hand, although it is known as a head-tax, the fact that *cizye* was frequently collected in lump-sums (*ber vech-i maktu*) puts serious doubt on such interpretations, since in that case any change in the number of people or in their ability to pay their share would simply create an additional burden or release for the rest and therefore cease to be visible in the aggregation. Therefore, the relatively minor fluctuation in the accrued annual revenues from poll tax in Erdek recorded in

¹²¹ The aggregate amount of poll tax collected in Erdek in the survey of Selim II is recorded as 21118 *akças*, whereas I calculated the total as 24658 and used the latter one in the calculations here. It is nonetheless important to point out that none of these numbers coincide with the actual revenue recorded in the *vakıf* register in the corresponding years – a lack of consistency which renders the revenue records in *tahrir defterleri* all the more doubtful.

¹²² Halil İnalçık, “Cizye”, *Türkiye Diyanet Vakfı İslam Ansiklopedisi* 8 (Ankara: TDV Yayınları, 1993), p. 47.

the *vakıf* registers (see Table 2.20) hardly provides a clue about the population trends or the subjects' incomes.

Last but not least, the aforementioned account book of the *vakıf* that dates back to the year 1588 records that the poll tax of the year was collected from some 463 *hânes* and amounted to 30570 *akças*. Here, it is difficult to determine whether the category of *hâne* employed corresponded to the common use of the term as physical household in survey registers¹²³ or as a tax unit that consists probably of multiple households. The numbers reveal a burden of 66 *akças* per *hâne*, which is an amount frequently encountered as poll tax imposed on households in the fiscal surveys at hand and therefore encourages one to estimate that the unit of *hânes* employed in the two sets of sources are comparable. If this happens to be the case, 463 *hânes* may at least eliminate the possibility of a considerable decline in the non-Muslim population of Erdek by 1588. Nevertheless, any conclusions dependent on this particular data would end up as mere speculation.

Ulu Köyü

A village near Erdek, Ulu Köyü shows a more modest demographic growth between 1521 and the early 1570s. In the fiscal survey of 1521, all the liable subjects of the village are recorded under the title *Çeltükçiyan* (rice cultivators). There are 28 *bennâks* and 29 *mücerreds* in addition to a prayer leader. The survey of Selim II grants a relatively detailed picture of the status of taxpayers: 12 taxpayers are

¹²³ See the discussion about the term *hâne* above.

recorded as *çeltükçiyan*¹²⁴ in addition to 21 others who seed rice on the banks of Erdek River¹²⁵. The register continues with 21 more male taxpayers who are classified as “sons of rice cultivators” (*çeltükçiler oğulları*). Of those, only one is written down as a *mücerred* while the status of the rest is not specified, but it would be logical to assume that there should be many unmarried *nefers* among those in this peculiar category. The aggregate number of taxpayers in the latter survey reaches up to 79 with the final addition of 7 non-Muslims (Table 2.2).

One reason that might explain the relatively modest demographic growth in Ulu Köyü would be the prevalence of rice cultivation in the area. The fact that the amount of water that could be used for irrigation and thus the amount of rice that could be sown annually was limited by the state might have prevented a substantial increase in aggregate output and might thereby have enforced a lower ceiling of food supply on the population growth. Unfortunately, we cannot estimate the proportion that rice occupied among other cereals in the livelihood of the peasants of Ulu Köyü since the tithes from grains other than rice belonged to the *vakıf* of Bayezid, while the tithe from rice was collected exclusively in cash. Another factor that might account for the slow rhythm of population growth in the village can be the inability to find marginal land for cultivation. Indeed already in 1521 all the household leaders were classified as *bennâk*; while *mücerreds* made up the rest of *nefers*. Such predominance of *bennâk* and *mücerred* categories point out to a disproportionately high rate of labor to land and a consequent deterioration of *çift* unit. Indeed, *resm-i çift* is never recorded for Uluköy throughout the period that the account books of the *vakıf* covered. In 1588, the register records a tax of 36 *akças* from 3 married *bennâks*

¹²⁴ Of 12, three people hold half *çifts* and one person one and a half *çift*, while one *nefer* is recorded as *mücerred*. There are no specific signs for the rest.

¹²⁵ No further status mentioned for the subjects recorded here, except for one *mücerred*.

(*bennâk-ı müzevvec*) and 90 from 15 unmarried ones (*bennâk-ı mücerred*). However, these numbers prove useless for comparison since the *rüsum* encountered here – 12 and 6 *akças* respectively – apply only to the subjects who were not classified as *çeltükçi* – *re ‘âyâ*.

Şib ‘Ali and Adıbini

These two villages are located in the district of İnegöl alongside the banks of the tributaries of Kocadere. Both villages had Muslim populations who cultivated rice.

The fiscal survey of 1521 gives 29 *hânes*, 1 prayer leader and 17 *mücerreds*.¹²⁶ By the early 1570s, the number of *hânes* in the village of Şib ‘Ali increased to 70, while the number of *mücerreds* went up to a total of 71 (Table 2.3).

The data exhibited in the fiscal surveys allow us to analyze the impact of this dramatic demographic growth on the opening up of new or wasteland for cultivation and land subdivision as well. In 1521, land that equals a total of 34,5 *çifts* seems to have been under cultivation, apart from an unknown amount of land in possession of 5 *bennâks*. This land of 34,5 *çifts* was possessed by 25 *çift* or *nîm çift* (half a *çift*) holders. An additional 5 people holding 2 *çifts* each were recorded to the *mezra ‘a*¹²⁷

¹²⁶ Of these 47 taxpayers, 32 have the note *kürekçi* next to their names, while a certain Kasım, son of Abdurrahman seems to have been appointed *re ‘is*. While the term *kürekçi* traditionally defines the peasants who have the task to help construct and repair irrigation canals and dams in rice fields, the impression one gets from the *Kanunnames* of Çukurâbâd and Özer is that the term is used interchangeably with *çeltükçi*: “...and when the rice grown fully the shoveler would scythe and thresh the rice he had sown (“...*Ve çeltük tamam yetişdikte kürekçi ekdiği çeltüğü biçip, dövüp...*”). See Barkan, *Kanunlar*, pp. 205 and 208. Hence the *kürekçis* of 1521 survey appear to be identical with the *çeltükçiyân* of 1573.

¹²⁷ A *mezra ‘a* is “a large farm with no permanent settlement; it may be originally a deserted village or land reclaimed by a nearby village.” İnalçık, *Economic and Social History*, p. xlix.

of Çavuşlu as cultivators from outside (*haric ra'ıyyet*). By the 1570s, 39 *çift* or *nîm çift* holders were in possession of land that amounted to 43 *çifts*. A total of 13 *bennâks* are recorded in the later survey register. If a certain amount of land that these *bennâks* might have possessed is neglected, the average parcel of land that falls to each *hâne* is calculated as 1,15 *çifts* in 1521¹²⁸ and 0,61 *çifts* in the early 1570s. As such, by the second half of the sixteenth century the village of Şib 'Ali begins to show the typical symptoms of population pressure on arable land. On the other hand, the fiscal surveys by themselves do not inform us about the dynamics of demographic growth, leaving the question whether the pressure originated from a high growth rate within the village community or reflected the arrival of a surplus population that migrated to the settlement.

As in Ulu Köyü, the account book of 1588 for Şib 'Ali records revenues from taxes imposed on unmarried and married *bennâks* separately. Once again, the 12 married and 7 unmarried *bennâks* made up exclusively the ones who did not engage in rice cultivation and who were therefore obliged to pay their taxes at the usual rates. The fiscal survey from the reign of Selim II mentions 12 *bennâks* and 28 *mücerreds* who fall outside the *çeltükçi – re'âyâ* category, paving the ground for a comparison which reveals a decline in the number of *mücerreds*. Unfortunately, the absence of any meaningful data other than this little detail allows no further analysis regarding the course of population change after the early 1570s.

A similar pattern of demographic growth is visible in Adibini, another village of rice cultivators. The survey of 1521 enumerates 22 *hânes* and 20 *mücerreds*¹²⁹ in

¹²⁸ If the statistics from the *mezra'a* of Çavuşlu is included, the first ratio increases to 1,27.

¹²⁹ The summary account register of 1530 gives the number 19 for *hânes*, probably excluding two *bennâks* and an *imam* who possesses half a *çift*.

addition to 3 *hânes* who cultivate land from outside the village. About fifty years later, there are 52 *hânes* and 58 *mücerreds* in Adıbini (Table 2.4). The population of the village, as in its neighbor Şib ‘Ali, grew about two and a half times. The subdivision of peasant plots into smaller units is more dramatic: while in 1521 the average size of land that falls to each *hâne* was about 0,68 *çifts*¹³⁰, fifty two years later it diminished to 0,36. The shrinkage of peasant plot to such low averages undoubtedly fits to numerous earlier studies for sixteenth-century Anatolia based on land surveys starting with M.A. Cook’s cited work. On the other hand, his conclusion that by the later decades of the century the *çift* unit that was supposed to meet the minimum requirements of the peasant family had undergone serious subdivision¹³¹ should be received with caution in this case. For it should be reminded that the peasants of Şib ‘Ali and Adıbini cultivated a significant amount of rice on their plots – a grain which promised higher yields than subsistence grains such as wheat and barley with sufficient irrigation. In order to come up with a mature estimation about the amount of food supply available for the peasants’ consumption and whether it was adequate to compensate for their subsistence requirement, therefore, one has to know the yields of the grains cultivated.

Çeltükçi and Boğaz

To the north of the previous two villages, Çeltükçi and Boğaz are located on the Yenişehir Plain on the upper and lower banks of Göksu River respectively. The name of the former settlement suggests that the peasants resident in these two

¹³⁰ If the outsider cultivators are included, the average in 1521 amounts to 0,7.

¹³¹ Cook, *Population Pressure*, pp. 10-11.

villages used to cultivate rice under *kesimci* status. However, by the second half of the sixteenth century, rice cultivation in the area had apparently ceased to be practiced.

The Çeltükçi village seems to have undergone a pattern of demographic growth similar to that encountered in the Plain of İnegöl, but in a limited scale. The number of *hânes* in the village increased from 66 in 1521 to 104 in the early 1570s (Table 2.5). The fiscal survey of Selim II records 21 *mücerreds*, while there is no taxpayer classified as unmarried in the earlier one. Unfortunately, the lack of differentiation in terms of land possession or marital status among the taxpayers who were liable to pay *kesim*, poll tax or both in the fiscal survey of 1521 prevents any attempt at a more detailed diachronic comparison. We may nevertheless try to come up with an approximate average plot size per household based on the records of the land survey of Selim II. The results are comparable to those from the earlier examples: the average land that fell to each *hâne* was about 0,21 *çifts*. Once again, whether such a small average size for peasant plots implies a severe pressure of the number of mouths to feed on land or not can be clarified through a comparative productivity analysis. To attain reliable data for agricultural productivity in the Ottoman Empire before the mid-nineteenth century is very difficult, although such attempts do exist.¹³² More on this will be discussed in the fifth chapter.

The *vakıf*'s account book of 1588 gives the number of *hânes* paying poll tax as 44, reflecting a considerable decline compared to the 77 *hânes* of the survey compiled in the early 1570s. While the continuous decline in the *vakıf*'s revenues from *cizye* in this village vindicates the presence of this downward trend, one must

¹³² Metin Coşgel, "Agricultural Productivity in the Early Ottoman Empire", *Research in Economic History* 24 (2006), pp. 161-87. Also see İnalçık, "Rice Cultivation", pp. 135-41.

nevertheless approach any conclusive statement with caution since the poll tax recorded in the *vakıf* register for the corresponding year – as well as the years immediately before and after – is considerably lower than the amount recorded in the fiscal survey of Selim II.

In Boğaz, the course of population change resembles that of Çeltükçi. The Muslim population grew from 12 *hânes* and 2 *mücerreds* in 1521¹³³ to 34 *hânes* and 18 *mücerreds* in the 1570s (Table 2.6). The latter *tahrir* allows an approximate calculation of average plot size exclusively for Muslim *re'âyâ* this time: an average of around 0,25 *çifts* per *hâne* excluding the land that the *bennâks* might possess and the smaller *zevlelik*s¹³⁴ appears more or less equivalent to the 0,21 *çifts* in Çeltükçi. As for the non-Muslims, the survey of 1521 records 61 *hânes*, while in ca.1571-73 we encounter 76 *hânes* and 48 *mücerreds*¹³⁵.

A decline in *cizye hânes* in Boğaz which paralleled that in the village of Çeltükçi becomes visible via a comparison of the numbers recorded in the later fiscal survey of Selim II and the *vakf* account book of 1588: the *cizye hânes* fell from 76 to 45. The annual poll tax revenues of the *vakıf* from Boğaz shows some fluctuation and a visible decline can be detected only after the early 1570s. Yet, the applicability of

¹³³ The 12 *hânes* involve one *imam*, 5 *bennâks* and 6 *haric ra'iyets*. The latter ones are not recorded in the summary survey of 1530.

¹³⁴ The word *zevle* (*zelve*, *zövla*, *zevile* etc.) literally means an awry stick attached to the yoke to prevent the ox from getting out of the yoke. *Derleme Sözlüğü* (Ankara: Türk Dil Kurumu Yayınları, 1979), s.v. “Zelve”. Cook notes that the unit “seems to be a small one.” Cook, *Population Pressure*, p. 68.

¹³⁵ The fact that there is no record of unmarried male taxpayers in the former *defter* raises some doubts about the reliability of estimating all names classified under *kesimciyan-ı gebran* and *cizye-i gebran* as *hânes*. Nevertheless, the sums of *nefers* at the end of both are given as *hânes*. Also see Barkan and Meriçli, *Hüdavendigâr Livası Tahrir Defterleri*, p. 237. The *tahrir* of Selim II differentiates the 48 *mücerreds* under the category “*Cema'at-i Gebran-ı Kesimciyan*.”

the *hâne* data from the *vakıf* account book for demographic analysis remains highly questionable in this peculiar case as well.¹³⁶

Karaomca

Located near Yarhisar, Karaomca is a village where vineyards occupy substantial place in economic activity, as it is reflected in the *bağbanan* records of the fiscal surveys as well as the level of taxes from vineyard recorded in the annual account registers.

While the trend of demographic growth in Karaomca shows similarity to the earlier villages encountered here with a total of 32 *hânes* and 5 *mücerreds* in 1521 (and 1530) going up to 87 *hânes* and 21 *mücerreds* in the *tahrir* of Selim II, the resemblance turns out to be superficial once one examines the population growth in more detail. For the Muslim population in the village seems to outrun the non-Muslims by far in 50 years, while the Christian population in fact shows a decline (Table 2.7). The reasons that may have caused such a shift of balance in demographic structure remains unknown to the researcher, but it is probable that a wave of Muslim migration into or non-Muslim migration to outside the village occurred in the half a century that falls between two surveys. The emergence of 10 *çiftlik*s and 5 vineyards of freehold status in the later survey might testify to a transfer of land, and it may have ended in the dispossession of the former holders of land by the *çiftlik*-formers. This would undoubtedly have a significant effect on the demographic balance in the village. But the freehold *çiftlik* or vineyard formations

¹³⁶ The fact that the record for *cizye* revenues in the fiscal survey overlaps with the record in the account book of 1568 raises the possibility that the land survey was registered in that year. I came across no other equations to support this probability, though.

may have taken place on wasteland as well. In brief, any guess about the occurrence of these *çiftlik*s is bound to remain speculative. In any case, the demographic pattern of Karaomca undoubtedly deserves separate consideration.

Kayapa, Yenice and Kızılcıklu

These three villages of Kite district to the west of Bursa are settlements where rice cultivation is adopted. Among them, Kızılcıklu is apparently a minor settlement where probably only one *hâne* resides on and cultivates the land and pays an annual *resm-i çift* of 33 *akças*¹³⁷ – the largest revenue of the *vakıf* from the village. Besides, the settlement is recorded in the survey that dates back to the reign of Selim II as a *mezra* 'a based on the draft *defters* as no subject cultivators were indicated in the place¹³⁸. The reason that Kızılcıklu nevertheless continued to appear as a separate unit of settlement in the *vakıf*'s account books until 1575 must be that it had been a small village in the first half of the century as the *tahrir* register of 1521 reveals.

The information that the subsequent fiscal surveys provide for Kayapa allows a relatively detailed depiction of the demographic trends and patterns of land distribution in the village. From 26 *hânes* and 15 *mücerreds* in 1521, a population increase to 34 *hânes* and 42 *mücerreds* constitutes another modest example of demographic growth within our sample pool (Table 2.8). Taking only the *hâne* population into account, the pace of the trend towards land subdivision is equally limited: In 1521, the average plot size per *hâne* is calculated as 0,54 while it falls to 0,40 by the early 1570s. As discussed before, the use of *hâne* totals in estimating

¹³⁷ 33 *akças* is the usual *çift* tax imposed on the *liva* of Hüdâvendigâr. See Barkan, *Kanunlar*, p. 2.

¹³⁸ “*Tahrir-i cedidde karye-i mezburede re'aya bulunmayub müsvedde defterlerinde hala mezra'a olmuştur deyu mukayyed bulunmağın vech-i meşruh üzere kayd olundu.*”

average plot size for households helps acquire a more realistic picture, but it simultaneously undermines the scale of demographic pressure by eliminating the increase in the number of *mücerreds* and thereby the increase in the average number of persons in a household. It nevertheless does not prevent a comparison with average plot sizes in the villages encountered so far, which demonstrates that Kayapa did not confront land subdivision as severely as the rice-cultivating villages on the Plains of İnegöl and Yenişehir at the time that the second survey was held.

Yenice constitutes an exception to the upward trend in population: the decline in the number of *hânes* recorded from 21 to 10 despite an accompanying increase in *mücerred* from 3 to 9 brings the possibility of a partial desertion to mind (Table 2.9). In any case, both Yenice and Kızılcıklı (Table 2.10) end up as minor settlement units by the second half of the sixteenth century and therefore have negligible impact either on the balance sheet of the Sultan Mehmed Han Vakfı or on the demographic statistics demonstrated and interpreted in this research.

Nefs-i Kite

Kite constitutes another example to the villages whose peasants belonged to *kesimci* status. The Muslim population in the village apparently did not engage in rice cultivation except for two households who are liable to pay a *kesim* in wheat and barley according to the survey of Selim II. The *tahrir* of 1521 records 7 Muslim *hânes* and 4 Muslim *mücerreds*, which amounts to 13 *hânes* and 12 *mücerreds* by the early 1570s (table 2.11). The records allow the calculation of the average land possession among Muslim subjects, which shows a relative abundance of land

available for cultivation around the settlement, in 1521 an average of 0,71 *çifts*¹³⁹ falls per *hâne* while by the early 1570s it goes up to 1 *çift*. The availability of arable land might be related with the stagnation of the non-Muslim population in the village: the fiscal survey of 1521 records 35 *cizye hânes* and 8 *kesimci hânes*¹⁴⁰, while about 50 years later there are 32 non-Muslim *hânes* recorded, 10 of which are liable to pay *kesims*. On the whole, it seems plausible to claim that the village did not experience a population pressure that is comparable to the settlements in the Plains of Yenişehir and İnegöl in the second half of the sixteenth century.

Görükle and Tansarı

Görükle and Tansarı are the two largest settlements among the *vakıf*'s villages located in the *nâhiye* of Kite. For both villages the surveys contain the note that the villages' peasants are former *ellicis* whose status were later altered to *kesimcis* with the Sultan's decree – a transition witnessed in many regions of the Empire where peasant producers were assigned special tasks such as salt work, mine work or rice cultivation.

The inadequacy of detail and classification in the recording of the population of these two villages in the surveys – particularly the latter one – has presented serious obstacles to come up with a general description of demographic patterns. Nor did the attempts towards a close and comparative study of the *tahrirs* with the *vakıf*'s account books result in at least a vague depiction of demographic trends.

¹³⁹ If the *haric re'aya* is included, the average equals to 1,11 *çifts*.

¹⁴⁰ While the survey classifies those 8 *hânes* under a different category, the names of the male taxpayers reappear under *cizye-i gebran*, which necessitates a reduction of 8 *hânes* recorded twice from the previous sum 43.

Nevertheless, these efforts helped elucidate the dangers of taking the demographic data acquired from *tahrir* registers for granted without a critical distance.

In Görükle, the survey of 1521 records 49 *hânes* and 40 *mücerreds* to which certain amounts of *kesims* and poll taxes are assigned; but no information which would unveil the patterns of land possession is present. The latter survey that dates to the early years of Selim II is not more generous either, for it not only conceals the households' land holding, but also records only 2 specified unmarried taxpayers among a total of 127 (Table 2.12). To start with, the quantity of taxpayers by itself speaks of a visible population growth in the area. On the other hand, at a second glance the fact that 62 names have no *kesim* requirement is striking. It is obvious that most of the *mücerreds* could be enjoying the status of the sons of *kesimcis* (*evlad-ı kesimciyan*), and they probably awaited becoming *kesim*-payers before they got married. Indeed, the 49 unmarried names none of whom have the liability to pay *kesim* tax in the former survey supports this deduction. On the other hand, there are 10 more people in the *tahrir* of 1521 who did not have the sign for *mücerred* under their names but nevertheless did not pay *kesim* either. If we accept that a consistent and appropriate procedure of registering the unmarried taxpayers as such has been followed in the making of the first *tahrir*, it follows that this surplus of 10 people must have been the subject peasants who fall outside the *kesimci* status, or perhaps the sons of *kesimcis* who got married when their fathers were still alive. Of course, there is a chance that there may be *mücerreds* who were assigned to pay *kesim* at the household leader's death when they were still bachelors. Yet, it seems plausible to claim that the number of such cases is very unlikely to exceed that of the married sons; which encourages the conclusion that in the early 1570s the number of *mücerreds* should not have surpassed 62 and hence the *hânes* must at least have

amounted to 65. That the names of many of those 62 taxpayers go as “... *veled-i O*” (... son of him) strengthens this argument. We are therefore able to assume that the village Görükle at least does not stand as an exception to the general pattern of demographic growth envisaged in the villages of the Sultan Mehmed Han Vakfi, although the lack of differentiated data forces the researcher to give up any hope of conclusory statement.

In Tansarı, as opposed to its neighbor, population seems to have remained stable in the half century between the two fiscal surveys. The survey of 1521 records 53 *hânes* and 15 *mücerreds*¹⁴¹ whereas by the early years of Selim II’s reign there are 55 *hânes* and 19 *mücerreds* (Table 2.14). On the other hand, a migration from outside seems to have compensated the internal demographic stagnation in the village, albeit to a minor extent: there is an additional record of 28 *nefers* who come from another settlement called “Medellü” and became sedentary in Tansarı.¹⁴² On the whole, in the fifty years the population of the village shows an increase from 68 to 102 male taxpayers.

However, the *vakıf*’s account register of 1588 raises serious doubt about the validity of information acquired from the fiscal surveys. For the account book records no lesser than 147 *hânes* for Görükle and 105 *hânes* for Tansarı who actually paid a total of 8825 and 6388 *akças* for poll tax respectively. Such an increase in the number of liable households is so drastic in probably less than 20 years that it is unlikely to have occurred even as a result of migration from outside the villages. For it would require a dramatic increase in the revenues of the *vakıf* from poll tax from

¹⁴¹ The summary account book of 1530 records 16 *mücerreds* instead of 15.

¹⁴² “Medellü’den gelüb karye-i mezburede mütemekkinler imiş.”

the late 1560s-early 1570s to the late 1580s, whereas a visible decline in the *cizye* revenues of both villages during that period is detectable.

It seems therefore contradictory to claim validity for both sources unless there is a difference in the definition of *hâne* unit applied in the *vakıf* accounts and the fiscal surveys. For instance, if the *tahrir* registers defined *hâne* as a fiscal unit that might contain multiple physical households as in the *cizye* and *'avâriz* registers while the *vakıf*'s account books used the term for a physical household, such a divergence in the number of *hânes* could have occurred. But the lack of congruence between the *cizye* totals recorded in Selim II's survey and those found in the *vakıf* account books of the late 1560s and early 1570s – roughly the period when the land survey for the *vakıfs* was held and the *defters* were produced – debunks this hypothesis. For the vast gap between the number of *hânes* in the survey and the account books to the advantage of the latter is similarly reflected in the revenues from poll tax as well. Indeed, the total revenues from poll tax recorded by the later survey do not amount to half the accrued annual revenues from *cizye* recorded in the *vakıf*'s account books throughout the years that might match the time of the survey's completion. Hence, all the clues at hand raises the possibility that a considerable proportion of population in these villages somehow managed to stay outside the fiscal census, which deeply harms the reliability of fiscal surveys for demographic research. At least for these two villages, no interpretation dependent on the data from *tahrirs* can be made with confidence.

It may be helpful to end this discussion with an exercise to compare the magnitude of *hâne* units employed in the fiscal surveys and in the *vakıf*'s account registers. It is logical to expect that the application of a larger *hâne* definition will bring about a higher tax imposed upon each *hâne*. We may therefore calculate the

average poll tax imposed on each *hâne* and the results to get a preliminary idea about the relative scales of the units. Since the later survey does not provide entries of poll tax liability for single *hânes*, the only fiscal survey the data from which can be put into use to compare with the results of the account book of 1588 belongs to 1521. Of course, the length of time interval between the two records introduces the households' average wealth or income as an additional variable – after all, the tax liability of each *hâne* might increase with the enrichment of the average *hâne* or vice versa without an alteration in the definition of the unit. Although this factor is unfortunately impossible to check, we may claim that a difference in the definition of *hâne* would in any case outrun one caused by a change in the level of income by far. The results of this little exercise strengthen the assumption that in both sets of resources the same *hâne* definition is in use: while the survey of 1521 gives an average poll tax of 65,29 and 63,33 *akças* per *hâne* for Görükle and Tansarı respectively, based on the account book of 1588 those averages are calculated as 60,03 *akças* for Görükle and 60,83 *akças* for Tansarı.

Küplü, Bahadır & Aleksi¹⁴³

Located in the *nâhiye* of Bilecik in the *sancak* of Sultanönü, these three villages are considerably distant from the *vakıf* in Bursa. While the lack of detail in the account books as well as the prevalence of *mukâta'a* revenues indicate that the distance minimized the relations between the *vakıf* and the settlements, the total amount of taxes nevertheless reach to significant sums. For the settlements in

¹⁴³ For the population figures for these villages, in addition to the related primary sources I benefited from Vedat Turğut, Bilecik Bölgesi Örneğinde 16. Yüzyılda Vakıflar ve Şehirleşme (Ph.d Diss., Sakarya Üniversitesi, 2011).

question appear to have been considerably large. Küplü, the largest among them – apparently in Bilecik as well¹⁴⁴ - in 1521 hosted 39 Muslim and 108 non-Muslim male taxpayers, while in 1576 these figures went up to 44 and 271 respectively (Table 2.14). On the other hand, the account book of 1588 records 144 poll tax *hânes*; an observation that requires a cautious interpretation as in the previous cases.

The population of Bahadır, another quite large settlement, in 1521 consisted of 37 Muslim and 74 non-Muslim tax-payers, while the latter survey recorded 54 Muslims and 175 non-Muslims. 95 poll tax *hânes* were recorded in 1588 (Table 2.15). Finally, for Aleksi, the summary account survey of 1530 registers 126 *hânes* and 21 *mücerreds*. The fiscal survey of 1526 gives 56 Muslim and 110 non-Muslim tax payers (Table 2.16). In 1588, the village had 62 *hânes* liable to pay poll tax. In brief, it seems safe to conclude that the general pattern of demographic growth in the *vakıf*'s villages in Bilecik shows similarity to those hitherto encountered.

Mü'min-Ece

Probably located near the urban center of Bursa, this village seems to have supplied the town primarily with products of horticulture. The survey of 1521 records only 4 *hânes* resident in the village (Table 2.17) in addition to 1 *hâne* cultivating land from outside, notwithstanding the total revenues of the *vakıf* from the place. That the latter survey merely reproduces the figures in the former leaves us without information about the demographic trends in this minor settlement.

On the whole, it seems clear that the settlements from which the *vakıf* collected taxes confronted demographic pressure on land by the early 1570s. The severity of

¹⁴⁴ *Ibid.*, p. 60.

this pressure is not known, nor does the data provide a positive or negative answer to the question whether it turned into a population crisis in the classical Malthusian sense. Nevertheless, the very presence of the phenomenon is what concerns this study. For population pressure substantially affects a set of other economic variables such as productivity and prices, and thereby alters the course of economic developments.

CHAPTER III

PRICES

While the demographic trends in the villages of Sultan Mehmed Vakfi provide the background information for the changes in economic variables such as production, pressure on land and returns to labor; a meaningful comprehension of the *vakıf*'s revenues from the late 1550s to the early 1590s requires primarily the knowledge of price levels during the period. This chapter concentrates on demonstrating the change in prices of manifold items registered in the account books and attempts to construct an index which comprises the prices of goods and services included in a consumer basket that would realistically represent the annual expenditures of the *vakıf*. It also explores the causes of the price increase in the second half of the sixteenth century in Anatolia in the light of ongoing debates over the so-called price revolution.

Vakıf's Account Registers as Sources for Price History

The value of the annual account books of the pious foundations for the history of prices has been first noticed by Ömer Lütfi Barkan, who used the records of Fatih, Süleymaniye and Bayezid II's *vakıf*s in addition to the account registers of the imperial palace kitchen in his pioneering study on the sixteenth-century price

revolution.¹⁴⁵ Since then, various scholars employed the *vakıf* account books in their researches to come up with price series for different geographies of the empire in the early modern period.¹⁴⁶ To be sure, the *vakıf* records are in many respects incomparable to any other archival material hitherto used for price history – such as the *narh* records from *şer’iyye sicilleri* (Kadi Court Records), *narh defterleri* (price-ceiling registers)¹⁴⁷ or for the prices of grains, fiscal surveys. For the former not only allows for the reconstruction of a continuous price series rather than random snapshots, but also reflects contemporary market prices more accurately. On the other hand, the exploitation of the *vakıf*’s account books to construct price series is not without limits and therefore the traits of these records along with the advantages they offer and the obstacles they may present should be discussed in detail before continuing.

The scholars attain the annual prices of goods and services from the entries under the subsection ‘*be-cihet-i harc-ı matbah-ı ‘âmire*’ (kitchen expenditures).

¹⁴⁵ Barkan, “The Price Revolution of the Sixteenth Century”, pp. 3-28. The statistics that the author employs in this article are present in *idem*, “Süleymaniye Cami ve İmaretî Tesislerine Ait Yıllık Muhasebe Bilançosu”, *Vakıflar Dergisi* 9 (1964), pp. 109-61; *idem*, “Edirne ve Civarındaki Bazı İmaret Tesislerinin Yıllık Muhasebe Bilançoları”, *Türk Tarih Belgeleri Dergisi* I, no. 2 (1964), pp. 235-377; *idem*, “Edirne Askerî Kassamına Ait Tereke Defterleri”, *Belgeler* III (1966), pp. 1-479; *idem*, “Fatih Câmîi ve İmaretî Tesislerinin 1489-1490 Yıllarına Ait Muhasebe Bilançoları”, *İstanbul Üniversitesi İktisat Fakültesi Mecmuası* XXIII, no. 1-2, (1962-63), pp. 297-341.

¹⁴⁶ Among these studies, a research project led by Şevket Pamuk provides the largest data pool for prices and wages in the Ottoman Empire hitherto produced both geographically and temporally: Şevket Pamuk, *İstanbul ve Diğer Kentlerde 500 Yıllık Fiyatlar ve Ücretler, 1469-1998* (Ankara: T.C. Başbakanlık Devlet İstatistik Enstitüsü, 2000). Also see Faroqhi, *Towns and Townsmen of Ottoman Anatolia*; *idem*, “Agricultural Crisis and the Art of Flute-Playing”, pp. 43-69; *idem*, “Vakıf Administration in Sixteenth Century Konya”, pp. 145-172; Güran, *Ekonomik ve Mali Yönleriyle Vakıflar*. Recently, Kayhan Orbay’s works contributed to our knowledge of price levels in Anatolia in the sixteenth and the seventeenth centuries. See Orbay, “Bursa’da Sultan II. Murad”, pp. 293-322; *idem*, *The Financial Administration of an Imperial Waqf*. The author’s formerly cited work Orbay, “16. Ve 17. Yüzyıllarda Bursa Ekonomisi” provides the prices of four goods from the *vakıf* registers employed in this study.

¹⁴⁷ *Narh* is a list of price ceilings for basic goods, established by the local kadi. See İnalçık, *Economic and Social History*, p. xlix. The price ceilings may appear in the court records, or they may be compiled in a *narh* register. For the latter, see Mübahat Kütükoğlu, *Osmanlılar’da Narh Müessesesi ve 1640 Tarihli Narh Defteri* (İstanbul: 1983).

Here, the aggregate purchases of the *vakıf* for use in the foundation's kitchen throughout the year are recorded for each item. On the whole, the range of goods detected in the kitchen records of Sultan Çelebi Mehmed Vakfı does not differ from similar institutions considerably. The items purchased by the *vakıf* include cereal or animal products such as wheat (*hınta*), barley (*şâ'ır*), flour (*dakîk*), butter (*revgân-ı sade*), meat (*gûşt*), honey ('*asel*), olive oil (*revgân -ı zeyt*), seed oil (*revgân -ı bezir*), cotton oil (*revgan-ı penbe*), sesame oil (*şirugan*), bean (*fîl*), cicer (*nohud*), rice (*erz*), red grapes (*meviz-i surh*), onion (*piyaz*), almond (*bâdem*), pepper (*fûlfûl*) etc. In addition, the *vakıf* purchases non-agricultural goods such as firewood (*hîme*) and sacks (*çuval*). The yearly prices of the goods for which the account books provided adequate data for the construction of a meaningful series are demonstrated in Table 3.1. Apart from the kitchen expenditures, there is another section that allows for the calculation of prices exclusively for a number of grains: '*ani'l-mebiât*' (revenues from sales) under the aggregate revenues (Table 3.3). Both the amounts of grain purchased for the *vakıf*'s kitchen and the amount sold from the grain stocks of the foundation reappears in the granary account (*defter-i gallât*) of the corresponding year.

The *vakıf* seems to have engaged in considerable sales and purchases of wheat simultaneously, which could stem from the incongruence in the timing of the purchases and that of the collection of tithes from *vakıf* villages. Another reason might be the incentive to profit from a possible difference between sale and purchase prices in favor of the former. Of course, the volumes of both transactions show great fluctuation from year to year (see Graph 3.4). Not surprisingly, the foundation's sales of barley dramatically surpassed its purchases. For barley was a component of basic crop rotation and the foremost fodder. Therefore, it constituted a significant

proportion of the pious foundations' revenues in kind in general, while its use in the soup kitchens remained limited.¹⁴⁸ Whereas a similar imbalance in favor of sales is found in oat, vetch, lentil and millet; we encounter the opposite in the cases of rice and cicer. Although the *vakıf* collected a considerable amount of rice in cash and in kind from its villages, a part of which it occasionally sold as well, there seems to have been a constant demand from the kitchen for additional purchases of rice throughout the period that the registers cover. On the other hand, the revenues collected in the form of cicer never reached significant amounts. Among the kitchen expenditures, the most significant item seems to have been meat, which was followed by butter, honey and firewood (See Table 3.1).

The aforementioned difficulty in ascertaining grain prices recorded in the account books to represent the actual market levels with a hundred per cent reliability is in fact an unavoidable feature of the figures attained from the *vakıf* registers.¹⁴⁹ To start with, the volume of transactions used in calculating the prices shows dramatic fluctuation and it is most probable that the price of a good which amounts to a few hundreds of *mudds*¹⁵⁰ would differ significantly from the price that occurs in the sale of a few *kiles* of the same good. Since the *vakıf* purchased meat on a daily basis (96 *vakıyye* per day is the most frequently encountered amount), the problem of volume affects the reliability of that item to a lesser extent. On the contrary, the *vakıf* appears to have purchased grain in large amounts in certain times of the year, which enforces

¹⁴⁸ Only a few records for the purchase of barley are existent in the account books employed in this study. While the *gallât* registers mention some barley used in the kitchen, the *vakıf* spent most of it for the payment of its employees' salaries or else sold it. In fact, sales of barley make up by far the most important portion of the foundation's revenues from sales of grain.

¹⁴⁹ In tackling as well as identifying the problems discussed below, I benefited greatly from Kayhan Orbay, "Tarihsel Fiyatların Elde Edilmesi ve Endekslenmesi Hususunda Bazı Notlar", *Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi Dergisi* 48, no. 1 (2008), pp. 85-96.

¹⁵⁰ 1 *mudd* equals 20 *kiles*. For the units of measurement, see Appendix C.

the conclusion that the amount purchased or sold must have had an impact on grain prices. However, statistical analysis does not point to a strong correlation between the volume of transactions and the level of prices in the case of Sultan Mehmed Vakfi.

Another obstacle that the researcher confronts in constructing reliable price series is the problem of seasonality. A not insignificant proportion of the account registers employed in this study as in other projects in fact covers only part of the year (see Appendix A). This brings forth the possibility that the price figures acquired from these registers might reflect seasonal levels. Having foreseen the problem, Pamuk abandoned using the account books which did not cover a full accounting year altogether.¹⁵¹ The daily purchase of products such as meat and butter indeed prevents the employment of the account books which cover less than a year for calculating prices. On the other hand, Kayhan Orbay drew attention to the fact that the *vakıfs* usually purchased grains at a certain time and depended on these stocks for the rest of the year.¹⁵² The annual purchase figures attained from the account books of Sultan Mehmed Vakfi corroborates Orbay's observation – both sales and purchases of grains such as wheat and rice seem to have occurred in a particular season, which is nevertheless difficult to determine because of the incongruence between the Islamic and the Gregorian calendars. I therefore used the figures of incomplete years where the amount of grain purchases converged the usual annual amounts, and I omitted using those where an additional transaction probably took

¹⁵¹ Şevket Pamuk, "Prices in the Ottoman Empire, 1469 -1914", *International Journal of Middle East Studies* 36 (2004), pp. 452-454.

¹⁵² Orbay, "Tarihsel Fiyatların Elde Edilmesi", p. 91.

place judging from the recorded amount.¹⁵³ For products other than cereals, if two rather than one book covered an accounting year and thus two distinct prices were calculated for a single year, I used their average as the annual price of that particular good. Otherwise, I excluded the incomplete years.

Last but not least, the quality of the goods purchased for the *vakif*'s kitchen could affect the price recorded in the account registers. We might expect the foundation to have purchased products of lesser quality in years of financial distress and vice versa, but in most cases the resources do not mention the quality of the goods.

Despite the account books' limits of representativeness for the actual market prices and the problems that confront the researcher in the process of calculation, it should nevertheless be remembered that the *vakif* registers on the whole resemble the archival material employed by the specialists of price history in Europe for decades now,¹⁵⁴ and a careful method for the use of these records is likely to produce considerably reliable price series and indices. Furthermore, most of the limits that constraint the researcher in analyzing the price fluctuations on a yearly basis with reference to contingent factors such as years of good or poor harvest lose their significance in a long-run analysis of price change. It is therefore possible to follow the general course of prices by constructing a representative consumer index.

¹⁵³ *Ibid.*, p. 91.

¹⁵⁴ *Ibid.*, p. 87. Also see Earl J. Hamilton, *American Treasure and the Price Revolution in Spain, 1501-1650* (New York: Octagon Books Inc., 1965), pp. 139-150.

Constructing an Index

In order to acquire a meaningful picture of the changes in the balance sheet of the *vakif* during the period studied, it is obviously necessary to construct a single price index. The process involves two decisions – selecting the goods and services that will comprise the consumer basket for the *vakif* and determining their respective weights in the basket. Both these steps require careful analysis.

As emphasized above, the kitchen expenditure records of the *vakif* involve many items but rarely allow for the reconstruction of a continuous price series for those items, which significantly reduces the possibility of including more than a few goods in the consumer basket. The account registers of Sultan Mehmed Vakfi provided adequate price figures to construct an uninterrupted chain for wheat, barley, oat, rice, meat, honey and butter. While it was possible to follow the long-run changes in the prices of sesame oil, seed oil, cotton oil, cicer, onion, starch and pepper, the number of missing values in the series constructed for these goods amounted to an extent that their inclusion in the consumer basket would diminish the reliability of the price index. Besides, the absence of this latter category of goods would not cause a significant shift in the trend of the index as their use in the *vakif*'s kitchen took place in small amounts. I therefore excluded them from the index.

On the other hand, the question whether barley and oat should enter the consumer basket or not stands as a more serious issue before the researcher. For their presence or absence would significantly alter the index, as their annual consumption reached considerable volumes. Particularly barley, which was a means of payment for the wages of the *vakif*'s workers, occupied an important place among the annual expenses of the foundation. On the other hand, these payment transactions took place

exclusively in kind, and therefore the ability of the fluctuations in the price of barley to affect the costs-side of the *vakif*'s balance sheet remained limited. Consequently, I decided to exclude barley and oat from the index as well, since the *vakif* rarely or never purchased them during the period that the account books covered.

Hence our consumer basket consists of wheat, rice, meat, butter and honey. The next step in the construction of an index is to appoint the relative weight that each good occupies in the annual expenditures of the institution. To calculate the amount of money that meets the annual consumption requirement of the *vakif*, it is necessary to estimate the amount of each good in the consumer basket. The foundation attained the goods demanded in the kitchen primarily via purchases from the market – except for grains. The *vakif*'s revenues in kind from its villages supplied most of the grain to the kitchen, whereas purchases comprised a minor proportion. Therefore, in order to represent the relative weight of wheat in the *vakif*'s annual consumption, the inclusion of wheat that was consumed without passing through the market was necessary. Consequently, I followed the method applied by Barkan¹⁵⁵ and weighed the components of the consumer basket according to their annual total consumption.¹⁵⁶

However, taking the total grain consumption into account in calculating the total money requirement of the *vakif* necessitates the application of the same price in

¹⁵⁵ Barkan, “The Price Revolution of the Sixteenth Century”.

¹⁵⁶ An alternative would be to weigh the products that comprise the index according to the amounts of yearly purchases of each. This method, however, would bring about an underestimation of annual grain consumption. For often the total yearly consumption of wheat and sometimes that of rice dramatically surpassed the purchases of these items in the market – as discussed above. Furthermore, if the index was designed in a way that the relative weights of the goods in the basket changed with the changes in the amounts purchased each year, then the fluctuations in grain purchases would drastically affect the level of the index. The base year for the relative weights of the products could cease to represent the typical weight each good should occupy in the consumer basket and the rates could end up as mere arbitrary numbers. Orbay, “Tarihsel Fiyatların Elde Edilmesi”, pp. 89-90.

both small and large volume transactions.¹⁵⁷ For instance, in 1558, the *vakıf* purchased only 240 *kiles* of wheat for 2400 *akças*, whereas its annual consumption was 12590 *kiles*. Although we multiply the 12590 *kiles* of wheat by 10 *akças* to express the annual wheat consumption in currency, it is most probable that a purchase of 12590 *kiles* of wheat would take place at a different price. Nonetheless, the difficulty described here is embedded in every attribution of a general market price that is free from peculiar transactions. Furthermore, the total consumption figure for grain is taken from the output account of the corresponding year and most of it is used in payments or for making bread or *'aşûre* without entering into the market. Hence, there is no reason to estimate for the grain in stock a price that would occur in a single transaction, which is in any case destined to remain hypothetical.

Whereas for wheat and rice the annual consumption figures taken from the output registers were employed in the index, for the remaining items, that is meat, butter and honey, I used the annual purchase amounts. For these products enter into the balance sheet of the *vakıf* exclusively via purchases from market. Next, I calculated two different indices: in the first, the base year for the relative weights of the five products which made up the consumer basket is 1558, whence the rates stayed constant. In the second index, the relative weights of the products changed with the fluctuations in annual consumption (Table 3.5 and Graph 3.5). Of course, both indices have their advantages and disadvantages. Since the latter index required the exclusion of certain years when the records of annual purchase amounts did not exist, I chose to apply the former one in real revenue calculations.¹⁵⁸

¹⁵⁷ *Ibid*, p. 90.

¹⁵⁸ On the other side of the coin, the second index with moving relative weights is undoubtedly more sensitive to the *vakıf*'s responses to price changes. For example, it better reflects the decline in the foundation's annual meat demand as a response to the rapid price increase in the late 1580s.

As for the price figures, for the years when the price of a good did not exist, I either used the sales prices if available, or used linear regression method to estimate approximate prices for the respective years (See Table 3.1).

Findings

The trend of general price levels reflected by the account books of Sultan Mehmed Han Vakfi fits into the general picture of price increase in the second half of the sixteenth century.¹⁵⁹ In the 1560s, the price levels remain more or less stable, while with the early years of the 1570s we enter into a phase of mild, but persistent price increase which continued in the early 1580s and accelerated with the famous debasement of 1585. The comparability of the price changes during the period studied here to the wider pattern encountered in Anatolia and even in the Mediterranean allows for an attempt to analyze the statistics for Bursa in the context of the debates over what is called the “price revolution” in Europe and the Mediterranean.

The first effort to interpret Ottoman price history in the early modern era with reference to the price revolution in Europe seems to have come from Mustafa Akdağ.¹⁶⁰ Later on, Barkan in his seminal article on the Price Revolution in the empire¹⁶¹ systematized Akdağ’s emphasis on the possible impact of the American reserves on Ottoman economy and developed a variant of the so-called monetarist

¹⁵⁹ Also see Orbay, “16. Ve 17. Yüzyıllarda Bursa Ekonomisi”, p. 156; Kayhan Orbay, “Fiyat Devrimi ve Geç 16. Yüzyıl ve 17. Yüzyıl İçinde Anadolu’da Fiyat Değişimleri”, paper presented at *Birinci İktisat Tarihi Kongresi* (İstanbul: 7-8 September 2007), p. 199.

¹⁶⁰ Akdağ, “Celali İsyânlarının Başlaması”, pp. 23-37. Also see Orbay, “Fiyat Devrimi”, p. 193.

¹⁶¹ Barkan, “The Price Revolution of the Sixteenth Century”, p. 6.

explanation of the price increase in Europe in the second half of the sixteenth century, which argues that the flow of American silver into the European markets sharply increased the money supply and consequently pulled the general prices upward.

The argument derives from the well-known formula of the quantity theory of money rendered by Irving Fisher as $MV = PT$; where M stands for the money supply, V stands for the currency's velocity of circulation among people, P for general price level and T for the total volume of the economic transactions.¹⁶² The left side of the quantity equation expresses the total amount of money used in the economy, while the right side expresses the gross output in terms of the real economy in currency. As such, the equation is tautologically true and by itself does not explain the cause of the price increase which occurred in the second half of the sixteenth century. What distinguishes the proponents of the monetarist explanation is their claim that the money supply in Europe and the Mediterranean did rise to an extent that it caused a dramatic increase in prices.¹⁶³

The monetarist explanation was severely criticized by various scholars on the grounds that the timing of bullion flows into Europe does not correspond to the respective phases of rapid price increase and stability, and therefore fails the test of empirical evidence.¹⁶⁴ In the Ottoman context, a quite persuasive objection to this perspective has come from Haim Gerber. Gerber argued that the Ottoman Empire in the sixteenth century in fact witnessed a shortage rather than an invasion of precious

¹⁶² See Irving Fisher, *The Purchasing Power of Money* (New York: Macmillan Publishing Co., 1926).

¹⁶³ For one of the pioneers of this particular school of economic historians in the twentieth-century historiography, see Hamilton, *American Treasure*.

¹⁶⁴ For instance, see W. Barrett, "World Bullion Flows, 1450-1800" in *The Rise of Merchant Empires*, ed. James T. Tracy (Cambridge: Cambridge University Press, 1990). A useful overview of the competing perspectives on price history is offered in Şevket Pamuk, "The Price Revolution in the Ottoman Empire Reconsidered", *International Journal of Middle East Studies* 33 (2004), pp. 69-89.

metals in the market, for the exports to Europe failed to compensate the outflow of species in the silk trade with Iran.¹⁶⁵ Gerber goes on to suggest that this deficit in the empire's balance of payments resulted in a pressure on money supply in circulation, which became acute with the demographic growth and urbanization. All these factors in the end enforced the government to debase the currency.

In fact, Barkan also follows a more complicated line of reasoning rather than simply counting on the inundation of the Ottoman markets with the flowing American silver. He argued that American silver had an indirect impact: the accumulation of species in European hands accompanied by demographic growth triggered foreign demand for the agricultural products and industrial raw materials produced in the Ottoman Empire and thereby caused a shortage which led to an inflation in the prices of basic goods.¹⁶⁶ Such an explanation does not necessarily contradict with Gerber's objection¹⁶⁷ regarding the Empire's balance of payments, for an imbalance between sectors combined with the disproportionate distribution of wealth may well have caused a shortage in currency and in basic goods simultaneously. On the other hand, Barkan develops his argument based on qualitative evidence on the Ottoman officials that took measures to prevent the exports of grains, wool and the like.¹⁶⁷ However, methods such as severe punishment of those who engaged in illegal exports or the expropriation of goods seized in transportation¹⁶⁸ may, as the author himself admits, be regarded as traditional responses of the Ottoman economic mind to assure the provisioning of the Empire's

¹⁶⁵Haim Gerber, "The Monetary System of the Ottoman Empire", *Journal of the Social and Economic History of the Orient* 25, no. 3, (1982), pp. 308-24; *idem*, *Economy and Society*, pp. 111-114.

¹⁶⁶ Barkan, "The Price Revolution of the Sixteenth Century", p. 6.

¹⁶⁷ *Ibid*, p. 6-7.

¹⁶⁸ *Ibid*, p. 6.

major cities as well.¹⁶⁹ In any case, an earlier examination of the price levels in İstanbul in the second half of the sixteenth century had revealed that what accounted for the dramatic increase in prices in the last two decades of the sixteenth and the beginning of the seventeenth centuries was in fact the debasements of currency introduced by the government. When the inflation rate is calculated in grams of silver, the price curve shows a mild, if visible upward trend.¹⁷⁰ The findings from the records of Sultan Mehmed Vakfi vindicates the conclusion that the main factor behind the abrupt change in prices was clearly the debasements,¹⁷¹ and the inflation rate calculated based on the silver content does not point to a major flow of bullion (Table 3.6).

Price Levels and Population Growth

Another widely-accepted perspective that aims to explain the sixteenth-century price increase lays emphasis on the real factors, primarily demographic growth. The early proponents of this approach were also devoted critics of the monetarist explanation having objected the argument that price levels rose at different rates for different products.¹⁷² Indeed, if what pulled the price levels up was the additional

¹⁶⁹ For the Ottoman economic ideology, see Halil İnalçık, “The Ottoman Economic Mind and Aspects of the Ottoman Economy” in *Studies in the Economic History of the Middle East*, ed. Michael A. Cook (London: Oxford University Press, 1970), pp. 207-218; Mehmet Genç, “Osmanlı İktisadi Dünya Görüşünün İlkeleri”, *Sosyoloji Dergisi* 3, no. 1 (1988-1989), pp. 175-185.

¹⁷⁰ Pamuk, “Price Revolution Reconsidered”, pp. 76-78 and 85; *idem*, “Prices in the Ottoman Empire”, p. 460.

¹⁷¹ Orbay, “Fiyat Devrimi”, p. 198.

¹⁷² For instance, see Y. S. Brenner, “The Inflation of Prices in England, 1551-1650”, *Economic History Review* 15 (1963), pp. 266-84. The so-called neo-Malthusian historians and monographers can also be counted among the defenders of the demographic perspective. For a seminal example, see Ladurie, *Peasants of Languedoc*.

demand brought by the surplus population, it was likely to affect the prices of agricultural goods most dramatically. For the agricultural goods in general and subsistence grains such as wheat in particular were characterized by a low income-elasticity of demand accompanied by an inelastic supply, especially as the amount of marginal land available for cultivation set an upper ceiling to the maximum output. In other words, the people did not simply restrict their demand for daily bread when their incomes shrank, whereas they could cut their expenses on industrial goods such as cloth, artisans' tools or their repair expenses. On the supply side, as the land became scarcer with the demographic pressure, the rate of returns to labor and therefore the food supply per capita inevitably fell.¹⁷³

To test the possible impact of population on relative prices, a comparison between the prices of grains and animal products attained from the *vakıf*'s account books can be used (Tables 3.1 and 3.2; Graph 3.1). For a better analysis, I also included the prices of raw silk – an industrial raw material – in Bursa during the period covered by the account registers, which Murat Çizakça exhibits in his seminal study on the Bursa silk industry.¹⁷⁴ That the index of raw silk prices lags behind the grain prices¹⁷⁵ arguably indicates the presence of a price scissors in favor of agricultural goods. The prices of silk cloth rose even to a lesser extent than the raw

¹⁷³ Of course, a fall in productivity will be inevitable only if technological innovation fails to compensate the decrease in the average amount of land tilled by each laborer. For an economist's attempt to calculate labor productivity for the Ottoman geography based on the fiscal surveys, see Coşgel, "Agricultural Productivity". For a useful introduction to the question in general, see David B. Grigg, *Population Growth and Agrarian Change: An Historical Perspective* (London: Cambridge University Press, 1980). Productivity will be discussed at length in the next chapter.

¹⁷⁴ Murat Çizakça, *Sixteenth-Seventeenth Century Inflation and the Bursa Silk Industry: A Pattern for Ottoman Industrial Decline?* (Ph.d diss., University of Pennsylvania, 1978), pp. 106-107.

¹⁷⁵ Table 3.3 and Graph 3.2 show that the trend in the prices of barley and oat was comparable to that in wheat throughout the period.

silk prices.¹⁷⁶ On the other hand, the fact that silk was an expensive luxury commodity and thus likely to be affected by changes in purchasing power due to inflation calls for some caution before reaching a quick conclusion.¹⁷⁷

It is more difficult to follow the relative trends in the prices of agricultural versus animal products, since after 1580 the account books that cover a full accounting year are not always available. Furthermore, we have no other price series from Bursa for the same years to check if the fluctuations in the prices of certain goods correspond to a more general trend either. On the other hand, Graph 3. 7 shows that even judging from the yearly purchases, the *vakıf*'s annual demand for meat was indeed more income-elastic than that for wheat and rice. It appears so despite the fact that the annual purchases of grains were much more volatile than their yearly consumption, for the *vakıf* could meet a significant proportion of annual grain requirement from its stocks. On the whole, therefore, only a vague depiction of the course of relative prices can be acquired with the limited data at hand. Nonetheless, it seems reasonable to conclude that the prices of basic commodities, be they agricultural or animal products, rose faster than luxury and manufactured goods such as silk – a pattern that emerges from Pamuk's comparative analysis of the price levels in the capital city as well.¹⁷⁸

However, even if we assume that the trends in the relative prices indicate a population-driven inflation, there are other objections to the alleged correlation between demographic growth and price increase. For instance, Donald McCloskey

¹⁷⁶ Murat Çizakça, "Price History and the Bursa Silk Industry: A Study in Ottoman Industrial Decline, 1550-1650", *The Journal of Economic History* 40, no. 3, (September 1980), pp. 533-550.

¹⁷⁷ It is on these grounds that Pamuk excludes textile products from his consumer price index until 1860. Pamuk, "Prices in the Ottoman Empire", p.454. It is significant to remind that Pamuk's index was meant to be suitable for examining the real budgets of lower income groups as well.

¹⁷⁸ *Ibid.*, p. 458.

argued that higher population density tended to increase the aggregate amount of transactions, which meant lower prices when the money supply and the velocity of circulation remained constant. Hence, *ceteris paribus*, population growth was supposed to push the prices down. The scholar criticized the proponents of population-centered perspective for confusing the relative prices with the general price levels. Demographic growth could indeed cause an imbalance in the relative prices of agricultural and manufactured goods, but this would only mean a milder decline in the prices of the former if monetary supply and velocity of circulation were constant.¹⁷⁹ If the only impact of population growth on the variables of the quantity equation was to increase the transactions, then McCloskey's argument would obviously be true. On the other hand, Harry Miskimin drew attention to another possible effect of demographic growth: that a greater number of people in closer contact with each other would lead to a higher velocity of circulation.¹⁸⁰

The relation between population growth and urbanization on the one hand and the velocity of circulation on the other is worth examining in some detail, since sixteenth-century Anatolia showed both trends. Indeed, demographic increase in Anatolia in the sixteenth century was accompanied by fast urbanization,¹⁸¹ which led to more complex economic relations between town and country as well as to a

¹⁷⁹ Donald McCloskey, "Review of ed. Peter H. Ramsey, *The Price Revolution in Sixteenth-Century England*", *Journal of Political Economy* 80 (1972), pp. 1333-1335.

¹⁸⁰ Harry A. Miskimin, "Population Growth and the Price Revolution in England," *Journal of European Economic History* 4 (1975), pp. 179-86. Pamuk, "Price Revolution Reconsidered," p. 72. Miskimin's suggestion that population affected velocity of circulation was taken up by J. Goldstone, who developed a model aiming to represent the correlation between urbanization and velocity of circulation: Jack A. Goldstone, "Urbanization and Inflation: Lessons from the English Price Revolution of the Sixteenth and Seventeenth Centuries", *American Journal of Sociology* 89 (March 1984), pp. 1122-60; *idem*, "Monetary vs. Velocity Interpretations of the 'Price Revolution': A Comment", *The Journal of Economic History* 51, no. 1 (March 1991), pp. 176-81.

¹⁸¹ See Ronald Jennings, "Urban Population in Anatolia in the Sixteenth Century: A Study of Kayseri, Karaman, Amasya, Trabzon and Erzurum", *International Journal of Middle East Studies* 7, no. 1 (January 1976), pp. 21-57.

blossoming of international and domestic commerce.¹⁸² Enhanced trading activities in urban areas and the commercialization of rural economy enforced by urban demand brought about the dissemination of the use of small coins and the development of small-scale credit relations.¹⁸³ Thus, if the velocity interpretation of price increase is correct for Europe, it is arguably equally valid for the Ottoman case as well.

However, velocity-driven explanation also met criticism from specialists of monetary history. N. J. Mayhew suggested that the empirical evidence in the British case does not point to a clear-cut correlation between demographic trends and velocity of circulation, although in the long run velocity does not remain constant contrary to the orthodox monetarist assumption.¹⁸⁴ Furthermore, he argued that the development and dissemination of more complex credit mechanisms actually diminished the velocity of circulation by increasing money supply, since in their presence economic actors could perform a higher number of transactions without an exchange of currency. On the other hand, Miskimin objected to such a definition of money supply on the grounds that once the impact of debasements are reduced from the aggregate money supply, what needs to be taken into account is the velocity of circulation of bullion, which increases with the development of credit relations. For a

¹⁸² Leila T Erder and Suraiya Faroqhi, "The Development of Anatolian Urban Network during the Sixteenth Century," *Journal of the Economic and Social History of the Orient* 23, no. 3 (October 1980), pp. 265-303.

¹⁸³ Suraiya Faroqhi, "Sixteenth-Century Periodic Markets in Various Anatolian *Sancaks*," *Journal of the Economic and Social History of the Orient* 22 (1979), pp. 32-80; *idem*, "The Early History of Balkan Fairs," *Südost-Forschungen* 37 (1978), pp. 50-68; Pamuk, "Prices in the Ottoman Empire", p. 461; *idem*, "Price Revolution Reconsidered," pp. 73-74. On the other hand, the level of commercialization in the rural economy is debatable.

¹⁸⁴ N. J. Mayhew, "Money Supply, Inflation and the Velocity of Circulation in England, 1300-1700," *The Economic History Review*, New Series 48, no. 2 (May 1995), pp. 238-257. It must be emphasized that the velocity of circulation is a magnitude that is almost impossible to calculate prior to the nineteenth century, neither are the author's figures a hundred per cent persuasive.

higher number of economic transactions now could be achieved with the same amount of bullion, in other words, the credit mechanisms increased the velocity of circulation of bullion by emancipating it from physical restrictions.¹⁸⁵ Mayhew replied that an analysis that accepted bullion as the medium of exchange would be inaccurate since its value considerably changed during the period examined. He argued that the governments' debasements were in fact a response to a preceding increase in the value of bullion.¹⁸⁶ But if that is true, then the genuine demand for more money supply simultaneously means a demand for a higher velocity of bullion, as Miskimin previously pointed out¹⁸⁷. In the end, Mayhew's objection seems to support rather than debunk the demand-driven explanations of the price revolution.

In fact, what the specialists of the price revolution have been doing in their debates around the quantity theory of money was translating an older position that found a correlation between aggregate demand and the price increase to the language of quantity equation and testing the validity of the former with reference to the theoretical implications of the latter. In other words, it elucidates monetary mechanisms whereby an upward shift in the demand curve caused by an increase in the quantity demanded leads to a price increase. Since the aggregate demand – especially for basic goods – mainly depended on the population, it was ultimately demographic growth which pulled the general level of prices upward. The relative prices of the cereals compared to the industrial products also increased, since consumers primarily demanded basic sustenance to meet their daily requirements and

¹⁸⁵ Harry A. Miskimin, "Silver, Not Sterling: A Comment on Mayhew's Velocity," *The Economic History Review*, New Series 49, no.2 (May 1996), pp. 358-60.

¹⁸⁶ N. J. Mayhew, "Silver, Not Sterling: A Reply to Miskimin," *The Economic History Review*, New Series 49 (no.2, May 1996), p. 361.

¹⁸⁷ Miskimin, "Silver, not Sterling," p. 358.

cut down their expenses on manufactured goods. By the same token, the demand for income-elastic animal products such as meat and butter could not have increased to the extent equal to that for cereals, since consumers shifted to cheaper articles of food in an environment where all the items in their shopping basket were becoming more expensive and their earnings were failing to catch up.¹⁸⁸

A criticism that targeted the proponents of the demand-sided interpretations of the price revolution was that they were too quick to apply the supply and demand curves which we are accustomed to from marginalist economics to the early modern economies, to an environment where the natural sector was still considerably larger than the monetary one. Indeed, the formation of the equilibrium of demand and supply would require the producers to react to the slightest price changes and arrange the amount which they supplied the market with accordingly. But even if we included the heavy and versatile transportation costs that would otherwise hinder the efficient functioning of the market in prices, the absence of market dependence for the peasant producers renders the application of competitive market laws to the sixteenth century useless.¹⁸⁹ It is therefore necessary to engage in a brief discussion of the relation between the peasants' economic decisions and the level of prices.

¹⁸⁸ For a relatively early, but remarkably qualified discussion of the price revolution from this perspective, see Wilhelm Abel, *Agrarian Fluctuations in Europe: From the Thirteenth to the Twentieth Centuries* (London: Methuen and Co. Ltd, 1980), pp. 116-123. The original German version was first printed in 1966.

¹⁸⁹ For an example to the critique of demand-sided interpretations, see Bois, *The Crisis of Feudalism*, pp. 78-96; *idem*, "Comptabilité et Histoire des Prix: Le Prix du Froment à Rouen au XVe Siècle," *Annales. Histoire, Sciences Sociales* 23, no. 6 (November-December 1968), pp. 1262-1282. The author suggests that an alternative explanation for the price increase in the long run might be the increase in the costs of production due to the fall in labor productivity and argues that the increase in total costs pulled the floor for the lowest possible prices up. While this reasoning may be meaningful in the seigniorial demesnes where either the landlord or a tenant farmer employed wage-labor to cultivate the land, it does not explain the economic behavior of the peasant family, which constituted the majority not only in Northern France but also in the Ottoman Anatolia in the sixteenth century. On the inadequacy of firm theories to comprehend the dynamics of peasant family farm organization in general, see Alexander V. Chayanov, *The Theory of Peasant Economy* (Wisconsin: University of Wisconsin Press, 1986).

In an environment where the laws of capitalist economy apply, the agricultural producer primarily responds to the fluctuation in prices. The presence of either accumulated cash or a credit mechanism allows him to stock the surplus grain when the prices fall, and to maximize his profit by selling these stocks when the prices reach a favorable level. By contrast, the peasant family which depends primarily on subsistence agriculture reacts to the changes in the quantity harvested in the first place.¹⁹⁰ While in years of good harvest the peasant ends up with more marketable surplus at hand, in the years of poor harvest the amount that he can sell in the local market shrinks when the proportion needed for simple reproduction and tax payments is left aside, regardless of changes in prices. The impact of demographic growth on the marketable surplus is to be understood via a similar reasoning. If the population grows more than total production, the average output per household and thus the amount marketed by each family will fall. The secondary effects of population pressure on the returns to labor will have a parallel impact: A fall in productivity due to the shrinkage of plot size, malnutrition or exhaustion of land will cause still more decline in the output per capita. In the end, the aggregate supply provided directly by the rural producers fails to meet the demand which had in the first place increased with the population growth. The result is a general increase in the prices of cereals.

However, there is another factor that might affect the amount of marketable supply. To begin with, the peasants were obliged to sell a certain amount of their

¹⁹⁰ The discussion here is largely based on Kula's brilliant study on the Polish peasantry and the feudal economy in general: Witold Kula, *An Economic Theory of the Feudal System* (London: Foundations of history Library, 1976). The original edition in Polish was first published in 1962.

produce to meet their tax obligations which are supposed to be paid in cash.¹⁹¹ For instance, the cash obligations of the Ottoman peasant to the revenue-holder or the central government determined his status as a *ra'yyet*. In that case, the peasant would try to sacrifice a minimal proportion of the grain output since he had to pay a fixed cash total. Therefore, he would sell less grain when the prices went up and vice versa.¹⁹² Again, a price increase makes a negative impact on the aggregate grain supply in the market provided directly by peasant producers. On the other hand, the gross income collected in kind by the surplus extractor increases with the gross output. Hence, population growth is likely to cause an increase in the aggregate marketable surplus in the hands of the revenue holders, primarily the timariots, *sancakbeyis* or *vakıfs*, although the annual amounts of grain sold by Sultan Mehmed Vakfi show no such trend.¹⁹³ At this point, the peasants' incentive to incline more towards natural economy and the extractors' contradictory motive to maximize their income from market sales coupled with the town dwellers' ever-increasing demand for food supply sets in motion a conflict of interests between these groups that aggravates the class struggle in society. As for the impact of the population growth on the prices, it becomes clear that the former leads to a rise in the aggregate demand for goods and services in general and for subsistence goods – primarily cereals – in particular, which tends to pull the general level of prices upwards. Its impact on the marketable supply is somehow more complicated, for it simultaneously increases the gross output and creates a motive to turn to natural economy for the peasantry. In

¹⁹¹ İslamoğlu, *Devlet ve Köylü*, pp. 237-238.

¹⁹² Kula, *Feudal System*, p. 43.

¹⁹³ However, it is important to remember that a significant proportion of the tax collected by the *vakıf* in kind was collected in lump-sum and fixed in practice, which neutralizes or at least diminishes the otherwise positive impact of the increase in total production on the annual grain sales.

brief, not only the empirical evidence but also logical deduction seems to vindicate the positive impact of population growth on the price increases.

More significantly for our purposes, however, the previous discussion has shown that the prices were not the sole or even primary determinants of the revenue-holders' or producers' economic decisions. Rather, prices were affected by various groups' economic behavior; and they in turn affected the latter via their own impact on the balance sheets of these groups. Our consumer index, together with the price series constructed for some individual goods of significance, will reveal the influence that price changes had on the revenues and expenses of Sultan Mehmed Vakfi in the next chapter.

CHAPTER IV

THE *VAKIF*

One of the purposes of this study is to search the patterns of economic behavior adopted by a *vakif* as a surplus extractor amidst the objective economic developments such as population growth, pressure on land and price increase in the second half of the sixteenth century. In the previous chapters I analyzed and delineated these objective economic trends as found in northwestern Anatolia in the places where Sultan Mehmed Vakfi and the villages from which it collected taxes were located in. The following task is obviously to search the financial situation that the *vakif* was in, in other words, the impact of the outlined economic developments on the finances of the institution.

That the financial position of surplus or deficit of any enterprise is best expressed in the current balances between its total revenues and total expenditures goes without saying. The account registers of Sultan Mehmed Vakfi offer elaborate information to calculate the foundation's total revenues and expenditures as a single item. Indeed, the records of granary accounts that accompany the main account registers of each year grant not only the amount of grains and sometimes other articles of food left in stock at the end of each year, but also the income received in kind as well as the expenditures made from the stocked grain. Approximate prices for a number of goods are available in the sales and purchases records contained in the account books and have already been presented in the previous chapter.

However, any attempt to express all the transactions of the *vakif* in currency in order

to analyze the financial position of the *vakıf* on the basis of overall profitability would be useless unless one first demonstrates the embedded connection between such an analysis on the one hand, and the incentives that shaped the economic behavior of the *vakıf*'s decision makers on the other.

The debate over the possible motives behind the establishment of pious *vakıfs* arguably sheds some light upon the criteria that shape the actions of the decision makers who govern the finances of the institution.¹⁹⁴ The services of public facility, employment and poor relief offered by *vakıfs* in general and the imperial *vakıfs* in particular require no description. The *vakıfs* undertook the building of mosques, hospices and workshops; operated soup kitchens for the feeding of those in need, employed a number of workers on a regular basis and assigned stipends to the poor¹⁹⁵. A predominant motive behind endowing wealth for private persons seems to have been to prevent the division of wealth among heirs or to avoid confiscation.¹⁹⁶ As far as the imperial *vakıfs* are concerned, the search for legitimization by the Sultan as well as the imperial family members was probably a significant motive,

¹⁹⁴ For a useful introduction, see John Robert Barnes, *An Introduction to Religious Foundations in the Ottoman Empire* (Leiden: E. J. Brill, 1986).

¹⁹⁵ Bahaeddin Yediöldüz, "Sosyal Teşkilatlar Bütünlüğü Olarak Osmanlı Vakıf Külliyesi", *Türk Kültürü* 219 (1981), pp. 262-271; Haim Gerber, "The Waqf Institution in Early Ottoman Edirne", *Asian And African Studies* 17 (1983); *idem*, *Economy and Society*, pp. 149-187; Murat Çizakça, *A History of the Philanthropic Foundations: the Islamic World from the Seventh Century to the Present* (İstanbul, Boğaziçi University Press, 2000); Amy Singer, *Constructing Ottoman Beneficence: an Imperial Soup Kitchen in Jersulaem* (New York: SUNY Press, 2002).

¹⁹⁶ Halil İnalçık, "Capital Formation in the Ottoman Empire", *Journal of Economic History* 29, no. 1 (1969), pp. 132-135. Mehmed II's attempt to confiscate the freehold and *vakıf* wealth in the 1470s met serious resistance from the endowers and property owners, which resulted in the return of the *vakıf* lands to their previous status. See *idem*, "Mehmed II", *Türkiye Diyanet Vakfı İslam Ansiklopedisi* 28 (Ankara: TDV Yayınları, 2003), pp. 395-407; Oktay Özel, "Limits of the Almighty: Mehmed II's 'Land Reform' Revisited", *Journal of Economic and Social History of the Orient* 42, no. 2 (1999), pp. 224-246.

while the urban elite similarly sought prestige and used the pious foundations as a tool for the construction of public image.¹⁹⁷

Even if a person endowed a pious foundation to ascertain the safety of his/her wealth against the dangers of confiscation or division, there were serious institutional obstacles that prevented the endower or the trustee (*mütevelli*)¹⁹⁸ from engaging in profitable business without disruption through various mechanisms. In this sense, pious *vakıfs* resembled non-profit organizations rather than commercial ventures. This was all the more so for imperial *vakıfs*, since the endower was a member of the dynasty in the first place and had no initial inducement to conserve his/her personal wealth. Nor did the trustees have much space in developing economic policies, since their decisions were both constrained by the *vakıf* deed's imperatives in the first place,¹⁹⁹ and also remained under the close scrutiny of the imperial center via regular inspections.²⁰⁰ The regulations in the *vakıf* deed already determined the amount and quality of items to be used in the kitchen as well as the levels of salaries and number of employees. The inability to reduce the costs was paralleled with the restrictions on the re-investment of surplus on profitable business because of periodic transfers of cash to either the Central Treasury or other pious foundations. In fact, it is legitimate

¹⁹⁷ Faroqhi, "Crisis and Change", pp. 609-621; Ruth Roded, "The Waqf and the Social Elite of Aleppo in the Eighteenth and Nineteenth Centuries", *Turcica* XX (1988), pp. 71-91.

¹⁹⁸ *Mütevelli* is the person who is appointed to govern the *vakıf*'s business affairs. Nazif Öztürk, "Mütevelli", *Türkiye Diyanet Vakfı İslam Ansiklopedisi* 29 (Ankara: TDV Yayınları, 2003), pp. 217-220.

¹⁹⁹ The restrictions of the *vakıf* system on the investment of wealth led some scholars to see in the institution a structural tendency to inhibit entrepreneurial activity. See Timur Kuran, "The Provision of Public Goods under Islamic Law: Origins, Impact and Limitations of the Waqf System", *Law & Society Review* 35, no. 4 (2001), pp. 841-898; *idem*, "The Islamic Commercial Crisis: Institutional Roots of Economic Underdevelopment in the Middle East", *The Journal of Economic History* 63, no. 2 (June 2003), pp. 414-446; *idem*, "The Absence of Corporation in Islamic Law: Origins and Persistence", *The American Journal of Comparative Law* 53, no. 4 (Fall 2005), pp. 785-834.

²⁰⁰ See Kayhan Orbay, "The Economic Efficiency of Imperial Waqfs in the Ottoman Empire", Paper Presented to XIV. *International Economic History Congress* (Helsinki: 2006).

to ask whether the trustee of an imperial *vakif* felt the impetus to maximize the institutional profit at all. For the personal interests of the administrators contradicted with those of the institution in cases where they tried to defalcate the foundation's wealth. Indeed, archival material documenting the cases of managers' corruption drew attention to the financial damage that the pious foundations suffered due to the administrators' embezzlement or delinquency.²⁰¹ On the whole, it seems safe to say that the *vakif* administrators' personal motives to make money at least did not automatically imply the presence of a profit-maximizing institutional policy in the foundation's management.

Nevertheless, the principles of *vakif* administration undoubtedly required a rational management corroborated by a well-developed accounting technique. To begin with, the scale of the imperial *vakifs*' economic activities and the various sources of revenue and expense to be administered required an efficient, standardized and detailed book-keeping system. Furthermore, the strict state control over the business affairs that the *vakifs* carried out apparently contributed to the development of such delicacy in book-keeping and in the efficient allocation of resources.²⁰² The summary account registers based on the detailed account books were sent regularly to İstanbul every year, and the local judge as well as the appointed government inspectors had the right to scrutinize the detailed registers in case of an investigation.²⁰³ Consequently, the parties responsible assured that even the relatively minor transactions of the institution were recorded promptly and adequately. In brief,

²⁰¹ Orbay, "The Economic Efficiency of Imperial Waqfs", p. 9.

²⁰² Orbay, "The Economic Efficiency of Imperial Waqfs", p. 9; Ronald Jennings, "Pious Foundation in the Society and Economy of Ottoman Trabzon, 1565-1640", *Journal of the Economic and Social History of the Orient* 33 (1990), pp. 271-336.

²⁰³ Gerber, *Economy and Society*, pp. 164-166.

although the account books show that the financial affairs of the imperial *vakıfs* was run via a rational management of costs and revenues, this rationality by no means corresponded to the economic behavior of a capitalist profit-maximizing enterprise.

But there would still be unresolved issues regarding the economic behavior of the *vakıfs*, even if we treated them as a variant of modern non-profit organizations. It is necessary to comprehend the peculiar conditions of a *vakıf* in the sixteenth century that determined the course taken according to the changes in the volume of production or the general level of prices. Then, as in the case of peasant families, the question revolves around the relation between the market price of a product determined through the play of demand and supply on the one hand, and the value attributed to it by a specific economic actor within a concrete situation on the other.

A Preliminary Note on the Logic of *Vakıfs*' Accounting

As mentioned in the introduction, Sultan Çelebi Mehmed Vakfi – as many of its counterparts throughout the empire – held the accounts of annual grain stocks in a distinct account book in addition to the main register.²⁰⁴ Such *vakıfs* usually kept specific books for various items when their transactions became complex enough to require a distinct documentation – a necessity with which accountants are familiar from the inventory books today.²⁰⁵ Yet, the granary accounts differed from the modern inventory accounts in that the latter did not contain the currency values of

²⁰⁴ See Kayhan Orbay, “Structure and Content of the Waqf Account Books as Sources for Ottoman Economic and Institutional History”, *Turcica* 39 (2007), pp. 3-47.

²⁰⁵ For some examples, see Kayhan Orbay, “Distributing Food, Bread and Cash: Vakıf Taamhoran and Fodulahoran Registers as Archival Sources for Imarets” in *Feeding People, Feeding Power; Imarets in the Ottoman Empire* ed. Amy Singer (İstanbul: Eren Yayıncılık, 2007), pp. 171-196; *idem*, “Vergi Kayıtları, Mahsul Miktarları ve Fiyatlar: Vakıfların Rüsûm, A'sâr-ı Hubûbât ve Fûrûht-ı Hubûbât Defterleri”, *Osmanlı Tarih Araştırmaları Dergisi* 30 (2011), pp. 127-144.

the stocks which did not enter into market. This nuance in fact reflects a historically peculiar attribution of value to any product in the examples of modern accounting, which does not apply to the logic of book-keeping in sixteenth-century Ottoman pious foundations. Here, some explanation is necessary.

The detailed account registers of Sultan Mehmed Vakfi record even unimportant transactions realized in cash, but do not include massive entries of grain to the foundation's storages – a grave distortion for modern accounting: since the grain stocks belong to the enterprise, they must be counted among the assets in the balance sheet. But this attribution of a monetary equivalent to an agricultural product before its actual appearance in the open market assumes its convertibility to cash when desired. According to the capitalist logic, the expenditure of the cereals in stock by any means other than selling them in the market means the acceptance of an opportunity cost – that of not selling the grain. Hence, the reduction in the stocks of any item is considered as a reduction from the total revenues of the enterprise expressed in currency. Here, money becomes not only a measure of value but also a common denominator through which the value of all goods and services are measured. Use value becomes subordinate to exchange value. Only in this case do these products become commodities.²⁰⁶

There are a number of peculiarities in the picture outlined above that do not fit to the economic system within which the account books of Ottoman *vakıfs* operated. First of all, the *vakıf*'s administrator or scribe would have difficulty even if he meant to calculate the cash equivalent of the grain in stock. For the proportion of total produce that never passed through the market was so large that its inclusion would

²⁰⁶ Karl Marx, *Capital: A Critique of Political Economy*, vol. 1 (London: Penguin Books, 1976), pp. 125-131, 157-178 and 188-227.

drastically alter the process of price formation.²⁰⁷ By the same token, it would be practically impossible to calculate salary payments made in kind and estimate their value expressed in currency. In fact, the frequent use of grains in transactions that by-passed the use of money as a medium of exchange such as tithe collection or salary payments left no room for the incentive to agglomerate all the foundation's wealth under a uniform chart. Indeed, an examination of the granary accounts proves that the management of grain stocks required their own value estimation. For instance, the *vakıf* usually retained large cereal stocks in its granary – probably for safety in case of an upcoming crop failure – but never calculated the opportunity cost of not selling it. A possible objection could be that the capitalist firms too occasionally prefer to maintain sizable inventory stocks depending on the entrepreneur's or manager's level of risk-aversion. The inclusion of risk would still not eliminate the element of opportunity cost, however; whereas in the case of the pious *vakıf* the decision of maintaining a certain amount of grain in stock is autonomous from currency concerns in maintaining financial position.

When the *vakıf* has 26370 *akças* currency and 4520 *kiles* of wheat at the end of the accounting year, therefore; it has 26370 *akças* and 4520 *kiles* of wheat, and this cannot be expressed as a cash total that corresponds to the sum of these two ingredients. Such a calculation would not only risk the application of a market price to a completely different hypothetical play of supply and demand, but also misrepresent the conditions that determined economic decisions as well as the perception of financial balances. I therefore made no attempt to calculate a single revenues- or expenditures-total for Sultan Mehmed Vakfi, but instead analyzed the cash balances and grain stocks separately.

²⁰⁷ Kula, *Feudal System*, pp. 36-39.

The General Finances of Sultan Mehmed Vakfi, 1558-1591

The main account registers of the *vakıf*, when used together with the consumer price index previously constructed based on the annual expenditures of the foundation, provide the tools for an analysis of not only the financial position of the foundation, but also the real volume of its aggregate transactions. The first twelve years that the account books cover seem to have been a period of economic growth and increasing wealth for the *vakıf*. Throughout the period, the general trend of both the nominal and the real revenues appears to have been upward, while the real usual expenditures such as kitchen expenses or salary payments also increased – but failed to catch up with the real revenues. Hence, the current surplus²⁰⁸ excluding the item ‘other revenues’ steadily increased at the closing of the accounting years, with the exception of 1565 and 1566. On the other hand, the surplus (*el-bâki*) amounts recorded at the end of each year’s balance sheets do not reflect this upward trend every year. The obvious reason for this is the occasional submission of a serious amount of cash to the Central Treasury. Indeed, the *vakıf* submitted to the palace 40000 *akças* in 1569 and 100000 *akças* in 1570 from the previous year’s surplus.²⁰⁹

The real agricultural revenues in cash seem to have increased during the twelve years. The stability in the general prices, corroborated by even a slight decline in the prices of grain in the 1560s contributed to this tendency. A series of good harvests around Bursa or in north-western Anatolia in general may have been a reason behind

²⁰⁸ In this text, the term ‘current’ is used for the transactions that took place during the accounting year in which the particular account book was recorded. Hence, the term ‘current surplus’ means the difference between the current revenues and expenses of the *vakıf*, whereas the surplus recorded in the register includes also the surplus transferred from the previous year among the total revenues. The figure ‘current surplus’ singles out the financial performance of the *vakıf* in the current accounting year (See Table 4.2).

²⁰⁹ Table 4.1. Also see Orbay, “16. Ve 17. Yüzyıllarda Bursa Ekonomisi”, p. 138.

the price decrease in cereals, primarily in wheat. The fact that there seems to have been a general upward trend in the tax payments of wheat in the villages where tithes probably reflected the levels of production vindicates this hypothesis.²¹⁰ On the other hand, in the years 1558 and 1565 a fall in the real agricultural revenues of the *vakıf* in cash took place. The decline in the *mukâta‘a* (tax-farm) revenues collected in lump-sum from the agricultural produce or the tithes imposed on orchards in addition to the fall in the grain tithes paid in cash seem to have been partially responsible for the decline in 1565. The same year, the decrease in the stock sales strengthened the negative impact of the decline in agricultural revenues.²¹¹ In contrast to a number of other occasions, the *vakıf* apparently did not choose to support the main budget with sales of grain from the stock, as the grain balances of the foundation was also faint in these years (Table 4.3). The inability of the *vakıf* managers to sell stocks in this case arguably points to a fall in the revenues in kind due to a few bad harvests, which constrained the volume of grain in stock available for sale and forced the management to stock a certain amount in case of another bad year to come.²¹² Indeed, the fall in the tithes received in kind from the villages where taxation was indexed to the level of production in addition to the aforementioned decline in the *mukâta‘a* revenues point to a bad harvest year. This, however, does not give a clue as

²¹⁰ See Tables 5.3, 5.4 and 5.5 for Kayapa, Adıbini and Şib ‘Ali. Production trends will be discussed in detail below.

²¹¹ Orbay, “16. Ve 17. Yüzyıllarda Bursa Ekonomisi”, p. 136.

²¹² Hence, there seems to have been a trade-off in front of the *vakıf*’s management. They could sell the grain in stock, which might enforce a purchase of grain from the market at high prices in the immediate future and therefore pull up the expenses item in the general balance sheet. Else, they would keep a certain amount of grain in stock and compensate the deficit in the current budget either from the previous year’s surplus or by borrowing. In this case, the favorable financial position of the *vakıf* in general allowed for a compensation of the current deficit, which amounted to 39727 *akças* from the previous year’s surplus. Despite that, there were still 31961 *akças* in the *vakıf*’s safe at the end of the year.

to the geographical scale of a bad harvest, for neither the favorable level of grain prices, nor the stable rent revenues of the *vakıf* signify a problem in the rural and urban economy in general.²¹³

The monthly revenues, which mainly consisted of rents from the shops and houses that belonged to the *vakıf*, remained relatively stable in the twelve years between 1558 and 1570, though obviously its relative share changed with the fluctuations in the other components of current revenues. For instance, the monthly revenues amounted to more than 35 per cent of the aggregate revenues from the current year, but comprised a lesser part of the total in 1568, 1569 and 1570, when the agricultural revenues in cash increased considerably. The real income from the rent payments increased a little in this period, for the price index proceeded at a slightly lower level than the monthly revenues (Graph 4.5).

The increase in the real expenditures of the *vakıf* throughout the period from 1558 to 1570 remained somehow modest compared to the current revenues. Both the kitchen expenditures and the salary payments show relative stability throughout the period. Among kitchen expenditures, the fact that the amount of meat purchased annually did not increase with the upward trend in the revenues in cash may be interpreted as a sign of saturation in the *vakıf*'s annual demand for meat. If so, that is, if the *vakıf* was able to meet its maximum demand for a luxury good, this could indicate considerable prosperity during the period. For once the annual income of the *vakıf* fell below a certain level, annual demand for meat began to show high elasticity. On the other hand, the increase in the wheat purchases despite the high level of annual revenues in kind is noteworthy (Graph 3.4). Prior to 1571, an increase in the amount of annual sales accompanied the rise in wheat purchases. A glance at

²¹³ Orbay, "16. Ve 17. Yüzyıllarda Bursa Ekonomisi", p. 136.

the price levels that emerged in sales and purchase transactions (Graph 3.3) elucidates the phenomenon: the *vakif* profited from selling wheat at higher prices while buying it for lower. The *vakif* either sold better-quality wheat than the one that it purchased from the market, or derived revenue from the imperfect market conditions. In any case, it seems that the economic growth promised returns from trade and therefore triggered a monetization in the *vakif*'s economic activities.

Salaries paid in cash also show a rather stable trend in the first twelve years covered by the account books. The *vakif* apparently paid the salaries regularly in this period.²¹⁴ Graph 4.5 shows the pattern of consumer price index, monthly revenues and salary payments in cash from 1558 to 1591, which can be considered as a vague depiction of the trends in prices, rents and wages. Yet, such an interpretation demands great caution, for neither the monthly revenues nor the salary payments reflect rent and wage levels without distortion. A reliable conclusion would require a more thorough study of these items, but a preliminary observation nevertheless seems possible. Both the rent and wage levels apparently fell behind the increase in the general level of prices after the mid-1570s, while with the debasement of 1585 the latter considerably outran the nominal increase in both rents and wages. The decline in the real wages is expected.²¹⁵ The fall in the real revenues from rents, on the other hand, may be due to the shrinkage of the Bursa silk industry. Both the competition of European textile industries and the Ottoman – Iranian War that meant almost no supply of silk from Iran caused the collapse of many manufacture enterprises. By 1587, more than 75 per cent of the weaving looms in Bursa had

²¹⁴ *Ibid.*, p. 138.

²¹⁵ See Süleyman Özmucur and Şevket Pamuk, “Real Wages and Standards of Living in the Ottoman Empire, 1489-1914”, *The Journal of Economic History* 62 (2002) pp. 292-321.

stopped operating.²¹⁶ Although the evidence from the account registers becomes inadequate to follow the trend in rents in the last quarter of the century, it seems possible to assume a correlation between the fall in the real rents and the decline in the silk industry in Bursa.

After 1570, the gradual increase in prices began to affect the volume of the *vakıf*'s real transactions. For the first half of the 1570s, both the real revenues and the real expenditures showed a slight downward trend and by 1575, they reached back 1558 levels (Graph 4.3). That the agricultural revenues in cash showed a mild, yet constant decline in these years is not surprising, since both the *mukâta'as* and the cash liabilities of the peasants except the tithe payments made by the villages in cash, tended to become relatively fixed and adapted to inflation with some delay. While salary payments remained more or less stable in nominal terms, the *akça* totals recorded as annual kitchen expenditures seems to have increased together with the rise in the prices of consumer goods. However, the upward trend in the prices was very limited for the time, and the *vakıf* apparently felt no necessity to cut down the expenses in the *vakıf*'s kitchen, as the stability in the annual meat consumption reveals. The total consumption of wheat in the kitchen similarly remained stable (Table 4.3). What probably caused the slight fall in the kitchen expenditures paid in cash was that the *vakıf* limited its annual purchases of wheat, which by no means constituted a sign of annual consumption for that particular cereal.

Until the last years of the 1570s, the *vakıf* continued to close the accounting years with high budget surpluses. The years 1574 and 1577 were peculiarly favorable. The high revenues in kind from the villages imply that these were good

²¹⁶ Özer Ergenç refers to a court record dated to 3 May 1587 that gives the decline in the number of operating looms as 26 from 483. Özer Ergenç, *XVI. Yüzyılın Sonlarında Bursa* (Ankara: Türk Tarih Kurumu Yayınları, 2006), pp. 218-219. Also see Çizakça, "Price History and the Bursa Silk Industry".

harvest years, and in 1577 the increase in the tithe payments accrued in cash from the villages turned the mild downward trend in the agricultural revenues upside down. In 1574, the *vakıf* transferred 50000 *akças* to the *Vakıf* of Yıldırım Han (Bayezid I) to help with its financial situation, and submitted another 50000 to the Central Treasury.²¹⁷ Throughout the period studied so far, the foundation presented a balanced budget and produced a current surplus in every year with the exceptions of 1565 and 1566 – two years of bad harvests which caused a decline in the agricultural revenues in cash and in kind, but which nevertheless did not cause any serious financial trouble to the *vakıf*'s management. In the late 1560s and the early 1570s the surpluses that the institution ended the years with reached considerable amounts. On the other hand, when adjusted to the inflation rate based on the consumer price index, the *vakıf* achieved little permanent economic growth despite the consecutive years of distinguished financial performance.

In the next three years, 1578 to 1580, the foundation's agricultural revenues declined while its aggregate expenditures increased due to price upsurges. A rise in the general level of prices was likely to affect the balance sheet of the *vakıf* negatively. For both the monthly revenues and the agricultural revenues in cash tended to remain fixed, although the latter did respond to price increase – albeit in a restricted manner – because of the items of tithes paid in cash or leased out. At the expenses side, the kitchen expenditure immediately reflected any increase in the prices of food articles, which sufficed to pull up the aggregate expenses despite the tendency of the salary payments to remain stable. In 1578 and 1579, therefore, the *vakıf* ended the accounting years with current deficits, that is the aggregate

²¹⁷ Orbay, "16. Ve 17. Yüzyıllarda Bursa Ekonomisi", p. 139.

expenditures exceeded the current revenues; but it was still able to compensate the shortfall with the cash in the foundation's safe from the previous years.

The *vakıf* adapted its expenses to the decline in the real revenues in 1580, and cut down on the kitchen expenditure to a certain extent. That year, the annual purchase of meat went down by 25 per cent, while a similar constriction was applied on the purchases of honey. An increase in the purchase of wheat replaced the fall in the demand for luxury goods, and the amount of wheat purchased from the market rose from 1858 to 3385 *kiles*. Of course, a shift in the consumer basket from luxury items to cheaper articles of food was not the sole reason behind the rise in wheat demand, the proportion of purchased cereals also became higher within the aggregate wheat consumption, since 1580 marked a year of harvest failure for a number of villages from which the *vakıf* collected taxes.

That both the agricultural revenues and the kitchen expenditures increased in 1581 must be due to the additional two months that the account book covered. On the other hand, the increase in the amount of accounts receivable (*der-zimem*) implies a difficult year for both the rural and urban economies. The *vakıf*'s unpaid revenues reached 84495 *akças* in 1581 from levels that never surpassed 40000. The receivables involved unpaid rents,²¹⁸ unpaid tithes in cash, and *mukâta'a* revenues from a number of villages. Despite the fact that the *vakıf*'s trustee managed to collect a significant proportion of these debts, the summary account books of the following years point to considerable fluctuation in the receivables item, which must have caused serious financial troubles to the foundation. The rarity and irregularity of the detailed account registers that covered full accounting years makes financial analysis difficult, but the available evidence indicates the existence of chronic budget deficits

²¹⁸ *Ibid*, p. 140.

in the 1580s, which led to the erosion of the liquidity in the *vakıf*'s safe and resulted in debts received from the foundation's trustees.²¹⁹

Since the account registers of 1585 and 1587 do not cover a full accounting year, it is not possible to see the immediate impact of the 1585 debasement on the *vakıf*'s balance sheet. The debasement's influence is nonetheless detectable in the overall increase in the nominal *akça* totals in the account book of 1588. But the real revenues had suffered a dramatic decline by the late 1580s: indices of both the current aggregate revenues and the agricultural revenues fell to half of their values in the beginning of the whole period under study here (see Graphs 4.1 and 4.2). The *vakıf* nonetheless managed to overcome budget deficits that gave rise to debt cycles: in 1588, 1590 and 1591 the account registers recorded current surpluses of over 50000 *akças* and paid considerable amounts of debt each year.²²⁰ The cost of such an achievement was naturally a strict policy of cutting down on the expenditures: the index of aggregate expenditures shows that total real expenses had fallen to 40 per cent of the level in 1558. A dramatic decline in almost every item that comprised the kitchen expenditures is visible, but if there is no mistake in the records of the account book of 1588 – which is a specifically accurate register in many respects – the meat consumption in the *vakıf*'s kitchen practically disappeared. It fell to 570 *vukıyyes* corresponding to 4524 *akças* from an average of 33000 to 35000 *vukıyyes* of the years before the late 1570s. In those years, total cost of meat purchases had occasionally exceeded 100000 *akças*, but never fallen beneath 80000. The real kitchen expenses rose a little in 1590 and 1591, but never approached the levels of the 1570s, or not even the late 1550s. In brief, the *vakıf* managed to strengthen its

²¹⁹ *Ibid*, p. 140.

²²⁰ *Ibid*, p. 140-141.

financial position once again, but at the cost of considerable shrinkage in the volume of its economic transactions.

In fact, a glance at the last three registers creates the impression that there was a determined effort to put the *vakıf*'s financial indicators in order. The account books of the late 1580s were particularly well-written, accurate and contained more detail. Of course, the attempt to fix the deficit position in the balance sheet was two sided: a closer examination of the agricultural revenues shows that there were novel articles of tax collection imposed on the *vakıf*'s villages, taxes from irregularly-cultivated lands or renewed leases of tax-collection rights with higher cash payments in order to increase the agricultural revenues from the villages. But these interventions were destined to remain insufficient. After all, the annual income from poll tax, which constituted the major item among the revenues from the villages collected in cash, was bound to suffer a serious decline from the price increase after the 1570s and especially after the debasement of 1585. Besides, the tithe or *kesim* revenues collected in cash, which stood as the only revenue item that was perhaps capable of compensating the erosion in the real poll tax revenues, followed an irregular path in the second half of the period that the account books covered. As we shall see below, the frequent occurrence of unpaid tithes as well as the repetitive poor harvests reflected in the revenues collected in kind ensured that the *vakıf* could not raise its revenues from cash payments of tithes either. Shrinkage in the volume of the foundation's economic transactions had therefore become indispensable.

On the whole, the finances of Sultan Mehmed Vakfi pursued a pattern that parallels the general findings and assumptions about economic trends in Anatolia in the sixteenth century. The findings of the study also help the researcher come up with a more precise periodization of these trends. Roughly, the *vakıf* seems to have been

through two distinct economic phases. The period between 1558 and the second half of the 1570s was a phase of economic growth that was only occasionally interrupted by years of relatively bad harvests. The prices remained stable through the 1560s and only mildly increased in the first half of the 1570s, which assured the maintenance of real revenues at a certain level. Nor did kitchen expenditures swell, and the *vakif* consequently was able to afford a consumption basket made up of multifarious goods including luxury articles of food. The foundation closed almost every accounting year with current surpluses, which considerably increased the liquidity in the safe and allowed for large-scale repair projects.

The *vakif* nevertheless was not able to take advantage of the favorable years by re-investing the surplus in profitable business. The imperial *vakifs* in general refrained from direct investments in productive sectors in any case,²²¹ but there is also no evidence that Sultan Mehmed Vakfi attempted to build a new workshop in the covered bazaar or buy one to lease and thereby increase its revenues from rents. The practical restriction to such efforts was obvious: the *vakif* had to submit a proportion of its annual revenues to the Central Treasury or occasionally transfer them to another pious foundation in financial distress. A possible interpretation could be that state intervention arguably obliterated the incentive of the *vakif*'s management to increase revenues. In other words, the organization of the imperial *vakifs* envisioned and consequently encouraged economic and financial stability as opposed to sustainable growth of the enterprise. But such an analysis would probably be anachronistic, for there is no reason to assume that the pious foundations would become operative wealth accumulators had there not been the regulatory mechanisms of state intervention. Besides, the high level of kitchen expenditures and salary

²²¹ Orbay, "The Economic Efficiency of Imperial Waqfs", pp. 12-13.

payments also brought about a growth in the gross domestic income in that they meant higher employment rates in the cities and more disposable income in the hands of city dwellers. We also saw that the *vakıf* participated in the dissemination of monetary transactions in the city. In all these ways, the *vakıfs* contributed to the sustenance of a larger number of people in the cities as the volume of their budgets increased. In this sense, they were part of the urbanization process in the sixteenth century.

About 1578, the *vakıf*'s finances entered into a new phase which was characterized by a decline and irregularity in the real revenues, accompanied by an initial rise in the aggregate expenditures followed by a policy of budget constraint in the expenses. In the years until 1588 the account books recorded frequent current deficits. The receivables which the foundation was unable to collect reached considerable amounts, and the *vakıf* had to run into debts in order to afford the ever-increasing annual expenditures. In the last three years that the account registers covered, it achieved to restore financial balance between current revenues and expenses and to pay the debts from the previous years. Yet neither the real incomes nor the real expenditures were close to their levels of the 1560s. The cost of putting the *vakıf*'s surplus/deficit position in order was a considerable downsize in the balance sheet.

Although the thirty-three years that the detailed account registers of Sultan Mehmed Vakfi covered is arguably not suitable for long-run analysis, it may nevertheless help clarify some problems of periodization regarding the economic transformation of Anatolia in the sixteenth century. To begin with, the growth of economic activity in the urban centers of Anatolia from the second half of the fifteenth century onwards seems to have continued in the 1560s and much of the

1570s. The favorable conditions in Bursa apparently reversed in the last years of the 1570s and in the rest of the sixteenth as well as the early seventeenth century,²²² and its urban economy entered into a period of recession. If we accept the registers as reliable indicators of the general trends of urban economy, then it seems safe to claim that the decline phase in the economy had started before the Celâli rebellions²²³, and therefore had its own dynamics. The aforementioned failure of the silk industry to compete with the European textile manufactures probably exacerbated the economic troubles in the particular case of Bursa, but comparable developments in the industrial sectors were visible elsewhere in the empire as well.²²⁴ On the other hand, the *vakıf* could have suffered less from a fall in the real rents or their irregular collection, had there not been such a crisis in the silk industry that substantially damaged the market of manufactured goods.

What led to the initial growth and successive collapse of the revenues of Sultan Mehmed Vakfi? An obvious answer to this question would be the course of general price levels in the first place. Indeed, price stability in the 1560s and the early 1570s shows that there was no erosion in the revenues from agricultural taxes collected at fixed amounts, while the kitchen expenditures did not increase throughout this first phase either. By the same token, first gradual and then – with the debasement – rapid increase in prices caused simultaneously a significant decline in the real income of the *vakıf* and a major upturn in the kitchen expenditures. In this sense, the *vakıf*

²²² Orbay, “16. Ve 17. Yüzyıllarda Bursa Ekonomisi”, pp. 141-147 proceeds the analysis until 1650, but the account books after 1591 contains less information – much less about the composition and content of the agricultural revenues of the *vakıf*.

²²³ The Celalis under the commandship of Kalenderoğlu arrived in Bursa in 1608. See Mustafa Na’imâ, *Tarih*, vol. 2 (İstanbul: 1287), p. 27.

²²⁴ For the similar case of the Salonika woolen industry, see Benjamin Braude, “International Competition and Domestic Cloth in the Ottoman Empire, 1500-1650: A Study in Undevelopment”, *Review (Fernand Braudel Center)* 2, no. 3 (Winter 1979), pp. 437-451.

arguably stood among the losing parties from the redistributive effects of the debasement.

As discussed in the previous chapter, the price mechanism was by no means an independent cause that triggered a set of interrelated developments. It is true that its impact on the purchasing power of cash totals was the predominant factor that determined the destiny of our *vakıf*'s financial balances. Yet, it was also a surface phenomenon beneath which lay deeper trends in the production and distribution of economic surplus. Ottoman documents are not very generous in granting data that would allow the researcher to calculate approximate levels of production and productivity except the snapshots provided by fiscal surveys – which have several problems of reliability as well. Unfortunately, the series of account registers employed in this study represent no exception to this rule. For most of the villages from which the *vakıf* collected taxes directly (*ber-vech-i emânet*) were *kesim* – rather than tithe – payers and thus paid a fixed amount of grains regardless of the output harvested every year. Nevertheless, the resonances of production levels, which so deeply affected the price change, are occasionally heard of in the output account books attached to the detailed registers of the *vakıf*. The next chapter will try to depict at least a vague description of production in the villages from 1558 to 1591. Before that, however, the following section examines the *vakıf*'s management of grain stock, which will hopefully help clarify the picture.

The Granary Account Books

The granary accounts at the end of each year's detailed register constituted a replication of the latter in terms of outlook and book-keeping practice. Like the

account books of the *vakıf*'s cash flows, the organization of the granary account books resemble uniform charts of accounts. In the beginning, total annual revenues for each grain were written. As in the detailed account registers, the grain stocks from the previous year followed. The scribe then recorded the annual grain purchases – the same amounts had previously appeared among the kitchen expenditures together with their cash equivalents. The next item, the *vakıf*'s tithe or *kesim* collections from the villages constituted the largest proportion of the yearly intakes of grain. The account books recorded the collection from each village separately.

Annual consumption – again recorded under the title ‘reduced from this’ (*vuzi ‘a min zâlike*) – followed the current grain revenues. Here, the scribe categorized the expenses primarily according to cereal types. The *vakıf*'s kitchen used most of the rice in the granary in cooking *pilav*²²⁵ throughout the year. Despite the revenues from tax collection in rice-cultivating villages, the *vakıf* still purchased a fairly considerable amount of rice every year, and almost never sold rice. Wheat was another cereal used in the kitchen in making bread, soup and ‘*âşûre*.²²⁶ The second source of wheat expenditure was the salary payments in kind. The *vakıf* also sold wheat almost every year in different amounts, which had appeared in the stock sales in the detailed account book of the corresponding year. The expenditures of barley from the *vakıf*'s granary came next. The use of barley in the kitchen remained relatively limited. Like wheat, barley was also a means of salary payment. We may note in passing that the type of cereal was a fixed means of salary payment: I have not come across a salary payment ordinarily made in wheat but accrued in barley or

²²⁵ “Boiled rice or wheat, prepared with butter, broth, etc.” James Redhouse, *Turkish and English Lexicon* (İstanbul: Çağrı Yayınları, 2000), s.v. “*پلاو*”.

²²⁶ A traditional dessert cooked with grains. Ferit Devellioğlu, *Osmanlıca – Türkçe Ansiklopedik Lügat*, (İstanbul: Aydın Yayınları, 2009), s.v. “*âşûre*”.

in any other cereal despite the failure of the *vakıf* to pay the salaries in wheat on time in a few cases. Barley in the stock was usually plentiful, since its current revenues from the villages always exceeded the expenditures. Even if the amount of barley left in the granary at the end of the year was rather small, this was because of sizable stock sales.

After barley came oat and other cereals. Their share in the stock was rather negligible, but as in the case of barley, the intakes of oat, vetch, lentil, common vetch and millet exceeded by far the foundation's demand for them. Hence, most of these grains collected as tithes were sold during the year. Only for cicer the demand in the kitchen was higher than the average annual supply from the villages.

At the end the account book, the calculated amounts of each grain left in stock were recorded. The tithes receivable of the *vakıf* were also reduced from the surplus in order to reach the grain physically present in the granary (*bâki der-anbar*) at the end of the year.

Managing the Wheat Stock

For the cereals such as rice or barley the chronic excess of demand for the former and supply for the latter determined the direction of the *vakıf*'s policy in managing the stocks of these grains. In contrast, the variety of both the revenue and expense items for wheat required the maintenance of a delicate balance between sales and purchases so that the *vakıf* could profit from the increases in wheat prices and assure the existence of adequate stock in the granary in case of need. Thus, it seems logical to end this chapter with a discussion of the *vakıf*'s management of the annual flow of wheat stocks.

The first point to note is the consistent record of a significant amount of wheat in the granary each year. Throughout the period, the volume of wheat recorded in the stock never fell below 290 *kiles*²²⁷ (Table 4.3). However, this does not mean that the *vakıf* never suffered from scarcity of wheat, or that it never had to purchase wheat above market prices or buy wheat on credit occasionally. During an accounting year, there must have been times when the *vakıf*'s kitchen or other sources of expenditure consumed the stocks of wheat in the season before the arrival of tithes collected in time of harvest.²²⁸ The fact that the book-keeping was made according to the Islamic Calendar renders it difficult to assess the exact season that the level of grain stocks marked. In any case, the simultaneous records of wheat sales and purchases in every account book may point out to fluctuations in the *vakıf*'s seasonal demand for purchases in the market.

In the years between 1558 and 1570, the favorable economic conditions that the *vakıf* enjoyed could also be seen in the peculiar case of wheat stocks. As opposed to the foundation's currency position, the annual outflow of cereal exceeded the intakes to granary in most of these twelve years. However, this need not point to a revenue crisis or an excessive consumption of wheat in the *vakıf*'s kitchen. In fact, the gradual dissolution of the stocks in the granary in the first half of the 1560s was due to the large amount of annual stock sales (Graph 3.4). The difference between the purchase and sales prices in favor of the latter (Graph 3.3) probably created the incentive for it. Indeed, when the wheat stock in the granary fell to 365 *kiles* at the end of 1564, the *vakıf* easily adapted the level of outflow by cutting down on annual

²²⁷ That is, about 4,5 tons. 1 *kile* of Bursa equals 15,395 kilograms. İnalçık, *Economic and Social History*, p. xl.

²²⁸ As elsewhere, the tithes in the Ottoman Empire used to be collected in the time of harvest. Although no direct reference to this is made in the provincial code of Hüdavendigâr, the Ottoman provincial codes contain numerous articles on the issue. For instance, see Barkan, *Kanunlar*, p. 66.

sales of wheat. The account books from 1567 to 1570 recorded increases in both the revenues and expenses of wheat, and the stock sales peaked in these years. By contrast, in 1571, the revenues in kind due to a harvest failure in Görükle and Tansarı (see Graph 4.9 and Table 5.1) decreased, but the foundation once again easily coped with the situation by increasing purchases and refraining from sales.

After 1574, troubles began to emerge in the collection of tithes from the villages, judged by the appearance of the item for tithes receivable (*der-zimem*) under the surplus in stock. The successive poor harvests from 1578 to 1580 pulled down the revenues in kind, and the *vakıf* sold almost no wheat from stock during these years, while it had to purchase a significant amount for the kitchen's use.

It is notable that throughout the period examined so far, the annual consumption of wheat in the kitchen showed little fluctuation (Graph 4.7). Furthermore, wheat consumption in the kitchen declined only a little even in the late 1580s and the early 1590s, when the volume of the *vakıf*'s economic activity dramatically shrank. Of course, despite the increase in its relative prices, wheat was still a relatively cheap product in absolute terms. Besides, the demand for wheat, which was the basic component of daily diet, was highly inelastic. All these factors tended to minimize the constraints on its annual consumption. Salary payments in wheat similarly drew a stable pattern. An exception was 1580, when the *vakıf*'s salary payments declined to a little more than half of their usual level. The *vakıf* apparently could not pay half of the salaries that year and must have closed the debts payable to the employees during the 1580s, but the irregularity of the account books in that decade renders the detection of the date of the accrued payment impossible.

The earlier observation about the *vakıf*'s increasing efforts to maximize the agricultural revenues in the last years of the period that the granary account books

covered seems to have been valid for the revenues collected in kind as well. The tithes receivable which had reached to 2980 *kiles* in 1584 had decreased to 731 in 1588. The last two years, 1590 and 1591 recorded no unpaid tithes. The wheat revenues in kind also showed a mild upward trend from 1588 to 1591, and the current intakes of wheat stock exceeded total outflow in these years.

The decline trend in the monetary transactions of the foundation in the late 1580s had its echoes in the sales and purchases of wheat at the end of the period. The role of the *vakıf*'s wheat in market exchanges that had reached its maximum in the late 1560s and the early 1570s had practically disappeared twenty years later. On the other hand, there was a limited decrease in the revenues in kind. Despite the dramatic crop failures in the years of poor harvests, the average tax collection of wheat in 1591 was only slightly below the levels of the late 1550s and the early 1560s. However, it is important to note that the revenues in kind did not directly reflect the fluctuations in the crop yields from year to year and tended to conceal the ups and downs of the annual agricultural production for two reasons. First, the *vakıf* collected a significant proportion of its yearly tithe revenues in fixed amounts of cereals (*kesims*) rather than at a predetermined portion of the harvest yield (*'öşür*²²⁹). Therefore, in the villages where the peasants paid *kesims* the *vakıf*'s revenues in kind had no connection with the output volume whatsoever, unless a harvest failure prevented the producers from paying the fixed amounts as well. Furthermore, the revenues collected in kind formed only part of the total taxes imposed on the harvested crop – not infrequently, the peasants paid some of the grain tithe in cash. I therefore used a revised version of total grain tithes from each village expressed in

²²⁹ Although it literally meant one-tenth, the common rate of tithe collection from grain output in the core lands of the Ottoman Empire was 1/8. See Ömer Lütfi Barkan, “Öşür”, *İslam Ansiklopedisi*, vol.9 (İstanbul: M.E.B. Devlet Kitapları, 1964), pp. 482-488.

kiles in order to attain a more direct reflection of production trends. To calculate the revised total, I added the *kiles* of grain that corresponded to the cash payment for yearly tithe to the usual revenues in kind.²³⁰ Even then, I still had to confine the analyses of rural production with the villages where *’öşr* rather than *kesim* was prevalent. In addition, the peculiar system that regulated the process of cultivation and the form of surplus extraction for rice gives some ground for deductions about the levels of rice production, which will be the topic of next chapter.

²³⁰ Fortunately, the account books almost always allow for the calculation of the amount of grain, while in many cases they simply record the amount that the received cash corresponded to. In a few cases where there was no information other than the accrued payment in *akças*, I neglected the transactions since they all constituted ignorable sums. The cash payments from grain output are recorded as *’baha-yı gallât* (the value of produce).

CHAPTER V

PRODUCTION

Production trends constitute the topic over which the scholarly debates around population pressure and the price revolution in sixteenth-century Ottoman Empire are knotted. Unfortunately, the fiscal surveys – the traditional archival source for scholars dealing with the early Ottoman period – offer little to the economic historians aiming to calculate the changes in production levels, crop yields or labor productivity. In general, research concentrated on the comparison of the levels of gross production and production per capita in the first and second halves of the sixteenth century.²³¹ Another widely adopted method has been to calculate the rural income per capita in economic wheat equivalent.²³² More recently, Metin Coşgel attempted to estimate the approximate levels of labor productivity for the *sancağ* of Hüdâvendigâr in wheat equivalents.²³³ These methods share a common limit set by the nature of their primary sources: The fiscal surveys do not continue as a series in consecutive years, but rather provide two or at best three random snapshots of

²³¹ Examples include Cook, *Population Pressure*, pp. 15-18; Huri İslamoğlu and Suraiya Faroqhi, “Crop Patterns and Agricultural Production Trends in Sixteenth-Century Anatolia”, *Review (Fernand Braudel Center)* 2, no. 3 (Winter 1979), pp. 400-436; İslamoğlu, *Devlet ve Köylü*, pp. 217-274.

²³² For a description of the method of calculating rural income with ‘economic wheat equivalent’, see Colin Clark and Margaret Haswell, *The Economics of Subsistence Agriculture* (New York, Macmillan, 1967), pp. 53-78; for its applications to the *tahrir* statistics, McGowan, “Food Supply and Taxation”, pp. 148-151; Öz, *Canik Sancağı*, pp. 86-107; Mehmet Öz, “XVI. Yüzyıl Anadolu’sunda Köylülerin Vergi Yükü ve Geçim Durumu Hakkında Bir Araştırma”, *Osmanlı Araştırmaları Dergisi* 17 (1997), pp. 78-90; Volkan Ertürk, “XVI. Yüzyıl Anadolu’sunda Ziraî Yapı ve Köylülerin geçim Durumları Hakkında bir Değerlendirme: Akşehir Örneği”, *Turkish Studies* 6, no. 4 (2011), 523-537; İbrahim Solak, *XVI. Yüzyılda Zamantu Kazasının Sosyal ve İktisadi Yapısı* (Konya, 2007), p. 52.

²³³ Coşgel, *Agricultural Productivity*. The scholar calculated absolute figures for the returns to labor as well, based on which he made comparison with various European countries.

different moments in the sixteenth century. This decreases the reliability of the statistics obtained from them as well. For while it is well known that state officials tried to reduce the element of contingency by recording the average of three previous harvests²³⁴, the surveys can still reflect short-run trends in production that would mislead the researcher. Thus, the surveys offer relatively reliable data rather for large-scale studies.

The most visible advantage of using the *vakif* account registers to follow the production trends is therefore the ability to reconstruct a continuous series which would simultaneously reveal short-run fluctuations and increase the reliability of long-run analysis. While the scale of such a study inevitably becomes smaller since the magnitude of the area covered in a single series of *vakif* registers is limited, the detailed information arguably makes analysis at this level feasible, if not completely optimal.

Besides the problem of limited scale, the use of the account registers of Sultan Mehmed Vakfi for analyzing production trends has brought additional methodological difficulties. The fact that the data from a number of villages did not reflect production trends for reasons that will be explained below forced me to refrain from using some of them completely, while some others proved only partially useful. This further reduced the scale of study. What came out consequently has been a compilation of fragmented observations rather than an integrated analysis. These observations nevertheless deserve separate discussion, for their presentation may not only enlighten some aspects of methodology regarding the use of *vakif* registers for research on production, which seem to be promising alternatives to fiscal surveys at

²³⁴ See the imperial order sent to the officers (*tahrir eminleri*) responsible to carry out and compile the surveys in Barkan and Meriçli, *Hüdavendigâr Livası Tahrir Defterleri*, p. 44.

this preliminary stage, but also help link some of the themes discussed in the previous pages.

To begin with, a discussion of changes in agricultural production during the sixteenth century is inevitable in order to come up with a healthy evaluation of the impact of demographic pressure in the region studied here. Indeed, the shrinkage of the average plot size may not have led to a crisis of food supply per capita if the peasants achieved to increase the gross production to an extent adequate to compensate the additional demand created by population growth. Furthermore, trends in demography and production shaped the process of price formation. Indeed, it was argued that the peasants' refrainment from market and their return to subsistence production were really among the major causes of the price increase after the mid-1570s. What indicates the possible economic behavior adopted by the peasants, in turn, is undoubtedly the changes in food supply produced per capita as well as the relative weights of subsistence cereals or other goods such as fruits, vegetables and cash crops within the total agricultural output. Last but not least, changes in production levels affected the finances of the *vakıf* via their impact on both the foundation's agricultural revenues and the general level of prices. Hence, a study of agricultural production in the *vakıf*'s villages is necessary to establish the correlation between the foundation's financial situation and the dynamics of rural economy.

Subsistence Crops

Graphics 5.1 and 5.2 show the revised annual tithes of wheat, barley and oat paid to the *vakıf* by the villages. The first thing to note is the fact that there is no

visible decline in the grain tithes to an extent comparable to the fall in the real agricultural revenues in cash. On the other hand, various signs such as the failure of *mukâta'a* revenues to keep up with the price change or the presence of unpaid tithes from the villages pointed in the opposite direction – that the agricultural production had entered into a downward trend after the late 1570s. Hence, the relative stability in the tithes collected demands explanation.

Of course, the obvious explanation is that the accrued tithes from the villages as a total, even in their revised form which includes the cash payments as well, does not represent the changes in the levels of production appropriately. As discussed in the previous chapter, a number of the *vakif*'s villages had *kesimci* peasants who were liable to pay fixed amounts of grains the levels of which were determined and recorded in the fiscal surveys. Therefore tax collection in those settlements had no connection with the level of grain output whatsoever, provided that their peasants were able to harvest a minimum amount of grain that allowed them to pay their shares. Consequently, the annual tithes collected tended to show stability regardless of the fluctuations in the yearly output of cereals. The extent to which the tithe revenues concealed the ups and downs of production becomes clear when we take into account the fact that in 1558, the wheat revenues from the villages which paid their tithes indexed to the volume of output made up not more than thirteen per cent of the aggregate payments expressed in *kiles* of wheat. Thus, an analysis of the trends in cereal production based on the account registers of Sultan Mehmed Vakfi will have to confine itself to a few villages. This undoubtedly raises serious doubts about the representativeness of the settlements subjected to analysis in terms of their typicality, and the sample pool used for statistics remains definitely inadequate. However, no other archival material can overcome these problems of methodology –

unless the account registers of other *vakıfs* that collect tithes from the villages of Hüdâvendigâr are brought into light. In addition, what the fiscal surveys provide on Sultan Mehmed Vakfi are of no further use either. In these conditions, the examination of production trends through tithe payments is bound to remain as sporadic impressions, which will nevertheless be discussed in the following lines.

To begin with, although the total tithe revenues do not say much about the production trends in the *vakıf*'s villages in general, they are not completely useless either. For a fall in the *kesim* payments due to a serious crop failure or to an unusually low harvest yield is immediately observed in the foundation's tithe revenues. For instance, in the last years of the 1570s, which were also difficult times for the *vakıf*'s finances in general, a sharp fall in the revenues is detectable, whereas in 1571 there is an abrupt fall in the amount of wheat collected. A closer examination of the grain tithes in each village promises to explain the origins of the declines in these years, while simultaneously unveiling aspects that are hidden in total figures.

An examination of the institutional framework that regulates the process of surplus exploitation reveals that the data from rice-cultivating villages are likely to better reflect the changes in the levels of production. One of the villages where rice-growing peasants (*çeltükçis*) in addition to their sons and ordinary *re'âyâ* were settled was Kayapa. Both the ordinary subject peasants and the *çeltükçis* were liable to surrender one tenth of their produce to the *vakıf*, allowing the researcher to approximately reconstruct the production trends in the village through these annual tithe revenues of the crops.

The direction of the change in the level of production in Kayapa in the whole period is noticeably upward, which distinguishes it from other settlements recorded in the *vakıf*'s account books. The study of the demographic trends in the fiscal

surveys had previously revealed that in Kayapa, the population pressure on land was less acute (See Table 2.18). In other words, the average plot size that fell per household was larger than that in the other cases where the statistics allowed calculation. If this was the case, it could explain the absence of successive crop failures in the late 1570s, which elsewhere either brought about a prolonged downward trend or at best halted the growth in the gross output in subsistence grains that characterized the 1560s and the early 1570s.

We could gain insight into the details of the correlation between the average plot size and the further increase in production if it would be possible to come up with a calculation of the average grain that falls per head or per household at about the time the survey of Selim II was compiled. Unfortunately, neither in Kayapa, nor in other *çeltükçi* villages such a calculation is available. For the number of peasants who actually engaged in the cultivation of subsistence grains is beyond our knowledge, despite the elaborate classification of the surveys. The rice-cultivating peasantry enjoyed no exemption from the tithe, which meant that they would pay the usual one-tenth for any crop that they might seed and harvest other than rice. It might be argued that since rice-cultivation entailed a very intensive labor process and probably prevented the devotion of much time to the cultivation of other cereals, the labor of *çeltükçis* could be excluded from calculation. However, the labor-time that the seeding and harvesting of dry-farming crops required were not homogeneously scattered throughout the year, but concentrated on particular seasons of the agrarian calendar. Hence, the peasants might have been able to allocate their labor between

rice and other crops.²³⁵ Calculating the grain output per male tax payer for wheat and barley therefore seems undoable.

The account registers provide no clue about the crop rotation implemented in Kayapa as in other settlements. That the annual tithes paid in wheat superseded those in barley and in oat raises the possibility that the latter two might have served as substitute spring grains while wheat was the dominant winter crop.²³⁶ The account registers occasionally indicate that the seasons for the collection of tithes were March and August, but in the absence of further information, this crucial subject is destined to remain a shadowy zone for the specialists.

The years of bad harvest in Kayapa reflect the wider trends encountered in the villages of Sultan Mehmed Vakfi. In 1565, Kayapa and Yenice experienced a hail disaster which led to a major crop failure. The granary account of the corresponding year notes that the peasants in these settlements were exempted from the tithe. On the other hand, the abrupt fall in 1571 in the tithe revenues of wheat and barley from Kayapa was apparently part of a general trend in the district of Kite. The same year seems to have brought a dramatic crop failure to Görükle and Tansarı (Table 5.1), where the tithe revenues almost disappeared. Kızılcıklı, a small settlement which the fiscal surveys registered as a separate village while the account books recorded it as a temporarily cultivated land (*zemin*) in Kayapa after the mid-1570s, also yielded no grain output.²³⁷ The fall in tithe revenues was visible in the village of Kite as well,

²³⁵ The Provincial Code of Bolu classifies every peasant who cultivates at least 10 *kiles* of rice as *çeltükçi*. Barkan, *Kanunlar*, p. 31.

²³⁶ For the rotation types commonly used in the Mediterranean geography, see Marcel Mazoyer and Laurence Roudart, *A History of World Agriculture: From The Neolithic Age to the Current Crisis* (London: Earthscan, 2006), pp. 231-235, 274-276.

²³⁷ 1571 was a year of export prohibition applied on grains. Recent studies on the climate history of the Eastern Mediterranean record 1570 and 1571 as years of “dry events”. See Peter I. Kuniholm, “Archaeological Evidence and Non-Evidence for Climatic Change” in *The Earth’s Climate and*

though there it apparently remained limited. An interesting point to note here is that the villages, judging from the *vakıf*'s revenues in cash from these places, were apparently capable of paying their cash levies in such temporary years of bad harvest.

In the Plain of İnegöl, the tithe revenues describe a considerably different picture. A distinctive feature of the crop composition encountered in the *vakıf*'s two villages there is the predominance of barley over wheat (Graphs 5.4 and 5.5), while oat and other secondary spring crops such as vetch and millet less frequently entered into rotation compared to Kayapa. The relatively good performance of barley throughout the period may have played a role in this preference. Indeed, the tithe revenues from barley throughout the favorable years of the late 1560s grew more rapidly than those from wheat, which also showed an upward trend albeit with interruptions of low yield years.

The 1570s marked years of great fluctuation in the annual yields from subsistence crops in both Adıbini and Şib 'Ali. In Adıbini, the years of good harvests in the mid-1570s, where the *vakıf*'s tithe revenues from the place reached their peak, were followed by three successive years of almost total failure for wheat. The average of tithe revenues from wheat in the last three years of that decade amounted to less than half of the level in 1558, and barely exceeded one-fourth of the level in 1576. The situation was not much better in Şib 'Ali either: the account books record the lowest level of tithe revenues from wheat in the village in the late 1570s and the early 1580s.

Variability of the Sun Over Recent Millennia ed. S. J. Runcorn and J. C. Pecker (Phil. Trans. R. Soc. Lond. A: 1990), pp. 651-652; Ramzi Touchan et al., "Reconstructions of Spring/Summer Precipitation for the Eastern Mediterranean from Tree-Ring Widths and Its Connection to Large-Scale Atmospheric Circulation", *Climate Dynamics* 25, no. 1 (2005), p. 86.

The fact that the tithes from barley recovered in both villages after one or two years of comparable decline in 1578 and 1579 certainly demands explanation. Whereas the apparent demographic pressure on land may reasonably elucidate the overall decrease in the output levels in the two settlements – especially in Adıbini,²³⁸ it fails to account for the asymmetry between the yields from the two crops. Changes in climate might be another explanation. Indeed, wheat was more vulnerable against abrupt changes and extreme conditions in climate, whereas barley was more durable and could resist periods of drought.²³⁹ Besides, the archival material as well as scientific research documents the existence of dry May-September periods in Western Anatolia in 1579 and 1580.²⁴⁰ The peasants may well have decided to seed barley instead of wheat in the expectancy of more years of drought to come. Another possibility is that they practiced a crop rotation whereby they seeded barley as the winter grain on October or November and harvested it on March or April, whereby they benefited from the waters of melting snow. Wheat then would be seeded in the spring and exposed to the summer drought until the harvest season in August. In brief, although the exact decision process of the peasants who drove barley forward as the dominant grain in Adıbini and Şib ‘Ali remains uncertain, climate seems to have been the original cause behind this rather unusual development.

Although I was unable to follow the path of change in the trends of production after 1581 due to the rarity of full-year granary accounts after that date, by the late 1580s and the early 1590s the tithes from the two villages apparently recovered and

²³⁸ See Chapter 2, pp. 48-50 above.

²³⁹ Wolf-Dieter Hütteroth and Kamal Abdulfattah, *Historical Geography of Palestine, Transjordan and Southern Syria in the Late 16th Century* (Erlangen 1977), p. 84.

²⁴⁰ Touchan et al., “Reconstructions of Precipitation”, p. 86; Kuniholm, “Archeological Evidence”, p. 652.

returned to the levels of the late 1550s. The change in the annual yields of subsistence crops in Adıbini and Şib ‘Ali debunks the validity of the hypothesis of population crisis as the primary cause behind the turmoil in rural economy after the late 1570s for these two settlements. The evidence from both the agricultural revenues recorded in the detailed account books and the revenues in kind from the granary accounts vindicate that the financial distress which Sultan Mehmed Vakfi entered into after mid-1570s had connections with a simultaneous rigor in the villages. However, a severe demographic catastrophe would surely prevent such a quick recovery in less than ten years. Although certain consequences of rising population pressure such as productivity decline tended to severe the effects of unfavorable climate conditions, its impact apparently remained limited with such temporary difficulties in the area. A factor that allowed the peasants to recover from the damages of the shortages in the late 1570s may have been the high yields that they attained from rice cultivation. Indeed, we will see that rice growing, despite the intensive labor it required and the high tax rate that the *vakıf* imposed, contributed considerably to the peasants’ integration to local markets when other economic objectives enforced a return to subsistence agriculture. As a result, the contingent series of bad harvests apparently did not lead to a permanent demographic catastrophe by breaking the chain of simple reproduction.²⁴¹

To the northeast, the limited data about the levels of production in the two villages of Yenişehir Plain implies a more serious downturn. As discussed

²⁴¹ It is nevertheless important not to overestimate the scale of recovery. For the granary account of 1588 still recorded significant amounts of unpaid tithes for the villages of Kite district. I chose to exclude the unpaid tithes from calculations of production levels, since the account books only occasionally recorded the location of tithes receivable. But I mentioned them in the textual analysis in order to prevent a misinterpretation. The tithes receivable of wheat from the villages of Kite in 1588 were as follows: Kite: 278 *kiles*; Görükle: 178.5 *kiles*; Tansarı: 179 *kiles*; Kayapa and Kızılıklı: 95 *kiles*. Compare the figures with the accrued tithes in Table 5.1.

previously, the peasants of Çeltükçi and Boğaz were both *kesimcis*. The name of the former as well as the occasional appearance of a customary tax suggest that in the past the residents of the two villages engaged in rice cultivation. However, the absence of any record of revenues from rice in the account books proves that the peasants of Çeltükçi and Boğaz had ceased to grow rice by the second half of the sixteenth century. There may be a number of possible reasons for the disappearance of rice cultivation from the area. The canals and the drainage system used in the irrigation of rice fields may have fallen into disuse and the *vakıf* may have preferred not to repair the system due to the high costs of reconstruction. Or, the water source that provided the villages' share to irrigate the rice-seeded fields may have dried. Whatever the reason might be, the villages consequently ended up as producers of primarily subsistence grains, whose entrance to the market remained limited judging from the recorded revenues in cash.²⁴²

I was unable to follow the course of production levels until 1579, since the peasants paid fixed amounts of wheat and barley as *kesims* in accordance with their status. The exact same figures that are also consistent with the revenues recorded in the fiscal surveys continue to reappear almost without interruption until the late 1570s. This uniformity is despite the fact that in one of the two villages, Boğaz, the fiscal survey of Selim II registered ordinary peasant-subjects who were hypothetically liable to surrender one-tenth of their annual produce to the *vakıf*. But the foundation collected the revenues in kind from the two villages in lump-sums (*ber vech-i maktu*), which must in time have led to the inclusion of tithe payers as liable to pay fixed shares as well. Hence, even if the gross output increased in the

²⁴² The peasants of Çeltükçi almost never made part their tithe payments in equivalent cash; whereas in Boğaz occasional currency payments for equivalent grain were recorded. See Tables 5.7 and 5.8.

1560s and in the early 1570s in parallel with the developments in the other settlements and consistently with the rapid demographic growth from 1521 to the early 1570s,²⁴³ it is impossible to detect it.

In 1579, the *vakıf*'s revenues in kind from Çeltükçi fell to less than 20 per cent of the usual level. In the following year, both Çeltükçi and Boğaz were unable to pay their usual *kesims*. The wheat tithes had been reduced to about 25 per cent of the commonly-charged amount, while the decline in barley was more moderate with about 50 per cent. In 1581, the two villages were able to fulfill the usual liability, but the evidence from the remaining account registers show that by the late 1580s the *kesim* liabilities in Çeltükçi and Boğaz had become fixed at half of their levels before the catastrophic harvests of 1579 and 1580.²⁴⁴

In addition to the permanent fall in *kesim* payments, the visible decline in the *vakıf*'s poll tax revenues²⁴⁵ suggest that there was a loss of considerable population in the area. The decline may have occurred due to an increase in mortality rate as a result of successive famines, or to a large-scale peasant flight. What happened in fact was probably a combination of the two, but the inability of the peasants of Çeltükçi and Boğaz to survive the late-1570s' harvest failures which damaged but not destroyed the peasants of Kite and İnegöl surely had its origins in differences in demographic and economic preconditions between the regions.

The limited data that the archival material offers regarding the actual production process as well as the minor scale of comparison that renders any

²⁴³ See Chapter 2, pages 50-52 above.

²⁴⁴ While the granary account of 1584 continues to record the unpaid portion of the ordinary revenue as tithes receivable, in the latter years this item too disappears.

²⁴⁵ See Tables 2.20. The poll tax revenues from each village had fallen to about less than half of their levels in the late 1590s and the early 1570s.

generalization all the more doubtful reduces any interpretation to the level of speculation. Nonetheless, an inconclusive observation about the possible reasons of the divergence between the economic experiences of the villages would primarily emphasize the lack of alternatives available to the peasants in Çeltükçi and Boğaz. The predominance of monoculture in the two villages seems a realistic assumption: although we could not determine whether the peasants there cultivated any drops of dry farming such as oat, vetch or millet other than wheat and barley, the cultivation of crops that required irrigated farming such as rice or flax would immediately be taxed and recorded in the registers. Similarly, the account books do not imply a diversity of economic activities other than moderate taxes imposed on vegetable gardens.

A glance at Table 2.18 will remind that the average plot sizes per *hâne* were lowest in Çeltükçi and Boğaz by the time that the survey of Selim II was compiled. However, the plot sizes can only *ceteris paribus* reflect the comparative levels of labor productivity in the compared areas. In our case, the cultivation of rice, a crop which promised higher yields than subsistence crops, probably assured higher returns to labor in İnegöl when the scarcity of food supply threatened the rural community. By contrast, in Çeltükçi and Boğaz labor productivity under the conditions of monoculture and shrinking plot size probably declined much more rapidly, which possibly pulled the demographic ceiling down.

On the whole, as far as the trends in the production of subsistence crops go, the account books allowed only for partial observations of a highly speculative nature. Nonetheless, they arguably contributed to the clarification of economic dynamics that led to the turn of tides for Sultan Mehmed Vakfi after the second half of the 1570s. Even a vague depiction of production trends in the *vakıf*'s villages has been

helpful in connecting the declining agricultural revenues of the *vakıf* and the demographic trends in the countryside.

On the other hand, the description of trends in the annual wheat and barley outputs is inadequate. For the villages of Sultan Mehmed Vakfi were by no means typical self-subsistent units, but engaged in rice cultivation, which was subject to a specific regulation considerably different from the regular organization of the rural economy in the Ottoman Empire.

Rice Cultivation in the *Vakıf*'s Villages

Before moving on to the analysis of trends in rice production in the villages of Sultan Mehmed Vakfi, a few points should be clarified. To begin with, rice was a crop which had a high demand in the market. Besides, it never became the basic ingredient of the daily diet of the peasantry in the Mediterranean, which was a place reserved for wheat with the occasional participation of rye and barley. Consequently, the peasants were able to and apparently did sell a significant amount of their produce in the market. Furthermore, they frequently made their tithe payments for rice in cash equivalent. While the peasants of Kayapa always paid their tithes in *kiles* of rice, the producers in Adıbini and Şib 'Ali occasionally made considerable percentages of their tithe payments in cash. On the other hand, the peasants in Ulu Köyü paid the cash equivalent of their tax liability without exception. Fortunately, the account registers almost always recorded the amount of rice in *kiles* that the cash payment from the villages meant to cover. Only in two cases, in 1558 and 1560 the account registers recorded significant cash revenues as payment for rice shares from

Ulu, but did not mention the corresponding volume of rice. To calculate the rice equivalent for these years, I used regression analysis.

A nuance that needs to be taken into account in calculating the annual grain harvests is the difference between unhusked and husked, or pure, rice. The previous studies differentiated between *çeltük* (unhusked rice) and *erz* (pure rice), and estimated that a certain amount of unhusked rice equaled to pure rice of half its amount.²⁴⁶ For instance, 10 *mudds* of *çeltük* in fact amounted to 5 *mudds* of *erz*. The account registers of Sultan Mehmed Vakfi uses both names for the crop, which at first glance requires a transformation of the volume recorded as unhusked to husked rice. However, the recalculation leads to an appearance of unreasonably high values attributed to one *kile* of rice in the payments from the villages. I therefore did not differentiate between the two names and accepted both as hulled rice, which procured the equivalence of value attributed to the unit amount of pure rice between the two types of records.

The graphics 5.6 to 5.10 in the appendix depict the trends in the *vakıf*'s total revenues from rice as well as the revenues from each village. An immediately noticed feature of the total-revenues graphic (Graph 5.6) is the dramatic fluctuation of the curves from year to year, which apparently reflects the fluctuations in the annual harvest levels in the two greatest rice suppliers of the *vakıf*: Adıbini and Şib 'Ali.

For both villages, what characterizes the period between 1558 and 1575 is consecutive succession of the years of good and bad harvests. There may be a few explanations for this phenomenon. First of all, there were numerous regulations that

²⁴⁶ Feridun Emecen, "Çeltik", *Türkiye Diyanet Vakfı İslam Ansiklopedisi* 8 (Ankara: TDV Yayınları, 1993), pp. 265-266.

prohibited rice cultivation without fallowing on the same parcel of land.²⁴⁷ Of course, the producers could obtain a stable annual output by rotating the land on which rice would be seeded every year as in the usual rotation of dry-farming crops. However, the canals and dams may have been technologically insufficient to irrigate different parcels each year. In that case, the peasants would have to lay the land to fallow and till it for seeding rice every second or third year. Alternatively, they would decrease the amount of seed to use lesser parcels. Such an explanation implies that the annual amount of seed used in calculation did not remain stable throughout the years, contrary to what the provincial codes and the fiscal surveys proclaimed.

Another reason that might elucidate the volatility in the annual rice harvests might be the changes in the yearly water supply. Indeed, the supply from the water streams tended to fluctuate considerably in arid or semi-arid climate zones. Furthermore, the archival documents make the competition over the scarce water resources between the rice fields and towns explicit, and the government did not always align with the former in such disputes.²⁴⁸ In Manisa, there were places where the producers had not been able to grow rice for twenty years due to the scarcity of water during the sixteenth century.²⁴⁹ This explanation presents a complimentary

²⁴⁷ For instance, see the *Voynuks'* Code from the reign of Süleyman I, which prohibited the exhaustion of land by cultivating rice every year, and ordered obedience to the predetermined rotation period of 1-year cultivation followed by 2-year fallow. Akgündüz, *Osmanlı Kanunnameleri ve Hukuki Tahlilleri*, vol. 7 (1994), p. 328. Similarly, the Provincial Codes of Aydın and Bolu stated that the timariot had no right to expropriate the possessor of land on the grounds that he did not engaged in cultivation every year, if the peasant grew rice: “Amma... çeltüğe korinub her yıl ziraate kabil olmayub boz kalsa alub gayra vermek memnu’dır...” Barkan, *Kanunlar*, p. 7 and p. 30.

²⁴⁸ An imperial order prohibited the use of excessive seed on the rice fields near Malatya on the grounds that it led to seizure of water that belonged by right to the town dwellers. For the record contained in the fiscal survey of Malatya, see Barkan, *Kanunlar*, p. 112.

²⁴⁹ Feridun Emecen, *XVI. Yüzyılda Manisa Kazası* (Ankara: Türk Tarih Kurumu Yayınları, 1989), pp. 247-250.

rather than alternative hypothesis to the former, emphasizing the role of water supply in determining the annual amount of seed.

On the other hand, the changes in water supply might have affected the harvest yield even if the peasants seeded the same amount of rice every year. Alternatively, the peasants may have exhausted the land with successive cultivations uninterrupted by periods of fallow. The incentive created by market demand or the population's pressure to squeeze the land may have led to such a development. If so, the fluctuation in the *vakıf*'s share from rice could reflect the changes in annual yields.

While the data acquired from the *vakıf* registers and the fiscal surveys allow for a hypothetical calculation of yield ratios for rice circa 1570, the results not surprisingly present a dramatic change from year to year, which makes any approximation very difficult (Table 5.3). The fact that the fiscal survey of Selim II replicated the annual seed requirements recorded in 1521 further complicates the picture. Besides, the annual revenues recorded in *akças* in the fiscal survey hardly overlap with the *vakıf*'s accrued revenues.²⁵⁰ Consequently, the notorious silence of the Ottoman archives regarding the calculation of yield or productivity proved equally valid for this research as well.

In any case, even if the fluctuations of the earlier phase were due to a conscious strategy of fallows or temporary falls in the annual yield ratio, after the late 1570s rice cultivation in the villages located in İnegöl Plain apparently entered into a period of prolonged decline. The reason for that may have been the peasants' shift to subsistence production under severe demographic pressure, despite the prohibition of cultivating any other crops on the land that was saved for rice. Another factor that

²⁵⁰ See the footnotes to Table 5.3 for a more elaborate discussion of the methodological problems that the use of surveys and the *vakıf* registers brought about.

decreased the rice output in the region might be the aforementioned years of drought, which might have dried the water sources and forced the producers to abandon rice growing for wheat and barley. In practice both factors were probably at work accounting for the downward trend in rice production.

Here, a parenthesis on the acclaimed tendency of the peasants to shift towards subsistence agriculture under population pressure is in order. In fact, demographic growth that exceeds the increase in food supply tended to make a dual impact on the economic behavior of the peasant producers. On the one hand, a fall in the output per capita obviously pushed the peasants to squeeze every parcel of land primarily to assure survival and simple production. Hence, a disproportionate dependence on wheat and barley cultivation would probably take place at the expense of time and land reserved for animal husbandry, cash crops, fruits and vegetables. On the other hand, the excess of labor could incite the peasants to engage more in labor-intensive agriculture. This would include horticulture as well as the cultivation of irrigated crops such as rice or cotton, and therefore result in further integration of producers to the market. The former of these two contradictory effects apparently operated on the peasants in the villages of Sultan Mehmed Vakfi in the late sixteenth century. While the account books provide only indirect and fragmentary evidence on the course of fruit and vegetable production, it seems clear that rice production suffered from a dramatic decline after the late 1570s both in absolute terms and compared to the production of subsistence grains. This is hardly surprising, since water supply rather than labor must have set the upper ceiling for the annual rice output in the region, not to mention the crop's vulnerability to weather fluctuations. In this respect, peasants' tendency to concentrate on subsistence grains under demographic pressure emerges in this study as an operational concept that arguably fits to specific conditions

regarding agricultural technology and availability of production factors other than labor in sixteenth-century Anatolia rather than a universal strategy adopted by peasant producers.

Trends in annual rice production in the villages of Sultan Mehmed Vakfi are similar to the patterns of production for wheat and barley. That the period from 1578 to 1580 brought about dramatic loss of revenues from rice to the *vakıf* in every village strengthens the earlier impression of successive harvest failures in these years. Although it is hard to pursue the path of changes in annual production after 1580, it seems that in Adıbini and Şib ‘Ali, the partial recovery of the production in subsistence crops was achieved at the expense of rice cultivation. On the contrary, Kayapa, where recovery from harvest failure in 1580 had been immediate, acquired a certain stability of output in the upcoming years, judging from the fragmentary evidence of the account books. The pressure on land does not seem to explain the divergence of trend between the two cases since the average plot size by the early 1570s were comparable in the three settlements (Table 2.18). It seems logical to leave the analysis of trends in rice production undecided here, since the limited scale of the study may be concealing unexpected contingencies which would render further interpretation meaningless.

Last but not least, the *vakıf*'s rice shares collected in cash provide some insight into the correlation between the harvested output and the local level of prices in a year. Indeed, a general rise in the price of rice accompanies and follows the poor harvests of 1559, 1565 and 1575 (Graph 5.11). By contrast, the years of abundance for rice harvests such as 1562, 1567 and – for Ulu²⁵¹ – 1577 brought about a general

²⁵¹ Table 5.10 in the Appendix presents the statistics of the *vakıf*'s annual rice shares from Ulu Köyü. However, that the *vakıf* received no tithes and only a few items of levies in cash from the village

decrease in the prices of the crop in the local market. The impact of harvest apparently continued to be felt during the next year. This is not unexpected, for the beginning and the end of accounting years, which were kept according to the Islamic calendar, rarely overlapped with the agrarian calendar. Hence, for instance, a bad harvest probably continued to affect the price levels until the harvest season in the next year.

It should be emphasized that the local prices referred to above and on Graph 5.11 are not prices that stemmed from genuine transactions in the market, but rather attributed values to one *kile* of rice in the cash payments from the villages to the *vakif*. Therefore, their representativeness is arguably questionable to an extent greater than the reliability of purchase prices attained from the *vakif*'s records of kitchen expenditures. It seemed nevertheless a reasonable premise to assume that the attributed prices reflected the levels in the local market of the village in question. That the attributed prices fluctuated considerably from year to year and adapted themselves to the rapid inflation caused by the debasement in the late 1580s eliminates the probability that the values were determined according to a customary rate, which would tend to become fixed over time. The apparent correlation between the levels of production and the local prices discussed above further vindicates the premise that the attributed values were determined with reference to the prices in local market.

Since singular years of rise or fall in the levels of production in a few villages may not represent the wider trends in northwestern Anatolia, we cannot expect the rice prices in Bursa to reflect the production trends of rice in the *vakif*'s villages in

prevented the analysis of the data. The fiscal survey of Selim II has a record under the name of the village that the tithe revenues of the settlement belonged to the *Vakif* of Sultan Bayezid.

the short run. On the other hand, in the long run, the prices in the city and local markets show similar patterns. A visible phenomenon regarding the local and urban prices is that the former remained lower than the latter, except a few cases of extraordinary increase in the local market due to crop failures. This is nothing but expectable, since the urban prices tended to include the transportation costs and the mercantile profit as well. The additional cost of transportation may also have led the *vakıf* to prefer or at least accept cash payments for price shares despite the fact that it would be able to sell the rice at higher prices in the city.

A Note on the Patterns of Land Possession

Unfortunately, the account books do not allow for a more complete depiction of the productive activities in the *vakıf*'s villages that would include practices outside cereal cultivation. The primary reason for this is the fact that the *vakıf* often preferred to lease the taxes imposed on vineyards, orchards and vegetable gardens. On the whole, they either represented insignificant amounts or were recorded in the registers under common titles, which prevented their distinctive analysis. At least some of the villages were apparently exempted from sheep tax judging from its near absence among the agricultural revenues of the *vakıf*,²⁵² which prevented any comments about the place of animal grazing in the economy of the *vakıf*'s villages. In general, the *mukâta'a* revenues showed an upward trend along with the economic growth of the 1560s and the early 1570s, but failed to catch up with the price increase after around 1575.

²⁵² Only the peasants of Ulu, Küplü, Aleksi and Bahadır paid the sheep tax (*resm-i ganem*), but the fragmented nature of the evidence regarding the economic activities in these settlements made any interpretation about the relative weight of stock breeding there impossible.

The appearance of taxes collected from irregularly cultivated land in the past led the scholars to assume a relative abundance of land in the Anatolian geography in general.²⁵³ Indeed, the occasional presence of taxes imposed on nomad outsiders such as *resm-i otlak*, *resm-i duhan* and *resm-i kışlak*²⁵⁴ apparently points to the existence of arable land that is not cultivated. On the other hand, whether the frequent occurrence of *resm-i zemin* imposed on irregularly cultivated land signifies an abundance of marginal land or not is not very clear. For the peasant subject who engaged in agriculture on the land that was not registered to his name was liable to pay both his ordinary cash levy – *resm-i çift*, *nîm çift* or *bennâk*, dependent on the parcel of land – and the additional *resm-i zemin*. Previously, Mehmet Öz had pointed out the possibility that such lands might in fact have been opened to cultivation by landless married and unmarried peasants in the context of Canik. Öz reasoned that the timariots and other surplus extractors in the region, suffering from the real decline in their cash revenues due to inflation, may have preferred to keep the status of those lands as *zemin* in order to continue to impose the additional levy on the cultivator.²⁵⁵ The fact that Sultan Mehmed Vakfî collected revenues from *zemin* lands on a yearly basis with few interruptions surely shows the validity of Öz's hypothesis in our case. Indeed, once the *vakıf* introduced an item of *resm-i zemin* revenue in a certain village, it usually did not disappear, nor did the recorded amount of cash tend to fluctuate.

²⁵³ Halil İnalçık, "Mazraa", *Encyclopedia of Islam*, 2nd Edition, vol. 5 (Leiden: E.J. Brill, 1983), pp. 958-961.

²⁵⁴ Cash levies imposed on the Turcoman nomads or other *re'aya* who come from outside and reside on the land but do not cultivate it. See Oktay Özel, "XV-XVII. Yüzyıllarda Osmanlı Toplumunda 'Hariç Raiyyet' ", *Türk Dünyası Araştırmaları* 43 (Ağustos 1986), p. 167-168.

²⁵⁵ Öz, *Canik Sancağı*, p. 192.

Not registering a cultivator as a land possessor meant refraining from the imposition of *resm-i tapu*, which was a one-time payment when the registration of the subject peasant took place. The revenues from *resm-i tapu-yı zemin*, withstanding the nature of the levy, occasionally made appearance on the registers, but frequently reached considerable amounts. On the other hand, the revenue holder always had the right to impose *resm-i tapu* if he decided to register the former *zemin* onto the cultivator.

Hence, we may conclude that the evidence from the *vakıf*'s agricultural revenues at least does not debunk our former conclusion based on the fiscal surveys that a number of villages studied here experienced demographic pressure in the second half of the sixteenth century. The limits of the period that the detailed account registers cover unfortunately does not allow for the pursuit of the changes in the patterns of land possession further to the seventeenth century. Nevertheless, that the account books of 1588, 1590 and 1591 occasionally record *zemin* or *tapu* levies imposed on *çiftlik*s is interesting. It is difficult to determine whether these were the ordinary peasant plots (*ra'ıyyet çiftlik*s) or the large-scale farming estates established by private persons. However, there are a number of clues that point to the second alternative. For the scribes of the account registers never wrote down the names of the possessors or define them explicitly as *çiftlik*s; whereas when the category appeared, the name of the owner was also recorded. Besides, some of those names bore the title '*Beg*', which strengthens the possibility that they were new estate-owners. We encounter four *çiftlik*s in Çeltükçi and Boğaz together in the account books of 1590 and 1591. The previous chapter had discussed that the two settlements had probably lost a significant population in the 1580s. This may have paved the ground for the appropriation of the emptied land by certain groups of the provincial

elite.²⁵⁶ However, with the limited data at hand, these remarks are bound to remain vague observations.

²⁵⁶ On the process of *çiftlik* formation, see İnalçık, “The Emergence of Big Farms, *Çiftlik*”, pp. 19-23.

CHAPTER VI

CONCLUSION

In this study, I tried to show the impact of general economic developments in the second half of the sixteenth century on the finances of Çelebi Sultan Mehmed Vakfi in Bursa with a particular emphasis on the dynamics of the rural economy. Through the statistics attained from the *vakıf*'s account registers accompanied by records of the *vakıf*'s villages from fiscal surveys, I tried to elucidate the correlations between various economic variables which arguably comprised an integrated economic trend in the countryside.

Research on *tahrir* registers showed that the population of the *vakıf*'s villages on average more than doubled in the fifty years between the compilations of the two successive fiscal surveys in the sixteenth century. By the early 1570s, the shrinking average plot sizes per household indicated the existence of demographic pressure, while the failure of increase in total output to catch up with population growth pointed in the same direction. Weather fluctuations after the mid-1570s apparently aggravated the negative impact of demographic pressure on rural output per capita, and the compound effect of both factors forced the peasants to shift towards subsistence agriculture and thereby caused an upward trend in prices. The increase in prices in addition to the decline in tax revenues due to crop failures in turn led to considerable decrease in the income of surplus extractors – for instance, the *vakıf* – and thereby completed the picture of general economic crisis.

What do these findings tell us about the dynamics in the second half of the sixteenth century that eventually led to a crisis? Granted, the limited scale of this

study inevitably undermines its ability to represent wider trends in economy. Nonetheless, not only the course of prices but also the trends in a number of other variables seem to overlap with the tendencies detected in earlier studies. In any case, leaving the problem of representativeness aside, we may venture to say that the statistics from the account registers studied here helped elucidate the specific mechanism of interrelation between economic actors in town and country. That mechanism is the process of price formation, and a comprehension of this process requires an extensive study of the actors' behavior through an analysis of a number of other economic variables and necessarily by taking historical specificity into account. The specific pattern of price determination through the interplay of supply and demand in the case of sixteenth-century Anatolia was characterized by the vulnerability of market to the changes in the natural sector. In other words, trends in the rural economy where peasants' subsistence production prevailed determined the developments in the sphere of market transactions.

In our example, the characteristic trend in the countryside was apparently increasing pressure on the aggregate food supply. Factors which might impose a downward pressure on rural output per capita – such as population pressure or climate change – seem to have triggered a specific pattern of peasant behavior characterized by a tendency to shift toward subsistence production with minimal participation in the market. This in turn restricted the amount of food supply to the city and thereby caused a price increase. The finances of Sultan Mehmed Vakfi exemplify the impact of developments in the countryside on the actors of the urban economy considerably well.

The real value of the account registers for the purposes of rural economic history seems to be the richness and variety of the economic data they present. This

is arguably what allows for the reconstruction of an integrated picture of economic change with fewer gaps than that which had been possible exclusively using fiscal surveys.

On the other hand, this study revealed certain limitations of the account registers for the study of agricultural economy as well. I mentioned the problem of representativeness because of the limited scale so frequently that it need not be discussed here one more time. However, there is another limitation of the account books when employed by themselves: they tend to conceal the political aspects of rural dynamics. Indeed, they provide little insight to the class struggle between the *vakıf* as a surplus appropriator and the peasant producers in the countryside. As such, an analysis of rural economy exclusively based on the statistics attained from the registers, however rich they might be, is bound to remain incomplete – even less entitled to represent the general trends in the countryside. For those who exploited the producers were in fact as active as those who cultivated the land in reacting to changes in economic trends. The behavior that both adopted was simultaneously economic and political. Furthermore, the actors affected each other so substantially that the negligence of the relation between them would render any interpretation about the peasants' or revenue-holders' economic strategies meaningless.

A task that stands before future studies which aim to shed light to these aspects of political subjectivity is therefore a diversification in the archival materials employed. Both the court records (*şer'iyye sicilleri*) and the imperial orders to the provinces (*mühimme defterleri*) constitute potential sources of qualitative data that might help the researcher break through the one-dimensional character of the narrative imposed by the exclusive use of the account registers. On the other hand, a way to cope with problems of reliability is to make use of account registers of more

than one *vakif* in the same region. Of course, Ottoman archives are usually not that generous to the researcher. Then, occasional employment of other material to test the accuracy of the data attained from the account books would be an option. A comparative use of *tahrirs* and a peculiar annual account book for demographic research in this study constitutes such an example. Indeed, the variety of resources in Ottoman archives allow for such comparisons for prices or production as well.

Last but not least, the evaluation of the financial performance of a *vakif* should necessarily be done with reference to the simultaneous performances of other *vakifs*. The absence of such an attempt here must be considered a shortcoming of this study, although neither the scope of analysis undertaken here nor the relatively elementary level of detailed studies on finances of particular *vakifs* would allow such an effort. Future proliferation of studies in this field will certainly help scholars develop comparative perspectives on the experiences of multiple *vakifs*. This would contribute to our comprehension of the *vakifs* as economic institutions, their functioning and their responses to the changing conditions in the larger economic environment.

In brief, the account registers by themselves do not grant the historian the tools to reconstruct the dynamics of rural society in all its aspects. Rather, they promise to contribute to our knowledge about the economic aspects of change in Ottoman society in the sixteenth and the seventeenth century. This study was an attempt of such a contribution. Further studies based on other account books accompanied with various other archival sources will undoubtedly produce better results.

APPENDICES

APPENDIX A

Table 1.1: List of Detailed Account Registers

Gregorian Calendar	Islamic Calendar	Duration
1558	Cemâziye'l-Evvel 965 - Cemâziye'l-Evvel 966	Annual
1559	Cemâziye'l-Evvel 966 - Cemâziye'l-Âhir 967	Annual
1560	Cemâziye'l-Âhir 967 - Zi'l-hicce 967	7 months
1560	Muharrem 968 - Cemâziye'l-Âhir 968	6 months
1561	Cemâziye'l-Âhir 968 - Cemâziye'l-Âhir 969	Annual
1562	Cemâziye'l-Âhir 969 - Şevvâl 969	4 months
1562	Zi'l-ka'de 969 - Receb 970	8 months
1563	Receb 970 - Ramazân 970	3 months
1563	Şevvâl 970 - Receb 971	10 months
1564	Receb 971 - Receb 972	Annual
1565	Receb 972 - Şa'bân 973	Annual
1566	Receb 973 - Şa'bân 974	Annual
1567	Şa'bân 974 - Muharrem 975	4 months
1567	Muharrem 975 - Şa'bân 975	7 months
1568	Ramazân 975 - Ramazân 976	Annual
1569	Ramazân 976 - Ramazân 977	Annual
1570	Ramazân 977 - Şevvâl 978	Annual
1571	Şevvâl 978 - Şevvâl 979	Annual
1573	Şevvâl 980 - Zi'l-ka'de 981	Annual
1574	Zi'l-ka'de 981 - Zi'l-ka'de 982	Annual
1575	Zi'l-ka'de 982 - Zi'l-ka'de 983	Annual
1576	Zi'l-ka'de 983 - Rebî'u'l-Âhir 984	4 months
1576	Cemâziye'l-Evvel 984 - Zi'l-hicce 984	7 months
1577	Zi'l-hicce 984 - Safer 985	3 months
1577	Zi'l-hicce 984 - Zi'l-hicce 985	Annual
1577	Rebî'u'l-Evvel 985 - Zi'l-hicce 985	10 months
1578	Zi'l-hicce 985 - Cemâziye'l-Âhir 986	6 months
1578	Cemâziye'l-Âhir 986 - Muharrem 987	7 months
1578	Zi'l-hicce 985 - Muharrem 987	Annual
1579	Muharrem 987 - Muharrem 988	Annual
1580	Muharrem 988 - Zi'l-hicce 988	Annual
1581	Zi'l-hicce 988 - Safer 990	14 months
1584	992 – 993	Annual
1585	Rebî'u'l-Evvel 993 - Receb 993	5 months
1587	Muharrem 995 - Cemâziye'l-Âhir 995	6 months
1588	Rebî'u'l-Âhir 996 - Rebî'u'l-Âhir 997	Annual
1590	Cemâziye'l-Evvel 998 - Cemâziye'l-Evvel 999	Annual
1591	Cemâziye'l-Evvel 999 - Cemâziye'l-Evvel 1000	Annual

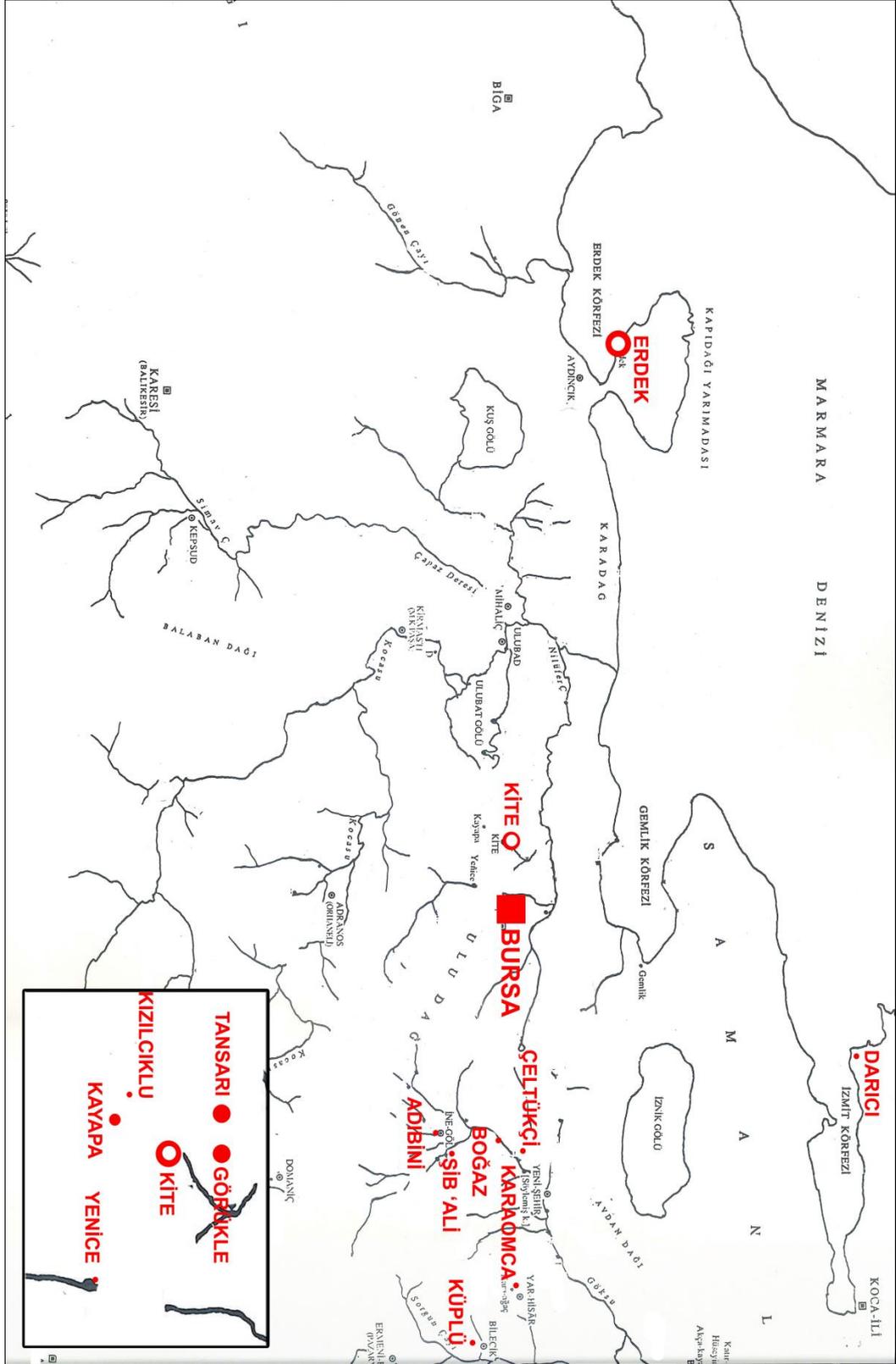
Table 1.2: List of Granary Account Registers

Gregorian Calendar	Islamic Calendar	Duration
1558	Cemâziye'l-Evvel 965 - Cemâziye'l-Evvel 966	Annual
1559	Cemâziye'l-Evvel 966 - Cemâziye'l-Âhir 967	Annual
1560	Cemâziye'l-Âhir 967 - Rebî'u'l-Âhir 968	Annual
1561	Cemâziye'l-Âhir 968 - Cemâziye'l-Âhir 969	Annual
1562	Zi'l-ka'de 969 - Cemâziye'l-Âhir 970	7 Months
1563	Şevvâl 970 - Cemâziye'l-Âhir 971	8 Months
1564	Receb 971 - Receb 972	Annual
1565	Şa'bân 972 - Receb 973	Annual
1566	Şa'bân 973 - Receb 974	Annual
1567	Şa'bân 974 - Muharrem 975	4 Months
1568	Şa'bân 975 - Receb 976	Annual
1569	Şa'bân 976 - Receb 977	Annual
1570	Şa'bân 977 - Ramazân 978	Annual
1571	Şevvâl 978 - Şevvâl 979	Annual
1573	Zi'l-ka'de 980 - Zi'l-ka'de 981	Annual
1574	Zi'l-ka'de 981 - Zi'l-ka'de 982	Annual
1575	Zi'l-ka'de 982 - Zi'l-ka'de 983	Annual
1576	Zi'l-hicce 984(3?) - Zi'l-hicce 984	Annual
1577	Zi'l-hicce 984 - Zi'l-hicce 985	Annual
1578	Zi'l-hicce 985 - Muharrem 987	Annual
1579	Muharrem 987 - Muharrem 988	Annual
1580	Muharrem 988 - Muharrem 989	Annual
1581	Muharrem 989 - Safer 990	Annual
1584	992-993	Annual
1588	Rebî'u'l-Âhir 996 - Rebî'u'l-Âhir 997	Annual
1590	Cemâziye'l-Evvel 998 - Cemâziye'l-Evvel 999	Annual
1591	Cemâziye'l-Evvel 999 - Cemâziye'l-Evvel 1000	Annual

Table 1.3: List of Summary Account Registers

Gregorian Calendar	Islamic Calendar	Duration
1557	Şa'bân 964 - Ramazân 965	Annual
1561	Cemâziye'l-Evvel 968 - Cemâziye'l-Âhir 969	Annual
1562	Cemâziye'l-Âhir 969 - Receb 970	Annual
1563	Şevvâl 970 - Receb 971	10 Months
1566	Receb 971 - Receb 972	Annual
1567	Receb 972 - Şa'bân 973	Annual
1567	Receb 973 - Receb 974	Annual
1568	Ramazân 975 - Ramazân 976	Annual
1569	Ramazân 976 - Ramazân 977	Annual
1570	Ramazân 977 - Şevval 978	Annual
1572	Şevvâl 979 - Şevvâl 980	Annual
1573	Şevvâl 980 - Zi'l-ka'de 981	Annual
1574	Zi'l-ka'de 981 - Zi'l-ka'de 982	Annual
1575	Zi'l-ka'de 982 - Zi'l-ka'de 983	Annual
1576	Zi'l-ka'de 983 - Rebî'u'l-Âhir 984	4 Months
1576	Zi'l-ka'de 983 - Zi'l-hicce 984	Annual
1577	Zi'l-hicce 984 - Zi'l-hicce 985	Annual
1579	Muharrem 987 - Muharrem 988	Annual
1580	Muharrem 988 - Zi'l-hicce 988	Annual
1581	Zi'l-hicce 988 - Safer 990	14 Months
1582	Rebî'ul-Evvel 990 - Safer 991	Annual
1584	Rebî'ul-Evvel 992 - Rebî'ul-Evvel 993	Annual
1584-1585	Rebî'ul-Evvel 992 - Receb 993	16 Months
1585	Rebî'ul-Evvel 993 - Receb 993	5 Months
1585	Şa'bân 993 - Muharrem 994	6 Months
1588	Rebî'u'l-Âhir 996 - Rebî'u'l-Âhir 997	Annual
1590	Cemâziye'l-Evvel 998 - Cemâziye'l-Evvel 999	Annual
1591	Cemâziye'l-Evvel 999 - Cemâziye'l-Evvel 1000	Annual

Map I: The *Vakıf* and Its Villages



APPENDIX B

Table 2.1: *Hane* and *Mücerred* Figures for Erdek

Karye-i Erdek, tabi-i Aydıncık	1521	1530	Selim II	1588
Müslümanan				
Hane	11	11	43	
Bennak	10		11	
Mücerred	4	4	26	
Gebran				
Nefer	310	313	682	
Hane	132	132	617	463
Mücerred	178	181	65	

Table 2.2: *Hane* and *Mücerred* Figures for Ulu Köyü

Karye-i Uluköy, tabi-i Aydıncık	1521	1530	Selim II
Cema'at-i Çeltükçıyan-ı Kesim			
Nefer	58	58	79
Hane	28	28	
Bennak	28	28	
İmam	1	1	
Mücerred	29	29	
resm-i bennak	643		243

Karye-i Uluköy (details)	Selim II
Cema'at-i Çeltükçıyan	
Nefer	33
Evlad-ı Çeltükçıyan	
Nefer	39
Cema'at-i Gebran	7

Table 2.3: *Hane* and *Mücerred* Figures for Şib ‘Ali

Karye-i Şib ‘Ali, tabi-i İnegöl	1521	1530	Selim II
Hane	29	29	70
Çift ²⁵⁷	24		39
Bennak	5		13
İmam	1	1	
Mücerred	17	17	71

Karye-i Şib ‘Ali (details)	Selim II	1588
Cema’at-i Çeltükçiyân		
Hane ²⁵⁸	31	
İmam	1	
Mücerred	1	
Evlad-ı Çeltükçiyân		
Hane	6	
Bennak	1	
Mücerred	39	
Ordinary Re’aya		
Hane ²⁵⁹	33	
Bennak	12	12
Mücerred	28	7

²⁵⁷ 3 *nefers*: *nim*, 9 *nefers*: 2 *çifts*, 1 *nefer*: 3 *çifts*, 12 *nefers*: 1 *çift*.

²⁵⁸ *Çift*: 20, *nim*: 11, *resim*: 2340.

²⁵⁹ *Çift*:8, *nim*:13, *bennak*: 12.

Table 2.4: *Hane* and *Mücerred* Figures for Adıbini

Karye-i Adıbini, tabi-i İnegöl	1521	1530	Selim II
Hane	22	19	52
Çift	19 ²⁶⁰		30 ²⁶¹
Bennak	2		15
Mücerred	20	20	58

Karye-i Adıbini (details)	Selim II	1588
Çeltükçıyan		
Hane	32	
Çift	24 ²⁶²	
Bennak	5	
Mücerred	3	
Evlad-ı Çeltükçıyan	2	
Hane	2	
Mücerred	44	
Ordinary Re'aya	2	
Hane	18	
Bennak	11	6
Mücerred	9	16

Table 2.5: *Hane* and *Mücerred* Figures for Çeltükçi

Karye-i Çeltükçi, tabi-i Yenişehir	1521	1530	1573	1588
Müslümanan (Kesimci)				
Hane	8	8	27	
Mücerred			6	
Gebran				
Kesimciyan-ı Gebran	31	13		
Cizye-i Gebran	27	27	77	44
Mücerred			15	

²⁶⁰ 2 *nefers*; 1,5 *çifts*; 11: *nim*; 5: full *çift*.

²⁶¹ 8 *nefers*: full *çift*, 22 *nefers*: *nim*.

²⁶² 8 *çifts*; 16 *nim çifts*.

Table 2.6: *Hane* and *Mücerred* Figures for Boğaz

Karye-i Boğaz, tabi-i Yenişehir	1521	1530	Selim II
Müslümanan			
Hane	5	5	34 ²⁶³
İmam	1	1	
Mücerred	2	2	18
Gebran			
Hane	30	30	76
Cizye-i Gebran			
Hane	31	30	48

Karye-i Boğaz, Cema'at-i Gebran-ı Kesimciyan	Selim II	1588
Hane	76	45
Mücerred	48	

Table 2.7: *Hane* and *Mücerred* Figures for Karaomca

Karye-i Karaomca, tabi-i Yarhisar	1521	1530	Selim II	1588
Hane	10	10	57	
Mücerred	5	5	11	
Gebran				
Hane	19	19	6	6
Nev-Yafte	3	3	4	
Çiftlik				
Çift			1	
Bennak			19	
Mücerred			11	

²⁶³ 3 çifts; 9 nim çifts; 4 bennaks; 4 çeyreks (quarters); 3 zevles.

Table 2.8: *Hane* and *Mücerred* Figures for Kayapa

Karye-i Kayapa, tabi-i Kite	1521	1530	Selim II	1588
Hane	26	26	34	
Çift	10		8	
Nim	8		5	
Bennak	8		14	18
Mücerred	15	15	42	8

Table 2.9: *Hane* and *Mücerred* Figures for Yenice

Karye-i Yenice, tabi-i Kite	1521	1530	Selim II
Hane	21 ²⁶⁴	21	10
Çift	4		2
Nim	4		1
Bennak	15		3
Kürekçi (çift)	2		
Mücerred	3	3	9

Table 2.10: *Hane* and *Mücerred* Figures for Kızılcıklı

Karye-i Kızılcıklı, tabi-i Kite	1521	1530
Hane	6	6
Çift	3	
Nim	2	
Bennak	2	
Mücerred	5	5

²⁶⁴ This total should be 23 if the enumeration is taken into account.

Table 2.11: *Hane* and *Mücerred* Figures for Nefs-i Kite

Karye-i Kite	1521	1530	1573	1588
Müslümanan				
Hane	7		13	
Çift	1		9	
Nim	2			
Bennak	4		3	
Mücerred	4	4	12	
Kesimciyan-ı Gebran	8	8	10	
Cizye (Neferan)	38		32	
Hane	35	35	22	11

Table 2.12: *Hane* and *Mücerred* Figures for Görükle

Karye-i Görükle, tabi-i Kite	1521	1530	1573	1588
Nefer	89	89	127	147
Hane	49	49		
Mücerred	40	40	2	

Table 2.13: *Hane* and *Mücerred* Figures for Tansarı

Karye-i Tansarı, tabi-i Kite	1521	1530	1573	1588
Hane	53	53	55	105
Mücerred	15	16	19	

Table 2.14: *Hane* and *Mücerred* Figures for Küplü

Karye-i Küplü, Tabi-i Bilecik	1521	1530	1576	1588
Cema'at-i Müslümanan	39		44	
Cema'at-i Zimmiyan	108		271	144 ²⁶⁵
Nefer	152		315	

²⁶⁵ The number of *hanes* that are liable to pay poll tax.

Table 2.15: *Hane* and *Mücerred* Figures for Bahadır

Karye-i Bahadır, tabi-i Bilecik	1521	1530	1576	1588
Cema'at-i Müslümanan	37		54	
Cema'at-i Zimmiyan	74		175	95 ²⁶⁶
Nefer	111		229	

Table 2.16: *Hane* and *Mücerred* Figures for Aleksi

Karye-i Aleksi, tabi-i Bilecik	1521	1530	1576	1588
İmam		1	1	
Hane		126		
Mücerred		21		
Nefer		148	166	

Table 2.17: *Hane* and *Mücerred* Figures for Mü'min-ece

Karye-i Mü'min-ece	1521	1530	Selim II	1588
Hane	4		4	
Çift	1		1	
Ekinlü	1		1	
Bennak	1		1	
Cizye (60 akça)	1		1	

Table 2.18: *Çift/Hane* Ratios: Average Plot Size per *Hane*

Settlement	<i>Çift/Hane</i>	
	1521	Selim II
Şib Ali	1,15	0,61
Adıbini	0,68	0,36
Çeltükçi		0,21
Boğaz (Muslim <i>Re'aya</i>)		0,25
Kayapa	0,54	0,4
Kite	0,71	1

²⁶⁶ The number of *hanes* that are liable to pay poll tax.

Table 2.19: *Çift/Hane* Ratios for the Province of Rum²⁶⁷

Survey	<i>Çift/Hane</i>
R1	0,49
R2	0,44
R3	0,46
R4	0,34
R5	0,27

Table 2.20: The Endowment's Poll Tax Revenues from the Villages

	Darıcı	Erdek	Çeltükçi	Boğaz	Karaomca	Nefs-i Kite
1558	9923	21325	4508	4736	300	1015
1559	10475	21595	4351	4981	250	840
1561	10910	21055	4753	4805	320	740
1564	10768	22485	4328	4110	300	1170
1565	9775	22660	4220	4075	250	1135
1566	9855	23715	3983	4290	250	1010
1568	13645	28250	4085	4765	355	1290
1569	13580	29240	3980	4740	364	1430
1570	13635	29675	3640	4670	375	1455
1571	13695	29330	3835	4615	440	1445
1573	13715	28440	3650	4576	500	1300
1574	13245	39345	3390	4160	390	1335
1575	13945	31170	3435	4307	355	1335
1577	13690	33220	3060	4415	295	1715
1578	13005	30830	3030	4365	300	1635
1579	12580	30235	2745	4095	300	1705
1580	12700	28870	2655	3645	300	1700
1581	12955	29265	2590	3550	300	1860
1584	12530	30340	2360	3565	290	1690
1588	13465	30570	2687	2880	330	610
1590	12432	30395	2218	2281	165	1360
1591	12295	31672	1892	1760	165	1295

²⁶⁷ The figures are taken from Cook, *Population Pressure*. The surveys contemporary to those of Hüdavendigâr are R3 and R5.

	Görükle	Tansarı	Küplü	Bahadır	Aleksi
1558	7481	5705	7860	5300	2745
1559	6690	5786	7975	5420	2795
1561	7331	5911	7880	5505	2695
1564	7135	5881	8080	5745	2740
1565	7190	6031	8055	5840	2840
1566	7090	6046	8660	6440	3265
1568	9030	7260	9395	6725	3585
1569	9625	7835	9705	6935	3650
1570	9985	8180	10055	7250	3905
1571	10555	8285	10295	7420	3935
1573	11345	8510	10260	7305	3960
1574	11015	8145	9520	6730	3845
1575	11875	8915	10210	7420	4275
1577	11730	8220	10400	7415	4610
1578	11640	8400	9735	6850	4280
1579	11490	8270	9250	6510	4060
1580	11060	8490	9385	6560	4110
1581	11390	8535	9750	6765	4035
1584	10860	8785	9505	6765	3875
1588	8825	6388	9133	6070	3798
1590	9699	7455	12900	9046	5708
1591	9594	7005	12658	8936	5633

APPENDIX C

Table 3.1: Prices of Some Goods in Bursa, 1558-1591²⁶⁸

	Meat	Butter	Honey	Sesame oil	Olive oil	Seed oil
1558	2,57	7,39	5,20	7,48	5,33	4,87
1559	2,59	7,90	6,05		4,43	3,64
1560	2,58	8,65	6,35	6,43	6,60	3,85
1561	2,55	8,66 ²⁶⁹	6,47 ²⁷⁰	6,37		4,86
1562	2,61	7,37	5,68	5,83	5,42	5,42
1563	2,61	8,69	6,50	6,67		4,32
1564	2,54	7,82	6,60	7,00		
1565	2,59	8,00	6,91			5,00
1566	2,42	7,29	5,93	6,62	6,83	3,85
1567	2,59	8,20	6,19	6,93	6,70	5,66
1568	2,58	8,56	6,29	6,80	6,52	
1569	2,60	8,13	4,29	7,03		5,95
1570	2,57	7,56	6,50	6,29		5,95
1571	2,52	7,14	5,91	6,14		
1573	2,57	7,73	6,55	7,81		5,27
1574	2,63	8,62	5,78	7,48		5,86
1575	2,67	11,45	6,01	7,61		6,00
1576	2,59	8,53	6,31	7,81		6,23
1577	2,96	10,06	6,66	8,72		5,81
1578	3,00	15,34	6,20	8,90		5,81
1579	3,00	9,96	8,92	8,98		5,00
1580	3,43	12,45	10,96	9,86		7,17
1581	4,00	12,08	9,21	11,73		8,74
1584	4,00	13,80	8,78	10,00		
1585	4,04	15,93	8,00	11,00		
1587	11,50	11,78	12,67			
1588	7,94	18,63	11,06	15,41	14,88	
1590	4,31	12,42	11,27			
1591	4,70	22,55	12,43			12,00

²⁶⁸ The prices of meat, butter, honey, sesame oil, olive oil, seed oil, cotton oil, onion and pepper are given in *akça/vukıyye*; those for rice, wheat and cicer in *akça/kile*; the price of raw silk in *akça/lodra*.
1 *kile* of Bursa = 12 *okkas* = 15,395 kg.

1 *vukıyye* = 300 *dirhem* = 0,962 kg.

1 *lodra* = 176 *dirhem* = 0,564 kg.

For the units of measurement used in the Ottoman geography, see Halil İnalçık, "Introduction to Ottoman Metrology", *Studies in Ottoman Social and Economic History* (London: Variorum Prints X, 1985), pp. 311-348; *idem*, *Economic and Social History*, pp. xxxvii-xliv.

²⁶⁹ Butter prices for 1561 and 1590 are calculated through regression analysis.

²⁷⁰ Calculated through regression analysis.

	Cotton oil	Rice	Wheat	Cicer	Onion	Pepper
1558	3,94	9,78	10,00	10,06	0,39	
1559		8,76	8,31	9,01	0,28	
1560	4,48	18,24	9,95	11,70		
1561		11,94	8,99	10,44	0,36	
1562	4,50	8,70	8,00	7,76	0,36	
1563	3,71	10,86	7,21	7,34	0,37	
1564	3,00	11,41	5,92	7,38	0,35	
1565	3,91	16,11	6,95	9,58	0,36	
1566	3,63	13,44	6,59	9,89	0,29	
1567	3,00	13,14	7,64	13,69	0,32	
1568	3,00	12,28	7,20	8,36	0,24	
1569	3,00	11,62	6,70	8,46	0,29	42,54
1570	4,03	14,00	7,70	9,11		41,69
1571	3,00	15,41	7,98	8,28	0,26	41,08
1573	3,58	14,80	7,18		0,36	47,07
1574	6,21	16,01	9,79	9,52	0,34	51,40
1575	3,97	17,35	10,28	14,63	0,44	52,41
1576	3,00	22,65	12,75	16,13	1,11	61,41
1577	4,79	15,37 ²⁷¹	9,76	11,19		66,00
1578	5,50	16,05	11,90	13,63	0,33	60,00
1579	3,77	15,89	13,55	13,56	0,25	61,44
1580	5,31	19,96	14,08	17,95	0,67	51,27
1581	4,03	20,51	15,47	15,93	0,34	59,50
1584		22,27	8,02	9,24	0,39	
1585		22,23	9,41	11,00		
1587		8,55	27,27			
1588		39,10	34,55			
1590		29,11	22,86 ²⁷²	25,68		120,00
1591		27,21	23,11			

²⁷¹ Calculated through regression analysis.

²⁷² Sales price of the corresponding year.

Table 3.2: Indices of Price Change for Some Goods in Bursa, 1558-1591

	Meat	Butter	Honey	Sesame oil	Olive oil	Seed oil
1558	100	100	100	100	100	100
1559	101	107	116		83	75
1560	100	117	122	86	124	79
1561	99	117	124	85		100
1562	101	100	109	78	102	111
1563	101	118	125	89		89
1564	99	106	127	94		
1565	101	108	133			103
1566	94	99	114	88	128	79
1567	101	111	119	93	126	116
1568	100	116	121	91	122	
1569	101	110	82	94		122
1570	100	102	125	84		122
1571	98	97	114	82		
1573	100	105	126	104		108
1574	102	117	111	100		120
1575	104	155	116	102		123
1576	101	115	121	104		128
1577	115	136	128	117		119
1578	117	208	119	119		119
1579	117	135	172	120		103
1580	133	169	211	132		147
1581	155	164	177	157		180
1584	155	187	169	134		
1585	157	216	154	147		
1587	447	159	244			
1588	308	252	213	206	279	
1590	168	168	217			
1591	183	305	239			246

	Cotton oil	Rice	Wheat	Cicer	Onion	Pepper	Raw silk ²⁷³
1558	100	100	100	100	100		
1559		90	83	90	71		100
1560	114	186	100	116			
1561		122	90	104	92		
1562	114	89	80	77	91		
1563	94	111	72	73	94		
1564	76	117	59	73	89		
1565	99	165	69	95	92		
1566	92	137	66	98	75		117
1567	76	134	76	136	83		
1568	76	126	72	83	61		
1569	76	119	67	84	75	100	85
1570	102	143	77	91		98	52
1571	76	158	80	82	67	97	93
1573	91	151	72		92	111	84
1574	158	164	98	95	86	121	
1575	101	177	103	145	112	123	89
1576	76	232	127	160	284	144	103
1577	122	157	98	111		155	99
1578	140	164	119	135	84	141	123
1579	96	163	136	135	64	144	104
1580	135	204	141	178	170	121	104
1581	102	210	155	158	87	140	169
1584		228	80	92	99		309
1585		227	94	109			196
1587		87	273				220
1588		400	346				226
1590		298	229	255		282	
1591		278	231				

²⁷³ Çizakça, *Sixteenth-Seventeenth Century Inflation*, pp. 106-107.

Table 3.3: Sales Prices of Grains, 1558-1591

	Wheat	Barley	Oat	Vetch	Rice	Lentil	Common vetch	Millet
1558	9,00	3,65	2,82				4,00	3,07
1559	10,61	3,76	2,36	4,47				4,00
1560	9,90 ²⁷⁴	4,45	2,81	3,64				4,59
1561	8,81	3,53	2,62 ²⁷⁵	3,08				
1562	8,39	4,02	2,97	4,00			4,00	
1563	8,37	3,37	2,64	3,50			3,00	
1564	12,00	4,56	3,60	8,00		5,00	4,33	
1565	7,00	3,58	1,67	5,00				
1566	8,50	4,36	3,43	5,03				3,99
1567	9,48	5,65	3,89	10,00		9,00		6,75
1568	8,81	3,96	2,86					5,57
1569	9,79	3,38	2,07		14,25			5,00
1570	9,55	3,54	2,50					9,57
1571	9,00	3,77	3,55	4,00				5,00
1573	9,21	6,11	4,68	5,00	15,00			6,75
1574	11,21	6,00	4,00					8,00
1575	15,00	10,52	7,99	11,00	8,90	6,00		5,87
1576	11,95	5,28	4,00	8,00				6,03
1577	11,26	5,00	4,00					6,00
1578	12,50	5,58	3,79	3,59	13,02			4,94
1579	17,50	6,60	4,00	8,00				6,60
1580	25,00	8,11	7,00					
1581	13,45	3,82	2,44	5,24				4,00
1584	8,02 ²⁷⁶	4,30	3,10	6,00		3,71		3,31
1588	25,00	10,54	7,50					13,33
1590	22,86	10,97	4,83	15,00				13,00
1591	21,00	7,49	5,36	13,22				7,64

²⁷⁴ Purchase price of the corresponding year.

²⁷⁵ The oat prices of 1561, 1590 and 1592 are calculated through regression analysis.

²⁷⁶ Purchase price of the corresponding year.

Table 3.4: Sales and Purchases of Wheat, 1558-1591

	Purchase Price	Sales Price	Amount Purchased	Amount Sold
1558	10,00	9,00	240	80
1559	8,31	10,61	120	1520
1560	9,95		557	
1561		8,81		1300
1562		8,39		1920
1563	7,21	8,37	530	2280
1564	5,92	12,00	1480	1300
1565	6,95	7,00	1100	360
1566	6,59	8,50	478	1700
1567	7,64	9,48	2880	4100
1568	7,20	8,81	1936,5	3920
1569	6,70	9,79	2400	3560
1570	7,70	9,55	2865	2515
1571	7,98	9,00	4507	800
1573	7,18	9,21	1560	1450
1574	9,79	11,21	3274	3768
1575	10,28	15,00	1532	687
1576	12,75	11,95	2052	2310
1577	9,76	11,26	2036	1872
1578	12,50		1590	
1579	13,55	17,50	1858	400
1580	14,08	25,00	3385	40
1581	15,47	13,45	2312	332
1584	8,02		1460	
1585	9,41		1994	
1587	27,27		2023	
1588	34,55	25,00	1588,75	412
1590	29,11	22,86	473	525
1591	23,11	21,00	45	200

Table 3.5: Consumer Price Index, 1558-1591²⁷⁷

	CPI I	CPI II	CPI III
1558	100	100	100
1559	92	102	93
1560	115		115
1561	100		100
1562	91	98	92
1563	91	101	92
1564	87	100	89
1565	97	96	98
1566	91	94	92
1567	99	111	102
1568	94	105	95
1569	88	99	89
1570	97	120	97
1571	100	102	100
1573	101	104	104
1574	114	145	116
1575	138	141	135
1576	136		135
1577	118	126	118
1578	134	138	134
1579	138	141	139
1580	164	135	159
1581	162	156	158
1584	135	116	133
1588	345	184	327
1590	225		224
1591	233		225

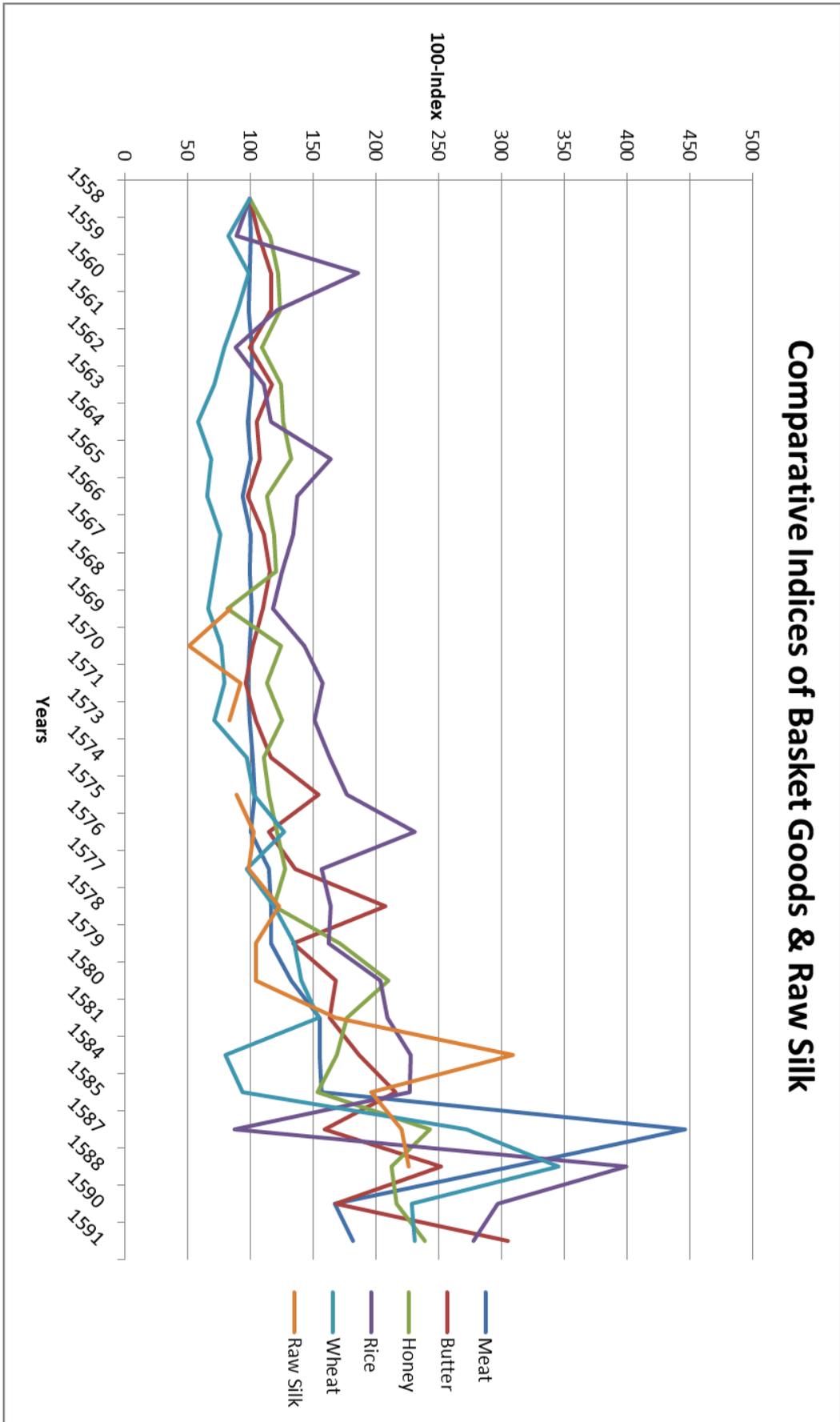
²⁷⁷ CPI I is the base-weighted index (also known as Laspeyre's index) and CPI II is the simple aggregative index, where both indices include wheat, rice, meat, butter and honey. CPI III is the base-weighted index which additionally includes barley and oat.

Table 3.6: *Akça*'s Silver Content and CPI in Grams of Silver, 1558-1591

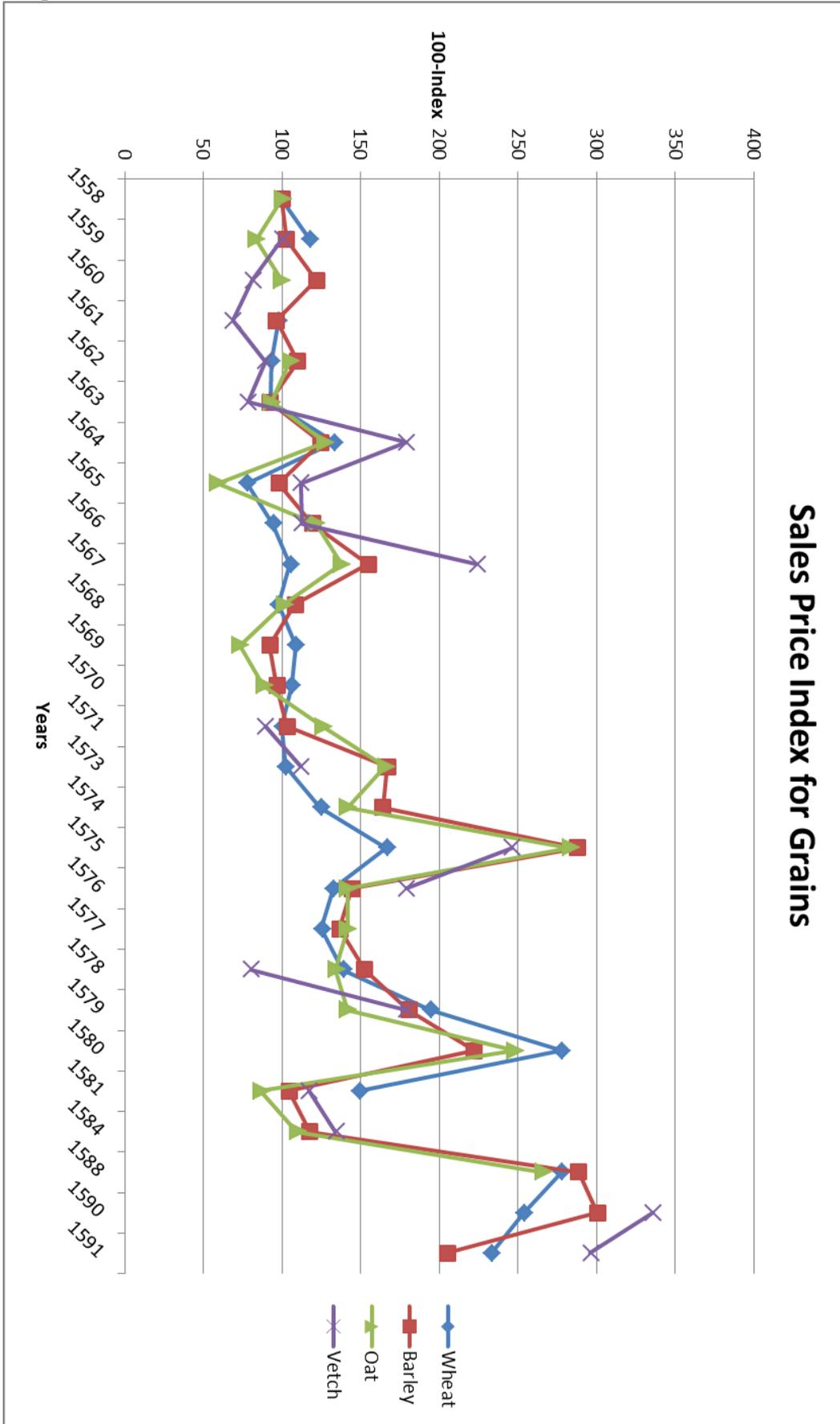
	CPI I	Silver Content ²⁷⁸	CPI I in Grams of Silver
1558	100	0,731	100
1559	92	0,731	92
1560	115		
1561	100		
1562	91		
1563	91		
1564	87		
1565	97		
1566	91	0,682	84
1567	99	0,682	93
1568	94	0,682	87
1569	88	0,682	82
1570	97	0,682	90
1571	100	0,682	93
1573	101	0,682	95
1574	114	0,682	106
1575	138	0,682	129
1576	136	0,682	127
1577	118	0,682	110
1578	134	0,682	125
1579	138	0,682	129
1580	164	0,682	153
1581	162	0,682	151
1584	135		
1588	345	0,384	181
1590	225	0,421	129
1591	233	0,421	134

²⁷⁸ Çizakça, *ibid*, 106-107; Pamuk, *500 Yıllık Fiyatlar ve Ücretler*; Özer Ergenç, "XVI. Yüzyılın Sonlarında Osmanlı Parası Üzerinde Yapılan İşlemlere İlişkin Bazı Bilgiler", *Türkiye İktisat Tarihi Üzerine Araştırmalar, ODTÜ Gelişme Dergisi: 1978 Özel Sayısı* (Ankara 1979), p. 86-97.

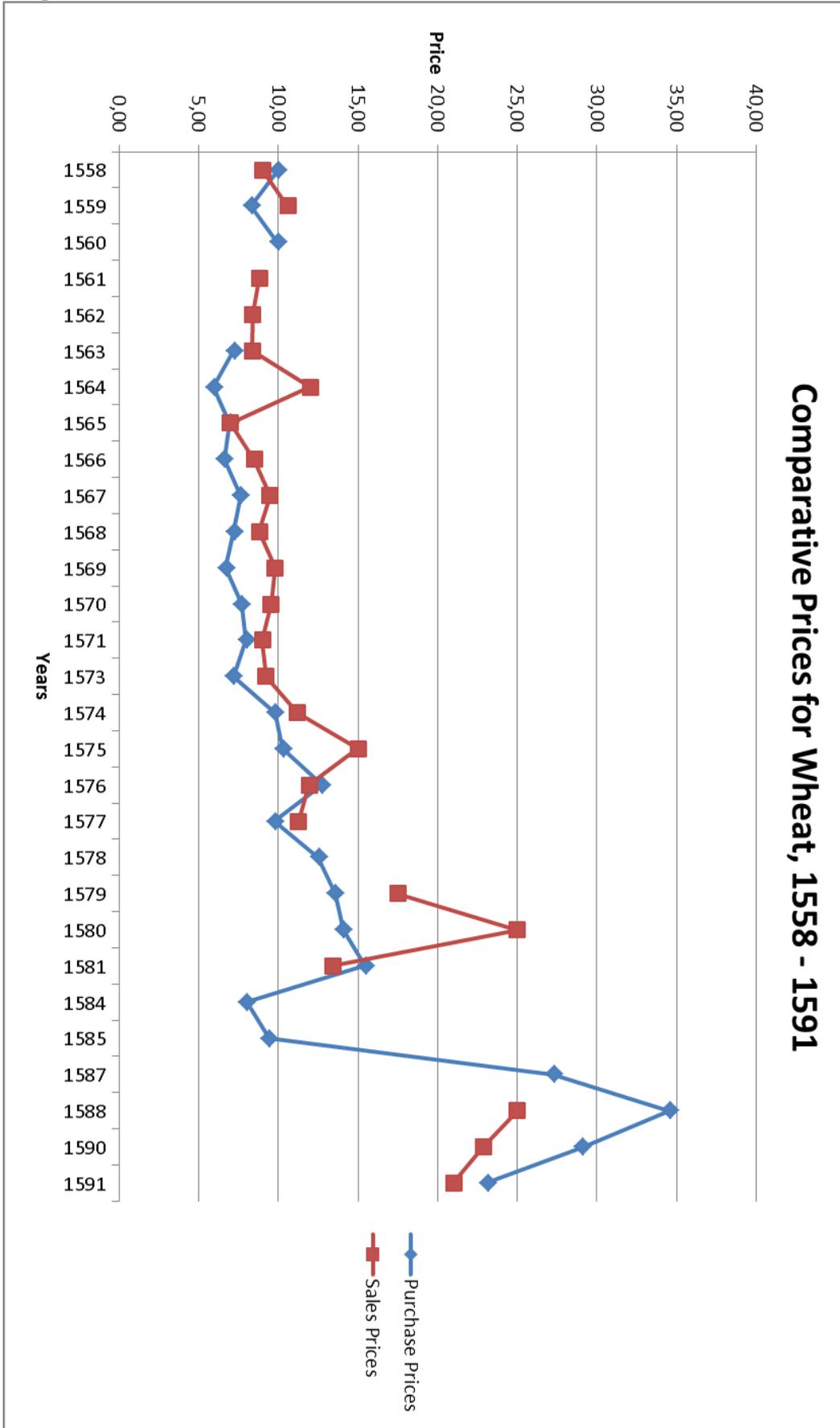
Graph 3.1: 100-Indices of the Purchase Prices of Basket Goods and Raw Silk, 1558-1591



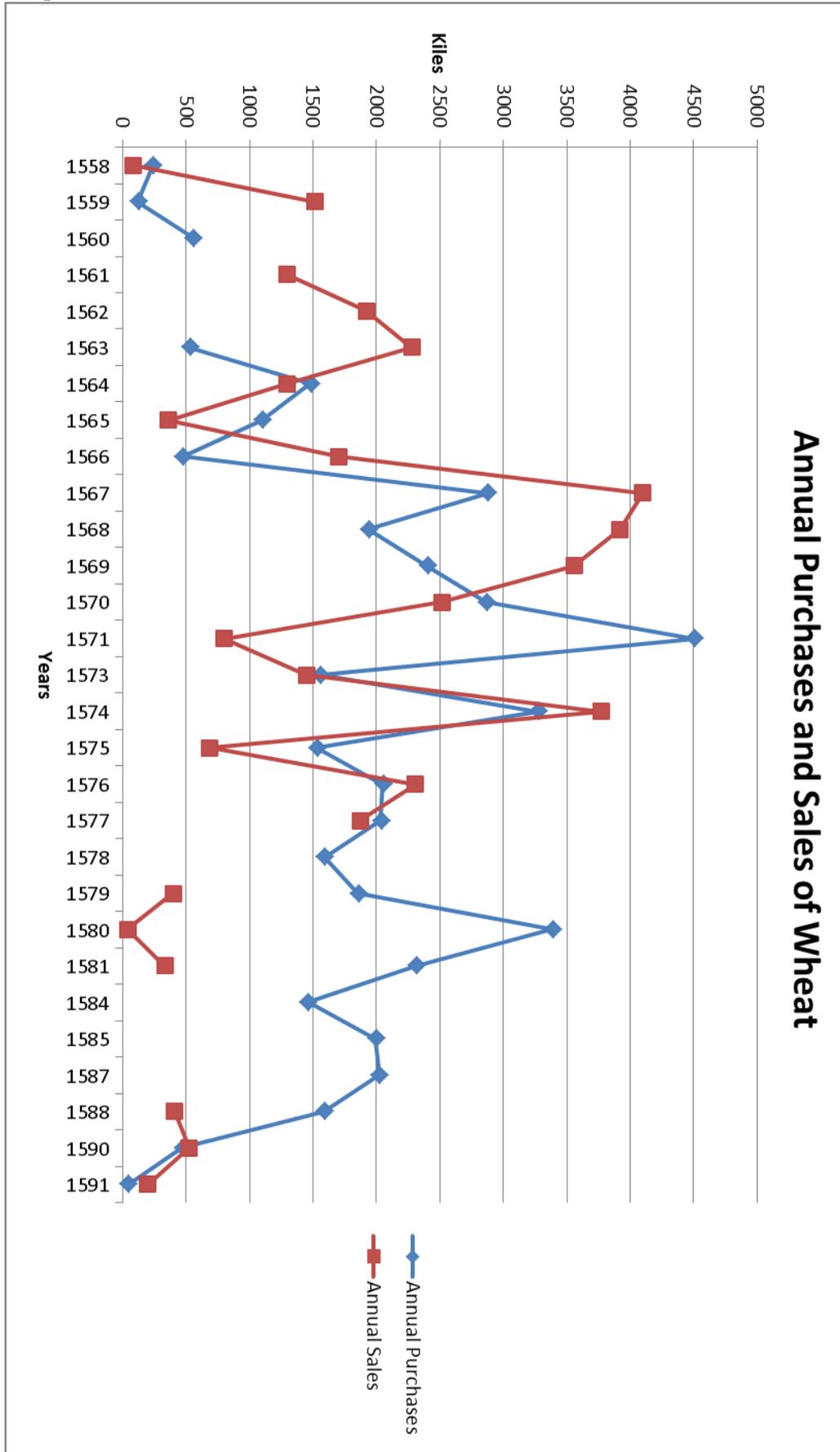
Graph 3.2: Sales Price Indices for Grains, 1558-1591



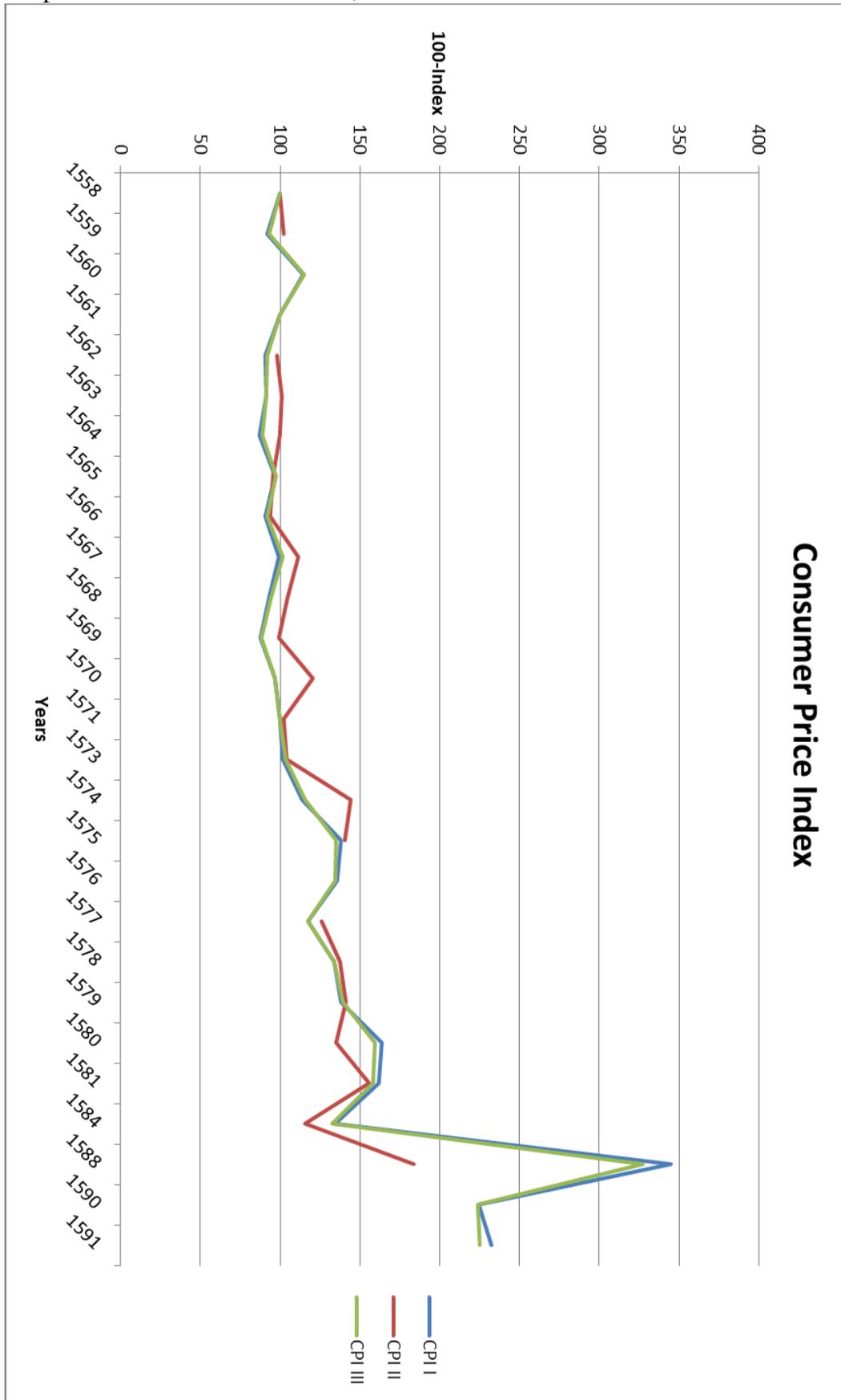
Graph 3.3: Wheat Prices, 1558-1591



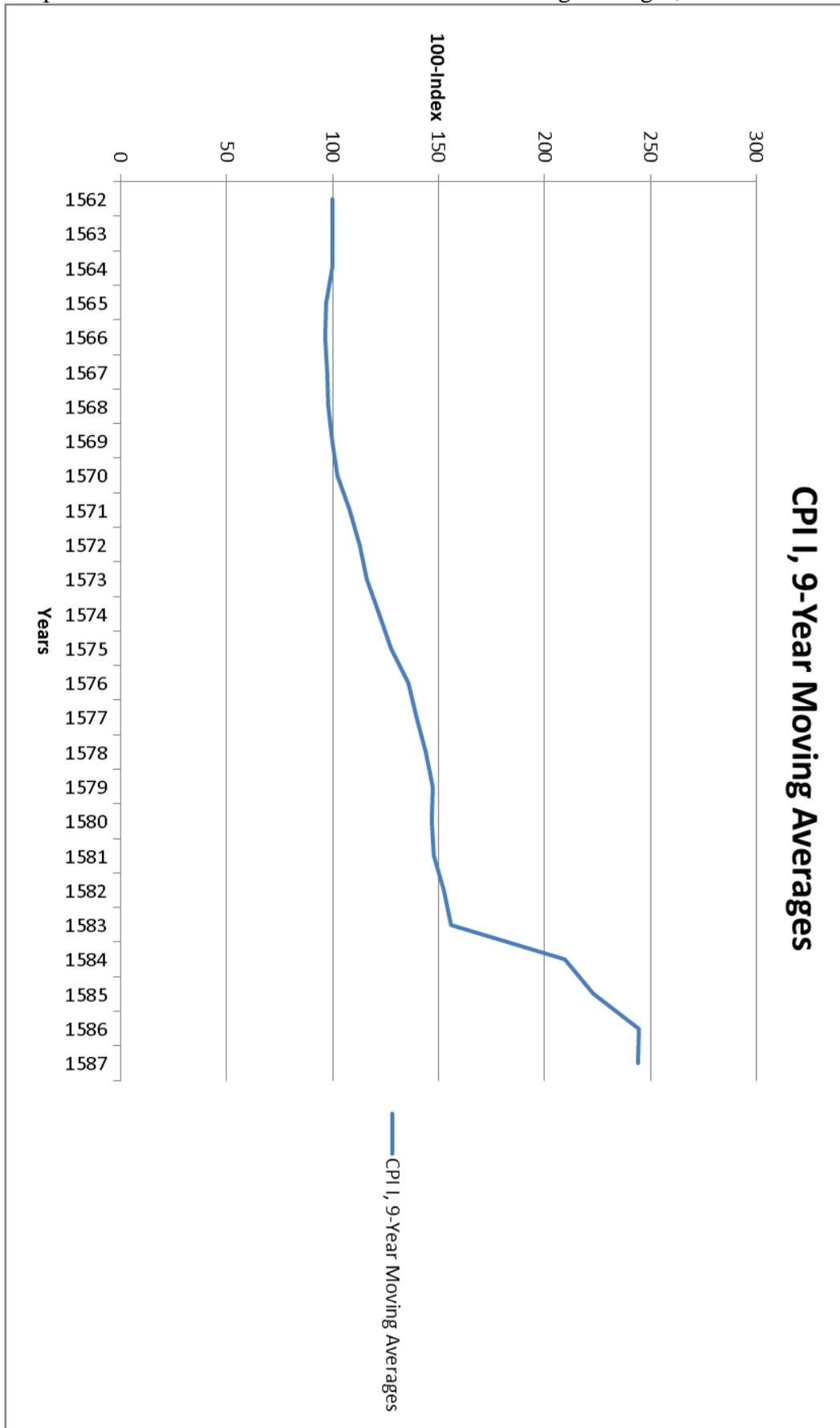
Graph 3.4: Wheat Purchased and Sold, 1558-1591



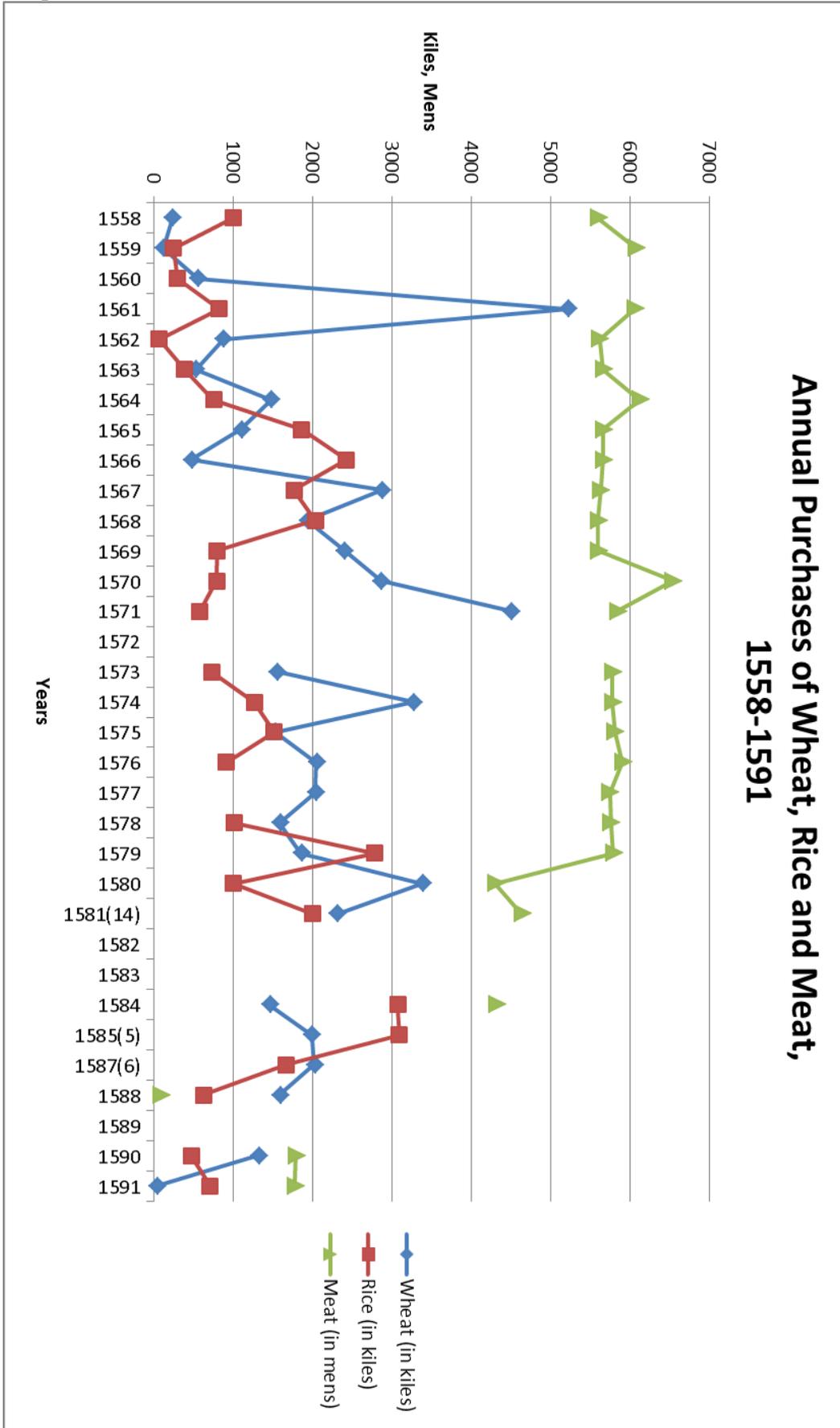
Graph 3.5: Consumer Price Index, 1558-1591



Graph 3.6: Consumer Price Index with 9-Year Moving Averages, 1558-15



Graph 3.7: Annual Purchases of Wheat, Rice and Meat, 1558-1591



APPENDIX D

Table 4.1: The Balance Sheet of Sultan Çelebi Mehmed's Endowment, 1558-1591²⁷⁹

	1558	1559	1560(7 months)	1560(6)
Total Revenues	326016	356361	176288,5	160545
Surplus from the Previous Year	24584	26367	41511	
Current Revenues	301432	318543	134297	
Revenues in Cash	273830	270844		
Revenues from Sales of Output	27599	47699		
Monthly Revenues	106028	107397	42382	56218
Agricultural Revenues (in Cash)	167048	162795		
Other Revenues	754	652		
Stock Sales	27599	47699		34599
Aggregate Expenditure	293647	314849,5	176288,5	124366,5
Salary Payments	128700	138970	74890	52100
Kitchen Expenditure	145297	152173,5	92171,5	59253
Miscellaneous Expenditure	5481	3925	3388	1930
Transportation Expenses	10622	12346	2157	10024,5
Repair Expenses	3547	7435	3682	1059
Other Expenses				
Accounts Receivable	5999			
Surplus	26370	41511		36179

²⁷⁹ The table includes the major items of revenues and expenses exclusively. The data is identical to those presented by Orbay, "16. Ve 17. Yüzyıllarda Bursa Ekonomisi", pp. 147-154 with some exceptions.

	1561	1562(4 months)	1562(8 months)	1563(3 months)
Total Revenues	403529	101076	281740	119440
Surplus from the Previous Year	41446	9018	12665	81653
Current Revenues	362082	91058	269075	37787
Revenues in Cash	320461		219929	
Revenues from Sales of Output	41622		49146	
Monthly Revenues	109841	36950	69274	4082
Agricultural Revenues (in Cash)	209082	53188	148375	33633
Other Revenues	1538	920	2280	72
Stock Sales	41622		49146	
Aggregate Expenditure	337874,5	112073	188090	84200,5
Salary Payments	137540	42960	84141	32445
Kitchen Expenditure	166735,5	60121	86324,5	48175
Miscellaneous Expenditure	7098	2557	1765,5	2044
Transportation Expenses	18358	857	12384	834
Repair Expenses	8143	4256	3495	702,5
Other Expenses	38480		11997	21630
Accounts Receivable	18157			
Surplus	9018	-11997	81633	-13606

	1563(10 months)	1564	1565	1566
Total Revenues	309510	400777	365688	352836
Surplus from the Previous Year	11932	55670	71069	31961,5
Current Revenues	276578	384107	294000	320875
Revenues in Cash	231132	296522	271424	272906
Revenues from Sales of Output	45417	48585	23195	47969
Monthly Revenues	93599	113918	105638	105026
Agricultural Revenues (in Cash)	136305	197913	163625	166560
Other Revenues	22257 ²⁸⁰	3441	2164	1320
Stock Sales	45417	48585	23195	47969
Aggregate Expenditure	231299		333726,5	328624
Salary Payments	97965	141505	130620	131006
Kitchen Expenditure	116237	166771	179169	171209,5
Miscellaneous Expenditure	3322	7260	6247	4133
Transportation Expenses	11744	11026	13328	14002
Repair Expenses	1986	3037	4320	8274
Other Expenses	22585			
Accounts Receivable				
Surplus	55670	71069	31961,5	24212,5

²⁸⁰ The Central Treasury sent 21000 akças of the sum to compensate the repair expenditures of the endowment.

	1567(4 months)	1567(7 months)	1568	1569
Total Revenues	110355	327037	485896	488469
Surplus from the Previous Year	24212,5	0	96186	157750
Current Revenues	413180281		429715	430719
Revenues in Cash		241633	354500	350131
Revenues from Sales of Output		85404	75215	80588
Monthly Revenues	86143	80123	108177	128391
Agricultural Revenues (in Cash)	45425	160715	230338	219391
Other Revenues	1080	795	15985	2349
Stock Sales		85404	75215	80588
Aggregate Expenditure	155419	185792,5	308146	330664,5
Salary Payments	54575	75605	130085	131390
Kitchen Expenditure	96786	93012	173793	161301,5
Miscellaneous Expenditure	3300	2967	5754	8232
Transportation Expenses		11981	13126	12861
Repair Expenses	758	2227,5	5388	16880
Other Expenses	45064	45064	40000282	
Accounts Receivable				
Surplus		96181	157750	157804,5

²⁸¹ Current revenues for H. 974 according to the summary account book of H. 977-978.

²⁸² 40000 akças of the surplus from the previous accounting year were submitted to the Central Treasury.

	1570	1571	1571	1572 ²⁸³
Total Revenues	592738	458215	458215	528560
Surplus from the Previous Year	157804,5	70203	70203	107458
Current Revenues	434933,5	388012	388012	421102
Revenues in Cash	378785	353148	353148	
Revenues from Sales of Output	56148,5	34864	34864	
Monthly Revenues	130114	112443	112443	126275
Agricultural Revenues (in Cash)	247317	238286	238286	225915
Other Revenues	1354	2419 ²⁸⁴	2419	1506
Stock Sales	56148,5	34864	34864	67406
Aggregate Expenditure	397842	350756,5	350756,5	412866
Salary Payments	155445	135998	135998	150915
Kitchen Expenditure	209624	186591	186591	206800
Miscellaneous Expenditure	9929	7810,5	7810,5	
Transportation Expenses	16495	13404	13404	7952
Repair Expenses	6351	6953	6953	41003
Other Expenses	124693 ²⁸⁵			3500
Accounts Receivable	5825			
Surplus	70203	107458,5	107458,5	112194

²⁸³ Summary account book.

²⁸⁴ 4400 *akças* is the rice tithes from the villages Adıbini and Şib ‘Ali, while 7500 *akças* is the unpaid poll tax, all from the previous year.

²⁸⁵ 100000 *akças* were submitted to the Central Treasury.

	1573	1574	1575	1576(4 months)
Total Revenues	508307	632008	497178	179178
Surplus from the Previous Year	112194	188596	101610	131760
Current Revenues	396113	463412	445568	77418
Revenues in Cash	344033	354204	353147	
Revenues from Sales of Output	52080	109208	92421	
Monthly Revenues	116629	126571	115659	39456
Agricultural Revenues (in Cash)	224855	226445	233273	37962
Other Revenues	2549	1188	4215	
Stock Sales	52080	109208	92421	
Aggregate Expenditure	333782	407142	395418	150628
Salary Payments	142940	155415	143460	61035
Kitchen Expenditure	168481	212265	215662	77066
Miscellaneous Expenditure	6130	9708	7614	3704
Transportation Expenses	9540	24954	19286	
Repair Expenses	6691	5400	9396	8823
Other Expenses	5929	123256286		
Accounts Receivable			14733	14733
Surplus	168596	101610	87027	13817

	1576(7 months)	1577(3 months)	1577	1577(10 months)
Total Revenues	354022	130866	555567	483552
Surplus from the Previous Year	28505	80904	80904	60171
Current Revenues	325472	49962	474663	423281
Revenues in Cash			406315	
Revenues from Sales of Output			68348	
Monthly Revenues	76885	30145	125910	95615
Agricultural Revenues (in Cash)	175369	19817	279128	258141
Other Revenues	2311		1277	1277
Stock Sales	70907		68348	68348
Aggregate Expenditure	273118	70695	362556,5	310216
Salary Payments	83595	35525	152148	119334
Kitchen Expenditure	136061	32010	189052	156001
Miscellaneous Expenditure	10977	1630	11021,5	6296
Transportation Expenses	22152		25309	25109
Repair Expenses	20333	1590	5026	3476
Other Expenses				
Accounts Receivable	38676	52586	79633	31025
Surplus	42228	7585	93378	142311

²⁸⁶ 73256 akças spent to the repair of Green Mosque complex, 50000 akças were transferred to the Endowment of Bayezid I in Bursa.

	1578(6 months)	1578(7 months)	1578	1579
Total Revenues	368891	420841	556358	514439
Surplus from the Previous Year	173336	87819	173011	131150
Current Revenues	195555	333022	383947	383289
Revenues in Cash		26060	346940	337286
Revenues from Sales of Output		72962	36407	46003
Monthly Revenues	47865	63747	110792	118433
Agricultural Revenues (in Cash)	147690		233874	216330
Other Revenues		1973	2274	2523
Stock Sales		72962	36407	46003
Aggregate Expenditure	170466	252396	425208	443857
Salary Payments	60225	86730	142305	145800
Kitchen Expenditure	110241	136246	240240,5	260125
Miscellaneous Expenditure	3960	6798	13747	14627
Transportation Expenses		12974	14478	12000
Repair Expenses	3858	9648	14138	7705
Other Expenses				
Accounts Receivable	198425	52138	38308	15149
Surplus	0	116307	92842	54443

	1580	1581(14 months)	1582 ²⁸⁷	1583 ²⁸⁸
Total Revenues	452476	521689	422555	469980
Surplus from the Previous Year	70582	73328	55868	39454
Current Revenues	381894	448321	366987	430526
Revenues in Cash	330229	403984	345257	
Revenues from Sales of Output	51665	44337	21730	
Monthly Revenues	115920	130550		
Agricultural Revenues (in Cash)	213209	249524		
Other Revenues	1100	23910 ²⁸⁹		
Stock Sales	51665	44337		
Aggregate Expenditure	379147,5	517807	487245	487245
Salary Payments	137350	189861	162394	158674
Kitchen Expenditure	213767,5	294707	238873	
Miscellaneous Expenditure	11297	12632	11840	
Transportation Expenses	8265	17103	12758	
Repair Expenses	6968	3804	7782	
Other Expenses	39040		53598 ²⁹⁰	28036
Accounts Receivable	34289	84495	42816	113047
Surplus	0	0	-64690	

²⁸⁷ Summary account book.

²⁸⁸ Summary account book.

²⁸⁹ Agricultural revenues accrued in the additional two months that the account book covers.

²⁹⁰ 53000 akças are debts received.

	1584	1584-85(16 months) ²⁹¹	1585(5 months)	1587(6 months)
Total Revenues	415128	631644	216530	192356
Surplus from the Previous Year	1333	1333		
Current Revenues	413795	630316		192356
Revenues in Cash	391177		209150	
Revenues from Sales of Output	22618		7380	
Monthly Revenues	139689	174426	33787	51852
Agricultural Revenues (in Cash)	251488	424927	174173	135344
Other Revenues		960		
Stock Sales	22618	22618		
Aggregate Expenditure	543808	870319	344736	241612
Salary Payments	160980	441000	56400	73590
Kitchen Expenditure	257692	279005	150969	77430
Miscellaneous Expenditure	12187	14760	132753	28561
Transportation Expenses	11196	14760		
Repair Expenses	2091	6705	4614	3804
Other Expenses	99662	179520		9740
Accounts Receivable	13052	166968	8762	
Surplus	-80415	-80469	-136968	-5869

	1588	1590	1591
Total Revenues	514069	509102	510568
Surplus from the Previous Year	20759	20614	35545
Current Revenues	493310	488288	475023
Revenues in Cash			
Revenues from Sales of Output	55567		
Monthly Revenues	149502	171818	183753
Agricultural Revenues (in Cash)	288241	316270	291265
Other Revenues			
Stock Sales	55567	65582	45339
Aggregate Expenditure	406070	423801	419943
Salary Payments	136515	154920	177145
Kitchen Expenditure	213145	185470	178929
Miscellaneous Expenditure	13772	18370	11873
Transportation Expenses	20672	26352	25911
Repair Expenses	6766	9750	16105
Other Expenses	62380	73316	16920
Accounts Receivable	33497	20814	24594
Surplus	12122	14731	59091

²⁹¹ Summary account book.

Table 4.2: The Balance Sheet of the Endowment: Ratio Analysis, 1558-1591

	AR/CR (%) ²⁹²	MR/CR (%) ²⁹³	SS/CR (%) ²⁹⁴	SP/AE (%) ²⁹⁵	KE/AE (%) ²⁹⁶
1558	55,42	35,17	9,16	43,83	49,48
1559	51,11	33,72	14,97	44,14	48,33
1561	57,74	30,34	11,50	40,71	49,35
1562(8)	55,97	29,50	13,65	42,34	48,79
1564	51,53	29,66	12,65		
1565	55,65	35,93	7,89	39,14	53,69
1566	51,91	32,73	14,95	39,87	52,10
1568	53,60	25,17	17,50	42,22	56,40
1569	50,94	29,81	18,71	39,74	48,78
1570	56,86	29,92	12,91	39,07	52,69
1571	61,41	28,98	8,99	38,77	53,20
1572	42,74	23,89	12,75	36,55	50,09
1573	56,77	29,44	13,15	42,82	50,48
1574	48,86	27,31	23,57	38,17	52,14
1575	52,35	25,96	20,74	36,28	54,54
1577	58,81	26,53	14,40	41,97	52,14
1578	60,91	28,86	9,48	33,47	56,50
1579	56,44	30,90	12,00	32,85	58,61
1580	55,83	30,35	13,53	36,23	56,38
1581(14)	55,66	29,12	9,89	36,67	56,91
1583			0,00	32,57	0,00
1584	60,78	33,76	5,47	29,60	47,39
1588	58,43	30,31	11,26	33,62	52,49
1590	64,77	35,19	13,43	36,55	43,76
1591	61,32	38,68	9,54	42,18	42,61

²⁹² Agricultural Revenues as per cent of Current Revenues.

²⁹³ Monthly Revenues as per cent of Current Revenues.

²⁹⁴ Stock Sales as per cent of Current Revenues.

²⁹⁵ Salary Payments as per cent of Aggregate Expenditure.

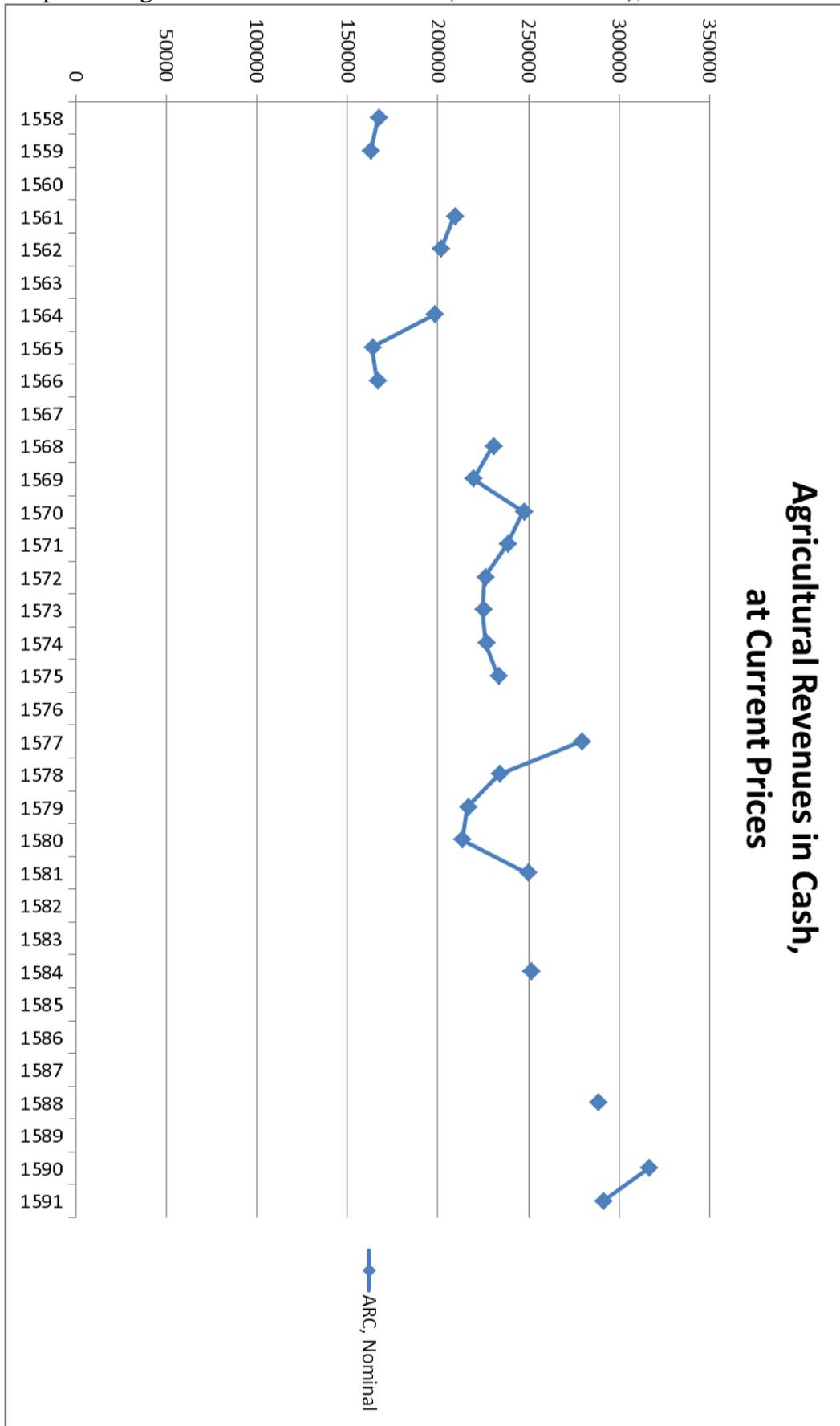
²⁹⁶ Kitchen Expenditure as per cent of Aggregate Expenditure.

	CR - AE ²⁹⁷	Surplus	(CR-AE)/CR ²⁹⁸
1558	7785	26370	2,58
1559	3694	41511	1,16
1561	24208	9018	6,69
1562(8)	59970	81633	16,65
1564	384107	71069	
1565	-39727	31961,5	-13,51
1566	-7749	24212,5	-2,41
1568	121569	157750	28,29
1569	100055	157804,5	23,23
1570	37092	70203	8,53
1571	37256	70203	9,60
1572	115694	112194	21,89
1573	62331	168596	15,74
1574	56270	101610	12,14
1575	50150	87027	11,26
1577	112107	93378	23,62
1578	-41261	92842	-10,75
1579	-60568	54443	-15,80
1580	2747	0	0,72
1581(14)	-69486	0	-15,50
1583	-56719		-13,17
1584	-130013	-80415	-31,42
1588	87240	12122	17,68
1590	64487	14731	13,21
1591	55080	59091	11,60

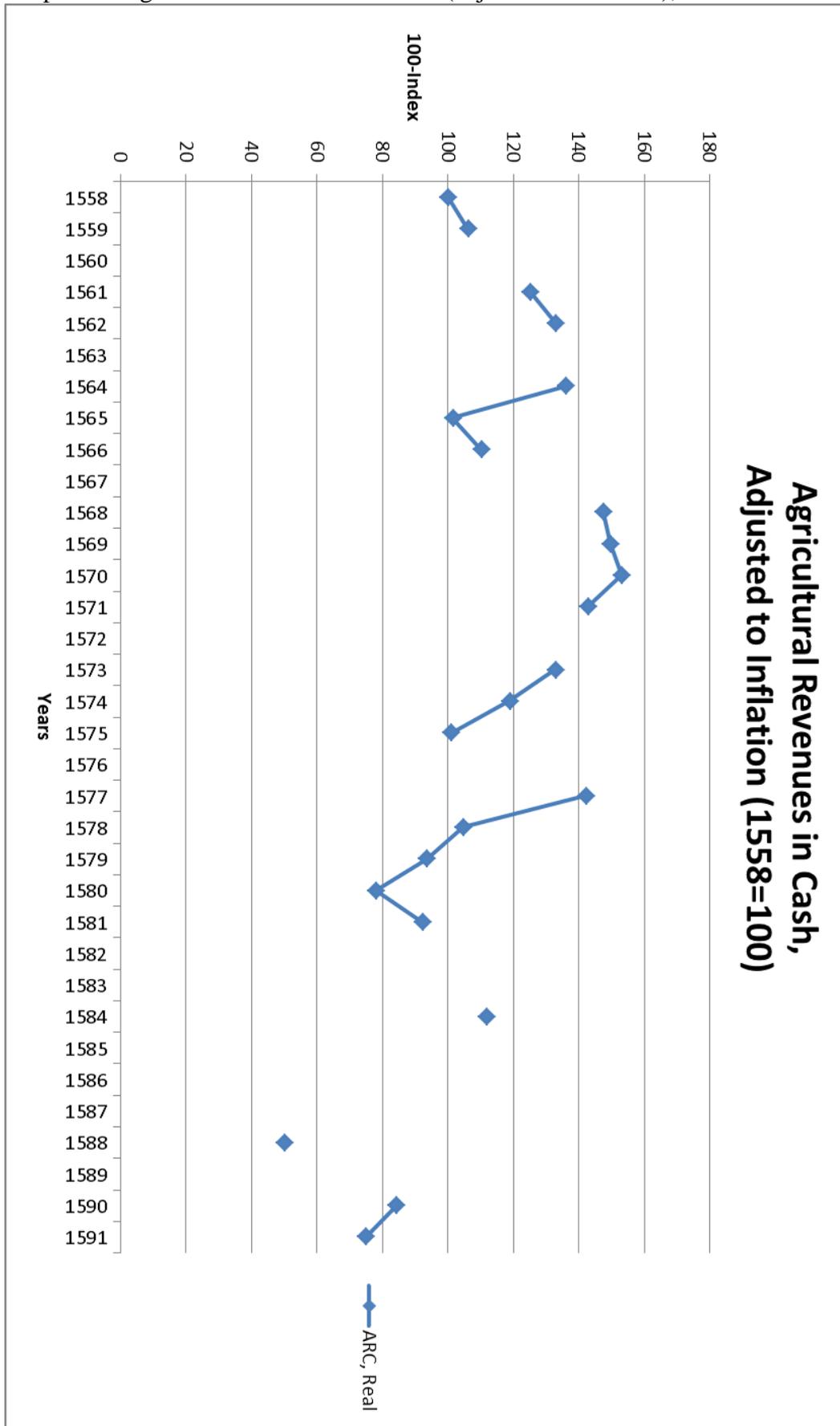
²⁹⁷ Current Surplus/Deficit.

²⁹⁸ The rate of Current Deficit to Current Revenues.

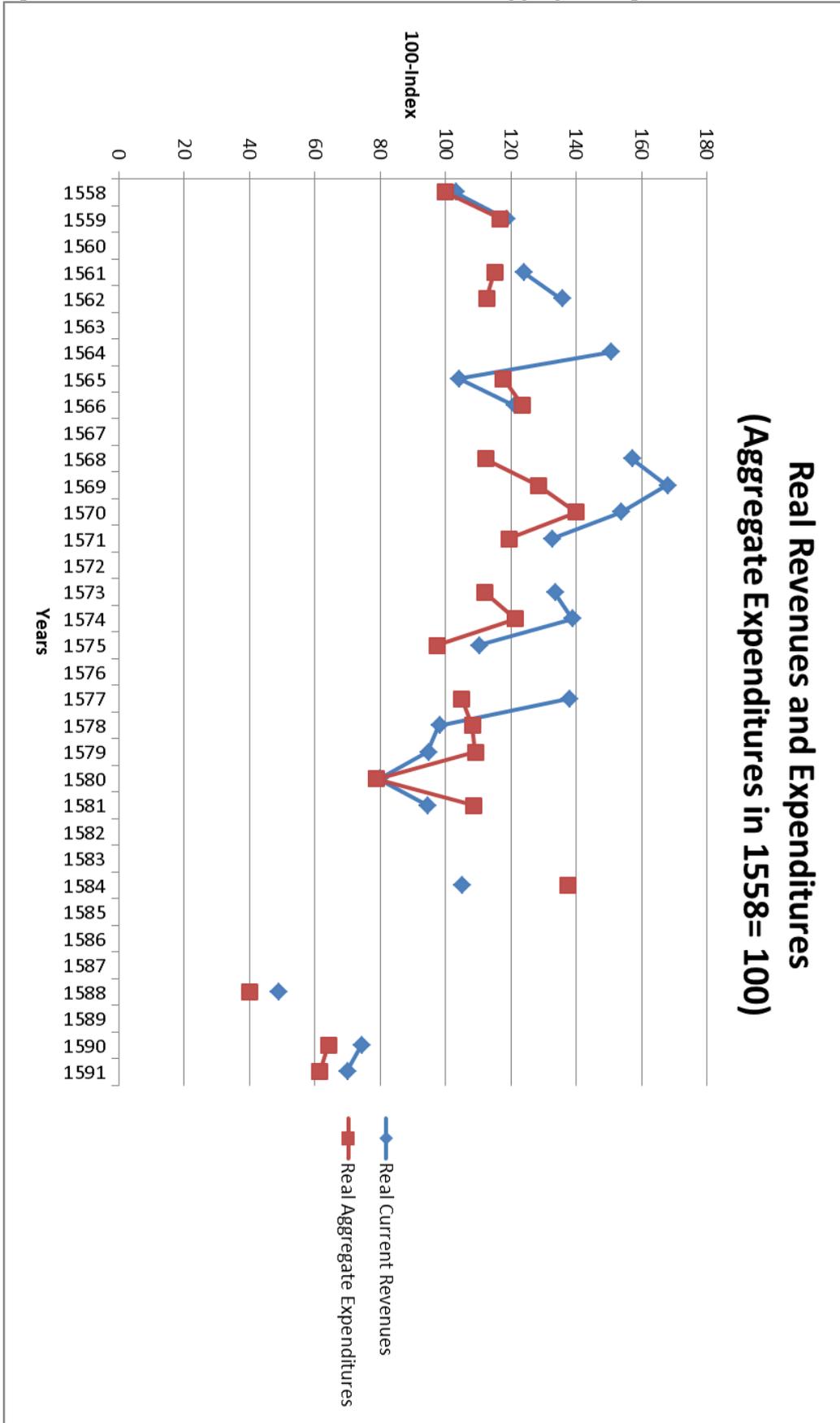
Graph 4.1: Agricultural Revenues in Cash (at Current Prices), 1558-1591



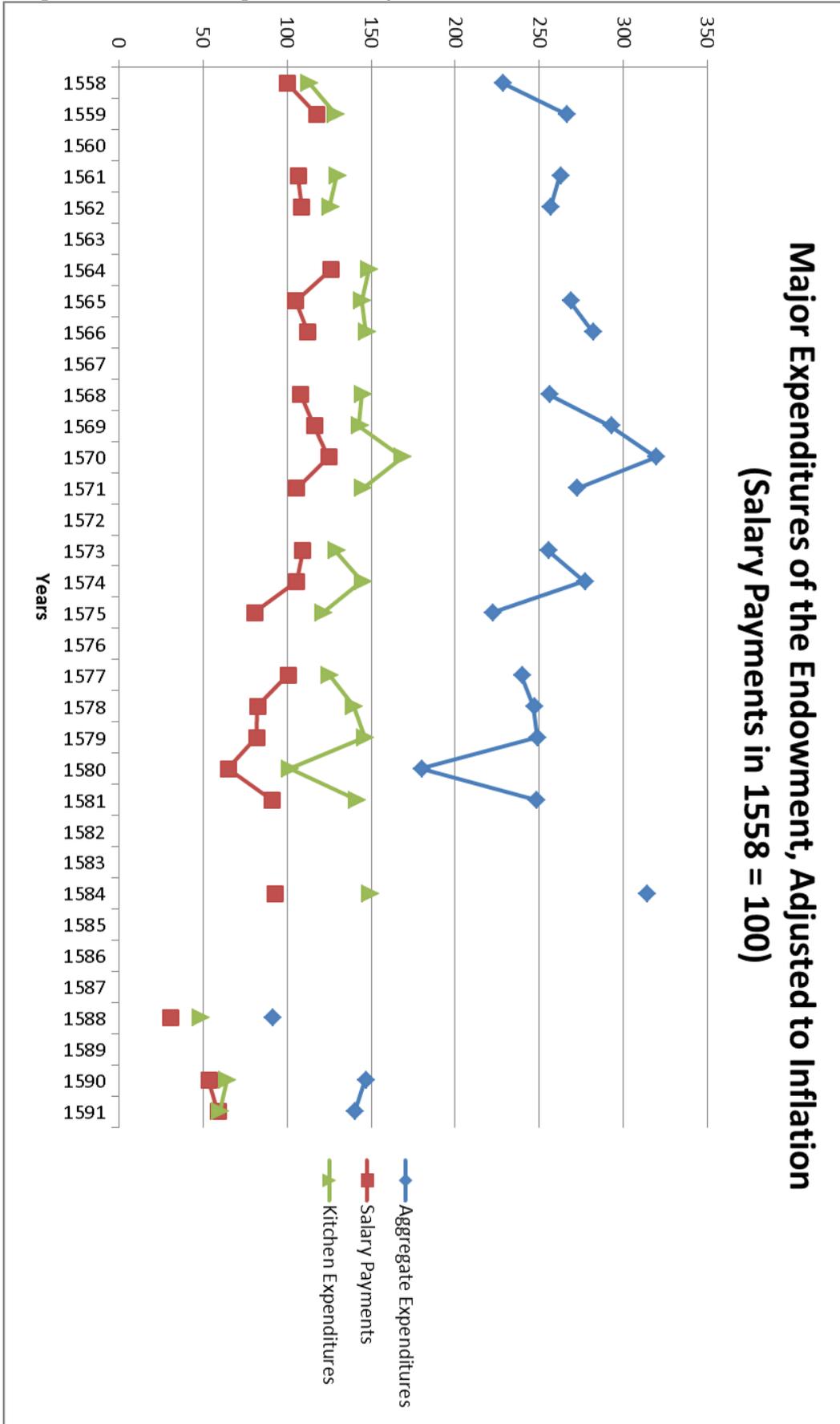
Graph 4.2: Agricultural Revenues in Cash (adjusted to Inflation), 1558-1591



Graph 4.3: Index of Real Current Revenues and Aggregate Expenditures, 1558-1591



Graph 4.4: Index of Expenditures (adjusted to Inflation), 1558-1591



Graph 4.5: Index Prices, Monthly Revenues and Salary Payments, 1558-1591

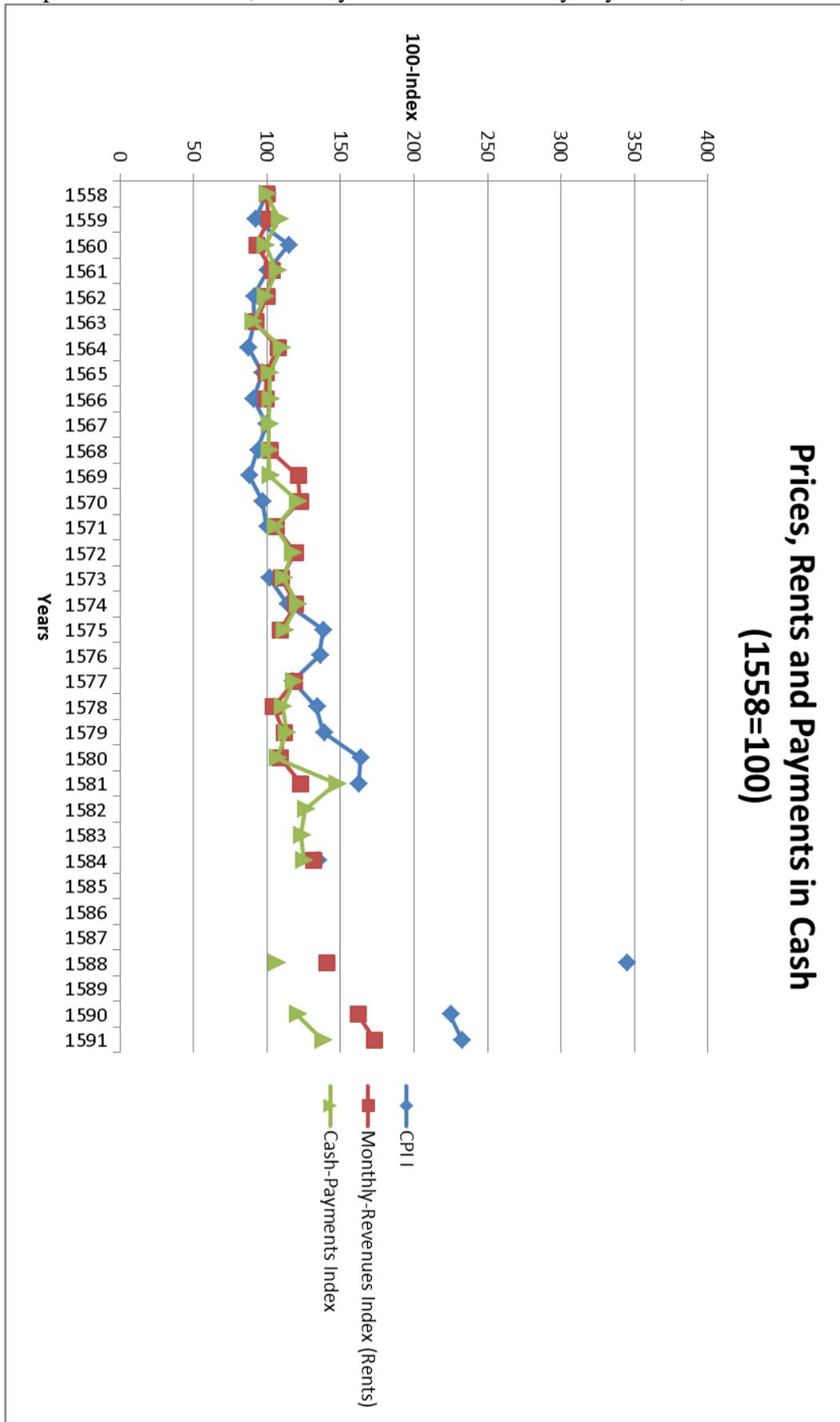


Table 4.3: Annual Accounts of Wheat Stock, 1558-1591

	1558	1559	1560	1561	1562
Total Revenues	17110	17811	17102	18650	1791570
Stock from the Previous Year	3552	4520	3153	4977	4355
Current Revenues	13558	13291	14470	13674	13469
Annual Purchases	240	120	557	580	
Revenues in Kind	13318	13171	13913	13094	13469
Consumption	12590	14658	12125	14295	14307
Sales	80	1520		1300	1920
Kitchen Expenditures	8670	9795	8655	9505	8912
Salary Payments	3840	3343	3470	3490	3475
Surplus	4520	3153	4977	4355	3506
Tithes Receivable from the Villages					
Surplus in Stock	4520	3153	4977	4355	3506

	1563	1564	1565	1566	1567
Total Revenues	16331	15322	13879	14445	13831
Stock from the Previous Year	3506	1536	365	1014	
Current Revenues	12986	13894	13524	13432	16331
Annual Purchases	530	1480	1100	678	2880
Revenues in Kind	12456	12414	12424	12754	13451
Consumption	14795	14957	12805	14144	12155
Sales	2280	1300	360	1700	4100
Kitchen Expenditures	8725	9867	8655	8654	
Salary Payments	3790	3790	3790	3790	3470
Surplus	1536	365	1074	301	1636
Tithes Receivable from the Villages					
Surplus in Stock	1536	365	1074	301	1636

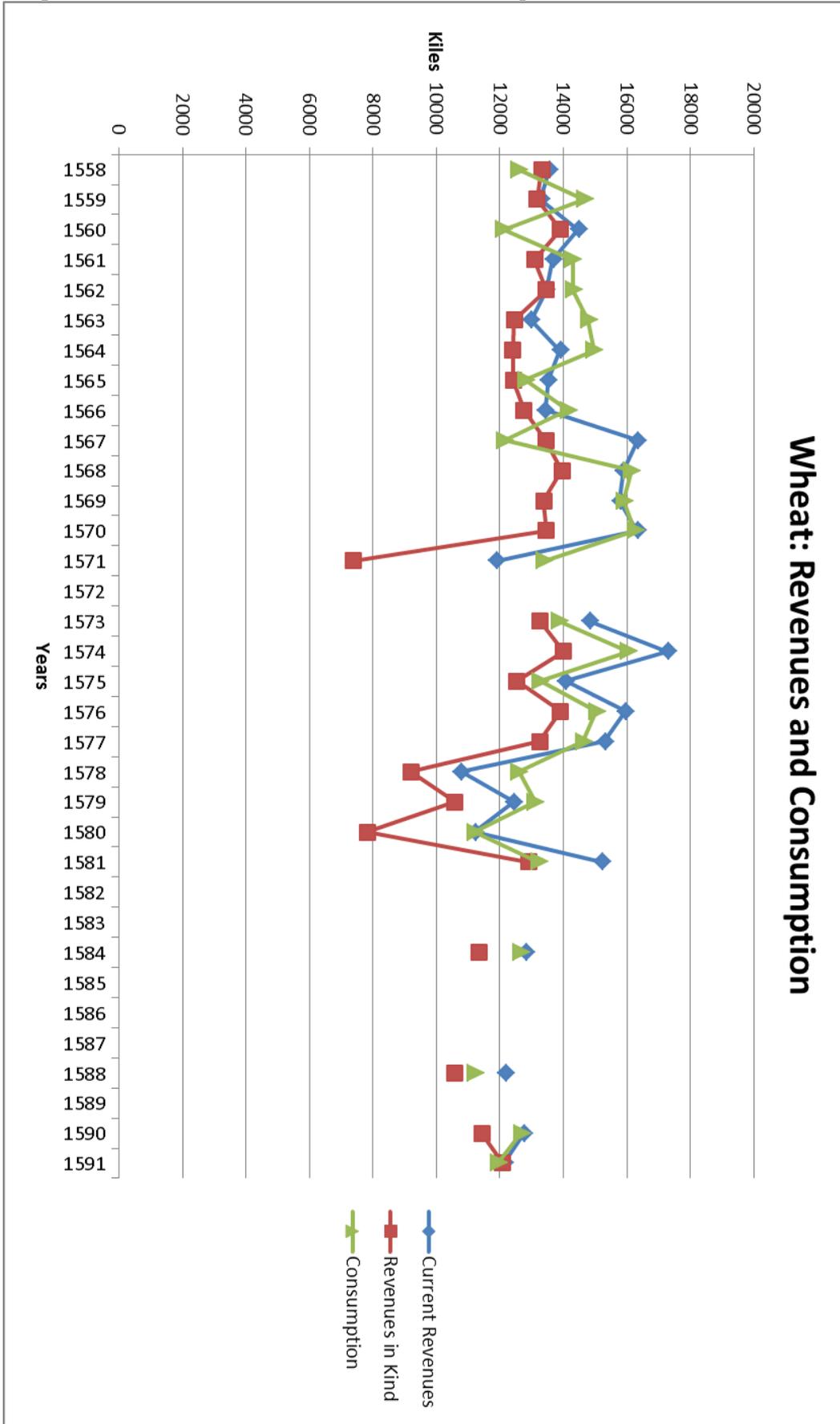
	1568	1569	1570	1571	1573
Total Revenues	18168	17806	18223	13859	17230
Stock from the Previous Year	2276	2024	1902	1969	3441
Current Revenues	15893	15780	16322	11891	14832
Annual Purchases	1936	2400	2865	4507	1560
Revenues in Kind	13957	13380	13457	7384	13272
Consumption	16144	15904	16254	13404	13884
Sales	3920	3560	2515	800	1450
Kitchen Expenditures	8734	8654	10049	9004	8864
Salary Payments	3490	3690	3690	3600	3570
Surplus	2024	1902	1969	455	3341
Tithes Receivable from the Villages					1000
Surplus in Stock	2024	1902	1969	455	2341

	1574	1575	1576	1577	1578
Total Revenues	21828	18644	21186	21442	17228
Stock from the Previous Year	3341	4574	5379	6146	3254
Current Revenues	17287	14070	15957	15296	10784
Annual Purchases	3274	1532	2052	2036	1590
Revenues in Kind	14013	12538	13905	13260	9194
Consumption	16054	13271	15040	14637	12600
Sales	3768	687	2310	1872	
Kitchen Expenditures	8676	8974	8980	9015	8850
Salary Payments	3610	3610	3750	3750	3750
Surplus	4574	5379	6146	6805	4308
Tithes Receivable from the Villages	948	2096	3393	3551	1608
Surplus in Stock	3626	3283	2753	3254	2700

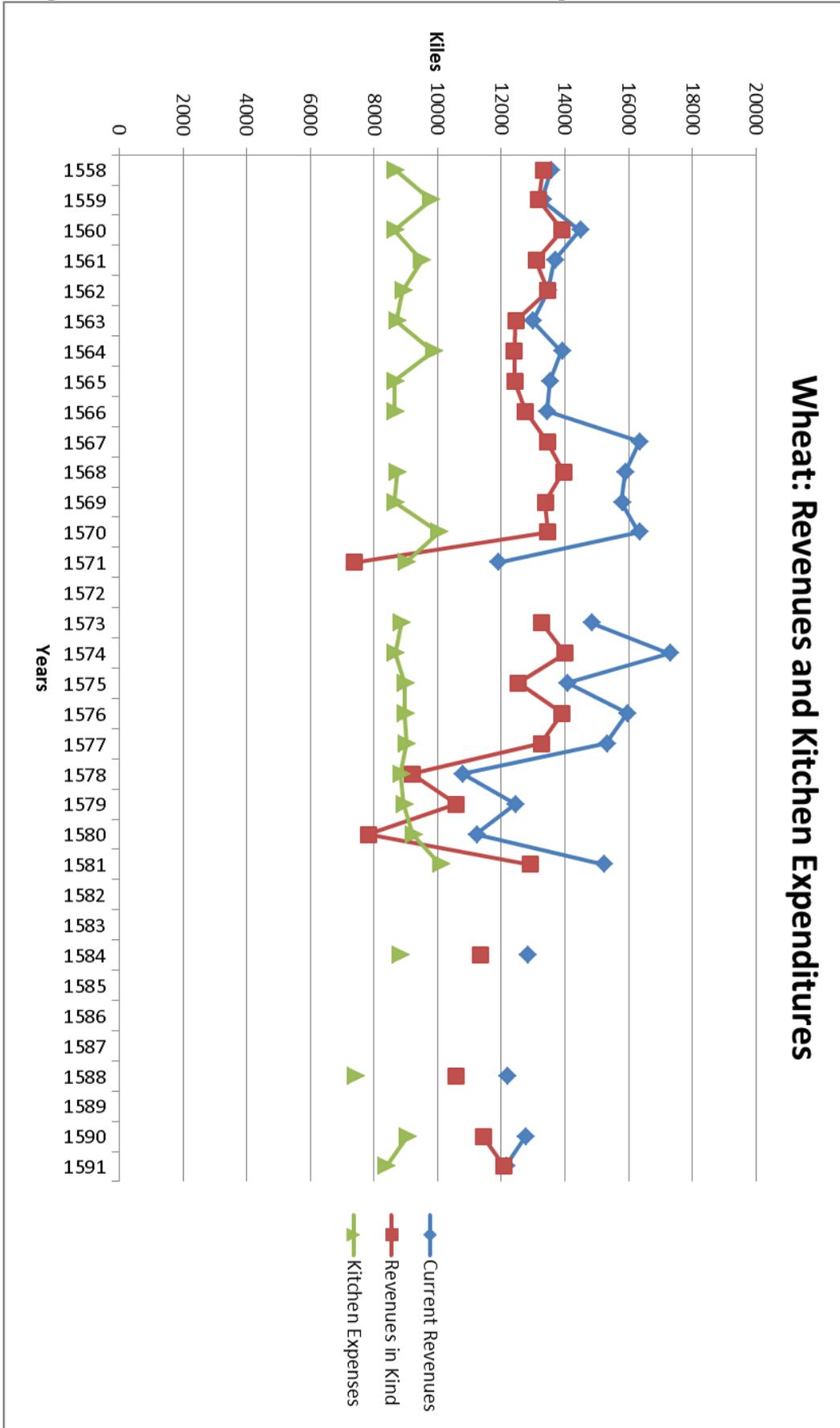
	1579	1580	1581	1584	1588
Total Revenues	16745	14842	18851	16855	12244
Stock from the Previous Year	4308	3637	3627	2840	63
Current Revenues	12447	11210	15224	12815	12181
Annual Purchases	1858	3385	2312	1460	1589
Revenues in Kind	10589	7825	12912	11355	10592
Consumption	13108	11215	13227	12654	11223
Sales	400	40	332		412
Kitchen Expenditures	8938	9225	10085	8824	7408
Salary Payments	3770	1950	2810	3830	3403
Surplus	3637	3627	5624	4201	1022
Tithes Receivable from the Villages	1532	3378	2920	2980	731
Surplus in Stock	2105	1285	2714	1221	291

	1590	1591
Total Revenues	16992	16682
Stock from the Previous Year	4084	4587
Current Revenues	12754	12141
Annual Purchases	1318	45
Revenues in Kind	11436	12096
Consumption	12675	11942
Sales	525	200
Kitchen Expenditures	9060	8386
Salary Payments	3090	3356
Surplus	4587	4740
Tithes Receivable from the Villages		
Surplus in Stock	4587	4740

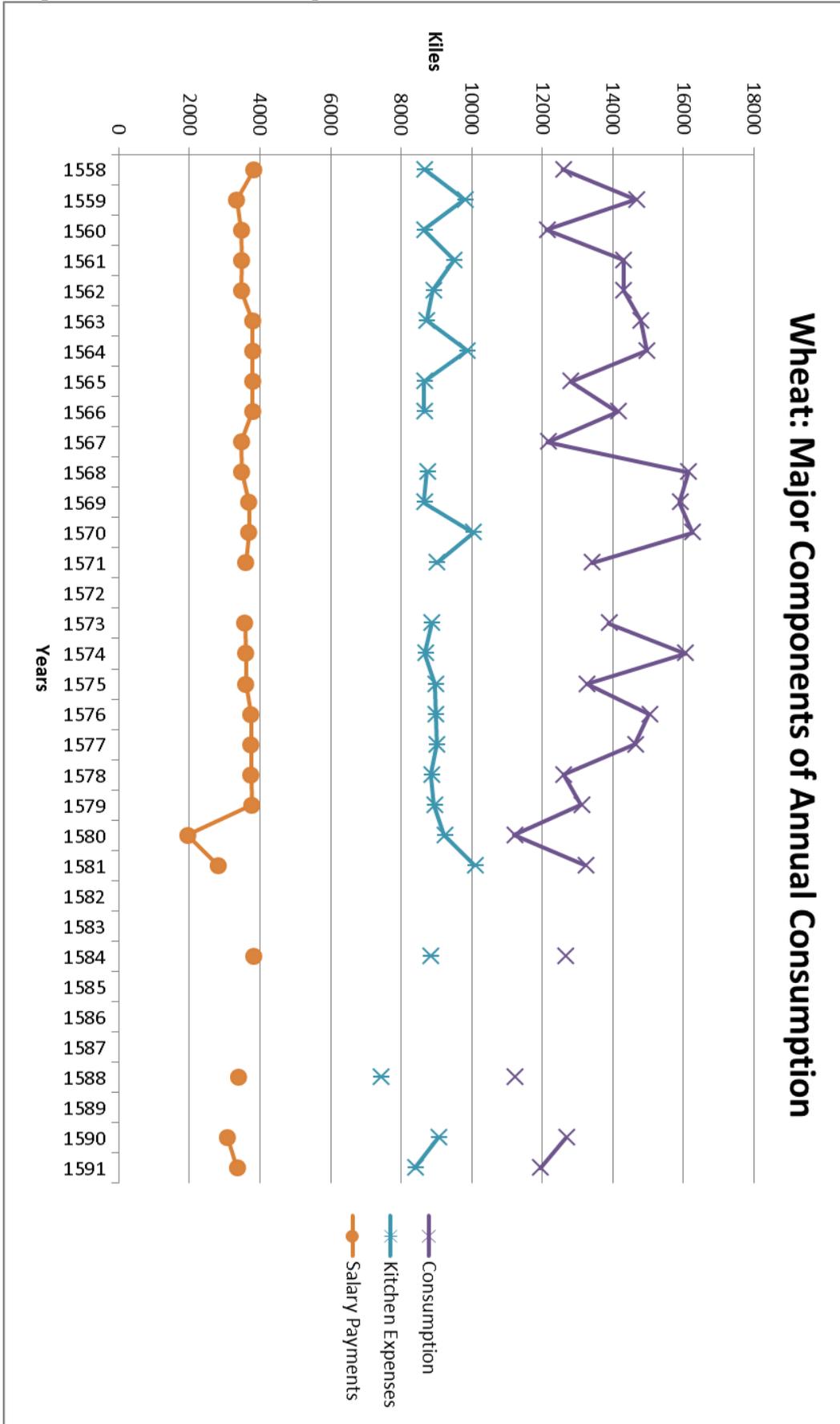
Graph 4.6: Wheat: Annual Revenues and Consumption, 1558-1591



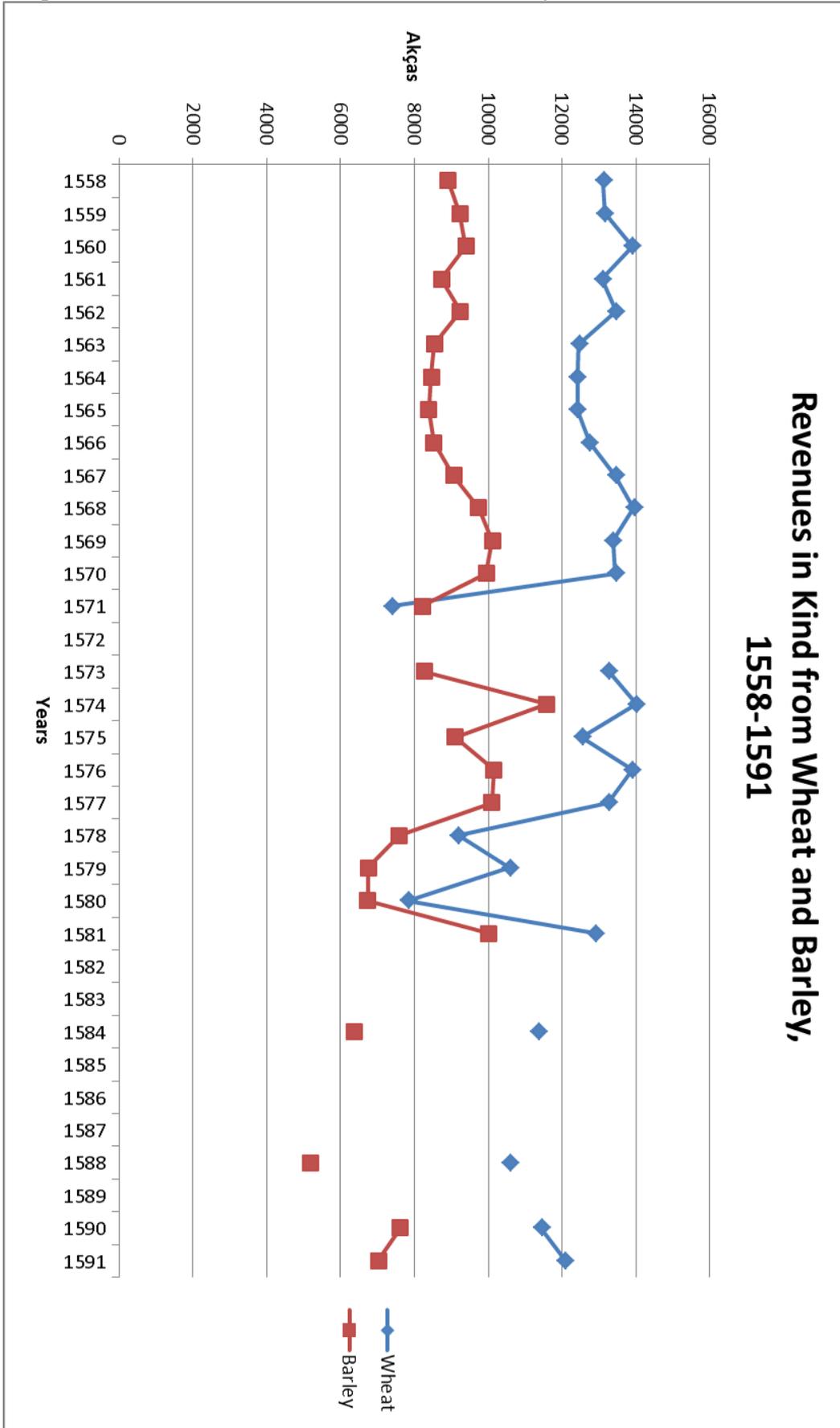
Graph 4.7: Wheat: Annual Revenues and Kitchen Expenditure, 1558-1591



Graph 4.8: Wheat: Annual Expenditures, 1558-1591



Graph 4.9: Revenues in Kind from Wheat and Barley, 1558-1591



APPENDIX E

Table 5.1: Wheat and Barley Tithes, 1558-1591

Date	Kayapa		Kite		Görükle		Tansarı	
	Wheat	Barley	Wheat	Barley	Wheat	Barley	Wheat	Barley
1558	57,5	57	913	635	3132	903,5	2479	639
1559	233	84,5	915,5	614	3154,5	903,5	2492,5	635
1560	313,25	84,25	915,5	574	3154,5	903,5	2492,5	635
1561	212,5	70,75	941,5	603	3056,25	847	2442,5	619
1562	356,25	102,5	910,25	722,5	3118	892	2483	726
1563	231,25	118,5	845	505	2940,5	625	2438	625
1564	267,75	117	905	545	2846	827	2463	665
1565	60	60	845	505	2945	627	2423	625
1566	154,5	29,25	825	485	3090	825	2423	625
1567	212,5	108,5	825	655	3090	825	2423	697
1568	335	176	905	535	3156,25	835	2434,5	605
1569	292	146	881	537	3166,5	857	2445,75	620
1570	161,5	132	825	485	3112	835	2413	618
1571	172,5	80	596	235	67	0	50	28,5
1573	385,25	178	828	565	3179	910	2421,5	615
1574	388	236	865	608	3170	912	2403	615
1575	347,25	227,25	865	585	3174	910	2405	615
1576	455,5	215	985	645	3190	905	2394	622
1577	367,5	256	885	605	3193	911,5	2375	615
1578	463	254	865	585	0	0	2372	615
1579	388	236,5	921,5	585	3195	905	2372	615
1580	297	197	895	635	3205	905	2386	615
1581	509,5	291	970,5	659	3292,5	916	2400,5	615
1584	388	61	1025	585	3217,5	905	2278	495
1588	588	224,25	885	605	3268,5	910	2379	582
1590	483	197	1105	755	3235	925	2361	615
1591	595,5	238	865	595	3244	940	2440	615

Date	Çeltükçi		Boğaz		Adıbini		Şib 'Ali	
	Wheat	Barley	Wheat	Barley	Wheat	Barley	Wheat	Barley
1558	2435,5	2435,5	2370	2670	837,5	686,25	786,125	777,5
1559	2435,5	2435,5	2570	2670	397,5	618,25	819	1159,25
1560	2435,5	2435,5	2570	2670	900	820	1000	1175
1561	2435,5	2435,5	2570	2670	743	614	619,125	779
1562	2435,5	2435,5	2572,5	2726	777,75	1028	870,5	1153,75
1563	2435,5	2435,5	2545	2625	447	807	449	703
1564	2435,5	2435,5	2545	2625	454,25	630,25	743,75	752,75
1565	2435,5	2435,5	2545	2625	545,75	929,25	568	530
1566	2435,5	2435,5	2545	2625	529,5	677,5	655	751
1567	2435,5	2435,5	2547,5	2640	884	946,5	934,75	918,5
1568	2435,5	2435,5	2545	2625	802,75	1032,5	1202,5	1413,25
1569	2435,5	2435,5	2545	2625	636,25	1261,5	875,5	1552
1570	2435,5	2435,5	2530	2625	891	1412,5	1011	1327,5
1571	2122	2375	2520	2620	1031	1474	825	1400
1573	2435,5	2435,5	2520	2620	615	558	810	316
1574	3312	4409	2520	2620	767	1290	510	818
1575	2435,5	2435,5	2530	2625	473	915	308	800
1576	2435,5	2435,5	2530	2625	1230	1465	685	1250
1577	2435,5	2435,5	2530	2625	827	1582	647	1072
1578	2435,5	2435,5	2530	2625	330	668	198	414
1579	380	400	2450	2545	476	804,5	406,5	657
1580	645	1020	40	1216	240	1490	117	656
1581	2435,5	2435,5	2450	2545	526	1232	327	1333
1584	1500	1500	1500	1500	801,75	914	644,75	400
1588	1480	1400	1480	1480	599,75	778,25	288	800
1590	1527,5	1527,5	1460	1460	974	1208	530	1119
1591	1527	1527	1593	1500	1185	1039	671	624

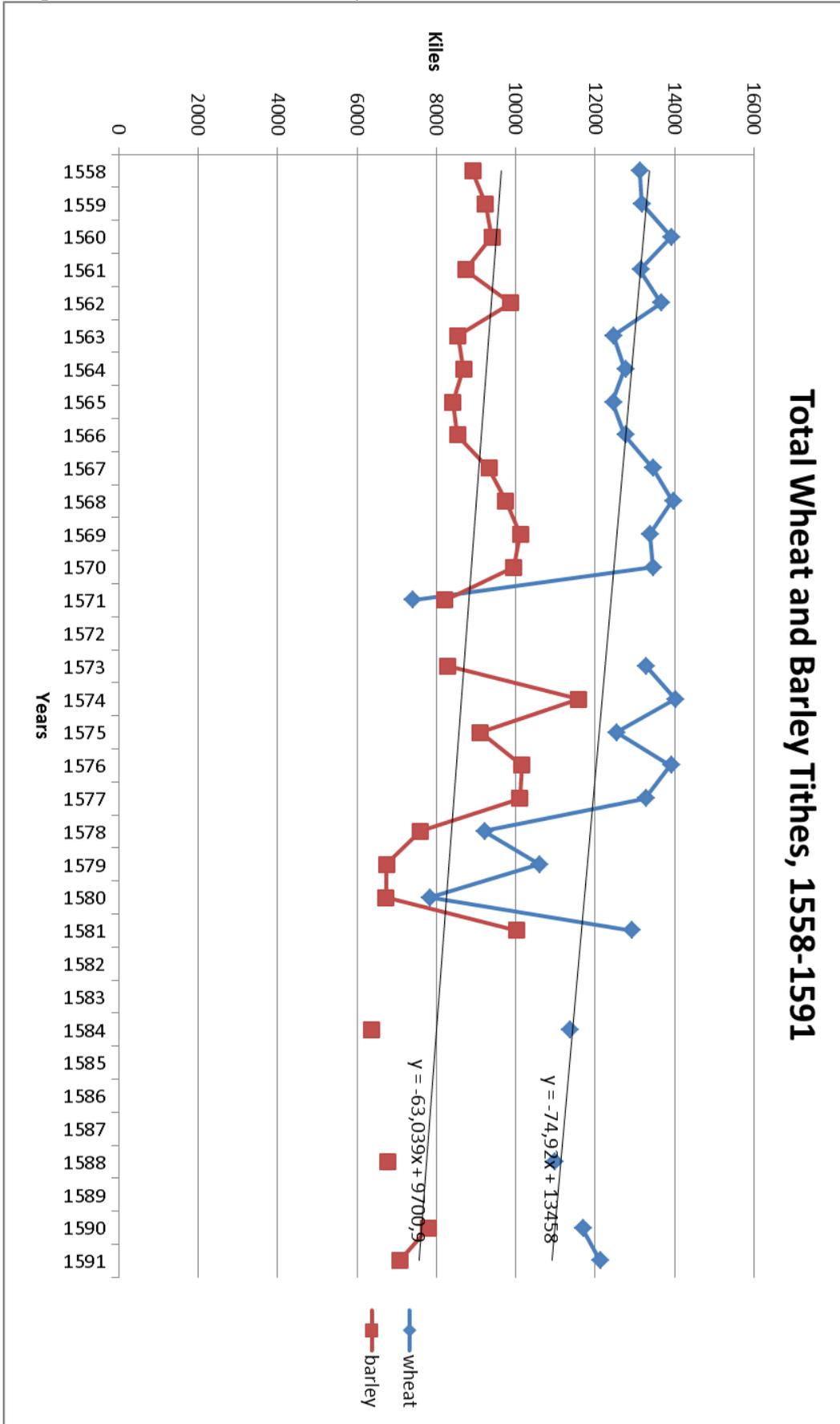
Table 5.2: Annual Grain Tithes from the Endowments' Villages, 1558-1591²⁹⁹

	Wheat	Barley	Oat	Vetch	Rice
1558	13118,13	8919	736,5	62,75	7700,5
1559	13171	9236	712,75	75,5	3193
1560	13913	9401	632	5,5	4208
1561	13133,63	8737,25	1244,75	65,5	11741,5
1562	13652,5	9879,25	1856,25	184,75	6723,125
1563	12456	8540	922,25	202	4835,5
1564	12750,5	8685,5	865,25	38	5476
1565	12446,25	8415,75	778	20	1787,5
1566	12756,5	8536,75	797,5	91,5	2683
1567	13453,75	9327,75	814	22,75	5646
1568	13956,5	9750,75	855	31,75	5413
1569	13380	10120	922	74,5	4790,25
1570	13457	9948,5	783	43,5	6296
1571	7383,5	8212,5	674	27,5	5120
1573	13272,25	8275,5	968,5	25	3241
1574	14013	11586	988	5	7105
1575	12537,75	9112,75	661,5	2	956
1576	13905	10162,5	1330,5	9	2508
1577	13260	10102	1145	58	9060
1578	9193,5	7596,5	234,5	192	4245
1579	10589	6748	702,25	38	2481
1580	7825	6734	648,5	62	2278
1581	12911,5	10026,5	1108,75	64,5	3360
1584	11355	6360	685	17,5	3970
1588	10968,25	6779,5	704,25	85	4854,5
1590	11675,5	7806,5	405	20	2372
1591	12120,5	7078	886	80	1357

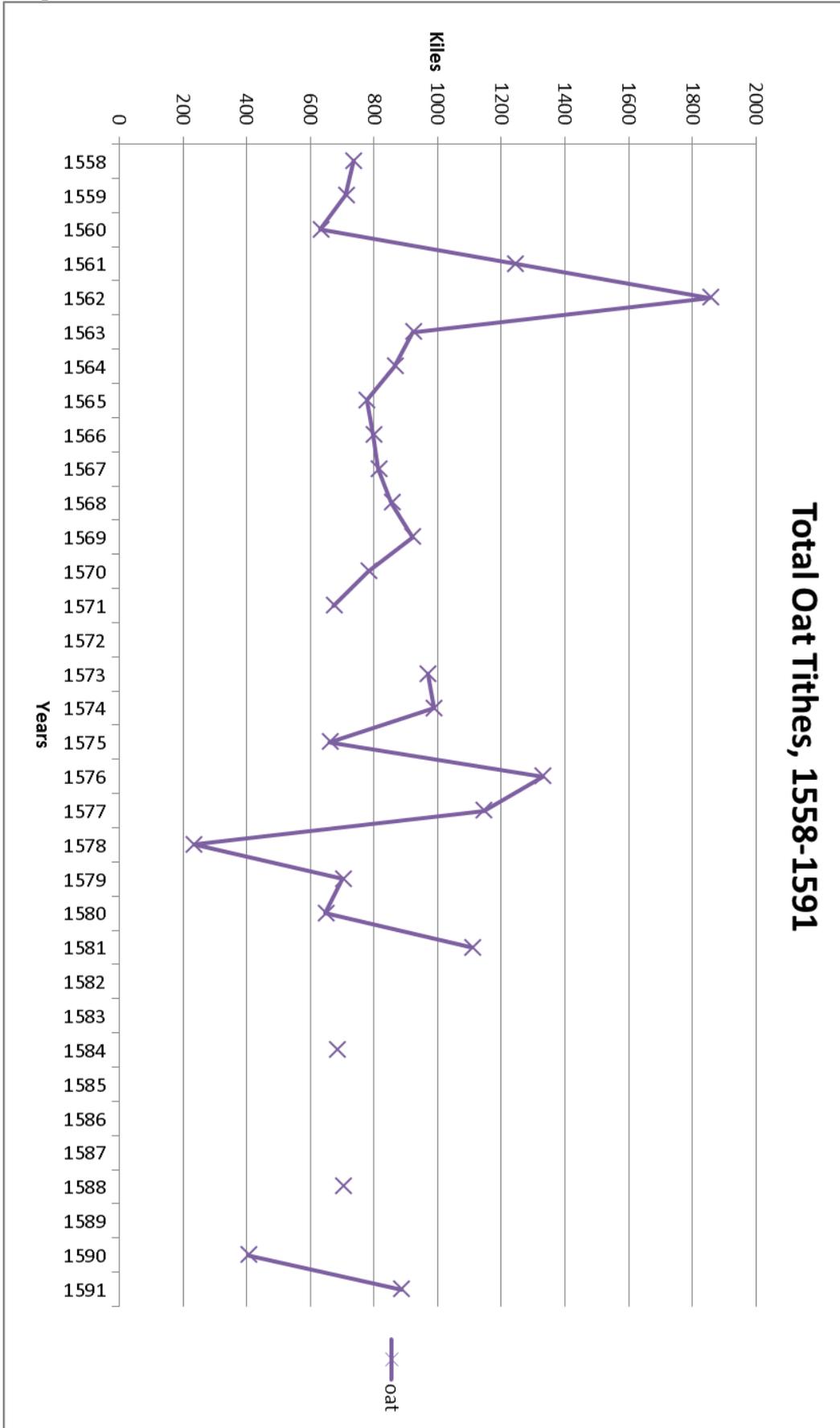
²⁹⁹ The table includes the cash payments and *kesims* as well.

	Millet	Lentil	Common Vetch	Cicer
1558	44,5	4	27,5	0
1559	99	0	38,75	0
1560	140	0	15	0
1561	130,75	6,5	41	1,25
1562	83,5	2	118	4
1563	162,5	1	95,5	3
1564	28,5	17	29,25	0
1565	70,75	0	0	0
1566	227,5	0	0	0
1567	47,75	14,75	0	0
1568	0	13	44,75	0
1569	54	20	55,75	0
1570	48	19,25	14	0
1571	95	0	0	0
1573	455	0	0	0
1574	314	21	0	0
1575	638	6,5	0	47
1576	136	0	0	0
1577	32	80	0	0
1578	132	0	0	0
1579	65,5	0	0	0
1580	335	38	0	0
1581	618	0	0	0
1584	36	28	0	0
1588	19,75	0	0	2
1590	0	0	0	0
1591	37	0	0	0

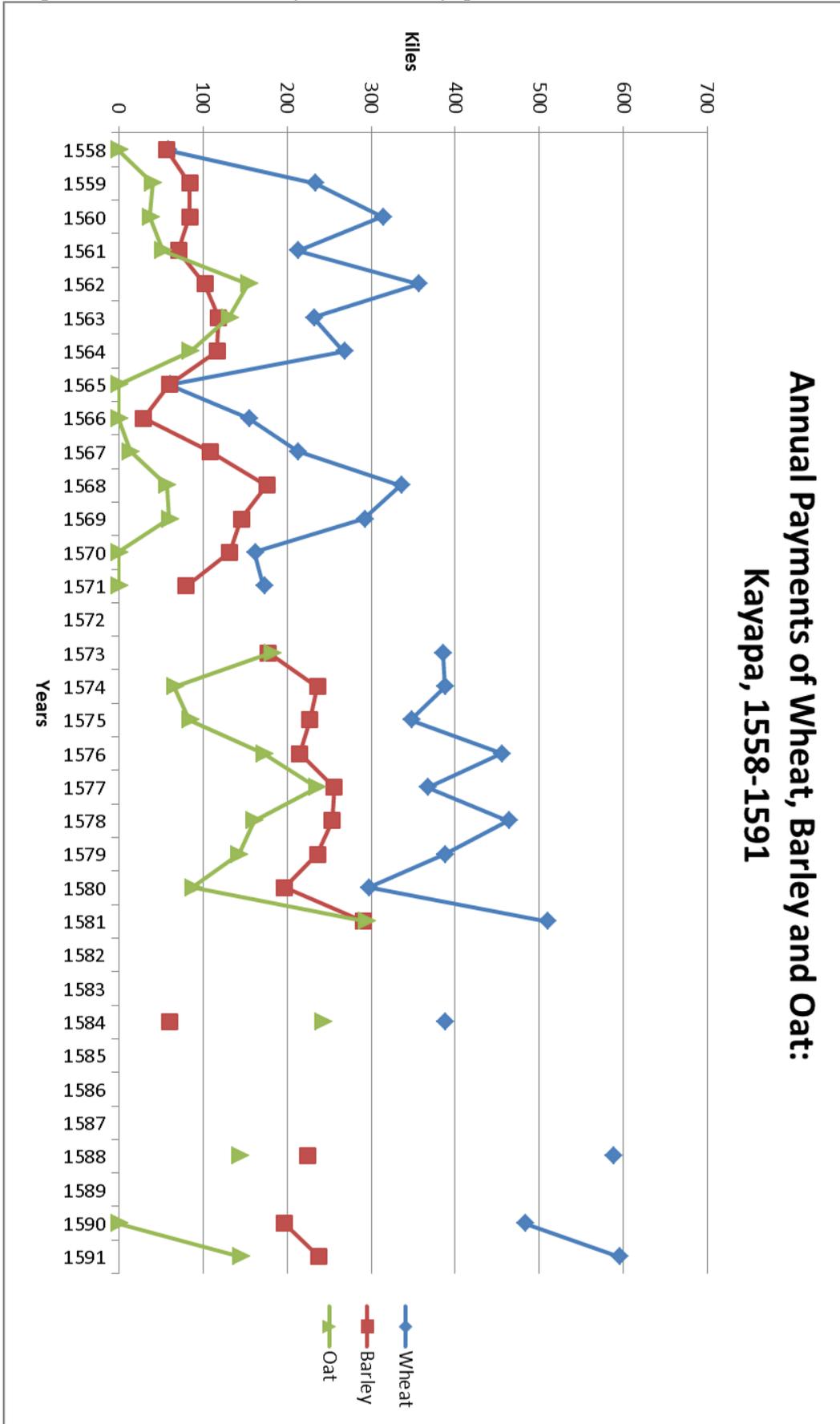
Graph 5.1: Total Wheat and Barley Tithes, 1558-1591



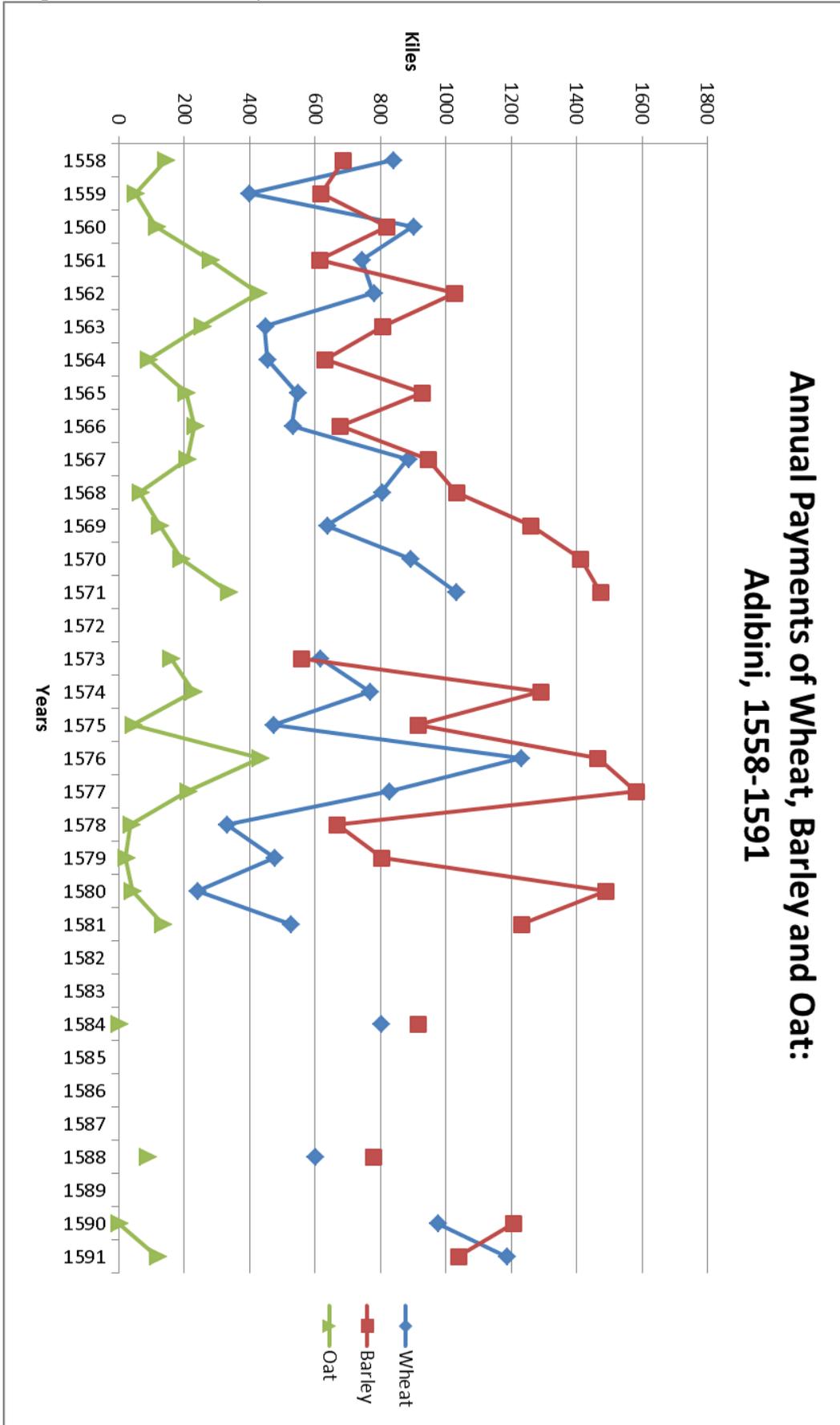
Graph 5.2: Total Oat Tithes, 1558-1591



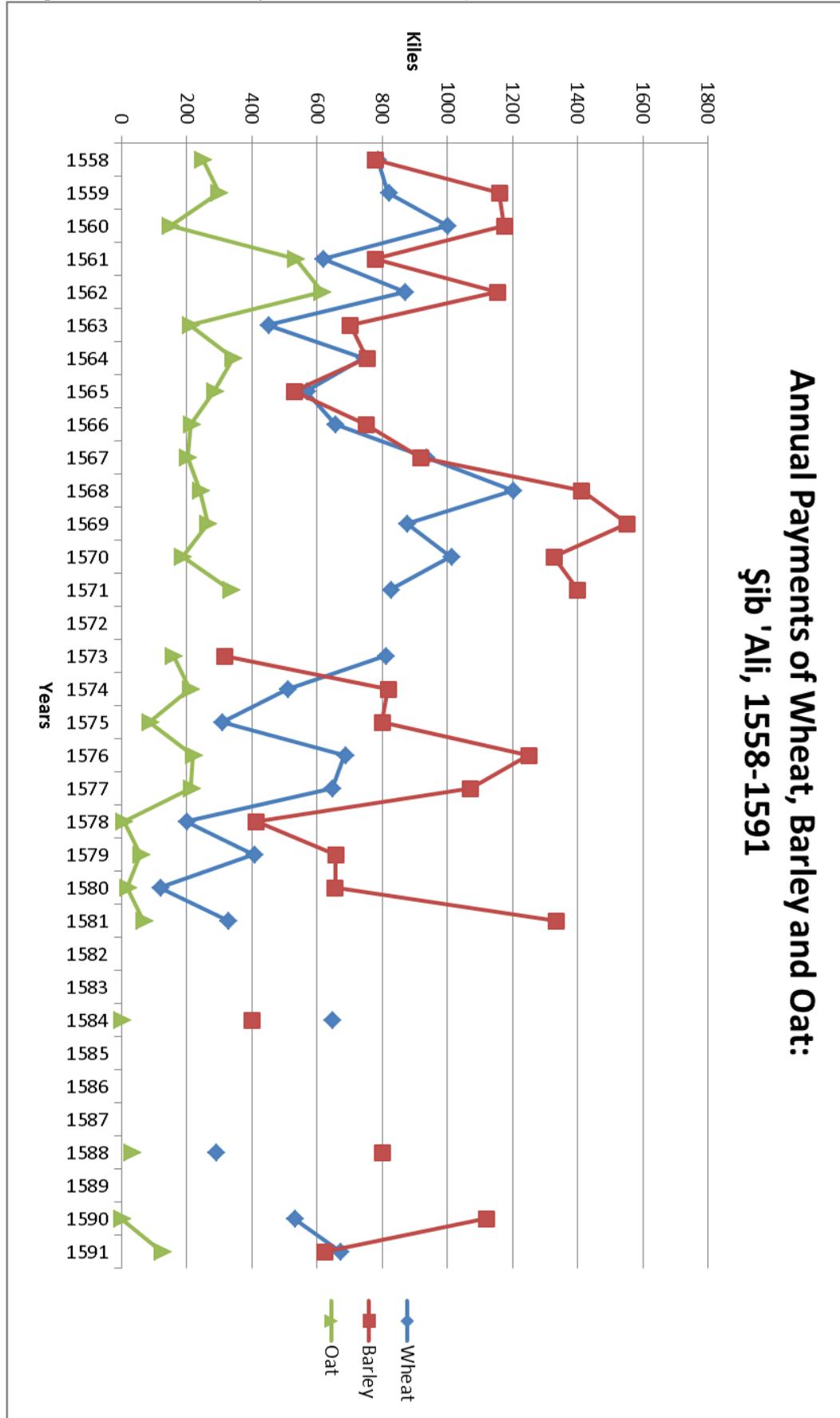
Graph 5.3: Wheat and Barley Tithes in Kayapa, 1558-1591



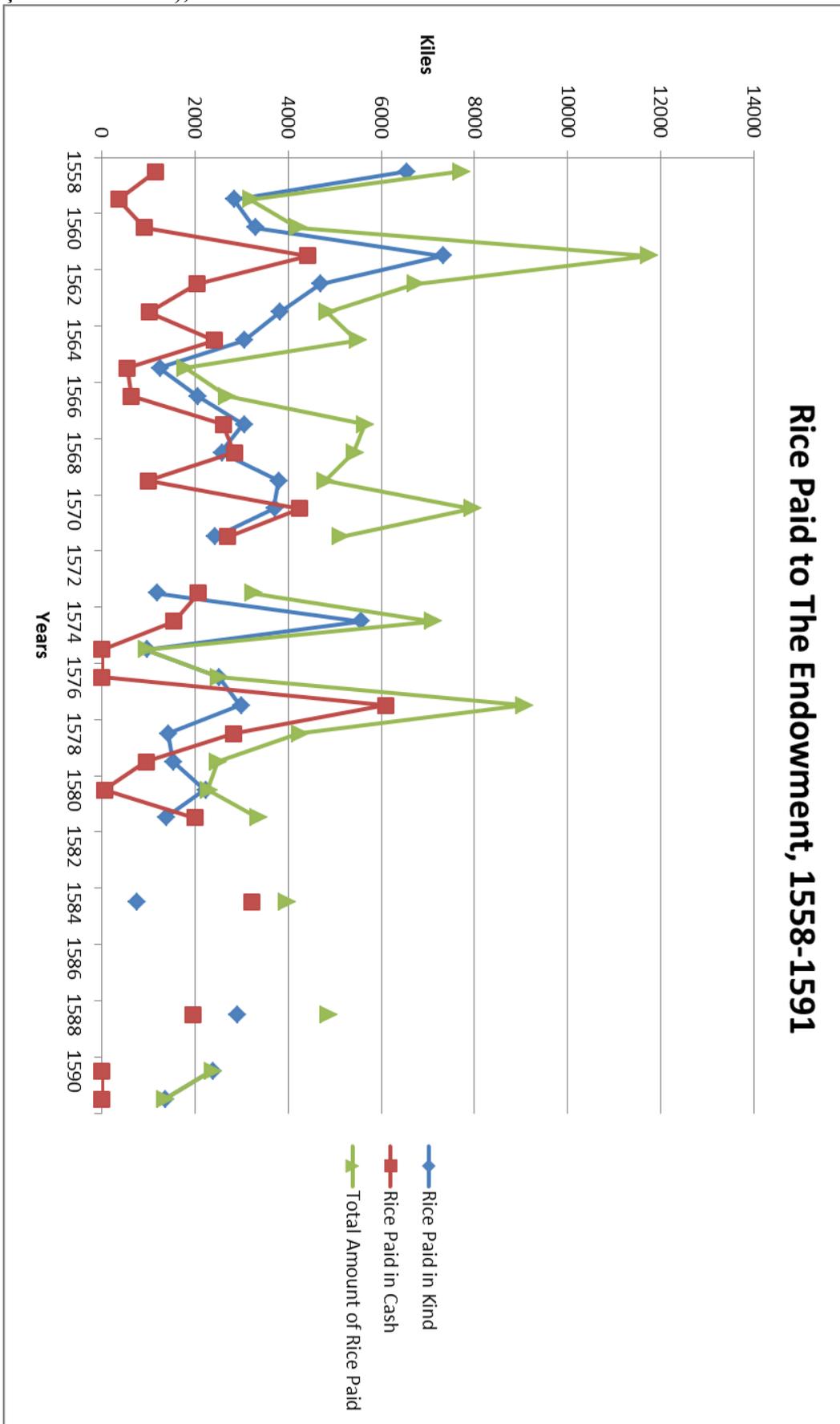
Graph 5.4: Wheat, Barley and Oat Tithes in Adibini, 1558-1591



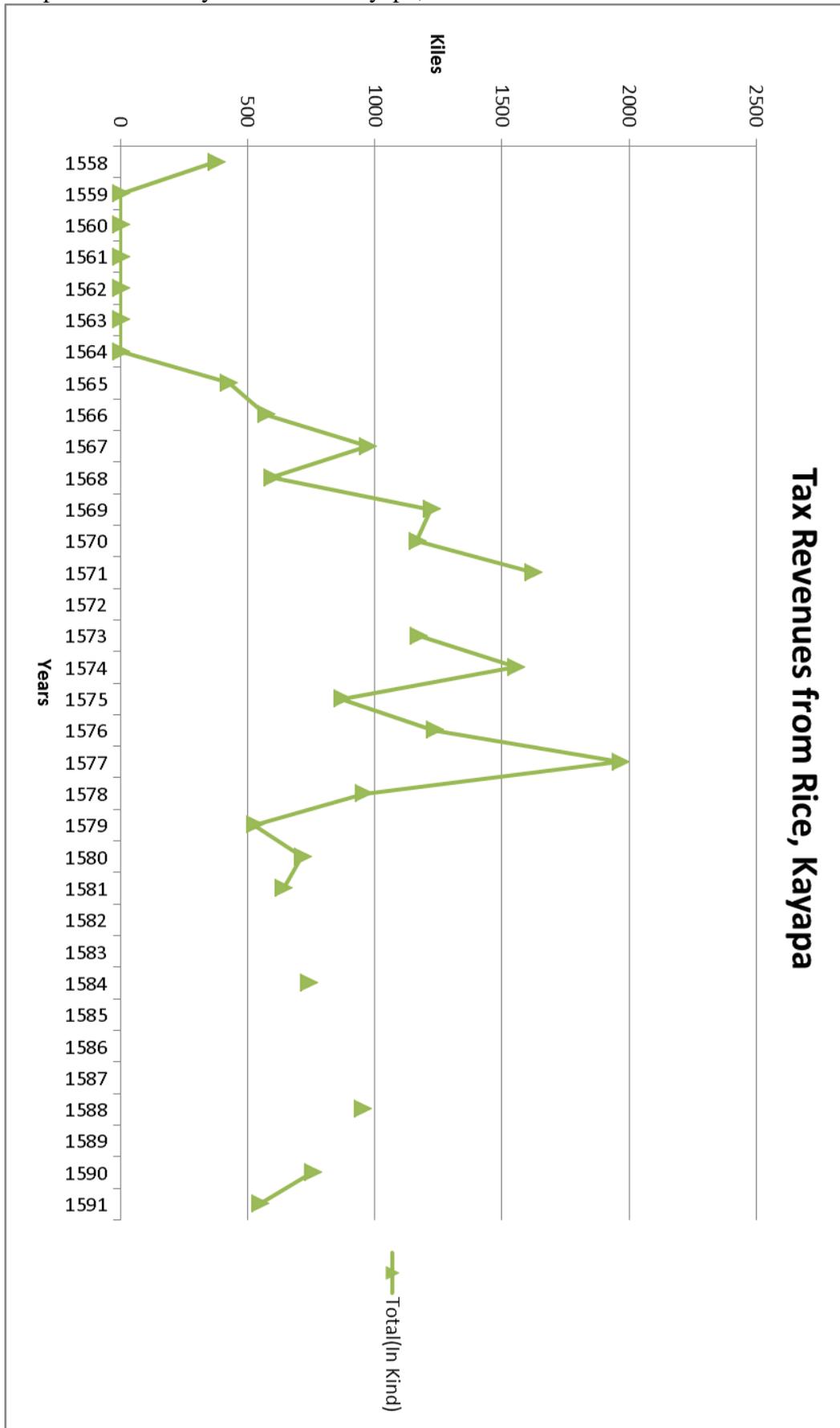
Graph 5.5: Wheat, Barley and Oat Tithes in Şib 'Ali, 1558-1591



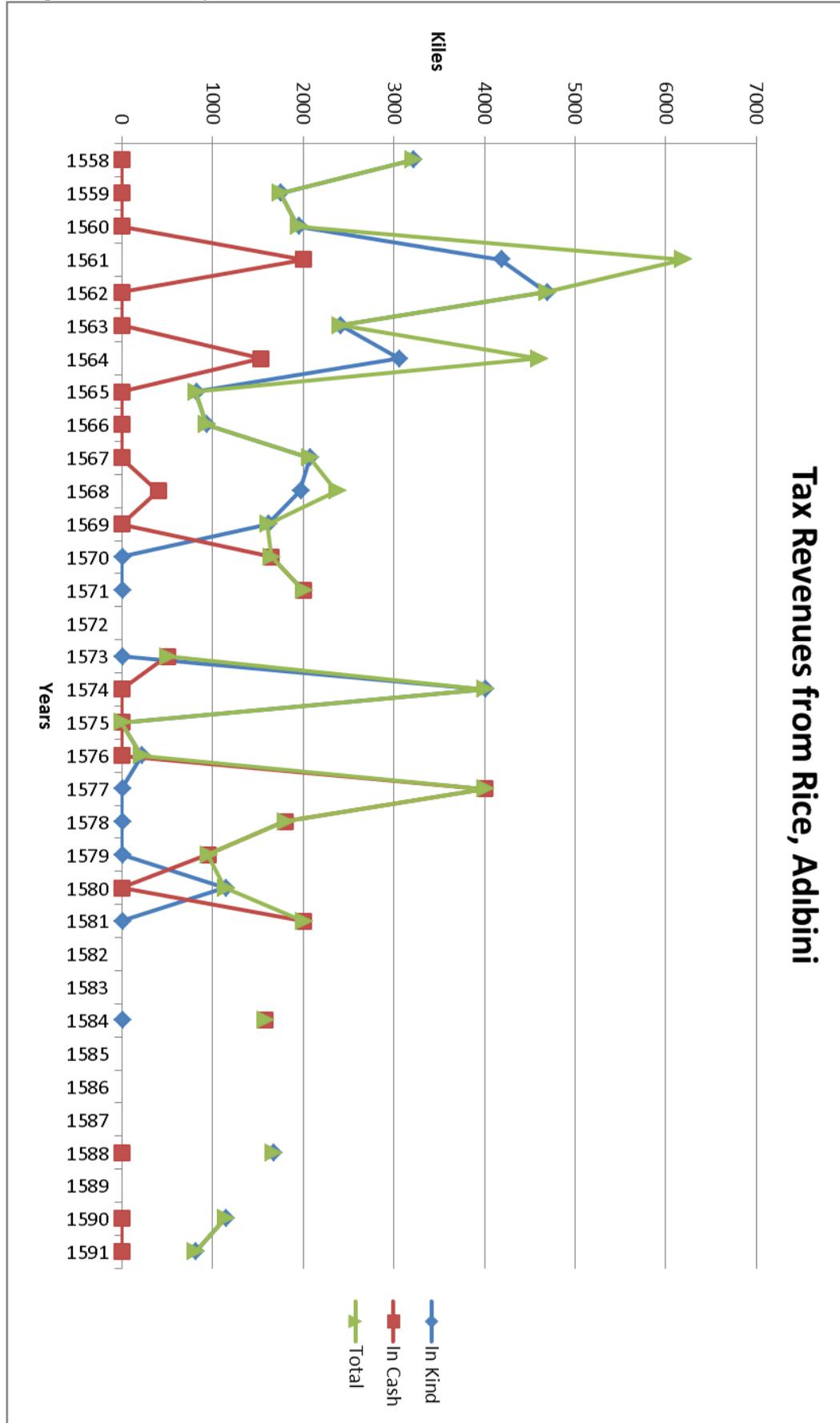
Graph 5.6: Annual Rice Payments from the Endowment's Villages (Kayapa, Adibini, Şib 'Ali and Ulu), 1558-1591



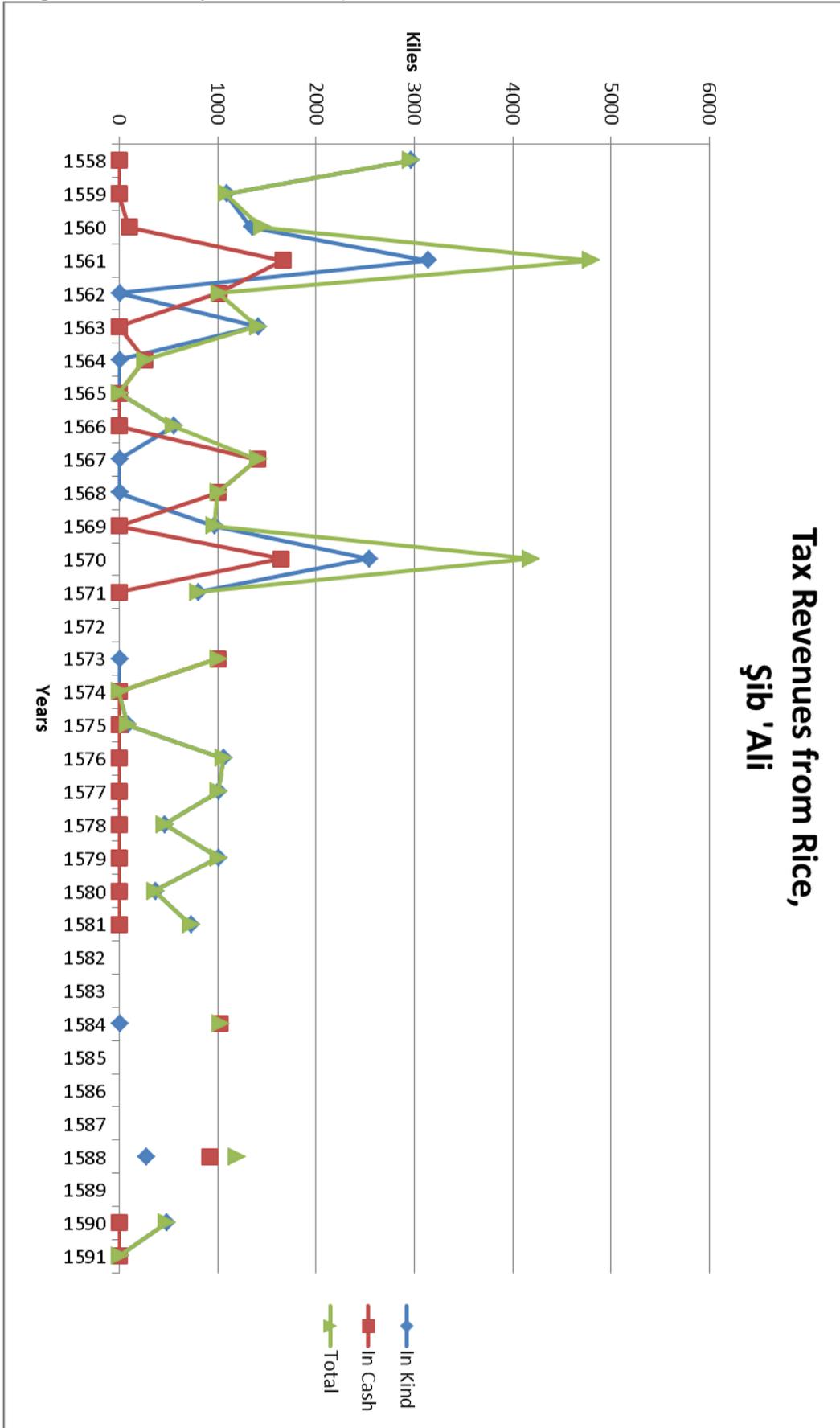
Graph 5.7: Rice Payments from Kayapa, 1558-1591



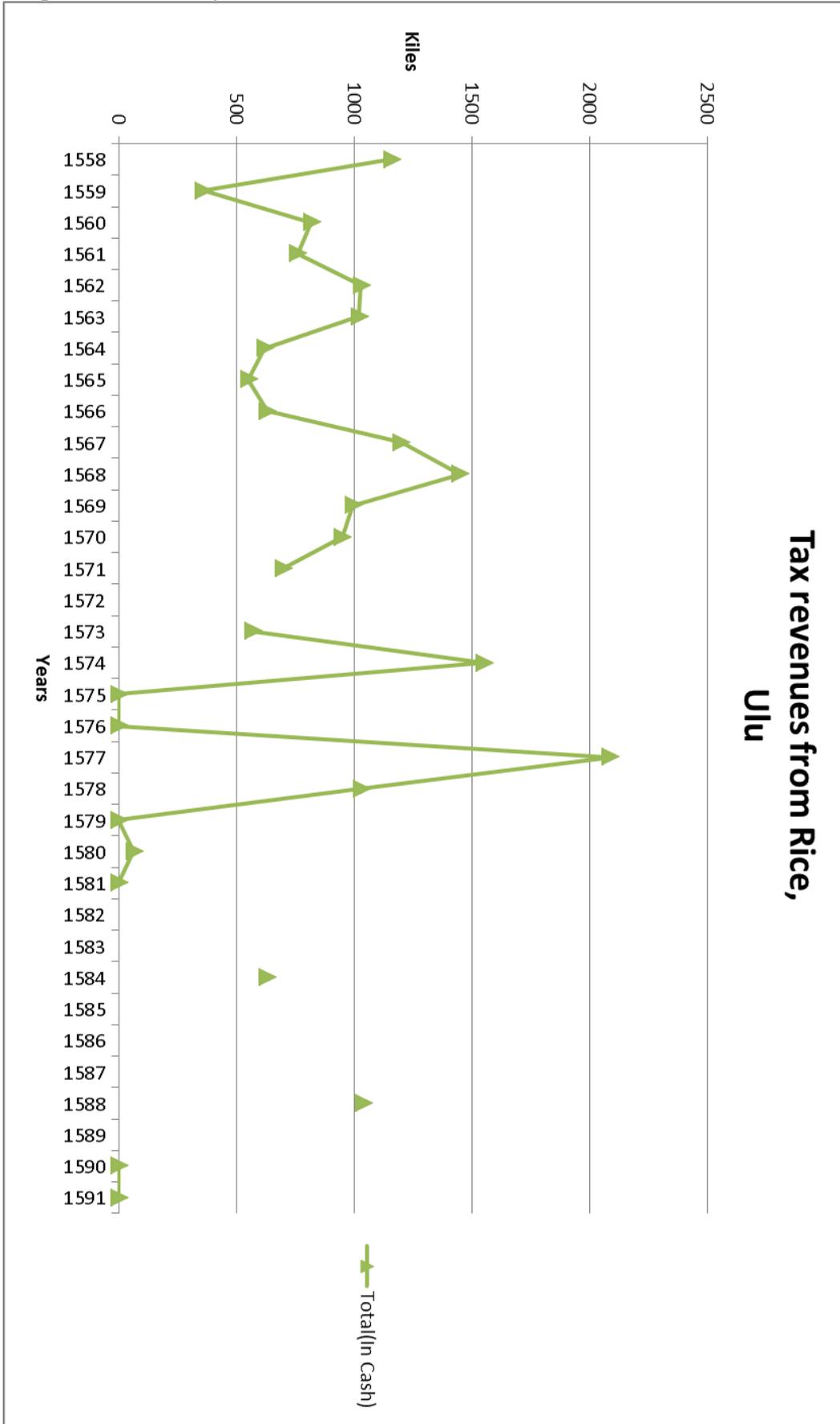
Graph 5.8: Rice Payments from Adibini, 1558-1591



Graph 5.9: Rice Payments from Şib 'Ali, 1558-1591



Graph 5.10: Rice Payments from Ulu, 1558-1591



Graph 5.11: Rice Prices in Bursa and the villages, 1558-1591

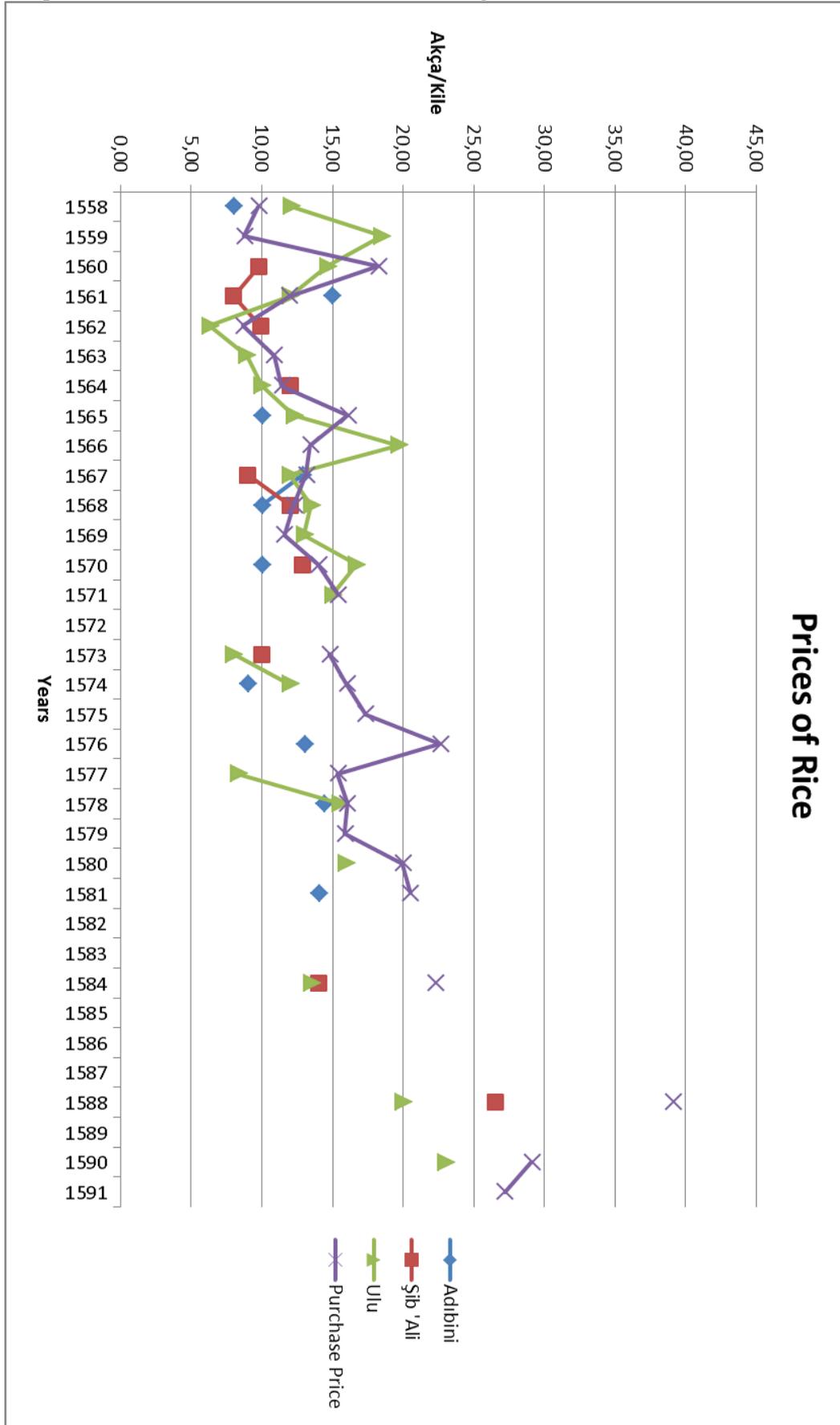


Table 5.3: Rice Yields, the Early 1570s³⁰⁰

Village	Seed	Survey Total (in <i>Akças</i>) ³⁰¹	Revenue (in <i>akças</i>) ³⁰²	Revenue (in <i>kiles</i>) ³⁰³	<i>Nefer</i>
Ulu (1569-70-71) ³⁰⁴	860	14436	13100	882	33
Adibini (1570-73) ³⁰⁵	640	13720	13142,5	1075	35
Kayapa (1570-72) ³⁰⁶	360	5577		1393	14
Şib Ali (1570-71) ³⁰⁷	800		10000	2490,5	32

Village	Upper Estimate ³⁰⁸			Lower Estimate ³⁰⁹		
	Total (Account Books)	Yield	Output per <i>Nefer</i>	Total (Account Books)	Yield	Output per <i>Nefer</i>
Ulu (1569-70-71)	2623	3,05	26,72	2463	2,86	24,05
Adibini (1570-73)	2790	4,36	30,71	2595	4,05	27,64
Kayapa (1570-72)	3146	8,74	99,50	2893	8,04	89,55
Şib Ali (1570-71)	5781	7,23	77,83	5328	6,66	70,05

³⁰⁰ The following calculations are based on the annual seed requirements predetermined in the endowment survey dated back to the reign of Selim II. I estimated its approximate compilation to be 1573 (981 in Islamic Calendar), the compilation date of the timars' fiscal survey in the region. The fact that the seed amounts are replications of those recorded in the endowment survey of 1521 reduces the reliability of the yield figures calculated here.

³⁰¹ The record in the survey registers is *hâsıl-ı çeltük*. İnalçık assumes it to be the cash equivalent of total rice output; in the registers, the word *hâsıl* means both total output and the income.

³⁰² Revenues recorded among the endowment's agricultural revenues in cash from the corresponding village.

³⁰³ Revenues recorded either among the *vakıf*'s agricultural revenues in cash or in the granary account books, among the revenues in kind from the corresponding village.

³⁰⁴ The average of the revenues from the years 1569, 1570 and 1571.

³⁰⁵ The average of the revenues from the years 1570 and 1573.

³⁰⁶ The average of the revenues from the years 1570 and 1572.

³⁰⁷ The average of the revenues from the years 1570 and 1571.

³⁰⁸ This calculation estimates the *vakıf*'s revenue to consist of its half share on the rice output.

³⁰⁹ This calculation estimates the *vakıf*'s revenue to consist of its half share on the rice output plus one tenth of the peasants' share.

Table 5.4: “Distribution of Income from Rice Production in Some of the Villages of Beypazarı Region in the Reign of Bâyezîd II (1481-1512)”³¹⁰

	Population		Total yield of hulled rice (in <i>mud</i>)	Total value (in <i>akça</i>)	Amount of seed (in <i>mud</i>)
	<i>Hâne</i> (Household)	<i>Mücerred</i> (Unmarried Adult Male)			
Boğa-Bökü	40	8	60	7200	12
Yassı-Kaya	22	3	100	12000	20
Akça-Kavak	18	2	70	8400	10
Günşah	41	8	55	6600	"0
Teksir-Bükü	10	5	100	12000	20
İncük	7	3	120	14400	30
Kapaklu	5				
Çomi	5		(15)	(1800)	3
Dikenlü	12	1	63	7560	12
Ulu	23	10	75	8000	15
Saru-kaya	8	3	(25)	3000	5
Sorka	4		15	(1700)	3

	Share of <i>Sipâhi</i> (in <i>mud</i>)	Per Capita Income of <i>Re'âyâ</i> (in <i>akça</i>)
Boğa-Bökü	24	260
Yassı-Kaya	40	192
Akça-Kavak	30	180
Günşah	22,5	55
Teksir-Bükü	40	320
İncük	45	550
Kapaklu		180
Çomi	6	40
Dikenlü	22,5	235
Ulu	30	109
Saru-kaya	10	109
Sorka	6	180

³¹⁰ İnalçık, “Rice Cultivation”, p. 112.

BIBLIOGRAPHY

Unpublished Primary Sources

Başbakanlık Osmanlı Arşivi Tapu Tahrir Defteri 113.

Başbakanlık Osmanlı Arşivi Maliyeden Müdevver 5470.

Tapu Kadastro Genel Müdürlüğü Kuyud-ı Kadime Arşivi 0541.

Tapu Kadastro Genel Müdürlüğü Kuyud-ı Kadime Arşivi 0570.

Published Primary Sources

166 Numaralı Muhasebe-i Vilayet-i Anadolu Defteri (937-1530): Dizin ve Tıpkıbasım (Ankara: T.C. Başbakanlık Devlet Arşivleri Genel Müdürlüğü, 1995).

438 Numaralı Muhasebe-i Vilayet-i Anadolu Defteri I (937-1530): Dizin ve Tıpkıbasım (Ankara: T.C. Başbakanlık Devlet Arşivleri Genel Müdürlüğü, 1993).

Akgündüz, Ahmet. *Osmanlı Kanunnameleri ve Hukuki Tahlilleri*, vol. 5 (İstanbul: FEY Vakfı Yayınları, 1992).

Akgündüz, Ahmet. *Osmanlı Kanunnameleri ve Hukuki Tahlilleri*, vol. 6 (İstanbul: FEY Vakfı Yayınları, 1993).

Akgündüz, Ahmet. *Osmanlı Kanunnameleri ve Hukuki Tahlilleri*, vol. 7 (İstanbul: FEY Vakfı Yayınları, 1994).

Barkan, Ömer Lütfi. "Türk-İslam Toprak Hukuku Tatbikatının Osmanlı İmparatorluğu'nda Aldığı Şekiller: İmparatorluk Devrinde Toprak Mülk ve Vakıflarının Hususiyeti", *İstanbul Hukuk Fakültesi Mecmuası* 3 (1942), pp. 906-942.

Yavaş, Doğan, Öcalan, Hasan Basri, Sevim, Sezai and Aydın, Hakan. *Bursa Vakfiyeleri-I*, (Bursa: Bursa Kültür Sanat ve Turizm Ticaret A.Ş., 2013).

Secondary Sources

- Abel, Wilhelm. *Agrarian Fluctuations in Europe: From the Thirteenth to the Twentieth Centuries* (London: Methuen & Co. Ltd, 1980).
- Abou El-Haj, Rifa‘at ‘Ali. *Formation of the Modern State: The Ottoman Empire, Sixteenth to Eighteenth Centuries* (New York: Syracuse University Press, 2005 [1991]).
- Abou El-Haj, Rifa‘at ‘Ali. *The 1703 Rebellion and the Structure of Ottoman Politics* (New York: ACLS History E-Book Project, 1984).
- Açıkel, Ali. *Changes in Settlement Patterns, Population and Society in North Central Anatolia: A Case Study of the District (Kaza) of Tokat (1574-1643)* (Ph.d diss. Manchester University, 1999).
- Agoston, Gabor. “A Flexible Empire: Authority and its Limits on the Ottoman Frontiers”, *International Journal of Turkish Studies* 9, no. 1-2, (2003), pp. 15-31.
- Agoston, Gabor. “Firearms and Military Adaptation: the Ottomans and the European Military Revolution, 1450-1800”, *Journal of World History* 25, no. 1, (March 2014), pp. 85-124.
- Akdağ, Mustafa. “Celâli İsyânlarının Başlaması” In *Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi Dergisi* 4, no. 1, (1945), pp. 25-37.
- Akdağ, Mustafa. “Timar Rejiminin Bozuluşu”, *Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi* 3, no. 4, (1945), pp. 419-431.
- Akdağ, Mustafa. *Türk Halkının Dirlik ve Düzenlik Kavgası: Celâlî İsyânları* (İstanbul: Yapı Kredi Yayınları, 2009 [1963]).
- Akdağ, Mustafa. *Türkiye'nin İktisadi ve İçtimai Tarihi 2 (1453-1559)*, (İstanbul: Cem Yayınevi, 1995).
- Arıkan, Zeki. "XV-XVI. Yüzyıllarda Anadolu'da Çeltik Üretimi", *V. Milletlerarası Türkiye Sosyal ve İktisat Tarihi Kongresi* (İstanbul, 21-25 August 1989), pp. 477-481.
- Arıkan, Zeki. *XV – XVI. Yüzyıllarda Hamit Sancağı*, (İzmir: Ege Üniversitesi Yayınları, 1988).
- Aston, Trevor ed. *Crisis in Europe, 1560-1660* (London: Routledge and Kegan Paul Ltd., 1965).
- Barkan, Ömer Lütfi. ““Avârız”, *İslam Ansiklopedisi* vol. 2 (İstanbul Milli Eğitim Basımevi, 1979).

- Barkan, Ömer Lütfi. "Edirne Askerî Kassamına Ait Tereke Defterleri", *Belgeler III* (1966), pp. 1-479.
- Barkan, Ömer Lütfi. "Edirne ve Civarındaki Bazı İmaret Tesislerinin Yıllık Muhasebe Bilançoları", *Türk Tarih Belgeleri Dergisi I*, no. 2, (1964), pp. 235-377.
- Barkan, Ömer Lütfi. "Fatih Câmii ve İmaret Tesislerinin 1489-1490 Yıllarına Ait Muhasebe Bilançoları", *İstanbul Üniversitesi İktisat Fakültesi Mecmuası XXIII*, no. 1-2, (1962-63), pp. 297-341.
- Barkan, Ömer Lütfi. "Kanunname", *İslam Ansiklopedisi*, vol.6 (İstanbul: M.E.B. Devlet Kitapları, 1977), pp. 185-197.
- Barkan, Ömer Lütfi. "Osmanlı İmparatorluğu'nda Çiftçi Sınıfların Hukukî Statüsü" In *Türkiye'de Toprak Meselesi Toplu Eserler 1* (İstanbul: Gözlem Yayınları, 1980).
- Barkan, Ömer Lütfi. "Research on the Ottoman Fiscal Surveys" In *Studies in the Economic History of the Middle East*, ed. Michael A. Cook (London: Oxford University Press, 1970), pp. 163-71.
- Barkan, Ömer Lütfi. "Süleymaniye Cami ve İmaret Tesislerine Ait Yıllık Muhasebe Bilançosu", *Vakıflar Dergisi 9* (1964), pp. 109-61.
- Barkan, Ömer Lütfi. "Tarihi Demografi Araştırmaları ve Osmanlı Tarihi", *Türkiyat Mecmuası*, no. 10 (1951), pp. 1-26.
- Barkan, Ömer Lütfi. "The Price Revolution of the Sixteenth Century: A Turning Point in the Economic History of the Near East", *Journal of Middle East Studies 6*, no. 1 (January 1975), pp. 3-28.
- Barkan, Ömer Lütfi. "Timar", *Türkiye'de Toprak Meselesi, Toplu Eserler I*, (İstanbul: Gözlem Yayınları, 1980), pp. 852-870.
- Barkan, Ömer Lütfi. "XV. Ve XVI. Asırlarda Osmanlı İmparatorluğu'nda Toprak İşçiliğinin Organizasyonu Şekilleri I: Kulluklar ve Ortakçı Kullar", *Türkiye'de Toprak Meselesi, Toplu Eserler I* (İstanbul: Gözlem Yayınları, 1980), pp. 575-716.
- Barkan, Ömer Lütfi. "Öşür", *İslam Ansiklopedisi*, vol.9 (İstanbul: M.E.B. Devlet Kitapları, 1977), pp. 482-488.
- Barkan, Ömer Lütfi. *XV. ve XVI. Asırlarda Osmanlı İmparatorluğunda Ziraî Ekonominin Hukukî ve Malî Esasları Birinci Cilt: Kanunlar* (İstanbul: İstanbul Üniversitesi İktisat Fakültesi Yayınları, 2001 [1943]).
- Barkan, Ömer Lütfi and Meriçli, Enver. *Hüdâvendigâr Livası Tahrir Defterleri* (Ankara: Türk Tarih Kurumu Yayınları, 1988).

- Barkey, Karen. *Bandits and Bureaucrats: the Ottoman Route to State Centralization* (New York: Cornell University Press, 1994).
- Barnes, John Robert. *An Introduction to Religious Foundations in the Ottoman Empire* (Leiden: E. J. Brill, 1986).
- Barrett, W. "World Bullion Flows, 1450-1800" In *The Rise of Merchant Empires*, ed. James T. Tracy (Cambridge: Cambridge University Press, 1990).
- Beldiceanu, Nicoara and Beldiceanu-Steinherr, Irène. "Riziculture Dans L'Empire Ottoman (XIV^e-XV^e siècle), *Turcica* 9/2, no. 10, (1978).
- Biraben, Jean-Noel. "La Population de Reims et son arrondissement, et la vérification statistique des recensements numeriques anciens", *Population* 16, no. 4, (1998), pp. 722-730.
- Bois, Guy. "Comptabilité et Histoire des Prix: Le Prix du Froment à Rouen au XV^e Siècle," *Annales. Histoire, Sciences Sociales* 23, no. 6 (November-December 1968), pp. 1262-1282.
- Bois, Guy. *The Crisis of Feudalism: Economy and Society in Eastern Normandy, c. 1300-1550* (Cambridge: Cambridge University Press, 1984).
- Bostan, Hanefi. *XV-XVI. Asırlarda Trabzon Sancağı 'nda Sosyal ve İktisadi Hayat*, (Ankara: Türk Tarih Kurumu, 2002).
- Braude, Benjamin. "International Competition and Domestic Cloth in the Ottoman Empire, 1500-1650: A Study in Undevelopment", *Review (Fernand Braudel Center)* 2, No. 3, (Winter 1979), pp. 437-451.
- Braudel, Fernand. *The Mediterranean and the Mediterranean World in the Age of Philip II*, vol. 1 (London: University of California Press, 1995).
- Braudel, Fernand. *The Structures of Everyday Life* (London: Fontana Press: 1985).
- Brenner, Y. S. "The Inflation of Prices in England, 1551-1650", *Economic History Review* 15 (1963), pp. 266-84.
- Canbakal, Hülya. *Society and Politics in an Ottoman Town: 'Ayntâb in the 17th Century* (Leiden: E.J. Brill, 2007).
- Cezar, Mustafa. *Osmanlı Tarihinde Levendler* (İstanbul: İstanbul Güzel Sanatlar Akademisi Yayınları, 1965).
- Chayanov, Alexander V. *The Theory of Peasant Economy* (Wisconsin: University of Wisconsin Press, 1986).
- Çiçek, Kemal. "Osmanlılardan Önce Akdeniz Dünyasında Yapılan Tahrirler Hakkında Bazı Gözlemler", *OTAM*, sayı 6 (1995), pp. 51-89.

- Cipolla, Carlo. *Guns, Sails and Empires: Technological Innovation and the Early Phases of European Expansion, 1400-1700* (New York: Minerva Press, 1965).
- Çizakça, Murat. *A History of the Philanthropic Foundations: the Islamic World from the Seventh Century to the Present* (İstanbul, Boğaziçi University Press, 2000).
- Çizakça, Murat. "Price History and the Bursa Silk Industry: A Study in Ottoman Industrial Decline, 1550-1650", *The Journal of Economic History*, 40, no. 3, (September 1980), pp. 533-550.
- Çizakça, Murat. Sixteenth-Seventeenth Century Inflation and the Bursa Silk Industry: A Pattern for Ottoman Industrial Decline? (Ph.d diss., University of Pennsylvania, 1978).
- Clark, Colin and Haswell, Margaret. *The Economics of Subsistence Agriculture* (New York, Macmillan, 1967).
- Cook, Michael A. *Population Pressure in Rural Anatolia, 1450-1600* (London: Oxford University Press, 1972).
- Coşgel, Metin. "Agricultural Productivity in the Early Ottoman Empire", *Research in Economic History* 24 (2006), pp. 161-87.
- Dağlı, Murat. "The Limits of Ottoman Pragmatism", *History and Theory* 52, no.2, (May 2013), pp. 194-213.
- Darling, Linda. "Ottoman Fiscal Administration: Decline or Adaptation?", *The Journal of European Economic History* 26, no. 1, (Spring, 1997), pp. 157-158.
- David, Geza. *Osmanlı Macaristan'ında Toplum, Ekonomi ve Yönetim 16. yüzyılda Simontornya Sancağı*, (İstanbul: Tarih Vakfı Yurt Yayınları, 1999).
- Derleme Sözlüğü* (Ankara: Türk Dil Kurumu Yayınları, 1979).
- Devellioğlu, Ferit. *Osmanlıca – Türkçe Ansiklopedik Lügat* (İstanbul: Aydın Yayınları, 2009).
- Doğru, Halime. *XVI. Ve XVII. Yüzyıllarda Sivrihisar Nahiyesi* (Ankara: Türk Tarih Kurumu Basımevi, 1997).
- Doumani, Beshara. "Endowing Family: Waqf, Property Devolution, and Gender in Greater Syria, 1800 to 1860" *Comparative Studies in Society and History*, 40/1 (1998), pp. 3-41.
- Dumont, René. *Types of Rural Economy: Studies in World Agriculture* (London: Methuen and Co. Ltd.).

- Emecen, Feridun. *XVI. Yüzyılda Manisa Kazası* (Ankara: Türk Tarih Kurumu Yayınları, 1989).
- Emecen, Feridun. "Çeltik", *Türkiye Diyanet Vakfı İslam Ansiklopedisi* 8 (Ankara: TDV Yayınları, 1993), pp. 265-266.
- Erder, Leila T. and Faroqhi, Suraiya. "The Development of Anatolian Urban Network during the Sixteenth Century," *Journal of the Economic and Social History of the Orient* 23, no. 3, (October 1980), pp. 265-303.
- Ergenç, Özer. *XVI. Yüzyılın Sonlarında Bursa: Yerleşimi, Yönetimi, Ekonomik ve Sosyal Durumu Üzerine bir Araştırma* (Ankara: Türk Tarih Kurumu Yayınları, 2006).
- Erinç, Sırrı and Tunçdilek, Necdet. "The Agricultural Regions of Turkey", *Geographical Review* 42, no. 2, (April 1952), pp.179-203.
- Ertürk, Volkan. "XVI. Yüzyıl Anadolu'sunda Ziraî Yapı ve Köylülerin geçim Durumları Hakkında bir Değerlendirme: Akşehir Örneği", *Turkish Studies* 6, no. 4, (2011), 523-537.
- Faroqhi, Suraiya. *Towns and Townsmen of Ottoman Anatolia* (Cambridge: Cambridge University Press, 1984).
- Faroqhi, Suraiya. "Sixteenth-Century Periodic Markets in Various Anatolian Sancaks," *Journal of the Economic and Social History of the Orient* 22 (1979), pp. 32-80.
- Faroqhi, Suraiya. "Agricultural Crisis and the Art of Flute-Playing: The Worldly Affairs of the Mevlevi Dervishes", *Turcica* 20 (1988), pp. 43-69.
- Faroqhi, Suraiya. "Crisis and Change: 1590 – 1699" In *An Economic and Social History of the Ottoman Empire*. vol 2, ed. Halil İnalçık and Donald Quataert, (Cambridge: Cambridge University Press, 1994), pp. 433-474.
- Faroqhi, Suraiya. "The Early History of Balkan Fairs," *Südost-Forschungen* 37 (1978), pp. 50-68.
- Faroqhi, Suraiya. "Vakıf Administration in Sixteenth Century Konya: The Zaviye of Sadreddin-i Konevi", *Journal of the Economic and Social History of the Orient* 27, no. 2, (1974), pp. 145-172.
- Faroqhi, Suraiya. *The Ottoman Empire and The World Around It* (New York: I.B. Tauris Academic Studies, 2004).
- Fisher, Irving. *The Purchasing Power of Money* (New York: Macmillan Publishing Co., 1926).
- Fleischer, Cornell. *Bureaucrat and Intellectual in the Ottoman Empire: the Historian Mustafa Âli, 1541-1600* (Princeton, N.J.: Princeton University Press, 1984).

- Genç, Mehmet. "İltizam", *Türkiye Diyanet Vakfı İslam Ansiklopedisi* vol. 22 (Ankara: TDV Yayınları, 2000), pp. 154-158.
- Genç, Mehmet. "Osmanlı İktisadi Dünya Görüşünün İlkeleri", *Sosyoloji Dergisi* 3, no. 1, (1988-1989), pp. 175-185.
- Gerber, Haim. "The Monetary System of the Ottoman Empire", *Journal of the Social and Economic History of the Orient* 25, no. 3, (1982), pp. 308-24.
- Gerber, Haim. "The Waqf Institution in Early Ottoman Edirne" In *Asian And African Studies* 17 (1983), pp, 29-45.
- Gerber, Haim. *Economy and Society in an Ottoman City: Bursa, 1600-1700* (Jerusalem: The Hebrew University, 1988).
- Gökbilgin, Tayyib. *Rumeli'de Yürükler, Tatarlar ve Evlâd-ı Fâtihân* (İstanbul: İşaret Yayınları, 2008).
- Gökbilgin, Tayyib. *XV.-XVI. Asırlarda Edirne ve Paşa Livası: Vakıflar-Mülkler Mukataalar*, (İstanbul: İstanbul Üniversitesi Edebiyat, Fakültesi Yayınları, 1952).
- Goldstone, Jack A. "Monetary vs. Velocity Interpretations of the 'Price Revolution': A Comment", *The Journal of Economic History* 51, no. 1, (March 1991), pp. 176-81.
- Goldstone, Jack A. "East and West in the Seventeenth Century: Political Crisis in Stuart England, Ottoman Turkey, and Ming China" *Comparative Studies in Society and History*, 30/1, (January 1988), pp. 103-142.
- Goldstone, Jack A. "Urbanization and Inflation: Lessons from the English Price Revolution of the Sixteenth and Seventeenth Centuries", *American Journal of Sociology* 89 (March 1984), pp. 1122-60.
- Goubert, Pierre. *Beauvais et le Beauvaisis de 1600 à 1730: Contribution à l'Histoire Sociale de la France du XVII^e Siècle* (Paris : Publications de la Sorbonne, 2013 [1977]).
- Göyünç, Nejat. "Hane Deyimi Hakkında", *İÜEF Tarih Dergisi*, no. 32 (1979), pp. 331-348.
- Göyünç, Nejat. *XVI. Yüzyılda Mardin Sancağı* (İstanbul: Edebiyat Fakültesi Basımevi, 1969).
- Grigg, David B. *Population Growth and Agrarian Change: An Historical Perspective* (London: Cambridge University Press, 1980).
- Griswold, William J. "Climatic Change: A Possible Factor in the Social Unrest of Seventeenth Century Anatolia", *Humanist and Scholar, Essays in Honor of*

- Andreas Tietze*, ed. Heath W. Lowry and Donald Quataert, (Istanbul: The Isis Press and the Institute of Turkish Studies, 1993), pp. 37-57.
- Griswold, William J. *The Great Anatolian Rebellion, 1000-1020/1591-1611* (Berlin: K. Schwartz Verlag, 1983).
- Güçer, Lütfi. *XVI. ve XVII. Asırlarda Osmanlı İmparatorluğu'nda Hububat Meselesi ve Hububattan Alınan Vergiler* (İstanbul: İstanbul Üniversitesi İktisat Fakültesi, 1964).
- Güneş, Turan. *Türkiye Çeltik Ekonomisi* (Ankara: Ankara Üniversitesi Ziraat Fakültesi Yayınları, 1971).
- Güran, Tevfik. *Ekonomik ve Mali Yönleriyle Vakıflar* (İstanbul: Kitabevi, 2006).
- Hamilton, Earl J. *American Treasure and the Price Revolution in Spain, 1501-1650* (New York: Octagon Books Inc., 1965).
- Howard, Douglas. *The Ottoman Timar System and its Transformation, 1563-1656* (PhD. Diss., Indiana University, 1987).
- Hütteroth, Wolf-Dieter and Abdulfattah, Kamal. *Historical Geography of Palestine, Transjordan and Southern Syria in the Late 16th Century* (Erlangen 1977).
- İnalcık, Halil. "The Ottoman Economic Mind and Aspects of the Ottoman Economy" In *Studies in the Economic History of the Middle East*, ed. Michael A. Cook, (London: Oxford University Press, 1970), pp. 207-218.
- İnalcık, Halil. *An Economic and Social History of the Ottoman Empire* (Cambridge: Cambridge University Press, 1994).
- İnalcık, Halil. "Cizye", *Türkiye Diyanet Vakfı İslam Ansiklopedisi* 8 (Ankara: TDV Yayınları, 1993), pp. 45-48.
- İnalcık, Halil. "Köy, Köylü ve İmparatorluk" *Osmanlı İmparatorluğu: Toplum ve Ekonomi*, (İstanbul: Eren Yayıncılık, 1993), pp. 1-15.
- İnalcık, Halil. "Mazraa", *Encyclopedia of Islam*, 2nd Edition, vol. 5 (Leiden: E.J. Brill, 1983), pp. 958-961.
- İnalcık, Halil. "Mehmed II", *Türkiye Diyanet Vakfı İslam Ansiklopedisi* 28 (Ankara: TDV Yayınları, 2003), pp. 395-407.
- İnalcık, Halil. "Military and Fiscal Transformation in the Ottoman Empire, 1600-1700" In *Archivum Ottomanicum* 6 (1980), pp. 283-337.
- İnalcık, Halil. "Rice Cultivation and the Çeltükçi-Reaya System in the Ottoman Empire", *Turcica* XIV (1982), pp. 59-141.

- İnalcık, Halil. "Su", *Türkiye Diyanet Vakfı İslam Ansiklopedisi* 37 (Ankara: TDV Yayınları, 2009), pp. 437-440.
- İnalcık, Halil. "The Emergence of Big Farms, *Çiftlik*s: State, Landlords and the Tenants", *Landholding and Commercial Agriculture in the Middle East*, ed. Çağlar Keyder & Faruk Tabak, (New York: SUNY Press, 1991), pp. 17-35.
- İnalcık, Halil. "The Impact of Annales School on Ottoman Studies and New Findings", *Review*, vol. 1, 3-4 (1978), pp. 69-99.
- İnalcık, Halil. "Capital Formation in the Ottoman Empire", *Journal of Economic History* 29, no. 1, (1969), pp. 97-140.
- İnalcık, Halil. *The Ottoman Empire: The Classical Age, 1300-1600* (London: Phoenix, 2000 [1973]).
- İnalcık, Halil. "Osmanlılar'da Raiyyet Rüşumu" In *Osmanlı İmparatorluğu: Toplum ve Ekonomi* (İstanbul: Eren Yayınları, 1993 [1959]).
- İslamoğlu, Huricihan and Faroqhi, Suraiya. "Crop Patterns and Agricultural Production Trends in Sixteenth-Century Anatolia", *Review (Fernand Braudel Center)* 2, no. 3 (Winter 1979), pp. 400-436.
- İslamoğlu, Huricihan and Perdue, Peter C. ed. *Shared Histories of Modernity: China, India, and the Ottoman Empire*, (New Delhi: Routledge, 2009).
- İslamoğlu, Huricihan. *Osmanlı İmparatorluğu'nda Devlet ve Köylü* (İstanbul: İletişim Yayınları, 2010).
- Jennings, Ronald. "Pious Foundation in the Society and Economy of Ottoman Trabzon, 1565-1640", *Journal of the Economic and Social History of the Orient* 33 (1990), pp. 271-336.
- Jennings, Ronald. "Urban Population in Anatolia in the Sixteenth Century: A Study of Kayseri, Karaman, Amasya, Trabzon and Erzurum", *International Journal of Middle East Studies* 7, no. 1, (January 1976), pp. 21-57.
- Kafadar, Cemal. "The Ottomans and Europe, 1450-1600", In *Handbook of European History, 1400-1600* Vol. 2, ed. Thomas A. Brady et al., (Leiden: E.J. Brill, 1994), pp. 589-636.
- Kafadar, Cemal. "The Question of Ottoman Decline" In *Harvard Middle East and Islamic Review*, 4 (1997-1998), pp. 30-75.
- Kaldy-nagy, Gyula. *Kanuni Devri Budin Tahrir Defteri (1546-1562)*, (Ankara: Ankara Üniversitesi Dil Tarih-Coğrafya Fakültesi Yayınları, 1971).

- Keyder, Çağlar. "Introduction: Large-Scale Commercial Agriculture in the Ottoman Empire?" In *Landholding and Commercial Agriculture in the Middle East*, ed. Çağlar Keyder and Faruk Tabak, (Albany: State University of New York Press, 1991), pp.1-17.
- Keyder, Çağlar. *Toplumsal Tarih Çalışmaları*, (İstanbul: İletişim Yayınları, 1983).
- Keyder, Çağlar. *Türkiye 'de Devlet ve Sınıflar*, (İstanbul: İletişim Yayıncılık, 1989).
- Kula, Witold. *An Economic Theory of the Feudal System* (London: Foundations of History Library, 1976).
- Kuniholm, Peter I. "Archaeological Evidence and Non-Evidence for Climatic Change", *The Earth's Climate and Variability of the Sun Over Recent Millennia*, ed. S. J. Runcorn and J. C. Pecker, (Phil. Trans. R. Soc. Lond. A: 1990), p. 645-655.
- Kunt, Metin. *Sancaktan Eyalete: 1550-1650 Arasında Osmanlı Ümerası ve İl İdaresi* (İstanbul: Boğaziçi Üniversitesi, 1978).
- Kunt, Metin. *The Sultan's Servants: The Transformation of Ottoman Provincial Government, 1550-1650* (New York: Columbia University Press, 1983).
- Kuran, Timur. "The Absence of Corporation in Islamic Law: Origins and Persistence", *The American Journal of Comparative Law* 53, no. 4 (Fall 2005), pp. 785-834.
- Kuran Timur. "The Islamic Commercial Crisis: Institutional Roots of Economic Underdevelopment in the Middle East", *The Journal of Economic History* 63, no. 2 (June 2003), pp. 414-446.
- Kuran, Timur. "The Provision of Public Goods under Islamic Law: Origins, Impact and Limitations of the Waqf System", *Law & Society Review* 35, no. 4 (2001), pp. 841-898.
- Kütükoğlu, Mübahat. *Osmanlılar'da Narh Müessesesi ve 1640 Tarihli Narh Defteri* (İstanbul: 1983).
- Ladurie, Emmanuel le Roy. *Peasants of Languedoc* (Urbana: University of Illinois Press, 1976).
- Lowry, Heath W. "The Ottoman Liva Kanunnames Contained in the Defter-i Hakani" *Studies in Defterology Ottoman Society in the Fifteenth and Sixteenth Centuries*, (İstanbul: The Isis Press, 1992).
- Lowry, Heath. "The Ottoman *Tahrir Defterleri* as a Source for Social and Economic History: Pitfalls and Limitations", *Studies in Defterology: Ottoman Society in the Fifteenth and Sixteenth Centuries* (İstanbul: ISIS Press, 1992).

- Marx, Karl. *Capital: A Critique of Political Economy*, vol. 1 (London: Penguin Books, 1976).
- Mayhew, N. J. "Money Supply, Inflation and the Velocity of Circulation in England, 1300-1700," *The Economic History Review*, New Series 48, no. 2, (May 1995), pp. 238-257.
- Mayhew, N. J. "Silver, Not Sterling: A Reply to Miskimin," *The Economic History Review*, New Series 49, no.2, (May 1996), p. 361.
- Mazoyer, Marcel and Roudart, Laurence. *A History of World Agriculture: From The Neolithic Age to the Current Crisis* (London: Earthscan, 2006).
- McCloskey, Donald. "Review of ed. Peter H. Ramsey, *The Price Revolution in Sixteenth-Century England*", *Journal of Political Economy* 80 (1972), pp. 1333-1335.
- McGowan, Bruce. "Food Supply and Taxation on the Middle Danube (1568-1579)" *Archivum Ottomanicum I* (1969), pp. 139-196.
- McGowan, Bruce. *Economic Life in Ottoman Europe: Taxation, Trade and the Struggle for Land, 1600-1800* (Cambridge: Cambridge University Press, 1981).
- Miskimin, Harry A. "Population Growth and the Price Revolution in England," *Journal of European Economic History* 4 (1975), pp. 179-86.
- Miskimin, Harry A. "Silver, Not Sterling: A Comment on Mayhew's Velocity," *The Economic History Review*, New Series 49, no.2 (May 1996), pp. 358-60.
- Na'imâ, Mustafa. *Tarih*, vol. 2 (İstanbul: 1287).
- Orbay, Kayhan. "16. Ve 17. Yüzyıllarda Bursa Ekonomisi: Sultan Çelebi Mehmed Yeşil İmaret'inin Mali Tarihi (1553-1650)", *OTAM* (Ankara: 2007).
- Orbay, Kayhan. "Bursa'da Sultan II. Murad Vakfı'nın Mali Tarihi (1608-1641)", *İstanbul Üniversitesi İktisat Fakültesi Mecmuası* 61 (2011), pp. 293-322.
- Orbay, Kayhan. "Distributing Food, Bread and Cash: Vakıf Taamhoran and Fodulahoran Registers as Archival Sources for İmarets", *Feeding People, Feeding Power; İmarets in the Ottoman Empire*, ed. Amy Singer (İstanbul: Eren Yayıncılık, 2007), pp. 171-196.
- Orbay, Kayhan. "Fiyat Devrimi ve Geç 16. Yüzyıl ve 17. Yüzyıl İçinde Anadolu'da Fiyat Değişimleri", paper presented at *Birinci İktisat Tarihi Kongresi* (İstanbul: 7-8 September 2007).
- Orbay, Kayhan. "Structure and Content of the Waqf Account Books as Sources for Ottoman Economic and Institutional History", *Turcica* 39 (2007), pp. 3-47.

- Orbay, Kayhan. "Tarihsel Fiyatların Elde Edilmesi ve Endekslenmesi Hususunda Bazı Notlar", *Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi Dergisi* 48, no. 1, (2008), pp. 85-96.
- Orbay, Kayhan. "The Economic Efficiency of Imperial Waqfs in the Ottoman Empire", Paper Presented to XIV. *International Economic History Congress* (Helsinki: 2006).
- Orbay, Kayhan. "Vergi Kayıtları, Mahsul Miktarları ve Fiyatlar: Vakıfların Rüsûm, A'sâr-ı Hubûbât ve Fûrûht-ı Hubûbât Defterleri", *Osmanlı Tarih Araştırmaları Dergisi* 30 (2011), pp. 127-144.
- Orbay, Kayhan. *The Financial Administration of an Imperial Waqf in an Age of Crisis: A Case Study of Bayezid II's Waqf in Amasya (1594-1657)*, (Master's Thesis, University of Bilkent, 2001).
- Öz, Mehmet. *XV-XVI. Yüzyıllarda Canik Sancağı* (Ankara: Türk Tarih Kurumu Yayınları, 1999).
- Öz, Mehmet. "XVI. Yüzyıl Anadolu'sunda Köylülerin Vergi Yükü ve Geçim Durumu Hakkında Bir Araştırma", *Osmanlı Araştırmaları Dergisi* 17 (1997), pp. 78-90.
- Öz, Mehmet. *Osmanlı'da Çözülme ve Gelenekçi Yorumları: XVI. Yüzyıldan XVIII. Yüzyıl Başlarına* (İstanbul: Dergâh Yayınları, 1997).
- Özel, Oktay. "17. Yüzyıl Osmanlı Demografisi ve İskan Tarihi İçin Önemli Bir Kaynak: 'Mufassal' Avârız Defterleri", Paper presented at XIIth International Congress of Turkish History /Uluslararası XII. Türk Tarih Kongresi (12-17 Eylül 1994 Ankara), published in *XII. Türk Tarih Kongresi, Kongreye Sunulan Bildiriler*, III. Cilt, Ankara: TTK Basımevi, 2000, pp. 736-743.
- Özel, Oktay. "XV-XVII. Yüzyıllarda Osmanlı Toplumunda 'Hariç Raiyyet' ", *Türk Dünyası Araştırmaları* 43 (Ağustos 1986), p. 159-171.
- Özel, Oktay. "Avarız ve Cizye Defterleri" In *Osmanlı Devleti'nde Bilgi ve İstatistik*, ed. Halil İncik and Şevket Pamuk (Ankara: Devlet İstatistik Enstitüsü, 2000), pp. 33-50.
- Özel, Oktay. "Hane [Halkı]", *Antropoloji Sözlüğü*, ed. Suavi Aydın & Kudret Emiroğlu (Ankara: Bilim ve Sanat Yayınları, 2003).
- Özel, Oktay. "Limits of the Almighty: Mehmed II's 'Land Reform' Revisited", *Journal of Economic and Social History of the Orient* 42, no. 2, (1999), pp. 224-246.
- Özel, Oktay. "Modern Osmanlı Tarihyazımında 'Klasik Dönem': Bir Eleştirel Değerlendirme", *Tarih ve Toplum, Yeni Yaklaşımlar* 4 (2006), pp. 273-294.

- Özel, Oktay. "Population in Ottoman Anatolia during the 16th and 17th Centuries: The 'Demographic Crisis' Reconsidered", *International Journal of Middle East Studies* XXXVI, no. 2, (2004), pp. 183-205.
- Özel, Oktay. "The Reign of Violence: the Celalis, c. 1550-1700" In *The Ottoman World*, ed. Christine Woodhead, (London-New York: Routledge, 2011), pp. 184-202.
- Özel, Oktay. *Changes in Settlement Patterns, Population and Society in Rural Anatolia: A Case Study of Amasya (1576-1642)*, unpublished Ph.D. Thesis, Manchester, Department of Middle Eastern Studies, 1993.
- Özmucur, Süleyman and Pamuk, Şevket. "Real Wages and Standards of Living in the Ottoman Empire, 1489-1914", *The Journal of Economic History* 62 (2002) pp. 292-321.
- Öztürk, Nazif. "Mütevelli", *Türkiye Diyanet Vakfı İslam Ansiklopedisi* 29 (Ankara: TDV Yayınları, 2003), pp. 217-220.
- Pamuk, Şevket. "Institutional Change and the Longevity of the Ottoman Empire, 1500-1800", *The Journal of Interdisciplinary History* 35, no. 2, (Autumn 2004), pp. 225-247.
- Pamuk, Şevket. "Prices in the Ottoman Empire, 1469 -1914", *International Journal of Middle East Studies* 36 (2004), pp. 451-468.
- Pamuk, Şevket. "The Price Revolution in the Ottoman Empire Reconsidered", *International Journal of Middle East Studies* 33 (2004), pp. 69-89.
- Pamuk, Şevket. *İstanbul ve Diğer Kentlerde 500 Yıllık Fiyatlar ve Ücretler, 1469-1998* (Ankara: T.C. Başbakanlık Devlet İstatistik Enstitüsü, 2000).
- Parker, Geoffrey and Smith, Lesley M. ed. *The General Crisis of the Seventeenth Century* (London: Routledge and Kegan Paul Ltd., 1978).
- Parker, Geoffrey. *The Military Revolution: Military Innovation and the Rise of the West, 1500-1800* (Cambridge: Cambridge University Press, 1988).
- Redhouse, James. *Turkish and English Lexicon* (İstanbul: Çağrı Yayınları, 2000).
- Roded, Ruth. "The Waqf and the Social Elite of Aleppo in the Eighteenth and Nineteenth Centuries", *Turcica* XX (1988), pp. 71-91.
- Russell, J. C. "Recent Advances in Medieval Demography", *Speculum*, no. 40:1, (1965), pp. 84-101.
- Russell, Josiah C. "Late Medieval Balkan and Asia Minor Population", *JESHO*, no. 3 (1960), 265-274.

- Sajdi, Dana. "Decline, its Discontents and Ottoman Cultural History: By Way of an Introduction" In *Ottoman Tulips, Ottoman Coffee: Leisure and Lifestyle in the Eighteenth Century*, ed. Dana Sajdi, (New York: I.B. Tauris Academic Studies, 2007), pp. 1-40.
- Salzmann, Ariel. "An Ancien Régime Revisited: "Privatization" and Political Economy in the Eighteenth-Century Ottoman Empire", *Politics and Society* 21 (December 1993), pp. 293-323.
- Salzmann, Ariel. *Tocqueville in the Ottoman Empire: Rival Paths to the Modern State* (Leiden: E.J. Brill, 2004).
- Sheridan, Aslıhan Aksoy. "Celaliler/Eşkıyalar: Gayesiz Asiler miyiz ki Hepimiz Biz?", *Kebikeç: İnsan Bilimleri için Kaynak Araştırmaları Dergisi* 33 (2012), pp. 111-126.
- Singer, Amy. *Constructing Ottoman Beneficance: an Imperial Soup Kitchen in Jersulaem* (New York: SUNY Press, 2002).
- Singer, Amy. *Palestinian Peasants and Ottoman Officials: Rural Administration Around Sixteenth-century Jarusalem*, (Cambridge and New York: Cambridge University Press, 1994).
- Solak, İbrahim. *XVI. Yüzyılda Zamantu Kazasının Sosyal ve İktisadi Yapısı* (Konya: Tablet, 2007).
- Taştemir, Mehmet. *XVI. Yüzyılda Adıyaman (Behisni, Hısn-ı Mansur, Gerger ve Kahta Sosyal ve İktisadi Tarihi)*, (Ankara: Türk Tarih Kurumu, 1999).
- Tezcan, Baki. "The Politics of Early Modern Ottoman Historiography" In *The Early Modern Ottomans: Remapping the Empire*, ed. Virginia H. Aksan and Daniel Goffman, (Cambridge and New York: Cambridge University Press, 2007), pp. 167-197.
- Tezcan, Baki. *The Second Ottoman Empire: Political and Social Transformation in the Early Modern World*, (New York: Cambridge University Press, 2012). *The American Historical Review*, no.3, (June 2011), vol. 116.
- Todorova, Maria N. "Was There a Demographic Crisis in the Ottoman Empire in the Seventeenth Century?", *Etudes Balkaniques* 2 (1988), pp. 55-63.
- Touchan, Ramzi et al. "Reconstructions of Spring/Summer Precipitation for the Eastern Mediterranean from Tree-Ring Widths and Its Connection to Large-Scale Atmospheric Circulation", *Climate Dynamics* 25, no. 1, (2005), pp. 75-98.
- Turğut, Vedat. *Bilecik Bölgesi Örneğinde 16. Yüzyılda Vakıflar ve Şehirleşme* (Ph.d Diss., Sakarya Üniversitesi, 2011)

- Uluçay, Çağatay. *XVIII. ve XIX. yüzyıllarda Saruhan'da Eşkîyalık Hareketleri* (İstanbul: Berksoy Matbaası, 1955).
- Ünal, Mehmet Ali. *VI. Yüzyılda Harput Sancağı (1518-1566)*, (Ankara: Türk Tarih Kurumu, 1989).
- Ünal, Mehmet Ali. *XVI. Yüzyılda Çemişgezek Sancağı*, (Ankara: Türk Tarih Kurumu, 1999).
- Vries, Jan de. "The Economic Crisis of the Seventeenth Century after Fifty Years", *Journal of Interdisciplinary History* 40, no. 2 (Autumn 2009), pp. 151-194.
- Willigan, J. Dennis and Lynch, Katherine A. *Sources and Methods of Historical Demography* (New York: Academic Press, 1982).
- Wrigley, E. A. and Schofield, R. S. *The Population History of England 1541 – 1871* (London: Cambridge University Press, 1989).
- Yediyıldız, Bahaeddin. "Sosyal Teşkilatlar Bütünlüğü Olarak Osmanlı Vakıf Külliyesi" In *Türk Kültürü*, 219 (March- April 1981), pp. 262-271.
- Yediyıldız, Bahaettin. *Ordu Kazası Sosyal Tarihi (1455-1613)*, (Ankara, Kültür ve Turizm Bakanlığı, 1985).