Agrarian and Commercial Change in the Southeastern Black Sea Region: Production, Ecology, and Institutions (1850s-1910s)

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Abstract

"Agrarian and Commercial Change in the Southeastern Black Sea Region: Production, Ecology, and Institutions (1850s-1910s)"

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for Modern Turkish History at Boğaziçi University, 2019

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This dissertation examines the changes in local agricultural production, when the local market in the Southeastern Black Sea region was being integrated into global markets from the mid-1850s to 1910s. It first examines the structure of agricultural production and commerce by deconstructing each step for every major crop and then captures agrarian and commercial changes at the micro-level. Benefitting from recent developments in economic history - institutional economics and ecological economics - the thesis analyses the causality behind the agrarian and commercial change.

The key finding is that although the emergence of capitalism and global markets triggered a series of agrarian and commercial changes at the global level, economic conditions, especially transportation, transaction, capital, and information costs determined the direction and limits of these agrarian and commercial changes in local agriculture and commerce. The dissertation argues that the amplitude and direction of agrarian change were determined by changes in commercial and financial institutions, innovation in transportation and information technologies, and emergence of the agro-industries under the constraint of ecological and climatic conditions. There had been two major agrarian and commercial change periods. In the first period, the long-distance agrarian market formed mostly thanks to innovations in transportation, information technologies lead to agrarian change, especially in tobacco and haricot during mid-1850s-1860s. In the second period, these markets were transformed especially thanks to institutional changes in financial institutions and emergence of agro-industries, which triggered agrarian change in tobacco, hazelnut and grains (1890s-1910).

106,500 words

Özet

"Güney Doğu Karadeniz'de Tarımsal ve Ticari Dönüşüm: Üretim, Ekoloji ve Kurumlar (1850s-1910s)"

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Bu çalışma, 1850lerin ortasından 1901lara kadar yerel piyasalar dünya piyasalarına entegre olurken, Güneydoğu Karadeniz'in tarımsal üretiminin dönüşümünü incelemektedir. Buna dayanarak, bu tez tarımsal ticaret ve üretimin her bir aşamasını bütün temel ürünler için tek tek parçalarına ayrıştırarak inceleyip, tarımsal ve ticari dönüşümü mikro ölçekte anlamaya çalışmaktadır. İktisat tarihi, ekolojik tarih ve kurumsal iktisat alanlarının güncel gelişimlerinden yararlanarak da tarımsal ve ticari dönüşümlerin arkasındaki nedenselliği incelemektedir.

Bu tezdeki temel bulgu; her ne kadar tarımsal ve ticari dönüşümlerin arkasındaki temel neden kapitalizmin ve küresel piyasaların oluşması olsa da yerel tarım ve ticaretin dönüşümü ekonomik sebeplerce -özellikle de ulaşım, sermaye, işlem ve enformasyon maliyetlerince- belirlenmiştir. Bu tezde öne sürülen temel argümana göre; tarımsal dönüşümün yoğunluğu ve yönünü ekolojik ve iklimsel şartların tahdidi altında, ticari ve finansal kurumlardaki dönüşüm, yeni iletişim ve ulaşım teknolojilerdeki atılım ve tarımsal endüstrilerin ortaya çıkışı gibi faktörler belirlemiştir. Temelde iki tarımsal ve ticari dönüşüm dönemi vardır.1850lerle 1860lar arası birinci dönemde, iletişim ve ulaşım teknolojilerindeki inovasyon sayesinde oluşan uzun-mesafeli tarımsal piyasalar özellikle tütün ve fasulye tarımında dönüşüme yol açmıştır. 1890lar ve 1910lar arası ikinci dönemde ise, bu tarımsal piyasalar özellikle finansal kurumlardaki yeniden yapılanma ve tarımsal endüstrilerin doğuşu sayesinde yapısal dönüşüme uğramış ve bu da tütün, fındık ve hububatta tarımsal dönüşümü tetiklemiştir.

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A Note on Measuring Units

When dealing with simple quantities of any crop, the *okka*s in the original document were converted into kilograms and the *kile*s into liters. However, when for the purpose of comparison, it was necessary to convert all units into a single one, the liter was preferred for cereals and the kilogram for other crops. This requires an accepted of exchange rates between *okka* and *kile*. In converting measuring units before 1881, the official exchange rates announced in the law issued on September 23, 1881 were adopted. However, when converting measuring units after 1882, the detailed exchange rates and prices given for each crop in consensus of 1909 was adopted. For wheat exported from Samsun, the exchange rate of 23 *okka*s consisted of one *kile* and 24 *okka*s equals to one *kile* for other types of wheat has been accepted. For maize from the Black Sea, 20 *okka*s equals to one *kile* was accepted, whereas for the maize from Anatolia and Constanta, it was 21 and 24, respectively. On the other hand, the measurement of hazelnuts has not changed since nineteenth century and quintal (*kantar*) was left alone.

When dealing with monetary units, silver piasters were left alone, other monetary units were converted into Ottoman golden Lira. The Ottoman golden Lira roughly equaled to republican golden lira (*cumhuriyet altını*) would have worth today and the easiest way to convert silver piaster into republican golden lira by dividing its value by 102 by the mid-nineteenth century and 105 by the late nineteenth century. Therefore, the reader would have a sense of the monetary quantities mentioned in the dissertation using these simple conversions.

A Note on Geographical Names

There are two remarks on geographic names. First, for Ottoman cities, the official Ottoman name and Turkish translations are used. For example, the town today called Pazar on the southeast shores of Black Sea was officially تنهٔ١ in the nineteenth century. This was transliterated as Athina or Athina-tu-pontu (Αθήνα του Πόντου) by contemporary Greek writers. Both Pazar and Athina-tu-pontu might have been used by locals in the nineteenth century but to avoid any unnecessary discussions, Atina is used.

Furthermore, the names of given geographical locations have shifted, as well. For example, the name of the modern town and *il* is Samsun but in the nineteenth century Samsun was used only for *kaza* and port, while Canik had been the name of the sanjak (*sancak*). In this dissertation, Canik always refers to sanjak and Samsun is the port and its nearby hinterland. For that reason, the sanjak of Canik is generally expressed simply as Canik. Another such example is Rize, which was the port, town and *kaza*, whereas Lazistan was the name of the sanjak. Likewise, Vakfıkebir and Akçaabad were the names of the region and *kaza* of ports of the Fol and Polathâne, respectively. On the other hand, the nineteenth century English form of any foreign geographical location is accepted. For example, the part of the world today called as Ukraine is referred as South Russia, but this preference has nothing to do with present politics.

The second point is that the borders of geographic units had changed during the period from 1853 to 1910. For example, the Sanjak (*Sancak*) of Canik and Sivas Province were part of the *Rum Eyaleti* until 18564 and *Trabzon Eyaleti* included Batumi and Kars, both of which were lost to Russia in 1878. To avoid confusion, these regions will be called according to *vilayet* system of 1890s. When Province of Trabzon is mentioned in the text, it always refers to *Trabzon Vilayeti* and never to *Trabzon Eyaleti*.

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1

Introduction

§ 1.1 Main Question

This dissertation examines agrarian change in Southeastern Black Sea region at micro-level from 1850s to 1910s when Anatolian agriculture was integrating into long-distance markets. Hence, this dissertation scrutinizes the effects of the integration of local agricultural markets and production in the Southeastern Black Sea region to global markets in the second half of the long nineteenth century. Accordingly, this dissertation has two agendas: First, it is a descriptive text that answers the questions of how major crops in Southeastern Black Sea region were produced by farmers, how they were marketed in global markets, and how credit flowed from western markets to local merchants and farmers. Second, it is an argumentative text explaining causality behind the mechanism of agrarian and commercial change. In this sense, it primarily answers the questions of how, how much, and in which direction local agriculture changed because of its integration into international markets. The main argument of this dissertation proposes answers to the causality behind local agrarian and commercial change; it claims that the amplitude and direction of agrarian change was determined by changes to commercial and financial institutions, arrival of new transportation and information technologies and emergence of agro-industries under the constraints of ecological and climatic features. This argument can be and is expressed in a second form

more suitable to economic theory throughout this dissertation. It is argued that mainly transportation, information, recurrent transaction and capital costs determined agrarian change.

Although, this dissertation discusses the effects of integration to global markets on local agricultural production and commerce, it is mainly concerned with local agrarian and commercial change at the micro-level not with global trends at the macro-level. For change at the macro-level, it is generally accepted among Ottoman historians that the main reason behind agrarian change in the Ottoman Empire during the long nineteenth century was the emergence of western capitalism and global markets. This dissertation generally agrees with this statement; however, while this argument explains why agrarian change happened simultaneously through the world in the second half of the nineteenth century, it don't explain the divergences in agrarian change in different pre-capitalist parts of the world like China, India, Latin America and the Ottoman Empire. Likewise, this statement fails to clarify why different parts of the Ottoman Empire reacted differently to emerging western capitalism and global markets. In other words, the emergence of western capitalism and global markets answers the question why agrarian change happened after the Crimean War in the Southeastern Black Sea region but neither how this change happened nor why the change occurred differently in different parts of the Empire.

To understand how agricultural production and markets changed at the micro-level, when the Ottoman economy was integrating to international markets during the second half of the long nineteenth, this dissertation focuses on agrarian and commercial change in a limited geography - the Southeastern Black Sea region - and a limited period - from the 1850s to the 1910s. Therefore, it deals with the questions of how agricultural production and markets changed and what were the factors behind these changes. To answer these questions, it argues that institutional change in finance and commerce, innovation in transportation and information technologies and change in agro-industry determined local agrarian change under the constraints of local ecological and climatic features. Economic theory suggests that these given factors can also be expressed as different forms of cost. For that reason, the same

argument can and will be expressed as follows: agrarian change was determined by four different costs –namely capital, transaction, transportation and information- under the geographic and climatic constraints.

This main question is scrutinized at five levels in five different corresponding chapters. Each chapter contributes to the main argument by discussing the main questions from a different perspective. Chapter two deals with two different standpoints. In the first part, the geography and climate features of Southeastern Black Sea region are presented; in the second, a summary of the political and commercial history of nineteenth century is given with a description of the formation and transformation of long-distance markets from a macro-perspective. Throughout the chapter it is argued that Southeastern Black Sea region agriculture did not integrate into global markets spontaneously after the political opening of 1830s except for the port of Trabzon. The integration of local agriculture commerce and production into long-distance markets started with the emergence of horizontally-integrated long-distance markets that followed innovation in transportation and information sectors in the 1860s.

Chapter three scrutinizes the transformation of long-distance market but this times at micro-level. This chapter describes the market mechanism by which crops cultivated in Southeastern Black Sea region farms end up in faraway ports via long-distance markets and how credit flowed in the opposite direction. This chapter claims that changes in western capitalism were transmitted by commercial and financial institutions. Accordingly, the four costs (transaction, transportation, capital, and information) that affect market mechanisms were the main reasons behind the integration of local agriculture to long-distance markets. For that reason, the periods when the local market institutions were most integrated (the mid-1850s to the late 1860s and the late 1880s the 1910s) were periods when agrarian change happened most, as well.

Chapter four examines the relationship of long-distance market institutions to agricultural production but from the perspective of qualitative change. In the first wave (mid-1850s to the late 1860s), shipping and information costs decreased to the global level thanks to improvements in those sectors, transaction and capital costs were substantially reduced thanks to emerging long-distance markets. However, transformation in this period was

limited geographically because there was no major amelioration of terrestrial transportation costs in this period. Accordingly, only the crops that benefitted from agricultural change were those cultivated along coast - tobacco and haricot beans. Meanwhile, there was no major change vis-à-vis crops cultivated in the hinterland, despite an inflationary trend that had favored the cereal production for a half a decade.

A second wave of change started with the arrival of banks, the emergence of agro-industries, and the amelioration of the road system in the late nineteenth century. During this second wave, the cost of capital, transaction and terrestrial transportation decreased substantially. Since transportation costs to and from ports to and from the hinterland were considerably reduced and financial and commercial networks penetrated further inland, this second wave reached a wider geography. Not only did tobacco and hazelnut cultivation on the coasts go through a series of changes but grain production in the hinterland increased dramatically.

Chapter five scrutinizes the effects of the transformation in agricultural markets on agricultural production at the level of farms. This chapter focuses on ecological and climatic constraints, and it is argued that farmers adopted new techniques and technologies so long as they fit with the ecology, climate, and the natural features of plant. In this chapter, it is claimed that ecology, climate and natural features of the plants are not the main cause of agrarian change but act as constraints. In this chapter, a description of the yearly routine for each major crop is given along with changes to this yearly labor schedule that occurred in time since main transformation happened in labor. Moreover, the introduction of new techniques and technologies is examined from this perspective.

The sixth chapter concerns agricultural growth and also deals with agricultural change from a more macro perspective than the previous two chapters. This chapter hardly suggests anything new; it repeats main arguments of the previous chapters but capitalizes on them from a quantitative perspective. Since the reasons for and constraints to agrarian and commercial change is discussed in previous chapters, this chapter focuses on the conclusions of agrarian change.

§ 1.2 Contributions

This study contributes to the existing literature by three ways; its research perspective, its methodology and its primary sources. First, unlike most studies dealing with agricultural production in the empire, this dissertation deals with agricultural production and commerce from farms to long-distance markets in a relatively short sixty years period (1850s-1910s) and in limited geography (Southeastern Black Sea region). Such a micro-level study provides better opportunities to observe agrarian change from local farms to markets under the pressure of integration to international markets. Second, the microstudy approach necessitated new primary sources and a reinterpretation of existing materials from different perspective. Finally, new methodologies and economic or historiographic approaches need to be introduced because there have been major paradigm shifts in agrarian history and economic history in the two decades since Tevfik Güran and Donald Quateart.

1.2.1 *The Raison d'Être of the Micro-study of Agrarian Change*

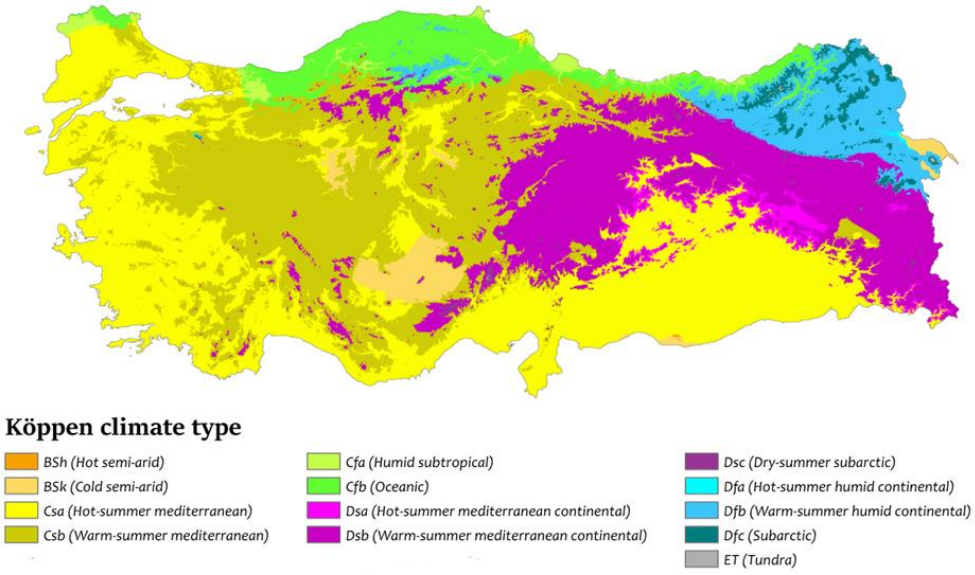
The first contribution of this dissertation to the literature is its research perspective being a micro-study. There are two basic reasons why it was necessary that this dissertation deal with limited geography and time. The first is that a more comprehensive study of the entire production and commercial structure from farms to ports can be accomplished by focusing on a relatively small part of the empire. This concentration also enables a more detail examination of what happened in the farms and in town markets and of the reactions of farmers, merchants and other major agents.

The second reason concerns the climatic and ecological features of the Anatolian geography. Most Ottoman economic historians assume that the Anatolian ecosystem and agriculture were homogenous structure that remained unchanged for centuries. This assumption resulted from the existence of homogenous central taxation and property regimes. However, even if true for other parts of the Empire, homogenous and unchanging agriculture was virtually impossible in Anatolia because of its climate and ecology. First, being at the junction of different major climate systems, the Anatolian peninsula has four major and thirteen minor climate types, making exceptionally diverse.

This diversity has serious consequences over the ecology and agriculture; the most important of which is that the climatic features in different parts of Anatolia diverges. For example, Istanbul and Muğla are in the same longitude but it is impossible to forecast Istanbul's weather from meteorology report of Muğla. Likewise, although positioned along the same latitude, knowing the weather in Istanbul says little about Trabzon. This climatic diversity is the main reason for the diversity of crops and fruits cultivated in Turkey. It is possible to cultivate a great range of crops - from tropical bananas to Mediterranean citrus and from desert dates to water-intensive tobacco and cotton in different climate systems.

More importantly, the mountainous geography creates innumerable numbers of micro climates. These micro climates make the cultivation of some crops in most unlikely zones, like the cold-sensitive orange in Çoruh near extremely cold Artvin and the Mediterranean grape in northern inlands like Tokat. In addition, situated at the junction of three continents, Anatolia is a biological coevolution zone. For that reason, the total number of biologic species existing today in Turkey is estimated to be greater than that on the rest of the European continent.[1] Considering that other countries posting similar ecological and climatic diversity are largest on earth like Brazil, France, Russia and the United States of America, Turkey arguably is most ecologically and climatically most diverse country on earth. Because of this highly diverse ecology and climate, it is impossible to approach Anatolian agriculture as homogenous like that of the Netherlands and the Fertile Crescent. For that reason, any study on Anatolian agricultural production should be similar to research on Russia, the United States of America and China, where researchers pay attention to different climate and ecological zones.

1 Nurten Günal, "Türkiye'de İklimin Doğal Bitki Örtüsü Üzerindeki Etkileri," *Acta Turcica* V, no. 1 (2013): 1-22.



Map 1.1 Köppen Climate Classification Map of Turkey

SOURCE İklim Sınıflandırmaları, T.C. Orman ve Su İşleri Bakanlığı Meteoroloji Genel Müdürlüğü

For this purpose, a limited zone roughly consisting of the present-day *il*s (provinces) of Samsun Amasya, Tokat, Ordu, Giresun and Trabzon has been chosen. The main reason this part of Anatolia is preferred is that the agrarian and commercial changes in this part of the empire happened in a short period of sixty years from the mid-1850s to the 1910s. By the late 1820s, the Southeastern Black Sea region was one of the most isolated of the Ottoman Empire from the global markets but it became one of the most integrated by the 1910s after sixty years of rapid integration. This rapid integration makes it possible to examine the effect of integration to long-distance agriculture markets with as little white noise as possible.

Moreover, this dissertation takes to this chosen geography as a dynamic structure. For example, when dealing with epizooties, some parts of Erzurum and Sivas Provinces are also included. To determine this zone, ecological and commercial features are taken into consideration, not administrative frontiers. The main zone under study is the Sanjaks of Canik and Trabzon but Sanjaks of Amasya and Tokat are also considered, because they were so intensely con-

nected to the port of Samsun that it would be difficult to examine Canik separately. On the other hand, while most of the geography lies in Trabzon Province, Gümüşhane is omitted because it had no vivid agriculture. Likewise, Lazistan is eliminated for two reasons. First agricultural activities in Lazistan were relatively limited as they were in Gümüşhane, and second, the port of Rize was more linked to the Caucasian commercial network than Trabzon.[2]

1.2.2 *New Approaches in Economics and Economic History*

The second contribution of this dissertation to the existing literature is that it benefits from new economical and historiographical approaches; mainly environmental economics, ecological history and new institutionalism. These approaches have become increasingly popular among in international economic history for several decades but they have so far not been welcomed by Ottoman researchers. Ottoman agrarian history has remained under the influence of two major schools, the Annales and the Marxists.[3] Agrarian history and the Annales tradition have deep roots in Ottoman economic history going

2 The only steam-shipping companies making regular trips to the port of Rize were Russian and Ottoman companies. See Ekin Mahmuzlu, "Transformation of Mercantile Shipping in Southeast Black Sea Ports between 1834 and 1914," in *Istanbul and the Black Sea Coast: Shipping and trade, (1770-1920)*, ed. Edhem Eldem and Sophia Laiou (Istanbul: Isis Press, 2018), 99-128. For that reason, the commercial network of Rize with western ports was limited compared to Samsun or Trabzon. The effects of agrarian and commercial changes that happened in the Southeastern Black Sea region was limited in Rize and its hinterland.

3 For the Annalles school's contribution to agrarian history, see F. Roy Willis, "The Contribution of the "Annales" School to Agrarian History: A Review Essay," *Agricultural History* 52, no. 4 (1978): 538-48. Prominent examples of the Annales school include: by Emmanuel Le Roy Ladurie, *Les Paysans de Languedoc* (Paris: S.E.V.P.E.N., 1966); and *La Civilisation Rurale* (Paris: Allia, 2012); and *Paysages, Paysans: l'Art et la Terre en Europe du Moyen Âge au XXe Siècle* (Paris: Bibliothèque Nationale de France, 1994); and Fernand Braudel, *Civilisation Matérielle, Economie et Capitalisme: XVe-XVIIIe Siècle* (Paris: Armand Colin, 1993); and *Villages Désertés et Histoire Economique XIe-XVIIIe Siècles* (Paris: S.E.V.P.E.N, 1965); and *La Mediterranée et le Monde Mediterranéen à l'Epoque de Philippe II* (Paris: Armand Colin, 1990); and Marc Bloch, *La Société Féodale* (Paris: Albin Michel, 2017).

back to Ömer Lütfü Barkan's dissertation in 1939.[4] On the other hand, the Marxist discussion has been shaped around the concept of the Asian mode of production first proposed by Maurice Godelier.[5] Godelier, one of the founding fathers of Marxist anthropology,[6] launched the theory of the Asian mode of production in 1964, sparking vivid discussions in Western Europe,[7] the Union of Soviet Socialist Republics, Poland, Czechoslovakia, Mexico, Peru[8] and even

4 Ömer Lütfi Barkan, *Toplu Eserler 1* (Istanbul: Gözlem Yayınları, 1980); and *Türkiye'de Toprak Meselesi* (Istanbul: Gözlem Yayınları, 1980); and Çoşkun Çakır, "Osmanlı Türk Tarihçiliğinde Bir Klasik Ömer Lütfi Barkan, XV ve XVIıncı Asırlarda Osmanlı Imparatorluğu'nda Ziraî Ekonominin Hukukî ve Malî Esasları, Birinci Cilt: Kanunlar," *Türkiye Araştırmaları Literatür Dergisi* 3, no. 5 (2005): 782-83.

5 It was Engels, not Marx, who developed the primary concepts of the Asian mode of production. See Maurice Godelier, *Asya-tipi Üretim Tarzı ve Marksist Şemalara Göre Toplumların Evrimleri*, trans. Attila Tokatlı, vol. 15 (Istanbul: Sosyal Yayınlar, 1966), 31-34. Wittfogel played important role in the formation of this primary hypothesis. See Karl August Wittfogel, *Oriental Despotism: A Comparative Study of Total Power* (New York: Random House, 1981). However, Engels gave up this theories under Morgan's influence, see Godelier, *Asya-tipi Üretim Tarzı ve Marksist Şemalara Göre Toplumların Evrimleri*, 15, 37-45; and Lewis Henry Morgan, *Ancient Society: Or, Researches in the Lines of Human Progress from Savagery through Barbarism to Civilization* (Calcutta: Bharati Library, 1887).

6 Godelier managed to reconcile modern anthropology, especially Levi-Strauss, with Marxists theories, especially those of Engels. See Friedrich Engels and Tristram Hunt, *The Origin of the Family, Private Property, and the State* (London; New York: Penguin Classics, 2010). To understand the difference between main stream Levi-Strauss school and Godelier's interpretations. See Marcel Mauss, "Essai Sur le Don: Forme et Raison de l'Echange dans les Sociétés Archaiques," *Sociologie et Anthropologie* (1960); and Marcel Mauss and Florence Weber, *Essai sur le Don: Forme et Raison de l'Echange dans les Sociétés Archaiques* (Paris: Presses Universitaires de France, 2012). Also Maurice Godelier, *L'Enigme du Don* (Paris: Flammarion, 2008). For interpretation of Godelier of Claude Lévi-Strauss, see *Lévi-Strauss* (Paris: Édition du Seuil, 2013).

7 See ed. Jean Suret-Canale, *Sur le "Mode de Production Asiatique"* (Paris: Centre d'Etudes et de Recherches Marxistes, 1969); and *Asya Tipi Üretim Tarzı*, trans. İrvem Keskinoğlu (Istanbul: Ant Yayınları, 1970).

8 See the introduction to second edition, Maurice Godelier, *La Notion de "Mode de Production Asiatique" et Les Schémas Marxistes d'Evolution des Sociétés* (Paris: Centre d'Etudes et de Recherches Marxistes, 1974).

Turkey as early as 1966.[9] Discussions of the Asian mode of production were one of the most popular topics in Ottoman economic history until the 1980s,[10] were fed by theoretical discussions between the Communist Party of Turkey (Türkiye Komünist Partisi initially founded in 1920) and the Workers' Party of Turkey (Türkiye İşçi Partisi founded in 1961). However, the Asian mode of production model was largely debunked by a group of historians sharing Barkan's enthusiasms towards Annales school tradition, especially by Halil İnalcık and his *çift-hane* model.[11] However, with the demise of the Marxist Asian mode of production theory in the 1980s, interest in agrarian waned among Ottoman historians, despite the existence of handful of prominent studies.[12]

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9 First Turkish translation, see *Asya-tipi Üretim Tarzı ve Marksist Şemalara Göre Toplumların Evrimleri*, 15.

10 For the Asian mode of production, see İdris Küçükömer, "Asya Tipi Üretim Biçimi, Yeniden Üretim ve Sivil Toplum = Mode de Production Asiatique, Nouvelle Production et Société Civile," *Toplum ve Bilim* 2 (Summer 1977); and Sencer Divitçioğlu, *Asya Tipi Üretim Tarzı ve Az-gelişmiş Ülkeler* (Istanbul: Elif Yayinları, 1966); and "Modèle Economique de la Société Ottomane (les XIVe et XVe Siècles)," *La Pensée* 144, no. Apvril (1966); and Muzaffer Sencer, *Osmanlı Toplum Yapısı* (Istanbul: May, 1982); and *Osmanlı Toplum Yapısı: Eleştirel bir Yaklaşım* (Istanbul: Sarmal Yayinevi, 1999); and Yıldız Sertel, "Le Concept de "Mode de Production Asiatique" et les Interprétations de l'Histoire Ottomane," *La Pensée* 186, no. April (1976). Publications opposing the Asian mode of production, see Y. Zubritski, V Kerov, and Mitropolski, *İlkel Toplum, Köleci Toplum, Feodal Toplum*, trans. Sevim Belli (Ankara: Sol Yayınları, 1968); and *Kapitalist Toplum*, trans. Sevim Belli (Ankara: Sol Yayınları, 1969). For a collection of Marx's writings on pre-capitalist societies, see Karl Marx, *Kapitalizm Öncesi Ekonomi Şekilleri*, ed. Eric Hobsbawn (Ankara: Sol Yayınları, 1967).

11 Halil İnalcık, *Osmanlı İmparatorluğu: Toplum ve Ekonomi* (Istanbul: Eren, 2009).

12 Examples include Huricihan Islamoglu, *Osmanlı İmparatorluğunda Devlet ve Köylü*, ed. Ayşe Çavdar (Istanbul: İletişim Yayınları, 2010); and Çağlar Keyder and Faruk Tabak, ed., *Landholding and Commercial Agriculture in the Middle East* (Albany (N.Y.): State University of New York Press, 1991); and Şevket Pamuk and Zafer Toprak, *Türkiye'de Tarımsal Yapılar: [Bildiriler]* (Ankara: Yurt Yayınları, 1988); and Donald Quataert, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, trans. Azat Zana; Gündoğan and Nilay Özok Gündoğan (Istanbul: Türkiye İş Bankası Kültür Yayinları, 2008); and Tevfik Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar* (Istanbul: Eren, 1998).

In this sense, Ottoman agrarian history followed global patterns until the 1990s. As explained in detail below, international agrarian history before the 1990s was mainly shaped by the Annales and Marxists schools, just as was Ottoman history. However, Ottoman agrarian history diverged from these global trends in the 1990s, especially after the radical paradigm shifts happened in the agrarian history of Western Europe (especially British, Dutch, French and Iberian), North America and Fareast (especially Chinese and Japanese) after 1990s.[13] This paradigm shift resulted from transformations in economics and

13 Let me explain this paradigm change by comparing Marxist theories with new theories on the subject of agrarian change in seventeenth and eighteenth centuries. In his *opus magnus,* Marxist Maurice Dobb scrutinized the formation and transformation of the manorial system which was the core of the feudal mode of production. See Maurice Dobb, *Transition from Feudalism to Capitalism* (London: [History Group of the Communist Party], 1963). This book sparked a series of discussion on transition from feudal economy to capitalism. See Maurice Dobb et al., *The Transition from Feudalism to Capitalism* (London: Aakar Books, 1954). Those Marxists asked how feudal society was organized, how surplus was shared, what were the production relations, and who controlled productive forces. In other words, they focused on landed property regimes, the nature of fiefs, and the economic-political relations between the seigneury and peasantry at a macro-level. Contemporary research has dealt with production at micro-level; how crops were cultivated, how labor was organized on farms, how much these farms produced, and how these crops were marketed. On the other hand, contemporary researchers focus on production at the micro-level not on relations at the macro level. For example, discussions of the transition from feudalism to capitalism in the English economy was replaced by discussions of when and how the increases in productivity and crop yields required to support an urbanized industrial society occurred. The focus of the discussion shifted from relations of production to production activities. See Mark Overton, "Estimating Crop Yields from Probate Inventories: An Example from East Anglia, 1585-1735," *The Journal of Economic History* 39, no. 2 (1979): 363-78; and "The Diffusion of Agricultural Innovations in Early Modern England: Turnips and Clover in Norfolk and Suffolk, 1580-1740," *Transactions of the Institute of British Geographers* 10, no. 2 (1985): 205-21; and Robert C. Allen, "Inferring Yields from Probate Inventories," *The Journal of Economic History* 48, no. 1 (1988): 117-25; and Mark Overton, "Weather and Agricultural Change in England, 1660-1739," *Agricultural History* 63, no. 2 (1989): 77-88; and "Re-estimating Crop Yields from Probate Inventories: A Comment," *The Journal of Economic History* 50, no. 4 (1990): 931-35; and M. S. Campbell Bruce and Mark Overton, "A New Perspective on Medieval and Early Modern Agriculture: Six Centuries of Norfolk Farming c.1250-c.1850," *Past & Present*, no. 141 (1993); and Mark Overton, *Agricultural*

environmental studies rather than in history. The rises of ecological history and environmental and new institutionalist economics were the main reasons for this paradigm shift. This dissertation benefitted from these new theories launched in last thirty years. For that reason, it is obligatory that this dissertation present these paradigm shifts and the nature of these new theories.

Even though these paradigm shifts exist for thirty years, only few studies have already been done applying these new paradigms. Although, in Ottoman economic history, there is yet no example of environmental economics, a few pioneering works on ecological history and institutional economics exist. For example, Sam White and Faruk Tabak's studies on climate change and socio-economic change from sixteenth- to nineteenth-century Anatolia and Rumelia is a starting point for ecological history.[14] Likewise, new institutional approach seems to be a rising trend among Ottoman economic historians like Şevket Pamuk[15] and Timur Kuran.[16] Unfortunately, it is impossible to list such studies and present all these works. For similar reasons, this dissertation was mainly influenced by foreign studies, although it owes gratitude to these Ottoman pioneers.

1.2.2.1 Transformation of Agricultural and Environmental Economics

Environmental economics and agricultural economics have become among the most respected fields in economic science after a three-decade struggle for recognition. Before the 1990s, agricultural and environmental economics were considered trivial by mainstream economic schools. Agriculture was deemed part of the past and archaic modes of production and economic system. Both

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Revolution in England: The Transformation of the Agrarian Economy 1500-1850 (Cambridge: Cambridge University Press, 1996).

14 See for example Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire* (New York: Cambridge University Press, 2013); and Faruk Tabak, "The Waning of the Mediterranean, 1550-1870 a Geohistorical Approach," (2008).

15 See for example Şevket Pamuk, *The Ottoman Economy and its Institutions* (Aldershot: Ashgate, 2009); and "Institutional Change and the Longevity of the Ottoman Empire, 1500-1800," *The Journal of Interdisciplinary History* 35, no. 2 (2004): 225-47

16 See for example Timur Kuran, *The Long Divergence: How Islamic Law Held Back the Middle East* (Princeton; Oxford: Princeton University Press, 2013).

neoclassical and Marxist economists assumed that theories modelled on modern market and socialist economies were valid for modern commercialized and collectivized agriculture, as well. If the realities of agriculture contradicted these theories, always agriculture itself was to blame because it was considered a backward, irrational economic activity and an ineffective allocation of resources. For these economists, an efficient agriculture was a commercialized capitalist or socialist one.

Compared with agriculture, the place of environmental economics before the 1990s was even worse. Serious economists considered economists dealing with environmental issues as benevolent people but useless as theorists. Environmental economics could be a hobby, like many economists today are interested in sport economies but not a real domain.[17] The reasons for establishment of agrarian and ecological economics as separate fields in the 1990s included increasing concern for ecological in the 1980s, the emergence of gigantic agro-industries, the transition of socialist economies, and the increasing potential of agriculture as income and a food source for an overpopulated earth. Despite countless attempts to reconcile neoclassical economics with environmental concepts,[18] environmental and ecological economics remained under the influence of two main theoretical approaches.[19] The first is based on the works of Nicolas Georgescu-Roegen, who managed to combine Marxist creation-of-value theories with terminology from physics.[20] Today, this ap-

17 For that reason, it is unsurprising that one of the most open-minded economists at the time, Amartya Sen considered ecology and climate to be external factors in his famous study on famine. See Amartya Sen, *Poverty and Famines an Essay on Entitlement and Deprivation* (Oxford: Oxford University Press, 2010), 45-51 and 167-94.

18 The best example of a study reconciling neoclassic economics with the environment is Thomas H. Lewis Lynne Tietenberg, *Environmental and Natural Resource Economics* (London: Routledge, 2018).

19 John E. King, "Environmental Economics," in *The Elgar companion to Post Keynesian Economics* (Cheltenham: Edward Elgar Publishing, 2013), 171.

20 Nicholas Georgescu-Roegen, *The Entropy Law and the Economic Process* (Cambridge: Harvard University Press, 2013). However, for more interesting debate on Georgescu-Roegen, see Herman Daly's critiques of Robert Solow and Joseph Stiglitz's models applying Georgescu-

proach deals mostly with macroeconomic topics like total energy consumption, sustainable growth and the creation of pollution.[21] The second approach reconciles eco-biology with circular-flow-of-income models.[22] This approach deals with microeconomic subjects like the effect of the introduction of new crop or pest into an ecosystem and the effect of salinization in a given territory. These later theories, mainly based on ecology and biology, had a greater impact on economic history.

This dissertation benefitted implicitly and explicitly from ecological history,[23] especially Marcel Mazoyer and Laurence Roudart's "A history of world

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Roegen, which were answered separately by Solow and Stiglitz, see Herman E. Daly, "Georgescu-Roegen versus Solow/Stiglitz," *Ecological Economics* 22, no. 3 (1997): 261-66; and Robert Solow, "Georgescu-Roegen versus Solow-Stiglitz," ibid.: 267-68; and Joseph E. Stiglitz, "Georgescu-Roegen versus Solow/Stiglitz," ibid.: 269-70.

21 For example, see Robert U. Ayres, *A Handbook of Industrial Ecology* (Cheltenham: Edward Elgar Publishing, 2002); and Robert U. Ayres and Benjamin Warr, *The Economic Growth Engine: How Energy and Work Drive Material Prosperity* (Cheltenham: Edward Elgar Publishing, 2010).

22 For ecological economics, see Joan Martinez-Alier and Inge Røpke, *Recent Developments in Ecological Economics Volume 1* (Cheltenham: Edward Elgar Publishing, 2008); and *Recent Developments in Ecological Economics Volume 2* (Cheltenham: Edward Elgar Publishing, 2008).

23 For the effects of nitrogen-fixing on crop yields. See Robert A. Dodgshon, "Land Improvement in Scottish Farming: Marl and Lime in Roxburghshire and Berwickshire in the Eighteenth Century," *The Agricultural History Review* 26, no. 1 (1978): 1-14; and G. P. H. Chorley, "The Agricultural Revolution in Northern Europe, 1750-1880: Nitrogen, Legumes, and Crop Productivity," *The Economic History Review* 34, no. 1 (1981): 71-93; and M. Robinson, "The Extent of Farm Underdrainage in England and Wales, Prior to 1939," *The Agricultural History Review* 34, no. 1 (1986): 79-85; and Robert S. Shiel, "Improving Soil Productivity in the Prefertiliser Era," in *Land, Labour, and Livestock: Historical Studies in European Agricultural Productivity*, ed. B. M. S. Campbell and Mark Overton (Manchester; New York: Manchester University Press, 1991), 51-78; and W. M. Mathew, "Marling in British Agriculture: A Case of Partial Identity," *The Agricultural History Review* 41, no. 2 (1993): 97-110; and Liam Brunt, "Nature or Nurture? Explaining English Wheat Yields in the Industrial Revolution, c.1770," *The Journal of Economic History* 64, no. 1 (2004): 193-225; and Robert C. Allen, "The Nitrogen Hypothesis and the English Agricultural Revolution: A Biological Analysis," ibid.68 (2008): 182-210.

agriculture."[24] In this dissertation, a circular ecological model is used for obvious reasons. Let explain a simple ecological model piece by piece. An ecological model is basically a cyclic holistic model that accepts at chemical materials with energy are the main determinants of biologic masses. In a typical model, the energy of any ecological system is provided by photons (sunlight) and the main building blocks of a bio-system are nitrogen, hydrogen, oxygen and carbon. Plants are the main producers that transform sunlight and the main building blocks into organic materials.[25]Accordingly, plants need abundant sunlight, hydrogen, oxygen, carbon and nitrogen.

Most plants easily obtain oxygen, carbon, and hydrogen from the air, soil or water but fail to respire free nitrogen from the atmosphere. Instead, they consume nitrates from the soil, which are usually produced by nitrogen-fixing bacteria mainly from the excretions of other organisms.[26] Since the regeneration of nitrates takes time the plants predictably often suffer from a deficiency of nitrates. For that reason, there is a strict relation between nitrate concentration in the soil and crop yields.[27] In order to reinstitute the fertility of soil, farmers usually fix the nitrate concentration of the soil. If left alone, the soil would eventually fix the nitrate concentration which is why farmers fallow their lands. However, a faster way to regain nitrates is to inject the excrement of animals or humans which are rich with nitrates because animals do not need as much nitrogen as plants. The second natural way is to seed plants known as green-manures, like beans, which harbor these nitrogen-fixing bacteria.

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24 Marcel Mazoyer and Laurence Roudart, *A History of World Agriculture from the Neolithic Age to the Current Crisis* (New York: Monthly Review Press, 2006).

25 The creation of energy is mainly via photosynthesis: $CO_2 + H_2O$ (+photon + Chlorophyll) → (HCHO) + O_2 = (Sugar/Glucose + Oxygen). See ibid., 53.

26 There are five main methods for regaining fertility: wild vegetation, slash and burn, natural pasturage, grazing animal-drawing cultivation, manure animal grazing animal-drawing cultivation, fallowing and green manure). See ibid., 60-61.

27 Fertility mainly depends on temperature, hours of sunshine, water and availability of mineral salts. See ibid., 31 and 63.

In addition to these four basic elements, plants also require different types of salt, especially sodium, potassium, calcium, and magnesium, to induce certain chemical reactions.[28] However, the plants do not need these salts as much as the do the basic building blocks. Moreover, the total requirement of a given plant for these salts varies greatly. In addition, the concentration of different types of salt varies greatly from one type of soil to another. This is why one plant grows better in soil rich in one of these salts while another plant prefers another soil type for the same reason. For example, while wheat requires mostly zinc, grapevines mainly need potassium and calcium. Whereas zinc is usually abundant in any farming soil, potassium and calcium are not. Because zinc can be found anywhere and wheat is a resilient crop, wheat can be cultivated almost anywhere on earth. On the other hand, potassium and calcium are harder to find naturally, and grapevines are intolerant of the cold. For that reason, geographically viticulture is limited to certain areas. In deficiency of potassium or calcium, the farmers could use natural fertilizers like bones or chemical ones. In this dissertation, the ecological model was taken into consideration; especially the ecology is used in the chapter five, where the change in cultivation techniques, agricultural calendars and new tools or fertilizers are discussed.

1.2.2.2 New-institutionalism and Economic History

This dissertation benefits from rise of popularity of new-institutionalism in economic history. The history of institutionalism goes back to Thorstein Veblen's the Theory of the Leisure Class in 1899.[29] After its birth, institutionalism remained marginal for a century, although many institutionalist economists like K. Polanyi, J.A. Schumpeter, J.R. Commons, and J.K. Galbraith[30] were

28 See ibid., 53.

29 Thorstein Veblen, *The Theory of the Leisure Class*, trans. C. Wright Mills (New York: Dover Publications, 1994).

30 John Kenneth Galbraith, nicknamed as JKG after JFK, a best-selling economist and an advisor to American presidents Franklin D. Roosevelt, Harry S. Truman, John F. Kennedy, and Lyndon B. Johnson. Even though JKG's institutionalist theories, especially on firms, were widely welcomed by the orthodoxy, few followed his institutionalist methodology. See John Kenneth Galbraith, *The New Industrial State* (Princeton: Princeton University Press, 2015).

highly appraised by neoclassical, Keynesian and Marxist economists. After a century of being omitted by main stream economics, new institutionalism became popular in the 1990s. First reason was the collapse of Marxist and Keynesian economies in the early 1990s, followed by failure of neoclassical economics to encompass the many subfields of economy. Cliometrics and new-institutionalist approaches tried to fill the theoretical gap in economic history. A recapitulation of cliometrics is beyond the scope this research; which is unfortunate because the new-institutionalist approach is not hostile to cliometrics as Marxist approach to neoclassical theory word toward one another. On the contrary, these two approaches are merged in many studies.

Such mergers were possible thanks to the theoretical flexibility of new institutionalism. This flexibility is the first reason behind success of new institutionalism. In fact, there are so many mergers of different approaches with new institutionalism that there are arguably multiple new institutionalisms today instead of just one. For example, normative institutionalism, deals with formal institutions and transaction cost analysis. Its main interest as exemplified in the work of Ronald Coase or Oliver Williamson is to determine the rules of these institutions –the firm, market, and contract- and how the agents reacts to these rules like.[31] Another school is innovation economics represented by Dosi, Freeman,[32] Fransman, and Soete.[33] This school's main interest is to examine the economic reasons behind innovations and the effect of innovations

31 Oliver E. Williamson, *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting* (New York: Free Press, 2010).

32 Christopher Freeman and Luc Soete, *Economics of Industrial Innovation* (Cambridge: MIT Press, 1997); and Christopher Freeman and Elgar, *Systems of Innovation: Selected Essays in Evolutionary Economics* (Cheltenham: Edward Elgar Publishing, 2008).

33 The examples includes Giovanni Dosi, Christopher Freeman, and Silvia Fabiani, "The Process of Economic Development: Introducing Some Stylized Facts and Theories on Technologies, Firms and Institutions," *Industrial and Corporate Change* 3, no. 1 (1994): 1-45; and Freeman and Soete, *Economics of Industrial Innovation*; and Klaus Nielsen, Björn Johnson, and Eaepe Conference of, *Institutions and Economic Change: New Perspectives on Markets, Firms and Technology* (Cheltenham: Edward Elgar Publishing: European Association for Evolutionary Political Economy, 1998); and J. Rogers Hollingsworth, "Doing Institutional Analysis: Implications for the Study of Innovations," *Review of International Political Economy* 7, no. 4 (2000): 50.

on the economy. In most of this research, institutions or a causal factor or an obstructer of innovation in the models. A third school is evolutionists like Richard Nelson, Sidney G. Winter,[34] and Geoffrey Hodgson[35] who use biologic analogies in economics.[36] This school considers institutions as a competitive evolutionary environment - for example a competitive market. Or the institutions themselves enter into an evolutionary process - for example the evolving strategies of firms to survive in a competitive market. A fourth approach is that of rational choice institutionalists, like Masahiko Aoki who uses extensive game theory and mathematical deduction but whose assumptions are not based mostly on new-institutionalist assumptions.[37] A fifth is approach deals

34 Richard R. Nelson and Sidney G. Winter, *An Evolutionary Theory of Economic Change* (Cambridge: The Belknap Press of Harvard University Press, 2004).

35 Geoffrey Martin Hodgson, Marc R. Tool, and Warren J. Samuels, *The Elgar Companion to Institutional and Evolutionary Economics* (Aldershot: Edward Elgar Publishing, 1994). There is a difference between Winter and Hodgson's perspectives on evolutionary institutional economics. Hodgson was inspired by Marx while Winter, Nelson, and Vromen were under the influence of Milton Friedmann. For Vromen, see Jack J. Vromen, "Economic Evolution: An Inquiry into the Foundations of the New Institutional Economics" (Routledge, 2007). Also see Karl Ernst Schenk, *Economic Institutions and Complexity: Structures, Interactions and Emergent Properties* (Cheltenham: Edward Elgar Publishing, 2003).

36 For discussions of the effects of evolutionary theories on Marx, Austrian School and German Historic school, see Jürgen G. Backhaus, *Evolutionary Economic Thought: European Contributions and Concepts* (Northampton: Edward Elgar Publishing, 2003); and John Laurent and Geoffrey Martin Hodgson, *Evolutionary Economics and Human Nature* (Cheltenham: Edward Elgar Publishing, 2003). For Schumpeter, Esben Andersen, "Schumpeter's Evolutionary Economics: A Theoretical, Historical and Statistical Analysis of the Engine of Capitalism," (2012). For recent studies, see Geoffrey Martin Hodgson, *Darwinism and Economics* (Cheltenham: Edward Elgar Publishing, 2009).

37 Eirik Grundtvig Furubotn and Rudolf Richter, *Institutions and Economic Theory: The Contribution of the New Institutional Economics* (Ann Arbor: University of Michigan Press, 1997), 11-37; and Masahiko Aoki, *Information, Corporate Governance, and Institutional Diversity: Competitiveness in Japan, the USA, and the Transitional Economies* (Oxford: Oxford University Press, 2000); and *Toward a Comparative Institutional Analysis* (Cambridge: MIT Press, 2001); and "Institutional Evolution as Punctuated Equilibria," in *Institutions, Contracts and Organizations: Perspectives from New Institutional Economics*, ed. Claude Ménard (Cheltenham: Edward Elgar Publishing, 2003).

with the political economy like Daron Acemoğlu and James A. Robinson,[38] who analyze political institutions, like political parties and the state in an economic perspective.[39]

The point is that if Marxism enabled created a profound relation to economic history thanks to its holistic, coherent structure that offered a perspective and tools for various fields of social sciences, the institutional economic approach benefits from a lack of structure that renders it compatible with any given field of research. The more interesting result of these theoretical flexibility is that this sub-schools often intersect. For example, Richard R. Nelson, one of the pioneers of evolutionary economics, has written so extensively on the subjects of innovation and technological change that he is considered an important innovation economist.[40] In fact, most innovationist economists are interested in evolutionary theories.[41] Likewise, it is also possible to merge orthodox economic approaches with new institutionalism. For example, Hodgson most new institutionalist are deeply affected by neoclassical theory. However,

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38 Daron Acemoğlu and James A. Robinson, *Economic Origins of Dictatorship and Democracy* (Cambridge: Cambridge University Press, 2009); and Daron Acemoğlu, *Why Nations Fail* (New York: Random House, 2012); and Daron Acemoğlu and James A. Robinson, "Economics versus Politics: Pitfalls of Policy Advice," *The Journal of Economic Perspectives* 27, no. 2 (2013): 173-92.

39 Norman Schofield and Gonzalo Caballero, *The Political Economy of Governance: Institutions, Political Performance and Elections* (London: Springer, 2015); and Wolfgang Streeck, "Beyond Continuity: Institutional Change in Advanced Political Economies" (Oxford, 2010). For a Marxist alternative, see Phillip Anthony O'Hara, *The Contemporary Relevance of Thorstein Veblen's Institutional-Evolutionary Economics* (Perth: Curtin University of Technology, School of Economics and Finance, 2000); and John F. Henry, Tae-Hee Jo, and Frederic S. Lee, *Marx, Veblen, and the Foundations of Heterodox Economics: Essays in Honor of John F. Henry* (London: Routledge, 2016).

40 For example, Richard R. Nelson, "Modelling the Connections in the Cross Section between Technical Progress and R&D Intensity," *The RAND Journal of Economics* 19, no. 3 (1988): 478-85; and "How New Is New Growth Theory?," *Challenge* 40, no. 5 (1997): 29-58; and Geoffrey Martin Hodgson, *After Marx and Sraffa: Essays in Political Economy* (New York: St. Martin's Press, 1991).

41 L. A. Leydesdorff, Peter van den Besselaar, and Peter M. Allen, *Evolutionary Economics and Chaos Theory: New Directions in Technology Studies* (New York: St. Martin's Press, 1994).

for example Hodgson is an offbeat Marxist, who combines Marxist economic theories with biologic concepts and institutionalism.[42]

Unsurprisingly, new institutional economics are involved in economic history as well. The first group of researchers, to deal with economic history were those testing their hypotheses using historical data. Since economic history had for many decades provided an experimental environment for many Marxist, Keynesian and neoclassical economists, many new institutional economists also sought the opportunity in economic history an experimental ground to prove their hypotheses - for example work of Acemoğlu, Johnson and Robinson's article on Atlantic trade,[43] and Acemoğlu and Robison's on the effects of French Revolution.[44] For that reason, a vast literature emerged in economic history in response to developments in new institutionalism. In fact, economic history contributed massively to popularity of new institutionalism in 1990s. Ronald Coase, the founding father of new institutionalism first won Nobel Prize in 1991, followed by economic historians Robert Fogel and Douglass Cecil North in 1993. While Fogel earned one mostly due to his contribution to cliometrics rather than new institutionalism, North constituted a

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42 Geoffrey Martin Hodgson, *Socialism and Parliamentary Democracy* (Nottingham: Bertrand Russell Peace Foundation for 'Spokesman', 1977); and *Labour at the Crossroads the Political and Economic Challenge to the Labour Party in the 1980s* (Oxford: M. Robertson, 1981); and *After Marx and Sraffa: Essays in Political Economy*; and *Evolution and Institutions: On Evolutionary Economics and the Evolution of Economics* (Cheltenham: Edward Elgar Publishing, 2001); and *A Modern Reader in Institutional and Evolutionary Economics: Key Concepts* (Cheltenham: Edward Elgar Publishing, 2002).

43 In this article, Acemoğlu and Robinson claim that in countries where political elites and political institutions directly benefited from of Atlantic trade, these elites and institutions favored changes to political institutions according to Atlantic trade. Otherwise, political elites resisted the introduction of new institutions that favored Atlantic trade. See Daron Acemoğlu, Simon H. Johnson, and James A. Robinson, "The Rise of Europe: Atlantic Trade, Institutional Change and Economic Growth," *American Economic Review* 95 (2005): 546-79.

44 The evidence demonstrates that countries in which the French army implemented his political and legal institutions by destroying the extant political power balance, reforms were more successful than in countries where the army did not interfere with local allocation of political power. See Daron Acemoğlu and James A. Robinson, "Persistence of Power, Elites, and Institutions," *The American Economic Review* 98, no. 1 (2008): 267-93.

role model for other economic historians. Although North has been trying for years to construct a universal and comprehensive institutionalist theory for years,[45] his was closer to the formal institutionalism of Coase and Williamson. North defines institutions as human devised constraints that shape human interaction.[46] Douglass North argues against Robert Thomas that economic organization "is the key to growth; the development of an efficient economic organization in Western Europe accounts for rise of the West."[47] The institutions that provide a more suitable economic environment for innovation and the accumulation of capital in history were – and still are – the main factor behind economic growth. For him, such institutions generate lower cost of information,[48] less uncertainty with negative externalities and better property rights.[49]

Despite North's efforts to produce a unified institutionalist theory, there is no unified new-institutionalist economic history. In fact, economic history suggested new perspectives for existing theory. For example, a group of economic historians trying to understand the relation among economic growth, innovation, geography, and history – comprised of Engerman, Sokoloff, and Haber – ask what is the source of the divergence of northern states of United States of America - already industrialized – from the southern states of United

45 ed. Geoffrey M. Hodgson, *The Elgar Companion to Institutional and Evolutionary Economics* (Aldershot: Edward Elgar Publishing, 1994), 136.

46 Douglass North defines institutions as the rules of the game in a society – or, more formally, the humanly devised constraints that shape human interaction. These institutions reduce uncertainty by establishing a stable (but not necessarily efficient) structure for human interaction. See Douglass Cecil North, *Institutions, Institutional Change and Economic Performance* (Cambridge; New York: Cambridge University Press, 2017), 3-8.

47 Quoted from Douglass Cecil North and Robert Paul Thomas, *The Rise of the Western World: a New Economic History* (Cambridge: Cambridge University Press, 2009), 1. Both writers argue that the main reason behind long-term growth is institutions. See ibid., 2-5.

48 North, *Institutions, Institutional Change and Economic Performance*, 29.

49 North's definition of property diverges from that of Marxist and Neoclassical economists because he emphasizes the role of institutions, transaction costs, and enforcement. See ibid., 33-34.

States of America and South America.[50] Another example is Grief's research on informal institutions. If formal institutions are the key factor in formation of long-distance markets, he asks then how did merchants trade in the absence of the modern state which sets such formal rules and supervises them efficiently? Grief's answer is that merchants relied on self-enforcing informal institutions.[51] In other words, merchants formed trade networks with relatives, fellow townsmen and coreligionist. Reputation based reinforcement forced the market agents fallow the rules. In the case of cheating, these market agents

50 Their work on the effect of geography focuses on two questions; first, why is South America underdeveloped relatively to North America, even though both continents had similar economic conditions before their colonization and second why were economic and social conditions of southern states of the United States so different before the civil war. These two questions are interdependent. Beginning with the former. S. Engerman, K. Sokoloff, and H. Haber argue that different institutional forms and geographical differences led two continents down two different paths of growth. Their definition of institutions includes the rules of the game, legal and political arrangements and rules, political power relations, and the balance of power between political elites, and the rest of the society as well as informal institutions, and cultural and religious values. See Stanley L. Engerman and Kenneth Sokoloff, "Colonialism, Inequality, and Long-Run Paths of Development," *NBER Working Paper* (2005). The development of the two Carolina's is apt example: The climate and soil of North Carolina and its lack of adequate coastal port facilities were not conducive to a considerable plantation sector but there was some expansion of the slave population, and the share of slaves in its population rose to about one-third before the Civil War. South Carolina, however, became a major plantation slave colony, starting with the expansion of the rice economy after 1700. Slave imports grew rapidly for work on the large rice plantations of coastal South Carolina and (after 1751) Georgia, and slave labor was also used to produce sea island cotton, indigo, and, after the invention of the cotton gin in 1793, short-staple cotton in the upland areas of the state." Quoted from Stanley L. Engerman and Robert E. Gallman, *The Cambridge Economic History of the United States* (Cambridge: Cambridge Univesity Press, 1996), 333. See also Stanley L. Engerman, "Slavery and its Consequences for the South in the Nineteenth Century," in *the Cambridge Economic History of the United States* (New York: Cambridge University Press, 2000).

51 Avner Greif, *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade* (Cambridge; New York: Cambridge University Press, 2006), 19 and 58-90; and "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders," *The Journal of Economic History* 49, no. 4 (1989): 857-82; and "History Lessons: The Birth of Impersonal Exchange: The Community Responsibility System and Impartial Justice," *The Journal of Economic Perspectives* 20, no. 2 (2006): 221-36.

faced multilateral punishment not from the formal state but from their social community.[52] For that reason, Grief demonstrated, a Jewish Venetian merchant would have been more inclined to trade with a fellow Jewish Venetian merchant than a Maghrebian Jew or a Christian Venetian.

Therefore, the popularity of new institutionalism in economic history relies on its successful on reconciliation of other social theories as Marxism did but with a major difference. This difference is also the third reason. Most contemporary economic historians are influenced by "new" institutionalism, not the "old" one. What makes new institutionalism, new is its approach to institutions. Oliver Williamson first stated that "institutions do matter," which is also main principle of the old institutionalism but also that "institutions are susceptible to analysis by tools of economy theory," which made new institutionalism actually new.[53] In other words, old institutional economists considered institutions as an extra-economic factor or variable to be explained by other social sciences. For that reason, old institutionalists borrowed theories from other social sciences to capture institutions. For example, Karl Polanyi benefitted from cultural analysis in his analysis of primitive societies,[54] while J.A. Schumpeter adopted Marxist social classes and some Weberian social theories.[55] In this sense, Ronald Coase essentially gave to an institution - the firm - an economic definition.[56] Accordingly, this new school captured institutions

52 *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade*, 91-123; and "History Lessons: The Birth of Impersonal Exchange: The Community Responsibility System and Impartial Justice," 221-36.

53 Oliver E. Williamson, "The New Institutional Economics: Taking Stock, Looking Ahead," *Journal of Economic Literature* 38, no. 3 (2000): 595-613.

54 Richard R. Nelson and Bhaven N. Sampat, "Making Sense of Institutions as a Factor Shaping Economic Performance," *Journal of Economic Behavior & Organization* 44, no. 1 (2001): 35-36. For original work, see Karl Polanyi and George Dalton, *Primitive, Archaic and Modern Economies: Essays of Karl Polanyi* (New york: Beacon Press, 1971).

55 Joseph A. Schumpeter, *Capitalism, Socialism, and Democracy* (Mansfield Centre: Martino, 2011).

56 Nelson and Sampat, "Making Sense of Institutions as a Factor Shaping Economic Performance," 34. For original paper, see R. H. Coase, "The Nature of the Firm," *Economica* 4, no. 16 (1937): 386-405.

with economic theories as much as possible. For example, the new-institutionalist Oliver Williamson was deeply influenced by J.R. Commons' old-school institutionalism. Both writers deal with contract theory and the institutional foundation of firms, markets and property rights and both start with the nature of transactions and institutions. However, while "for Commons, the transaction [and institutions are] not merely an economic phenomenon; rather [they are] basic unit[s] of analysis in law, economics and ethics,"[57] Williamson tries to capture these factors using transaction costs analysis and pure economic theories. This transformation of institutionalism makes it more compatible with economic history but ironically moved institutional economics away from other social sciences.[58]

The last reason is the failure of policies suggested by new-liberals, especially at the World Bank and the International Monetary Fund (IMF), for the transition of former Soviet economies into successful market economies.[59] The Nobel Prizes given to Douglas North[60] and Robert Fogel are key for the popularity of institutional economic history and cliometrics but they were given

57 "In the transaction are joined the three inescapable social relationships of conflict and interests (arising out scarcity), interdependence of interests (arising out of the need for exchange), and order (or compromise, arising out the need for establishing a system of working rules and expectations as the basis for exchange)." Both quoted from Joseph Dorfman, *Institutional Economics. Veblen, Commons, and Mitchell Reconsidered. A Series of Lectures by Joseph Dorfman, C.E. Ayres, Neil W. Chamberlain, Simon Kuznets* (Berkeley; Los Angeles: University of California Press, 1963), 73.

58 New institutionalism is clearly oriented toward capturing every institution through pure economic theory – especially business institutions like firms, markets, and commodity chains. However, in doing so it ignores social theory. See Malcolm Rutherford, "Institutional Economics: Then and Now," *The Journal of Economic Perspectives* 15, no. 3 (2001): 187-89.

59 Paul Krugman, *The Accidental Theorist: and Other Dispatches from the Dismal Science* (London: Penguin Books, 1999); and *The Great Unravelling: from Boom to Bust in three Scandalous Years* (London: Allen Lane, 2003); and Joseph E. Stiglitz, *Globalization and its Discontents* (New York: W.W. Norton, 2003).

60 Douglass Cecil North, *Structure and Change in Economic History* (New York: W.W. Norton, 2008); and *Institutions, Institutional Change and Economic Performance*; and *Understanding the Process of Economic Change* (London: Princeton University Press, 2005).

due to the fact that institutional economists like North were proposing an alternative explanation of why the formation of market economies by new liberals in former Soviet economies resulted in monopolistic competitive markets mingled with mafia economies.[61] After the epic failure of neoliberal policies influenced mainly by neoclassical economics, in transforming former socialist agriculture into efficient capitalist agricultures, the field of agrarian economics quickly transformed and became dominated by new-institutionalism in the 1990s. In fact, this transformation was so radical and absolute that that new institutionalism is arguably the new orthodoxy in agriculture economics.

The Tanzanian case exemplifies the epic failure of the neoclassical economic approach, and the example of Ivory Coast explains why new-institutionalism prevailed. In 1961, newly independent Tanzania inherited an agriculture sector characterized by a large semi-subsistence smallholder sector and small number of plantations and estates. In the mid-1970s, the Tanzanian socialist government launched a program to settle forcibly nomadic tribes and provide substantial governmental support.[62] However, Tanzania was forced to abandon its socialist policies and adopt an economic liberalization program under the pressure of the IMF and World Bank in the 1980s. However, the Tanzanian agriculture collapsed because of this liberalization program such that by the end of 1990s a serious risk of famine emerged. Many newly-settled farmers abandoned agriculture for nomadism, and crop yields fell to the lowest levels in the country's history.[63] Tanzania was spared from famine only due

61 "The institutional structure most favorable to approximating such conditions is a modern democratic society with universal suffrage." Quoted from *Institutions, Institutional Change and Economic Performance*.

62 Peter Gibbon, "Cooperative Cotton Marketing, Liberalization and 'Civil Society' in Tanzania," *Journal of Agrarian Change* 1, no. 3 (2001): 5 and 394. To pursing the entire agrarian change, see Elizabeth Daley, "Land and Social Change in a Tanzanian Village 1: Kinyanambo, 1920s–1990," ibid.5 (2005): 363-404.

63 The levels of crop yields in the late 1990s were even lower than those the 1979-1984 crisis, forcing the Tanzanian government to call for the help of the IMF and World Bank. See Rune Skarstein, "Economic Liberalization and Smallholder Productivity in Tanzania. From Promised Success to Real Failure, 1985–1998," ibid.: 345-47.

to the generous help of IMF and World Bank, which had pushed the country to the edge with their liberal policies in the first place.[64]

Today, given such epic failures, prominent national and international organizations like IMF, World Bank, USAID, and Ministry of Agriculture of People's Republic of China prepare field studies mainly based on new-institutionalism. In fact, institutional economics became so popular in agriculture that it can be considered the new orthodoxy.[65] Commodity chains analysis is the most common approach today, the core of which originally emerged in scientific management theory. Commodity chains analysis was reinterpreted by economists using Oliver Williamson's theories of contracts and the formation of markets. Cacao production in the Ivory Coast exemplifies why market-chains analysis increasingly replaced established theories of agriculture. In the Ivory Coast, cocoa production radically augmented with the emergence of global agrarian markets in the 1990s. On one hand, cocoa cultivation brought prosperity to its national economy; on the other hand, it ended up in human tragedy: revival of child labor and slavery. It is reported that cocoa farms increasingly exploited child labor. Eventually, the demand for child labor became so great that local tribes started to profit from human trafficking and child slavery. For that reason, by the turn of the new millennia, child slavery had become a major issue in the Ivory Coast. Although the return of child

64 Stiglitz provided the example of how the IMF pushed for the privatization of the telephone monopoly, which created greater market failures in the Ivory Coast. See Stiglitz, *Globalization and its Discontents*, 56-59.

65 Some examples include: Keyder Çağlar and Zafer Yanal, "Agrarian Change under Globalization: Markets and Insecurity in Turkish Agriculture," *Journal of Agrarian Change* 11, no. 1 (2011). For marketing chains analysis of the case of Ethiopian coffee, see Nicolas Petit, "Ethiopia's Coffee Sector: A Bitter or Better Future?," ibid.7, no. 2 (2007): 225-63. For Vietnam, see D. Michelle Benjamin, L. Brandt, and Daniel Lee, "Agriculture and Income Distribution in Rural Vietnam under Economic Reforms: A Tale of Two Regions," (William Davidson Institute Working Paper No. 519, 2002); and A. Haroon Akram-Lodhi, "Vietnam's Agriculture: Processes of Rich Peasant Accumulation and Mechanisms of Social Differentiation," *Journal of Agrarian Change* 5, no. 1 (2005): 73-116; and Martin Ravallion and Dominique van de Walle, "Land in Transition: Reform and Poverty in Rural Vietnam," ed. World Bank (World Bank and Palgrave Macmillan, 2008); and A. Haroon Akram-Lodhi, "Review Essay: Land, Labour and Agrarian Transition in Vietnam," *Journal of Agrarian Change* 10, no. 4 (2010): 564-80.

slavery became a growing national and international concern, the local government was impotent and had limited means to struggle against this issue. As one of the largest buyers of coffee from farmers in West Africa, Nestlé c signed an agreement with the local government in 2001 to put an end to this humanitarian issue.[66] Meanwhile, Fair Labor Association (FLA) filed a report in 2011 condemning Nestlé for policies aided and abetted child slave labor, which turned into a legal case in 2016.[67] It is important to understand why the FLA sued Nestlé. From the Marxist and neoclassical economic perspectives, Nestlé is not responsible because it neither owned cocoa farms; nor leased the land for its cultivation. Moreover, the company did not exploit any children, had no direct involvement in human trafficking and most importantly did not buy any cocoa directly from farms using slave labor. In other words, Nestlé had no direct connection to the production, cultivation, marketing, labor and real estate market. The company simply bought cocoa from legitimate markets in the cities, where no child labor existed. However according to commodity chains analysis, Nestlé is the dominant market agent with established power over the coffee production chain.[68] Thanks to this market power, the company indirectly sets the price and determines the quality standards of the coffee to be cultivated. It also has the indirect power to determine the labor organization of the farms. According to the FLA, Nestlé is pushing other market agents - wholesalers, local credit institutions and farmers to lower prices and improve quality regardless of how the farmers go about their production. FLA indicts Nestlé because the company could simply exercise its market power over the farms to prevent child labor and slavery but it preferred higher profits over resolving humanitarian issues. For that reason, the FLA claims that Nestlé is responsible for these market choices.

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66 Humphrey Hawksley, "Nestlé 'Failing' on Child Labour Abuse, Says FLA Report," BBC News, http://www.bbc.com/news/world-africa-18644870.

67 Rachel Revesz, "Nestlé Is Being Sued for Allegedly Using Child Slaves on Cocoa Farms," Independent, http://www.independent.co.uk/news/world/americas/nestle-is-being-sued-for-allegedly-using-child-slaves-on-cocoa-farms-a6806646.html.

68 For commodity chains in West Africa, see Benoit Daviron and Peter Gibbon, "Global Commodity Chains and African Export Agriculture," *Journal of Agrarian Change* 2, no. 2 (2002): 137-61.

The agrarian commodity chains assume that even though an agrarian market contains uncountable numbers of producers offering a highly undifferentiated, homogenous crop, this market can easily be imperfect for several reasons. First, although in theory, there are no market barriers in agrarian markets, farmers have physical issues accessing markets simply because they are scattered over a vast geography and need to transport their crops long-distances to the markets. Moreover, agricultural enterprises face high transaction costs for accessing information and credit unlike the industrial firms. For these reasons, despite the existence of perfect market conditions at the level of producers, powerful intermediary agents - like monopsonies and oligopolies - in the different level of the commodity chains can exercise market power over other agents in the marketing chain. For that reason, contrary to the suggestion of Marxist analysis, ownership of the means of production in agrarian markets does not typically work as it does in capitalist production, even though farmers may be the landowners, they are still subject to market standards determined by more powerful market agents. For example, as will be discussed in the third chapter, whether producers owned the land hardly mattered in the late nineteenth century tobacco market because powerful port merchants and the Régie Company (la Société de la Régie Co-intéressée des Tabacs de l'Empire Ottoman – simply Régie) eventually set the prices, determined the quality, and established control over products and producers though credit distribution and asymmetrical provision of information.[69]

69 This type of agent is called a lead agent and decides three parameters of production: what is produced – product design and specifications – how it is produced – defining production processes and how much is produced –, and when it is produced – scheduling and logistics. The market power of an agent in a commodity chain is called governance. Governance is expresses the ability of some firms in the chains to set and/or enforce parameters under which others in the chains operate. See John Humphrey and Hubert Schmitz, "Governance in Global Value Chains," in *Local Enterprises in the Global Economy Issues of Governance and Upgrading*, ed. Hubert Schmitz (Cheltenham: Edward Elgar Publishing, 2004).

1.2.3 *The Scope of the Dissertation*

This study does not discuss the topics of landed property, the anthropological conditions of the peasantry, biodiversity, long-term effects of climatic and ecological factors, and the short run determinants of agricultural production in all aspects. Each of these five subjects have been discussed briefly at least once but these short discussions are hardly enough to cover entirely the scope of these subjects. The reason why these subjects are dismissed relies on different reasons. The latter three subjects are dismissed because they are out of the scope of this study. The biodiversity and long-term effects of climatic and ecological factors are dismissed because the period of this dissertation is too short to study climatic and ecological change and geography is too small to study biodiversity. In addition, the short run determinants of agricultural production are dismissed because this study scrutinizes the long run agrarian change, not the short run determinants of agricultural production – short run supply curve. For example, this dissertation discusses the reasons why the farmers in Canik increased the production of tobacco fit better to western taste and increasingly adapted their tobacco production according to global standards in the long run. However, it does not discuss reasons why the percentage of tobacco production was not change in time. The answer to this question should be scrutinize at macro-level geography, but with tools of microeconomics and econometrics approach.

Two remaining subjects, landed-property and anthropologic conditions of the peasantry, could have been part of this dissertation because they might have provided some answers to main question. For that reason, they require longer explication. There are three main reasons why landed property rights are dismissed. First, although there are signs of the transfer of landed properties among economic agents throughout the century, there is no sign that these transfers of landed property affect long-term agrarian change. For example, even in cases of dispossession of farmers by usurers, or merchants; new owners kept the farmers in place and neither the crop they cultivated nor how these crops were produced. Neither are there any cases in which new owners – merchants, big landowner, nor tax farmers transformed small-to-medium sized farms into large capitalist enterprises. For that reason, in the case of the dispossession of land from farmers, the confiscating party usually lent the land

back to the same farmers to others without changing the nature of the agricultural production. The change in ownership led to changes in wealth distribution among agents but this is not the subject of this dissertation.

Second, an examination of the effect of changes to the Ottoman land regime in 1858 on production is also outside of the scope of this research, because the periods with which this dissertation deals are after mid-1850s. In other words, a private property regime existed for almost the entire period investigated by this dissertation. Therefore, it is unlikely that the effect of the Ottoman Land Code of 1858 could be extracted other factors. For that reason, it is impossible to detect whether this code contributed to agrarian change in the 1860s by studying only the period 1850s-1910s. To sum up, a study of the Southeastern Black Sea region starting in the mid-1850s reveals little about the effects of change in the landed regime on agricultural production and commerce in the late 1850s. Finally, primary archives are silent about the effects of landed property rights. This is a fault in the nature of the archival material and the absence of evidence does not prove the counter argument: however, questions on landed property rights can only be answered satisfactorily, once the *Tapu Kadostro Arşivleri* is fully opened to researchers. Otherwise examining the existing primary archives to determine the importance of landed property, especially when the existing archives indicate otherwise would be fruitless.

The second topic that was dismissed was the anthropological features of the peasantry. The main reason it is disregarded is the absence of secondary sources. If there had been studies like that of Martha Mundy and Richard Saumarez Smith's study on governing property and anthropological nature of the peasantry and change in nineteenth century for Anatolia; the anthropological structure of the peasantry could have been added into this dissertation.[70] This is unfortunate because there is some evidence that the anthropological character of the peasantry was important for agrarian change. There are signs in Southeastern Black Sea region that support this argument. For example, a study could have been made discussing the effects of open fields, the sizes of the villages, the exercise of collective labor, and private labor organizations.

70 Martha Mundy and Richard Saumarez Smith, *Governing Property, Making the Modern State Law, Administration and Production in Ottoman Syria* (London: I.B. Tauris, 2007).

The consensus of 1909 points out that some farmers in Ordu and Tokat collectively owned large lands, whereas in Canik the sizes of farms were smaller with considerably fewer owners of any given farms. There are studies arguing that common ownership, open farming, and large families are resistant to agrarian change.[71] However, since there are no studies of the nature of farmers in the late nineteenth century in South Black Sea, it is impossible to entertain these possibilities.

1.2.4 *The Nature and Limits of Primary Sources*

The third contribution of this dissertation to the literature is its primary source. On this point, I have to make personal statement, I am deeply influenced by the attitude of quantum mechanics towards its subject of study. In quantum mechanics, observation and experiment is everything, its pioneers gave little heed to common sense or human logic; these pioneers of the quantum mechanics simply modelled what they observed even if the model is contradictory to human reasoning. As Richard Feynman puts it "[Quantum mechanics] describes nature as absurd from the point of view of common sense. And yet it fully agrees with experiment. So, I hope you can accept nature as she is – absurd."[72] Accordingly, this dissertation starts with primary sources and is mainly based on an inductive method. For that reason, a presentation

71 Some examples include Robert C. Allen, "The Efficiency and Distributional Consequences of Eighteenth Century Enclosures," *The Economic Journal* 92, no. 368 (1982): 937-53; and M. A. Havinden, "Agricultural Progress in Open-Field Oxfordshire," *The Agricultural History Review* 9, no. 2 (1961): 73-83; and Donald [Deirdre] McCloskey, "The Enclosure of Open Fields: Preface to a Study of Its Impact on the Efficiency of English Agriculture in the Eighteenth Century," *The Journal of Economic History* 32, no. 1 (1972): 15-35; and "The Economics of Enclosure: A Market Analysis," review of European Peasants and Their Markets: Essays in Agrarian Economic History, William N. Parker, Eric L. Jones, *The American Historical Review* 82, no. 1 (1977): 83-84; and J. A. Yelling, *Common Field and Enclosure in England, 1450-1850* (London: MacMillan Press, 1984).

72 Richard Phillips Feynman, *The Strange Theory of Light and Matter* (Princeton: Princeton University Press, 1988), 10.

of primary sources is compulsory. Unfortunately, this presentation will be limited to three sources, consular reports, the official statistics and reports of the Ottoman government, and price lists.

1.2.4.1 Consular Reports and Statistics

This dissertation benefitted from Belgian, British and French consular reports. These consular reports were used for their detailed information on commerce and agriculture and abundant statistics. The British and Belgian consular reports are published ones and their photos were kindly granted by the Thalis Black Sea Project.[73] In addition, the same British reports were also published by Musa Şaşmaz but Şaşmaz's anthologies contain numerical transliteration mistakes.[74] Accordingly, the photos of the reports granted by the Black Sea Project is preferred over Şaşmaz's anthology. Another collection was Vital Cuinet's voluminous statistical description of the Ottoman Empire - first published in 1892. The statistics in these volumes given for the Southeastern Black Sea region are nothing but five-year averages (1885-1890) of French consular reports.[75] For that reason, Vital Cuinet's statistics are only reliable as the French reports. I collected the French commerce reports from the archives in Nantes, where I have realized that the French foreign ministry did not publish every handwritten consular report. In fact, only a considerably small proportion was published. For example, reports and correspondence containing de-

73 "Thalis Black Sea Research Project," https://blacksea.gr/.

74 Musa Şaşmaz, *Trade Reports of the Trebizond Province on British Documents, 1830-1914 = İngiliz Belgelerine Göre Trabzon Vilayeti Ticari Raporları, 1830-1914* (Ankara: Türk Tarih Kurumu, 2014).

75 For Erzurum Province, Cuinet clearly indicated the years "de 1885 à 1889" quoted from Vital Cuinet, "Vilayet d'Erzouroum Statistique Descriptive," in *La Turquie d'Asie; Géographie Administrative, Statistique, Descriptive et Raisonnée de Chaque Province de l'Asie-mineure* (Paris: Ernest Leroux, 1892), 113. Cuinet also asserted that he used the last five years for Trabzon Province, therefore it is safe to assume that these years were also 1885 to 1889, as was the case for the Province of Erzurum. See "Vilayet de Trébizonde Statistique Descriptive," in *La Turquie d'Asie; Géographie Administrative, Statistique, Descriptive et Raisonnée de Chaque Province de l'Asie-mineure* (Paris: Ernest Leroux, 1892), 23.

tailed information on tobacco cultivation in Canik, shipping, the local mercantile classes, conditions of the French citizens, French court minutes, and the Armenian Revolt/Hamidian Massacres of 1894-1896 were never published.[76] In some cases, handwritten reports went through serious editing before publication. For that reason, the French consular archives in Nantes provided more detailed information compared to published works at the *Bibliothèque Nationale de France* in Paris.

Anyone who uses these archives in their work had to answer to three main questions. What were the sources of the information used in these reports? How reliable are these reports? And what are their limits. To understand the historiographic limits of these reports, it is important to know the sources of information used their composition. The first type of information consists of commerce and shipping statistics of the ports of Trabzon, Samsun, Giresun, Ordu, Tirebolu and Rize. These were based on the actual shipping manifests of steamship companies operating in the ports of Trabzon Province. These manifests recorded the weight, volume, and value of all cargo carried by steamship.[77] For sailing ships, shipping company agents estimated the cargo based on two items of information. First these shipping agents knew the official cargo capacities of these sailing ships from the official manifests of their arrival and departure. Second - and fortunately - most of time these ships carried bulk cargo, like grains making easy to estimate the total volume they carried.[78]

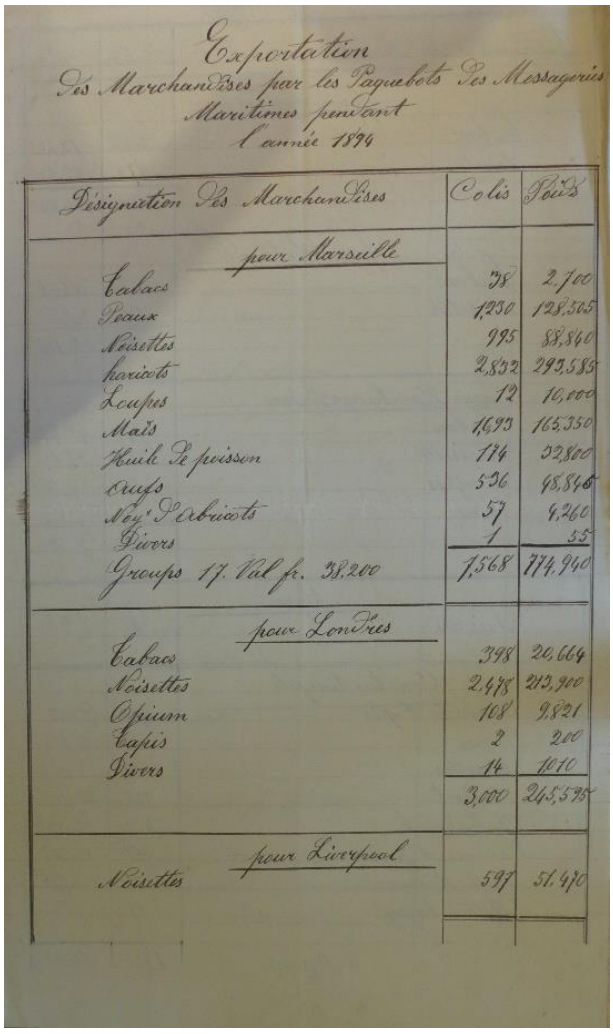
The reports of shipping company agents were so important for the information gathering for the consular reports that in some cases entire commercial reports were written by shipping agents. For example, Numa Doulcet and

76 The files for the Province of Trabzon were located at the Archive Diplomatique Inventaire de la Série Mémoires et Documents sous Série Turquie; 605PO/1, 703PO/1/59, 703PO/1/82, 703PO/1/83 and 703PO/1/84. However, the files in these boxes are disheveled: and listed for rearrangement. For that reason, the name of the reports is given instead of box codes, which may change.

77 The agents did not use official statistics to compose the reports on navigation and commerce at least until end of nineteenth century. See A. Chayet, "Rapport Commercial de Trébizonde (1897)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1897).

78 However, if they failed within an acceptable margin of error, it would have marginal error since the percentage of the volume of cargo was roughly 10% by the end of century.

Henri de Contanze were agents of the shipping companies Les Méssageries Maritimes and Paquet in Samsun as well as active consular agents of the French mission. For that reason, shipping statistics compiled from the commercial statistics of a port are the most reliable among such statistics. However, expectedly, the reliability of consular reports increase in time. While the reports from Trabzon became more reliable after 1869, Samsun after 1876, Giresun, Ordu, Karahisar-ı Şarkî and Sivas in the late 1880s and finally Rize, Amasya and Tokat in the late 1890s.



Exportation
Des Marchandises par les Paquebots des Messageries
Maritimes pendant
l'année 1894

Désignation des Marchandises	Colis	Poids
pour Marseille		
Tabacs	38	2,700
Peaux	1,230	128,365
Noisettes	995	88,840
haricots	2,832	293,585
Loupes	12	10,000
Maïs	1,693	165,350
Huile de poisson	174	32,800
œufs	536	48,840
Ney d'Arbicots	57	4,260
Divers	1	35
Groupe 17. Val fr. 38.200	7,568	774,940
pour Londres		
Tabacs	398	20,664
Noisettes	2,478	213,900
Opium	108	9,821
Tapis	2	200
Divers	14	1010
	3,000	245,595
pour Liverpool		
Noisettes	597	51,470

Figure 1.1 A Page from Méssageries Maritimes' Report in 1894

SOURCE Agence Consulaire de Trébizonde, 703 PO/1/83, AMAE, CADN

In handwritten reports, there are references to the commercial reports of various institutions and of other nation, which went missing before being publishing. Moreover, the dossier of the French consulate from Trabzon Province contains many receipts from the Régie Company, merchants, and others; maps; communiqués; telegraphs; and letters among local agents; and most interestingly a compilation of Russian statistics on port of Trabzon written in Russian. Moreover, in some cases the same agent was the consul for two different nations; in Samsun in 1889, Numa Doulcet represented both France and United Kingdom,[79] while H. de Caravel represented Italy, Sweden, Norway and the United States of America. The most extreme example occurred when Austro-Hungarian Consul Helzinger de Weidich, who also held the office for Germany and the Netherlands, suddenly passed away. A. Sassi assumed his duties and became the consul in Trabzon representing five countries - Belgium, Denmark, Germany, Netherlands, and Austro-Hungary - for several months in 1902.[80] Considering the existence of such documents, it is safe to assume that Belgian, British, French, Italian, Ottoman and even Russian local agents were exchanging commercial and shipping information and statistics at least at the end of the century. The major exception was the Dual Monarchy and the German states.[81] In extreme cases, some British reports for Samsun were actually written by French shipping and consular agents as in the year 1898.[82] Considering that British shipping was more active before the 1860s and

79 Numa Doulcet assumed both positions until his death on January 13, 1890, when he was replaced by Henri de Contanze. See Şaşmaz, *Trade Reports of the Trebizond Province on British Documents, 1830-1914 = İngiliz Belgelerine Göre Trabzon Vilayeti Ticari Raporları, 1830-1914*, XXII-XXIII.

80 See R. Cesar Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1902)* (Istanbul: The Annuaire Oriental and Printing Company Limited, 1902), 1424.

81 Other nations' reports, like those of American, Swiss, and Dutch, are missing as well but these nations had a limited presence in Southeastern Black Sea region. Austro-Hungary, however, possessed one of the most active consulates and shipping agencies along with France, Russia or Great Britain.

82 The British report of 1898 was indicated as being "The report of M. de Contanze, British Consular Agent at Samsoon". However, Henri de Contanze was a de jure French consular agent

the French steamshipping companies replaced them by the 1860s, it is unsurprising that British reports were more detailed before 1860s and French ones thereafter.[83] By the mid-1880s, the French mission had established active deputy consulates in Samsun, Giresun and Ordu and had access to the archives of the two most active steamship companies. Because the British consul mostly deferred to French agents and consular reports, the values in sterling in British commercial statistics were nothing but 25-fold of the French values in francs after 1885.

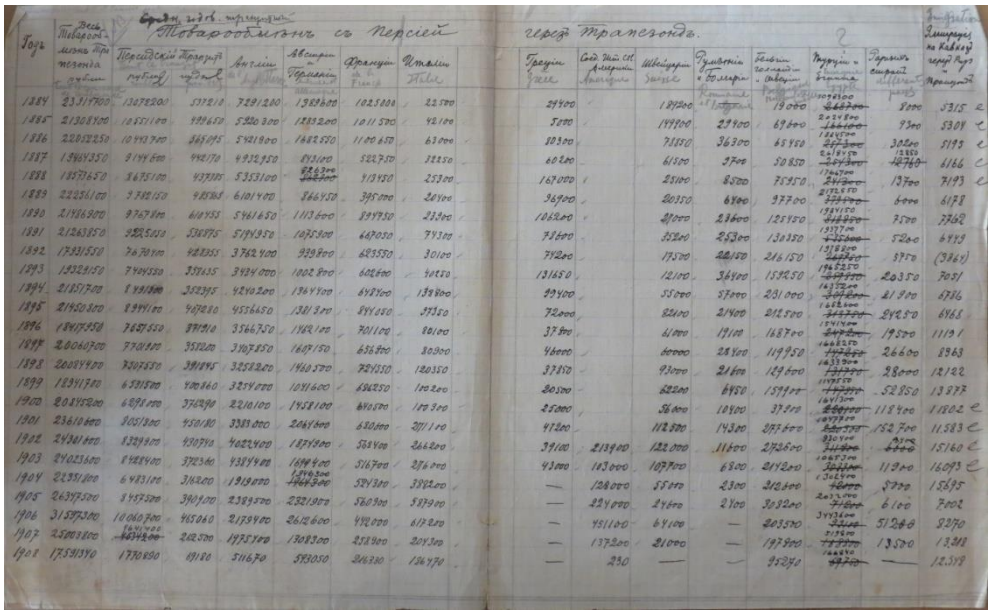


Figure 1.2 Russian Statistics for the Port of Trabzon

SOURCE Agence Consulaire de Trébizonde, 703 PO/1/84, AMAE, CADN.

who wrote report for others in the same year for the ports of Samsun and Tirebolu. As a shipping agent for Méssagerie Maritime and Paquet at the same time, he was also a member of French Chamber of Commerce in Constantinople and writer of the journal *"Levant Oriental,"* the official journal of the same Chamber of Commerce. See Henry Longworth, "Report on the Trade of the Trebizond Vilayet for the Year 1898," (London: Foreign Office of the United Kingdom, 1898). For French reports, see Henri de Contanze, "Rapport Commercial de Tirépoli (1898)," (Agence Consulaire de Samsoun, AMAE, CADN, 1898).

83 Mahmuzlu, "Transformation of Mercantile Shipping in Southeast Black Sea Ports between 1834 and 1914," 99-128.

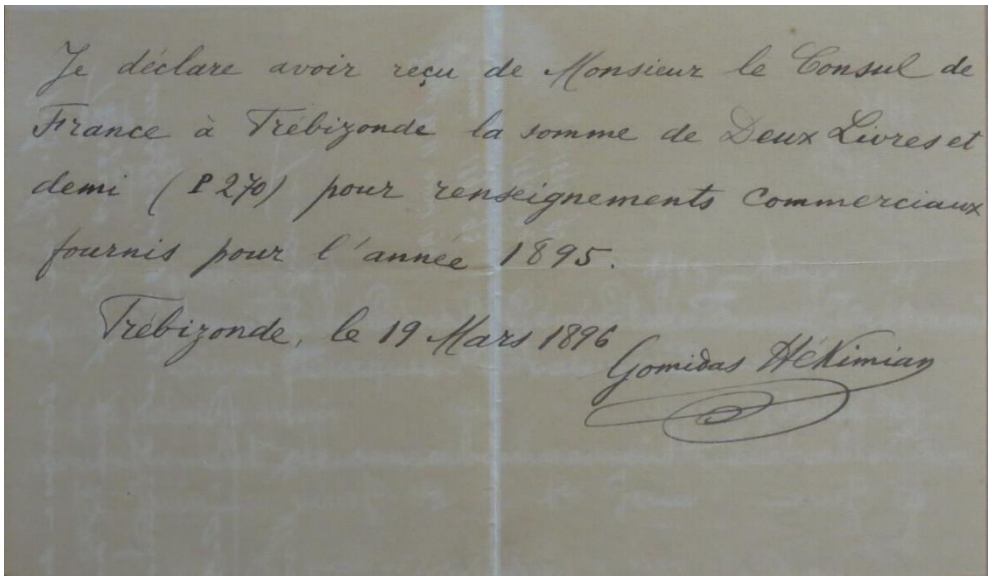
The second source of information is local merchant communities, which can be inferred from the nature of the information given in the reports and the bills paid to those merchants (see figure 1.3). In fact, some members of the foreign missions were actively involved in commerce as well. For example, the Piaoglou brothers filed a petition against Numa Doulcet, who in 1874 was the representative of Méssageries Maritimes and the French consular agent in Samsun, accusing him of abusing his political position to avoid his duties in his commercial transactions.[84] Moreover, these consular agents apparently had better access to the archives of the Régie Company and the Ottoman Bank than the contemporary historians. For example, information and statistics on Canik's agriculture provided by the French mission was extremely rich after 1886, because these consular agents were being fed information by the local Régie bureaus. One final source of information was local governments.[85] For example, while writing his report for 1904, Henri de Contanze was given a guided tour of model farms and informed about the agricultural situation of the Canik by *Kaimakamlık*. The French consul thus wrote a special report on the agriculture of Samsun in 1905, which was astonishingly detailed.[86] Likewise, in some years, consular agents included the official annual provincial budgets in their reports.[87]

84 Piaoglou brothers complained to French Tobacco Monopoly that the French consular agent who also represented Méssageries Maritimes, Numa Doulcet abused his position. For further information see *Attachement de la Lettre de l'Administration de Tabacs à Paris au Consulat à Trébizonde* (August 20, 1874), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN.

85 Kemal Karpat claims that consular agents in Ottoman Empire had access to some public statistics. See Kemal H. Karpat, *Ottoman Population, 1830-1914: Demographic and Social Characteristics* (Madison: University of Wisconsin Press, 1985), 6.

86 Henri de Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904," (Agence Consulaire de Samsoun, AMAE, CADN, 1904).

87 For example for the year 1881, see Alfred Biliotti, "Report on the Trade, Commerce, and Navigation of the Port of Trebizond for the Year of 1881," (London: Foreign Office of the United Kingdom, 1881).


Je déclare avoir reçu de Monsieur le Consul de France à Trébizonde la somme de Deux Livres et demi (P 2½) pour renseignements Commerciaux fournis pour l'année 1895.

Trébizonde, le 19 Mars 1896 Gomidas Hékimian

Figure 1.3 Payment for Gomidas Hekimian's Commercial Advices

SOURCE Agence Consulaire de Trébizonde, 703 PO/1/84, AMAE, CADN.

Although consular reports provided valuable information, one should pay special attention to three points before using it. First, consular missions had political and economic agendas. For that reason, although consular agents tried to accurately describe the economic situation with statistics, they interpreted these facts and statistics from a certain point of view. For example, expressions like "commerce was good this year" and "the tobacco of Samsun is better than last year" could mislead the modern reader if attention is not paid to what the reporter meant by adjectives such as good, better, and worse. For example, in 1858, Belgium replaced its consular agent in Trabzon; both agents thus wrote a commercial report for the same year. Jules Paulis claimed that 1857 was a "good" year for commerce, while Arnaud labelled it as "bad."[88] Interestingly their opinions were based on the same facts but they interpreted these facts from completely different perspectives. Arnaud was from a local merchant family, and reading between the lines, it is clear that he called 1857 a

88 Jules Paulis, "Receuil Consulaire de Trébizonde (1857)," (Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1857); and H. Arnaud, "Receuil Consulaire de Trébizonde (1857)," (Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1857). and

bad year because there was a substantial decrease in profitability due to heavy decreases in prices. On the other hand, Paulis wrote that it was a good year because he considered total trade volume to be the main measure, not profitability. In reality, following the end of the Crimean War, prices and volume of trade decreased considerably. Deflation continued in 1857 but the quantity demanded of local goods by foreign agents increased because of price deflation. Accordingly, the decrease in prices brought about a decrease in profitability but a higher volume of trade; while the total volume of trade in 1857 was as high as in 1855, profits remained as low as in 1856.[89]

Another less reliable aspect of these statistics was the origin and final destinations of the cargo. The main reason was that most cargo were shipped by imperialist powers to and from their colonies changed hand in an international commercial network several times before reaching its final destination. For example, most bags imported to the Province of Trabzon were originally shipped from Calcutta,[90] but they were labelled as English [*sic* – British] rather than Indian. Likewise, imported fezzes were mostly manufactured in Bohemia, which was part of Dual Monarchy but they were simply counted among Austrian [*sic* – Austro-Hungarian] textiles.[91] Moreover, things became more complicated when commodities were exported and imported from a secondary foreign port or by a different group of merchants. For example, the French cigarette paper of JOB was shipped from Austro-Hungarian Trieste, not from France.[92] Likewise Dutch agents exported commodities in the name of Americans in the late nineteenth century but these commercial activities were

89 Another striking example was that Henri de Contanze, who had been a shipping agent in Samsun, considered a decrease in shipping fees to be "les frêts malheureusement très reduits" quoted from Henri de Contanze, "Rapport Commercial de Samsoun (1901)," (Agence Consulaire de Samsoun, AMAE, CADN, 1901).

90 N. Collaro, "Rapport Commercial de Kérassunde et Ordou (1898)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1898).

91 This issue became even more complicated due to the fact that most German goods were transported via Trieste. See Chayet, "Rapport Commercial de Trébizonde (1897)."

92 Henri de Contanze, "Rapport Commercial de Samsoun (1905-1906)," (Agence Consulaire de Samsoun, AMAE, CADN, 1905-1906).

counted as commerce with Netherlands, not United States of America.[93] More interestingly, British textiles maintained their dominance until the end of the nineteenth century but these textiles were mainly imported indirectly on French or Austrian ships via Marseille or Trieste.[94] A third and more complicated issue arose when the production of a final commodity was accomplished in a different country. For example, most imported sugar was originally cultivated in colonies but was processed in France or Austro-Hungarian Empire. For that reason, someone not paying any attention would think that the French mainland was the largest exporter to the Southeastern Black Sea region. However, most of the commodities being imported on French ships or from French ports were colonial goods like coffee that had been cultivated and processed in a French colony, not in the mainland. France along with its colonies were one of main importers to the Southeastern Black Sea region but if the French *denrées coloniales* were omitted, the volume of goods imported from mainland France was inconsiderable.[95] The forth and most important issue was that cargo shipped directly to Istanbul, Marseille or Trieste were often later reshipped elsewhere.[96] In fact due to the insufficient warehouse space at local ports, most of the goods to be sold in the long-distant markets were shipped to these port and then reshipped to their final destinations. In situations where reshipping took a considerable amount of time, reporter often lost track of the cargo and considered Istanbul, Marseille or Trieste to be the final destination. In such cases, the cargo was counted as the part of Ottoman, French or Austro-Hungarian commerce regardless of where this cargo even-

93 Alphonse Cillière, "Rapport Commercial de Trébizonde (1895)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1895).

94 Chayet, "Rapport Commercial de Trébizonde (1897)."

95 Alfred Spradaro, "Rapport Commercial de Samsoun (1893)," (Agence Consulaire de Samsoun, AMAE, CADN, 1893).

96 The reporter stated that the real numbers on internal trade were hard to estimate since some foreign goods transported from Istanbul were inscribed as having been imported from "Turkey". See ibid.

tually ended up. This fault was considered to be most significant issue in commercial statistics by consular agents themselves.[97] For these reasons, it is safer to deal with the total volume and value of exports or imports rather than to pay any attention to port of origin or destination of the cargo.

The final issue in these foreign archives is most crucial for this dissertation. The foreign archives provide information and statistics on different *kaza*s and Sanjak*s* in the same report, document, and even table but information and numbers for these *kaza*s and Sanjaks are not equally reliable. Let's clarify by comparing statistics on the Sanjak of Lazistan and port of Rize with those on Canik and its port, Samsun. Since these Sanjaks are part of the same province, consular agents provided statistical information on them in the same table but paid little attention to statistical issues that are important to the contemporary historian. However, the reliability of comparable statistics for these two ports and Sanjaks could diverge greatly. For example, the consular agents obtained astonishing information on Canik at the turn of the century thanks to presence of the shipping company and the Régie Company, foreign commercial interests, and vivid commercial network of the Samsun port and its nearby hinterland. Accordingly, detailed statistics and information was present in a series of British and French reports about the Sanjak of Canik at the turn of the century. These statistics were the best possible for this period. However, unlike to port of Samsun, no western shipping company made regular trips to Rize. Therefore, its shipping statistics were less reliable. More importantly, the French, British and Austro-Hungarian consular missions had no active presence in this port. For that reason, statistics concerning Lazistan are more questionable than those for Trabzon Province. In addition, because of its mountainous geography, even the Ottoman central state had difficultly counting and registering its own villages. A comparison of budgetary reports on Lazistan

97 For example, in 1898 the consular agent indicated that some of the cargo that he had entered as "French" was later reshipped to Northern countries. See Chayet, "Rapport Commercial de Trébizonde (1897)."; and "Rapport Commercial de Trébizonde (1898)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1898). For Istanbul see C. Collomb, "Rapport Commercial de Trébizonde (1900)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1900); and Spradaro, "Rapport Commercial de Samsoun (1893)."

prior to and after 1890s reveals an astonishing increase in tax revenue. For example, there are detailed statistics on agricultural production in Trabzon Province provided by the British consular report for 1881.[98] When I double-checked the reliability of statistics on the population of Lazistan and commercial statistics for Rize, I realized that the numbers on agricultural production in Lazistan were impossibly low before 1890s.[99] My theory is that in 1880s some of mountain villages were absent from Ottoman tax surveys as well as from consular reports but these villages were later added by the end of the century.

1.2.4.2 Ottoman Reports and Statistics

During my research on Ottoman sources, I realized there is an issue of missing statistics and reports in field of agriculture. For example, the *salname*s (yearbook) of the Province of Trabzon sometimes recapitulate detailed surveys of agriculture conducted by the Ministry of Finance but the original surveys made by this ministry are missing.[100] The ministry of finance obviously regularly estimated Ottoman agricultural production in order to estimate tax revenues. Moreover, agricultural reports were filed regularly with the central government and some were published in *Ticâret ve Ziraat Nezâreti Mecmuası*. However, it is impossible to determine whether this journal published every report. Another source is books and journals on agriculture but most of these

98 See Appendix M.

99 I conclude that the numbers for the Sanjaks of Trabzon and Canik appear genuine and could represent reality but the numbers from Lazistan do not add up. If the total recorded amount of agricultural production in Lazistan were correct villagers would have been dying from famine. Total production was less than 5 million kilograms and 1881 and surpassed 50 million kilograms by 1909. Population growth was not behind this increase, as population was 136,280 in 1881 and 123,567 in 1914. See Karpat, *Ottoman Population, 1830-1914: Demographic and Social Characteristics*, 139 and 81. If total agricultural production per person is considered, the residents in Lazistan would have been suffering from famine according to the numbers for 1881, the existence of fishing notwithstanding. If these numbers in 1881 were taken from *Maliye* (Ministry of Finance), many villages hidden in inland mountainous areas were probably not properly inscribed.

100 Kudret Emiroğlu, *Trabzon Vilayeti Salnameleri Yer ve Kişi Adları* (Ankara: Trabzon İli ve İlçeleri, Eğitim, Kültür ve Sosyal Yardımlaşma Vakfı, 2012).

publications contain lectures and not real observations of agriculture. However, reading between the lines, it is possible to find valuable information in such publications. For example, one of the main sources on hazelnuts using in this dissertation is Antreasyan's book. He was from a merchant family in Ordu that dealt with hazelnut commerce for at least two generations. Moreover, he was a professional agriculturist who had graduated from Bursa Agricultural School, and was later appointed as inspector of agriculture for the Provinces of Trabzon, Bitlis, and Erzurum some time before 1914. He was a member of Provincial Agricultural Banks of these provinces, member of the Chamber of Commerce and Industry in Ordu, member of the *Sandık Meclisi* (Provincial Treasury Council) in Ordu and an owner of silkworm farms in Ordu and Bilecik. Accordingly, the information given in his book and his agricultural reports were based on first hand observations.[101]

Of the Ottoman statistics from which this dissertation benefitted the famous Agricultural Consensus of 1909, which was the first comprehensive statistical analysis of agriculture in Anatolia. This consensus facilitated estimates of long-term change from the late 1880s to the 1910s. However, it is important to understand the nature and the limits of this consensus. The consensus of

101 As Donald Quarteart points out, most books written by Ottoman agriculturalists are didactic and based on information provided by foreign writers. However, he missed the fact that Ottoman agriculturists liked to add information about their own local production between the lines. For example, Mardinîzâde provided examples of tobacco cultivation methods unsurprisingly from his native town, Mardin. See Ahmed Cemalettin Mardinîzâde, *Tütüncülük* (Istanbul: Cumhuriyet Matbaası, H. 1321). Likewise, Nişan Antreasyan's Fındık Ziraati ve Ticareti contained similar examples from Ordu – first of sericulture (See N. Collaro, "Rapport Commercial de Kérassunde et Ordou (1901)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1901).) and of course hazelnut arboriculture. More importantly, he clearly shared his personal observations with detailed statistics and descriptions on local production in his book: "Bizzat icra ettiğim tecrübelere nazaran" quoted from Nişan Antreasyan, *Fındık Ziraati ve Ticareti* (Istanbul: Matbaa-ı Hayriyye ve Şürekası, 1915/1916 (1331)), 35. He was probably the anonymous writer of Agricultural report in Trabzon as well.

1909 was compiled from questionnaires filled individually by the local government of each *kaza*.[102] Given the decentralized methodology inconsistencies in the estimates among various Provinces is apparent in the numbers. Let's give a concrete example. For example, crop yields for maize in the Sanjaks of Erzurum and Bayezid were much greater than in Trabzon Province, which is fundamentally impossible considering the fact that crop yields of maize are heavily dependent on rainfall. My guess is that officers in Sivas and Trabzon Provinces weighed only harvested kernels to estimate total crop yields, officers in Erzurum weighed the harvested crops along with their stems. The second methodologic issue is that the numbers given are only for 1909. Accordingly, there were deviations from the real mean. Extreme deviations were noted by the officers as well; for example, the harvest of cereals from Kangal[103] and hazelnut from Ordu[104] were lower than usual in 1909.

102 Tevfik Güran, *Osmanlı Dönemi Tarım Istatistikleri 1909, 1913 Ve 1914 = Agricultural Statistics of Turkey During the Ottoman Period* (Ankara: T.C. Başbakanlık Devlet İstatistik Enstitüsü, 1997), XXI.

103 "Kuraktan yalnız zira olunan tohum derecesinde mahsul alınabilmiştir" quoted from *1325 Senesi Asya ve Afrika-ı Osmanî Ziraat İstatistiği*, ed. Cemâl (Orman ve Maden ve Ziraat Nezareti Kalem-i Mahsus Müdürü), vol. 2, Ziraat İstatistikleri (Istanbul: Matbaa-ı Osmaniye, 1911), 73.

104 "Kuru fındık (kuraktan nıfs raddesindedir)" quoted from ibid., 279.

Table 1.1 Crop Yields of Maize in the Consensus of 1909

Sanjak	Crop Yields
Erzurum	44.01
Erzincan	10.74
Beyazıd	50
Sivas	10
Amasya	12.2
Trabzon	7.44
Canik	18
Gümüşhane	4.4
Lazistan	9.62

SOURCE 1325 Senesi Asya ve Afrika-ı Osmanî Ziraat İstatistiği

Third, the issue of deferring reliability in different Sanjaks exists in Ottoman statistics as well. For example, the number for Hınıs in the consensus of 1909 are doubtful. According to this consensus, the unfertile Sanjak of Hınıs, where 26,211 people were living in 1907, produced the equivalent of half of the total volume of wheat produced in the rest of the Erzurum Province.[105] Giving that cereals were consumed entirely within the Sanjak,[106] the local population would have been consuming more than 10 kilograms of wheat per head every day! My guess is that this error was resulted from *kile* being inscribed as *okka/kıyye*.

In addition to issues in measuring the numbers, some of the data is also missing. First, the consensus doesn't contain every *kaza* of every Province. For example, Tonus in Sivas and Tortum in Erzurum were missing from the statistics on cereals.[107] Second, not every crop was included. For example, hemp, hazelnuts, onions, *koloz* yellow wheat, okra, cherries, black cherries, cranberries, and peaches were excluded from the consensus. Among these hazelnuts,

105 For the population of Hınıs, see Karpat, *Ottoman Population, 1830-1914: Demographic and Social Characteristics*, 163.

106 "Hububat kemalen dahilde sarf olunur" quoted from Cemâl, *1325 Senesi Asya ve Afrika-ı Osmanî Ziraat İstatistiği*, 2.

107 See the footnotes of "Tortum Kazası gayr-ı dahildir" and "Tonus kazası gayr-ı dahildir" quoted from ibid., aa and bb, respectively.

hemp, and onions were important for Trabzon Province, for Sivas, and for Erzurum, respectively. Fortunately, the production of hazelnuts in Trabzon Province can still be evaluated thanks to footnotes that indicated its yearly estimates.

The final point is that there are significant differences between the original statistics and Tevfik Güran's translated copy on several points. First Güran converted the Ottoman Sanjak system into Turkey's *il* system. However, there are significant geographic differences between the borders of contemporary *il*s today and those of Ottoman Sanjaks, even the *il*s' borders of 1927 was different than todays. Moreover, the borders of Sanjaks themselves changed during the late nineteenth century. Second and more importantly, Tevfik Güran's price list for each *il* is miscalculated. Güran simply copied average prices provided by officers in each Sanjak, however, these officers erroneously calculated these averages by taking arithmetic means. In economics, weighted means are more logical for calculating average revenue and average prices.[108] Let me give one example of a mistake by Güran. The prices of tobacco in Canik were 16, 15, and 8 piasters for the *kaza*s of Samsun, Bafra and Çarşamba. Accordingly, both the consensus and Güran posit 13 piasters as the price of tobacco for the entire sanjak. In addition, he calculated the total value of given crops in each sanjak by multiplying is average price by the total production. However, these *kaza*s produced 1,638,000, 2,239,380, and 600,000 *kile*s respectively. The weighted mean is ~14.42 piasters, which is more accurate in economic terms. However, he should have multiplied the price in each *kaza* by the total production in the same *kaza*, then summed them up. For that reason, my estimates for the total value of tobacco produced in the Sanjak of Canik is roughly ~50% greater than Güran's.

1.2.4.3 Weekly Long-term Price Lists

The final primary source is the long-term price statistics, which are presented in the appendices. I have compiled these statistics from weekly price lists taken

108 For example, the average cost to a firm producing x number of commodities and facing decreasing/increasing returns is calculated as $\sum_{n=1}^{x}(p_n q_n)/q_n$ and definitely not as $\sum_{n=1}^{x}(p_n)/n$ as Tevfik Güran did.

from the newspapers *Journal de Constantinople*: *Echo de l'Orient* (from 19 January 1851 to 29 October 1859),[109] *La Turquie* (from 5 February 1866 to 16 September 1880) and *Dersaadet Ticaret Odası Gazetesi*[110] (*Journal de Chambre de Commerce de Constantinople* from January 1885 to December 1911). The prices given in these journals were consistently grouped according to shipping port of origin and quality. For example, wheat from Samsun referred to wheat cultivated mainly in the Sanjaks of Amasya and Tokat rather than Canik. Second, the prices were wholesale prices in the form of minimum and maximum prices currently on offer. For example, "wheat from Samsun, 1st, 34-38 piasters per *kile*" meant that merchants offering first quality wheat between the prices of 34 and 38 piasters in the Istanbul port, whether it be already stored in Istanbul or ready for immediate shipment from Samsun.

Third, real sale prices were sometimes different from the prices in these lists. For example, a buyer may purchase the aforementioned wheat for a price outside of the 34-38 piasters range like 33 piasters per *kile*. Some of these transactions were indicated in these journals, as well. However, when compiling prices for ports, economic historians dealing with markets commonly prioritize sticker over realized prices for various reasons.[111] First of all, some of these transactions were made privately and they were unknown to newspapers. Although all prices being offered by merchants were included in the journals, only a few realized prices were published. In addition, the sticker price of a given commodity persisted as long as the commodity existed but transactions on the same commodity were not realized every week. This fact does not constitute an issue because most price lists compiled from newspapers give sticker prices not realized prices.

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109 Before 15 May 1855, this newspaper published these lists for 10-day period; afterwards, it became weekly.

110 *Dersadet Ticaret Odası Gazetesi* (or the French version *Journal de Chambre de Commerce de Constantinople*) is the official publication of the Chamber of Commerce of Istanbul, at was published in both French and Ottoman every two weeks in 1885 and every week starting in 1886. In this dissertation, I preferred the French edition because the Ottoman Turkish version occasionally omitted the second or third number after the decimal point when giving the prices.

111 For such price lists, see "Nouvelles des Provinces (June 3, 1899)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 3, 1899.

Fourth, the prices of tobacco and grapes are missing from all price lists, because it was not practical to give price lists for these crops. First, the substitutability of different types of grapes and tobacco varied greatly. For example, as discussed in chapter four, there were basically six types of tobacco cultivated in Trabzon Province with significant differences among them. Given the fact that quality differences mattered more for tobacco, there should have been twenty-four different entry just for first and second quality tobaccos produced in Trabzon Province. Moreover, the tobacco market was not an open market but an oligopsonistic market, where transactions were made in bilateral agreements apart from the open market. Moreover, it became also monopolistic market after the foundation of the Ottoman Tobacco Monopoly – the Régie. For that reason, it was impractical for newspapers to inform potential buyers of the tobacco prices every week.

Fifth, these newspapers occasionally published price lists from the ports of Trabzon and Samsun. Unfortunately, such lists had been published not every week. More importantly, such series starts from the last years of the nineteenth century and hardly enough for composing monthly series. In addition, these lists hardly contain twenty different commodities but at the same time Dersaadet Ticaret Odası Gazetesi (Journal de Chambre de Commerce de Constantinople) published a price list from Istanbul containing hundreds of items. For that reason, it was virtually impossible to compose a similar list for these ports.[112] Fortunately, the absence of local price lists doesn't constitute a major problem, because most of transaction in long-distance trade were made through Istanbul and Istanbul prices represented actually the global prices for the Southeastern Black Sea region. Moreover, since the lists of different crops have been used to understand trends in agricultural prices of long-distance trade not for the prices in the production-sides, these price lists fit better to our goal than local prices.

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112 Theoretically, the price lists should have been composed by the prices from local farmer's market but such endeavor is virtually impossible even today. For that reason, the economic historian used proxy data; for example, it is assumed that prices of London should have represent the agricultural prices at least form England. See Peter J. Bowden, "Agricultural Prices, Wages, Farm Profits, and Rents," in *the Agrarian History of England and Wales, Agrarian Change 1640-1750*, ed. Joan Thirsk (Cambridge: Cambridge University Press, 1985), 16-20.

2

Geography and Commercial History of Southeastern Black Sea Region (1850-1910)

Geography is destiny

Napoléon Bonaparte

This dissertation is a micro-level study of agrarian change in the Southeastern Black Sea region between the mid-1850s and the 1910s. However, every micro-level study requires a presentation of macro-level facts and this chapter contributes to the dissertation by presenting the necessary macro-level facts to scrutinize agrarian change at the micro-level. Since the main subject of this dissertation is agrarian change in Southeastern Black Sea region in the second part of nineteenth century, a presentation of geography and climate along with a political and commercial history is required. Accordingly, this chapter has twofold objective: first to understand the effect of geography and climate over agriculture and commerce, and second to summarize the commercial history of Southeastern Black Sea region. For that reason, this chapter is constituted of two separate parts, one focusing on geography and climate, and the latter on the history of commerce at the macro-level.

The first part of this chapter argues that geography sealed the fate of commerce and agriculture in the "historical" *longue durée*;[1] the position of the Pontic Mountains played a key role by creating climatic contrast between the coasts and inlands. On one hand, these mountains block humidity coming from the Black Sea and create consistently humid, rainy weather with countless number of rivers flowing to the sea. On the other hand, the same mountains are the main reason for the continental inland climate prevent humidity from penetrating into inner-Anatolia. Because of this climatic and geographic diversity, the main crops cultivated along the coasts and in the hinterland diverged greatly. Finally, these mountains also created deep isolated valleys and micro climates. The contrast between the coasts and the hinterland characterized by multiple micro climates generate a rich agricultural biodiversity in the Southeastern Black Sea region. Moreover, the geography especially mountains determined the trajectories of trade routes that remained unchanged for centuries, limiting easy passage of humans and commodities to and from coasts to the hinterland.

The second part of this chapter recapitulates the commercial history of the Black Sea from 1774 to 1914, focusing on the transformation of the long-distance market.[2] The formation and transformation of the long-distance market

1 In this dissertation, a distinction has been drawn between economic and historical time for practical reason. The *longue durée* consists of centuries even millennia, as Ferdinand Braudel expressed in his works. On the other hand, this dissertation deals mainly with time periods that Braudel calls "histoire evenementielle." See for example, Braudel, *La Mediterranée et le Monde Mediterranéen à l'Epoque de Philippe II*. However, an additional distinction is necessary. To distinguish time periods like years from decades, the economic concepts "long run" and "short run" have been used. The meanings of these concepts diverge according to context in an economic text but in this dissertation, the short run indicates to one year – a full lifecircle of a crop – and the long-term indicates two to five decades according to context.

2 Contrary to expectations, international economics does not provide the necessary tools to examine trade in nineteenth century ports in Trabzon Province. There are several reasons. First, international economics ignores geography and logistics which are crucial factors for analyzing a single port. As Krugman points out "the decision by international economists to ignore the fact that they are doing geography wouldn't matter so much if someone else were busy exploiting the facts and insights that can come from looking at localization and trade

is also the main topic of the chapter three but with one major distinction – while this chapter examines change to the long-distance market at macro-level, the chapter three scrutinizes these markets at a micro-level. Accordingly, the main argument of the second part of this chapter is similar to that of the third chapter. Both chapters argue that transportation, transaction, information and capital costs were the main issues preventing the formation of long-distance markets and commodity chains. In other words, the main reason for the change in long-distance markets was the change in commercial and financial institutions, and technology as well as the nature of the demand. Since change in the information and shipping sector, like the arrival of the telegraph and postal services by steamship, better fits the discussion at the macro level, so the discussion of information and maritime transportation costs are presented in this chapter alone with the commercial history. The effect of the transaction, terrestrial transportation and capital costs will be discussed in the following chapter.

§ 2.1 Geography, Agriculture, and Commerce

2.1.1 *Geography, Climate, and Agriculture*

Geography has always played an important role in formation and transformation of trade routes, commodity chains and agricultural production in Southeastern Black Sea region. The most important feature of this geography is the fact that the mountains lie parallel to the Black Sea. The position of the mountains dictates the precipitation - the water evaporating over the Black Sea clashes with cold weather fronts over the first mountain range,

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within countries" quoted from Paul Krugman, *Geography and Trade* (Leuven: Leuven University Press; Cambridge; MIT Press, c1993), 3. However, geography and logistics are important variables in this dissertation. To understand the importance of distinguishing between a single port and an entire economy, considered the example of Los Angeles given by Krugman. Los Angles is geographically closer to eastern Canadian and Mexican ports then New York, yet Los Angeles obviously shares fiscal and monetary systems with New York (ibid., 2.). Understandably, international economics deals with Los Angeles as part of the American economy at the macro level but such an approach neglects the realities of a single port at the micro level.

which creates a persistently humid and weather on the coast. Heavy rainfall alone with uneven geography create rivers that irrigate fertile plains and plateaus. Two of the longest rivers in Anatolia, the Kızılırmak and Yeşilırmak originate from these mountains and feed two fertile coastal valleys Bafra and Çarşamba. In other words, these mountains are the main cause of the high fertility but also the narrowness of land available for cultivation in Trabzon Province. The escapement of these mountains is also important. On the coastline, the total area under cultivation is determined by the distance between the coast and the escarpment. For example, in Canik, the mountains rise at a low angle offering a vast and fertile area for cultivation. In Lazistan the mountains are steep and near to the sea and agriculture was merely a complement fishing business. The mountains are covered with rich forests that in some cases reached the coast as Bulancak, Keşap, Piraziz Tirebolu, and Giresun. These forests provided villagers alternative income sources like logging[3] and beekeeping.[4] These woodlands were the main source of silt on the lower plains carried down by rivers and rain.

This rugged terrain with rivers also created micro climates, where marginal cultivation regimes could exist. For example, agriculture in the Sanjak of Tokat was exceptionally diverse thanks to two rivers that created intermountain plateaus. The plains in Tokat are narrow but extremely fertile with alluvial, Brown and Terra Rosa soil enabling lucrative arboriculture, especially apples

3 Timber and wood fabrication were vivid sectors. Local timber was widely used in house and ship building. See Henry Suter, "Report on the Trade of Trebizond for the Year 1839," (London: Foreign Office of the United Kingdom, 1839). And also the manufacture of shovels and boxes. See Longworth, "Report on the Trade of the Trebizond Vilayet for the Year 1898." However, demand for timber increased with the emergence of the oil-industry in Batumi. See Charles Thomas Marvin, *The Region of the Eternal Fire: An Account of a Journey to the Petroleum Region of the Caspian in 1883* (London: Woodfall and Kinder Printers, 1888), 212-14. For example, at the end of the century, more than half of the timber from Kulakkaya was used in this industry. See Cillière, "Rapport Commercial de Trébizonde (1895)."

4 Honey production in the east of Trabzon Province was famous. See Gifford Palgrave, "Report on the Provinces of Trebizond, Sivas, Kastemouni, and Part of Angora for the Year 1867," (London: Foreign Office of the United Kingdom, 1867). As a side-product, locally produced yellow wax was used to produce candles. See Collomb, "Rapport Commercial de Trébizonde (1900)."

and pears as well as an unexpectedly vivid viticulture and abundant cereal production. Likewise, Ordu, Tirebolu and Kiskim are among such microclimate.[5] The most extreme arboriculture was that of olives in Kiskim near Çoruh River. The olive tree is intolerant of cold and is virtually it should have been impossible to grow in such a cold mountainous geography.[6] On the other hand, these mountains are also the main cause of the continental climate in Erzurum and Sivas Provinces because they prevent wet weather from penetrating inland.

The contrast of the humid climate along the coastline with the continental climate further inland sealed the fate of agriculture in the mountainous geography. The coastlines were suitable for crops requiring little land but abundant water like maize and beans, while grains like wheat and barley that require abundant land but less water dominated the hinterland. In this sense, the agriculture of lower Sivas Province was similar that of Fertile Crescent given the prevalence of wheat and dry farming techniques, while agricultural practices along the coast were comparable to Mexican *milpa*s for maize, beans of squash and tobacco and employed *andenes* and *chinampa*s techniques.[7] Likewise the precipitation and quality of the soil enabled the farmers of Canik to cultivate high-value crops like tobacco for worldwide consumption but in most of Erzurum Province low-value crops to be sold only in nearby markets work abundant.

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5 At the end of the century, farmers in Tirebolu were dealing with various crops ranging from rice and maize to walnuts and hazelnuts. They even cultivated grapes fit for wine production in the region relatively north of the Mediterranean climate zone. See Contanze, "Rapport Commercial de Tirépoli (1898)."

6 Some ten thousand trees yielded twenty tons of olives every year in narrow the valley of Çoruh River. See Cemâl, *1325 Senesi Asya ve Afrika-ı Osmanî Ziraat İstatistiği*, 2.

7 For these techniques see Rebecca Story and Randolph J. Widmer, "The Pre-Columbian Economy," in *the Cambridge Economic History of Latin America*, ed. John H. Coatsworth and Roberto Cortés Conde (Cambridge: Cambridge University Press, 2008). For further information on pre-Colombian crop rotation with maize developed by the Mayans. See Bruce E. Johansen, *The Encyclopedia of Native American Economic History* (Westport: Greenwood Press, 1999), 124.

In addition to affecting the climate, the rugged geography determined commercial routes as well. The mountains prevented humans and commodities from easily travelling between the Anatolian plain and the shores of the Black Sea. Geographically, there are plenty of natural port, like Vona or Ordu but the mountain parallel to coast cut their connection to inner-Anatolia with two exceptions: Trabzon and Samsun. Accordingly, these two ports became the most important of the Southeastern Black Sea region, but with a major difference. Trabzon was the main gate for Persian commerce, conducted through narrow passages that had been used for centuries. The first was a narrow passage from Trabzon to Erzurum. This trajectory had been main route for Persian trade for centuries[8] and what made Trabzon such an important port had always been its connection to the fertile lands of Northern Persia.[9] This narrow route also determined Trabzon port hinterland which consisted roughly of the old *Eyalet*s of Trabzon and Erzurum and North Iran. However, although this route was the best alternative east of Samsun, transportation along it was still difficult and costly. For that reason, only plants cultivated in the vicinity of the coastline and high-value commodities from the hinterland,

8 The evidence suggests that the trade route between Northern Persia and Trebizond via Artze (Erzurum) existed even before the eleventh century. See Angeliki E. Laiou, "Exchange and Trade, Seventh–Twelfth Centuries," in *the Economic History of Byzantium: From the Seventh through the Fifteenth Century*, ed. Angeliki E. Laiou and Charalampos Bouras (Washington: Dumbarton Oaks Research Library and Collection, 2002), 748.

9 The north of Persia – the territory from the Alborz Mountains to the Caspian Sea – is the most fertile and rich in the country. Accordingly, in the nineteenth century, the heart of the Persian commerce was the Caspian Mild (the Ardabil, Gilan, Mazadaran, Golestan, Taheran regions of modern Iran). However, in addition to its mountainous and hostile geography, two other factors caused comments to suffer: a security risk of nomadic raids and the conditions of the market places. Accordingly, despite efforts such as the construction of a railway line on the Euphrates and Caspian Sea and the gentrification of some ports, conditions of doing business in the Persian Empire were little ameliorated. See Charles Issawi, "European Economic Penetration," in *the Cambridge History of Iran: Vol. 7, From Nadir Shah to the Islamic Republic* ed. Peter Avery, Gavin Hambly, and C. P. Melville (Cambridge: Cambridge University Press, 2008), 590-608; and Marvin L. Entner, *Russo-Persian Commercial Relations* (Gainesville: University of Florida Press, 1965).

like Persian silks, rugs, carpets, and *tümbeki* became part of long-distance trade.

The port of Samsun and its hinterland was different because the Kızılırmak and Yeşilırmak Rivers cut the Northern Anatolia heights vertically creating a narrow lower zone that enabled humans and commodities to travel easily and cheaply. These narrow plains allowed even low-value merchandise from inland, like cereals, to be marketed to a global market. Consequently, Samsun port enjoyed a vast hinterland consisting of contemporary Amasya, Tokat, Zile, and Sivas throughout the nineteenth century. On the other hand, Yozgat, Kayseri, Malatya, Harput,[10] Diyarbakır[11] and most of the Province of Ankara were added to this hinterland following the arrival of steamships in the late 1850s but this vast geography was lost to the port following the construction of the Anatolian Railway Company (*Anatolische Eisenbahn*) in the 1890s. Moreover, Kızılırmak and Yeşilırmak provide the two fertile deltas in Samsun, the Bafra and Çarşamba, which comprise the core of tobacco cultivation. Likewise, a series of small rivers cutting the mountains also created narrower but still fertile plains as in Ordu. In the hinterland, the lack of rain was compensated for by rivers, as on the fertile plateau of Pasinler in contrast to barren lands like those of Gümüşhane.

2.1.2 *Geography, Transportation, and Commerce*

There were four major ports along the Southeastern Black Sea region in nineteenth century - Samsun, Giresun, Ordu and Trabzon - whose export structures and performances diverged considerably because of their differencing geographies and climates. After, Izmir, Trabzon was the second largest port in Anatolia in the middle of the century but what made it so important was the Persian transit trade, not Anatolian trade. Moreover, due to the mountainous

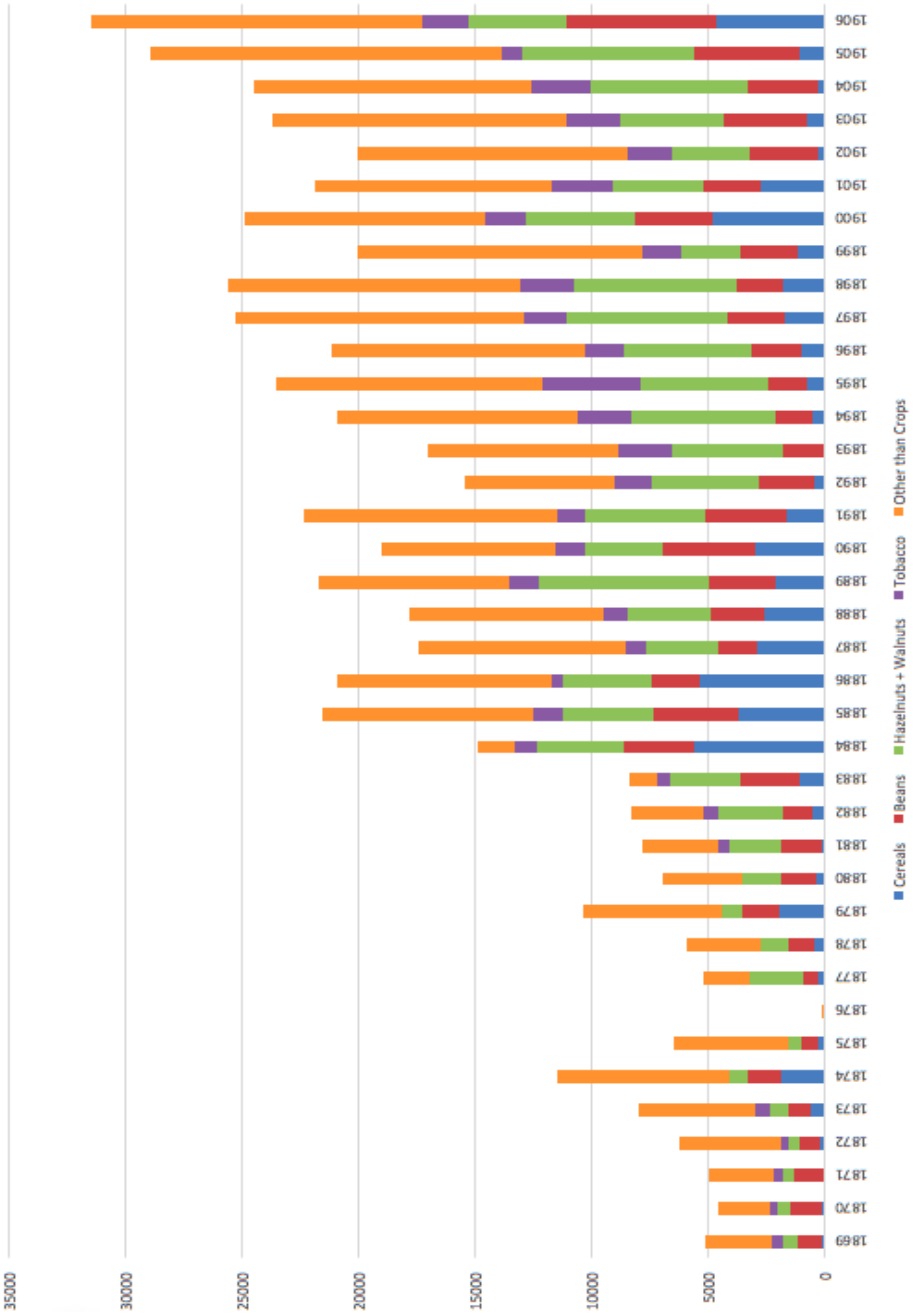
10 From the arrival of steamship companies in the mid-1850s to the construction of Anatolian railways in the 1890s, the merchandises of Kayseri and Harput transported to and from Istanbul was usually via the port of Samsun rather than Iskenderun because passing through the Taurus Mountains was costly.

11 Numa Doulcet, "Rapport Commercial de Samsoun (1890)," (Agence Consulaire de Samsoun, AMAE, CADN, 1890); and Gifford Palgrave, "Report on the Trade and Commerce of Trebizond for the Year 1869," (London: Foreign Office of the United Kingdom, 1869).

geography that limited transportation, the port of Trabzon exported mostly crops cultivated along the coastlines and Persian goods; its hinterland hardly contributed to its exports. Moreover, existence of numerous microclimatic pockets creates differentiation in crops to be cultivated in the hinterland. As the result, although the port exported considerable amounts of maize, haricot beans, tobacco and hazelnut, there was no dominant crop like hazelnut in Giresun and tobacco in Samsun. Maize, intercropped with haricot was cultivated by farmers mainly for food. Accordingly, commerce in maize was volatile and depending on prices and climate; it could be exported in one year and imported in another according to its yearly performance. Other important crop was haricot that was seeded together with maize to enhance crop yields, and never consumed by locals to the same degree that it was cultivated. Consequently, haricot exports were the greatest export of the port in volume. With respect to value, first place was held by tobacco until being overthrown by hazelnuts by the mid-1880s. However, neither the cultivation of tobacco nor of hazelnuts challenged its neighboring ports Trabzon's tobacco, mainly cultivated in Polathâne, always fell behind that of Samsun,[12] hazelnut exports were always overshadowed by those of Giresun.[13]

12 Compared to Trabzon, Samsun exported usually four to six-fold more tobacco in volume. The difference in value was always higher than that of volume, because tobacco grown in Canik was better quality than that of Trabzon. Consequently, tobacco exports in Samsun comprised of 45-55% of the total value of its total exports while tobacco exports from Trabzon remained at around 13-18% of its total exports.

13 Hazelnut exports from Trabzon and Giresun was usually close in volume and value. However, by the end of the century Giresun possessed cracking and oil-extracting light industries neither of which were substantial in Trabzon. Thus, Giresun exceeded Trabzon in quantity and value when by-products of hazelnuts are included.



Graph 2.1 Distribution of Exported Commodities from the Port of Trabzon (in Tons)

SOURCE British and French Consular Reports

Giresun, Ordu, and Rize were secondary ports in the system and perfect examples of smaller ports. The port of Ordu possessed limited connection to Anatolia. Its hills rose at lower angles enabling cultivation, and its rivers created small deltas and lower plains with different soil types. Thanks to this fractured geography, Ordu had the largest biodiversity among Southeastern Black Sea region ports. Its exports included all kinds of cereals, nuts, beans and even mulberries, and grapes but all in modest quantities and of modest qualities. While for merchants, Ordu was nothing but a secondary cereal and fruit provider for larger nearby ports, for steamers, it served as a middle station between Samsun and Trabzon in the turn of the century.

Giresun, on the other hand, was a monocrop port with narrow hinterland.[14] The lucrative hazelnut made this town a center of attraction for steamships and merchants, like salt for Manure, coffee for Santos, and rice for Rangoon.[15] It will be discussed in ensuing chapters that the luck of this small port turned following the discovery of broader usage of hazelnuts by western industries in the 1880s. Unlike Ordu, Giresun was always an international port thanks to these hazelnuts. While Ordu provided haricot beans and maize for local consumption, it sold almost nothing beyond South Black Sea ports. On the other hand, there had always been international demand for local hazelnut, and following the boom in international demand by the 1880s, Giresun became third most important port in Ottoman Anatolia only after Samsun and Trabzon.

Likewise, Rize was a port of call between Batumi and Trabzon but it had neither a large hinterland nor a lucrative crop to lure merchants and steamship companies. Moreover, the ascent of its mountains is generally too steep for cultivation. Subsequently, the Sanjak of Lazistan possessed the narrowest area

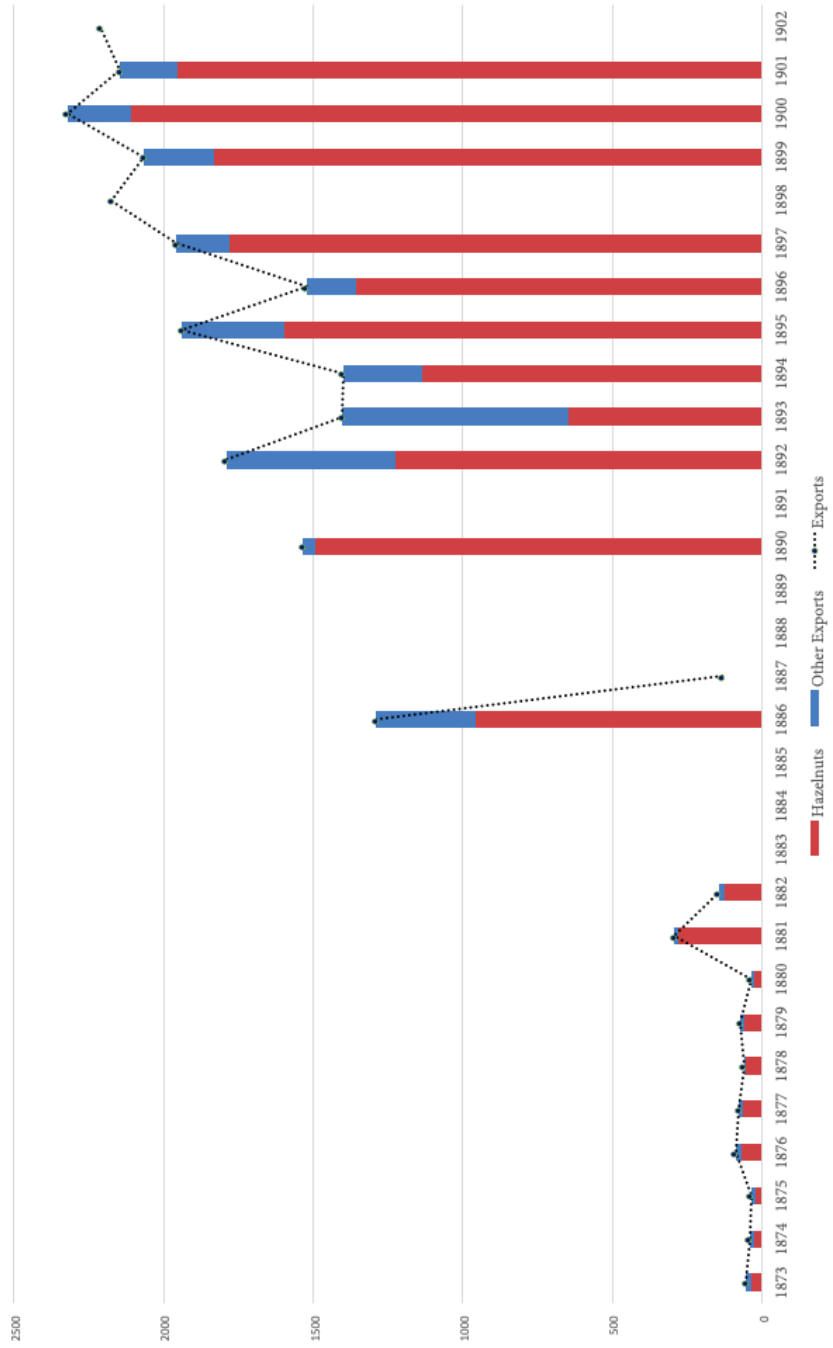
14 Giresun's main hinterland can was *kaza* of Şebinkarahisar (100-120 kilometers to the south) the port's main grain provider. See N. Collaro, "Rapport Commercial de Kérassunde et Ordou (1904)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1904).

15 Micheal B. Miller, *Europe and The Maritime World: A Twentieth-century History* (New York: Cambridge University Press, 2012), 62.

for potential cultivation in Southeastern Black Sea region.[16] Rize's only importance was that it was the closest port to the Russian frontier, which made it a center of interest for the political rivalry between the Ottoman and Russian national steamship companies.[17] Accordingly, due to the fact that its agriculture and integration into world economics was limited, Rize and its small hinterland will be the least mentioned in this dissertation.

16 *1325 Senesi Asya ve Afrika-ı Osmanî Ziraat İstatistiği*, 2.

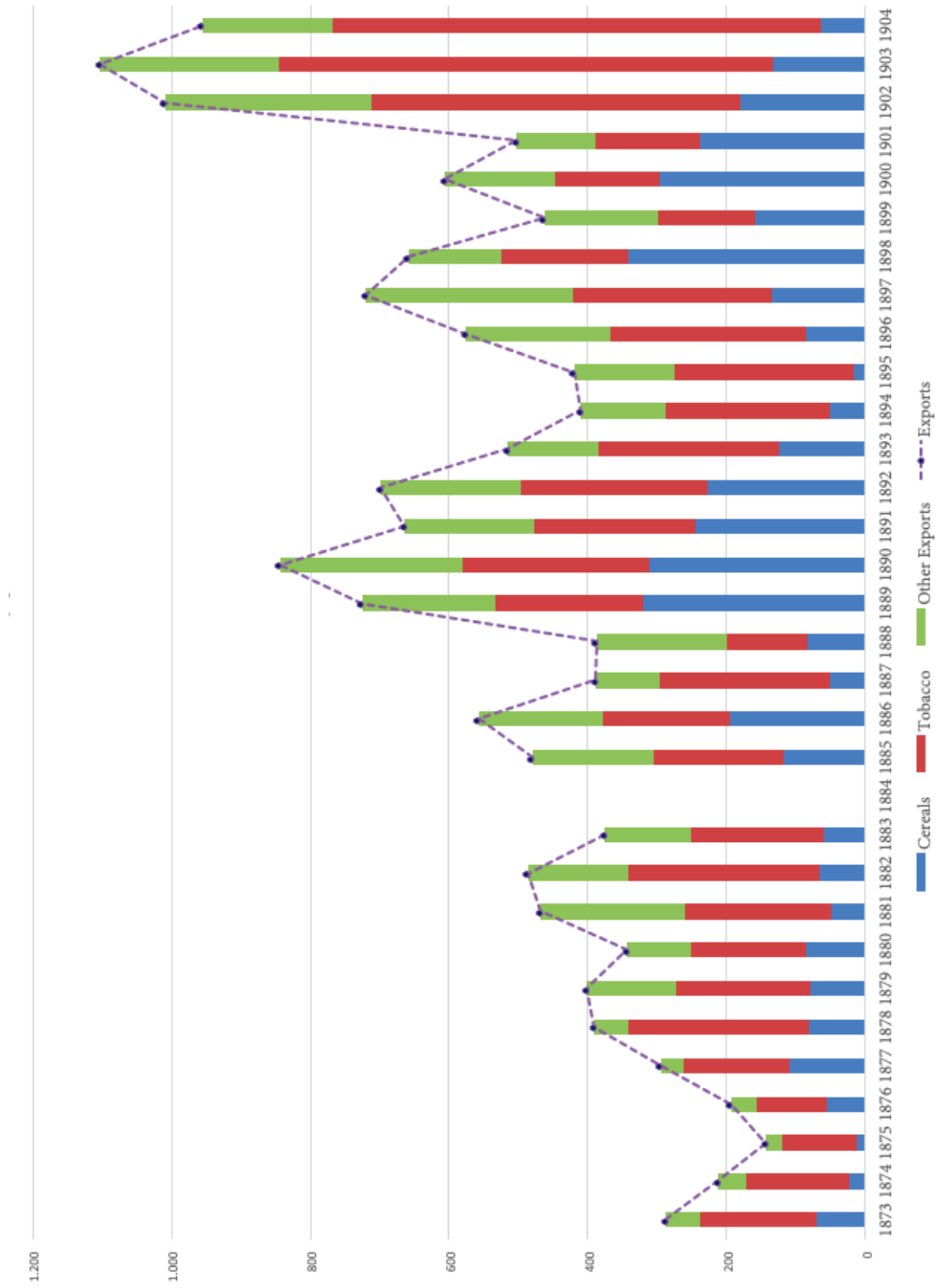
17 Mahmuzlu, "Transformation of Mercantile Shipping in Southeast Black Sea Ports between 1834 and 1914," 99-128.



Graph 2.2 Exports from Giresun (in Hundreds Ottoman Liras)

SOURCE British and French Consular Reports.

The main gate to inner-Anatolia was Samsun. However, until the discovery of local tobacco first by Austro-Hungarian, and then by French merchants in the 1840s, this port functioned mainly as a midway station for Trabzon. After the Crimean and American Civil wars, Samsun became main export port for Anatolian cereals with lucrative crops – including tobacco from Canik and opium and seeds of *immortelles* from Tokat and Amasya. However, since land transportation costs were high, Samsun's commercial performance from year to year up until the 1880s was largely determined by the performance of tobacco, which was mainly cultivated along the coast. By the turn of the century, Samsun had become the role of being largest port in Southeastern Black Sea region instead of Trabzon thanks to the increasing commercialization of cereals from inland, the standardization of tobacco cultivation in the line with the emerging cigarette industry and the falling performance of Trabzon.



Graph 2.3 Exports from Samsun (in Hundreds of Ottoman *Liras*)

SOURCE British and French Consular Reports.

§ 2.2 Long-term Trends in Agricultural Commerce

Unlike Western Anatolian ports, which had already been integrated into world markets by the eighteenth century,[18] the ports in Southeastern Black Sea were late-bloomers in commerce and agriculture despite their great agricultural potential. Indeed, the ports of Southeastern Black Sea region remained isolated from the rest of the world due to the fact that until 1774 Ottoman authorities successfully prevented foreign ships and markets from penetrating thanks to the straits which served as naturals. The integration of local markets and agriculture in Southeastern Black Sea region into global markets was a gradual process that can be divided into seven periods. The first was its political opening from 1774 to 1829 when foreign powers, especially the Russian Empire, penetrated Black Sea ports. The second period was from 1829 to 1853 when international commerce slowly started to penetrate into this part of the world but under the political supervision of the Ottoman government. The third is the period from the mid-1850s to the late-1860s, when agricultural growth was triggered by the formation of long-distance trade. The forth was an age of depression, famine and misery in the 1870s followed by recovery in the 1880s. The first part of the 1890s was a period of depression followed by years of prosperity and agricultural change up until at least the second constitutional era.

18 For brief review of Izmir's commerce, see Edhem Eldem, *French Trade in Istanbul in the Eighteeth Century* (Leiden; Boston: Brill, 1999); and Daniel Goffman, "Izmir," in *the Ottoman City between East and West Aleppo, Izmir, and Istanbul*, ed. Edhem Eldem, Daniel Goffman, and Bruce Masters (Cambridge: Cambridge University Press, 2005), 79-135; and Elena Frangakis-Syrett and Spoudon Kentro Mikrasiatikon, *The Commerce of Smyrna in the Eighteenth Century, 1700-1820* (Athens: Center for Asia Minor Studies, 1992); and Elena Frangakis-Syrett, "Trade between Ottoman Empire and Western Europe: The Case of Izmir in the Eighteenth Century," *New Perspectives on Turkey* 2 (1998): 1-9. For urban history see Sibel Zandi-Sayek, *Ottoman Izmir the Rise of a Cosmopolitan Port, 1840-1880* (Minneapolis; London: University of Minnesota Press, 2012).

2.2.1 *Political Integration of Southeastern Black Sea Region Ports (1774-1853)*

> *How important … the Black Sea trade generally, is becoming may be seen at the Manchester Exchange, where dark-complexioned Greek buyers are increasing in numbers and importance, and where Greek and South Slavonian dialects are heard along with German and English. The trade of Trebizond is also becoming a matter of most serious political consideration, as it has been the means of bringing the interests of Russia and England anew into conflict in inner Asia.*
>
> Karl Marx, *New York Tribune*, 7 April 1853

Until the annexation of the Crimean Khanate by the Russian Empire in 1774, the Black Sea was the Ottoman *Mare Nostrum*, commercially and politically isolated from rest of the world. Russian-flagged commercial ships acquired rights to sail in the Black Sea five years after the Russo-Ottoman War (1868-1774) by *Aynalıkavak Tenkitnâmesi*, (1779).[19] During this period, Ottoman authorities was to prevent the formation of Russian mercantile[20] and military

19 This treaty fixed the legal limits of the cargo capacities of Russian flagged ships to one to sixteen thousand *kile*. See İdris Bostan, *Beylikten İmparatorluğa Osmanlı Denizciliği* (Istanbul: Kitap Yayınevi, 2006), 288-89.

20 Mercantilism became the new economic policy under Peter the Great dreamt of making Russia a buffer between the eastern and western ends of Eurasian trade routes by stretching its frontiers to Ottoman Greece. Although during the Great Northern War (1700-1721) he managed to create a navy and a port city on the Baltic Sea namely St. Petersburg, Russian efforts to penetrate to Black Sea came to a halt after defeat in the Pruth Campaign (1710-1711). However, the Russian policy to create military and mercantile fleets on the Black Sea was carried out by his successors, especially Catherine the Great. Boris Ananich, "Russian Economy and the Banking System," in *The Cambridge History of Russia Imperial Russia, 1689-1917*, ed. Dominic Lieven (Cambridge: Cambridge University Press, 2006), 396; and Walter G. Moss, *A His-*

fleets and to keep the Black Sea isolated as it had been before.[21] To this end, the straits helped the Ottoman governments serving as a natural barrier to control the passage of Russian and other foreign ships between the Mediterranean and Black Seas and allowing the surveillance of all cargo, captains and crews.[22] Due to Ottoman control over the Straits, commerce between Black Sea ports and the rest of the world remained strictly limited from 1774 to 1829.[23]

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tory of Russia: To 1917 vol. 1 (London: Anthem Press, 2005); and Alexander M. Martin, "Russian Economy and the Legacy of 1812," in *the Cambrigde History of Russia Imperial Russia, 1689-1917*, ed. Dominic Lieven (Cambrigde: Cambrigde University Press, 2006), 145-62.

21 Before Catherine II's accession to the throne, Russian trade depended heavily on British shipping. Subsequently, the British Empire had hedged Russia's international policies in with the rules and regulations of free trade thanks to this dependency. In addition to the heavy dependency of British navy over Russia, the British Navy's successful naval blockade of France during the Seven Years' War, gave momentum for the Catherine II's ambitions to create an un-British shipping sector in Russia. For that reason, Russia Empire approached to the Ottoman Greeks, which made up the core of the Ottoman Navy in early nineteenth century. Naturally, the fact that Russia recruiting Ottoman Greeks for forming a mercantile and military navy in Black Sea terrified the Ottoman elites for so many reasons. The Ottoman authorities declared their concerns for the first time during the negotiations for the Aynalıkavak Convention and convinced Russian delegation to forbid the illegal emigration of the Ottoman Greeks to Russia. However, despite these agreements, Russia promoted naturalization of Ottoman Greeks and as the response, Istanbul tried to block the conscription of the Ottoman Greeks by Russian Navy as much as it could. For Russian policies. See Hugh Ragstale, "Russian foreign policy, 1725–1815," in *the Cambridge History of Russia: Imperial Russia, 1689-1917*, ed. Dominic Lieven (Cambridge: Cambridge University Press 2006), 509-13. For Ottoman concerns see Bostan, *Beylikten İmparatorluğa Osmanlı Denizciliği*, 289.

22 The officers inscribed the maritime traffic to and from the Mediterranean and Black Seas on the Books of Foreign Countries (*düvel-i ecnebiyye defterleri*). See "Rusya'nın Karadeniz'de Ticarete Başlaması ve Osmanlı İmparatorluğu (1700-1787)," *Belleten* CLIX S.23 (1995).

23 From 1774 to 1787, the total number of passages of Russian-flagged ships through the Bosphorus was 445 and of Ottoman-flagged ships with Russian cargo was 38. See ibid., 369. The number of ships from other countries was less. For example, when news that the first American merchant ship, the Calumbet, was sailing into the Black Sea to St Petersburg, the American ambassador to Russia, John Quicy Adams was surprised. For the full story, see S. E. Morison, "Forcing the Dardanelles in 1810: With Some Account of the Early Levant Trade of Massachusetts," *The New England Quarterly*, no. 2 (1928): 208-25.

2.2.2 *The Economic Opening of Black Sea Ports (1829-1853)*

The treaties of Edirne (1829) and Hünkar İskelesi (1833)[24] *de facto* opened the Black Sea to all foreign commercial ships.[25] With the considerable loosening of official restrictions, not only sailors, but also the new transportation technologies –brigs- and global markets slowly began penetrate to Southeastern Black Sea region. Meanwhile, especially after the Greek Revolution (1821-1828), the Ottoman government launched a series of policies promoting the construction of modern sailing ships in Black Sea ports and favored Muslim ownership as opposed to that of local Greeks.[26] Consequently, local commercial shipping became an entirely Muslims business[27] and locally-built brigs became the dominant type of commercial sailing ship.[28] Another development was the arrival of the first generation of steamships, Austrian Danube Steam

24 For discussion of the economic effects of this treaty, see Şevket Pamuk, *Osmanlı Ekonomisinde Bağımlılık ve Büyüme* (Istanbul: Tarih Vakfı Yurt Yayınları, 1994), 19.

25 According to these treaties, foreign ship passing through the Bosphorus still needed permission but with considerably fewer official restrictions. Finally, international powers and the Ottoman government agreed to open the straits to all kinds of merchant ships during peace negotiations between Prussia and France in London (1871). From then on, merchant ships without shipping permits could pass through the straits. See Stanford J. Shaw and Ezel Kural Shaw, *History of the Ottoman Empire and Modern Turkey*, vol. 2 (New York Cambridge University Press, 1976-1977), 152.

26 For the nature of this policy, see İlhan Ekinci, "Osmanlı Denizciliğinde Sened-i Bahri Uygulaması," 6, no. 28 (2013). For the result of the policy, see Mahmuzlu, "Transformation of Mercantile Shipping in Southeast Black Sea Ports between 1834 and 1914," 99-128.

27 The crews of local coasters were comprised mostly of *Laz* by the late 1860s. See Palgrave, "Report on the Provinces of Trebizond, Sivas, Kastemouni, and Part of Angora for the Year 1867."

28 In fact, a mix of a local type of ship and a brig, known as a *şethiye brik*, became the predominant ship. They were long, fast wooden ships with two sails that had an average freight capacity of 100 tons. See Mahmuzlu, "Transformation of Mercantile Shipping in Southeast Black Sea Ports between 1834 and 1914," 99-128.

Navigation launched first regular steamship route between Trabzon and Istanbul in 1835[29] followed by the Ottoman Steamship Company.[30] For Samsun, the Austrian Lloyd and Ottoman Shipping Companies[31] first started regular steamship sometime in the late 1830s.[32] However, because these steamships

29 Alfred Biliotti, "Report on the Trade, Commerce, and Navigation in the Vilayet of Trebizond from the Year 1873 to the Year 1882 Inclusive," (London: Foreign Office of the United Kingdom, 1882).

30 The first steamers arrived to the Black Sea, as early as 1830s, see Gelina Harlaftis, *A History of Greek-Owned Shipping: The Making of an International Tramp Fleet* (London: Routledge, 1996).

31 In the early 1840s, the Austro-Hungarian ships usually exported tobacco and interestingly, leeches from Samsun, see Kaya Tuncer Çağlayan, "İngiliz Konsolosluk Raporlarına Göre 1841 Yılında Samsun ve Çevresinde Ticaret," in *Geçmişten Geleceğe Samsun*, ed. Cevdet Yılmaz (Samsun: Samsun Büyükşehir Belediyesi. Kültür ve Eğitim Hizmetleri Daire Başkanlığı, 2006), 284.

32 Although the first French ship entered port of Trabzon in 1804. See Faruk Bilici, *La Politique Française en Mer Noire, 1747-1789: Vicissitudes d'une Implantation* (Istanbul: Les Éditions Isis, 1992), 94. French shipping was absent before the Crimean War. For example, the French tobacco monopoly suggested renting a French ship to lower transportation fees in 1846. See Lettre de Consulat à Trébizonde à l'Administration de Tabacs à Paris (4 July 1846), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN). However, even after a six-month search by the embassy in Trabzon, not a single French ship ready to sail from Samsun to Marseille could be found. See Lettre de Consulat à Trébizonde à l'Administration de Tabacs à Paris (January 6, 1847), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN) The embassy in Trabzon solved the problem by hiring a French ship that normally operated in Russian ports. Meanwhile, first British-flagged ships entered Trabzon and Samsun in the 1830s. See Charles Issawi, "The Tabriz-Trabzon Trade, 1830-1900: Rise and Decline of a Route," *International Journal of Middle East Studies* 1, no. 1 (1970): 19; and Çağlayan, "İngiliz Konsolosluk Raporlarına Göre 1841 Yılında Samsun ve Çevresinde Ticaret." And also) British consular reports from 1831 to 1842 point to a weak British presence in the area but no British steamship company established a regular line there in the nineteenth century. For a list of every large ship that entered Trabzon's port from 1831 to 1842, see R.D. Middleton, "Remarks on the Weather at Trebizond in November and December 1831 by Master of the Schooner Syeed Khan," (London: Foreign Office of the United Kingdom, 1831); and James Brant, "Report by Consul James Brant on the Trade of Trebizond for the Year 1832," (London: Foreign Office of the United Kingdom, 1832); and "Remarks by Consul Henry Suter on the Trade of Trebizond for the Year 1833," (London: Foreign Office of the United Kingdom, 1833); and "Report by Consul James Brant on the Trade of Trebizond for

were no bigger than 200 tons and had limited horsepower and speed, they did not challenge the dominance of local brigs which carried 100 tons on average.

In commerce, the port of Trabzon had become the only international port for Persian transit trade. Other port contributed little to long-distance trade before the Crimean War. During this period, the mobility of humans and commodities to and from the Southeastern Black Sea region was casual and generally limited to the local. With the respect to long-distance trade, local port merchants dealt with triangular commerce among the Southeastern Black Sea region, Istanbul and Caucasian ports. On a typical trip, a merchant in Trabzon would fill a wooden sailing ship, usually a brig,[33] with commodities mainly imported from Northern Persia, like carpets, *tümbeki*, and silk. This ship would sail to Istanbul where a business partner with reshipped the Anatolian and essentially Persian commodities to western ports. In turn, he refilled the ship with Western and European commodities, mainly British textiles. This ship would sail to a Caucasian port, usually Sukhumi, Redoubt-Kali, and Poti where a proportion of its cargo would be replaced with Caucasian commodities, usually leather in the middle of the century and tea or petroleum later in the century.[34] Finally, it would sail back to Trabzon to repeat the circle. In certain seasons, these big sailing ships were diverted to Bulgarian ports like

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the Year 1834," (London: Foreign Office of the United Kingdom, 1834); and Henry Suter, "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1835," (London: Foreign Office of the United Kingdom, 1835); and "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1837," (London: Foreign Office of the United Kingdom, 1837); and "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1838," (London: Foreign Office of the United Kingdom, 1838); and "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1839," (London: Foreign Office of the United Kingdom, 1839); and James Brant, "Report on the Trade of Trebizond for the Year 1840," (London: Foreign Office of the United Kingdom, 1840); and Richard White Stevens, "Report by Consul Stevens on the Trade of Trebizond for the Year 1841," (London: Foreign Office of the United Kingdom, 1841); and "Report by Consul Stevens on the Trade of Trebizond for the Year 1842," (London: Foreign Office of the United Kingdom, 1842).

33 Mahmuzlu, "Transformation of Mercantile Shipping in Southeast Black Sea Ports between 1834 and 1914," 99-128.

34 Jules Paulis, "Receuil Consulaire de Trébizonde (1855)," (Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1855).

Varna, especially during local fairs like the Avratalan fair and the harvest seasons in Eastern Thrace. Or they would be diverted to Sinop or Samsun, after the harvest of tobacco, opium, and wheat or to Yapraklı[35] and the Zile fairs.[36]

This triangular trade was controlled mostly by *Hayriyye* and *Avrupa* merchants.[37] These privileged merchants tended to invest vertically by acquiring tax farms and ships and stationing their agents in various ports. However, the only group of merchants able to fully vertically integrate were mostly Muslims.[38] To get a concrete picture, here is an example of such kind of merchant; Hacı Haşim Efendizâde Mehmed Emin Efendi, a *hayriyye* merchant from Sinop, was one of the most powerful merchant of his time in Sinop engaged in this triangular trade.[39] He acquired a mercantile fleet of brigs, the total cargo capacity of which was three million of liters (~5,335 tons of wheat of Samsun)

35 Brant, "Report on the Trade of Trebizond for the Year 1840."

36 The fair of Zile was a month-long fair frequented by some 50 thousand people by the 1840s. The merchants from Amasya, Tokat, Sivas, Kayseri, Yozgat, Diyarbakır and especially Ankara regularly attended this fair every year. In some years, caravans from Damascus, Aleppo and other parts of Syria visited the fair. See Richard White Stevens, "Report on the Trade of Djanik for the Year 1839," (London: Foreign Office of the United Kingdom, 1839). "Report on the Fair of Zilleh for the Year 1840," (London: Foreign Office of the United Kingdom, 1840). The Zile fairs continued into twentieth century – for example in 1895 the fair was held between November 1 and 13 – but its importance had decreased. See R. Cesar Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1895)* (Istanbul: The Annuaire Oriental and Printing Company Limited, 1895).

37 A group of merchant which enjoyed governmental support and tax exceptions. For further information, see Bruce Masters, "The Sultan's Entrepreneurs: The Avrupa Tuccaris and the Hayriye Tuccaris in Syria," *International Journal of Middle East Studies* 24, no. 4 (1992): 579-97.

38 On the absence of prominent Greek merchants in middle of the century, see the comments of M. Kypriotti, vice-consul of Greece, who complained about the issue, see Kypriotti, "On Nous Écrit de Trébizonde: Trébizonde, 28 Septembre," *Journal de Constantinople (Echo de l'Orient)*, October 6, 1858.

39 Haşim Efendizâde was appointed as *Tüccar ve Hayriyye Şehbenderi* (legal representative for court of privileged and ordinary merchants) OA A} MKT.MHM 103.40, December 9, 1856) and as chief of the *meclis-i ticaret* (council of commercial arbitration) in Sinop (OA İ.DH. 689.48125, September 24, 1874).

equivalent of twenty-five local steamers in the 1840s.[40] After 1844, he also possessed a huge warehouse in Trabzon[41] and engaged in tax farming operations in Trabzon and Erbaa (Sivas).[42]

Alongside this triangular trade, there was a vivid maritime commerce between adjacent ports[43] was handled mainly by coasters,[44] but it is impossible to quantify the scope of this short-distance trade because of irregularities[45] and smuggling. However, if the respective cargo capacities of coasters operating mainly in short-distance trade and steamers operating only in long-distance trade are used as a proxy for comparing long-distance and short-distance trades, short-distance trade in the port of Trabzon steadily decreased from 20 percent in early 1870s to 5 percent by the 1910s. However, any estimates on aggregated trade will be incomplete, because it was impossible to observe short-distance commerce. For example, the port of Trabzon was fed by wheat imported from Erzurum Province, maize from vicinity,[46] fish from

40 Haşim Efendizâde possessed full ownership of eight *şethiye brik*, one brigantine and two-thirds of another small *şethiye birk*. The sum was exactly, 166,333 *kile*s, when the ship of which Haşim Efendizâde owned only two-thirds share (two-thirds of the 4,000 *kile*s) added to the sum. See the list: OA, A}DVN. 85.99, A}DVN. 85.100, A}DVN. 86.1, A}DVN. 86.2, A}DVN. 86.3, A}.DVN. 86.4, A}DVN. 86.5, A}DVN. 86.6, A}DVN. 86.7, A}DVN. 86.9, A}DVN. 86.10, A}DVN. 86.11 and A}DVN. 86.12.

41 "Beratlı hayriyye tüccarından Mehmed Emin Efendi'nin Trabzonlu Deli Mehmed oğlu Mustafa ile beynlerinde sabıka eden şirket muhasebelerini bundan altı sene mukaddem Trabzon'da […] bil-iştirak mutasarrıf olduğu mağazanın nıfs hissesiyle 30,000 kuruş dahi" quoted from OA, HR.MKT.35.1, April 25, 1850.

42 OA, A} MKT.UM 7.53, January 31, 1850.

43 The list of nearby ports that the coasters of Trabzon regularly visited, includes Sürmene, Rize, Batumi, Poti, Redutkale, Sokhomi, Anapa, Theodosia, Kertch, Taganrog, Tirebolu, Samsun, Giresun and Ordu, see H. Arnaud, "Receuil Consulaire de Trébizonde (1860)," (Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1860).

44 Mahmuzlu, "Transformation of Mercantile Shipping in Southeast Black Sea Ports between 1834 and 1914," 99-128.

45 As an example of spot marketing, ship full of haricot beans was boarded and 50,000 *okka*s of haricot beans were sold at 1.1 piaster per *okka*. See "Bulletin Commercial (July 17, 1856)," *Journal de Constantinople (Echo de l'Orient)*, July 17, 1856.

46 Wheat had been the main sustenance for the middle classes and maize had been the main sustenance for lower classes in mid-century's Trabzon but this distinction was blurred by the

its sea and by Lazistan. Still, knowing that long-distance trade from Southeastern Black Sea region increased exponentially in the mid-1850s, it is safe to assume there was a trend favoring long-distance trade. Moreover, although triangular and short-distance trade, fairs and vertical integration tactics survived until the end of the century with some modifications;[47] triangular trade[48] and other commercial networks became increasingly less important vis-à-vis long-distance trade carried out by steamers after the Crimean War.

However, it was not exports of local crops but essentially Persian transit trade that steamed long-distance commerce in the first half of nineteenth century. Accordingly, it was mainly the port of Trabzon that benefitted from the opening of the Black Sea. For that reason, aggregate commerce in Trabzon tripled from 1815 to the mid-1830s and by the late 1840s Trabzon had become the second biggest Anatolian port after Izmir thanks to Persian transit trade.[49]

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late nineteenth century. For class distinction vis-à-vis maize and wheat, see Henry Suter, "Report on the Trade of Trebizond for the Year 1840," (London: Foreign Office of the United Kingdom, 1840); and Richard White Stevens, "Report on the Trade of Trebizond during the Year 1858," (London: Foreign Office of the United Kingdom, 1858).

47 When privileges given to these merchants were abolished is unknown and could have been some time after the Crimean War. See Masters, "The Sultan's Entrepreneurs: The Avrupa Tuccaris and the Hayriye Tuccaris in Syria," 579-97. However, in the provincial annuals of Trabzon (*Trabzon Salnameleri*), the merchants were using the titles of *Hayriyye* and *Avrupa tüccarı* in late nineteenth century, even though they became de facto obsolete. See ed. Kudret Emiroğlu, *Trabzon Vilayeti Salnamesi*, trans. Kudret Emiroğlu, vol. 3 (Trabzon: Trabzon İli ve İlçeleri, Eğitim, Kültür ve Sosyal Yardımlaşma Vakfı, 1993), 175.

48 Richard White Stevens, "Report on the Trade of Trebizond for the Year 1854," (London: Foreign Office of the United Kingdom, 1854).

49 Ships sailing to Trabzon mostly carried salt and cereals and usually returned with ballast or mostly with Persian commodities. For the list of every large ship that entered the port of Trabzon from 1831 to 1842. See Middleton, "Remarks on the Weather at Trebizond in November and December 1831 by Master of the Schooner Syeed Khan."; and Brant, "Report by Consul James Brant on the Trade of Trebizond for the Year 1832."; and "Remarks by Consul Henry Suter on the Trade of Trebizond for the Year 1833."; and "Report by Consul James Brant on the Trade of Trebizond for the Year 1834."; and Suter, "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1835."; and "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1837."; and "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1838."; and "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1839."; and

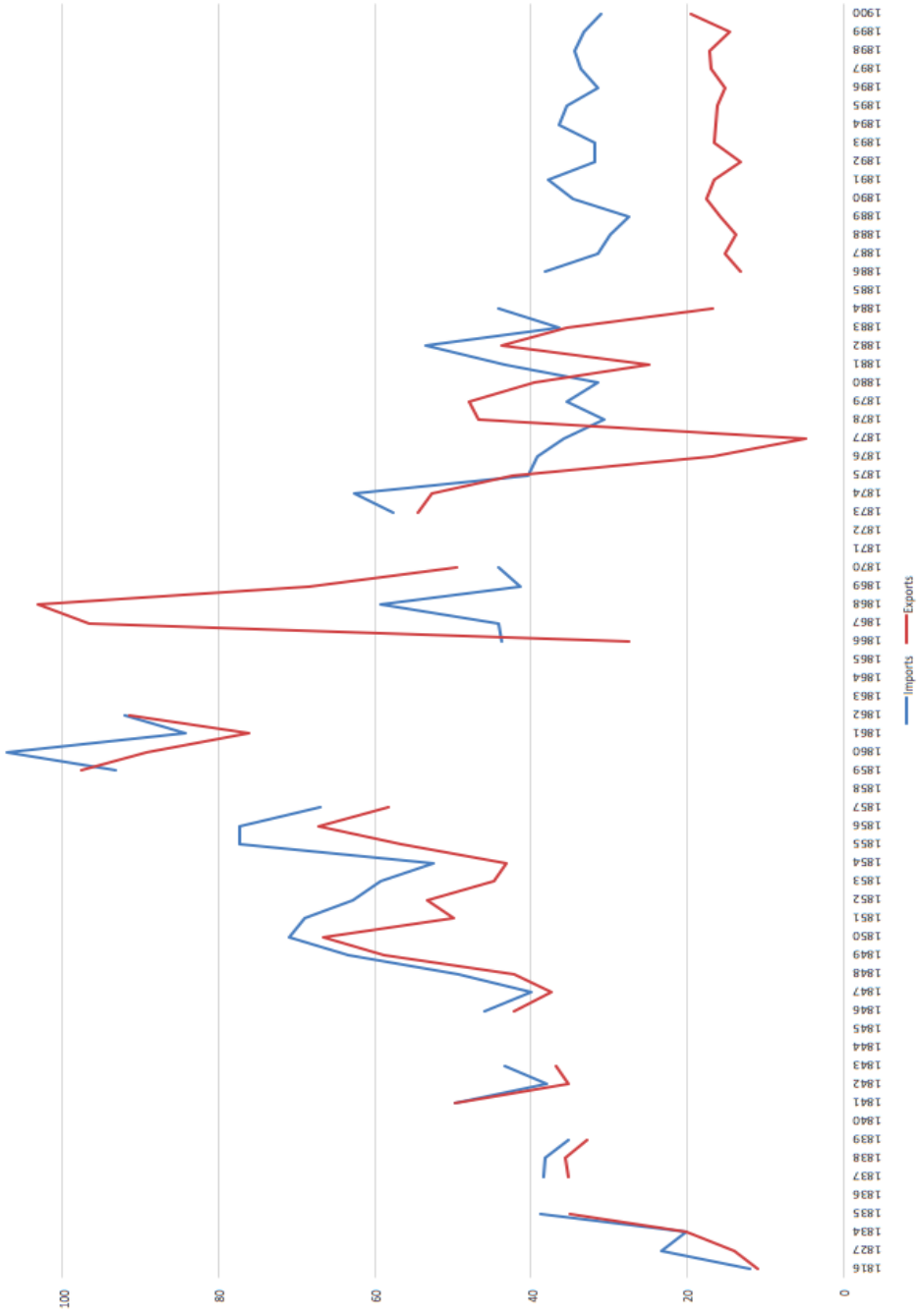
On the other hand, little of Anatolian agriculture was integrated into long-distance trade. For example, during this period when ships dealing with long-distance trade rarely anchored in the ports of Giresun and Ordu, Samsun was nothing but a midway station between Istanbul and Trabzon, where shipping companies filled vacant cargo with local crops on their way from/to Trabzon.[50] For that reason, foreign merchants arrived in Samsun to find something marketable. In the early-1840s Austro-Hungarian merchants sought leeches there and were the first to become interested in local tobacco.[51] They were followed by French Tobacco Monopoly between 1844 and 1847.[52]

Brant, "Report on the Trade of Trebizond for the Year 1840."; and Stevens, "Report by Consul Stevens on the Trade of Trebizond for the Year 1841."; and "Report by Consul Stevens on the Trade of Trebizond for the Year 1842."

50 The yearly volume of trade was as low as £254,517 (roughly 230 thousand Ottoman Liras) in 1840s. See Çağlayan, "İngiliz Konsolosluk Raporlarına Göre 1841 Yılında Samsun ve Çevresinde Ticaret," 284.

51 ibid., 291-92.

52 Prior to 1844, international commerce in Samsun was limited. There are two items of evidence for this claim: The first is that during the French Tobacco Monopoly's expedition in 1844, Ottoman officers were ignorant of a new rule on external custom duties issued after Baltalimanı Treaty (1838). In addition to the French embassy, Austrians had similar issues. Abdullah Pasha declined to reduce the taxes owned by a silk merchant on the silk he had bought. The second is that the Ottoman governor in Samsun, Abdullah Pasha implied that there had never been direct, large commercial expedition from Samsun to Western Europe as far as he knew. (Lettre de Consulat à Trébizonde à l'Administration de Tabacs à Paris (June 25, 1844), Agence Consulaire de Samsoun, Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN) Of course, there were indirect, causal attempts. For example, in 1838 Adémie Outray's father carried tobacco samples to Paris; however, the samples were ruined during the voyage, and as a result he failed to establish connection for tobacco from Samsun. See Adémie Outray, "Extrait d'un Rapport sur la Province du Djanik (fait par Adémie Outray Chancelier Honoreux du France à Trébizonde)," (Agence Consulaire de Samsoun, Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN, 1847).



Graph 2.4 Trade in Trabzon Port (in Millions of Francs)

SOURCE Charles Issawi, "The Tabriz-Trabzon Trade, 1830-1900: Rise and Decline of a Route," *International Journal of Middle East Studies* 1, no. 1 (1970)

2.2.3 *Formation of Long-distance Trade and the First Period of Commercial Integration (mid-1850s - the late 1860s)*

> *The troops are fed in the most luxurious manner, except in the article of beef, which is the most wretchedly lean miserable –looking stuff conceivable. I suppose as the season advances bullocks will get fat. Fresh bread has been brought from Constantinople for some time; a bakery is now established at Kadikoi, and another has been sent out fitted in a small ship.*
>
> Sir Leopold George Heath, *Letters from the Black Sea during the Crimean War, 1854-1855*

2.2.4 *Formation of Long-distance Trade (1853-1868)*

Despite the fact that the port of Trabzon was integrated into global markets due the growth of Persian transit trade during 1830s and 1840s, neither adjacent ports nor local agriculture in Southeastern Black Sea region were affected by this growth. In other words, commodities produced in Southeastern Black Sea region were rarely traded outside of Black Sea ports before the Crimean War, not even with Ottoman like Izmir and Alexandria. There were three main reasons for the failure to integrate into long-distance markets before the Crimean War: high transportation costs, high capital costs, and high transaction costs.[53] However, these four costs - shipping, terrestrial transportation, transaction, information, and capital costs - can be observed on different levels. Since the effects of terrestrial transportation costs, transaction costs and the

53 Theoretically, transaction costs should be divided into information transaction costs and recurrent transaction costs but for simplify things I used the term "transaction costs" only for recurrent transaction costs and the term "information costs" for transaction costs created by an absence or asymmetry of information. For the difference see Wolfgang Kasper, Manfred E. Streit, and Peter J. Boettke, *Institutional Economics: Property, Competition, Policies* (Cheltenham: Edward Elgar Publishing, 2013), 214.

cost of capital are better examined at the micro-level, these costs will be discussed in the next chapter along with micro foundations of long-distance trade. For that reason, the rest of this chapter will examine the macro-structure of long-distance trade with an emphasis on the transformation of shipping and information costs.

The Crimean War (1853-1856) was the cornerstone for commercial and agrarian change in Southeastern Black Sea region for several reasons.[54] First, allied armies settled in Anatolian Black Sea ports during the Crimean War, which made possible for foreign merchants to establish direct contact with local market agents. Trabzon became a military hub for Caucasian front,[55] and Samsun provided grains and tobacco to Istanbul and to the allied armies. Second, the war brought not only calamity but new business opportunities, in particular war alleviated demand. During the war, prices rose dramatically. The prices of hard wheat greased by a multiple of 2.3, common wheat by 2.8, maize by 2.4, and barley by 3.5,[56] which would have meant great mark-up profits for local agents.

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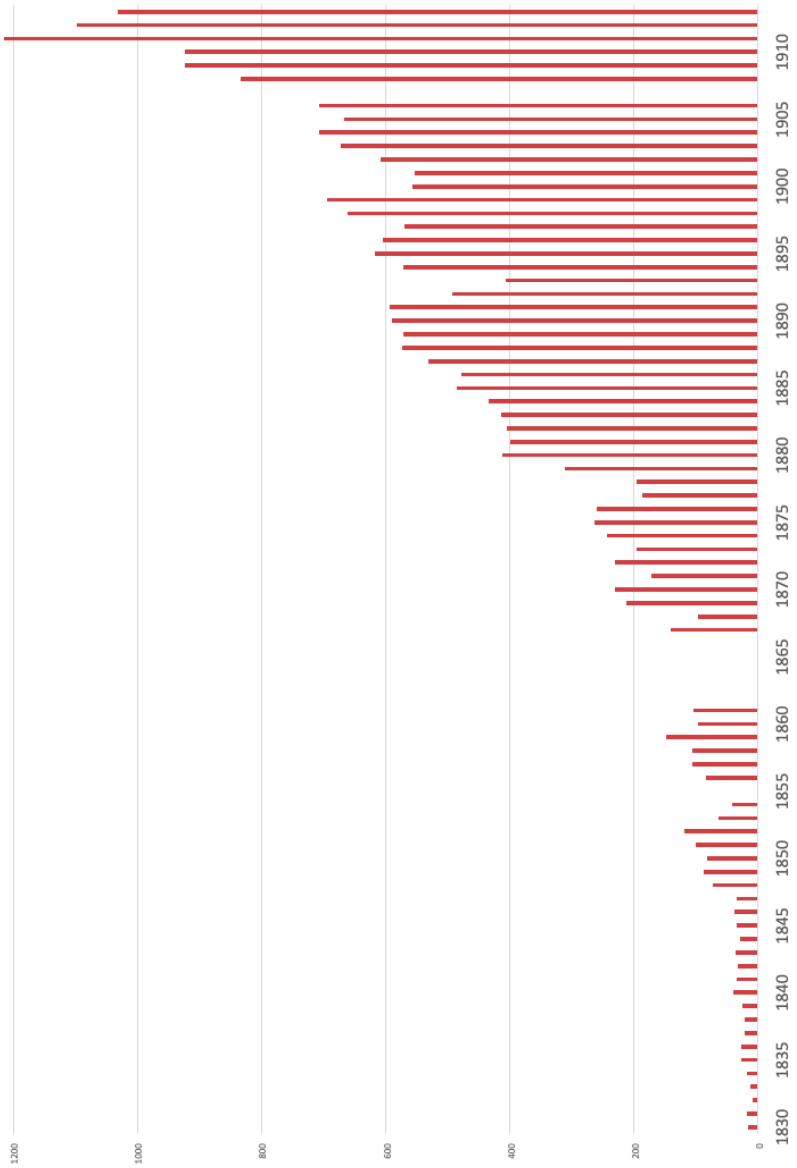
54 For the impact of the Crimean War on Ottoman commerce overall, see Pamuk, *Osmanlı Ekonomisinde Bağımlılık ve Büyüme*. In Beirut, the volume of trade doubled, see Charles Issawi, "British Trade and the Rise of Beirut, 1830-1860," *International Journal of Middle East Studies* 8, no. 1 (1977).

55 The Caucasian Army often procured provisions from local markets like Samsun, Trabzon, Erzurum, Sivas, and Sinop. See Jules Paulis, "Receuil Consulaire de Samsoun, Sinope et Kérassounde (1856)," (Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1856). Although Üner Turgay claims that Trabzon port served as the base for military actions in the Crimean Peninsula, but the evidence suggests otherwise. See Üner Turgay, "Trabzon," in *Doğu Akdeniz'de Liman Kentleri, 1800-1914*, ed. Çağlar Keyder, et al. (Istanbul: Tarih Vakfı Yurt Yayınları, 1994), 57. Trabzon seems was the primary military hub for the army fighting in the Caucasia alongside Samsun, Erzurum, Sivas and Sinop. See Paulis, "Receuil Consulaire de Samsoun, Sinope et Kérassounde (1856)." A fundraising event was even organized among local notables, officers and merchants of Trabzon to pay the salaries of Ottoman soldiers stationed in Batumi. See Yusuf Sarınay and Kemal Gurulkan, *Osmanlı Belgelerinde Kırım Savaşı: (1853-1856)* (Ankara: T.C. Başbakanlık Devlet Arşivleri Genel Müdürlüğü, 2006), 211-35.

56 The prices of hard wheat in Azov were 16-17 piasters per *kile* Bessarabia, 15-15.5 and Rumelia 14 in 4 May 1853 and passed to 50-55, 40-45 and 37-40 by mid-December 1853. The prices of common wheat from Braila 11.5-13 and Rumelia 14-15 piasters (May 14, 1853) rose to Rumelia 39-40 and 34-36 (January 14, 1854). Rumelia was 12-12.5 piasters, Bessarabia 13-13.5, Braila 12-



Graph 2.5 Total Cargo Capacity of Ships Entered to Port of Trabzon (1830-1914)

12.5 and Galatz 13-13.5 piasters (May 14, 1853), which increased to Braila 30-30.5 (January 24, 1854), Galatz 31-32, Anatolian 29-30 piasters. The prices of barley from Braila was 5.25-5.5 piasters and from *Rumelia* 6.25-6.5 piaster (May 4, 1853) to Galatz 18-20 (December 14, 1854). For the prices, see Appendices.

SOURCE British and French Consular Reports

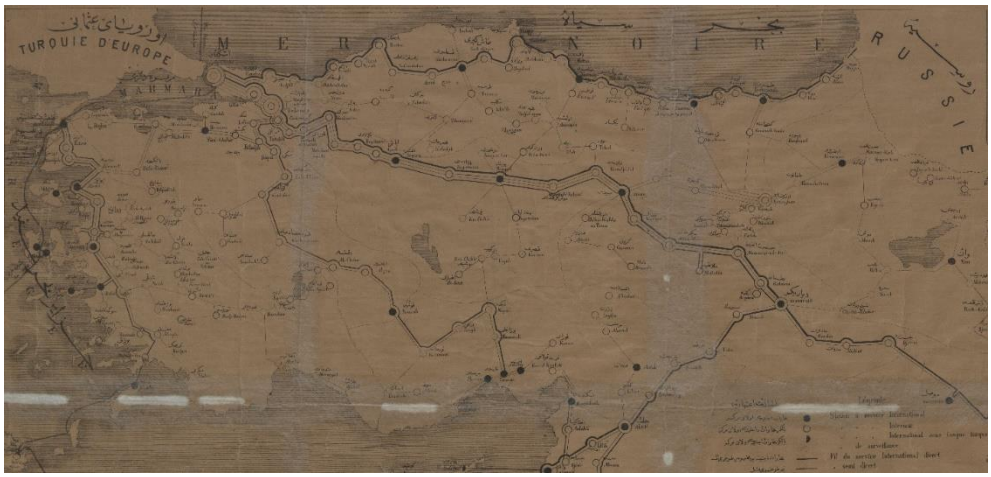
Third and most importantly, the war revolutionized transportation technologies. While soldiers, money and provisions were carried on brand new military steamers during the war,[57] foreign steamship companies and a new generation of steamships arrived following the war. Consequently, the average cargo capacity of steamers doubled in the early-1860s compared to mid-1840s. These new generation ships quickly prevailed over wooden ships by the 1860s.[58] Thanks to arrival of these steamships, transportation costs decreased and maritime commerce became regular given their routine weekly schedules. Interestingly, the number of sailing ships also increased following the Crimean War up until the Great War, even as their share of maritime commerce kept decreasing. The reason the number of these ships increased was that they carried low-value crops[59] over short-distances with flexible schedules that change according to local need. For example, these ships swarmed the port of Samsun after every wheat harvest, but vanished in winter months.[60]

57 For the ship list, see Sarınay and Gurulkan, *Osmanlı Belgelerinde Kırım Savaşı: (1853-1856)*, 280-81.

58 Mahmuzlu, "Transformation of Mercantile Shipping in Southeast Black Sea Ports between 1834 and 1914," 99-128.

59 Small ships dealt with goods of little value: firewood, timber and fruits. See Biliotti, "Report on the Trade, Commerce, and Navigation in the Vilayet of Trebizond from the Year 1873 to the Year 1882 Inclusive."

60 Mahmuzlu, "Transformation of Mercantile Shipping in Southeast Black Sea Ports between 1834 and 1914," 99-128.



Map 2.1 Detail of Map of Telegraph Lines in 1881

SOURCE OA HRT 364.01

Fourth, the information sector was revolutionized with the arrival of steamships and telegraph. Before the Crimean War, local market agents followed major global news delivered on sailing ships. Since these ships entered ports irregularly, it could take several weeks - even months - to keep up with the news. After the Crimean War, postal services became more regular thanks to being shipped on steamers with regular weekly schedules,[61] the telegraph arrived during the war[62] and officially established by 1857.[63] In the world after the Crimean War, port merchants learned the major global headlines within an

61 Steamship companies became the nexus of commercial information, especially for long-distance commerce as it did in the west during the nineteenth century. See Miller, *Europe and The Maritime World: A Twentieth-century History*, 71.

62 Yakup Bektaş, "The Sultan's Messenger: Cultural Constructions of Ottoman Telegraphy, 1847–1880," *Technology and Culture* 41, no. 4: 673.

63 Although the first tariffs for civilian use of the telegraph were published in November 1855, "Tarif des Dépèches Télègraphiques," *Journal de Constantinople (Echo de l'Orient)*, November 29, 1855., a telegraph convention signed on December 1857 with the Austrian Empire, which also represented the states of Prussia, Bavaria, Saxe, Hanover, Netherlands, Baden, Württemberg, and Mecklenburg-Strelitz. See "Convention entre la Turquie et l'Autriche pour Regler la Transmission des Dépèches Télègraphiques," *Journal de Constantinople (Echo de l'Orient)*, December 5, 1857.

hour thanks to telegraph but they still had to wait a day or a week for full details of the event.[64] Moreover, with the advent of steamships and the telegraphy, merchants were able to benefit from information agencies like Reuters and commercial newspapers to keep up with market news.[65] Primary source suggest that port merchants usually benefitted from the postal service carried out with steamers (which took three or four days) instead of the telegraph, because letters allowed merchants to write in more detail. On the other hand, telegraphs were mainly used on occasion where fast communication was required.

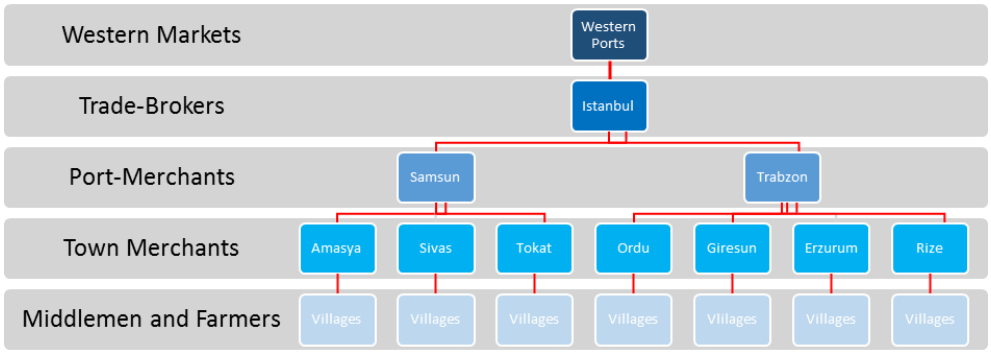


Figure 2.1 Port Hierarchies in the 1860s-1880s

SOURCE See the text

64 Constantinopolitan agents could follow the traffic of ships sailing in the Levant. For example, news that a certain captain name as Cameno of a Greek brick "Arta" destined for Marseille entered the port of Trieste by 10 January 1867 reached Istanbul by January 23 1867. This ship also brought news of a Greek ship named George that sunk due storm nearby Sardines. See "Mouvement du Port (January 23, 1867)," *La Turquie*, January 23, 1867.

65 Daily communication was crucial for the organization of the market. See "Opérations à Terme sur les Marchandises," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 4, 1892.

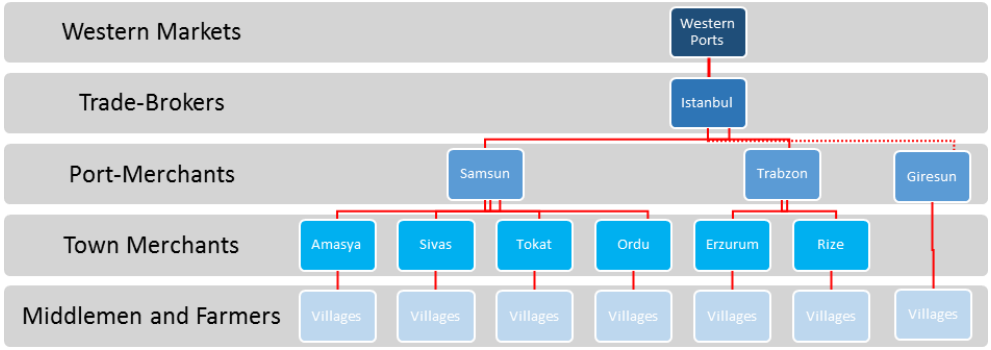


Figure 2.2 Port Hierarchies in the Early-1900s

SOURCE See the text

There was a strict hierarchy among different ports and different agents in this emerging long-distance trade.[66] A detailed examination of the hierarchies among agents at the micro-level will be presented in the next chapter. The position of every agent in each step of the commodity-chains for various major crops was determined by transportation, capital, transaction, and information costs. Every port place in the hierarchy was likewise determined by these four costs. In this hierarchical structure, different layer of networks dominated by different type of cost. First type of network had been formed by circulation of commodities, in other words transportation costs. Thanks to its geographic

66 At the macro level, there were several interconnected market hierarchies along the Black Sea and this dissertation takes Harlaftis' categorization as a starting point. Harlaftis argues that ports' economic performances and their hierarchy can be categorized according to shipping line and commercial networks. Using these criteria, she categorizes the Black Sea ports into five peripheral subsystems. However, her categorization misses the fact that the roles and connections among ports changed over time during the nineteenth century. However, Batumi and Rize can be included in either the Southeastern Black Sea region or Caucasia. While in the last quarter of nineteenth century. The liner companies making trips from Constantinople to Batumi, made Batumi part of the Ottoman system – foreign trade and shipping statistics do not fit with the general tendencies in Trabzon Province. As pointed out in the introduction, Rize hardly fit the profile of Trabzon Province's other ports. See Gelina Harlaftis, "Maritime Transport Systems in Southeastern Europe in the Nineteenth Century," in *the Economic Development of Southeastern Europe in the 19th Century*, ed. Edhem Eldem and Socrates Petmezas (Athens: Alpha Bank Historical Archives, 2011).

position Istanbul has/had been the natural main midway station for every ship sailing in or out of Black Sea. For that reason, Istanbul served as the nexus of commodity traffic of long-distance trade for entire Black Sea. In this relation, major Southeastern Black Sea region ports, especially Samsun and Trabzon, served as gateway for commodities circulated from and to local markets to and from long-distance markets. For example, most crops to be exported from Sanjak of Canik or Sivas Province should have expedited to port of Samsun first. Likewise, Trabzon fulfilled similar tasks for Persian transit trade. Accordingly, there had been hierarchical relations between these ports due the geography or transportation costs.

However, the importance of a port in this hierarchy varied greatly according to the nature of the commodity and time period. For example, Persian silk trade was controlled completely by Marseille and London in the late 1850s,[67] and British market agents in Istanbul were at the top of market for opium – which was mostly shipped to London and Liverpool[68] – in 1890s. In an extreme case, hazelnut commerce was controlled by Constantinopolitan and *Marseillais* agents for most part of the century, through local Giresun agents supplanted agents from Istanbul by the late 1890s.[69] In the establishment of hierarchy, storage capacity also played an important role. For example, one major function of Istanbul was to provide warehousing facilities for long-distance trade.[70] Due to the insufficiency of warehouses in Samsun, most goods

67 H. Arnaud, "Receuil Consulaire de Trébizonde (1858)," (Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1858).

68 Numa Doulcet, "Rapport Commercial de Samsoun (1887)," (Agence Consulaire de Samsoun, AMAE, CADN, 1887).

69 "Rapport Commercial de Samsoun (1890)."

70 Istanbul's function as a warehouse for Black Sea trade was comparable to the role of Hamburg in nineteenth-century European Atlantic trade. Hamburg was at the intersection of British-Russia maritime routes, and inland waterway networks. It also had the greatest storage capacity in Europe with 10,000 acres. This supremacy of Hamburg's warehouses made the port a checkpoint for import-export companies, as was also the case for Istanbul and the Black Sea. For Hamburg, see Miller, *Europe and The Maritime World: A Twentieth-century History*, 36-41.

transported to Samsun were shipped first to Istanbul.[71] Compared to other local ports, Trabzon acquired a relatively satisfying number of storage facilities but these facilities were mostly used for Persian transit trade rather than Anatolian trade.[72]

The second type of network concerned the circulation of money. Southeastern Black Sea region consistently lacked liquidity and other forms of money. In long-distance trade, major western financial centers like London and Paris[73] supplied liquidity and credit to Istanbul and thanks to this concertation of capital, Istanbul functioned as major financial center for the Levant.[74]

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71 Samsun's warehouse capacity remained insufficient for its hinterland even at the end of the century. The maximum duration cargo could be stored varied from a week to ten days according to availability of port facilities. See Contanze, "Rapport Commercial de Samsoun (1901)." Moreover, the warehouses proximate to the port were deficient; rain and humidity penetrated stores which hastened the putrefaction of the crops. See "Rapport Commercial de Samsoun (1897)," (Agence Consulaire de Samsoun, AMAE, CADN, 1897). The sanitary conditions was also insufficient. The situation of storages in the hinterland was even worse; they were exiguous, old, and ill-assorted. The only crop that enjoyed storage facilities was tobacco thanks to the Régie. However, there were even complaints of its insufficiency. The situation in Giresun and Ordu was the poorest. Subsequently, commodities transported from the hinterland were shipped with little delay to Istanbul, the ports of which possessed vast storage facilities. In Samsun, the work shift at the port was eight hours in winter, and twelve hours in summer. Daily wages varied from 10 to 12 piasters. 5 to 6 piasters for overtime work in the evening, and 20 to 24 piasters for the night shift. See "Rapport Commercial de Samsoun (1901)." For that reason, Constantinople was the main warehouse for South Black Sea ports. In fact, direct trade was rare; in the 1880s, most goods imported from the Mediterranean to the ports of Trabzon Province with exception of Trabzon port, were shipped to Istanbul, where it was stored until an ultimate buyer along the Black Sea was found. These merchandises reshipped to Trabzon Provinces' ports only after a sale was made. See Numa Doulcet, "Rapport Commercial de Samsoun (1881)," (Agence Consulaire de Samsoun, AMAE, CADN, 1881).

72 For example, in a slow year like 1896, 4,726 packages arrived to the port of Trabzon between 15 February and 15 March and 3,471 of them were rerouted to Persia. See Stephan Braendli, "Lettre de Trébizonde," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, March 1896.

73 For the role of London and Paris as the financial centers of Western Europe, see Miller, *Europe and The Maritime World: A Twentieth-century History*, 53.

74 Moneylenders in Istanbul functioned as intermediary financial agents who borrowed from western financial centers and redistributed the capital to the Levant. They seem to establish

Trabzon acted as a secondary finance center in Southeastern Black Sea region. The flow of credit flow was exactly the reverse of the commodity-chain. The source of capital was western markets that mainly allocated credit to big port especially Istanbul. Market agents in Istanbul allocated credit to local ports, especially those of Trabzon and Samsun and from local port agents, the credit reached to farmers usually by the intermediation of middlemen. Interest rates increased at every step for example, in the late nineteenth century, western interest rates were as low as 2-5%.[75] They were 8-10% in Istanbul and reached 12-20% in the ports.[76] For producers, rates went up to 20-25% for the luckiest tobacco farmers,[77] and 100%[78] was a maximum. As pointed out in the third chapter, by controlling the circulation of money, credit and shipping insurance in Black Sea ports, Constantinopolitan market agents were able to control the flow of commodities and to control local port agents. However, with the arrival of banks in late nineteenth century, local port merchants freed themselves from Constantinopolitan agents thanks to establish direct contact with western markets and borrowed directly from western financial markets.[79]

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this dominance over Levant's financial markets as early as the 1840s and remained unchallenged until the first banks arrived in 1880s. See Ioanna Pepelasis Minoglou, "Ethnic Minority Groups in International Banking: Greek Diaspora Bankers of Constantinople and Ottoman State Finances, c. 1840-81," *Financial History Review* 9, no. 2 (2002): 128-34. Even major local enterprises dealing in international trade profited from this network. For example, while in 1850s, Istanbul and Izmir provided credit to Chiot ship owners. See Harlaftis, *A History of Greek-Owned Shipping: The Making of an International Tramp Fleet*, 50.

75 See any of commercial newspapers published in Istanbul in the late nineteenth century.

76 Alphonse Cillière, "Rapport Commercial de Trébizonde (1896)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1896).

77 Louis Rambert, *Notes et Impressions de Turquie: l'Empire Ottoman sous Abdul-Hamid* (Geneva: Édition Atar, 1926), 141.

78 Longworth, "Report on the Trade of the Trebizond Vilayet for the Year 1898."

79 This story actually contradicts to role and power distribution in Lenin's version of imperialism. According to Lenin, there was already an emerging Russian industry, capitalism and proletariat in the late nineteenth century. With the export of capital to Russia, the Russian bourgeoisie, and then the proletariat became increasingly dependent on western capitalism and its bourgeoisie. See Vladimir Il'ich Lenin, *Imperialism: The Highest Stage of Capitalism* (London: Penguin Books, 2010). However, in Southeastern Black Sea region, there was no direct investment and no franchising. Only the capital flux from western markets to local agents became

Table 2.1 Interbank Interest Rates in December 1887

City	Interest Rate
Istanbul	9.00%
Athens	8.00%
Genova	5.50%
Lisbon	5.00%
St. Petersburg	5.00%
Vienna	4.50%
London	4.00%
Madrid	4.00%
Brussels	3.50%
Paris	3.00%
Berlin	3.00%
Frankfurt	3.00%
Hamburg	3.00%
Copenhagen	3.00%
New York	3.00%
Calcutta	3.00%
Bombay	3.00%
Amsterdam	2.50%

SOURCE Dersaadet Ticaret Odası Gazetesi (French copy), December 10, 1887

The third type of network in this new value-chains concerned the circulation of information. During the nineteenth century, financial and shipping centers monitored the market through the movement of money,[80] ships and cargo.[81]

more direct, the consequence of which was opposite as it enabled local agent to become independent of intermediary agents.

80 London as the heart of the finance market in the nineteenth century, was also the center of information of world markets. Information on commodity crisis, paper holdings, market conditions, the situation of the international enterprises, and political developments were most circulated via London. See Miller, *Europe and The Maritime World: A Twentieth-century History*, 31.

81 Consider information on prices that circulated the week of May 29 to June 5, 1886 in Istanbul's port concerning what was happening in the ports in the Province of Trabzon: 1,600 bags of

Market agents in Istanbul monitored different markets for information on the condition of supply and demand for different crops. For example, prices and news from Russian ports like Taganrog, Berdianska, Yeski, and Azov and Ottoman ports like Samsun, Edirne, and Tekfurdağ provided enough information on supply of hard wheat. On the other hand; the news and prices from Danubian and Southern Russian ports – especially Odessa, Azov, and Braila – were representative of the situation for common wheat. Likewise, market agents followed the news in Istanbul and Marseille to understand the global market demand for cereals. A port or market could gain or lose importance as well for example, with the construction of Anatolian railways, the prices of different types of wheat from Ankara, Sivas, and Konya were added to the list of signals indicating supply.

For the entire Black Sea, Istanbul was the hub of information connecting local markets to rest of world. Most market agents in Southeastern Black Sea region learned current events from Constantinopolitan newspapers, news agencies, and fellow agents in the Ottoman capital. Thanks to this, Constantinopolitan agents profited from an asymmetry of information over counterparts in Southeastern Black Sea region. On the other hand, this asymmetry went both ways: whereas Constantinopolitan agents had better access to information on global markets, port merchants enjoyed being better informed about local markets and production. In this relation, local port agents acted as the conveyors of information between local production sites and global markets. For example, the port of Samsun served as the hub of news about the condition of the supply of tobacco cultivated along the coast and of wheat in the hinterland, Trabzon served the same role for maize, haricots and hazelnuts.

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haricot beans from Rumelia and Trabzon were sold for 110 and 105 piasters per *okka,* respectively and 22 thousand kilograms of maize from Samsun was sold for 15 piasters per kilogram. See "Bulletin Commercial Hebdomadaire (June 5, 1886)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 5, 1886.

The fourth and final network was institutional[82] and driven by transaction costs. Istanbul lured the most prominent market agents and financial institutions and most settled their business center with control over the entire Black Sea region in the city. From 1850s to the 1910s, Istanbul was among the greatest transit port on earth. Although the city of Constantinople was relatively limited importance compared to other ports like Izmir,[83] when transit trade is included the port of Istanbul was the most important port in the Mediterranean Sea and in Eastern Europe by far. In fact, with the respect to volume, Istanbul was the one of the greatest ports in the world in the second half of the nineteenth century, if not the greatest. (See table 2.2) For that reason, the total volume of commerce in all Southeastern Black Sea region ports combined remained marginal compared to the port of Istanbul. Moreover, the city was perfect transit port and thus a center for institutional network enhanced by being hub of information, credit and commodity traffic. This reality created a great asymmetry in Istanbul's favor vis-à-vis Southeastern Black Sea region. Istanbul was the center of long-distance trade for Southeastern Black Sea re-

82 Antwerp was more similar to Istanbul when commercial houses, shipping companies and banks are compared. Antwerp functioned largely as a transit port given its narrow hinterland. Accordingly, the major commercial agents in Antwerp, like those of Istanbul, interested in the commerce of foreign cities rather domestic ones. For that reason, multinational companies and foreign agents harbored in this port. In Antwerp, many more communities of commercial agents with double-nationalities existed than elsewhere, which was also true for Istanbul. See *Europe and The Maritime World: A Twentieth-century History*, 47-48.

83 Istanbul, on the other hand, does not have a hinterland, which made it the perfect port of call. While the large majority of ships entered the Bosphorus to exchange cargo between ships, get orders or refuel before going to some other port, few entered to dock and deal in local commerce. When this transit trade is included, the volume of trade in Istanbul was six to eight times larger than that of Izmir. However, if transit trade is disregarded customs entries to Izmir were greater than those in Istanbul because it enjoyed the vast hinterland of west Anatolia. For example, exports in 1897-1898 and 1898-1899 from Istanbul were £2,576,000 and £2,585,000 (roughly 2.34 and 2.35 million Ottoman Liras) compared to £4,258,000 and £2,997,000 (roughly 3.87 and 2.72 million Ottoman Liras) from Izmir. See Waugh, "Report on the Trade of Constantinople for the Year 1902," (London: Foreign Office of the United Kingdom, 1902).

gion but the commerce of Southeastern Black Sea region was but a small percentage of the total business in Istanbul. In fact, most of the business in Istanbul port concerned the commerce of South Russia and Romania - especially cereal commerce[84] - and most ships passing through Bosporus were coming from Russian or Romanian port[85] rather than Anatolian.[86] Just exports from Odessa were more important for Constantinopolitan agents than those of the than Southeastern Black Sea region.[87] For that reason, most prominent market agents settle in Istanbul were dealing with Russian and Romanian commerce, not that of the Southeastern Black Sea region. In other words, Istanbul was the

84 Harlaftis, *A History of Greek-Owned Shipping: The Making of an International Tramp Fleet*, 82-89.

85 For the importance of the Danubian ports, see Paul Cernovodeanu and Beatrice Marinescu, "British Trade in the Danubian Ports of Galatz and Braila between 1837 and 1853," *The Journal of European Economic History* VIII (3) (1976); and Constantin Ardeleanu, *International Trade and Diplomacy at the Lower Danube: The Sulina Question and the Economic Premises of the Crimean War (1829-1853)* (Braila: Muzeul Brailei, Editura Istros, 2014). Odessa grew from a small town to one of the most populous cities of the Russian Empire during the nineteenth century thanks to cereal exports. See Lewis Siegelbaum, "The Odessa Grain Trade: A Case Study in Urban Growth and Development in Tsarist Russia," *The Journal of European Economic History* 9, no. (Spring 1980) (1980): 113-47.

86 For example, none of the prominent Greek ship owners listed by Harlaftis remained in Trabzon Province by the 1870s. For the list see Harlaftis, *A History of Greek-Owned Shipping: The Making of an International Tramp Fleet*, 90-91 and 124-25. This asymmetry was also apparent in shipping. While British-flagged ships dominated maritime traffic in Istanbul up until 1890s, they had abandoned Trabzon by 1856. See Paulis, "Receuil Consulaire de Samsoun, Sinope et Kérassounde (1856)."; and "Receuil Consulaire de Trébizonde (1856)," (Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1856). For example, in 1888 British-flagged ships accounted for 77.04% of the total tonnage in Istanbul, but only 1.07% for Samsun and 1.73% in Trabzon. See Henry Fawcett, "Report on the Trade and Commerce of Constantinople for the Years 1887 and 1888," (London: Foreign Office of the United Kingdom, 1888); and Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1888," (London: Foreign Office of the United Kingdom, 1888).

87 For example, in the late nineteenth century, the sum of Trabzon, Samsun and Giresun's exports amounted to only 5-20% of Odessa's exportation. Take the years 1888 and 1889 as examples: total exports from both Trabzon and Samsun amounted to 7.88% and 9.07% of Odessa's exports in 1888 and 1889, respectively. See P. Stevens, "Report on the Trade and Commerce of Odessa for the Year 1891," (London: Foreign Office of the United Kingdom, 1891).

heart of long-distance trade between local and western markets but Southeastern Black Sea region was at best a secondary market for Istanbul.[88]

Table 2.2 Volume of Trade of Various Ports (in Millions of Tons)

	Port	1870	1880	1890	1900	1905
West Mediterranean	Marseille	2159	3634	4887	6163	7824
	Genoa	1362	1884	3371	4812	6422
	Livorno	875	1203	1416	1840	2307
	Napoli	716	1818	2421	3336	4698
	Trieste	889	1111	1471	2165	3002
East Mediterranean	Istanbul	5090	6054	9996	9821	14786
	Alexandria	1199	1142	1632	2376	3591
	Izmir	630	1040	1405	1578	2334
	Syros	746	833	1039	839	1240
	Pireus	235	1158	2070	2188	2845
Black Sea	South Russia	2502	2585	6259	6016	9199
	Danube	601	658	1539	1252	1756
	Trabzon	114	205	296	279	333

SOURCE Gelina Harlaftis, "Maritime Transport Systems in Southeastern Europe in the Nineteenth Century.

This asymmetry between Istanbul and Black Sea Anatolian ports had several consequences. First little investment hardly invested was in local markets in Southeastern Black Sea region except in the tobacco market the turn of the century. Accordingly, all long-distance commerce of Southeastern Black Sea region was handled by local agents, who successfully integrated into global

88 Gad G. Gilbar observes the same absence of foreign capital. Whereas capitalists settled in major ports, local Muslim families dominated commerce in secondary trade centers in Syria and Iraq. However, his explication is different. Gilbar argues that "the high profitability of commercial and industrial investments in those regions, and also the growing tension between the Muslim population at large and the non-Muslim communities during the second half of nineteenth century" quoted from Gad G. Gilbar, "The Muslim Big Merchant-Entrepreneurs of the Middle East, 1860-1914," *Die Welt des Islams* 43, no. 1 (2003): 21.) On the other hand, this dissertation argues that foreign market agents preferred to invest indirectly in the Southeastern Black Sea region because direct investment would generate higher transaction costs.

markets. Second, the commercial institutions and value-chains changed according to the transformation of transportation and information technologies and commercial institutions were mainly formed for Russian and Rumanian commerce not for that of the Southeastern Black Sea region. For that reason, the transformation of local markets was mainly triggered by external rather than internal factors. However, this commerce was being carried out by local agents, not by outsiders. In other words, changes to global value-chains and commercial institutions infiltrated the Southeastern Black Sea region so long as local economic conditions permitted. For that reason, as will be argued in the next chapter, the nature of commercial change was mainly determined by external factors, but the direction of the change was determined by local factors.

2.2.5 *A Decade of Depression (1869-1879)*

A series of economic crises in 1870s marked the end the first period of commercial integration and the golden age of Persian transit trade.[89] First, the port of Trabzon lost its importance following two sequential events: first the opening of Suez Canal in 1869,[90] which diverted most Persian trade to Southern Iran[91] and second the construction of a railway from Baku to Tiflis (completed by 1870),[92] which offered a cheaper alternative[93] to the Tiflis-Erzurum-Trabzon

89 For discussions of the long British depression, see E. J. T. Collins, "Rural and Agricultural Change," in *the Agrarian History of England and Wales 1850-1914*, ed. E. J. T. Collins (Cambridge: Cambridge University Press, 2011), 140-47. For discussion of the existence of such a depression in the Ottoman economy, see Şevket Pamuk, "The Ottoman Empire in the "Great Depression" of 1873-1896," *The Journal of Economic History* 44, no. 1 (1984).

90 Alfred Biliotti, "Report on the Trade and Commerce for the Year 1878," (London: Foreign Office of the United Kingdom, 1878).

91 Exports totaling 103.4 million francs (roughly 238.6 million of Ottoman Liras) in 1868 and dropped to 49,4 million (roughly 114 million of Ottoman Liras) in 1870. see Issawi, "The Tabriz-Trabzon Trade, 1830-1900: Rise and Decline of a Route."

92 Alfred Biliotti, "Supplementary Report for the Year 1873," (London: Foreign Office of the United Kingdom, 1873).

93 One of the ironies of this transit trade was that the Ottoman tax system favored transit trade from Caucasia over that of Trabzon. Thanks to Ottoman custom politics, cargo passing

road.[94] Consequently, most foreign commercial houses that arrived with the Crimean War, like Rallis, abandoned the port between 1868 and 1871.[95] Moreover, a great number of bovines vanished because of cattle disease in 1870 and agricultural performances worsened.[96] The sharp decrease in the affairs of the port of Trabzon and subsequent low performance of agriculture[97] was followed by the first wave of famine that ravaged a territory extending from Erzurum Province to Northern Iran,[98] paralyzing the economic life in the port of Trabzon in 1870 and 1871.[99]

However, local agriculture was harder hit by the second wave of famine in Anatolia, which would be the worst in modern times. From 1872 to 1874, a commercial crisis coincided with successive crop failures, paving the path for

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through Istanbul for delivery in Persia that passed over Russian territory paid no customs duties but cargo to Persia via Trabzon was charged such duties. See Arnaud, "Receuil Consulaire de Trébizonde (1858)."

94 "A rather unexpected fact is revealed by them. It would seem that the commerce of the port has not been diminished much by the competition of Russia in Persia since 1864, or by the opening of the Suez Canal in 1869. Indeed, considering that the other coast towns and their inland districts no longer deal through Trebizond, the volume of trade in this new mart of only North-Eastern Anatolia and North-Western Persia is, on the whole, satisfactory" quoted from Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1900," (London: Foreign Office of the United Kingdom, 1900). See also Issawi, "The Tabriz-Trabzon Trade, 1830-1900: Rise and Decline of a Route," 22-23.

95 The Ralli Agency operated from 1858 to the winter of 1870. See Gifford Palgrave, "Report on the Trade and Commerce of Trebizond, Black Sea for the year 1870," (London: Foreign Office of the United Kingdom, 1870).

96 Cattle-disease was widely reported in the early 1870, but lost its severity waned by 1873. See "Report on the Trade and Commerce of Trebizond During the Year 1873," (London: Foreign Office of the United Kingdom, 1873); and "Report on the Trade and Commerce of Trebizond, Black Sea for the year 1870."

97 Maize and tobacco crops along in the coast failed due to heavy rains during the summer followed by storms in autumn. In addition, a severe bovine epizooty hit the hinterland by 1870 which affected grain production. See "Report on the Trade and Commerce of Trebizond, Black Sea for the year 1870."

98 Biliotti, "Supplementary Report for the Year 1873." For the details of the famine, see Shoko Okazaki, "The Great Persian Famine of 1870-71," *Bulletin of the School of Oriental and African Studies, University of London* 49, no. 1 (1986).

99 Biliotti, "Supplementary Report for the Year 1873."

this famine.[100] The commercial crisis preceded the crop failures. The first signs of a crisis existed in 1872; however, this commercial recession was deepened by a global financial crisis sparked by the market crash in Vienna in the late 1873. Interest rates increased fast and foreign capital tired out. As the result, two thirds of the exports from Samsun vanished within a year.[101] In addition two consecutive crop failures in grains happened in Central Anatolia in 1873 and 1874.[102] When roads to the hinterland were closed due to snow during the winters of 1873 and 1874, husbandry was the first victim.[103] As a result of these calamities, agricultural production decreased to tragically low levels leading to the famous Anatolian famine.[104] Trabzon Province was affected by these events but spared from famine. In these years hazelnut production shrank to

100 Although local famines seem occurred frequently in nineteenth century Anatolia, the subject of famine including the great Anatolian famine of 1874 remain understudied. For alternative means of feeding the farmers see Özge Ertem, "Sick Men of Asia Minor in an Ailing Empire: Famine, Villagers and Government in Missionary Accounts (1873-75)," *International Review of Turkish Studies* 2, no. 1 (2012): 86.

101 Exportation of cereals reached the level of 28 million francs (roughly 64.6 million Ottoman Liras) by 1868; it dropped first to 12 million in 1872, and then to 9.5 million (roughly 22 and 27.7 million Ottoman Liras) by 1873.

102 Mehmet Yavuz Erler, *Osmanlı Devleti'nde Kuraklık, 1800-1880* (Istanbul: Libra Kitap, 2012), 146. Total estimate of total production of grain was 1/10 of a normal year. See *The Famine in Asia-minor: Its History, Compiled from the Pages of the "Levant Herald."*, (Istanbul: Isis Press, 1989).

103 Ertem, "Sick Men of Asia Minor in an Ailing Empire: Famine, Villagers and Government in Missionary Accounts (1873-75)," 76; and Erler, *Osmanlı Devleti'nde Kuraklık, 1800-1880*, 146.

104 Hazelnut failed in 1874. See Alfred Biliotti, "Report on the Trade and Commerce of Trebizond for the Year 1874," (London: Foreign Office of the United Kingdom, 1874). However, despite the dry summer in 1872, tobacco yields were good. See Gifford Palgrave, "Report on the Trade and Commerce of Trebizond During the Year 1872," (London: Foreign Office of the United Kingdom, 1872). Although 1873 was a bad year because of high custom duties in Russia, tobacco exports increased thanks to demand from Austro-Hungaria in 1874. See "Report on the Trade and Commerce of Trebizond During the Year 1873." And Biliotti, "Report on the Trade and Commerce of Trebizond for the Year 1874."

a smaller geography[105] and the average quality of tobacco deteriorated.[106] After these crisis years, the exports of all major crops with the exception of haricot beans – namely wheat, barley, maize, tobacco, and hazelnuts, decreased drastically throughout 1870s. In fact, only the commercial performance of haricot beans cultivated along the coasts improved.[107] Consequently, the commercial performance deteriorated so hard that the period from 1870 to 1876 that even the Russo-Ottoman War of 1877-1878 fairly affected the agricultural performance, which had already at its worst.[108]

Alignment of the events suggests that commercial crises was the *primum mobile* for famines. First, the commercial crises of both ports were caused by external factors – the opening of Suez Canal and market crash of 1873. More importantly, they preceded the famines, the commercial crisis in Trabzon (1868-1872) was followed by the Persian Famine (1870-1871) and the commercial crisis in Samsun (1873-1875) was followed by the Anatolian Famine (1874-1875).[109] There is a relation between the economic collapse in the ports and the famines in the hinterland, but a comprehensive examination of the causes of the Anatolian famines is beyond the scope of this dissertation.

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105 See "Report on the Trade and Commerce of Trebizond for the Year 1874."

106 The quality of tobacco's quality was inferior in 1877. "Report by Vice-Consul Biliotti on the Trade, Commerce and Navigation of the Port and Distinct of Trebizond for the Years of 1877-1878," (London: Foreign Office of the United Kingdom, 1877-1878).

107 The relative success of haricot beans was discontinuous. 1873 was a good year but failed in 1874 because of the heat. Yields were abundant in 1875, 1876, 1878 and 1879. See Palgrave, "Report on the Trade and Commerce of Trebizond During the Year 1873."; and Alfred Biliotti, "Report on the Trade and Commerce of Trebizond for the Year 1875," (London: Foreign Office of the United Kingdom, 1875); and "Report by Vice-Consul Biliotti on the Trade, Commerce and Navigation of the Port and Distinct of Trebizond for the Years of 1877-1878."; and "Report on the Trade, Commerce, and Navigation of the District of Trebizond for the Year 1879," (London: Foreign Office of the United Kingdom, 1879).

108 "Report by Vice-Consul Biliotti on the Trade, Commerce and Navigation of the Port and Distinct of Trebizond for the Years of 1877-1878."

109 For a historical review of the famine, see Ertem, "Sick Men of Asia Minor in an Ailing Empire: Famine, Villagers and Government in Missionary Accounts (1873-75)," 72-94.

2.2.6 *Transformation of Long-distance Trade and the Second Period of Commercial Integration (the late-1880s-1910s)*

Most of 1880s was a recovery period for local agriculture and commerce. For reasons explained in chapter 6, commercial integration and transformation of long-distance trade started in the late-1880s, but local long-distance commerce only entered another growth phase in the mid-1890s. This new period of integration and transformation was triggered by five interrelated factors: the entrance of new shipping companies, railway construction, the arrival of banks, the vertical integration of local commercial houses through disintermediation and the emergence of agro-industries. In other words, there was a considerable decrease in information, transportation, transaction and capital costs in this period, which triggered commercial and agrarian change. First, starting in the late 1880s, new foreign shipping companies and finally a local one – Yelkencizâdes – entered the local shipping market.[110] Thanks to competition from new shipping companies that introduced new technologies, shipping fees were considerably reduced considerably [111] and new local products became part of the long-distance market. For example, it became economically and physically possible to export fresh eggs from Trabzon as far as Marseille by the late 1890s.[112]

110 Mahmuzlu, "Transformation of Mercantile Shipping in Southeast Black Sea Ports between 1834 and 1914."

111 Thanks to stiff competition among steam-shipping companies, shipping fees were considerably reduced in early 1890s up to 25%. For example, the fees from Samsun to Istanbul were reduced from 15 to 12 francs (roughly from 34.6 to 27.7 Ottoman Liras), to Northern France for 20 francs (roughly 46.2 Ottoman Liras), to Germany for 30 francs (roughly 69.3 Ottoman Liras), to Greece for 10 francs (roughly 23.1 Ottoman Liras), to Russia for 12 francs (roughly 27.7 Ottoman Liras), to Italy for 15 francs (roughly 34.6 Ottoman Liras) per ton. See Alfred Spradaro, "Rapport Commercial de Samsoun (1894)," (Agence Consulaire de Samsoun, AMAE, CADN, 1894).

112 Subsequently, French demand for eggs from Trabzon's villages and local demand for butter produced in Maçka (Trabzon) boomed. It was reported that butter, produced in Maçka, four hours far from the port of Trabzon, was and is still famous for its taste, the production during the months of July and August was a particularly quality product. See Chayet, "Rapport Commercial de Trébizonde (1897)."

This period coincided with the age of imperialism. As several writers of this age observed, there were two major trends in finance capital: a trend of the merger of financial capital with other sectors, especially natural monopolies requiring great fixed capital like those in the transportation sector and another trend of exporting capital to pre-capitalist world. As the result, steamship companies were integrating with railway companies[113] and financial institutions merged with transportation companies: Mytilene Bank with the Aegean Shipping Company,[114] Crédit Lyonnais with Méssageries Maritimes and the Paquet steamship companies and Deutsche Bank with Anatolian Railways.[115] The third wheel of the merger of financial capital with other sectors was the integration of information technologies: for example, telegraph services were finally fully integrated with postal services in the Ottoman Empire in 1901.[116]

The first effect of these mergers was to provide opportunities for merchants to invest vertically in commodity chains, which will be discussed in the next chapter. Second, both foreign and local light industries emerged – cigarettes, chocolate, textiles, flour, and bakering, which will be examined in chapter four. However, the transformation of commercial and financial institutions was interrupted by the highest deflation of the century between 1893 and 1896, which is discussed in the chapter six. Moreover, the commercial expansion of Samsun, was halted by the construction of the railway station in Ankara in 1893. From the mid-1850s until the 1890s, this port served as the main port for towns south of Ankara Province, like Kayseri, Yozgat, Sivas, Zile, Malatya,

113 For example, Méssageries Maritimes merged with in French railways company by 1896. See "Faits et Notices (July 4, 1896) ", *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 4, 1896.

114 Evridiki Sifneos, "P.M. Courtgi and the Birth of a Greek-Ottoman Liner Company," in *Following the Nereids: Sea Routes and Maritime Business, 16th-20th Centuries*, ed. Maria Christina Chatzeioannou and Gelina Harlaftis (Athens: Kerkyra Publications, 2006).

115 Murat Özyüksel, *The Berlin-Baghdad Railway and the Ottoman Empire: Industrialization, Imperial Germany and the Middle East* (London: I.B. Tauris & Co. Ltd., 2016), 20-25. See also Peter Mentzel, *Transportation Technology and Imperialism in the Ottoman Empire, 1800-1923* (Washington: D.C.: American Historical Association, 2006), 39-42.

116 The first package using the integrated service was sent to a Nasır Efendi in Trabzon. See "Faits et Notices (April 20, 1901)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 20, 1901.

Harput, Diyarbekir and even Musul.[117] This was redirected to Ankara in 1893.[118] However as discussed in the chapter six, the deflationist wave was soon followed by growth in commerce and agriculture, which restored growth in the port of Samsun. On the other hand, commerce and agrarian growth affected the port of Trabzon and its hinterland very little: indeed, the port of Trabzon had not recovered from the crisis in 1870s.[119] It was in fact smaller ports like Giresun and Ordu that benefitted most from the growth thanks to the mesmerizing growth in the hazelnut cultivation.

§ 2.3 Chapter Summary

Since this chapter deals with two separate topics, it has two separate conclusions. The first is that the geography and climate of Southeastern Black Sea region were the main constraints for changes to agricultural commerce and production. The Pontic Mountains strictly divide the rainy coasts and uneven geography from a vast hinterland dominated by continental climate. Accordingly, major crops cultivated on the coasts and in the hinterland, had distinctly different ecological features. Since the Southeastern Black Sea region is highly diverse in ecological and climatic terms, it is virtually improbable that climate or ecology create global effects that would affect entire Provinces of Trabzon, Sivas and Erzurum simultaneously –like total crop failures, droughts, famine,

117 Doulcet, "Rapport Commercial de Samsoun (1890)." For Musul, see Sarah D. Shields, "Regional Trade and 19th-Century Mosul: Revising the Role of Europe in the Middle East Economy," *International Journal of Middle East Studies* 23, no. 1 (1991): 32.

118 Spradaro, "Rapport Commercial de Samsoun (1894)." Most of the opium commerce was shifted to Ankara railway. For example, 4,200 *okka*s of opium with value of 440,000 *akçe*s was transported from Ankara to Istanbul in February 1896. See "Lettre d'Ankara," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, March 1896.

119 "Merchants continually complain that the commercial importance of this town is annually decreasing; however, their statement is not borne out by facts, as has been shown in my ten-yearly report dated July last" quoted from Alfred Biliotti, "Report on the Trade, Commerce, and Navigation at Trebizond for the Year 1883," (London: Foreign Office of the United Kingdom, 1883).

or even prosperity. In fact, from mid-1850s to the 1910s, there is no single example of an ecological or climatic disaster that affected the entire geography in either the short or the long run. For that reason, a general trend affecting entire the Southeastern Black Sea region cannot be explained by natural reasons – neither for short or long run. For occurrence of such global effects across the region, one or more external economic factors should be in motion. Accordingly, as will be discussed in the following chapters, different crops reacted inversely to changing ecological and climatic conditions. For example, as argued in chapter 4, maize, haricot, and tobacco failed whenever there was drought in the late summer but wheat performance was more related to rainfall in spring and to the conditions of animal husbandry, especially that of bovines.

In the second part of this chapter, the long-term political, commercial and economic history from the 1830s to the 1910s – with a special focus on commercial and financial institutions – was presented. The second conclusion is that innovations in transportation and information technologies along with the transformation of financial and commercial institutions determined the formation and transformation of long-distance markets. In other words, as will be discussed in the next chapter, the change in long-distance markets relied on changes in transportation, transaction, information and capital costs. Although the treaty of Edirne in 1829 marked the political opening of Southeastern Black Sea region, agriculture and commerce in Southeastern Black Sea region had not spontaneously integrated into global markets because it suffered under these costs. Prominent foreign market agents were interested mostly in Southern Russian and Romanian market, which enjoyed better infrastructure in information and transportation facilities, access to capital and institutional framework. Only the port of Trabzon became part of long-distance markets mostly due to Persian transit trade. On the other hand, other Southeastern Black Sea region ports and agriculture remained isolated from global markets until the mid-1850s.

The integration of local agriculture and commerce into long-distance markets started with Crimean War. First, the Crimean War brought many opportunities; while wartime inflation favored commerce, and steamship and new communication technologies prevailed by the 1860s, decreasing the costs of

transportation and information to be on par with global levels. More importantly, long-distance markets emerged in the 1860s, which will be discussed in the next chapter as well. Accordingly, the real commercial opening of Southeastern Black Sea region agriculture occurred in the period from 1853 to 1868, when the value of exports from the port of Samsun increased almost twenty-fivefold. After the prosperous decade of the 1860s, the 1870s brought calamities: war, famine, and economic depression. Since there was no substantial change in agriculture during these depression years. They will rarely be mentioned in the dissertation. A second wave of agricultural change started in the late 1880s, and interrupted by the heaviest deflationary trend from 1893 to 1896. This second wave was initiated by a transformation in financial institutions and long-distance markets, which will be discussed in the next chapter.

3

Formation and Transformation of Long-distance Markets

This chapter examines three related topics: how the long-distance markets were formed in the mid-nineteenth century, how they then transformed, and how these long-distance markets functioned. Accordingly, it discusses first how and why long-distance markets formed in the middle of the century and transformed at the turn of the century from a micro-level perspective. Therefore, this chapter takes over where the previous one ended, but it focuses on the relations among economic agents not ports. As discussed in the previous chapter, transformations in western capitalism and integration to global market triggered agrarian change during the long nineteenth century. However, the integration of agriculture in Southeastern Black Sea region was not spontaneous, but a gradual process. This dissertation argues that technologies, institutions, and factors of production – especially capital – was transmitted from western capitalism and global markets to local agricultural markets mainly by commercial and financial institutions throughout long-distance markets. This chapter deals with these transmission channels – formation and transformation of commercial and financial institutions. The integration of local markets to global markets and the transmission of new technologies, new institutions and factors of production from western capitalism to local agriculture was determined mainly by the conditions of four costs: transaction, information, transportation, and capital costs.

In addition, this chapter also examines how long-distance commodity chains in Southeastern Black Sea region worked. In other words, it describes how crops cultivated in Southeastern Black Sea region were commercialized in long-distance markets and how credits flowed from western markets to local farms. As pointed out in the previous chapter, long-distance commodity chains had a hierarchical structure, in which market agents established governance over others by controlling the flows of capital, and information by establishing a better position in commercial networks. As the structure changed, the roles of and hierarchy among these agents changed accordingly. In other words, the hierarchy of these commodity chains transformed whenever there was a substantial change in the four costs.

Since the effects of innovations in shipping and information are examined comprehensively in the previous chapter, this chapter starts with a discussion of the effects of the remaining three costs: terrestrial transportation, transaction and capital costs. These three costs contributed negatively to agricultural commerce and production throughout the century, even though information and shipping costs decreased considerably after the Crimean War. On the other hand, these three costs were considerably reduced twice – first in the mid-nineteenth century and second in the late nineteenth century – which triggered change in agricultural commerce and production. For that reason, evolution of the long-distance markets can be divided into two periods: 1853-1869 and the late 1880s-1910s. The first wave of change started in the mid-1850s when local markets integrated into the long-distance markets emerged. In this period, transportation and information costs were diminished by innovations in the information and shipping sectors. The long-distance market structure started to transform again by the late 1880s with a transformation of institution – especially with the arrival of banks and bankers. The banks and bankers assumed some of the functions that had been provided by third parties, introducing the new instruments of payment and assurances that relaxed the dependency of local market agents to major long-distance ports, especially Istanbul.

§ 3.1 Imperfections of the Local Market

As pointed out in the first chapter, the port of Trabzon was already part of the global trade network even before the Crimean War.[1] In fact, the total value of exports from Trabzon was considerably greater in the period from the 1830s to the 1850s compared to the period from the 1880s to 1910s. However, most of its trade consisted of Persian transit trade; Anatolian trade, on the other hand, remained relatively insignificant until the Crimean War. This low performance these are the commercialization in Southeastern Black Sea region before Crimean War was not resulted from a lack of local commercial capacity, otherwise the port of Trabzon would not have been part of the global market. Nor was it the lack of potential of agriculture, otherwise there could not have been a commercial opening afterwards. The issues preventing Anatolian agriculture to integrate to long-distance markets before mid-1850s had been generated by mainly four different types of costs; capital, transaction, transportation and information. As pointed out in the first chapter, the issue of high information cost was mainly solved with the arrival of new information technologies during the Crimean War. Likewise, maritime transportation costs were substantially reduced with the arrival of steamships. Accordingly, information and shipping costs reduced to global levels by 1860s. However, during the second half of long-nineteenth century, market agents primarily kept suffering from three types of costs; cost of capital, transaction and terrestrial transportation costs, which remained higher than potential competitors. As argued, the transaction and capital costs decreased considerably with the arrival of vertically-integrated into long-distance markets, which made possible the first wave agrarian change. The second but more effective wave of change was in the late nineteenth century. It was again reduction mainly in transaction and capital costs, thanks to arrival of new financial institutions, made

1 The arguments of Van Zanden on Javanese markets are similar to those of this dissertation. He argues that inefficiencies in Javanese markets between 1823 and 1853 arose from inadequacies in the institutional framework, property rights, the monetary system and high transportation costs. Jan Luiten van Zanden, "On the Efficiency of Markets for Agricultural Products: Rice Prices and Capital Markets in Java, 1823-1853," *The Journal of Economic History* 64, no. 4 (2004): 1028-55.

possible more directly production-sides connection with western markets thanks to more horizontal integration. As the result, direct investment and transfer of agricultural technologies became possible even it remained low and spawns of sustainable growth in agriculture was seeded.

3.1.1 *Cost of Capital*

First main obstacle to commercial and agrarian change was the fact that cost of capital remained high for several reasons. First, even though local market agents seem to been achieved to accumulate considerable amount of capital in the late nineteenth century than generally Ottoman historians assumed,[2] it still remained low to finance commerce of Southeast Black Sea ports.[3] Second, most capitalist invested either in exchange as circulating capital or in rentier sectors like real estate. Even though long-term fixed investment reached its apex by the turn of the century, the lion's share went to the industry and mining sectors, not to agriculture. Most direct investment in agriculture was limited to tobacco where market agents, especially the Régie Company, spent considerable amounts monitor and ameliorate the quality of the crop. The financing of agriculture consisted essentially of providing liquidity to farmers to cover unexpected costs that usually resulted from bad weather and epizooties for periods of here months to a year according to nature of the crop.

However, finding this liquidity was a significant issue even for merchants. First, the availability of coins was insufficient to cover daily transactions in the ports.[4] In fact, Ottoman coins were so scarce that although use of Russian coins had been legally forbidden, the Ministry of Finance eventually allowed

2 For example, Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 69.

3 Even in ports, estimates of total accumulation of capital were low. See Chayet, "Rapport Commercial de Trébizonde (1898).". It was estimated that the total capital of the fifty wealthiest merchants in the port of Trabzon in the early 1900s was around 18-20 million francs (roughly 41-45 million Ottoman Liras). See Fornier, "Rapport Commercial de Trébizonde (1905-1906)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1905-1906).

4 E. Gasselin, "Rapport Commercial de Trébizonde (1893)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1893).

their circulation.[5] For that reason, "bad" Russian silver coins chased "good" gold-backed Lira from circulation.[6] On the other hand, gold money was even scarcer. The situation slightly improved, albeit slowly with the spread of Ottoman Bank's gold banknotes, which was accepted as base currency.[7] Accordingly, the premium on gold,[8] which had been ~25.5% in the mid-1850s,[9] decreased to 7-8% in the ports in the new century.[10] The premium on gold should have always been greater in the hinterland.[11]

5 Imports of Russian money was officially prohibited during the Russia-Ottoman War of 1877-1878. However, Russian money kept circulating in Trabzon, Samsun and Izmir after the war. When authorities intercepted the circulation and confiscated Russian money, merchants resisted. One rightfully claimed that the import of Russian money was illegal, yet there was no law against its circulation. Confused by this statement, the Sublime Porte asked to Ministry of Finance whether the circulation of Russian should be averted. The answer summarized the situation: confiscation of Russian money was legal, yet it was recommended that Russian money be allowed to circulate in defiance of the law due to the scarcity of 5-para, 10-para and 20-para Ottoman coins. See OA MV 15.26, December 26, 1886

6 Gasselin, "Rapport Commercial de Trébizonde (1893)."; and Fornier, "Rapport Commercial de Trébizonde (1905-1906)."

7 Ottoman Lira were accepted as based money. English and French golden moneys were also welcomed by merchants. See Gasselin, "Rapport Commercial de Trébizonde (1893)."

8 In the nineteenth century the gold premium consisted of the excess of "purchasing power or exchange value of gold currency over another form of money (as paper dollars) of nominally equal value" quoted from Philip Babcock Gove and Noah Webster, "Gold Premium," in *Webster's Third New International Dictionary of the English Language* (Springfield: Merriam-Webster, 2008).

9 "Trébisonde (January 29, 1857)," *Journal de Constantinople (Echo de l'Orient)*, January 29, 1857.

10 Fornier, "Rapport Commercial de Trébizonde (1905-1906)."

11 In addition to the scarcity of liquidity (monetary base - MB), the creation of money through credit was low. Considering that hardly long-term advances of more than a year were rare before the arrival of banks, the M2 and M3 were especially low. As expected, the need for money in the in the forms of either liquidity or credit became a bigger obstacle with increases in commercialization and total production. As has been discussed in detail in the text, this monetary scarcity made credit the main tool of economic actors, especially merchants and the Régie Company establishing dominance over agricultural production.

Table 3.1 Import of Russian Rubles to Various Small Ports

Sanjak	1905	1906	1907	1908	1909
Giresun	81,771	68,476	71,575	59,610	57,660
Ordu	38,210	30,562	53,536	41,965	35,384
Tirebolu	3,791	8,455	18,479	21,760	17,699
Rize	17,165	16,926	26,253	26,150	22,438
Total	140,937	124,419	169,843	149,485	133,181

SOURCE N. Collaro, "Rapport Commercial De Kérassunde (1910)," (AMAE, CADN, 1910)

3.1.2 *Transportation Costs*

You and I come by road or rail,
but economists travel on infrastructure

Margaret Thatcher

The second main factor preventing the commercialization of agriculture was high terrestrial transportation costs.[12] While mountains prevented the passage of humans and commodities, especially in the eastern part of Trabzon Province, where transportation via river was limited.[13] In addition to these geographic disadvantages, transportation technologies were primitive; farmers

12 Cost of transporting grain from Sivas to Samsun by ox cart in good weather was estimated to be 9-12 francs (roughly 21-28 Ottoman Liras) per 100 kilograms (20-30% of the current prices of wheat in Istanbul and 50% of current prices in Sivas). For 1860s wee "Rapport Commercial de Sivas (1866)," (Agence Consulaire de Sivas, AMAE, CADN, 1866). For 1870s, see Numa Doulcet, "Rapport Commercial de Samsoun (1878)," (Agence Consulaire de Samsoun, AMAE, CADN, 1878); and Biliotti, "Report on the Trade, Commerce, and Navigation of the District of Trebizond for the Year 1879."; and Captain Maunsell, "Reports on the Trade and Commerce of the Trebizond and Sivas Vilayets for the Year 1897 b-Sivas Vilayet," (London: Foreign Office of the United Kingdom, 1897).

13 The transportation of commodities by river was mostly conducted by small, simple boats known as *kelek*s. In 1890, a group of entrepreneurs from Sivas Province applied to the government to establish a company for the transport of cereals from the hinterland to Samsun by

and rural merchants used ox carts and donkeys[14] but long-distance merchants preferred camels.[15] However, since most of the Black Sea basin from Anatolia to Southern Russia relied on similar means of transportation, the technology that made a real difference was the railroad. However, a railway line was never built in Southeastern Black Sea region, which rendered it comparatively disadvantaged vis-à-vis over other regions.

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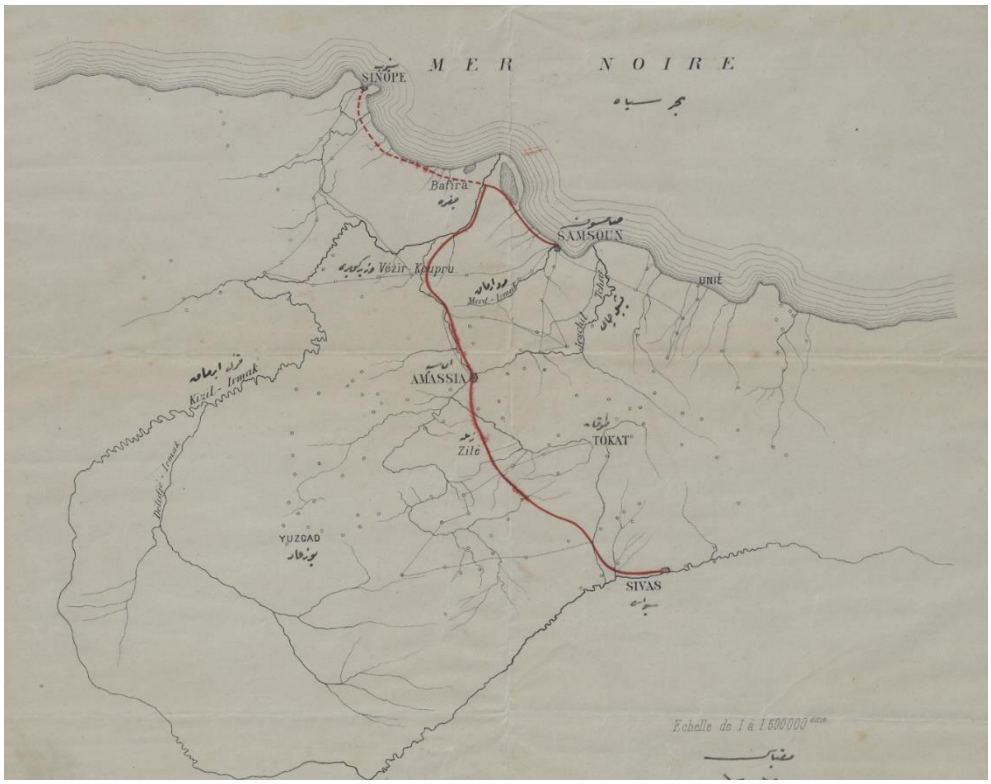
*kelek*s but this enterprise had no major consequence, see "Faits et Notices (April 19, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 19, 1890.

14 It was reported that the crops from hinterland to Samsun were transported by oxen-carts known as *araba*s throughout the century. For ox carts, see Stevens, "Report on the Trade of Djanik for the Year 1839."; and Doulcet, "Rapport Commercial de Samsoun (1890)."; and Contanze, "Rapport Commercial de Samsoun (1905-1906)." For donkeys, see Spradaro, "Rapport Commercial de Samsoun (1894)."

15 The grain was brought mainly by camels from Yozgat, Bozok and Çorum for grinding by water mills in Samsun. See Stevens, "Report on the Trade of Djanik for the Year 1839." On the other hand, the camel had been widely used in the Persian Transit trade from Tabriz to Trabzon. For example, some 48 thousand camels had passed by the 1860s when this road was active. See Fulya Özkan, *A Road to Rebellion, a History on the Move: The Social History of the Trabzon-Bayezid Road and the Formation of the Modern State in the Late Ottoman World* (New York: UMI Dissertation Publisher, 2012), 10. "The highways with the interior have not changed much. It is carried out from time to time a more or less complete reflection work make it possible to transport the goods and the travelers by means of oxcart exists a very large number in the country" quoted from Doulcet, "Rapport Commercial de Samsoun (1890)."



Map 3.1 Map of Unrealized Railway Line from Sivas to Samsun with Major Roads and Rivers

SOURCE OA HRT 400.1

More importantly, the Sivas-Samsun and Erzurum-Trabzon routes suffered from inadequate infrastructure. During rainy and snowy seasons transportation became especially difficult.[16] The Ottoman government tried to ameliorate its roads during the second half of the nineteenth century. First construction on a wagon road from Trabzon to Erzurum started in the late 1850s,

16 "Rapport Commercial de Samsoun (1879)," (Agence Consulaire de Samsoun, AMAE, CADN, 1879); and "Rapport Commercial de Samsoun (1876)," (Agence Consulaire de Samsoun, AMAE, CADN, 1876); and Habib Suifi, "Lettre de Sivas (April 17, 1894)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, April 17, 1894.

becoming operational by the early 1870s.[17] However, the road of Trabzon-Erzurum-Tiflis was more costly than alternative Poti-Tiflis road.[18] By the 1880s, repairs started on the road between Trabzon and Erzurum.[19] In the west, the transportation network of Sivas improved considerably between the mid-1860s and 1900s – especially Halil Rıfaat Pasha, the governor of Sivas Province[20] was especially known for his road construction projects.[21] Many roads connecting a wagon road from the Province of Sivas to the ports of Giresun[22] and Samsun[23] with the towns of Sivas and Canik were finished by the new

17 Construction of the section between Trabzon and Beyazıd started in 1857 and finished by 1871. See Özkan, *A Road to Rebellion, a History on the Move: The Social History of the Trabzon-Bayezid Road and the Formation of the Modern State in the Late Ottoman World.* also Issawi, "The Tabriz-Trabzon Trade, 1830-1900: Rise and Decline of a Route," 21-22.

18 Biliotti claims that the Erzurum-Trabzon route was relatively short compared to Poti-Tiflis but transportation via Erzurum-Trabzon was 20% more expensive than its alternative. See Biliotti, "Supplementary Report for the Year 1873." Charles Issawi claimed that it was a sunk investment but after the route was opened, commerce in Trabzon port took off again until 1868. see Issawi, "The Tabriz-Trabzon Trade, 1830-1900: Rise and Decline of a Route," 21-22. Also see Özkan, *A Road to Rebellion, a History on the Move: The Social History of the Trabzon-Bayezid Road and the Formation of the Modern State in the Late Ottoman World*, 202 and 59.

19 Maintenance of the finished road seems to be ignored for some time. See Biliotti, "Report on the Trade and Commerce of Trebizond for the Year 1874." However repairs started in 1880s. See Özkan, *A Road to Rebellion, a History on the Move: The Social History of the Trabzon-Bayezid Road and the Formation of the Modern State in the Late Ottoman World*, 134-39,54-57 and 97-98.

20 Atilla Çetin, "Halil Rifat Paşa," in *İslam Ansiklopedisi*, ed. Türkiye Diyanet Vakfı İslâm Araştırmaları Merkezi (Istanbul).

21 Ali Açıkel and Murat Hanilçe, "Sivas Vilayetinde Ulaşım," in *Ciepo 6. Ara Dönem Sempozyumu 14-17 Nisan 2011*, ed. Tuncer Baykaya and Adnan Şişman (Uşak: Uşak İli Kalkınma Vakfı, 2011), 91-97.

22 Project to build a 250-kilometer road connecting Karahisar and Giresun started in 1870. See Cuinet, "Vilayet de Trébizonde Statistique Descriptive." but its construction was slow, and only 122 kilometers were finished by 1890 see G. Genna, "Rapport Commercial de Kérassunde et Ordou (1890)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1890). This road was completed in the next century.

23 The main road between Sivas and Samsun started in 1862 and finished in 1883. See Cuinet, "Vilayet de Trébizonde Statistique Descriptive."

century.[24] However, although progress was made in decreasing transportation costs,[25] this progress remained insufficient compared to road and railway contractions of neighboring countries. Moreover, most of the time, the condition of these roads quick deteriorated, because regular maintenance was neglected.[26]

24 Açıkel and Hanilçe, "Sivas Vilayetinde Ulaşım," 91-97.

25 Assuming that wheat and barley in 1890 and 1909 were of similar density and the years of 1890 and 1912 were representative years; transportation cost for wheat from Erzurum to Trabzon decreased between ~55-65% and for barley between 97-122% in Erzurum between 1890 and 1912. However, further examinations of the cost of transportation in nineteenth century Anatolia is required to determine the decrease in transportation costs. For the cost in 1890, see J. Srabian, "Lettre d'Erzéroum (October 17, 1890)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, October 17, 1890, 24. For the cost in 1912 see Özkan, *A Road to Rebellion, a History on the Move: The Social History of the Trabzon-Bayezid Road and the Formation of the Modern State in the Late Ottoman World*, 238.

26 For the Samsun-Sivas road, see Contanze, "Rapport Commercial de Samsoun (1905-1906)." For the Erzurum-Trabzon see Özkan, *A Road to Rebellion, a History on the Move: The Social History of the Trabzon-Bayezid Road and the Formation of the Modern State in the Late Ottoman World*, 197-98.

Map 3.2 Military Map of Roadways and Telegraph Lines during the 1877-1878 War

SOURCE İ.B.B. Atatürk Kitaplığı Sayısal Arşiv Hrt_000137

3.1.3 *Transaction Costs*

Another obstacle to long-distance trade was high recurrent transaction costs. These transaction costs were caused by several factors. One major source of transaction costs was the structure of the markets and the inadequacy of formal – especially legal – institutions. The existent legal system was inadequate for long-distance trade for several reasons. First, there were no international laws to regulate international commerce.[27] For that reason, market agents acted according to unwritten tacit rules. Market agents faced more serious legal issue: The Ottoman legal system was composed of disunited formal legal

27 The first Incoterms – an international commerce terms – were first published in 1936. For a detailed history of international laws. See International Chamber of Commerce, "Incoterms® Rules History," https://iccwbo.org/resources-for-business/incoterms-rules/incoterms-rules-history/.

systems like the Ottoman *Nizamiyye* (modern courts),[28] the *Meclis-i Şer'i* (Islamic courts) and the consular courts[29] which existed alongside officially-recognized informal communal codes.[30] This created legal flexibility, but also confusion. To overcome this, Napoleonic codes served as an international code and a number of tacit rules were accepted by consular courts and most merchants dealing in international commerce to compensate for the absence of international laws. For example, when a complainant and a defendant were of different nationalities, traditionally the court system of the defendant would take the case.[31] Legal extraterritoriality solved the issue of the absence of international law but it also generated an issue of conflicting legalities, foreign consuls and Ottoman courts had no jurisdiction over market agents of other nationalities. For example, trade brokers and other intermediary agents were important in nineteenth century international trade but no laws concerning

28 However, these commercial courts did not exist everywhere. In fact, there had been a commercial court, in early 1880s but it was abolished in the mid-1880s and the *kadı* assumed its functions. It reopened thanks to taxes on hazelnut. See Genna, "Rapport Commercial de Kérassunde et Ordou (1890)."

29 For a summary of the official workings of the old and new Ottoman legal systems. See Turan Kayaoğlu, *Legal Imperialism: Sovereignty and Extraterritoriality in Japan, the Ottoman Empire, and China* (New York: Cambridge University Press, 2014), 114-21.

30 However, these communal laws were not independent of official legal systems. As Roger Cotterrell puts "Transnational communities of interest, in commercial and other contexts, rely on state law but also shape and avoid it, or set legal traditions against each other, in new contexts that merely extend the kinds of struggles over authority and jurisdiction that, for example, Arthurs' study of English legal pluralism showed" quoted from Roger Cotterrell, *Law, Culture and Society: Legal Ideas in the Mirror of Social Theory* (London: Routledge, 2017), 42.

31 For example, on November 17, 1858, a Belgian citizen, Charles Couteuaux, submitted a petition to the Belgian Consulate of Istanbul for the payment of three overdue bills signed by Soirault, a French citizen. The Belgian Consulate handed the case over to French Consulate in Istanbul the next day. Soirault lost the case in a court hearing held by the French Consulate on 22 November and he was given a month to pay these bills. However, he did not pay these fees as well and Couteaux applied to the Belgian Consulate again on December, 22 and again the Belgian consulate passed the case on to French Consulate, which punished Soirault with a fine on December 22, 1858. See Les Minutes, No:16 January 3, 1859, AMAE, CADN 167PO/A Constantinople Série A,62

trade brokers were issued before 1888.[32] For that reason, market agents like trade brokers and bankers were usually foreign citizens.

Subsequently, the legal risk and hence the transaction costs of doing business were especially high for foreign agents wishing to make trade in Ottoman lands. The most rational solution for foreign agents to avoid huge legal risks was to seek local agents with double citizenship and hence who could be sued in the merchant's own consular court. Accordingly, local agents with foreign citizenship had an advantage in finding suitable long-distance partners compared to others subjects only to local Ottoman laws.[33] In other words, since the Ottoman Empire recognized extraterritoriality and there was no international law or court, the best strategy for local agents dealing in international trade was to obtain the citizenship of western power. Likewise, for foreign merchants it was less risky to deal with a local agent who could be sued in the merchant's own consular court. Accordingly, local agents sought foreign citizenship or sought third parties with multiple citizenships to facilitate the exchange.

32 On April 14, 1886, the Ministry of Agriculture, Commerce and Public Works presented prescription for a law on brokerage. A wider, more comprehensive legal order on brokerage was prepared by the Chamber of Commerce of Constantinople and sanctioned by an imperial order (*İrâde-i Şâhane*). Although the *irâde* was issued on October 7, 1888, the new law only began to be applied on February 23, 1889. See "Courtage en Turquie (November 10, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 10, 1888. For the full regulation and taxes. See OA İ.MMS 102.4291, October 7, 1888 or "Réglement sur les Courtiers Santionné par Iradé Impérial," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 3, 1888.

33 In theory, all commodity exchanges were under the supervision of the Ministry of Commerce. See "Les Bourses de Commerce," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 21, 1891. In practice, market agents of a variety of nationalities subject to various legal institutions limiting the authority of the Ottoman government over most long-distance merchants.

Moreover, primary sources suggest that neither traditional *kadı*, *nizamiyye*[34] and consular courts nor armed forces[35] operated efficiently according to needs of market. The main source of complaints about local courts was their partiality.[36] Especially in the late nineteenth century, there were numerous examples of powerful, local market agents manipulating legal procedure.[37] For example, the Mavrides family was an important merchant family involved in tobacco commerce in the late nineteenth century, the story of which is described in the next chapter. The members of this family penetrated local political institutions,[38] which provided a political and legal shield against even powerful institutions – like Bank of Salonica, the Egyptian courts,[39] and the

34 One foreign consul observed; "The laws of Turkey are modified counterparts of the Code Napoléon introduced in 1856. The order of procedure revised in 1879 is with due regard to the capitulations, equally French. There are two commercial courts within the vilayet, the one at Trebizond and the other at Samsoon. Each of those courts has a paid president appointed by Government, and four members, a paid Christian and a Mussulman as well as an unpaid Christian and a Mussulman member, selected conjointly by the administrative and municipal councils. In commercial suits between an Ottoman and foreign subject the Consulate, besides sending a representative, appoints two members in the place of the two unpaid members. In mixed cases between foreigners the defendant is amenable to his own Consular Court in all cases but that of real property, which lies within the exclusive competency of the Ottoman civil courts" quoted from Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1891," (London: Foreign Office of the United Kingdom, 1891).

35 See for example, Spradaro, "Rapport Commercial de Samsoun (1894)."

36 "On connait assez les tribunaux turcs pour en douter" quoted from G. Genna, "Rapport Commercial de Kérassunde et Ordou (1895)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1895).

37 For another example, see the case of Mersin, Meltem Toksöz, "Ottoman Mersin: The Making of an Eastern Mediterranean Port-town," *New Perspectives on Turkey* 31 (2015): 80.

38 Mavridi Hâci Constantine/Konstantin Efendi was a member of the Tirebolu *bidayet* court. Mavradi Panayot Efendi was a member of Giresun *sandık* council and a member of Chamber of Commerce and Industry in Giresun, and a member of *meclis-i idare* (municipal council) in Giresun. Emiroğlu, *Trabzon Vilayeti Salnameleri Yer ve Kişi Adları*, 172.

39 Unsurprisingly, the Mavridi family had established political power over the institutions not limited with the boundaries of Trabzon Province. For that reason, they preserved even when they lost successive legal cases for bankruptcy in Samsun and Alexandria in Egypt. "The tobacco company "Mavradis and Sons" established in Samsun and having branches in Cairo and Alexandria, whose bankruptcy was declared by the Commercial Court in Alexandria on

Régie Company.[40] Likewise, many members of merchant families enter political offices: Nemlizâde Tahsin Pasha as a minister,[41] Todoraki Arzoğlu was deputy from Canik, and Kaptan Yorgi Konstantinidi Pasha was Mayor of Giresun.[42] For these reasons, the legal system pertaining to long-distance trade was complicated and full of discrepant, competing laws that were an enormous source of transaction costs. For example, the most common complaints concerned damage during transshipping[43] and routine check on the cargo.[44] Another was delays in payments. An eight-day to one-month delay was routine business, but three-month delay pushed the limit.[45] Delaying payment

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May 18, 1914, was asked (by our ministry to the governor of Trabzon) whether Commercial Court in Samsun delayed its order for bankruptcy of this company or not." quoted from OA DH.H. 68.73, August 4, 1914

40 Although the plaintiff was officially the manager of the Régie in Istanbul ("Dersaadet Reji İdâresi direktörü tarafından") Sava Mavridi won the case in Samsun. "Hacı Sava Mavradis, Ottoman citizen and one of the tobacco merchants of Samsun, found innocent by majority of the municipal court of Canik on the case filled by the administration of the Régie. The Régie claimed that Sava Mavradis sent 13,690 kilograms of tobacco of Samsun to Alexandria via Trieste instead of sending directly from Samsun to evade internal monopoly taxes." quoted from OA ŞD.1839.3, November 18, 1886)

41 Yaşar Tolga Cora, "A Muslim Great Merchant [Tüccar] Family in the Late Ottoman Empire: A Case Study of the Nemlizades, 1860-1930 " *International Journal of Turkish Studies* 19, no. 1/2 (2013): 1-29.

42 Sezai Balcı, *Giresun Rumları ve Gayrimüslim bir Belediye Başkanı: Kaptan Yorgi Konstantinidi Paşa* (Istanbul: Libra Kitapçılık ve Yayıncılık, 2013).

43 Due to the absence of modern ports, transportation by barge caused lots of damage. For Istanbul. See "Les Courtiers," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 31, 1890; and "Le Transport des Blés," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 10, 1890. For a similar situation in Samsun, see Henri de Contanze, "Rapport Maritime de Samsoun (1903)," (Agence Consulaire de Samsoun, AMAE, CADN, 1903).

44 "Le Courtage," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 15, 1890; and "Faits et Notices (March 23, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 23, 1889.

45 According to one witness, the contracts of sale were made before witnesses inside a building. They stamped their signature to seal the deal. However, the payment and delivery dates were often not respected. The delays in payment was so common that even the formal institutions accepted such delays. "Rapport Commercial de Samsoun (1899)," (Agence Consulaire de Samsoun, AMAE, CADN, 1899). A delay of ninety days were normal for credit "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

was so common that not only the Ottoman courts but also the consular courts accepted it as an unwritten rule. Such issues were a source of greater market failure. For example, when one trade broker in Manchester dealing with commerce in Giresun went bankrupt in 1895, it generated debt of roughly 1,250 Ottoman liras for market agents in Giresun, which was a great sum in the local market.[46]

Under the condition of insufficient formal institutions, market agents benefitted from its alternatives –informal institutions. First alternative was to rely on third parties. As discussed in detail below, most market agents involved in the long-distance trade in the second part of nineteenth century relied on relatively impartial third parties.[47] The second was to rely on self-enforcing contracts – either on long-term partnerships or on reputation. Furthermore, there was a dominant agent in the market, where he could enforce his rules over others, like in competitive fringe markets with dominant firms and hierarchical contrast –as between a firm and a single free employee.[48] In commerce there are hierarchical contracts – like direct investment and franchising. As pointed out in the previous chapter, Southeastern Black Sea region was not attractive for direct foreign investment. For that reason, foreign investors like the Macropolys, Outrays,[49] and the Hochstrasser Co were few in number. Franchising, only existed for import trade, which is off topic for this dissertation.[50]

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46 Aristote G. Néophytos, "Lettre de Kérassunde (April 1895)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, April 1895.

47 "French traders will do well to ask for references on traders who ask them for merchandise on credit because they would have inconvenience to collect fully their credit afterwards," quoted from Genna, "Rapport Commercial de Kérassunde et Ordou (1895)."

48 Williamson, *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*, 221-23.

49 For example, while his merchant father was stationed in Trabzon, French descendant Adémie Outray settled in Samsun. In 1838, the father Outray went to France carrying some samples of tobacco but failed to find potential buyers. See Outray, "Extrait d'un Rapport sur la Province du Djanik (fait par Adémie Outray Chancelier Honoreux du France à Trébizonde)."

50 This dissertation deals only with commodity chains concerning exportation of agricultural goods. For imports, there were other marketing strategies as well. Mail ordering and franchis-

The second type of self-enforcing contract relied on reputation.[51] Game theory suggests that the agents playing repetitively the games with same partners are more inclined to collaborate,[52] because the commitment problem can

ing became particularly common in the late nineteenth century. The case of Singer is an example of the new mail order marketing. Singer profited from new bank payment instruments. Unlike European competitors, it offered monthly payment plans to its consumers. Consumers signed checks or promissory notes, and payment guaranteed by banks and its local agent, Azarian Père et Fils Co and the machines were delivered by postal service. Moreover, this company provided after-sales service by repairing machines and providing spare parts. Aristakes Azarian, the head of this company, was also the first president of the Chamber of Commerce of Constantinople. See Donald Quataert, *Manufacturing and Technology Transfer in the Ottoman Empire, 1800-1914* Centre de Recherche sur la Civilisation Ottomane et le Domaine Turc Contemporain Université de Science Humaines de Strasbourg (Istanbul: Isis Press, 1992); and "Aristakès Effendi Azarian," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 22, 1897. Franchising was even more popular method. For an example, see the case of Nestlé, see Yavuz Köse, "Nestlé: A Brief History of the Marketing Strategies of the First Multinational Company in the Ottoman Empire," *Journal of Macromarketing* 27, no. 1: 11. Orosdi-Back store-chains , see Uri M. Kupferschmidt, *European Department Stores and Middle Eastern Consumers: the Orosdi-Back Saga* (Istanbul: Osmanlı Bankası Arşiv ve Araştırma Merkezi, 2007). In 1891 of Samsun, the Garassino, Hekimian, Hoëlzer, Masraf and Mouradian families were likewise representatives of other foreign houses. R. Cesar Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1891)* (Istanbul: The Annuaire Oriental and Printing Company Limited, 1891), 873.

51 See Kasper, Streit, and Boettke, *Institutional Economics: Property, Competition, Policies*, 218-21.

52 In game theory, this situation is modeled as the evolution of cooperation by Axelrod. In 1970s, Axelrod ran experiments on the prisoner's dilemma after being invited to observe an experiment along with other academics. He concluded from these experiments that participants to long-term or repetitive games acted differently from one-time prisoner game. He defines five types of strategy; selfish, who always seek to maximize its benefits; altruist, who always cooperates; copycat, who always repeat the previous action of his co-player, tit-for-tat, who cooperate until his/her co-player cheats and detective, who try to figure out his/her co-player's strategy. Among five types of strategy, it was the copycat who wins the game. The outcome of the game changes when the pay-offs changes too. As the result, Axelrod concluded that the outcome of games played for indefinite time or continuously but without a predicted end would have cooperative outcomes. See Martin J. Osborne, *An Introduction to Game Theory* (New Delhi: Oxford University Press, 2014), 414-20. For enjoyable presentation of Axelrod, visit the website; Nick Case, "Evolution of Trust," https://ncase.me/trust/.

be solved by bilateral tacit agreements. In commerce, to overcome the commitment problem market agents could appeal to informal institutions like kinship, religious (*muâhât*), and town (*hemşehrilik*) fellowship. In other words, in a case of undue forfeiture or cheating, market agents were punished by the internal social mechanisms of the family and community to which he belonged instead of by the formal legal system. A market agent's reputation was based on reinforcement[53] and multilateral punishment.[54] Therefore, accumulation of symbolic capital[55] was crucial in long-distance trade. Moreover, since the Ottoman system recognized communal law, it was good example of Ehrilich's living law, where communal punishment systems are influenced by the formal one and vice versa.[56] Consequently, making business with relatives, fellow townsmen and coreligionists was common in long-distance trade. Accordingly, merchants acted and reacted to institutional changes according to *millet* system, which was backed by legal institutions as well. As discussed in the next chapter, when merchants started to invest horizontally they placed kin in various ports and towns and made regular partnerships with others from the same religious community often bonding such relations with marriages, instead of creating legal partnerships with strangers.

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53 The main question in Greif's research is how merchants in the pre-modern world were able to trust faraway market agents in long-distance trade given the absence of formal institutions and an effective legal system. In these circumstances, it was more rational for agents to cheat one other. In fact, thanks to their distance from one another, business partners and overseas agents could cheat associates and bosses, misinform them about prices and deals and steal from traders. Moreover, even if caught, they could get around the law, since the judicial institutions were insufficient. However, if that were the case, long-distance commerce would not be viable in economic sense. See Greif, "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders," 857-82. See also *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade*, 58-90.

54 "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders," 868-71. *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade*, 91-123; and "History Lessons: The Birth of Impersonal Exchange: The Community Responsibility System and Impartial Justice," 221-36.

55 For a brief explication of symbolic capital, see Pierre Bourdieu, *Practical Reason: On the Theory of Action* (Cambridge: Polity Press, 2008), 1-30.

56 M. L. M. Hertogh, *Living Law: Reconsidering Eugen Ehrlich* (Portland: Hart Publishing, 2009).

§ 3.2 Formation of Long-distance Markets (mid-1850s - the late 1860s)

> *– Mais non, je ne sais pas! s'écria le seigneur Kéraban en riant d'un bon rire… Tabacs de Macédoine pour nos fumeurs de cigarettes, tabacs de Perse pour nos fumeurs de narghilés! Et mes correspondants de Salonique, d'Erzeroum, de Latakié, de Bafra, de Trébizonde, sans oublier mon ami Van Mitten, de Rotterdam! Depuis trente ans, en ai-je expédié de ces ballots de tabac aux quatre coins de l'Europe!*
>
> Jules Verne, *Kéraban-Le-Têtu*

3.2.1 *Global Markets*[57]

The evolution of long-distance markets in Southeastern Black Sea region can be divided into two major phases: from the mid-1850s to the 1880s and from the 1880s to the 1910s.[58] The first age from the mid-1850s to the 1880s was dominated by horizontally-integrated commodity chains and "contracts to arrive."[59] After the arrival of regular postal service, the telegraph and steamships,

57 This description only applies to the exportation of crops. The exports market for primary resources (like metals and woods), processed foods (like flour alcoholic beverages, and butter), animal goods (like milk, honey and leather) are not subject of this dissertation.

58 The commercial network examined in this chapter focuses on the exportation of crops from local to international markets. For Persian trade via Trabzon. See Leonard M. Helfgott, *Ties That Bind: A Social History of the Iranian Carpet* (Washington: Smithsonian Institute Press, 1994); and Issawi, "The Tabriz-Trabzon Trade, 1830-1900: Rise and Decline of a Route," 18-27; and Gad G. Gilbar, "Muslim Tujjâr of the Middle East and their Commercial Networks in the Long Nineteenth Century," *Studia Islamica*, no. 100/101 (2005): 183-202; and Entner, *Russo-Persian Commercial Relations*.

59 Cronon prefers "to arrive" market, which can be translated as "*à livrer*" in French. The term "*à livrer*" is still used in modern Turkish as in "*alivre satış*" for future transactions. See "A livre Satış," Halil Seyidoğlu, *Ekonomik Terimler: Ansiklopedik Sözlük* (Ankara: Güzem Yayınları, 1992).

market agents were able to sell their crops over increasingly longer distances by using more and more global communication and commercial networks but they made less physical contact with other market agents than ever.[60] As information and commodities were constantly in motion, faraway port merchants made transactions through trustworthy third parties – a trade broker or another merchant.

Assume a hypothetical merchant in the port in Samsun dealing with the commerce of wheat from Amasya explains how this market worked in action. In the first stage, this port merchant would send samples of wheat from Amasya to targeted major ports, especially to Istanbul. All the various samples came from various ports were regrouped according to type, quality and port of origin.[61] Meanwhile, information about the prices and conditions of wheat from different ports were exchanged throughout the Mediterranean and Black Sea via newspaper, mail or telegraph. Istanbul was the center of this commodity and information traffic for the entire Black Sea.[62] For that reason, the global prices of the wheat of Amasya[63] shipped from Samsun were determined neither in Amasya nor in Samsun, but in Istanbul. In fact, in this new commercial network, prices and deals could be made in Istanbul or in other faraway ports even before the crop was actually shipped.[64] Likewise the same wheat could be

60 Kudret Emiroğlu, *Trabzon Vilayeti Salnamesi*, 3. For Chicago case, see William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York W.W. Norton, 1991), 107.

61 For example of Chicago exchange, see *Nature's Metropolis: Chicago and the Great West* 107-08.

62 Market agents in Istanbul could buy the wheat or a port merchant in Samsun could contact a trade broker in Istanbul to be sell it Mediterranean ports. Whenever the crop reached Istanbul, the agent in Istanbul controlled the quality and quantity of the delivered cargoes without unloading the ship and then sent it to Marseille.

63 Wheat exported from the port of Samsun was known as "wheat of Samsun" or simply "Samsun," even though the Province of Sivas was the main producer.

64 For example, during the week prior to September 8, 1866, 480 hectoliters of wheat of Samsun already stored in Marseille port was sold. Meanwhile another 1,600 hectoliters of wheat from Tekfurdağ, which had not yet been loaded onto a ship in Tekfurdağ port, was also sold on the condition it would be delivered by the end of September 1866. See "Mouvement du Port (September 18, 1866)," *La Turquie*, September 18, 1866.

resold several times while in transit before reaching its final destination via this information network.[65]

Horizontal commodity chains and commerce via trade brokers or intermediary merchants were not a novelty; such commercial strategies existed in the local market before Crimean War. For example, as seen in next chapter, the French Tobacco Monopoly bought tobacco from Samsun in the mid-1840s using local agents as trade brokers. The real novelty was the emergence of horizontally-integrated markets around the globe from the United States of America to Russia Empire and even to Japan.[66] Local markets started to integrate to these long-distance markets following the Crimean War thanks to innovation in transportation and information technologies, the emergence of new marketing institutions and capital imports.[67] As argued in the previous chapter, crops increasingly flowed from Southeastern Black Sea region to global markets, whereas information and credit moved in the opposite direction.

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65 Even before a shipment of wheat left the port of Samsun, it could be sold by the trade brokers by telegraph to multiple buyers. In such cases, the acting partner or trade broker in Istanbul was responsible for unloading the cargo and reshipping it to its final destinations. In fact, such transactions would happen multiple times along the transport of local wheat to western markets. See Harlaftis, *A History of Greek-Owned Shipping: The Making of an International Tramp Fleet*, 14 and 63.

66 The Chicago futures market started sometime in the late 1840s but flourished during the Crimean War. See Cronon, *Nature's Metropolis: Chicago and the Great West* 106 and 24-25. For the effect of the Crimean War on American agricultural markets, Jeremy Atack, Fred Bateman, and William N. Parker, "The Farm, the Farmer and the Market," in *Cambridge Economic History of the United States*, ed. Stanley L. Engerman and Robert E. Gallman (Cambridge: Cambridge University Press, 2000), 250. For Russia, see Evridiki Sifneos, "The Dark Side of the Moon: Rivalry and Riots for Shelter and Occupation between the Greek and Jewish Populations in Multi-ethnic Nineteenth-century Odessa," *The Historical Review/La Revue Historique* 3 (2006): 193. For Japan, see Yoshiro Miwa and J. Mark Ramseyer, "Japanese Industrial Finance at the Close of the 19th Century: Trade Credit and Financial Intermediation," *Explorations in Economic History* 43, no. 1 (2006): 98.

67 For another description of commodity chains formed during the Crimean War, see Toksöz, "Ottoman Mersin: The Making of an Eastern Mediterranean Port-town," 81-84.

Figure 3.1 Horizontal Commodity Chains of the 1860s-1890s (d>c>b>a)

SOURCE See the text

3.2.2 *Horizontal Integration and Transaction Costs*

3.2.2.1 Open Market

On June 9, 1873, 150 bales of tobacco from Samsun arrived in Rotterdam. After some 100 kilograms were distributed as samples to local agents, it was understood that most of the leaves were ruined,[68] because the bales had been so

68 Stager&Hänni Co made a request to its trade broker in Rotterdam to reexamine and appreciate the tobacco. It was detected that only forty bales remained unspoiled. See Letter from Stager&Hänni Co to T. Adjemian on June 20, 1873, Copies des Lettres Adressées à

poorly packed in Samsun that humidity spoiled them.[69] The unfortunate owner of this tobacco was a port merchant[70] in Samsun, Adjemian,[71] who dealt in the long-distance trade of anything of value in western ports[72]. Adjemian had no direct connection to long-distance markets per se. Stager&Hänni Co,[73]

Stager&Hänni Co à Constantinople, par Monsieur T. Adjemian à Samsoun, Agence Consulaire de Samsoun, Affaires Commerciales 1874-1892, 605 PO/1, AMAE, CADN - now on Simply *Letter to Adjemian*

69 This case contains sixty-five pages of copies of commercial letters originally written between June 24, 1873 and July 18, 1874. See Agence Consulaire de Samsoun, Affaires Commerciales 1874-1892, 605 PO/1, AMAE, CADN

70 Use different terms for the different types of merchant in the commodity chains in order to underscore the differences each type of merchant was dealing with. However, in real life an agent could play several roles in the same time. Hence the distinction between two categories were often blurred and the same agent could assume different roles.
1) "Port merchants" are merchants dealing with trade between ports or railway towns.
2) "Trade brokers" are market agents offering their services by mediating between different merchants from different towns for a commission vis-à-vis the benefit or the price of a commodity.

71 Adjemian was a French protégé in Samsun. It is impossible to determine when he became involved in long-distance trade but he went bankrupt in 1874. According to the abstract of a judgement issued by the court in Marseille on February 1874, Adjemian was confined to pay 70 thousand francs in cash or in kind (roughly 161,5 thousand Ottoman Liras) to one Léon Balignes. The court sanctioned Mr. Jean Calmatty living in Samsun to collect the debt and gave permission to French Embassy in Trabzon to levy his real holdings. See Copie de Minute Légale de Tribunal Civile à Marseille dated on February 27, 1874, Agence Consulaire de Samsoun, Affaires Commerciales 1874-1892, 605 PO/1, AMAE, CADN

72 Adjemian wrote that the harvest of *immortelles* would occur soon and that he planned to send samples with the prices. See Letter from Adjemian to Stager&Hänni Co on July 5, 1873, Copies des Lettres Adressées à Monsieur T. Adjemian Samsoun par Stager&Hänni Co à Constantinople. Agence Consulaire de Samsoun, Affaires Commerciales 1874-1892, 605 PO/1, AMAE, CADN now on Simply *Letter to Stager&Hänni*

73 Stager&Hänni Co was an association of two Swiss merchants operating an office in Küçük Ticaret Hanı (nos: 2-3), today located in Tarakçılar Street in the distinct of Fatih distinct. See Annuaire (1880) R. Cesar Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1881)* (Istanbul: The Annuaire Oriental and Printing Company Limited, 1881).) Stager&Hänni Co was also the first franchising agent for Nestlé products, dealing with distribution and marketing of those products in the Levant. See Köse, "Nestlé: A

a trade-brokering in Istanbul, found potential clients and handled the transportation.[74] In addition, Stager&Hänni Co also provided information on prices, and market conditions in multiple ports and short-term liquidity around 50% over the value of future transactions. This partnership ended when Stager&Hänni Co filed a lawsuit in the French consular court regarding Adjemian's unpaid debt.[75]

The legal case between Adjemian and Stager&Hänni Co is an example of relation between local port merchants and trade brokers or port merchants in Istanbul. Long-distance market agents carried great risks and transaction costs. To minimize such costs and risks, market agents integrated horizontally into long-distance commodity chains. Each market agent dealt only with transactions occurring in their own port and delegated remaining transaction in the next agent of the next port in the commodity chain. No agent was fully responsible for the commerce from the original to destination port.

This division of responsibility enabled local agents to limit their risks as much as possible. For example, the anonymous final buyers in Rotterdam did not file a case directly against Adjemian in Samsun. As in most cases, they

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Brief History of the Marketing Strategies of the First Multinational Company in the Ottoman Empire," 76-77.

74 Given the language of the letters and references in the them, Stager&Hänni Co and Adjemian must have been doing business together for some time. For example, Stager&Hänni Co. had already mediated a transaction for the sale of fifty bales of tobacco in Bremen, which was not particularly lucrative for Adjemian. See *Letters to Adjemian on* June 20, June 21, and July4, 1873.

75 Stager&Hänni Co. insisted that the ruined tobacco should be sold as quickly as possible regardless or price because the market was slow and every day tobacco became more inexhaustible. See *Letters to Adjemian* on June 21 and 23 1873. Adjemian accepted the offer, see *Letter to Stager&Hänni* on June 24, 1873. and the sale was arranged by business partners of Stager&Hänni Co in Amsterdam. Stager&Hänni Co informed Adjemian that the tobacco was sold for 10,175 francs (roughly 23.5 thousand Ottoman Liras). After the transaction costs, the remainder was just 7,000 francs (roughly 16 thousand Ottoman Liras). Transportation from Istanbul and other expenses were paid by Stager&Hänni Co. Adjemian owed them the transaction cost of this operation, which came to 3,175 francs (roughly 9.5 thousand Ottoman Liras). As a counter offer Stager&Hänni Co agreed the money could be paid in cash in sixty bales of tobacco. See *Letter to Adjemian* on July 2, 1873.

demanded compensation from the trade broker in Rotterdam, who in turn demanded it from Stager&Hänni Co and Stager&Hänni Co then filed the case with the French consulate against Adjemian.[76] In this way, every agent bore responsibility only to the next agent, each of which was of different nationalities and responsible to different legal systems. Adjemian was liable only for quality and quantity of the shipment when it left Samsun[77] to Stager&Hänni Co in Istanbul. Likewise, when payment was due, Stager&Hänni Co who was to pay to Adjemian regardless of whether the agents in Rotterdam had paid. Moreover, if anything happened to the cargo after being shipped, it was Stager&Hänni Co that would compensate for it, even though Adjemian was the owner.[78] As expected, this structure had different alternatives. In most cases local port merchants served as trade brokers, while another market agent in the hinterland held possession of the crops. Possession of the crop could be transferred in a process by which each agent would buy the crop from the former agent. No matter who played which role, the principle of being responsible to the next agent remained. For example, if Stager&Hänni Co had bought these leaves instead of brokering them. The merchant in Rotterdam would have asked for compensation from the merchant in Istanbul from whom he bought them, and the merchant in Istanbul would have asked for compensation from merchant in Samsun.[79] This sequential transaction could be made via brokerage, in which the initial port merchant had full possession of the

76 Based on this principle, Stager&Hänni Co rightfully blamed Adjemian for packing the crops poorly. See *Letter to Adjemian on* June 20, 1873

77 In fact, the port merchant diminished the transaction costs resulting from the system risk and the inadequacy of quality or quantity. For cereal shipping, globally there was a global standard that plus or minus 5% of the contracted volume was accepted as a loading tolerance. In other words, the seller could deliver 5% less than contracted volume, which was legally acceptable margin of error. See "De la Tolérance de Chargement," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 27, 1908.

78 For example, Stager&Hänni Co openly accepted full responsibility to Adjemian regarding all transactions after the cargo was unloaded in Rotterdam. See *Letter to Adjemian on August 4, 1873.*

79 Establishing legal guarantees was a precondition of trade brokering. See "Courtage en Turquie (November 10, 1888)."; and "Courtage en Turquie (November 24, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 24, 1888.

commodity until it was delivered to the final buyer,[80] or one merchant sold the commodity to another. The difference among the forms of this commodity chains concerned how profits were shared and how much risk each agent bore. While trade brokers worked on a percentage over sale price basis[81] or for a prefixed fee,[82] but assumed limited responsibility, in the case of the sale, total benefit or loss with entire risks and legal responsibilities was belonged to the merchant, who purchased the cargo.[83]

If this horizontally integrated long-distance market is elaborated with economic theory, institutional economics argues that trade brokers and intermediary port merchants are third-party agents, whose function is to minimize transaction costs generated by the imperfections of long-distance markets.[84]

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80 Until the delivery of crops to its final buyer, the ownership of the cereals remained to port merchant in Samsun. This rule is officially recognized in Chicago commodity market. See Cronon, *Nature's Metropolis: Chicago and the Great West* 107-08.

81 During the nineteenth century, the rate for brokering usually varied between 1-3%. After November 1888, an official list of fixed rates and fees for brokerage was published. For cereals, was 20 *para*s per *okka* or 0.5% taken from the vendor and the same amount taken from buyers, tobacco, whose price was lesser than 10 piasters was 10 paras per *okka* from vendors and shoes price over to 10 piasters was fixed to 20 paras. See "Réglement sur les Courtiers Santionné par Iradé Impérial."

82 The merchant's mark-up rate was around 12.5% merchant's mark-up. See "Courtage en Turquie (November 24, 1888)."

83 The role of a trade broker could be interpreted as a service provider and a liaison establishing trade between two port merchants. See *Nature's Metropolis: Chicago and the Great West* 120.

84 The first role of these third-party agents was to ensure that both parties obeyed the rules, which in the economic literature is called bilateral governance. Their second role was third party governance; buyers or sellers could apply to a third party like the government and legal institutions or to private third-party security companies, legal firms or trade brokers to secure the transaction. The trade brokers were the most common choice in nineteenth century long-distance Ottoman markets of this type. Thirdly, they formed private, asymmetric multilateral governance forms like diaspora, communities and private clubs that could assume the role of a third party, *Hemşehirlik* and *millet* diaspora communities were most common in Ottoman markets. Finally, institutionalized market forms and multilateral governance structures like stock markets and the Ottoman *zahire borsası* (cereals market) could provide a third-party role. See Éric Brousseau Jean-Michael Glachant, ed., *New Institutional Economics A Guidebook* (Cambridge: Cambridge University Press, 2008), 340-45.

These trade brokers and intermediary merchants operated as economic buffers regulating the institutional risks resulting from the inadequacy of formal and informal institutions. The second function of these third parties was to provide information,[85] in other words, to diminish the transaction costs resulting from and asymmetry of information.[86] Their last function was to provide under-the-counter short-term credit to port merchants,[87] who were usually paid in kind or from future transaction. For that reason, horizontally-integrated commodity chains averted the risks generated by the imperfections of long-distance markets and facilitated the flow of capital. In other words, the costs of capital and transactions decreased considerably thanks to these new commodity chains.

These commodity chains and the flow of capital were also the tool for establishing dominance over other market agents. As argued in the previous chapter, there was an asymmetric relation between market agents in Istanbul and Southeastern Black Sea region, Constantinopolitan agents were the information and credit providers enabling them to establish dominance over local port merchants at least until the end of the century. Likewise, the same commodity chains provided tools to local port merchants to establish dominance over other local agents.

3.2.2.2 Oligopolistic Tobacco Market

Most local crops exported to long-distance markets were handled in such commodity chains with the exception of tobacco and grapes. Tobacco never fully became an open market crop in the second half of the nineteenth century.

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85 Merchants dealing with long-distance commerce communicated with their partners on daily basis. See "Opérations à Terme sur les Marchandises.". For an American example; Cronon, *Nature's Metropolis: Chicago and the Great West* 121-22.

86 For the asymmetry of information in business transactions, see George A. Akerlof, "The Market for "Lemons": Quality Uncertainty and the Market Mechanism," *The Quarterly Journal of Economics* 84, no. 3 (1970): 488-500.

87 "Courtage en Turquie (November 24, 1888)." For another example, see the transactions made by Adam-Norayr in 1897, Bedross Der Matossian, "The Armenian Commercial Houses and Merchant Networks in the 19th Century Ottoman Empire," *Turcica* 39 (2007).

Long before the Régie Company Co-intéressée des Tabacs de l'Empire Ottoman (simply the Régie) was established in 1883, there were already national monopsonies[88] – Austro-Hungary, France, Italy, Sweden and Spain[89] – operating directly or indirectly in the Trabzon market. Tobacco trade with these oligopsonies was run by contractors and public agreements. For example, the auction held by the French tobacco monopoly for the purchase of the tobacco harvest in Samsun in 1888 and 1889 was held in on July 15, 1890, at 14:30 in the building of the Ministry of Finance.[90] According to the conditions, auctioneers would stock the required amounts of A, B and C quality tobacco[91] before the new year in the warehouses of the French tobacco monopoly in Marseille.[92] Another method was to conduct auctions in local consulates. For example, as examined in the next chapter, all of the purchases made by the French tobacco monopoly in 1844, 1846 and 1847 were organized by the local consul in Trabzon. Either way, local port merchants provided the tobacco to the contractor. For that reason, although tobacco could be sold via long-distance market like the crops, tobacco market was essentially a competitive fringe market dominated by national tobacco monopolies. As discussed in the next chapter, due to the oligopolistic nature of the tobacco market, foreign market agents had a greater impact on determining the quality standards for tobacco.

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88 For a history of French Monopoly, see Jacob M. Price, *France and the Chesapeake; a History of the French Tobacco Monopoly, 1674-1791, and of Its Relationship to the British and American Tobacco Trades* (Ann Arbor: University of Michigan Press, 1973).

89 A.W. Madsen, "The State as Manufacturer and Trade," *The Spectator*, November 4, 1916.

90 ed. Direction Générale des Manufactures de L'Etat, "Cahiers des Charges et Conditions de l'Adjudication des Tabacs et Feuilles de Samsoun Ordinaire," ed. Direction Générale des Manufactures de L'Etat (France) (Istanbul: Imprimerie Nationale, 1891), Article 1.

91 The monopoly requested 20% of A, 50% of B and 30% of C. The samples of these types were in Jean Nicot street in Paris and the manufactory in Marseille. See ibid.

92 ibid., Article 6. Another example is an auction for 15 lots of Ottoman tobacco (each lot of which was 100,000 kilograms) held on July 21 and 28, 1874. D.N. Bahocoressi promised four lots from Volos and two from Samsun, and A.A. Couros promised two lots from Volos and seven from Samsun. See *Lettre de l'Administration de Tabacs à Paris au Consulat à Trébizonde* (August 20, 1874), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN.

3.2.3 *Credit and Tax farming*

3.2.3.1 Hierarchy of Credit Institutions

Contrary to rich discussions on landed property in the literature of Ottoman history, primary sources do not support the hypothesis that property holding was the main source of controlling agricultural production in the period from the 1860s to the 1910s. While, there are few cases of disposition of farms by merchants, there is no single case in which the new owners changed the production. The new owners preserved the farms as they were but forced the farmers to pay rent. In other words, the change in ownership seems to have no effect on production but rather on the distribution of the wealth. However, there was no major trend of accumulation of land in the hands of a few merchants. Nor was establishing control over farmers using property rights over the land ever implemented. Such question will only be answered after the *Tapu Kadastro Arşivleri* in Ankara become accessible to researchers. On the other hand, primary sources suggest that establishing control over the labor force via credit or share-cropping (*yarıcılık*) was a common practice for establishing dominance over production.[93]

The first reason for this was that lucrative crops like tobacco, opium, and grapes required little land but abundant labor. Hazelnut trees could grow in the wild and did not require orchards. On the other hand, land-extensive crops like cereals were not lucrative. The second reason was that the land-labor ratio

93 Share cropping in the Ottoman Empire is understudied, which makes it impossible to understand share-cropping practices in Southeastern Black Sea region. For an example of share cropping in fifteenth century Italy, see Daniel A. Ackerberg and Maristella Botticini, "The Choice of Agrarian Contracts in Early Renaissance Tuscany: Risk Sharing, Moral Hazard, or Capital Market Imperfections?," *Explorations in Economic History* 37, no. 3 (2000): 241-57; and Maristella Botticini, "Institutions, Information, and Markets in Fifteenth-Century Tuscany," *The Journal of Economic History* 59, no. 2 (1999): 456-59; and Lee J. Alston, "Tenure Choice in Southern Agriculture, 1930-1960," *Explorations in Economic History* 18, no. 3 (1981): 211-32; and Lee J. Alston and K. D. Kauffman, "Agricultural Chutes and Ladders: New Estimates of Sharecroppers and "True Tenants" in the South, 1900-1920," *The Journal of Economic History* 57, no. 2 (1997): 464-75.

favored labor.[94] Since the ration of current arable lands over potential arable lands in Northeast Anatolian agriculture was low, in the case of dispossession, farmers could move their production and settle on new public lands. Moreover, hiring a permanent labor force was costly for big farms since labor was scarce. For these reasons, the main means to control farmers were credit, share-cropping and tax farming.[95] In other words, capital in the forms of credit and tax farming were the keys to controlling "free" farmers and agricultural surplus in Southeastern Black Sea region. Therefore, controlling the flow of capital from global to local markets was the main means of controlling not only export traffic of local agricultural production but also agricultural production itself. For that reason, establishing control over commodity chains and credits opened up the possibility of controlling farmers – in other words, the labor force.[96]

3.2.3.2 Tax farming

The traditional way of establishing control over farmers was through tax farming operations.[97] Tax farming methods underwent several changes after the Tanzimat Decree. For example, between 1855 and 1861, the central government contracted with petty local tax farmers instead of big agents.[98] Local contractors then sold the taxes to local sub-contractors, usually local merchants or

94 Güran, 19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar, 54-55 and 67-68.

95 The rural merchants – called middlemen in the literature of English agrarian history travelled the countryside in order to facilitate the commerce between towns and villages, and played an important role in the commercialization of agriculture in Europe's westernmost country, see Overton, *Agricultural Revolution in England: The Transformation of the Agrarian Economy 1500-1850*.

96 This strategy was not original to Southeastern Black Sea region. The establishment of long-distance credit mechanisms was an important variable in the commercialization of agriculture in England as well, see ibid.

97 Even the most prominent moneylenders in Istanbul were involved in tax farming operations. See Minoglou, "Ethnic Minority Groups in International Banking: Greek Diaspora Bankers of Constantinople and Ottoman State Finances, c. 1840-81," 134.

98 Nadir Özbek, *İmparatorluğun Bedeli: Osmanlı'da Vergi, Siyaset ve Toplumsal Adalet (1839-1908)* (Istanbul: Boğaziçi Üniversitesi Yayınevi, 2015), 54.

landowners,[99] who again distributed it to other sub-contractors who were responsible for one or two villages. However, there are contrary examples, such that of Beğleroğlu Agop, a famous *sarraf* (paymaster) in Istanbul.[100] According to complaints he filed,[101] Beğleroğlu was involved in a number of tax farming and mercantile operations[102] in North Anatolia (in the year of 1273 [1856-1857] in Samsun,[103] in 1274 [1857-1858] for Samsun[104] and Gümüşhane,[105] and in 1276 [1859-1860][106] in Sanjak of Bozok) along with powerful local tax farmer (*ayan/mültezim*) families[107] such as the Cabbarzâde/Çapanoğlu family and

99 Kühn also estimated that every agent in the process earned 5%. See Kühn, "Report by Kühn on the Trade of Samsoon for the Year 1858," (London: Foreign Office of the United Kingdom, 1858).

100 Another example was M. Zarifi who bought the custom duties of Amasya and Bafra for 8 millions piasters for the years of 1859-1860 and 1860-1861, see "Interieur (June 1, 1860)," *Journal de Constantinople (Echo de l'Orient)*, June 1, 1860. See also Buket Çelik, "19. Yüzyılda Sivas Eyaleti'nde Sarraflık Faaliyetleri" (Unpublished MA Thesis, 2013), 24-27.

101 Unfortunately, only petitions complaining about unpaid debts made by Beğleroğlu Agop are in Cumhurbaşkanlığı Osmanlı Arşivleri. Therefore, there was no full list of operations but still, the relatively rich documents in Cumhurbaşkanlığı Osmanlı Arşivleri give an idea of the scope of his operations.

102 The operations of Beğleroğlu Agop in this geography was not limited to commerce and tax farming; he also invested in clay extraction in Mihalcık and made an agreement to sell clay at the rate of 1 kiyye for 5 paras, see OA A} MKT.MVL 128.60, August 15, 1859. He also possessed a land in Samsun., see OA DH.H.41.84, July 6, 1912.

103 OA A} MKT.UM 306.63, February 6, 1858 and A} MKT.MHM 134.50, June 7, 1858.

104 In another case, this time in Samsun, he engaged in tax farming, probably for 1274 AH (1857-1858) together with some merchants from Samsun – Arapoğlu Vasil, Arapoğlu Yorgi, Kokonyos and Tımaroğlu Ahmed Ağa. See OA HR.MKT.269.57, December 3, 1858. The amount of money (299,000 piasters) suggest that this was not a small operation.

105 This is not the only tax farming operation with which Beğleroğlu Agop engaged; for example, that same year, Beğleroğlu Agop financed also the tobacco tax farming of one Artin from Gümüşhane. See OA MKT.UM 561.7, April 25, 1862.

106 Cabbarzâde Ahmed Bey (later on he became Cabbarzâde Ahmed Paşa) owned 3,000 piasters, Cabbarzâde Derviş Bey 10,000 piasters, Cabbarzâde Asım Bey 5,000 piasters, Çapanzâde Nazif Bey and Kızıloğlu Ohannes 10,000 piasters, Sikuroğlu Kiryako 7,500 piasters, and Hasanbeyzâde Osman Bey and Cincibaşı Ahmed Ağa 8,000 piasters to Beğleroğlu Agop for the tax farming operation Sanjak of Bozok. See OA A.MKT.DV 208.36, October 26, 1861.

107 See Süleyman Duygu, *Yozgat Tarihi ve Çapanoğulları* (Istanbul: Sayar Basımevi, 1974).

other local merchants. At the micro-level, primary sources suggest that the practices of collecting tithes were different for each crop. For example, while taxes on maize and grains were collected in kind over the harvested product,[108] for tobacco, farmers paid money according to the area of their farms in the 1840s.[109] Unfortunately, although there are studies of the macro-level,[110] our knowledge of how these taxes were collected from farmers is understudied. Big tax farmers clearly dealt with port merchants and the crops ended up in the ports. Understanding this relation is sufficient to explain the changes to the production and commerce of agriculture for the purposes of this dissertation. However, the relationship of petty tax farmers to local merchants and usurers – and more importantly to cultivators – needs further scrutiny.

3.2.3.3 Usury

Primary sources suggests that distribution of credit to farmers for future sales – variously called *selem* or *murabaha*[111] – was the main source of establishing control over peasants. Most of the time, *selem*s became a tool with which rural

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108 In maize, while share-croppers in 1860s paid 2/3, See M. Jules Schéfer, "Renseigement Concernant la Province de Trébizonde," in *Enquête Agricole: Quatrième Série Document Recueillis à l'Entranger* (Paris: Imprimerie Impériale, 1868). The free farmers in Tirebolu paid 35%. See "mısırın 20 ölçeğe vergiden baki kalan 13 ölçek mısırın" quoted from OA ŞD.1839.12, January 13, 1889).

109 For tobacco, tax farmers collected taxes, called *yaş*. This tax was collected over the land, using a rope attached to stake, the measures of which were approved by kadı. Then they piled the stakes over the land to measure the total farming area and the tax farmer collected leaves based on these parameters. See Outray, "Extrait d'un Rapport sur la Province du Djanik (fait par Adémie Outray Chancelier Honoreux du France à Trébizonde)."

110 Nadir Özbek, ""Anadolu Islahatı", "Ermeni Sorunu" ve Vergi Tahsildarlığı, 1895-1908," *Tarih ve Toplum Yeni Yaklaşımlar* 9 (2009): 59-85; and *İmparatorluğun Bedeli: Osmanlı'da Vergi, Siyaset ve Toplumsal Adalet (1839-1908)*.

111 Tevfik Güran makes distinction between *murabaha* and *selem* but officers seem to use both terms interchangeably to define the same action. Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 139-41. However, in this dissertation *selem* is used, because it is the proper legal term for advance payment for future crops. On the other hand, *murabaha* basically means overcharged interest rate. See Joseph Schacht, *An Introduction to Islamic Law* (Oxford: Clarendon Press, 1964), 119.

merchants or *sarraf*s burdened the farmers with overwhelming debt by using high interest rates to confiscate some of the future production or the land. Accordingly, usurers usually profited misfortune, forcing farmers into a vicious circle. The most common reason for borrowing from usurers were epizooty,[112] heavy taxation,[113] and harvest failures.

Usury was a common practice throughout the Black Sea region[114] and the Ottoman Empire.[115] Ottoman authorities repeatedly took serious precautions to

112 According to investigation made by the Ottoman Agricultural bank in Amasya, the epizooty was determined to be the primary source of usury, see "La Banque Agricole (October 20, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 20, 1888.

113 If cultivators could not pay their taxes in kind, they usually borrowed money by mortgaging their next harvest; Kühn, "Report by Kühn on the Trade of Samsoon for the Year 1858."

114 The trend of establishing control over farmers through credit mechanisms was neither unique nor unseen in the Black Sea region. In fact, the that led to the foundation of the Ottoman Agricultural Bank was widespread moneylending in Dobrudja after the famine of 1868. The moneylenders in Dobrudja provided credit with monthly interest rates of 5-10% (amounting to a 79-213% yearly interest rate) not only in cash but also in kind (animals, seeds, and agriculture tools). Often the entire production was sold even before the harvest. Despite government efforts, especially those of Midhat Paşa the issue of usury remained unsolved during Ottoman rule. After Dobrudja became part of Bulgaria, the situation worsened until 1884 when the Bulgarian government started to make an effort to prevent usury; nevertheless, the issue remained unsolved until the century. See Andreas Lyberatos, "The Usury Cases of the Black Sea Region: State Legitimation and Bourgeois Rule of Law in 19th Century Dobrudzha," *Études Balkaniques* XLIX, no. 3-4 (2013): 65-91.) Another Balkan country struggling with usury was Greece, where usurers distributed credit for future harvest with interest rates varying from 20% to 40% in the 1880s, see "La Banque Agricole (October 20, 1888)." In fact, usury was a common strategy in the commercialization of agriculture. Credit mechanisms played a crucial role in the commercialization of agriculture in the late-seventeenth and eighteenth-centuries' England. The credit mechanism broke the resistance of farmers who were producing for their subsistence. However, since merchants needed a continuous flow of commercial crops, merchants made contracts for future goods and distributed credit. Finally, in the nineteenth century, some middleman acquired possession of agricultural land and the others opened shop in the countryside. See Overton, *Agricultural Revolution in England: The Transformation of the Agrarian Economy 1500-1850*.

115 "La Banque Agricole (October 20, 1888)." Another example from other part of Anatolia took place in the 1890's. In Sandıklı (Aydın) usurers accorded credit with a 50-60% interest rate to

prevent usury and keep interest rates under 15%.[116] Despite these endless governmental efforts, usury was still common at the end of the nineteenth century with even increased interest rates. The interest rates for maize in Trabzon Province went from 20-25% in the 1850s[117] and 1860s[118] to 50% by the end of nineteenth century.[119] According to a long, detailed petition written by maize farmers from Tirebolu in 1887, merchants accorded credit to farmers against future harvests but they charged the farmers with the entire annual interest rate even if the farmers paid their debt after for two or three month of cultivation period of maize. These merchants escorted by armed men visited the villages after the harvest and used force in the case of any resistance to paying.

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be paid by the next opium harvest. Moreover, the same middlemen bought the opium in advance at the rate of 50-60 piasters per *okka* and sold it at 110-120 piasters per *okka* on the market. Accordingly, in cases where merchants enabled the confiscate the entire opium production of given farmer, the income of merchant would vary from 80 to 100 piasters per *okka* (73-83%) versus the farmer's income of 20-25 piasters per *okka* (17-27%). However, it is impossible to calculate the income distribution between commercial and agriculture classes without knowing the percentage of the crop was mortgaged. See Ion Ionescu de la Brad, "Progrès de L'Agriculture en Turquie. Le Drainage (Cinquième et Dernier Article)," *Journal de Constantinople (Echo de l'Orient)*, May 27, 1865; and "L'Usure et ses Effets," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 6, 1890.

116 Political authorities had almost no impact on the prevention of usury. For that reason, similar laws against usury were issued again and again. In 1844/1845, by Zoning Instruction (*İmâr-ı Mülk Talimatnamesi)* forbade distributing credit to farmers with interest rates over the 15%. After the law was enacted, the commission for construction in Doçova near Üsküp investigated rumors of illegal usury in both Kratova and Koçana (both near Üsküp). However, the commission found no evidence that rumors are grounded. See OA A} MKT 26.94, June, 13 1845 However, despite the new law, merchants signed debt contracts with farmers transgressing the law. For this reason, in 1857, *selem* and *murabahacılık* were declared illegal in an imperial order (*fermân*). The *Saadaret* sent an order recalling the old law (of 1844) and added, it that from then on credit providers and usurers (*murabbahacı* and *selemci*) must make their deals under the supervision of local authorities. See OA A} MKT.UM 270.9, June 20, 1857.

117 Kühn, "Report by Kühn on the Trade of Samsoon for the Year 1858."

118 Palgrave reported that the usurers lent money at least 2% per month. Although he calculated as 24% as annual interest rate, the local money lenders calculated the debts using compound interest. Therefore, the real interest should have been 26.82%. See Palgrave, "Report on the Trade and Commerce of Trebizond for the Year 1869."

119 Longworth, "Report on the Trade of the Trebizond Vilayet for the Year 1898."

Whenever villagers failed to pay, their debts quickly accumulated because of compound interest to amounts that they would never be able to pay back. When villagers' debts reached thousands of piasters, merchants appealed to the courts to size the lands of the farmers, paying less than half of the value of these farms. Eventually, most farmers lost their land and started to earn their living by share-cropping.[120] Other primary sources in Trabzon Province suggest that this petition represents not only the situation of farmers in Tirebolu but also those in the rest of Trabzon Province.[121]

The nature of the crop was also important in the formation of interest rates and the severity of usury. For example, the case of wheat farmers in the hinterland was even more severe than that for farmers in Tirebolu,[122] especially

120 OA ŞD.1839.12, June 16, 1887.

121 OA ŞD.1839.12, June 16, 1887. Share-cropping was common: "The owners of the farms are the main usurers of the country. They lend big interests to the farmers who ruin them, the advances of funds being soon and more and more disproportionate with the production given in pledge. These abuses date more especially from the last issue of paper money, because, shortly before its withdrawal, the holders had the ability to place it in generous loans to tobacco growers, who were obliged to remunerate in cash, thus bearing considerable losses" quoted from Cuinet, "Vilayet de Trébizonde Statistique Descriptive." See also: "The peasant growing tobacco was at the mercy of the merchants of our city and the great owners of the Sanjak to whom he borrowed money on the harvests" quoted from Doulcet, "Rapport Commercial de Samsoun (1890)." For the situation in the 1860s, Schéfer, "Renseigement Concernant la Province de Trébizonde." In the early 1900s, the interest rates were 30-40% per year in the eastern part of Trabzon Province "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde et Kérassonde)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1910-1911).

122 In the second half of the nineteenth century, usury was part of agricultural commerce in Anatolia and the Balkans and the hinterland of Trabzon Province was no exception. On February 10, 1895, for example a local officer petitioned the governor of Sivas that three usurers – Veli, Süleyman and Rıza from village of Düğer (Hafik), in Sivas – be expelled from their province. According to the report, these three usurers had profited from credit distribution and established control over farmers for some time. Eventually, immigrants from Kars, who probably migrated because of the Russo-Ottoman War of 1877-1878, complained that these usurers were distributing credit with high interest rates. See OA BEO 569.42603, March 11, 1895. In an example occurred in Divliği, it was reported that local notables from the Ayanoğluları family had confiscated farmers' land to build a barn. See OA DH.MKT.2234.13, August 16, 1889. For

farmers in the hinterland in the Province of Erzurum.[123] On the other hand, the situation for cash crops like hazelnuts[124] and tobacco[125] was milder. According to Louis Rambert, the director of the Régie Company, merchants distributed credit to tobacco farmers with interest rates of 20-25% *à livrer*[126] in order to force farmers to produce tobacco of a determined quality for less than ordinary market prices.[127] The Régie Company was also dealing with contract farming; it distributed credit up to half of the price of tobacco for future harvest with no interest.[128]

§ 3.3 Transformation of Long-distance Markets (the late 1880s - 1910s)

3.3.1 *Banks and Vertical Integration*

Long-distance commodity chains and financial institutions went through a series of radical changes because of a trend of mergers in the financial, transportation and information sectors in the late nineteenth century as explained in the previous chapter. The financial sector especially stirred up the change;

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other examples from Divriği, see OA A.} MKT.UM 2234.13, June 26, 1850; İ.MVL.317.13418, October 31, 1854; DH.MKT 43.44, May 21, 1893 and HR.MKT 247.54, July 20, 1858.

123 The usurers exercised a 200-300% interest rate per year on wheat from the hinterland and usually collected their debts from farmers in kind during the spring after the harvest. See Cuinet, "Vilayet d'Erzouroum Statistique Descriptive," 156.

124 Richard White Stevens, "Report on the Trade of Trebizond for the Year 1841," (London: Foreign Office of the United Kingdom, 1841).

125 It was reported that the terms of credit for tobacco were favorable in the vicinity of the town of Samsun, where the Régie had managed to establish control by the early 1890s, unlike in Bafra, Alaçam and other parts of Trabzon Province, where the Régie had struggled to enter. See Spradaro, "Rapport Commercial de Samsoun (1893)."

126 Rambert, *Notes et Impressions de Turquie: l'Empire Ottoman sous Abdul-Hamid*, 141.

127 The tobacco of Samsun was sold by farmers for 1.5-2 piasters per kilogram but it could reach 8-15 piasters by the time it reached the port of Samsun. Ibid. 142.

128 Doulcet, "Rapport Commercial de Samsoun (1890)."See also Filiz Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914* (Istanbul: Osmanli Bankası Arşiv ve Araştırma Merkezi, 2007), 35.

the banks arrived in the Southeastern Black Sea region in the 1890s[129] and revolutionized the financing sector in four ways. First, with the arrival of the banks the terms of borrowing ameliorated. The banks allocated credit from western markets to local agents without the intermediaries, which pulled annual interest rates to levels as low as ~9% for local port agents.[130] Moreover, local monetary stock increased considerably.[131] Second, banks changed power relations in financing sector. First, they created class of bankers who operated on behalf of the banks. For example, G. Capayannidès was entitled to execute financial operations in the name of Crédit Lyonnais, and the Mavrides Company represented the Ottoman Bank in Ordu, Tirebolu, Akçaabad and Giresun.[132] Moreover, these banks and bankers openly acted in opposition to

129 The first bank established in Trabzon was the Bank of Constantinople sometime after January 20, 1857. See "Trébisonde (January 29, 1857)." However, this bank closed in 1852. Hüseyin Al, Şevket K Akar, and Kaya Bayraktar, *Devlet-i Aliyye-i Osmaniyye'de Merkez Bankası Arayışları*, ed. Türkiye Cumhuryet Merkez Bankası (Istanbul: Denizaltı Ofset, 2014), 75-76. Banks and bankers returned to Trabzon Province and its hinterland in the 1890s. The Ottoman bank opened branches in Trabzon and Samsun in 1891, in Ankara 1893, in Sivas in 1899 and in Erzurum in 1906. André Autheman, *Bank-ı Osman-ı Şahane: Tanzimat'tan Cumhuriyet'e Osmanlı Bankası*, trans. Ali Berktay (Istanbul: Osmanli Bankası Arşiv ve Araştırma Merkezi, 2002), 264. For the bank in Trabzon, see Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1891."; and "Report on the Trade and Commerce of the Trebizond and Sivas Vilayets for the Year 1899," (London: Foreign Office of the United Kingdom, 1899).

130 In the 1900s, a merchant loaned advances to another merchant for 30-90 days on 75-90% of the value of the merchandise with at an interest rate of 9% per year. Fornier, "Rapport Commercial de Trébizonde (1905-1906)."

131 "This national bank of deposit, discount, and circulation ought to do well in these parts, where interests are so high and where money is so scarce. It will, however, perhaps take time to upset the system of exchange so long in local practice between exporters and importers" quoted from Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1891."

132 Bankers provided credit for 1-3 months at 9% per year. They required a contract with a signature and two guarantors. See Fornier, "Rapport Commercial de Trébizonde (1905-1906)." These bankers were sanctioned to issue checks and letters of credit, to loan advances against securities and merchandise, to make payments by telegraph, for checks, paid and discounting credit letters and coupons and exchanged foreign money on behalf of the banks.

the interest of local *sarrafs*'.[133] Consequently, these new financial agents superseded local *sarrafs* in major towns by the turn of the century.[134] These new financial actors gasped control over monetary markets. Not only did they offer credit with lower interests for longer periods, they also brought regularity to payments,[135] which considerably decreased transaction costs.[136]

Finally, as pointed out in the previous chapter, there was a trend of conglomeration in the financial, transportation and information sectors. Banks like Deutsche Bank and Mytilene Bank increasingly entered joint-ventures with steamship and railway companies on one hand, and with telegraph and postal services on the other. For that reason, banks assumed some of the functions of trade brokers as third-party agents in long-distance transactions.[137]

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133 "In November, 1891, branches of the Imperial Ottoman Bank were established at Trebizond and Samsoon. It was pointed out in the report for that year that it would take time to upset the local monetary regulations in vogue. It is, however, a matter of agreeable surprise to find that the bank has commenced to hold its own against the clique of money-lenders and usurers; that it is, in fact, rapidly gaining customers as much at home as abroad. The genial character of Mr. Chaoul, the new manager at Trebizond, has greatly aided in bringing this about. He has popularized the bank to an unexpected degree among a people remarkably suspicious, tenacious, and conservative" quoted from Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1894," (London: Foreign Office of the United Kingdom, 1894). "The Trebizond branch of the Imperial Ottoman Bank was established in November, 1891. It covered expenses in the first year, and has since prospered, notwithstanding the opposition of the moneyed classes" quoted from "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1900."

134 Between 1885 and 1891, there were seven sarrafs – Andonouglou, Arghiropoulo, Caragheusian, Dökmecioğlu, Nourikian, Spiridis and Stephanian – operating in Trabzon and Samsun but there is no mention of sarrafs 1909 in Trabzon, Sivas, Samsun and Erzurum in 1900. See R. Cesar Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1885)* (Istanbul: The Annuaire Oriental and Printing Company Limited, 1885); and *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1891)*; and *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1909)* (Istanbul: The Annuaire Oriental and Printing Company Limited, 1909).

135 "The long-term credits are required, with long-term credits, the exchange is gaining much regularity" quoted from Gasselin, "Rapport Commercial de Trébizonde (1893)." See also Contanze, "Rapport Commercial de Samsoun (1899)."

136 Ibid.

137 Henri de Contanze, "Rapport Financier de l'Année (1899)," (Agence Consulaire de Samsoun, AMAE, CADN, 1899).

The new role of financial institutions not only considerably reduced transaction costs but also opened up new marketing possibilities. To understand the impact of these financial institutions, take back the example of the wheat of Amasya and the merchant in Samsun to understand what had changed. Prior to 1880s, a merchant in Amasya was fully dependent on port merchants in Samsun to acquire information about global markets and transportation and to make contact with potential clients. Accordingly, the most rational alternative to exporting cereals from Amasya was to sell to a port merchant in Samsun. The port merchant in Samsun would connect with a trade broker in Istanbul who would provide information on global markets, credit, and transportation with some legal guarantees against any risks. More importantly, this trade broker would arrange the transaction in the long-distance market. However, by the turn of century, the merchant in Amasya could acquire the same information thanks to telegraph lines, newspapers, and local bank branch without the intermediation of port merchants. He could easily contact an agent working with Deutsche Bank in Ankara who would not only provide credit but at the same time provide information about the market and cargo space for the farmer's cereals from the Anatolian Railway Company. As an alternative, he would contact G. Capayannidès in Samsun who could arrange a credit agreement with Crédit Lyonnais and transportation with Méssageries Maritimes or the Paquet shipping company or he would contact Georges/Yorgi Mavridis for a credit deal with Mytilene Bank and transportation by the Courdgi or PanHellenic shipping companies.

The advantage of horizontal integration in the 1860s was a considerable reduction of transaction and capital costs but there were many intermediary agents with whom to share profits. Now, a new banking system integrated with the information and transportation sectors offered the possibility of making direct contacts with final buyers. However, since the issue of transaction costs resulting from the inadequacy of legal institutions persisted, local agents preferred backward or forward vertical integration using informal institutions. As explained in the next chapter, the most prominent merchants opened branches either on the production side or in western markets, usually by placing relatives in various ports and towns.

3.3.2 *Ottoman Agricultural Bank*

One peculiar financial institution needs further attention: the Ottoman Agricultural Bank (*Osmanlı Ziraat Bankası*). The Sivas branch of Ottoman Agricultural Bank established as early as 1888[138] and was followed by another in Trabzon in 1889.[139] By the new century a branch had been established in each major town of the Southeastern Black Sea region.[140] The nature and accomplishments of this bank still generate great discussion. On one hand, the Agricultural Bank was the backbone of Ottoman agricultural reform politics given that it was the main financer as Donald Quataert argues.[141] On the other, early republican writers considered the bank to be a major failure as it became a bank of the usurers instead of the farmers.[142] The key to solve this puzzle relies on comprehension of the institutional framework of the bank.[143]

The first point to make is that the consolidation of Homeland Funds (*memleket sandığı*) and Benefit Funds (*menfai sandıkları*) by Agricultural Bank was not simple property transfer as has been widely argued.[144] There were obvious institutional and class-based differences in the managements of these institutions. The Homeland Funds operated like farm cooperatives or

138 Yusuf Saim Atasağun, *Türkiye Cumhuriyeti Ziraat Bankası: 1888-1939* (Istanbul: Kenan Basımevi ve Klişe Fabrikası, 1939), 117.

139 The first branch of the Agricultural Bank in Trabzon Province doors in Trabzon the last week of September 1889. See "Faits et Notices (September 28, 1899)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 28, 1899.

140 Samsun, Erzurum, Giresun, Ordu, Akçaabad and Rize, see R. Cesar Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)* (Istanbul: The Annuaire Oriental and Printing Company Limited, 1904).

141 Quataert, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, 129-32.

142 Esat Demirel, *La Banque Agricole de Turquie et la Nécessité de sa Réorganisation* (Lausanne: C. Risold & Fils, 1935), 46 and 50.

143 The concepts "rule of the game" and "play of the game" are borrowed from Oliver Williamson. See Williamson, "The New Institutional Economics: Taking Stock, Looking Ahead."

144 Atasağun, *Türkiye Cumhuriyeti Ziraat Bankası: 1888-1939*; and Demirel, *La Banque Agricole de Turquie et la Nécessité de sa Réorganisation.*

rural credit unions[145] and dealt mostly with credit in kind under the supervision of the central government. As a rule, major decisions how to manage these funds were made within the farming communities.[146] Therefore, the funds protected the interest of one or several rural classes, if not all farmers. On the other hand, the Agricultural Bank was a bank[147] and settled in towns that dealt mostly with cash. Its members were selected from the local bureaucracy and prominent merchant families.[148] For example, the first local council of eight in Trabzon was formed by at least four merchants, including the chairman.[149] Naturally, the bank worked mostly in the line with the interests of the urban instead of the rural class.

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145 Esat Demirel claims that Mithad Paşa was influenced by Friedrich Wilhelm Raiffeisen's credit unions. See *La Banque Agricole de Turquie et la Nécessité de sa Réorganisation*, 24. This comparison was made by the Chamber of Commerce of Constantinople as well; "Revue Commerciale et Prix-Courants (August 24, 1889)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 24, 1889.

146 The village elder or local cleric was appointed as the individual responsible for credit distribution, see Articles 2,3,4,5 and 6. See Atasağun, *Türkiye Cumhuriyeti Ziraat Bankası: 1888-1939*, Appendix 1-2.

147 Moreover, since the bank should make profits, the boards of directors of the branches did not risk distribute credit to landless farmers.

148 As a rule, all boards of directors of local branches were comprised by a manager and a vice manager and general agricultural inspector – both appointed by the central government – in addition to two members each from the chamber of commerce, the chamber of agriculture and the municipal council. For example, the two members from Istanbul at the top of the list were Aristakes Azarian, the president of the Chamber of Commerce of Constantinople, and Dimitraki Yenidünya Efendi from the management of the Chamber of Commerce of Constantinople. However, the irony is that merchants held the majorities in local political councils as well as in chambers of commerce and agriculture. To understand the power of merchants in decision-making of the bank, see the list of bureaucrats and merchants' in the boards of Agricultural Bank branches in Atasağun, *Türkiye Cumhuriyeti Ziraat Bankası: 1888-1939*, 84-88.

149 For example, in Trabzon, the manager was Hacıpolatzâde Şakir and the three other members were Didebanzâde Hacı Vahid, Karagözyan Kerkork Ağa and Aphrimidis Banco Efendi. All these names were merchants. See ed. Kudret Emiroğlu, *Trabzon Vilayeti Salnamesi 1892*, trans. Kudret Emiroğlu, vol. 14 (Trabzon: Trabzon İli ve İlçeleri, Eğitim, Kültür ve Sosyal Yardımlaşma Vakfı, 1995). In another example, two members from the merchant Hacı Alizâde

Even though the bank offered cheaper credit than usurers, the real cost of this credit could be higher because the bank distributed credit by mortgaging and expected to be paid in cash. Since rural real estates were not yet properly registered,[150] because of the fees to produce official documents,[151] actual interest rates could reach 12-14%[152] well above the official 9%. However, the biggest issue was that the bank required payment in cash. In bad years, most *selemci* suffered along farmers since they made deals for a percentage of the product. Because the credit of this bank was loaned in cash payment through mortgaging of land;[153] only farmers would suffer the consequences of a bad year, unless the debt was pardoned by central government. Moreover, the legal system favored the bank in cases of confiscations of land, whereas the actions of *selemci*

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family were appointed as successive managers in Giresun. (Emiroğlu, *Trabzon Vilayeti Salnameleri Yer ve Kişi Adları.*) See also "The authorities have succeeded in bringing about the establishment of an agricultural bank at Trebizond. The manager, who only receives 7£ a month, is aided in the work by a paid clerk, and six honorary members forming a board" quoted from Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1890," (London: Foreign Office of the United Kingdom, 1890).

150 In most of cases it was the grand parents who were officially recognized as the owners of their estates, see "La Banque Agricole (November 19, 1892)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 19, 1892.

151 The application procedures were too costly and too lengthily for illiterate farmers who usually appealed to muhtars or imams for help. They paid fees to acquire proper documents, see ibid.

152 The Chamber of Commerce of Constantinople estimated a transaction cost of 3-6% for the application. See "Faits et Notices (September 27, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 27, 1890. See also "The bank next in importance at Trebizond is the Governmental Agricultural Bank. It advances to villagers only, mortgaging their lands and charging an annual interest of 6 per cent, for a period limited to If years. The formalities required are however many, so that the usurer still flourishes exacting his more than 100 per cent, though the legal rate of interest is 9 percent." quoted from "Report on the Trade of the Trebizond Vilayet for the Year 1898." The bank's official interest rates for delayed debts is 9%. See OA ŞD 1583.17, 13 June 13, 1908.

153 According to Article 26, farmers should get approval of village elders to mortgage their lands. Although this article was changed and it was permitted to accord credit without a mortgage, the total of mortgaged credit fell only 4.3%. See Demirel, *La Banque Agricole de Turquie et la Nécessité de sa Réorganisation*, 50.

were considered illegal.[154] Therefore, the bank did little to improve the economic conditions of the farmers as it supposed to.

On the other hand, the Agricultural Bank was a state bank. For that reason, the bank's headquarters sent various orders to local branches to improve agriculture mostly through cheap credit and provision of agricultural tools.[155] For that reason the interest of urban classes were limited by the capacity of central government to surveille local branches. Unfortunately, the questions of how much local classes profited and the extent to which the bank served agricultural progress will remain unanswered until the Ziraat Bankası archives are opened.

§ 3.4 Chapter Summary

This chapter has provided answers to two related questions; first how long-distance markets were formed and transformed and second how did these long-distance markets worked. Karl Polanyi claims that the formation of markets is not an ipso facto process; it necessitates institutional and informative frameworks.[156] This chapter demonstrated that formation and transformation of Southeastern Black Sea region long-distance markets necessitated physical infrastructure (in transportation and information) and an institutional framework (financial and commercial). It is argued that institutional change that

154 However, in the case of unpaid debt, farmers still owned the same sum to the bank, and moreover. In worst scenario, they lost their land to the bank. Under the law, the confiscation of land by *selemci*s was usually unjustified because the interest rates being charged were usually above legal rates. But in the case of the Agricultural Bank, the laws protected the bank, because both the interest rate and the paper work were legal.

155 In spring 1917, the central government sent orders to local Agricultural Bank branches to help needy farmers. This allocation of 20 thousand liras for Akçaabad farmers who lost their crops to enemy plundering as well as the distribution of grain with money to the farmers of Gümüşhane, Tonus and Erzincan, see OA DH.İ.UM 20.12, March 19, 1917. Several examples can be found in the Ottoman archives like in OA BEO 151706.2023, March 20, 1903 or Quateart's book. See Quataert, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908.*

156 For arguments on the institutional framework of market economies, see Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time* (Boston: Beacon Press, 2001), 71-80.

accompanied innovations in information and transportation technologies determined the formation and transformation of long-distance markets. Put another way the integration of local agriculture into long-distance markets was determined by changes in four costs, transaction, information, transportation and capital. This chapter also describes every step of these commodity chains: how crops cultivated in the Southeastern Black Sea region were sold in long-distance markets and how capital circulated from western markets to local production sites. The structure of these hierarchical markets was also determined by transformation to commercial, financial institutions and changes to information and transportation technologies – in other words, by the costs of transaction, transportation, information, and capital.

As pointed out, physical infrastructure (transportation and information) and an institutional framework (financial and commercial) substantially changed twice – from mid-1850s to the late 1860s and the late 1880s to 1910s. In the first period, in addition to the fact that shipping and information costs decreased to global levels, horizontally markets emerged igniting commercial and agrarian change. Contrary to the triangular trade of 1830s and 1840s, where one market agent controlled every step along the commodity chain, every market agents involved in the long-distance markets interested in only one stage of the commodity chain. Local merchants, usurers, and tax farming agents brought crops from farms to ports, and port merchants in Southeastern Black Sea region, who bore the benefits and risks of long-distance markets, sent these crops to faraway ports. Meanwhile, third-party agents – either fellow merchants or trade brokers in major ports, usually Istanbul – established connections with faraway markets.

In this commodity chain, credit and information markets moved in the opposite direction. Information and especially credit were key in establishing control over the commodity chain. Third parties who gathered liquidity from western markets provide credit and information to local port merchants, who in turn distributed credit to local market agent and these agents distribute it to farmers. In this relationship, credit was an instrument to create domination over other agents in the commodity chain. The transmission of the changing

conditions of western capitalism depended on the structure and power relations of the commodity chains as well. These relations will be scrutinized in the next chapter.

As pointed out, the second wave of change began with the transformation of financial institutions and some improvement in land transportation in the late nineteenth century. Banks and bankers arrived in the late 1880s. Thanks to new payment instruments and the integration of the financial sector with the transportation and communication sectors, the need of local port merchants for trade brokers and other third parties in big ports in order to establish long-distance commerce with faraway port agents was considerably reduced. Meanwhile, thanks to decreasing transaction and transportation costs, local port merchants were able to invest vertically in farms – and in faraway ports as well. As it will be discussed in the next chapter, tobacco merchants increasingly invested in establishing dominance over farms and implementing quality standards. Meanwhile a small group of hazelnut merchants established dominance over the commodity chains and became price setters.

4

Long-distance Markets and Agrarian Change

This chapter analyses the relation of change in commercial and financial institutions with agrarian change. It scrutinizes how changes to commercial and financial institutions, innovation in transportation technologies and change in global demand – the especially emergence of agroindustry –affected agrarian change in Southeastern Black Sea region. In other words, it examines how changes in the costs of capital, transaction, transportation and information affected agriculture in the Southeastern Black Sea region. For that reason, this chapter bridges the previous chapters (which discussed the transformation in agricultural commerce) and forthcoming chapters (which deal with changes in agricultural production).

Since changes in cost of transaction, transportation, information and capital were the main reason for commercial and agrarian change, agrarian change periods coincided with changes financial and commercial institutions. Accordingly, this chapter is divided into two distinct periods. The first starts with a history of the commercialization of tobacco from the 1840s and to the 1860s, which is a representative case of why local crops failed to integrate into long-distance markets before the mid-1850s and of what changed afterwards to make it possible for tobacco to integrate into global markets in the mid-1850s. As discussed using the example of tobacco below, early attempts to integrate local tobacco in the 1840s suffered from heavy transportation and

transaction costs. In addition, most local tobacco was labelled by foreign market agents as unfit for western taste and production standards and relatively expensive due to heavy transportation and transaction costs. However, it is argued that after a series of institutional and technological changes took place in the mid-1850s, local tobacco would become part of long-distance markets in the 1860s.

The second part of this chapter argues that a second wave of change started in the late 1880s but this time it was emerging agro-industries that pushed agrarian change for three major crops: tobacco, hazelnuts and grains, especially wheat and barley. For tobacco, the emergence of the cigarette industry which required the blending of specific types of tobacco with specific features, increasingly led to obeisance vis-à-vis new market standards and to vertical integration in the tobacco commodity chain. On the other hand, the case of cereals was completely different; they required cheap production of specific subspecies like common wheat for bread flour or hard wheat for macaroni. For that reason, the agrarian change consisted to extensive growth. The final investigation is of hazelnuts. It will be demonstrated that hazelnut growth was sparked by demand for chocolate, sweets and perfume. Here, too increase the commercialization of hazelnuts, market power over the commodity chains was in the hands of a group of merchants at the turn of twentieth century. Local merchants in Giresun and Trabzon were able to fix prices not only in local markets but also in Istanbul starting in 1903.

§ 4.1 First Period of Agrarian Change; Tobacco and Haricot Beans (mid-1850s – the late 1860s)

During the nineteenth century, agrarian change was a result of emerging capitalism, technological change in western agriculture and global markets. However, while there was no direct foreign investment in agriculture there were several intermediary agents – trade brokers, port merchants, local merchants, bankers – and institutions – long-distance markets, the Régie Company, banks – between western markets and local farm and farmers. For that reason, the novelties of western capitalism, the flow of capital, changes in demand and technological change reached from western markets after passing through

several channels. In other words, commercial and financial agents and institutions were the conductors of effects emerged in western markets to local markets. However, as discussed in the previous chapter, four main types of cost – transportation, transaction, capital and information –obstructed this transmission and the integration of local agriculture and commerce to global markets. It was argued that the integration of local markets to global markets and the formation and transformation of long-distance trade was determined by these costs. This chapter argues that these four costs determined the extent which these novelties in western capitalism – flow of capital, changes in demand and technological change were transmitted from western markets to local farms. Accordingly, factors effecting these costs, change to commercial and financial institutions, the arrival of new transportation and information technologies and the emergence of agro-industry, determined the agrarian change.

First period of agrarian change was triggered by the introduction of a series of innovation in the mid-1850s like the arrival of steamships and telegraph, new commodity chains, and the boom in demand and price boom following Crimean War. However, agrarian change during this period was relatively limited compared to the second one in the late nineteenth century as the result of several differences. One distinctive feature of agrarian change in the mid-1850s-1870s were that export commodity chains were completely horizontal. For that reason, technological change, flow of capital, information and the effects of change in western markets reached local farms only after passing through several intermediary agents. Although, newly emergent long-distance markets enabled the integration of local markets to global by considerably decreasing shipping, transaction, information and capital costs prior to the Crimean War, transaction costs in this market were still higher than the late nineteenth century. Moreover, there was no local agro-industry to support agrarian change as they would be in the late nineteenth century. For that reason, any changes to quality standards were driven by western markets but their effects were limited by local costs. Technological transfers, new quality standards, and capital flows arrived to farms indirectly after passing several layers in the commodity chain. For that reason, despite two major inflationary periods during the Crimean War and American Civil War which compelled almost all major crops to become part of long-distance markets and triggered

agricultural change for mainly to two crops – tobacco and haricot. The rest, like wheat and maize, disappeared from the markets soon as inflationary trends ended and they created no sustainable agricultural change in the long-term. Especially high land transportation costs prevented crops cultivated in the hinterland from becoming part of global markets.

4.1.1 *History of Agrarian Change in Tobacco (mid-1850s – the late 1860s)*

Throughout the century, tobacco was more susceptible to agrarian change and western markets than other crops, mainly because it was an addictive pleasure-giving cash crop. Consumers were much more willing to pay more for higher qualities, which encouraged lead economic agents to invest more in ameliorating quality than increasing quantity compared to other crops. For that reason, the interaction between the transformation of long-distance markets and agrarian change is examined in detail using tobacco as the main example in this chapter. After it is demonstrated why tobacco was more susceptible to agrarian change throughout the century, as well as how changes to commercial and financial institutions, the arrival of new transportation and accompanying information technologies and the emergence of agro-industries determined the direction of agrarian change. However, there were two periods when agrarian change in tobacco happened more intensely. The first is the decade after Crimean War but the time corresponding to the American Civil War, and the second began with the emergence of an Egyptian cigarette industry in the 1890s.

4.1.1.1 Benefit: Price Divergence and Increasing Returns According to Quality

The first argument is that the range of prices among different qualities of tobacco were significantly broader than other major crops such that it was more lucrative for producers to invest in ameliorating quality vis-à-vis other crops. Tobacco is an addictive pleasure-giving crop. Consumers were willing to pay higher prices for requested qualities, so wholesalers entered the market to buy specific types of tobacco with specific qualities: aroma and color. Accordingly, the price range between the best and worst qualities was usually higher than

necessary goods like wheat. A comparison between tobacco and wheat will be helpful to explain difference between the highest and lowest qualities. For example, in the week of January 21-28, 1868, the price of first-quality tobacco from Bafra was roughly three times higher than its fourth-quality tobacco (16-18 versus 5-7 piasters). Compared to Yenice's (Γιαννιτσά) first-quality (74-98 piasters), the difference is a factor of fourteen.[1] Meanwhile, the price range of hard wheat varied between 37 and 43 piasters per *kile* – ~5% variance for any given port and ~16.2% variance across all ports.

The reason that tobacco farmers invested in diversifying their product was that price elasticity of demand for tobacco was significantly higher than for other crops, which meant greater income for producers in the case of price discrimination according to quality.[2] To understand the meaning of this price range, consider a typical farmer living in Bafra in 1868 who produced forth-quality tobacco and lowest quality of wheat in the market. According to the long-distance market prices on January 21-28, 1868, while the difference of prices among the lowest quality of tobacco and first-quality tobacco was ~300%, it was only ~5% for the wheat. Assume that this farmer could either ameliorate the quality of tobacco and wheat separately to their highest respective levels of qualities or increase the quantity of their production – for the sake of simplicity without cost. In this scenario, the choice would be made according to the potential quantitative increase for each plant. If the farmer knew that he could produce more than 5% more wheat, the farmer would invest in increasing the quantity of wheat production. On the other hand, this opportunity cost was 300% for tobacco not 5%. Subsequently, the farmers tended to choose to invest in ameliorating the quality of tobacco rather than other crops. Since most tobacco in Southeastern Black Sea region was sold to global markets, local tobacco was susceptible to changing western quality standards than other crops.

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1 The prices diverged greatly in local markets as well; for example, tobacco prices varied from 4 to 24 piasters per *okka* in Trabzon, see Palgrave, "Report on the Provinces of Trebizond, Sivas, Kastemouni, and Part of Angora for the Year 1867."

2 In neoclassical economic terms, the price range can also be explained by the substitution hypothesis. Different qualities of tobacco had higher demand elasticity compared to different qualities of other crops.

4.1.1.2 Marketing Costs: Transportation Costs, Transaction Costs and Decreasing Average Fixed Costs of Marketing

Second argument is that the relative competiveness of higher-quality tobacco vis-à-vis the lower-quality tobacco increases with increasing fixed costs (like logistics, taxes or shipping costs). Subsequently, there is a tendency for better-quality crops to be sold in long-distance markets, whereas trading in a lower quality product became rational only over short distances. This tendency is most apparent for tobacco where logistic and transportation costs (with taxes) were greater than other costs. This argument is important because it explains why the quality standards of high-quality tobacco were determined largely by long-distance than local short-distance markets. To demonstrate this argument, I will benefit from the French Tobacco Monopoly's three consecutive market research reports on Samsun from 1844 to 1847. Fortunately, despite some minor issues,[3] these expeditions were so well-documented that it enabled further investigation. These papers contain detailed information on market prices of tobacco in the port of Samsun, logistics costs in Samsun and Istanbul and shipping costs from Samsun to Marseille. (See the appendix for details)[4]

3 There are minor gaps in the numbers and some differences in the nature of expenditures, see Appendix D.

4 In other words, I estimated every cost for different kinds of tobacco based on these account papers to demonstrate why long-distance market agents were almost always only interested with highest qualities available for purchase.

Table 4.1 Estimates for Three Expeditions in Piasters per Kilogram[5]

	Reality (1844)	1st quality (1844)	2nd quality (1844)	3rd quality (1844)	Reality (1845)	1st quality (1845)	2nd quality (1845)	Reality (1847)	1st quality (1847)	2nd quality (1847)
Price in Samsun	100	100	100	100	100	100	100	100	100	100
Taxes	20.0	15.8	21.9	30.3	15.2	13.7	19.3	16.0	14.5	19.8
Logistics	11.7	9.6	12.7	17.0	20.2	18.5	25.0	17.9	16.4	21.5
Transportation	44.6	35.2	48.8	67.6	33.7	30.5	43.0	23.4	31.7	43.4
Profit of Merchant	4.6	4.0	4.8	5.9	4.2	4.0	4.7	2.7	2.8	3.0
Other Costs	0.5	0.4	0.6	0.8	0.4	0.3	0.4	0.0	0.0	0.0
Added-Costs	81.4	64.9	88.8	121.6	73.6	66.9	92.5	59.9	65.4	87.9
Price in Samsun	2.56	3.25	2.34	1.69	3.23	3.57	2.53	3.06	3.38	2.47
Price in Marseille	4.09	4.94	4.00	3.33	5.94	5.96	4.88	4.90	5.59	4.64

SOURCE Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN

First point is that there is a negative correlation between relative additional marketing costs and quality. As seen in the current example, while logistical costs for tobacco sent from Samsun to Marseille were ~65% for first-quality in

5 There were three expeditions – 1844, 1845 and 1847 – which were documented with detail. See the appendix for details of these expeditions. The eighth line is real prices (piasters per kilogram) in Samsun as paid and registered by consular agents. The final line represents the cost of same tobacco in the port of Marseille. First line represents the price that consular agents bought in Samsun. All these initial prices were accepted as 100. The following five lines were the relative amounts paid for all the operations of deliver the tobacco bought in Samsun port to Marseille. For example, the initial price in the port of Samsun in 1844 was 2.56 piasters per kilogram, and the trade broker paid 0.512 piaster per kilogram as tax. These are noted in this graph as 100 and 20 – respectively. The lines two to six represent every type of cost to ship the tobacco from the port Samsun to Marseille. For example, in 1844. the total cost of shipping from Samsun to Marseille (added-costs) was ~2.08 piasters per kilogram – that is 81.4% of the initial value of the tobacco. The columns beginning with "Reality" are the real capitulation of costs inscribed by trade brokers. The columns for 1st, 2nd, and 3rd qualities are hypothetical scenarios calculated according to information given in these reports. For the original documents, see Appendix D.

the mid-1840s, it was ~90% for second-quality tobacco and even more for lower qualities. The reason was that transportation and logistics costs and some taxes were determined by volume, weight and geographical distance instead of value.[6] For that reason, shipping one kilogram of the highest quality tobacco worth 3.38 piasters per kilogram was the same that for second quality tobacco worth 2.47 piasters per kilogram. This cost further increased over longer distances. Accordingly, it was relatively most costly to transport lower quality tobaccos vis-à-vis best quality tobacco from Canik to London than to Marseille, to Marseille than to Istanbul, and to Istanbul than to the Caucasus. Every time the distance and hence shipping costs, increased shipping costs per unit rose faster for lower quality than higher quality product, which rendered the lower qualities less competitive over longer distances. Western buyers were interested in only the best qualities of any given crop but this was more apparent for tobacco.[7] Therefore, market agents for long-distance markets were interested only in the best quality tobacco throughout the nineteenth century, while lower qualities were only marketed in local markets.

This price-quality-cost effect had three effects on tobacco, which are discussed repeatedly in this dissertation. First, farmers and merchants anticipating better gains were more eager to invest in catching up to the quality standards of global markets for tobacco than for any other crop. Subsequently, the lead agents in the commodity chains and production of tobacco were more

6 Shipping cost is a key determinant of the cost of shipping operations. Every ship seeks to sail to the seas with a full hold. Empty space means economic lost for ships. For that reason, what really mattered to ship owners was the weight and volume, and not the value of its cargo. See Harlaftis, *A History of Greek-Owned Shipping: The Making of an International Tramp Fleet*, 14. A ton of coal worth a few shillings and a ton of silk fabric worth a few thousand pounds entailed the same cost for ship owners. See Miller, *Europe and The Maritime World: A Twentieth-century History*, 96. For that reason, the supply of maritime transportation is measured in terms of tonnage, which refers to the available capacity to carry cargo from one or more ports to one or more ports by sea. (Y.H.V. Lun, K.-H. Lai, and T.C.E. Cheng, *Shipping and Logistics Management* (London: Springer, 2010), 22.) Accordingly, equilibrium in shipping was not achieved in terms of value but in terms of volume. (ibid., 25 and 94.)

7 This fact was repeated several times by French Tobacco Monopoly. The French Tobacco Monopoly and other major buyers – like Austro-Hungarian – had cheaper alternatives.

willing to invest in ameliorating quality than quantity. For that reason, it was more likely for a lead agent to invest in fertilizers, technology, and other elements to improve the quality of tobacco instead of expanding the size of crop yields their farm.[8] Second, while the highest qualities of tobacco were exported to long-distance markets, the market range among the lowest qualities remained limited. For that reason, the highest qualities of tobacco were more susceptible to changing western standards than lower-quality tobacco or higher qualities of any other crop. In other words, tobacco's agricultural change was heavily determined by changing market conditions throughout the century, while local factors and actors were relatively more important for other crops. The final point is that since tobacco was the crop, that paid more for better quality, the most fertile lands were reserved for tobacco in any field where tobacco cultivation was possible, the consequences of which will be discussed in detail in the next chapter.

4.1.1.3 Agrarian Change in Tobacco

In the 1840s, local tobacco cultivated in Northeastern Anatolia was sold mostly in short-distance markets. Tobacco cultivated in Canik and Polathâne

8 A hypothetical farmer around Samsun in 1868, who produced both tobacco and hard wheat of the lowest quality on his farm and could invest his money and labor either in clearing new lands or improving the quality of crops with better fertilizers and tools. To simplify thing assume constant productivity/cost per return. Doubling the quantity of production of the same crop by clearing new land doubles the total costs. A second alternative was that this farmer could spend exactly the same amount of money to improve the quality from inferior to mediocre. Given the prices 1868 provided in the appendix, the additional income of the farmer can be calculated. See appendix for tobacco and wheat prices in 1868. According to these prices, this farmer would gain 5-15% more income from wheat by investing in its quality compared to 100% more income by doubling the size of the farm. Accordingly, investing in quality instead of quantity meant 85-95% economic loss. However, thanks to the greater price ranges for tobacco. The farmer would earn greater income as 300-500% more income by investing in quality. Accordingly, investing in quality tobacco meant a 200-400% gain compared beyond that from doubling the size of a tobacco farm. In this imaginary case, the farmer would want to invest in producing better quality tobacco and doubles the size of his farm for wheat production. Accordingly, the agents controlling tobacco production had a tendency to invest in better quality in tobacco compared to other plants.

was sold in the hinterlands of Samsun and Trabzon as far as Ankara, Kayseri and Gümüşhane, and it was shipped to nearby ports in Lazistan and in the Caucasus. The long-distance trade consisted of limited quantities of exports to Russia[9] and occasionally to Austro-Hungarian Empire.[10] Only first-quality tobacco was shipped to Istanbul to be mixed with the tobacco of Macedonia.[11] As pointed out in the first chapter, the first expeditions to establish a long-distance market were made by the French Tobacco Monopoly in 1844-1847. Fortunately, these expeditions were documented. The monopoly not only calculated costs but had its experts analyze the different types of the highest qualities of tobacco in the monopoly's laboratories.

According to these experts, the positive features of tobacco from Samsun and Bafra were described as follows: their color was beautiful and their leaves were pliable, odorous, gummy, easily burned. Above all, they praised the good perfume.[12] The local tobacco preserved these features even into the twentieth century.[13] On the other hand, these experts also listed possible issues with exporting in to France tobacco manufacturers. One major issue was that the

9 *Lettre de Bréban à Kavala* (May 22, 1844), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN and *Lettre de Consulat à Trébizonde à l'Administration de Tabacs à Paris* (May 17, 1845), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

10 See Çağlayan, "İngiliz Konsolosluk Raporlarına Göre 1841 Yılında Samsun ve Çevresinde Ticaret."

11 Outray, "Extrait d'un Rapport sur la Province du Djanik (fait par Adémie Outray Chancelier Honoreux du France à Trébizonde)." And also Schéfer, "Renseigement Concernant la Province de Trébizonde," 54.

12 *Lettre de Bréban à* Kavala (May 22, 1844), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN and *Lettre de Consulat à Trébizonde à l'Administration de Tabacs à Paris* (December 22, 1864), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN.

13 After examining of tobacco sent from Samsun to Marseille in 1847, French tobacco experts reported that tobaccos labelled first quality were generally good. The sizes of the leaves were sufficiently large, pliable and homogenous for manufacturing, but the color was light and brilliant and the taste was gummy. The stems were usually fine. The second quality tobacco was not as good. The dimensions buried and a large proportion of the tobacco was red, brown, and marbled. Its stem was not marked enough, see *Lettre de Consulat à Trébizonde à l'Administration de Tabacs à Paris* (September 1, 1847). Agence Consulaire de Samsoun. Les Tabacs

plant lost its natural aroma more quickly than other kinds of tobacco[14] because of its fast fermentation,[15] especially when exposed to humidity. For that reason, local tobacco required careful drying and packing.[16] For example, in 1844, two in three bales sent to Paris fermented during transport because they had not been packed properly in Samsun.[17] For that reason, the French monopoly repeatedly warned agents in the field to take more measures against fermentation.[18]

Another issue was that processing the local tobacco leaves was harder on the machinery because neither farmers nor merchants paid attention to whether the leaves were fully grown before harvest; moreover, the leaves were not properly separated according to size and color. Therefore, "while some of these leaves were considered prematurely harvested others required additional time and labor for separate the leaves according to the requirements of the

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1844 à 1847. 605 PO/1. AMAE. CADN. Compare with "Since Trabzon tobacco was like a silk wire, it did not make any dust. The dark color and burning properties of this tobacco gives it an exceptional quality" quoted from Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 44.

14 Lettre de Consulat à Trébizonde à l'Administration de Tabacs à Paris (September 1, 1847), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN. Lettre de l'Administration de Tabacs à Paris à Consulat à Trébizonde (April 17, 1868), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN. Renseignements sur les 30 Balles Tabacs Expediées le 24 Juilliet 1864 (undated, probably the late 1864), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN.

15 However, despite attention to packing, in some years, the job was done not properly. For example, the trade broker failed to accomplish his task and the tobacco lost its quality during transport in 1864. See *Lettre de l'Administration de Tabacs à Paris à Consulat à Trébizonde* (December 22, 1864), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN.

16 Villagers wrapped it up in a bundle (*bohça*), see Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 116.

17 Lettre de l'Administration de Tabacs à Paris à Consulat à Trébizonde (April 18, 1844), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

18 The French Tobacco Monopoly warned trade brokers in Samsun about the dangers of humidity, the loss of aroma and fermentation, see *Lettre de l'Administration de Tabacs à Paris à Consulat à Trébizonde* (May 17, 1845), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

machinery."[19] However, the most important issue was that local quality standards were not compatible with western one.[20] The most obvious difference emerged because the types tasted better when smoked with a hookah, as was popular in the Levant was not compatible with western taste. For example, in the 1840s, local agents praised the quality of tobacco from Bafra which was highly recommended in Ottoman markets.[21] However, after laboratory analysis, French experts concluded that the Bafra type was suitable for "oriental" tastes,[22] while those cultivated in Samsun were better for western consumption.[23]

The transaction cost of the incompatibility between the standards is best observed in the expert report of 1847[24]: only ~37.8% of the qualification made in the port of Samsun matched that of Marseille, which generated at least a

19 Quoted from *Lettre de l'Administration de Tabacs à Paris à Consulat à Trébizonde* (September 1, 1847), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

20 "Although French consumers do not always look for the oriental tobaccos, they would like the local tobacco (of Samsun)" quoted from *Lettre de l'Administration de Tabacs à Paris à Consulat à Trébizonde* (May 17, 1845), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

21 According to these reports, local consumers considered tobacco cultivated in Bafra to be superior to tobacco planted around the port of Samsun. See *Lettre de Bréban à* Kavala (May 22, 1844), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

22 Lettre de l'Administration de Tabacs à Paris à Consulat à Trébizonde (May 17, 1845), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

23 However, French experts classified the tobacco of Bafra as unsuitable for western taste and unfit for manufacturing, because it was too thin. On the other hand, the tobacco of Samsun was classified as better for manufacturing and western tastes. The French Tobacco Monopoly declared no interest in purchasing Bafra tobacco, but requested the highest qualities from Samsun, see *Lettre de l'Administration de Tabacs à Paris à Consulat à Trébizonde* (April 18, 1844), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

24 For example, in 1844, although the consul sent the tobacco of Samsun according to local standards, the French Tobacco Monopoly regrouped the tobacco according to French quality standards again in France. See Lettre de Consulat à Trébizonde à l'Administration de Tabacs à Paris (September 1, 1847), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

~8.25% additional transaction cost.[25] Because of the issues of incompatibility, fermentation and high transportation and logistics costs,[26] the French Tobacco Monopoly calculated that there were better alternatives at better prices and higher quality levels.[27] Eventually the Monopoly lost interest.

Table 4.2 Comparison of Two Quality Standards of Tobacco in 1847[28]

Type		Quality (French Standards)	A	B	C	Sum
Samsun	(Local Standards)	First	116	260	27	403
		Second	9	117	87	213
		Total	125	377	114	616
Bafra		First	1	1		2
		Second	1			1
		Total	2	1		
Sum			127	378	114	619

SOURCE Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN

As pointed out in the chapter two, the Crimean War triggered agrarian change in tobacco thanks to wartime inflation (which boosted the demand), the arrival of steamships and amelioration of informative technologies (which caused

25 The transaction cost that emerged from differences between two standards was calculated using a simple method. First, new value of tobacco was calculated according to French standards. Then the amount of money paid for these tobacco leaves in the port of Samsun was compared to their value according to French standards.

26 The reports of the French Tobacco Monopoly underscored the fact that the packing, storage, and transport of local tobacco was unusually costly for this level of quality. The main issue was not the quality but the fees of the operation (40% of the price) with transportation costs, see *Lettre de Consulat à Trébizonde à l'Administration de Tabacs à Paris* (September 1, 1847), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

27 Lettre de l'Administration de Tabacs à Paris à Consulat à Trébizonde (March 19, 1845), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

28 First and Second indicates Ottoman Standards; A, B and C the French of the same tobacco. The operations were arranged by Frederick Quaricino, the vice-consul of England Samsun. *Bill filed by consular agent at Samsun* (June 22, 1847) Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

considerable decrease in shipping and information costs), and emergence of new commodity chains (which reduced transaction costs). Consequently, total production was increased during the Crimean War. More importantly, the tobacco types were better fit to western consumption, especially the types of Samsun.[29] In 1844, tobacco cultivation in Trabzon Province could be divided geographically into four. The first known as the tobacco of Bafra, was cultivated in the area between Bafra and the Kürdün River, 18-20 kilometers from the coast. The tobacco known as Samsun tobacco was cultivated between the Kürdün and Batmasu Rivers and there was also production of lower qualities of tobacco between Batmasu and just east of the delta of Çarşamba.[30] A forth area existed in the west of Trabzon, in Akçaabad near to the Polathâne port. Most geographic change happened after the Crimean War, but especially during the American Civil War. First, in order to be more compatible with western tastes, types cultivated between the Kürdün and the Batmasu (known as Samsun tobacco) spread and took over other parts of Canik. Second, tobacco cultivation expended its territory to Ünye, Trabzon,[31] Erbaa, Tokat, Amasya,[32] Ordu and Niksar.[33] As the result, total production in Canik increased from

29 H. Arnaud, "Receuil Consulaire de Trébizonde (1861)," (Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1861).

30 Outray, "Extrait d'un Rapport sur la Province du Djanik (fait par Adémie Outray Chancelier Honoreux du France à Trébizonde)."

31 Gifford Palgrave, "Report on Anatolian Coast, and the Corresponding Inland Districts, Between the Longitudes of Sinope and Trebizond, in the Summer of the Year 1869," (London: Foreign Office of the United Kingdom, 1869).

32 Vital Cuinet, "Vilayet de Sivas Statisique Descriptive," in *La Turquie d'Asie; Géographie Administrative, Statistique, Descriptive et Raisonnée de Chaque Province de l'Asie-mineure* (Paris: Ernest Leroux, 1892).

33 Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 41.

~650,000-770,000 kilograms per year in the mid-1840s[34] to roughly 4,000,000-5,000,000 kilograms by the mid-1880s.[35]

However, in these years the quality of local tobacco lagged behind that of Caucasian tobacco,[36] which was handsomely sponsored by the Russian government. For that reason, in the early-1860s local tobacco was mostly sold in Ottoman territories and in Russia, including St Petersburg,[37] but rarely to western countries. The American Civil War (1861-1865) changed boosted the global demand for local tobacco. Before the Civil War, Confederate States were the one of the main providers of tobacco to global markets.[38] However, American tobacco cultivation took a hard blow from the Civil War and ruination of slave plantations. The subsequent shortage in the global tobacco supply created a window of opportunity for local tobacco. With the war, tobacco exports from Canik immediately doubled.[39] In fact, the tobacco famine was so severe

34 These numbers were converted from 5-6 hundred thousand *okkas*. See *Lettre de Bréban à* Kavala (May 22, 1844), Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.

35 See chapter six. The periods of agrarian change of western Anatolian tobacco coincided with that of the Southeast Black Sea region. See Mustafa Koç, "The Transformation of Oriental Tobacco Production in the Aegean Turkey," *New Perspectives on Turkey* 4 (2015): 33. However, the evolution of commerce in Samsun bore similarities to that of the port of Mersin, which integrated into international trade during the Crimean War and enjoyed an increase in exports thanks to the local cash crop – cotton – mainly was cultivated in Adana during a cotton famine triggered by the American Civil War. See Meltem Toksöz, "Ottoman Mersin: The Making of an Eastern Mediterranean Port-town," ibid.31: 72-73.

36 Arnaud, "Receuil Consulaire de Trébizonde (1857)."

37 "Receuil Consulaire de Trébizonde (1861)."

38 During George Washington's presidency, tobacco and wheat were the most important crops in southern states. See Robert William Fogel and Stanley L. Engerman, *Time on the Cross* (Boston: Little, Brown & Co., 1995), 43. However, due to the industrial revolution in Europe and the emergence of textile industries in the northern states, cotton cultivation became the most important agricultural activity by the middle of the century. Tobacco was the second-most important cash crop when the Civil War started. Hence 14% of slave was employed in tobacco cultivation. See ibid., 41-42.

39 From roughly 30,000 bales to 61,629 bales. See Barker, "Report on the Trade of Samsoon for the Year 1861; and on the Corn Trade for Six Months ended June 30th 1862," (London: Foreign Office of the United Kingdom, 1861-1862).

that even junk tobacco, usually left in the fields to be carried off by the wind, found buyers in Bremen.[40] Thanks to the American Civil War, local tobacco was rediscovered by the Austro-Hungarian, French, and Belgians markets.[41]

Soon after local tobacco became part of global markets, total local tobacco production was quickly increased to meet demand[42] and local quality standards caught up the western ones. The types of tobacco being cultivated locally were increasingly chosen to fit better to western tastes. This transformation can again be traced in the French Tobacco Monopoly's correspondence with local consular agents. Although some inconsistences between western and local standards existed in the mid-1860s (See table 4.3).[43] These western standards seem to be caught mainly by widespread of what was labelled as Samsun type in 1844 instead of Bafra with better care on size and color fitting the western taste. For example, in the 1840s, the Samsun types were cultivated mostly

40 Alfred Biliotti, "Report by Consul Biliotti on the Town and Port of Samsoon, and on Circassian Colony in the District (1884)," (London: Foreign Office of the United Kingdom, 1884).

41 In 1861 given increased production of American tobacco due to the Civil War, the Belgian consulate sent samples of tobacco to its home market for the first time. See Arnaud, "Receuil Consulaire de Trébizonde (1861)."

42 L Reboul, "Receuil Consulaire de Trébizonde (1865)," (Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1865).

43 *Bill filed by consular agent at Samsun* (July 2, 1876), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN.

around the port of Samsun,[44] but by 1874, it was reported that tobaccos cultivated in Samsun and Bafra were similar and it was hard to distinguish them.[45] By the mid-1870s, local standards were up to French quality standards.[46]

Table 4.3 Comparison of Various Quality Standards of Tobacco (1864)

	Quality (French Standards)	A	B	Sum
Local Standards	1st Quality (Tiflis)	12	2	14
	2nd Quality (Taganrog)	-	16	16
	Sum	12	18	30

SOURCE Lettre de l'Administration de Tabacs à Paris à Consulat à Trébizonde (December 22, 1864), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN.

44 Outray, "Extrait d'un Rapport sur la Province du Djanik (fait par Adémie Outray Chancelier Honoreux du France à Trébizonde)."

45 The tobacco types that better fit western tastes increasingly crowded out local types suited to oriental taste in the *kaza*s of Samsun and Bafra. It was reported that the tobacco cultivated in Samsun and Bafra were of good quality. its maturity was mediocre. its color was satisfying, and its surface was rugged, little bit thick and its perfume was odorous. The first two qualities were well distinguished. The third quality was mixed with other inferior quality tobaccos and green leaves.

The tobacco of Bafra smoked well. Its aroma was inadequate but it did not leave any disgusting taste in mouth. There were some green leaves. Some leaves in second class were immatured. The leaves of the third and fourth classes had a rugged surface and were thick.

The tobacco of Samsun was usually composed of healthy leaves with a supple surface. It was sufficiently balmy with a good smell. The leaves were properly matured. When chopped, it smoked well with an agreeable, mild, fine smell but it was little bit weak. The different classes of tobacco of Samsun were graduated as they were supposed to be, each consistent with their price. See *Lettre de Consulat à Trébizonde au Directeur Général, Membre de l'Institut Sciences (October 15, 1874)*, Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN. For the report of American experts at the turn of the century. See Guarracino, "Report on the Trade of Samsoon during the Year 1856," (London: Foreign Office of the United Kingdom, 1856).

46 Apparently, local standards started to conform to French standards. See for example *Bill filed by consular agent at Samsun* (June 23, 1875), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN.

4.1.2 *Cereals: Wheat, Barley, Maize, Haricot Beans and Potatoes*

Agrarian change in cereals was also triggered by technological and institutional changes that accompanied two successive waves of inflation following the Crimean War. However, same factors had different effects for different types of cereals. Of the cereal types, wheat and barley were mostly cultivated in the hinterland and enjoyed an inflationary trend for a decade but eventually these effects faded, especially during the decade of crises (1869-1879). On the other hand, long-term effects emerged mostly for maize and haricots cultivated symbiotically along the coasts. Finally, the potato, which was introduced just before the Crimean War became widespread but was not a major crop even in the late nineteenth century.

Evidence suggests that Constantinopolitan merchants massively imported cereals from Southeastern Black Sea region ports until the beginning of the nineteenth century,[47] but most probably because Danubian and South Russian cereals became competitive, cereal imports from Southeastern Black Sea region was marginalized in Constantinopolitan markets.[48] In fact, the circumstances so much favored Russian wheat by the late 1830s that it even stated to penetrate Trabzon's markets and even deeper into Anatolia, especially during the major crop failures of 1839[49] and 1840.[50] The Crimean War (1853-1855) was the turning point for local cereals. Although during the first year of the Crimean War, Russian and Romanian ports – the latter of which were occupied by Russian armies – kept supplying the Ottoman capital,[51] cereals from Sam-

47 For the exports of cereals from Southeastern Black Sea region in the eighteenth century, see Salih Aynural, *Istanbul Değirmenleri ve Fırınları: Zahire Ticareti, 1740-1840* (Istanbul: Türkiye Ekonomik ve Toplumsal Tarih Vakfı, 2002), 64-65. For the early nineteenth century see ibid., 26.

48 See the issues of Journal de Constantinople from 1848 to 1853

49 Suter, "Report on the Trade of Trebizond for the Year 1839."

50 Brant, "Report on the Trade of Trebizond for the Year 1840."

51 Even trade among Romania, South Russia and Southeastern Black Sea region even the Ottoman capital continued during 1853, see Stevens, "Report on the Trade of Trebizond for the Year 1854."

sun returned to Istanbul and to long-distance markets during the spring harvest of 1854.[52] Thanks to sharp increases in the price of cereals all around the Black Sea like in Istanbul, Samsun, and Trabzon,[53] cereal commerce and agriculture had a tremendous the short-term boost. The American Civil War caused another inflationary trend in prices. Wheat fully became part of long-distance markets in the years 1854-1858,[54] 1862, and 1867, and barley in 1858, and 1866-1869.

Despite these successive inflationary trends, local cereals again abandoned long-distance markets by the late 1860s, and there was little, lasting visible agrarian change. First reason local cereals left global markets when everything returned to normal was relatively high transportation costs. As pointed out in the previous chapter, Russian and Romanian cereals enjoyed a better infrastructure compared to those of Southeastern Black Sea region ports. For that reason, local cereals became part of long-distance commerce only during inflationary trends in global prices that lasted until the 1880s. Second reason why the effect of global markets was limited was that cereals had greater price and demand substitutability than other cash crops. They suffered from greater competition than cash crops. During the nineteenth century, local cereals suffered from continuous stiff competition from Russia and Romania (and in the 1890s, from the United States as well) which produced much cheaper and better-quality cereals for western markets. Accordingly, the prices of local cereals had to be cheaper than the alternative,[55] otherwise, there would be no demand. Accordingly, the exportation of cereals varied greatly.

On the other hand, the situation for the maize-haricot symbiosis diverged from other cereals for two reasons. First, maize and haricot beans were never

52 Ziya Çekel, *Dünyada ve Türkiye'de Buğday*, vol. 10, Istanbul Ticaret Odası Mecmuası (Ayrı Basıları) (Istanbul: İstanbul Ticaret Odası Mecmuası, 1960). A petition for permission to export from Samsun to Istanbul during the war reads: "I, this humble servant, is from merchant class, bought three months ago 60,000 kiles of wheat from port of Samsun to be sold in Istanbul" quoted from OA MVL 152.82 April 8, 1854.

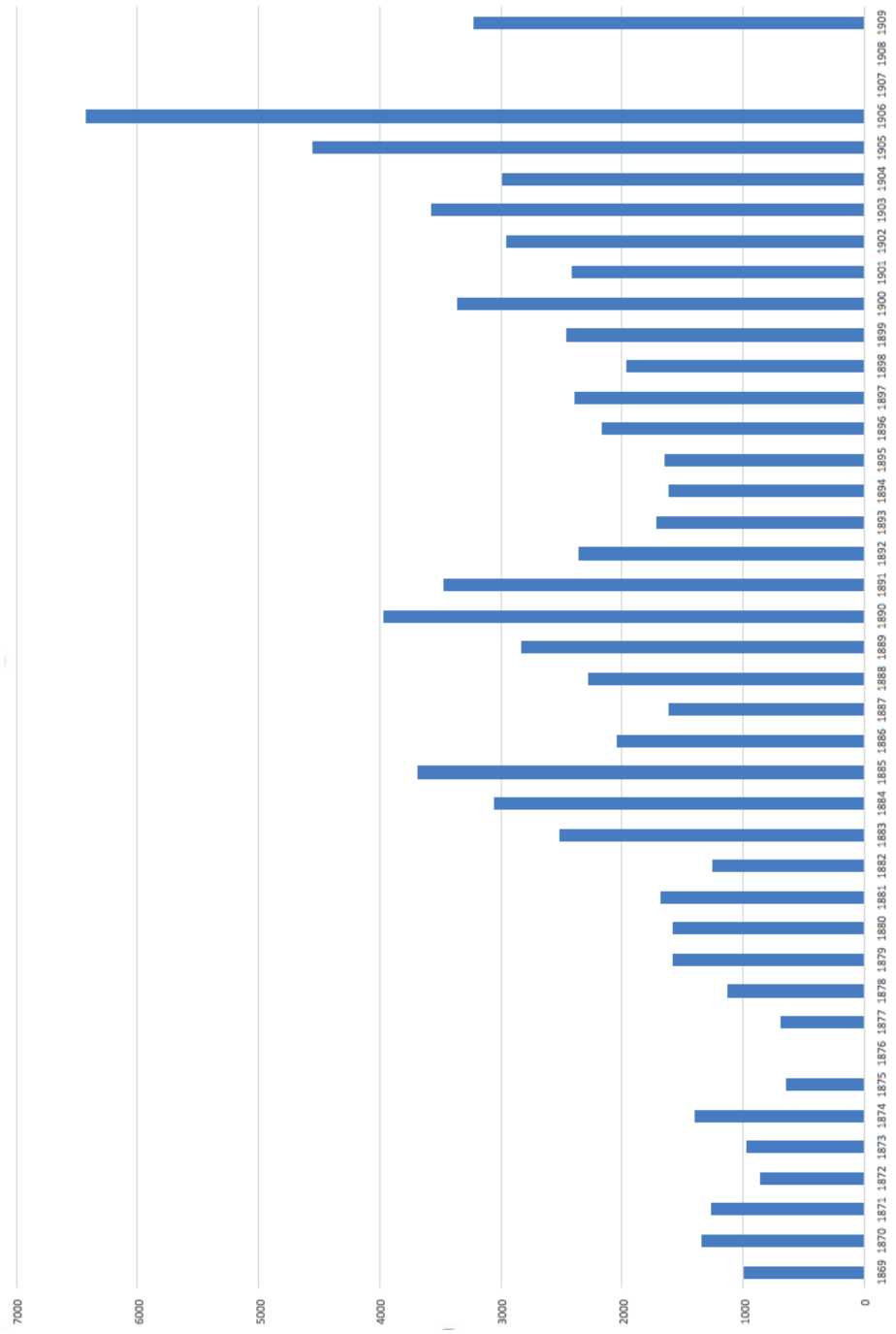
53 See the prices series in the fourth chapter. For speculation and the high prices in the port of Samsun, see Guarracino, "Report on the Trade of Samsoon during the Year 1856." For port of Trabzon, see Stevens, "Report on the Trade of Trebizond for the Year 1854."

54 Guarracino, "Report on the Trade of Samsoon during the Year 1856."

55 See the chapter five for price competition.

challenged by strong competitors like wheat and barley, maize from Dobrudja and Bessarabia and haricots from Rumelia and the Danube, notwithstanding. Second and more importantly, while wheat and barley, which were mainly cultivated inland, suffered from huge transportation costs, maize and haricot were mainly produced along the coastlines of Trabzon Province. Consequently, maize and especially haricot beans remained competitive internationally long after the Crimean War. Maize was exported in great quantity to Istanbul and further markets in the long intervals of 1853-1855 and 1858-1859 and eventually every year after 1868. Haricot beans almost the entire second half of the nineteenth century through with remarkable fluctuations. However, the main agrarian change resulted from the commercial success of haricots. Haricot was side-product of the maize-haricot symbiosis. While maize was the main nutritious crop for the masses living along the coast, haricot was little consumed. Maize cultivation always implied an overproduction of haricots, and if these haricots were not consumed or sold, it meant ecological and economic loss for agriculture. Therefore, the commercial success of haricots enabled the cultivation of maize to expand geographically to the west of Samsun port, into Canik's hinterland down to Amasya and Tokat, and especially in the east, down to Keskim and Tortum.[56]

56 Palgrave, "Report on Anatolian Coast, and the Corresponding Inland Districts, Between the Longitudes of Sinope and Trebizond, in the Summer of the Year 1869."



Graph 4.1 Exports of Haricot Beans from Trabzon (in Tons)

SOURCE British Consular Reports

The final crop to discuss is potato. The potato was the only new crop:[57] its cultivation started between the late 1830s and the early 1840s.[58] Although the crop is resistant to continuous below freezing temperatures,[59] the plant is most venerable when seedlings are hit by sudden frosts.[60] For that reason, the local potato was a summer crop.[61] The main advantage of this crop was that yielded better at higher altitudes than other crops, which made it the perfect candidate for cultivation in the mountains and plains that characterized Southeastern Black Sea region.[62] One issue of potato cultivation is that being a tuber, the crop required different techniques and new crops – like clover – with which

57 Another new crop was tea but the case of tea is more a republican success story. Tea came to Rize's forests from Caucasia just before the Russo-Ottoman War of 1877-1878. See Biliotti, "Report by Vice-Consul Biliotti on the Trade, Commerce and Navigation of the Port and Distinct of Trebizond for the Years of 1877-1878." Tea plantations existed in small pockets in Rize and Tokat as early as the late 1870s. Tea cultivated in Tokat was processed in Caucasia and illegally labelled as Chinese tea. See Kemalletin Kuzucu, "Osmanlı'nın Son Döneminde Uluslararası Kaçakçılığa Konu Olan "Tokat Çayı"nın Serüveni," in *Tokat Sempozyumu* (Tokat: 2012), 186-87. Although its production increased considerably in the 1880s. See Alfred Biliotti, "Report on the Trade and Commerce of the District of Trebizond for the Year 1884," (London: Foreign Office of the United Kingdom, 1884). It never became a popular crop until the republic.

58 While French reports suggest the date of the late 1830s for the arrival of the potato, British reports just the early 1840s. For French report, see Schéfer, "Renseigement Concernant la Province de Trébizonde." For British report, see Richard White Stevens, "Report on the Trade of Trebizond for the Year 1844," (London: Foreign Office of the United Kingdom, 1844).

59 Salih Zeki Ekinci, *Ziraat ve Ticaret Muhtırası = Agenda, Aide-Mémoire Agricole et Commerciale* (Istanbul: İlhami ve Fevzi Matbaası, 1926).

60 ibid.

61 For the proof that it was seeded in summer, see OA MKT.MHM 727.15, February 10, 1894 and also Pasinler Kazasının Esval-ı Tabiyye Ve Ziraiyyesi [Erzurum Merkez Ziraat Mualimliğinin 13 Ağustos 1329 Senesine Aid Raporu]," in *Ticaret Ve Ziraat Nezâreti Mecmuası 31-40*(Istanbul: 1913). Stevens mentioned that the planting of potato should occur in May or June, see Richard White Stevens, "Report on the Trade of Trebizond during the Half-year Ending 30th June, 1860," (London: Foreign Office of the United Kingdom, 1860). If this is the case, considering potatoes have a life time of 80-120 days, the potato harvest was in August or September.

62 In the pre-Colombian era, the potato was cultivated mainly as a *suni* level crop, 3,600-4,200 meters above sea level. In addition, potatoes require regular manuring, so the cultivation of broad beans and wheat, which the Spanish Conquistadors planted better crop.

to rotate, which in turn meant substantial ecological change. For example, the Pasinler was only plane where it was rotated with clover and fuchsia.[63] Moreover, potato required a radical, gastronomical change: introduction of a potato-based diet replacing bread, which was still widely consumed by Anatolians. For that reason, the geographic expansion of the potato stagnated after two successive crop failures in 1858[64] and 1859[65] and eventually potato cultivation was limited to small pockets.

63 "Fallowing and planting clovers was the most common practice for reinstitute fertility fast and fertilization exists in some regions" quoted from *"Pasinler Kazasının Esval-ı Tabiyye ve Ziraiyyesi [Erzurum Merkez Ziraat Mualimliğinin 13 Ağustos 1329 Senesine aid Raporu]," in Ticaret ve Ziraat Nezâreti Mecmuası (Istanbul: 1913).* In Europe, it was usually clover that entered the rotation. See Redcliffe N. Salaman, W. G. Burton, and J. G. Hawkes, *The History and Social Influence of the Potato* (Cambridge; New York: Cambridge University Press, 1985), 584-85. The pre-Colombian crop rotation was potatoes, lupines, quinoa, and grasses. See Mazoyer and Roudart, *A History of World Agriculture from the Neolithic Age to the Current Crisis*, 201 and 13.

64 Stevens, "Report on the Trade of Trebizond during the Year 1858."

65 "Report on the Trade of Trebizond for the Year 1859," (London: Foreign Office of the United Kingdom, 1859).

§ 4.2 Second Period of Agrarian Change: Cereals, Tobacco, and Hazelnuts (1890s-1910s)

In the late nineteenth century, three[66] emerging industries[67] triggered a series of changes to commodity chains, the nature of demand and eventually agricultural production.[68] The slightest change resulted from the emergence of a small-scale flour industry in Southeastern Black Sea region and in Istanbul. The fact that these factories required a continuous supply of wheat encouraged demand for common and hard wheats, which triggered agrarian change for other cereals – namely hard wheat, barley, and oats. In addition to industrial demand, decreasing transportation fees and governmental support promoting the cultivation of cereals between 1896 and 1903 played equally important roles. As a result, cereal production, especially that of wheat and barley, quickly increased in the Sanjaks of Amasya, Tokat, Canik and Karahisar, especially after the deflationist crisis of 1893-1896. The case of cereals was an example of extensive growth, that resulted in expansion of cultivation overall, especially that common wheat, which was richer in gluten and highly demanded by flour industry.

The second, lucrative change was initiated by the emergence of a cigarette industry not only in Ottoman territory but also in Egypt, Belgium, Tiflis, and Varna. The cigarette industry required specific types of tobacco with specific

66 The fourth industry was textiles but since textiles had a marginal effect on local agriculture it is ignored. For the development of the textile industry. See Donald Quataert, *Ottoman Manufacturing in the Age of the Industrial Revolution* (Cambridge; New York: Cambridge University Press, 1993).

67 The emerging soft industries created demand for maintenance and repair of machinery in Southeastern Black Sea region ports even by 1894. For example, the company *Margossian et Masraff Frères* imported machinery and machine parts and importantly, they provided installation services for these machines in Samsun. See Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*.

68 Agrarian change in this period coincided with what Van Zanden calls the first Green Revolution. It is safe to assume that Southeastern Black Sea region was affected by this green revolution but this requires further research. For example, see Jan Luiten van Zanden, "The First Green Revolution: The Growth of Production and Productivity in European Agriculture, 1870-1914," *The Economic History Review* 44, no. 2 (1991).

features for processing. In order to catch up to these standards, port merchants and the Régie Company tried to establish control over and standardize production and transportation as much as possible. These agents made contacts with producers and retailers, distributed credit and seeds, monitored production, and organized packing and transportation in order to decrease transaction costs. As a result, tobacco commerce and industry became a perfect example of contract farming and vertical integration. For that reason, tobacco types suitable for the cigarette industry were increasingly being produced by the turn of the century.

The third change, which was the most astonishing one, resulted from the demand for hazelnuts from the chocolate, confectionery and perfumery industries in the west – especially Belgium, Switzerland and France – in the late nineteenth century. Here, power relations between local and foreign merchants were completely unlike those of most other sectors in the empire. Although, hazelnut commerce was marginal in global agro-business, the hazelnuts of Giresun and Trabzon was one of the most important hazelnut producers in the world. Accordingly, big local merchants became leading agents in the commodity chains were involved in the international price-setting process in the new century. These big merchants who controlled the market established small-scale cracking and oil-extraction facilities as well. Consequently, hazelnut cultivation became integrated with cracking and oil-extraction, the commodity chains of which was under the control of local merchants.

4.2.1 *Emergence of the Flour Industry and Agrarian Change in Cereals*

Before the mid-1880s, traditional flour mills in Southeastern Black Sea region mainly operated to feed to local consumers; local flour was rarely exported to long-distance markets for several reasons. The first and main obstacle facing this commerce was high transportation costs as pointed out in chapter three.[69] Second, Istanbul and western markets preferred common wheat and ghirka,

69 Quataert, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, 160.

which were richer in gluten, and were mostly cultivated in Southern Russia[70] and Romania for bread makers and bakeries. On the other hand, farmers in Southeastern Black Sea region commonly cultivated hard wheat which while more resilient against droughts and pests[71] was considered lower quality[72] because of its lower concentration of gluten. Although this hard wheat was extensively consumed by locals in the form of bread – except in Trabzon Province where bread was customarily made from maize – hard wheat was also exported to long-distance markets mainly for use in manufacturing macaroni or bulgur for major ports.[73]

The local flour and wheat production started to transform in the mid-1880s for several reasons. The first was the emergence of a flour industry in Trabzon and Sivas Provinces.[74] In mid-1880s, there were only three flour factories in Trabzon Province[75] (two in Samsun[76] and another owned by the Diraoudian family in Trabzon[77]). The Hacı Ali Hafız family opened a new factory

70 For example, in November 1857, red wheat from Azov bought for mills operated by steam engines. See "Le Commerce à Trébizonde," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 2, 1892.

71 See the next chapter for pests.

72 J. Srabian, "Lettre d'Erzéroum (La Disette)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, February 15, 1894. Also in Quataert, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, 170.

73 Johansen, The Encyclopedia of Native American Economic History. Also in Quataert, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, 170.

74 Likewise, flour mills operated by steam engines started to spread during the 1890s. See Ernest Giraud, "Farines," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, June 1896.

75 Most of these factories used petroleum imported from Batumi. See "Revue Commerciale et Prix-Courants (November 22, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 22, 1890.

76 İbrahim Edhem and associates opened a factory nearby the Yeşil River in the town of Çarşamba in 1885. See OA ŞD.506.7, April 6/15, 1885. The other factory, a restored mill, was owned by Costi Grégoriades. See Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1885)*; and *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1891)*.

77 *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1885)*.

in Trabzon in the late 1880s[78] which was followed by the opening of another in Değirmendere.[79] The number of factories in Trabzon reached three in 1893. In addition, a pastry shop started operation in the city.[80] Meanwhile, in Samsun, a factory was constructed by Arslanian and Bakizâde in 1892[81] followed by the factory of Bekçizâde Ömer Efendi from Trabzon in the mid-1890s.[82] In the countryside, Şükrü Efendi from the Kırzâde family exported heavy machinery for the construction of a factory in the village of Boyalıca near Havza in 1899.[83] First fully-automatic flour factory in Samsun was constructed by the Maranian brothers in 1909.[84] There were modest improvements in other ports. For example, in Tirebolu there were eight flour mills.[85] Meanwhile only one flour mill was constructed in Giresun that of the Constantinidis family in early 1890s. It was sold to the Mavrides family sometime after the death of Kaptan Yorgi Constantinidi who had also been the mayor of Giresun, in 1906.[86]

The case of Sivas Province was more remarkable.[87] Two flour factories, the Rıfaat Pasha and Yeni Fabrika[88] opened in 1886 and another was added in

78 *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1889)* (Istanbul: The Annuaire Oriental and Printing Company Limited, 1889).

79 Gasselin, "Rapport Commercial de Trébizonde (1893)."

80 ibid.

81 OA ŞD.2596.07, May 29, 1892.

82 OA, ŞD 1827.31. For the content of these document see the chapter three.

83 OA, İ.RSM 9.53, April 29, 1899. For further information on the case, see ŞD. 1805.4, February 28, 1899.

84 Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1909)*.

85 Cuinet, "Vilayet de Trébizonde Statistique Descriptive."

86 Balcı, *Giresun Rumları ve Gayrimüslim bir Belediye Başkanı: Kaptan Yorgi Konstantinidi Paşa*.

87 The French consular agent warned French merchants that foreign entrepreneurs willing to invest in flour production in Samsun had not been able to enter the market due to stiff competition from local mills functioning in the vicinity of the city. See Contanze, "Rapport Commercial de Samsoun (1901)."

88 There were two factories Rıfaat Paşa, whose director was Niyazi Bey and Yeni Fabrika, whose director was Sarkis Bıçakçıyan. See Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1889)*. Both factories belonged to Halil Rıfaat Paşa, who served as Sadrazam, minister of Interior and most importantly as governor of Sivas. See the chapter three for his other works as governor of Sivas. Niyazi Bey was his relative and probably

1894.[89] Within a decade, by 1904, the number of flour factories operating with steam engines reached eighteen in the town of Sivas[90] and there was one other in a nearby village.[91] Meanwhile, there was already one mill in Karahisar,[92] and one in Aziziye[93] and the number of mills increased from two to five in Tokat in the 1890s and the early 1900s.[94] Amasya remarkably claimed two steam-powered factories and forty mills by new century.[95] In sum, there were at least

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the same man who opened a cloth factory in Sivas, see "Revue Commerciale et Prix-Courants (June 19, 1907)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 19, 1907; and "Revue Commerciale et Prix-Courants (September 28, 1907)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 28, 1907.

89 The owners of these factories were Halil Rıfaat Paşa, Adjemian, and Afionian. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1894)* (Istanbul: The Annuaire Oriental and Printing Company Limited, 1894).

90 Afionian Cie, Bian Efendi, Burhan Efendi ve şürekası, and Chanian et Cie, Derbabian, Hamamdjioglou, Kurkdjian and Ghazarian et Cie (who had been Chanian and Odabachian Cie in 1904). See *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*.

91 OA ŞD 2584.13, May 16, 1891". The location of this mill was pretty close to Rifaat Paşa factory.

92 Ohannes Amasiali's factory already existed in 1894. See Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1894)*; and *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*.

93 OA BEO 251.18801 and İ.TNF 2.3, May 15, 1893.

94 There had been only two in the 1890s. See Cuinet, "Vilayet de Sivas Statisique Descriptive," 306. The factories in the early 1900s were Afionian and Katranian, Assasian and Parseghian, Bodos Kurkdji, Mercuroglou and Daniel Tchamkertenian. See Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*.

95 *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*. See also *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1914)* (Istanbul: The Annuaire Oriental and Printing Company Limited, 1914). An example of such mills operating with water-power in Amasya in June 27, 1902, the brothers Artin and Boghos Torkiyan applied for tax-exemption for their flour mill under construction in the Sanjak of Amasya, in the village of Hacıbayram in the current-day quarter of Suluova. "Amasya Sancağına merbud Çeltik nam mahalde Hacıbayram kariyesinde su ile işlemek üzere tesis ve inşa ettikleri dakik fabrikası için Avrupadan celb olacak âlât ve edâvatın […] Torkiyan Artin ve Bogos biraderler" quoted from OA BEO 3477.260737, June, 29, 1902 and "Merzifonlu Durekyan/Deverkyan/Durkiyan (?) Artin ve Boghos veled-i Amin Asudur'un (?) mutasarıf oldukları araziden bilâ-firâz su ile devran etmek üzere tavlen 35 arzen 12 metre mahalinde inşasını istida ettikleri dakik fabrikası için" quoted from OA ŞD 1808.02, February 6, 1901.

fifty-nine small flour mills operating in Southeastern Black Sea region by 1909.[96]

Figure 4.1 Factory of Rıfaat Pasha

SOURCE Ahmet Turan Alkan and Halûk Çagdaş, *Sivas'in Resmi*

Second factor behind agrarian change in cereals was the amelioration of transportation infrastructure. Although, the road system connecting the villages of Sivas was enhanced in the mid-1880s,[97] the most important development in the hinterland was the extension of the railway to Ankara, which dramatically

96 The list includes; Ctenidès (Polathâne), Constantinides (Giresun), Güdükyan (Samsun), Hüsnü Kansızzâde (Samsun), Afyonyan (Sivas), Biyan (Sivas), Şahinyan (Sivas), Şirinyan (Sivas), Derbabyan (Sivas), Hamamcızâde (Sivas), Odabaşyan (Sivas), Hacı İsmail Hamamcızâde (Trabzon) and Diradouryan (Trabzon), see *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1909)*.

97 Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1886," (London: Foreign Office of the United Kingdom, 1886).

boosted local agriculture in the 1890s.[98] With prices dropping 30-80% for cereals transported by railway,[99] the competitiveness of inland Anatolian wheat increased extensively.[100] Along the coasts, as discussed in the first chapter, the integration of steam shipping and railways and the introduction of a new generation of steamers resulted in considerably decreased shipping fees by the mid-1890s.

Third factor was the central government's policy of promoting especially the cultivation of common wheat in Anatolia. In the late 1890s, political decision-makers initiated several policies[101] to increase the total volume and quality of cereal production in Anatolia. First step was to abolish internal taxes.[102] Internal taxes for land transportation had already been abolished by 1874.[103]

98 Quataert, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, 162-63.

99 This estimates is from report on Ankara by Aslanian, official agriculturist of the Province, "Le Vilayet d'Ankara (April 18, 1896)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 18, 1896. Wrongly quoted from Quateart as "cereals" and an incorrect date is given twice, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, 163. Some of the decrease in prices resulted from cheap a transportation policy for cereals. For example, fees for transporting wheat from Anatolia were reduced by the Railway Company twice by 25% in 1894. See "Revue Commerciale et Prix-Courants (October 27, 1906)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 27, 1906.

100 See *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, 172. However, construction of railways did not solve all the transportation problems, see for example ibid., 175.

101 In addition, importation of foreign wheat was limited at least until 1896. However, since the main reason for the problem was the type and cost of wheat, policies promoting Anatolian wheat were remained ineffective and abandoned in 1901, see ibid., 170.

102 While most foreign merchants enjoying capitulations paid 3% ad volerem for cereal trade. See Pamuk, *Osmanlı Ekonomisinde Bağımlılık ve Büyüme*. The Russian merchants paid 1.53-1.68 piaster per kilogram for wheat, the rate of which varied according to port of origin. See R. Cesar Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1883)* (Istanbul: The Annuaire Oriental and Printing Company Limited, 1883), 148.

103 Mehmet Genç, "Osmanlı Devlet'inde İç Gümrük Rejimi," in *Tanzimat'tan Cumhuriyet'e Türkiye Ansiklopedisi*, ed. Vedat Çakmak and Murat Belge (Istanbul: İletişim Yayınları, 1985), 790. See also "L'Importation des Blés," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 19, 1887.

Internal taxes for domestic maritime transport of wheat and flour were abolished in 1893,[104] which was followed by the diminution of such maritime internal customs to 2% for other cereals in 1902.[105] These reduced taxes rendered local producers more competitive in local markets. In addition, as Donald Quateart emphasizes government played a role in the transformation of Anatolian agriculture through more direct polies like the distribution of tools and seeds.[106] However, the quantity of seeds was so low that it was barely enough to transform the agriculture of cereals in even a small *kaza*. Most of these seeds were delivered to model farms instead of to farmers.[107] Likewise, the tools and plows mentioned in Quataert's book were sent to model farms rather than to farmers.[108] In fact, the first serious attempt for transformation of wheat in Southeastern Black Sea region[109] was made in 1906, through the distribution

104 Quataert, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, 169.

105 For the tariff in detail, see "Le Droit de Douane Intérieur," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 2, 1902. The regime of internal taxes was completely abandoned only in 1910, see Genç, "Osmanlı Devlet'inde İç Gümrük Rejimi," 790.

106 The government distributed wheat and barley in Karahisar, Bursa. See "Nouvelles des Provinces (June 3, 1899)." Some grain from Emirdağ was distributed to cultivators. See "Les Bons Blés de Semence," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 3, 1906

107 For example, 124 cases in 1893, 500 *kile*s of barley in 1894, and another *1,000 kile*s of cereal. See Quataert, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, 164-67. My guess is that these seeds were distributed to model farms, agricultural schools, and such enterprises for experimentation.

108 See ibid., 150. The original document states "usul-ı cedide-i ziraatin tatbikatı zımnında Samsun numune tarlasıyla, Edirne'ye gönderilmek üzere lüzum görülen kalbur makineleriyle, pulluk ve tırmık gibi bazı alet ve edevat için sarfı iktiza eden 13,000 kuruşun" quoted from OA, İ.OM 5.37, March 14, 1899.

109 The government distributed maize seeds imported from America in 1905 and 1907 as well; however, there is no evidence that this maize had a major effect on local production, see Kemalletin Kuzucu, "Osmanlı Döneminde Karadeniz Bölgesinde Mısır Tarımı ve Islah Çalışmaları," in *Karadeniz Tarihi Sempozyumu (25-26 Mayıs 2005)*, ed. Kenan İnan, et al. (Trabzon: Karadeniz Teknik Üniversitesi Matbaası, c2005), 780-81.

of common wheat from Braila, to the farmers of Samsun, Sinop, Fatsa, and Kastamonu. It was too little to have had any major effect by 1908.[110]

Unlike in the mid-nineteenth century, wheat, barley, and flour permanently integrated into long-distance trade. By the turn of the new century, local wheat production increased tremendously in the zone centered on Amasya, which will be discussed in detail in chapter six. While common wheat cultivation had spread throughout the Southeastern Black Sea region,[111] high quality hard wheat was also being planted in increasing quantity.[112] As a result, Southeast Black Sea region became one of the main suppliers of common wheat and flour for Istanbul and other major long-distance ports.[113] As expected, the emergence of a flour industry in Sivas and Trabzon Provinces also prompted flour trade in Samsun and Ankara.[114]

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110 Wheat from Emirdağ was considered as the bests among all Anatolian types and was famous in Istanbul. See "Les Blés Sélectionnés," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 7, 1905. The commission decided to distribute soft reds. Samples of common and hard wheat from Emirdağ (Kütahya), reds from Rumelia, and hard wheat of Yozgat were sent to Samsun, Kastamonu, Trabzon, Bursa, Kütahya, Eskişehir, Karahisar and different parts of Konya failed. Crop yields the following year were not satisfying, so the commission preferred to import 130,000 kilograms of Braila. See "Les Bons Blés de Semence."

111 Quataert, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, 172.

112 The sales of wheat in Istanbul increased in the early 1890s. See for example, G. Genna, "Rapport Commercial de Kérassunde et Ordou (1894)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1894); and Henri de Contanze, "Rapport sur les Produits d'Importation et d'Exportation de la Rade de Samsoun (1903)," (Agence Consulaire de Samsoun, AMAE, CADN, 1903).

113 Quataert, *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908*, 172.

114 In port of Trabzon and its hinterland, locally-produced flour was mostly consumed locally, see E. Gasselin, "Rapport Commercial de Trébizonde (1890)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1890). The production of flour for long-distance markets existed mainly in Samsun and its hinterland. The list of flour merchants in Samsun in early twentieth century: Aprahamian, Arkelian, Arzoglou, Djiamdjian, Erkelekian, Euksuzian, Ezeghielian, Georgopouloi Ghazarian, A. Gulbenkian, G. Hussussian, Karakachian, H. Langa, S. Lazaroglou, Ignace J. Marcopoli, Mardighian/Mardikian, Peniryemezian, Piranian, Protopapa, Rüştü, Said, Salian, Tahir, Tchekemian and Agop Tchettchettian. See Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*.

4.2.2 *Cigarette Industry and Agrarian Change in Tobacco*

The transformation of tobacco cultivation in the late nineteenth century was triggered by the emergence of a cigarette industry.[115] Cigarette production was a mechanized and required specific types of tobacco with specific qualitative traits. The secret of oriental cigarettes was its careful blend of specific types[116] and the preservation of their natural aroma as much as possible. As an industry working with determined quality standards, the cigarette industry required specific types of leaves with specific features – in due time of course. This industry enforced its quality standards on tobacco merchants and cultivators by paying handsomely for leaves that best fit their standards. For that reason, these detailed quality standards not only meant new opportunities but also potentially higher transaction costs resulting from factors such as bad packing, delays in delivery, and most importantly inadequate quality. In fact, the costs of monitoring production, and storage became so important that the price paid to farmers the leaves was only ~20% of the total expenditure. (See table 4.4) Higher profits were then tied to decreasing transaction costs monitoring, and ameliorating quality standards rather than producing tobacco cheaper. Therefore, unlike the agricultural change in 1860s which was driven by decreases in transportation costs and high demand, the change in 1890 was triggered by the cigarette industry and transaction costs. Subsequently, with increasing desire for standardization from the emerging cigarette industry, Régie and big local merchants increasingly invested in establishing full control over the commodity chain in minimizing transaction costs, and in imposing quality and production standards on farmers. As a result, at the turn of the

115 Tobacco processing and the cigarette industry are not the same. Government-controlled workshops (*duhan kârhânesi*) in Istanbul, Salonica, Yanya and Patras were processing the tobacco in the late eighteenth century. See Rhoads Murphey, "Tobacco Cultivation in Northern Syria and Conditions of its Marketing and Distribution in the Late Eighteenth Century," *Turcica* 16 (1985): 205-26. However, a cigarette industry emerged only in the late nineteenth century.

116 For the requirements of the Egyptian cigarette industry, see Relli Shechter, *Smoking, Culture and Economy in the Middle East the Egyptian Tobacco Market 1850-2000* (London; New York: I.B. Tauris, 2006), 40.

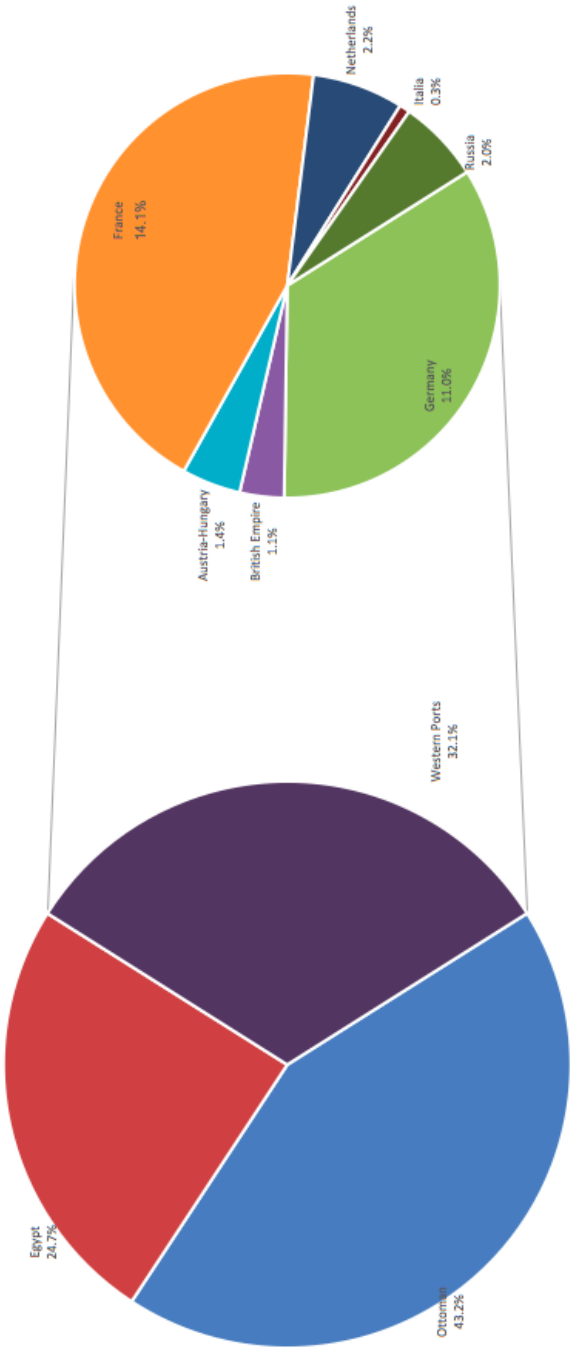
century changes to local tobacco cultivation and change were mainly determined in line with the needs of the cigarette industry.

Table 4.4 Operational Costs and Benefits of Local Régie Branches

	1900-1901		1901-1902	
	Samsun	Trabzon	Samsun	Trabzon
Delivery	10.12%	8.73%	10.59%	8.96%
Monitoring	21.98%	12.89%	19.16%	12.54%
Salary	18.39%	7.85%	15.91%	7.42%
Manufacturing Fee	4.00%	6.94%	3.84%	6.67%
Rent	3.64%	0.97%	2.89%	1.16%
Displacement	0.70%	0.45%	0.47%	0.58%
Other Fees	2.76%	1.44%	2.43%	1.45%
Bad Debts	-0.18%	-0.15%	0.01%	-0.15%
Expenses for Mortgaging	0.08%	0.00%	0.11%	0.01%
Procedures Fees	0.00%	0.00%	0.00%	0.00%
Procedures	1.92%	0.08%	1.59%	0.26%
Recycling	0.07%	-0.41%	0.25%	-0.42%
Stored Tobacco	-0.37%	0.87%	-0.18%	0.91%
Other Unexpected Fees	0.74%	0.04%	0.86%	0.23%
Cultivating Fees	6.13%	1.53%	5.48%	1.57%
Secret Monitoring	2.25%	3.68%	1.83%	3.10%
Price of the Leaves	19.97%	19.90%	20.84%	20.53%
Benefits	7.79%	35.19%	13.92%	35.18%

SOURCE Nazarets, Régie Co-Interessée des Tabacs de l'Empire Ottoman: Statistique et Exploitation Comparative des XVIIe and XVIIIe Exercices

In the early 1880s, before the emergence of the cigarette industry, the tobacco market in Trabzon Province was controlled by two types of merchants. First were petty investors settled in Samsun who dealt mainly with just tobacco commerce (like Hekimian, Enfiadjian, Missirian, Yelkencizâde, and Arzoğlu). The second were the wealthiest families of Trabzon Province (like the Boyadjian, Nourian, Nemlizâde, and Ofluzâde) who dealt with commerce in many profitable commodities including tobacco. These agents were all port merchants interested mostly in simple brokering of tobacco to long-distance markets.



Graph 4.2 Tobacco Exports from Samsun in 1892

SOURCE "Rapport Commercial de Samsoun (1892)," (AMAE, CADN)

The emergence of the Egyptian cigarette industry and Egyptian consortium[117] definitively triggered the transformation of the marketing and then the production of tobacco. The Egyptian cigarette industry was one of the oldest. While mechanized production of cigarettes was widespread in the United States of America and the United Kingdom by the mid-1880s,[118] the first automatic cigarette machine imported to Egypt was in 1884.[119] However, Egypt did not cultivate enough tobacco to supply its industry and relied mostly on importation from the Levant including Southeastern Black Sea region. Thanks to Egyptian demand, local tobacco increasingly met the global cigarette industry's standards and was exported not only to Egypt but also to factories in Belgium, Georgia, and Thrace. Local industry quickly followed the global trend. The Régie established a factory for processing tobacco leaves in Samsun sometime between 1884 and 1887[120] and another in Trabzon by 1895.[121] However, the local tobacco-cutting and processing industries were controlled

117 What is labeled the Egyptian consortium in this dissertation is the group of port merchants dealing with the exportation of tobacco to Egypt from local ports. It has nothing to do with the nation or nationality.

118 Shechter, *Smoking, Culture and Economy in the Middle East the Egyptian Tobacco Market 1850-2000*, 87.

119 According to its description, the machine was invented by an American in January 1894. It was able to produce 180 cigarettes in one minute at a cost of 1 piaster per 1,000 cigarettes. Compare with 24-26 piasters paid per 1,000 cigarettes for labor. According to the description in the journal, this was most probably the cigarette rolling machine invented by William Cyrus Brigg. See "Une Machine à Cigarette," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 17, 1894.

120 First tobacco processing factories were established in Istanbul and Izmir in 1884, followed by smaller facilities in Aleppo, Samsun, Salonika, Adana, and Damascus. See Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 49. This tobacco-cutting factory employed 500 workers and employed 40 horse-power steam-engines that cut 6,000 kilograms of leaves a day in 1905-1906. Moreover, it acquired storage of up to 4,000 tons.

121 In its first year, this factory bought roughly 375 tons (7,360 cwt.) of leaves and sold them for £56 thousand (roughly 51 thousand Ottoman Liras) with its marketing partner Nemlizâdes. On its opening, see Cillière, "Rapport Commercial de Trébizonde (1895)." For other details, see Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1895," (London: Foreign Office of the United Kingdom, 1895).

mainly by private sector. Even in 1905-1906, Régie factories represented only one fifth and roughly half of tobacco processing in Samsun and Trabzon, respectively.[122] The remaining ~80% was processed by the private sector.[123] Contrary to tobacco-cutting, cigarette production remained under the Régie's monopoly at least until 1908.[124] For that reason, local cigarette production became important only in the 1910s.[125]

122 For Samsun, assuming that 6,000 kilograms was cut per day, the Régie exported 1,575 tons in 22,500 cases in 1906. The same year, the port exported 9,063 tons of leaves and the Sanjak of Canik produced 15,000 tons of tobacco in 1906. See Contanze, "Rapport Commercial de Samsoun (1905-1906)." Therefore, The remaining 7,500 tons were cut in private workshops.

123 For example, in 1901, the factory of the Régie in Trabzon processed roughly 1,280 tons (25,250 cwt.) of leaves, all of which came from Trabzon and especially from Polathâne. Meanwhile, Trabzon produced 365 tons (7,200 cwt.) and Polathâne roughly 2,000 tons (39,400 cwt.). Thus, the Régie Company's production roughly half of the production, the total estimated production in 1901. See Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1901," (London: Foreign Office of the United Kingdom, 1901).

124 The Régie obtained a sanction to produce cigarettes with the foundation of the Turkish Cigarette Company in 1893. See "Turkish Cigarette Company," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 27, 1893. However, local private cigarette industry did not flourish until 1911, when this monopoly was abolished because of the Balkan Wars. One private investor in cigarettes was Gary Tobacco Company, which 300 child workers in 1912. See Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 53-54.

125 For example; while the Régie produced 60,000 kilograms of cigarettes in 1897, its annual production reached to total 1 million kilograms only in 1914. See *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 53.

Table 4.5 Number of Workers at the Régie Company Factory in Samsun

Year	Women	Men	Total
1887-1897			500
1905-1906			500
1914	162	144	306
1927			200-500

SOURCE "Rapport Commercial de Samsoun (1892)," (AMAE, CADN) and Filiz Dığıroğlu, *Memalik-ı Osmaniye Duhanları Müşterekü'l Menfaa Reji Şirketi: Trabzon Reji İdaresi*[126]

In the private sector, the arrival of the Egyptian consortium – the Mavrides, Pappadapoulos, Vafiadis Triandafilides, and Mathossians families – sparked changes to the commodity chains, and then to agricultural production.[127] This consortium was composed by families already integrated into Egyptian cigarette industry. Unlike local port merchants dealing only with the intermediation between the hinterland and other ports, these merchants tried to integrate vertically – from farms to factories. To minimize risks and transaction costs, this consortium's main strategy was to maximize profits by reducing transaction costs by investing vertically in the tobacco market.[128] The Mavrides family's transactions would provide example to understand how it worked.[129] In the financial sector, the Mavrides were a banking family that also operated on behalf of the Ottoman Bank, the French Agricole Insurance Company, and

126 For the number of workers, except in 1905-1906. See ibid. For other information, see Contanze, "Rapport Commercial de Samsoun (1905-1906)."

127 Before the arrival of the Egyptian consortium, there already had been local merchants like Agop Ghudukian from Samsun, who were exporting tobacco to Egypt and had already established a branch in Alexandria, see Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1885)*.

128 This commercial strategy existed in the Levant. It was common among the Greek merchants of the Chiot network. For the Greek networks on the Black Sea, see Harlaftis, *A History of Greek-Owned Shipping: The Making of an International Tramp Fleet*, 55-56.

129 The list of the occupations of this family was not limited to tobacco. C. Mavridis in Akçaabad also dealt with the imports of textiles, leather and skins. They were also involved in the petroleum business in Rize. See Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*.

Assurence Foncière in different parts of Trabzon Province. In shipping, the members of Mavrides family operated as agents for Courdgi Steamship Company in Polathâne and Giresun, and also financed the operations of the Courdgi Steamship Company along with other Greek families in the consortium. At the production level, the Mavrides family had a family member in the main tobacco production sides – in Polathâne, Bafra and Samsun. Moreover, Kyriako Mavrides was the agent of the Régie in Karahisar.[130] At other and of the commodity chain, this family possessed factories in Alexandria[131] and Cairo.[132] As argued in the previous chapter, contrary to what Ottoman historiography suggests, most of these prominent local merchant families entered these institutions and gained remarkable political power even before the 1908 Revolution but this exceeds the scope of this dissertation and requires further investigation. To sum up, the Mavrides family established control over production, by distributing credit to tobacco farmers in Canik, Bafra and Polathâne, and even Karahisar. The harvested tobacco was transported mostly by Courdgi steamers to Mavrides cigarette factories in Egypt and all operations were financed by the Mytilene and Ottoman Banks.

130 For the financing of the local Greek commercial network, see Contanze, "Rapport Commercial de Samsoun (1899)."

131 For the factory, see Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1914)*, p.1705. This factory was sold after the Great War to British American Tobacco. See Shechter, *Smoking, Culture and Economy in the Middle East the Egyptian Tobacco Market 1850-2000*, 97.

132 Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1914).*

This marketing strategies[133] was soon imitated by local port merchant families, which along with the Régie increasingly invested vertically,[134] the first step was that some merchant families opened branches in the production sides. For example, while the Arzoğlu,[135] Değirmencioğlu and Ofluzâde families opened branches on Bafra, the Boyadjian, Enfiyedjioglou, Haralambidis, Metaxas, Nemlizâde and Nourian families opened them in Akçaabad.[136] In addition, since the main issues were to reduce transaction costs and ameliorate quality, they built storage facilities[137] and arranged for proper transportation of the leaves. Above all, the local merchants and the Régie Company tried to establish control over the production and producers by providing credit and

133 Mavridis was not the only case. The Papadopoulos family was active in Bafra and Samsun even in 1885 and they were agents of the Lloyd Steamship Company, Austro-Hungarian post office and the embassy of Austro-Hungary in Giresun. As another example, the Triandafilidès family was present both in Bafra and Trabzon by 1885. One member of this family was an officer in Régie in Istanbul as well. They were agents of the Agency of Assurance Company of La Foncière in Trabzon by 1894 also of Courdgi Shipping Co, in Trabzon.

134 Some other families preferred to make direct contact with retailers. For example, Muslim families had a tendency to open branches only in the west, especially Istanbul and Western Europe, and had no interest in other Black Sea ports. For example, four members of Nemlizâde family – Hasbi, Hulusi, Tahsin Paşa and Zihni Bey – were in Istanbul by 1904. See Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*. The family managed to open an office in Brussels. See Cora, "A Muslim Great Merchant [Tüccar] Family in the Late Ottoman Empire: A Case Study of the Nemlizades, 1860-1930 " 13. Nemlizâde Cemal eventually moved to Berlin in 1916. See OA MV.206.28, February 17, 1917. On the other hand, Armenian families in Samsun profited from the Armenian network in Tiflis and other foreign Black Sea ports. For example, Armen and Michael Missirian established an office in Brussels ("Missirian S.A. | Leaf Tobacco," www.missirian.gr/history.html.) and had a branch in Plovdiv (Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*.). It operated in Tiflis through the headquarters of the commercial house moved to Istanbul.

135 *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1885)*.

136 ibid.

137 The Régie Company possessed 70,000-80,000 bales of tobacco in 1902. See Rambert, *Notes et Impressions de Turquie: l'Empire Ottoman sous Abdul-Hamid*, 142. In rural areas, the Régie Company was obliged to construct nearby storage for every village producing more than 100 *okka*s. See Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 36.

setting wholesale prices.[138] First strategy was to distribute credit over future harvests to control production. [139] It was expected that farmers repay creditors in harvested tobacco of the required quality. The second strategy was to handsomely price the tobacco leaves that best met the cigarette industry's standards,[140] encouraging the farmers to produce more of the desired types. Third, the Régie Company tried to oversee the production by *kolcu*s (gendarmerie).[141] If price was the carrot, prohibition was the stick. The Régie tried eliminate the lowest quality tobacco but as could be expected, these low qualities were cultivated secretly and smuggled by merchants.[142] By the 1890s, while the

138 To compare see Joan Thirsk's article on the distribution of a new crop – tobacco – in seventeenth-century England. This case is interesting because it is a well-documented case of the distribution of new crops which was not subsided by government but in fact prohibited. She argues that merchants did not own farms in general but the merchants tried to establish control over production by making contracts, distributing credit and keeping cultivation and drying methods a secret. See Joan Thirsk, "New Crops and Their Diffusion: Tobacco-growing in Seventeenth-century England," in *the Rural Economy of England*, ed. Joan Thirsk (London: Hambledon Continuum, 2003), 259-87.

139 The distribution of credit for future tobacco production was common in the *Sancak* of Canik. See "The peasant growing tobacco was at the mercy of the merchants of our city and the great proprietors of the distinct, to whom he borrowed money on the crops" quoted from Doulcet, "Rapport Commercial de Samsoun (1890)." Although the Régie and merchants sought to control production and decrease the prices, there were differences between merchants and the Régie. While merchants allocated liquidity to farmers at interest rates of 20-25% for future harvests to be sold to foreign countries. For interest rates, see Rambert, *Notes et Impressions de Turquie: l'Empire Ottoman sous Abdul-Hamid*, 141. The Régie Company allocated credit with no interest for up to half of the expected future price. See Doulcet, "Rapport Commercial de Samsoun (1890)." Also see Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 35-36.

140 *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 73-77.

141 The Régie experts visited the farms from time to time. Moreover, Mustafa Batman argues that Régie's *kolcu*s rarely chased smugglers without the governmental gendarmerie, instead they controlled shops and farms. For that reason, he assumes that the *kolcu*s helped oversee production. See Mustafa Batman, *Tobacco Smuggling in the Black Sea Region of the Ottoman Empire, 1883-1914* (Istanbul: Libra Kitapçılık ve Yayıncılık, 2016), 110-14.

142 See Chapter five.

Régie's control was limited to the surroundings of the port of Samsun; private merchants had control over Bafra and Alaçam.[143]

In the 1840s, the local tobacco was labelled as hardly matched to western standards. After the American Civil War, only the best quality tobacco was marketable over long distance market but the quality of local leaves had ameliorated so much by the turn of the century that[144] even second and third quality product was marketable in global markets.[145] The effects of this qualitative change throughout the century can be traced to a change in the geographic distribution of different sub-species.[146] According to western standards, the best quality tobacco was *Karamaden.* The leaves were longer but rather thin with fine edges and its perfume was the best.[147] Its quality was mediocre in high mountains but superior in the foothills. Starting in the 1860s, *Karamaden* cultivation was concentrated around Samsun and Çarşamba. This type was considered the highest quality tobacco by Ottoman and Russian consumers, but it was labelled as second quality in Austro-Hungary and tended to be used

143 "The Régie was the providence of the unfortunate farmer, who no longer needs to go anywhere else at least as far as the *kaza* of Samsun is concerned, because the situation for the *kaza* of Bafra and Alaçam has not changed much" quoted from Doulcet, "Rapport Commercial de Samsoun (1890)." Polathâne seems to be shared by both merchants and the Régie.

144 For improvement in quality in Samsun, see Henri de Contanze, "Rapport Commercial de Samsoun (1902)," (Agence Consulaire de Samsoun, AMAE, CADN, 1902). For Trabzon, see Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1903," (London: Foreign Office of the United Kingdom, 1903).

145 "The first quality usually goes to America, Egypt and the United Kingdom: the second to Austro-Hungary, Germany and Belgium; and the third to the Régie Company for home consumption" quoted from "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909," (London: Foreign Office of the United Kingdom, 1909).

146 French consular agents also noted the existence of "pour le Tiflis" and "pour le Taganrok" types (*Tiflislik* and *Taganrokluk* in Turkish?) in the mid-1860s but such categories may have been brands. See *Lettre de l'Administration de Tabacs à Paris à Consulat à Trébizonde* (December 22, 1864), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN.

147 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

in blends.[148] This type of tobacco was highly demanded by the Egyptian cigarette industry once that industry emerged.

Other types of tobacco cultivated around Samsun were *Canik*, *Karasiyel/Gümüşhacıköy, Evkaf*, and *Dere*.[149] Cultivation of *Canik* in plains produced inferior quality product, and from the mountains it was only mediocre. *Canik* was geographically concentrated around Samsun port, *Karasiyel/Gümüşhacıköy* was mainly cultivated south of Canik and Amasya and was of mediocre quality. *Evkaf* was mediocre to inferior and *Dere* from the foothills was superior. From the south side of the mountains, it was inferior and from the north side it was mediocre.[150] The leaves of tobacco planted in Bafra known as *Bafra tütünü* were bigger and hairy with a higher concentration of nicotine than other local subspecies.[151] Bafra tobacco had three subtypes called *Püçak*, *Marsilya*, and *Arap*. *Marsilya*, was the most lucrative thanks to French demand. *Arab harcı* or simply *Arap* was dark reddish in color,[152] was considered the lowest quality tobacco from Bafra, and was mainly cultivated in Çarşamba for consumption in Egypt as a chewing tobacco.[153] The lowest quality tobacco produced in Canik district was the *Harman* of Alaçam which lacked the distinguishing feature of oriental tobacco its perfume. The leaves were thin and used only for blends.[154] Platana or *Akçaabad* was a blackish tobacco usually used in blends with superior quality tobacco.[155]

148 Biliotti, "Report by Consul Biliotti on the Town and Port of Samsoon, and on Circassian Colony in the District (1884)."

149 There have been changes to these names. For example, Kara Maden is now called Maden, or Karasiyel is now called Gümüşhacıköy. See Metin Turan and Abdülrahim T. Göksoy, "Ünite 10," in *Tarım Bitkileri*, ed. Süleyman Eripek (Ankara: Anadolu Üniversitesi Açıköğretim Fakültesi, 1995), 237.

150 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

151 The nicotine percentage in tobacco cultivated in Canik varied from between 2.6-3%, in the 1920s, while that of was Izmir 2-2.5%, Trakya 3.5-4% and Macedonia 3.5-4.5% in 1920s. See Salih Zeki Ekinci, *Türkiye'de Tütün, Ziraat, San'at ve Ticareti* (Istanbul: Cumhuriyet Matbaası, 1928), 28.

152 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

153 Biliotti, "Report by Consul Biliotti on the Town and Port of Samsoon, and on Circassian Colony in the District (1884)."

154 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

155 Fornier, "Rapport Commercial de Trébizonde (1905-1906)."

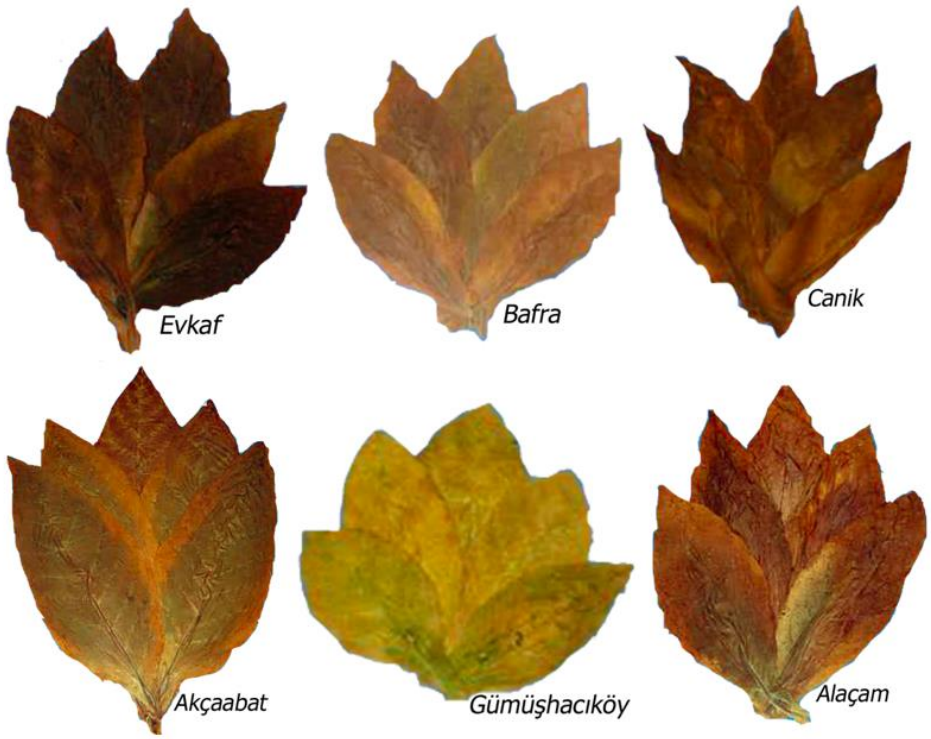


Figure 4.2 Tobacco Types

SOURCE http://www.turkishtobacco.net/#!blank/e74l3

Standardization had several consequences. First prices increased considerably.[156] Second, prominent investors eventually entered the local market for example, the American Tobacco Company entered the market in 1902,[157] and opened a local branch in 1904[158] to supply the American cigarette industry.[159]

156 See Chapter five.

157 Contanze, "Rapport Commercial de Samsoun (1902)."

158 Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*.

159 In 1937, an ordinary American cigarette contained roughly 15% Levantine types of tobacco originating from Macedonia, Latakia or Samsun. See C.F. Bailey and A.W. Petre, "The Modern Cigarette Industry," *Industrial & Engineering Chemistry Research* 29 (1937): 11-18.

Finally, as pointed out above, local merchants widened their network and established branches especially Belgium and Germany.

4.2.3 *Speculative Market for Hazelnuts*

The most astonishing developments among all crops in the late nineteenth century were those of hazelnuts. After the discovery of uses for that nut in the perfumery, confectionary and especially in the chocolate industries in the late nineteenth century, hazelnuts were increasingly exported to the western world.[160] The hazel tree grows naturally in few places in the world, one of which is Trabzon Province. Although, the use of hazelnuts for sweets and chocolate was not new – the history of chocolate with hazelnut, *gianduja,* dates back to the 1860s in Turin,[161] – it was mostly consumed as exotic appetizer in the western world. The luck of the fruit turned with developments in confectionery industries. First chocolate in tablet from was produced as early as 1836,[162] but chocolate became a consumption good for the masses only after the injection of milk into the chocolate was originated in the 1890s.[163] In addition, demand for hazelnuts increased because of new developments in confections and perfumery. A global boom in demand resulted from these industries triggering a rush in hazelnut plantations.[164]

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160 Genna, "Rapport Commercial de Kérassunde et Ordou (1895)."

161 Gianduja of Turin was first chocolate made with hazelnuts. After limits on the importation of luxury goods, including cocoa, in 1861, chocolate makers added hazelnut, grown in Piedmont, to compensate for the lost cacao. Caffarel invented gianduja in 1861, an ingot-shaped chocolate with a smooth mix of finely-ground hazelnuts, walnuts and almonds, as well as sugar and chocolate. See Nathalie Bailleux and Jeanne Bourin, *The Book of Chocolate* (Paris; New York: Flammarion, 1996), 137; and Katherine Khodorowsky, *The Little Book of Chocolate* (Paris; London: Flammarion; Thames & Hudson, 2001).

162 Saadet Özen, *Çukulata: Çikolatanin Yerli Tarihi* (Istanbul: Yapı Kredi Yayınları, 2014), 63.

163 See ibid., 65. A local chocolate industry was not established before 1908. Although Nestlé entered had possessed a factory in Ottoman Empire since 1875 (ibid., 123.), it did not produce chocolate at least until 1905 (ibid., 76.).

164 "Bu mahsulün kâffesi ecnebi memleketlerinde en ziyade iç halinde olarak çikolata, şekerleme ve pasta imalatında ve bazı memleketlerde de bundan istihsal olunan zeyt-i ressamlar tarafından istimal edilmektedir. Sanayide tatlı badem yerine kaim olup kıymeti tedricen ve sarfiyatı mütemadiyen artmakta olduğundan son zamanlarda Ordu, Ünye, Fatsa, Samsun, Lazistan ve

The fact that hazelnuts grew naturally in few places in the world gave the merchants of Trabzon Province bargaining power in the market. Before demand boomed, hazelnuts grown in Giresun were mainly shipped to Istanbul and Russian and French ports under the control of trade brokers in Istanbul and Marseille.[165] Although, merchants dealing in hazelnuts bought machinery to crack hazelnuts, and made overseas connections, no group of merchants specialized only in hazelnut commerce emerged as did for tobacco. Şirket-i İttifakiyye of Giresun, for example, was founded by Mustafa and Kaşif in 1871 and dealt not only in hazelnuts but also in the exportation of maize and haricot and the importation of coffee, sugar, and textiles.[166] The Hoschstrasser Company settled in Trabzon and Giresun and was the only foreign firm persevere from the time of the Crimean War until World War II. It also dealt with hazelnut commerce along with a long list of other goods.

However, as discussed in detail in the chapter six, the prominent local merchants expanded their control vertically over the value chains as early as the 1890s. They first grasped control over producers and eliminated petty merchants through speculation in 1897-1902. Consequently, by 1903, prominent local merchants had become the price-setters in international markets, as well.[167] In the new century, they extended their trade networks and managed to make direct contacts in France, Egypt, Italy, Russia, Austro-Hungary, and Belgium.[168] The best example of such merchants is the Pisani family, which

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hatta Sinop ve İnebolu cihetlerinde mücededen gaib-i vasi' bahçeler tesis edilmiştir" quoted from Antreasyan, *Fındık Ziraati ve Ticareti* 6.

165 Prior to the mid-1890s, hazelnuts were mainly exported to Marseille, where they were redistributed to other western ports. See Genna, "Rapport Commercial de Kérassunde et Ordou (1895)."

166 Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*.

167 See chapter five.

168 "Trabzon Vilayetinin Esval-ı Umûmiyye Ziraiyyesi [Ziraat Umurluğunu 1328 Senesine aid Raporu]," *Ticaret ve Ziraat Nezâreti Mecmuası* 31-40 (1912): 320; and Genna, "Rapport Commercial de Kérassunde et Ordou (1895)."

was among the *Avrupa tüccarları.* The family was involved in various commerce in Giresun including hazelnuts[169] and founded one of largest hazelnut trade companies in the world – Pisani & Rickertsen Company – in Hamburg in 1905.[170] By the end of the nineteenth century, such prominent actors invested in cheap, simple machines mostly operating with petroleum to crack hazelnuts – reducing labor, time and considerable transportation costs, given that the shells were heavy.[171] The total percentage of shelled hazelnuts increased accordingly.[172] As a result, hazelnut arboriculture became integrated with the local cracking industry as well as with foreign chocolate, confectionary, and perfumery industries.

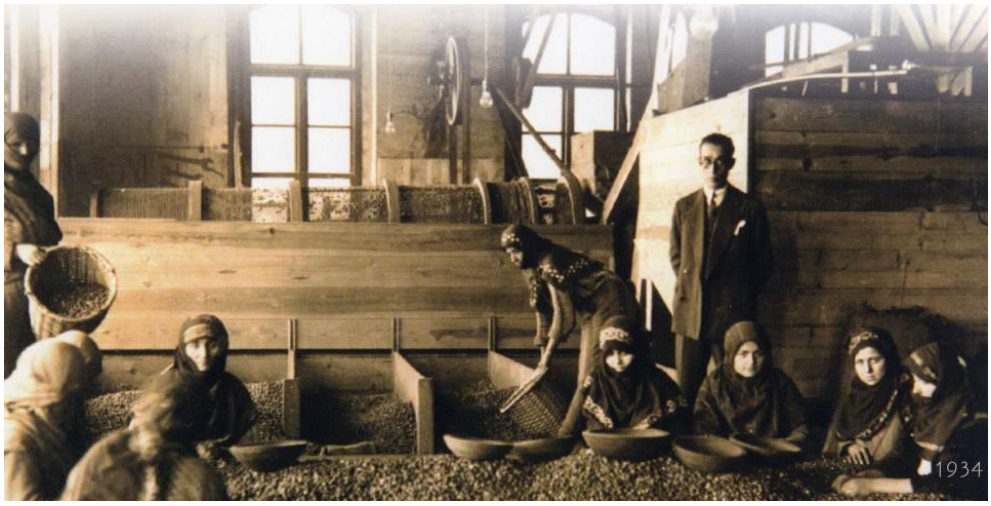


Figure 4.3 Simple Manufactory in Giresun in the 1930s

SOURCE https://www.pinterest.com.au/pin/517702919642346655/

169 Like shipping, trade of wood. See Balcı, *Giresun Rumları ve Gayrimüslim bir Belediye Başkanı: Kaptan Yorgi Konstantinidi Paşa*, 60-62.

170 This company is still operating. See "Pisani & Rickertsen GMBH," http://www.pisani.de/en/index.html.

171 See the next chapter about this transformation.

172 In 1892, 4,151 tons of unshelled hazelnuts and 1,841.8 tons of shelled hazelnut were produced, which meant roughly 30% were cracked. By 1904, the numbers were 5,160,645 and 3,351.54 tons which is roughly 50%.

§ 4.3 Chapter Summary

In chapter two, it was argued that since there was no direct investment in the Southeastern Black Sea region except in the shipping sector, the transformation of western capitalism and global markets was mainly transmitted long-distance markets in the nineteenth century. In chapter three, it was argued that the long-distance market constitutes an elementary transmission mechanism between western capitalism and local agriculture, global and local markets, western and local commercial and financial institutions, western and local technologies, and western and local market agents. In other words, not only crops but also credit, information and technologies were transported via the long-distance market. For that reasons, the factors behind the transformation of long-distance markets – namely, the costs of capital, transaction, transportation and information – were a key to this transmission.

In this chapter, the influence of the change to financial and commercial institutions, technological change and the emergence of agroindustry on agrarian change has been examined. In other words, how the four aforementioned costs affected agrarian change has been scrutinized. Unsurprisingly, the agrarian change coincided with transformations of the markets form the mid-1850s to the late 1860s and from the late 1880s to the 1910s. As discussed, the first of these periods concerned mostly changes to tobacco and the maize-haricot symbiosis. Early agrarian change in tobacco was triggered by two successive wars – the Crimean and American Civil Wars. On one hand, these wars boosted demand. On the other, thanks to innovations in information and transportation technologies, the establishment of new commodity chains enabled local port merchants to integrate to long-distance markets. For tobacco, differences among different quality levels mattered most; its prices varied considerably depending on quality level, and only the highest quality local tobacco was marketed to long-distance markets. In the next chapter, it will be demonstrated for that reason that tobacco was more disposed to intensive growth than other crops. The only other crop affected by the emergence of long-distance markets and by integration to global markets was haricot beans. With the increased commercialization of haricots, local producers increasingly intercropped these beans with maize.

The second wave of change, which started in the 1880s, was triggered by the emergence of agroindustry: the cigarette industry for tobacco, the flour industry for cereals and the chocolate, confectionary and perfumery industries for hazelnuts. The main result of the emergence of the flour industry was extensive growth in wheat and barley cultivation. The nature of this extensive growth in cereals will be discussed more in detail in the chapter six. Likewise, changes in tobacco cultivation were triggered by an emerging oriental cigarette industry, especially the Egyptian one. This industry paid handsomely but was interested only in specific types of tobacco with specific features. This created a potential for high profit as well as risk of high transaction costs. Accordingly, transaction costs played a more important role in transformation of tobacco in the latter period compared to earlier period. In order to decrease such costs, the Régie Company alongside a group of merchants invested vertically – from the farms to the factories – enabling them to impose production standards on farmers as well as to decrease transaction costs. Thanks to this vertically integration and direct investment, local tobacco became a permanent part of global markets by the turn of the century. In other words, while in the earlier period tobacco was marketed in global markets as a mediocre-quality crop cultivated at increasing rates, in the second period, local tobacco became a niche crop highly demanded by oriental cigarette industry. Finally, the change in hazelnut cultivation was examined. The agrarian change with respect to this nut was initiated by blooming global demand from chocolate, confectionary, and perfumery industries. Unlike other crops, a group of local merchants dealing in hazelnut commerce established dominance over the commodity chains by eliminating rivals and integrating the cracking and oil-extracting industries in what was obviously a local oligopolistic market.

5

Change in Production Processes

> *"A slow sort of country!" said the [Red] Queen, "Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"*
>
> Lewis Carroll, *Through the Looking Glass*

This chapter discusses intensive growth in agriculture, in other words the adoption of new techniques and technologies, as well as changes to labor organization and the agricultural calendar. It is argued that the farmers adopted new techniques and technologies as much as the ecological, geographical and climatic conditions allowed. In other words, each crop reacted differently to agrarian change according to the natural features of the plant and the ecological conditions; hence, the adoption of new tools, fertilizers and techniques was limited by natural factors. Put another way, as pointed out in former chapters, the institutional changes to commodity chains, technological innovation and the transformation agribusiness were the main causes of the change – to the natural factors constituted a main constraint against agrarian change. For example, although tobacco was probably the most innovative and labor-intensive crop, labor-saving technologies rarely became part of tobacco

farming, because most nineteenth-century machines and tools were poor substitutes for the labor required for tobacco. Likewise, geography and climate were other constraints. For example, new manufactured plows were widespread in the hinterland of the port of Samsun but remained limited in ~250-350 kilometers east of this port, in the hinterland of the port of Trabzon, simply because these plows required vast, smooth plains, and were incompatible with the uneven geography of the Sanjak of Trabzon. To understand the limits of agrarian change, it is obligatory to discuss natural constraints that farmers faced. For that reason, this chapter deals with the constraints on change – ecology, geography, and climate – rather than the reasons for it.

In addition to dealing with constraints on the agrarian change rather than the causes for it, it also diverges from the main narrative on two points. First, this chapter is counter-argumentative. It scrutinizes why ecology and climate are considered constraints not determinants of agrarian change despite their importance for agriculture. For that reason, this chapter starts with two examples of ecological disasters that had considerable effects on local agricultural production but not on agrarian change. Moreover, it is discussed that climate was a main factor in yearly crop yields for each major crop but not a factor in agrarian change. Second, the conceptualization of historiographic time differs from that of other chapters. While other chapters deal with linear time and long-term change, the conceptualization of time in this chapter is cyclical, wherein agricultural production and the ecological cycle repeat every year. For that reason, any agrarian change that took place in production occurred first in the context of this yearly routine, which is known as the agricultural calendar. In fact, a considerable part of agrarian change manifested itself in change in daily labor routine instead of technological change.[1] For that reason, the

1 Clark argues that growth in productivity in European agriculture before the 1850s resulted mainly from manuring and changes to labor, like reaping and trashing. See Gregory Clark, "Productivity Growth without Technical Change in European Agriculture before 1850," *The Journal of Economic History* 47, no. 2 (1987): 419-32. For an objection to Clark's estimates. See John Komlos, "Agricultural Productivity in America and Eastern Europe: A Comment," ibid.48, no. 3 (1988): 658-59. For Clark's reply to Komlos, see "Productivity Growth without Technical Change in European Agriculture: Reply to Komlos," *The Journal of Economic History* 49, no. 4 (1989): 979-91.

agricultural calendar for every major crop and its transformation are described.

§ 5.1 Ecology, Climate, and Technology

5.1.1 *The Effect of Ecology and Climate on Long-term Agrarian Change*

This dissertation argues that ecology, climate, and geography might be determinants of agrarian change in the *longue durée* of history, while events might determine annual crop yields. But these factors operated as constraints on long-term agrarian change from the 1850s to the 1910s. Since the effect of geography was examined in the chapter two, this chapter starts by discussing the effects of ecology and climate on agrarian change. Ecological studies suggest that agriculture has always been a holistic process, whereby the biomass reproduces itself. However, assuming that this circular production remains constant would be mistaken; the biomass in an ecological system is constantly evolving. In an agricultural ecosystem, even if planting techniques, fertility, and crop yields remain the same, farmers and crops must adapt themselves to constantly changing conditions to sustain the same levels of production.[2] In other words, since microorganisms, insects, and plants are constantly evolving, cultivated plants and their struggle against pests must evolve, as well. In this matter, Southeastern Black Sea region was no an exception; for example, the list of infestations in *kaza* of Trabzon in 1912 consisted of nut weevils for hazel threes, the woolly apple aphid (*pamuklu biti*) for apple trees and the

2 According to the Red Queen hypothesis, every organism should constantly adjust itself to ever-changing conditions of an ecosystem to survive. Alan L. Olmstead and Paul W. Rhode take this hypothesis further and argue that any farming system should evolve to adapt to physical and economic changes to maintain the same levels of production, see; Alan L. Olmstead and Paul W. Rhode, "The Red Queen and the Hard Reds: Productivity Growth in American Wheat, 1800-1940," ibid.62 (2002): 929-66.

scarab beetle[3] and mole cricket[4] for tobacco.[5] Local farmers developed a series of methods to struggle against these pests.

The struggle among pests, plants and farmers has been going on for centuries and evolution and major transformation of the ecosystem have major effects on agriculture in the *longue durée* but such effects are limited in a period as short as sixty years. Nevertheless, two major ecological disasters occurred between the 1850s and the 1910s: the pébrine virus which attacked silk worms and phylloxera which mainly destroyed grapevines. By the late 1830s, a vivid mulberry cultivation and silk-weaving existed in Ordu, Çarşamba, Zile and especially Amasya.[6] This manufacturing grew in the following three decades and by the mid-1860s, Çarşamba produced an estimated 175,000 kilograms of dry cocoons[7] and two weaving mills were operating in Amasya.[8] The

3 As folivore, an adult scarab beetle itself has a marginal effect on agriculture. However, the larval form devours the roots of plants and even trees. The mother patches 40-60 eggs by March and the beetle reaches to larva form around May. See "Le Hannetonage," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 29, 1897. For that reason the Anatolian farmers called it the as "May beetle"(*Mayıs Böceği*).

4 "Transfer by manure: The adult [mole cricket] hibernates in horse manure or other warm places and becomes active in March. Mating occurs above ground in May and shortly afterward oviposition takes place. This insect has been reported to be extremely harmful market gardens composed with legumes and tobacco" quoted from Harry B. Weiss and Edgar L. Dickerson, "The European Mole Cricket, Gryllotalpa Gryllotalpa L, An Introduced Insect Pest," *Journal New York Entomological Society* XXVI: 19-22.

5 "Trabzon Vilayetinin Esval-ı Umûmiyye Ziraiyyesi [Ziraat Umurluğunu 1328 Senesine aid Raporu]."

6 There was yearly production of 30,000 *okka*s, see Stevens, "Report on the Trade of Djanik for the Year 1839." These manufacturers produced low quality silk for local consumption, especially for Aleppo and Diyarbekir. (Suter, "Report on the Trade of Trebizond for the Year 1839.")

7 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

8 Doulcet, "Rapport Commercial de Samsoun (1876)."

Pébrine outbreak hit in the 1860s; subsequently, the production of silk decreased dramatically becoming almost nonexistent by the early 1870s.[9] However, thanks to pasteurization[10] and the introduction of new machinery in the 1890s, the silk industry became profitable again. While silk manufacturing revived again in Amasya, three agricultural engineers, Nişan Antreasyan, S. Djiknavorian, and H. Hekimian[11] helped to reintroduce the mulberry and silkworm keeping to Ordu using new techniques. Despite these efforts, the silk industry never recovered and eventually fell victim to stiff competition in the new century.[12]

Second ecological disaster happened in viticulture. Viticulture existed in Southeastern Black Sea region thanks to microclimate zones. While in the hinterland Havza and Zile were known as the best raisin-producing districts, Tokat was a production center for *rakı* made of grapes.[13] The viticulture was vivid along the coast in the east[14] between Bulancak[15] and Görele,[16] but especially in Tirebolu.[17] Local viticulture was first jeopardized by an oidium plague in the

9 In Ordu and Çarşamba, the cultivation of mulberries almost perished. One mill in Amasya closed for good and another decreased its quality and quantity to survive, see ibid.

10 For the original text of Louis Pasteur about Pébrine disease, see Louis Pasteur, *Œuvres de Pasteur. Etudes sur la Maladie des Vers à Soie* (Paris: Gautier-Villars, 1870).

11 Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904)*.

12 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

13 Maunsell, "Reports on the Trade and Commerce of the Trebizond and Sivas Vilayets for the Year 1897 b-Sivas Vilayet."

14 Biliotti, "Report by Vice-Consul Biliotti on the Trade, Commerce and Navigation of the Port and Distinct of Trebizond for the Years of 1877-1878."

15 "Les Vins en Turquie," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 5, 1896.

16 Palgrave, "Report on Anatolian Coast, and the Corresponding Inland Districts, Between the Longitudes of Sinope and Trebizond, in the Summer of the Year 1869."

17 Viticulture in Bulancak dates back at least to the mid-sixteenth century. See Feridun M. Emecen, *Doğu Karadeniz'de İki Kıyı Kasabasının Tarihi: Bulancak-Piraziz* (Istanbul: Kitabevi, 2005), 144.

late 1860s.[18] Although winemaking in Tirebolu[19] decreased dramatically, it recovered fast as well. However, phylloxera, *Phylloxera vastatrix pervastatrix*, hit harder. Phylloxera is a short-range winged insect living only on the vines' roots and leave. It attacks the roots of the plant, exhausting the plant until it dies.[20] This bug was first detected in 1854 and quickly spread throughout the world in the 1860s.[21] Phylloxera pestilence became catastrophic by 1890s[22] alarming the whole world including the Ottoman Empire.[23] Subsequently, the struggle against phylloxera became an international issue – first of its kind –

18 "Due to the disease that attacked 30 years ago to the vineyards in the vicinity of Samsun, the owners completely abandoned the vineyards and started to cultivate tobacco." Exactly the same sentence appears in two different documents written in 1900 and 1901. See OA DH.MKT 2341.56, May 6, 1900 and OA BEO 1627.2, February 10, 1901, Henri de Contaze also mentioned oidium disease about which he was probably informed while visiting the model farm in Samsun. See Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

19 Palgrave, "Report on Anatolian Coast, and the Corresponding Inland Districts, Between the Longitudes of Sinope and Trebizond, in the Summer of the Year 1869."

20 Abraham Izaak Perold, *A Treatise on Viticulture* (London; New York: Macmillan, 1927), 487-91.

21 See ibid., 486. It start ravaging France in 1867 "Agriculture Nouvelles Diverses (February 2, 1897)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, February 2, 1897. This bug caused a decrease of 2/3 in French wine production between 1875 and 1889. See Eric Hobsbawm, *The Age of Empire: 1875-1914* (London: Abacus, 2013), 36.

22 "Agriculture Nouvelles Diverses (February 2, 1897)."

23 Adem Yağcı and Adnan Erdem claim that phylloxera arrived in the 1880s, while Demiryürek claims that it arrived after 1882. (Adem Yağcı and Adnan Erdem, "Amerikan Asma Anaçlarının Kullanım Nedenleri ve Bazı Anaçların Özellikleri," T.C. Gıda Tarım ve Hayvancılık Bakanlığı, http://arastirma.tarim.gov.tr/manisabagcilik/Belgeler/genel-bagcilik/AMERIKAN%20ANACLARI%20ADEM%20YAGCI.pdf. Mehmet Demiryürek, "İngiliz İdaresi Döneminde Kıbrıs'ta Filoksera (Asmabiti) ile Mücadele (1878-1895)," *Kebikeç*, no. 23 (2007).) The pest turned to be catastrophic in the mid-1890s, when many vineyards were ravaged and some, like it were in the Province of Aydın were transformed into kitchen garden. See "Agriculture Nouvelles Diverses (April 11, 1896)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 11, 1896.

and the Ottoman government took a series of measures against it.[24] Second, although Ottoman government decided to distribute American vines[25] which were resistant to European phylloxera[26] and offer a generous tax incentive, Trabzon Province was excluded because its viticulture was a marginal and farmers could earn more by cultivating tobacco.[27] Since phylloxera was carried mostly through, especially maritime commerce, exposure on the coasts and in the hinterland was different. As it was constantly exposed viticulture and winemaking[28] on the coast died out by the end of the 1890s,[29] and former vineyards were mostly transformed into tobacco fields.[30] On the other hand, the result for vineyards in the hinterland was different. These micro-climates were sheltered thanks to being little effected by the ports. For that reason, since these vineyards were protected from phylloxera which was mostly carried by ship, viticulture survived despite catastrophic losses.

24 The question was first addressed by a commission of Raif Paşa. See "Agriculture Nouvelles Diverses (December 13, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, December 13, 1890.

25 For the distribution of American vines to farmers in Aydın by 1896, "Agriculture Nouvelles Diverses (April 11, 1896)." For tax exemption for ten years for the vineyards seeding American vines. See OA DH.MKT 2418.99, October 7, 1900.

26 American vines were immune to phylloxera unlike European ones. See Perold, *A Treatise on Viticulture*, 488.

27 "As it is understood that high quality grapes cannot be growth because of climate in Samsun" quoted from OA DH.MKT 2341.56, May 6, 1900. The government decided to not help to the province because the local farmers could cultivate tobacco instead. See OA BEO 1627.2, February 10, 1901.

28 There was especially high-quality wine production in Giresun. See Genna, "Rapport Commercial de Kérassunde et Ordou (1890)." However, this production was marginal since it was not mentioned in the article of Commercial Journal of Constantinopolitan Chamber of Commerce promoting Ottoman wines. See "Les Vins en Turquie."

29 Cuinet, "Vilayet de Trébizonde Statistique Descriptive," 15.

30 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

Figure 5.1 Phylloxera, a True Gourmet, finds the Best Vineyards and Attaches Itself to the Best Wines

SOURCE Cartoon from Punch, September 6, 1890

Second factor, which was a key determinant in short-term agricultural production but had limited effect on long-term agrarian change, was climate. To explain the effect of climate on short-term performances, the period from spring of 1886 to summer of 1887 is a perfect example because rainfalls radically differed in the hinterlands of Samsun and Trabzon. In 1886, in the western part of Trabzon Province and its hinterland, the climate was unfavorable climate pattern with rest of the Anatolia.[31]After a dry spring, Anatolian wheat

31 In fact, thanks to increased prices, the port of Samsun exported roughly 2/3 more cereals in terms of value compared to the previous year. See Henry Longworth, "Report on the Trade and Commerce of Trebizond and Samsoon for the Year 1885," (London: Foreign Office of the United Kingdom, 1885); and "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1886." The increase in exports was confirmed by statistics on the imports of wheat to Istanbul, which was estimated by the Chamber of Commerce of Constantinople. Each million of *kile*;

was only saved by March rains.[32] The following summer was extremely dry.[33] Subsequently, maize and haricot largely failed in Canik, and harsh drought burned the tobacco, yields of which were low in both quality and quantity.[34] The worst was yet to come. 1887 would be driest year in Anatolia during the entire nineteenth century.[35] Rainfall in May 1887 was extremely low not only

Place of Origin	1884	1885	1886
Rumelia Oriental	4.5	1.25	2
Rumelia, Varna and Russia	2	3.5	1.75
Black Sea (Samsun) and Marmara	0.5	2.25	3.25

SOURCE "L'Approvisionnement du Blé de la Capitale," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 26, 1887.

32 Although rainfall in Samsun was 33 millimeters, there was a genuine fear that a dry winter in Inner Anatolia, might cause a general crop failure, especially in Konya Kastamonu, and Sivas. For rainfall in Samsun, see Appendix C. For the dryness through Anatolia See "Revue de la Semaine (February 15, 1886)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, February 15, 1886. The poor rain performance caused anticipation of a crop failure and an increase in hard wheat prices. However, the rainfall in March was abundant saving the harvest from failure and prices decreased. See "Revue de la Semaine (February 22, 1886)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, February 22, 1886.

33 During the whole of the late-summer, only 2 millimeters of rain fell on in August 2 and 31 millimeters on September 12-13, see Appendix C.

34 While maize yields were less throughout the Black Sea region, local haricot beans yields were ~80% less than the previous year. See Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1886." As the result, the prices of maize augmented greatly as 50% in a month. See appendix G.

35 Ünal Akkemik et al., "Anadolu'nun Son 350 Yılında Yaşanan Önemli Kurak ve Yağişlı Yıllar," in *Türkiye Kuvaterner Sempozyumu* (İTÜ Avrasya Yer Bilimleri Enstitüsü2005), 133.

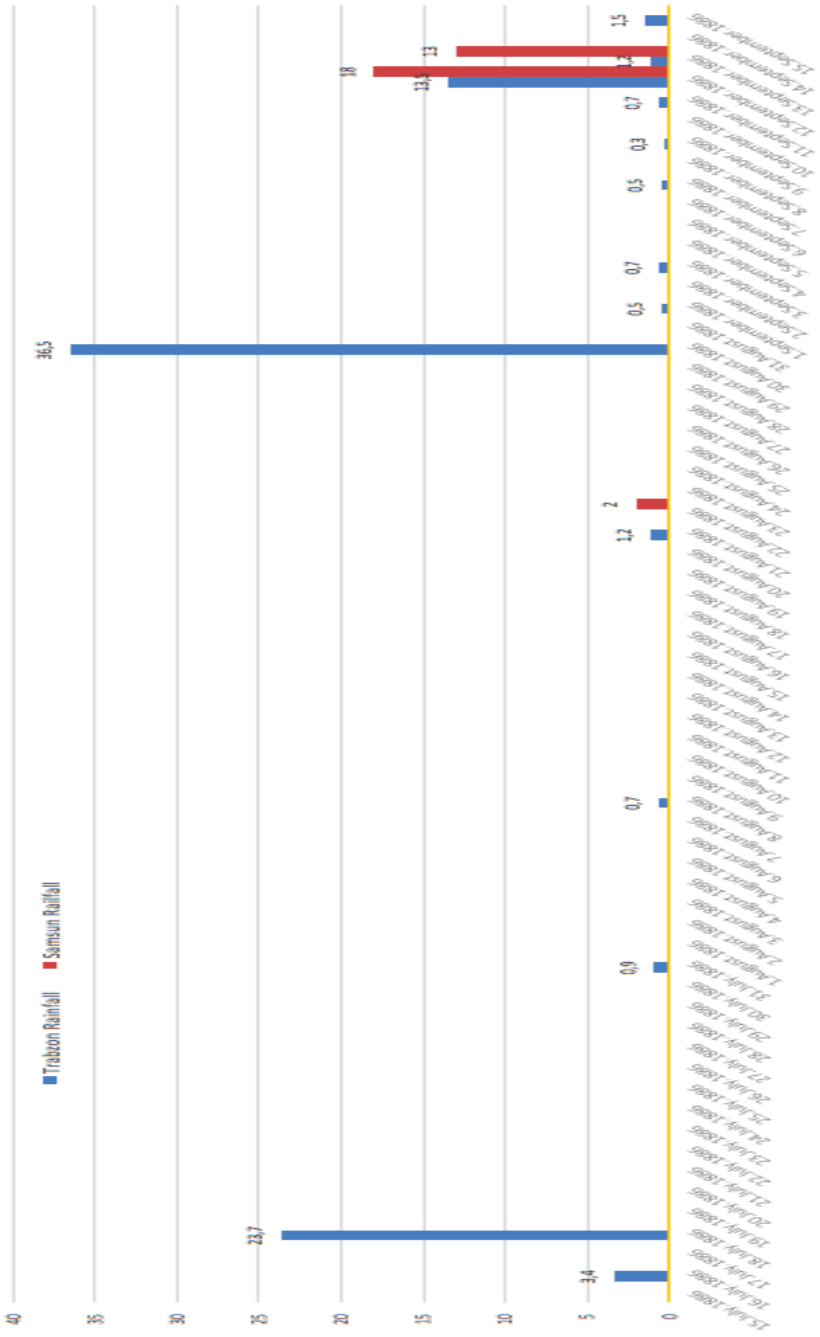
in Samsun,[36] but in most of Central and Western Anatolia, as well.[37] As expected wheat and opium yields were catastrophically low.[38] Consequently, famine ravaged Sivas, Ankara and Konya Provinces. By the late April 1887, merchants and farmers in Canik started to protest at the local Régie office in Samsun because of their ongoing misery and concerns about next harvest. While some merchants and villagers petitioned the *Sadaret,* other villagers marched to Samsun and started protesting the Régie Company by May, 4.[39] Eventually these protestations were handled handsomely by the local government and the Régie office working collaboratively.

36 It was only 7 millimeters, see Appendix C.

37 The winter of 1886-1887 and spring of 1887 were dry not only in Samsun and its hinterland but through Central Anatolia as well. Ingiliz Said Paşa warned of a risk of crop failure during his inspection visit to Konya Province. See İngiliz Said Paşa, *İngiliz Said Paşa ve Günlüğü (Jurnal),* trans. Burhan Çağlar (Istanbul: Ari Sanat, 2010), 75-80. The estimates of Ünal Akkemik, Nesibe Köse, Aliye Aras and H. Nüzhet Dalfes on Kastamonu confirm that 1886-1887 was extremely dry. See Akkemik et al., "Anadolu'nun Son 350 Yılında Yaşanan Önemli Kurak ve Yağişlı Yıllar," 133.

38 Consequently, the exports of wheat from Samsun in 1887-1888 reduced £50,000-100,000 (roughly 45-90 thousand Ottoman Liras), which amounted roughly a 75% loss in value. See Doulcet, "Rapport Commercial de Samsoun (1887)."

39 Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 81-82.



Graph5.1 Rainfall in Samsun and Trabzon (in Millimeters)

SOURCE La Météo France

Meanwhile, in the eastern part of Trabzon Province and its hinterland, 1886 was an ordinary year in terms of rainfall and temperatures. Consequently, not only were maize yields better than normal, hazelnuts were less abundant but of better quality.[40] Therefore, farmers of eastern part of Trabzon province enjoyed prosperity. During the drought in the spring of 1887, the port of Trabzon and its hinterland received the greatest amount rain in Anatolia. Accordingly, Erzurum and coastal Sanjaks were spared from famine.[41] Trabzon and its hinterland were hit by drought in the summer of 1887.[42] As expected, maize and haricots were yields little[43] and most tobacco burned from heat.[44] Naturally, the prices of maize and haricot rose;[45] however, the effect of this disasters was limited for the farmers of eastern part of Trabzon thanks to better qualities but lower quantity of hazelnuts.[46]

Despite the devastating effects of ecology and climate, these factors had a limited effect on long-term agrarian change. First, ecological disasters remained limited to certain crops: viticulture and silk worms. On the other hand, it is estimated increase that the in the average temperatures from the

40 The prices of hazelnuts fluctuated within the normal parameters of 70-90 piasters per quintal. For the performance of all major crops, see Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1886."

41 Abdülkadir Gül, "Osmanlı Devlet'inde Kuraklık ve Kıtlık (Erzurum Örneği: 1892-1893 ve 1906-1908 Yılları)," *Uluslararası Sosyal Araştırmalar Dergisi* 2, no. 9 (2009): 146.

42 Trabzon was eventually affected by drought during the summer of 1887. In late-summer, it rained only 29.9 millimeters in Trabzon (June 16-15 September 15) and 33 millimeters in Samsun (on June 17 and September 15), see Appendix C.

43 Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1887," (London: Foreign Office of the United Kingdom, 1887). Doulcet, "Rapport Commercial de Samsoun (1887)."

44 First, tobacco in the west suffered from the previous year's performance, see Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1887." Second, summer rainfall was low and as a result, the performance of tobacco in the east remained mediocre, see M.A. Querry, "Rapport Commercial de Trébizonde (1887)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1887).

45 See appendices G and I.

46 The prices of hazelnuts rose from 81 to 145 piasters per quintal to from spring 1887 to spring 1888. See Appendix H.

mid-1850s to Great War for the European continent,[47] which hardly meant climate change with a maximum 0.5 degrees. For that reason, these factors had little effect on agrarian change. On the other hand, as discussed below every aspect of agrarian change was compatible with ecologic, geographic and climatic factors, which made these factors not the determinants of change but the constraints on it.

5.1.2 *Preconditions of Technological Change*

Second point to make is on the preconditions of technological change. Before the mid-1880s, a technological change in agriculture in Southeastern Black Sea region were not economically plausible for two reasons: First, local economic conditions were completely contradictory to the preconditions of Habakkuk's hypothesis;[48] while labor was cheap, capital was expensive.[49] Moreover, farmers did not need labor-saving technologies most of the time. The agricultural

47 "Climate Model Simulations of the Last 1,000 Years ", https://www.ncdc.noaa.gov/global-warming/last-1000-years.

48 Habakkuk's theory explains why The Britain and United States of America were leaders in mechanization, especially in agriculture. This theory is based on the Ricardian effect. See Hrothgar John Habakkuk, *American and British Technology in the Nineteenth Century* (Cambridge: Cambridge University Press, 1967), 13. and Hicks' theory of innovation, see ibid., 9. This theory tries to explain American success in mechanization via the low elasticity and high price of labor and relatively abundant capital and land. He argues that investors in agriculture invested their capital in labor-saving technologies because of the scarcity of labor. Labor was expensive compared to capital. See ibid., 1-43. For the use of the Habakkuk hypothesis, see Robert C. Allen, "The Price of Freehold Land and the Interest Rate in the Seventeenth and Eighteenth Centuries," *The Economic History Review* 41, no. 1 (1988). For a critique of the theory, see Peter Temin, *Causal Factors in American Economic Growth in the Nineteenth Century* (London: Macmillan, 1975).

49 Let me explain the situation with a hypothetical example. Consider a family of one adult man, his wife, and their three children with one pair of oxen cultivating only wheat, which brings in 110 piasters annually. For the sake of simplicity assume that this family can easily barrow from the Ottoman Agricultural Bank at 10% real interest (The rate was officially 6% but the real interest as high as 9%, see chapter three.). The size of their land is at maximum for animal-drawn agriculture with two oxen. This household has two choices to keep going with two oxen (1,000 piasters) or to sell them and borrow money to buy tractor (2,000 piasters) which would yield twice the wheat as with oxen. Assuming that the transaction cost of the tractor and oxen

calendar of peasants, especially those dealing with cereals,[50] was mostly free. During periods of activity, like harvests, these farming families either exploited labor reserves – children or animal – as Chayanov suggests[51] or they organized the labor as *imece* – collective farming by a village.[52] In the case of emergencies, it was also possible to hire seasonal laborers.[53] In addition, the sustainability of any technological innovation depends on a proper institutional framework. Institutionalist theory suggests that if transactions costs of accessing and operating a new technology are high, economic agents will not utilize that technology. In other words, if no institutional framework existed to guarantee farmers constant easy, cheap access to fertilizers, fuel and spare parts for their new machinery, whenever and wherever they needed, it was irrational to use machines or fertilizers because of high after-sale transaction costs.[54] However, no such commercial network existed prior to the 1880s. For

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is the same. The cost of the tractor paid over ten years would be 1,593 piasters for 1,100 piasters additional gain. The family would stand to lose 593 piasters eventually. In this hypothetical case, the threshold interest rate was roughly 7.1% per annum. Above that rate the family would be unlikely to invest in a tractor. The same calculations can be made for wages and labor as well. For that reason, the profitability of mechanization is dependent on interest rates and wages.

50 The Halkalı Model Farm calculated that the annual man hours for wheat was 314 hours in a year. see Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 87-88.

51 According to Chayanov's observations of Soviet farmers' behavior, in cases of emergencies, farmer families could easily increase its labor using reserve labor force, mainly children, in production. See Alexander V. Chayanov, *The Theory of Peasant Economy* (Delhi: Oxford University Press, 1987), 70-89.

52 Harold Eustace Satow, "Report on the Trade and Commerce of the Vilayet of Trebizond for the Year 1912," (London: Foreign Office of the United Kingdom, 1912).

53 For temporary labor in Anatolia, see Reşat Kasaba, "Migrant Labour in West Anatolia," in *Landholding and Commercial Agriculture in the Middle East*, ed. Çağlar Keyder and Faruk Tabak (Albany (N.Y.): State University of New York Press, 1991), 113-21.

54 "These increasing incentives to differentiate the task of invention from that of commercializing new technologies depended for their realization upon the development of markets and other types of organizational supports for trade in technology. The evidence suggests that the necessary institutions evolved first in those regions of the country where early patenting activity had already been concentrated. A self-reinforcing process whereby high rates of in-

these reasons, investing in labor-saving technologies for small to middle scale husbandry was irrational until the mid-1880s. Farmers generally continued using their traditional wooden tools[55] and animal manures. There was no sign of the infiltration of new tools, machinery[56] or chemical fertilizers.[57]

These negative preconditions for technological change slowly and modestly improved in the 1880s. First, the arrival of new financial institutions made a difference. These financial institution, especially Ottoman Agricultural Bank, decreased the interest rates for direct investment. Moreover, they ameliorated the sales of new technologies. The banks allocated credit and guaranteed payment for expensive tool. They also facilitated mail-order marketing from long-distance markets, allowing the purchase of tools by post on credit, as in the case of Singer.[58] Second, a new local trade network insured a constant supply of tools, machinery, and fertilizers to farmers and they offered after-sale options. While some enterprises specialized in the export of such commodities,[59] local entrepreneurs joined them in the 1890s. For example, in the mid-1900s, Theodor J. Arzoğlu, the future deputy of Samsun, and GC Stephopoulo started to sell agricultural tools and machinery.[60] They were followed into the business by one of the most influential merchants in Trabzon: Gayzag Arabian. Accordingly, investment in machinery followed the arrival of these

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ventive activity encouraged the evolution of a market for technology, which in turn encouraged greater specialization and productivity at invention as individuals found it increasingly feasible to sell and license their discoveries, appears to have been operating" quoted from Naomi R. Lamoreaux and Kenneth L. Sokoloff, "Long-Term Change in the Organization of Inventive Activity," *Proceedings of the National Academy of Sciences* 93, no. 23 (1996): 12686-92.

55 Cuinet, "Vilayet de Trébizonde Statistique Descriptive," 22.

56 Longworth, "Report on the Trade and Commerce of Trebizond and Samsoon for the Year 1885."

57 Schéfer, "Renseigement Concernant la Province de Trébizonde," 50.

58 Quataert, *Manufacturing and Technology Transfer in the Ottoman Empire, 1800-1914*

59 By 1891, the merchants dealing with the commerce of agricultural machineries were Laughton and Chisnell, the Mouradyan Brothers and John R. Thomson. See Cervati, *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1891).*

60 *Ergebnisse einer Botanischen Reise in das Pontische Randgebirge im Sandschak Trapezunt, Unternommen im Jahre 1907 im Auftrage der Naturwissenschaftlichen Orientvereines in Wien* (Vienna: A. Hölder, 1909).

new horizontally integrated markets. As a result, importing new tools and fertilizers, especially from Germany and the United States of America, became increasingly profitable by the mid-1890s.[61] Moreover the active support of the Agricultural Bank for investment in fertilizers, tools and machinery made an important difference.[62] Likewise, the Régie Company and local merchants played an important role. For example, in Canik, merchants distributed tools to their captive farmers[63] and primary source indicate that merchants and the Régie brought heavy machinery.[64]

§ 5.2 Change in the Labor and Agricultural Calendar

5.2.1 *Food Crops*

5.2.1.1 Wheat, Barley and Oats

Since wheat, barley and oats are labor and water-extensive but land-intensive crops,[65] they are the perfect food crops for a continental climate, and vast, smooth geographies dealing with dry-farming like the Anatolian plains. Moreover, among the major, biological tribes, grains have the highest adapta-

61 "Rapport Commerciale De Samsoun (1898)," (AMAE, CADN, 1898). "Rapport Commerciale De Samsoun (1899)," (AMAE, CADN, 1899).

62 Donald Quataert, "Dilemma of Development: The Agricultural Bank and Agricultural Reform in Ottoman Turkey, 1888-1908," *International Journal of Middle East Studies* 6, no. 2 (1975).

63 "Rapport Commerciale De Samsoun (1900)," (AMAE, CADN, 1900).

64 Any petition for machinery, tools, seed, fertilizers, and stallions from the Ottoman Agricultural Bank's depots were sanctioned by a commission of six people: high local official, an officer of Agricultural Bank, a member of the chamber of agriculture, a member of the chamber of commerce, an official agriculturist of Province and official veterinary and somebody from agricultural sector. See "Alat-ı Cedide ve Tohum ve Damızlık Hayvanat Tedarikiyle Islahat ve Teşebbüsat-ı Ziraiyede Bulunacak Olan Çiftcilere Ziraat Bankası'nca İcra Olunacak Teshilat ve Muavenat-ı Mukteziyeyi Mübeyyin Talimatname," (Istanbul: Matbaa-ı Âmire, 1910).

65 For the properties of modern Anatolian wheat, see "Buğday Yetiştiriciliği," http://ankara.tarim.gov.tr/Belgeler/liftet/bugdayyetistiriciligi.pdf.

bility to different climatic conditions and are the most resilient crops in extreme climates, especially in a drought.[66] However, the Achilles' heel of wheat cultivation was bovines,[67] most of the hard work like tilling, airing and harvesting could not be done without the help of animal power,[68] livestock was the main source of fertilizer, as well.[69] In fact, shortages of human labor and rainfall could be better tolerated than a shortage of bovines. In fact, there is a clear relationship between bovine breeding and wheat cultivation. For that reason, maize-cultivating coastal regions had few bovines.[70] Accordingly, any negative impact on bovines, especially epizooty, became a source of economic misery for nineteenth century wheat farmers in the Southeastern Black Sea region.[71]

66 See ibid.; and Food and Agriculture Organization of United Nations, "Crop Water Information: Wheat," http://www.fao.org/nr/water/cropinfo_wheat.html.

67 Tevfik Güran claims that livestock was the most important part of the farmer's fixed capital. See Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 85.

68 Stevens, "Report on the Trade of Trebizond during the Half-year Ending 30th June, 1860." According to information given by *Zakaryan Çiftlik İdaresi*, one couple of horse could plow 6-7 *dönüm*s but a couple of oxen, only 3-4 *dönüm*s. See Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 86.

69 *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 88. Schéfer, "Renseigement Concernant la Province de Trébizonde," 49.

70 See Table 5.1. Likewise, there is a relation between poultry and maize production. Especially after chickens reach three weeks, the proportion of maize in their diet is increased. See Salih Zeki Ekinci, *Mükemmel Ameli Tavukçuluk* (Istanbul: Şark Kütüphanesi, 1925), 162. Since maize was also used as chicken fodder, Trabzon Province, especially Fatsa was better known for its poultry and eggs. See Chayet, "Rapport Commercial de Trébizonde (1897)."

71 According to a field survey in Kastamonu made by the Ottoman Agricultural Bank in 1883, the main cause for farmers to take credit was the epizooty. See "La Banque Agricole (March 26, 1892)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 26, 1892.

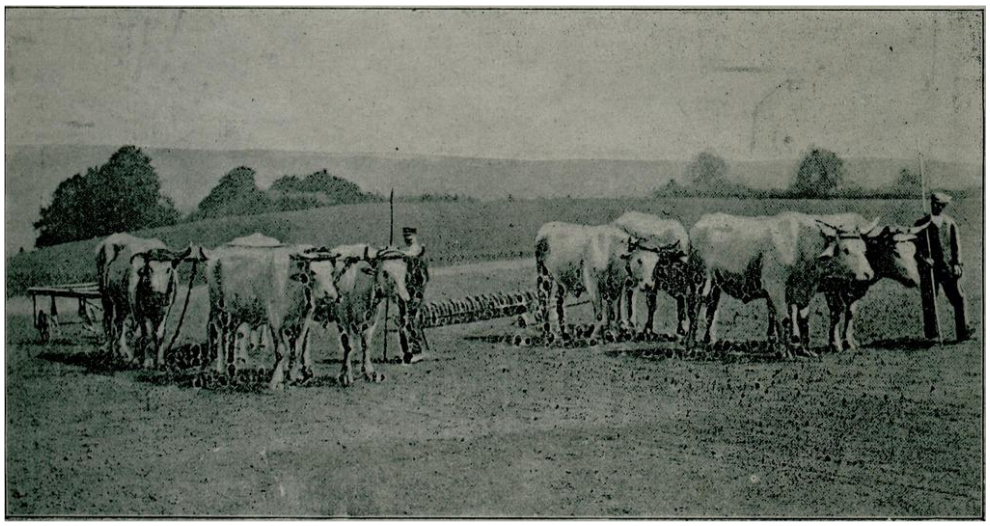

Figure 5.2 Tilling the Land with Plows and Harrows

SOURCE "Çiftliklerde: İlkbahar Ameliyattan," Resimli Çiftçi April 12, 1909

Table 5.1 Number of Heads of Livestock in Southeastern Black Sea Region

	Trabzon	Erzurum	Sivas
Bovine	40,000	532,885	102,583
Ovine	800,000	2,296,461	2,174,100
Asine	50,000[72]	116,833	75,156
Total	890,000	2,946,179	2,351,839

SOURCE Vital Cuinet

72 "Although camels are slower than mules or horses, they were better in carrying heavy cargos. Camels having almost entirely superseded horses and mules, the weight of heavy packages has gradually risen from 2 to 2 ½ cwt, and in some few cases to 2 1/2 cwt" quoted from Biliotti, "Report on the Trade and Commerce of the District of Trebizond for the Year 1884." For that reason camels were in port of Trabzon to be used for Persian transit trade. See Stevens, "Report on the Trade of Trebizond during the Half-year Ending 30th June, 1860."

Since the conditions of bovines were the most important factor in yearly performance,[73] most machinery and metal tools introduced into wheat cultivation assisted or replaced animals, not humans. The major change was in plow technology. By the eve of twentieth century, there were two traditional types of wooden plows in Northeast Anatolia: the *yapaz*[74] and the *karasaban/sürgü*[75] in the North-East Anatolia. Although most farmers continued using these traditional plows until the Great War,[76] manufactured plows started to infiltrate the life of farmers by the end of the nineteenth century.[77] For example, in Pasinler (Erzurum),[78] farmers started using manufactured plows imported from the Russian firm Eksa, which were imitations of the famous German Eckert sizes four, five, and six.[79] (See figure 5.3 for Eckert brand size 5 plow)

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73 Since bovines were the most important factor in yearly performances of grains in premodern societies, it was common to express the potential yearly crop yield of a farm as a number of bovines, like *iugum* in antique Rome (See Nicolas Oikonomides, "The Role of the Byzantine State in the Economy," in *the Economic History of Byzantium: From the Seventh through the Fifteenth Century*, ed. Angeliki E. Laiou (Washington: Dumbarton Oaks Research Library and Collection, 2002), 980.) , ζευγάριον in East-Roman Empire (ibid., 998.), oxen in England under Plantagenet rule (for example; "holme Mortving holds 1 virgate of Hugh, land for 3 oxen and there are. It is worth 3s" quoted in Ann Williams and G. H. Martin, *Domesday Book: A Complete Translation* (London; New York: Penguin Books, 2003), 574.) or *çift*lik in the early-Ottoman Empire.

74 *Yapaz* was a triangular wooden plow with straight or curved iron tip. A *yapaz* cut the soil to 4-5 centimeters and a *karasaban* up to 6-7 centimeters. For it use see Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904." For the meaning of the word, see "Yapaz (I)," Türk Dil Kurumu, http://www.tdk.gov.tr/index.php?option=com_ttas&view=ttas&kategori1=derlay&kelime1=yapaz.

75 The *Karasaban* of Samsun was a wooden plow, usually made of oak. The plow was fixed to the neck of oxen by ailerons. See Satow, "Report on the Trade and Commerce of the Vilayet of Trebizond for the Year 1912."

76 "Pasinler Kazasının Esval-ı Tabiyye ve Ziraiyyesi [Erzurum Merkez Ziraat Mualimliğinin 13 Ağustos 1329 Senesine aid Raporu]."

77 Mostly imported from the United States of America, Germany and Russia, see "Rapport Commercial de Samsoun (1900)," (Agence Consulaire de Samsoun, AMAE, CADN, 1900).

78 New plows also existed in Hafik and Koçgiri by the early 1890s. See Cuinet, "Vilayet de Sivas Statisique Descriptive."

79 "Pasinler Kazasının Esval-ı Tabiyye ve Ziraiyyesi [Erzurum Merkez Ziraat Mualimliğinin 13 Ağustos 1329 Senesine aid Raporu]."

The main advantage of these new plows was that they cut the soil deeper, which enabled entering deeper layers of the soil into circulation and increases crop yields. On the other hand, tilling the soil with these plows required more animal power than traditional plows drawn by a single pair of oxen. One solution was to attach more oxen which was the case in Pasinler where it was reported that five, six, or even ten oxen pulled these plows.[80] However, attaching so many oxen created enormous coordination and management problems. A better alternative was to attach robust horses as some farmers in Canik did.[81]

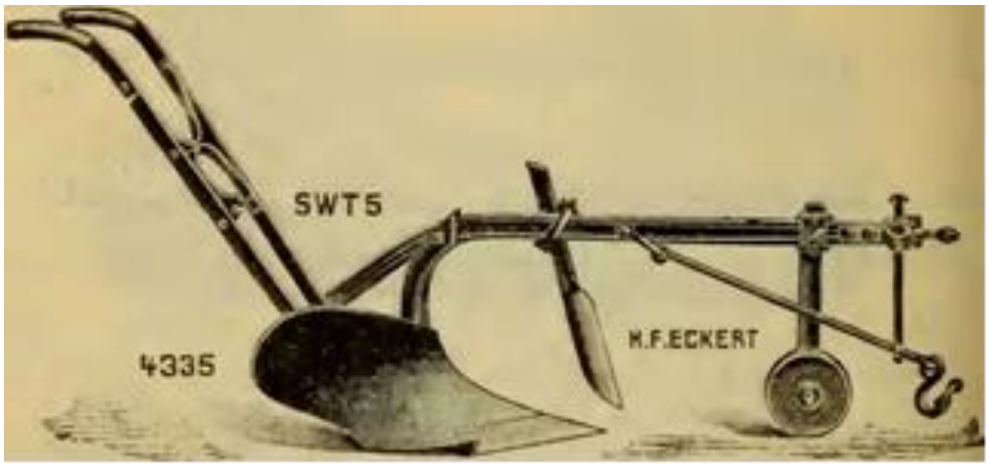


Figure 5.3 H.F. Eckert Plow Size 5

SOURCE Ekinci, Ziraat Ve Ticaret Muhtırası = Agenda, Aide-Mémoire Agricole et Commerciale

If these new plows were novelty only a few farmers enjoyed, heavy machinery was even less popular. First reason was that most machines required large, smooth terrain on which to operate. That is why these big tools spread faster in Canik and its hinterland rather than in the Sanjak of Trabzon and its hinterland. Second reason was that big machines were more expensive and required expertise. Consequently, since these machines were rarely affordable for simple farmers, they were mainly bought by merchants and big landown-

80 ibid.

81 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

ers. For example, although merchants in Canik experimented with new machines like the sower, mower, side-delivery reaper, and a threshing machine in the late 1900s,[82] the only heavy machinery to enter the farms was the seed cleaner[83]. Nonetheless, despite efforts made by merchants and the Agricultural Bank, the use of these big machines remained marginal,[84] while plows had a limited effect on cereal cultivation, big machines had almost none.

Table 5.2 Heavy Machines Distributed by the Agricultural Bank in the 1910s

No.	Tool Name	Producer	Destination	Vendor
8	Reaping machine	Deering	Province of Sivas	Suriçi Deposu
3	Reaping machine	Osborne	Province of Sivas	Muradyan Biraderler
6	Reaping machine	Deutz	Province of Sivas	Balıkçıyan Efendi
2	Reaping machine	Massey Harris	Province of Sivas	Hungarian Bank
9	Reaping machine	Deutz	Province of Sivas	Dikran Kazgancıyan
12	Reaping machine	Deutz	Province of Sivas	Arabyan Efendi
2	Baler	Deutz	Province of Sivas	Hungarian Bank
5	Baler	Deutz	Province of Sivas	Pandoronlos
500	Scythe	8 no	Province of Sivas	Pandoronlos
500	Scythe	8,5 no	Province of Sivas	Ghazarian
4	Reaping machine	McCormick	Province of Erzurum	Balıkçıyan Efendi
6	Reaping machine	Massey Harris	Province of Erzurum	Balıkçıyan Efendi
1	Thresher with Locomotive	Gazirer (?)	Province of Erzurum	Negararyan (?)

SOURCE OA T.2199

82 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909."

83 For example, there were six seed cleaners bought by merchants and used in common in different villages in Bafra. The reason farmers welcomed seed cleaners but no other machines, was because it was a simple machine and its function could be accomplished by no other tool or animal, see "Canik Sancağının 1328 Senesi Emval-i Ziraiyyesi [Canik Ziraat Muavinin Raporu]," in *Ticaret ve Ziraat Nezâreti Mecmuası* (Istanbul: Ziraat Nezareti, 1912-1913).

84 "Rapport Commerciale De Samsoun (1900)," (AMAE, CADN, 1900).

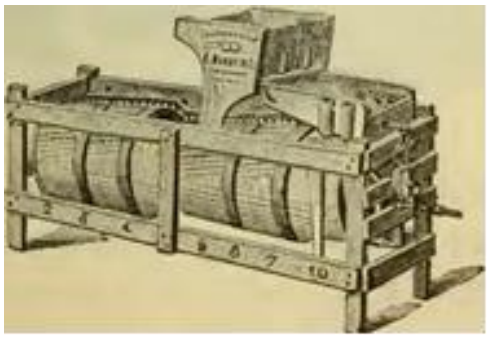


Figure 5.4 Wooden Seed Cleaner

SOURCE Ekinci, Ziraat Ve Ticaret Muhtırası = Agenda, Aide-Mémoire Agricole et Commerciale

On the other hand, farmers reacted differently on the matter of hand tools. First, farmers showed little interest in replacing traditional hand tools with modern ones. They kept using traditional wooden hand tools like flint-toothed sledges, wood hand seeder (*sivriç*),[85] watering cans (*süzek*),[86] wooden pitchforks,[87] and wooden spades.[88] Likewise, mall metal tools like the hand sickle (*el orağı*), wooden thresher and the *döğen* (flat wooden grain sheller)[89] also survived, because the modern alternatives were expensive. However, farmers willingly accepted new tools that had no precedent. For example, sprayers, especially Velmorel sprayers, were sold greatly.[90] It can be argued that farmers usually reacted more positively towards completely new technologies than to improvements in traditional hand-made tools.

85 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

86 Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 46.

87 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909." Satow, "Report on the Trade and Commerce of the Vilayet of Trebizond for the Year 1912."

88 The locally-produced wooden spades were famous and were exported to other parts of the Empire and to Egypt. See "Rapport Commercial de Kérassunde et Ordou (1894)."

89 "Canik Sancağının 1328 Senesi Emval-i Ziraiyyesi [Canik Ziraat Muavinin Raporu]."

90 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

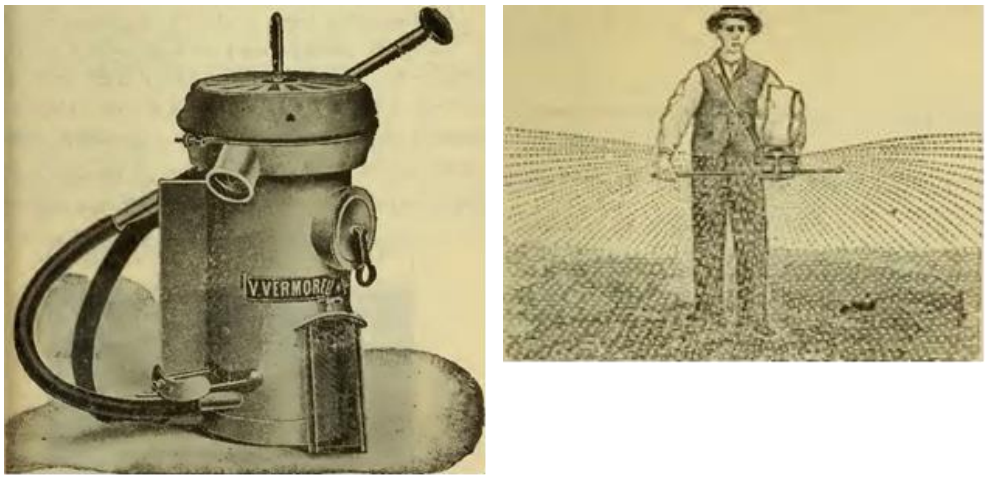


Figure 5.5 Velmorel Sprayer and Depiction of Its Use

SOURCE Ekinci, Ziraat Ve Ticaret Muhtırası = Agenda, Aide-Mémoire Agricole et Commerciale

A more radical transformation happened in the rotation of cereals.[91] The agricultural calendar of wheat, barley, and oats was free and in most cases there were two periods for the cultivation for cereals: the winter crop from autumn to spring and the summer crop from late spring to early autumn.[92] In most of Sivas and Erzurum Provinces, wheat was preferred as a winter crop because the risk of failure was greater[93] if the flowering period coincided with a dry the late summer.[94] On the other hand, a rainy climate enabled the farmers of the

91 For alternative rotations in Anatolia. See Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 88-90.

92 Historically, the most common crop rotation in Eurasia crop rotation was triennial. It consisted of one winter cereal, a small fallowing – a period spring cereal – long fallowing period. See Mazoyer and Roudart, *A History of World Agriculture from the Neolithic Age to the Current Crisis*, 317.

93 In choosing the order, exposure to the sun, rainfall during the flowering period and ecological balance with other crops were taken into consideration.

94 For a detailed account of grain crop failures, see the next chapter.

coast of Trabzon Province to seed wheat before June[95] and harvest in August to October.[96] However, farmers in the hinterland preferred to rotate barley and oats with the wheat. Barley was the main choice[97] because it could be used as human food and more importantly as an energizer for bovines.[98] On the other hand, oats were a more resilient crop, and was the main choice for rough terrains and newly cleared land[99] like in Bafra.[100] In the maize zone of eastern part of Trabzon Province, barley entered occasionally entered the rotation with summertime maize-haricots.[101]

95 This was deduced from indirect information given in consular reports like "Barley, Wheat and oats already been sown in June of 1860" quoted from Stevens, "Report on the Trade of Trebizond during the Half-year Ending 30th June, 1860." "the wheat will be sown next summer" quoted from Guarracino, "Remarks on the Trade and Navigation of Samsoon for 1857," (London: Foreign Office of the United Kingdom, 1857).)

96 Ibid.

97 See "Faits et Notices (April 29, 1893)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 29, 1893.

98 Spring grass was the main subsistence for the animals. See for example; Stevens, "Report on the Trade of Trebizond for the Year 1841." However, barley and oats were and additional part of the animals' diet, especially in winters. However, bovines were generally poorly fed. See "Report on the Trade of Trebizond during the Half-year Ending 30th June, 1860."

99 On the practice of opening new lands, farmers first cleared the land in summer and then carefully tilled it. Then they left the land alone to be washed by rains until spring when they almost always seeded oats, See Henri de Contanze, "Rapport Agricole Consulaire de l'Année (1899)," (Agence Consulaire de Samsoun, AMAE, CADN, 1899). This practice of cultivating oats in newly cleared lands had either to do with the market because oats were worth less compared to the alternatives, nor with the farmer's own needs, because oats were usually used to feed horses. For the local practice of feeding the horses with oats. See Schéfer, "Renseigement Concernant la Province de Trébizonde." For general point of view, see Jean Gimpel, *The Medieval Machine: The Industrial Revolution of the Middle Ages* (New York: Holt, Rinehart and Winston, 1976), 35-37.)

100 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

101 ibid.

5.2.1.2 Symbiosis of Maize and Haricot Beans

Maize was always the dominant food crop in the coastal zone from Canik to Lazistan at least by the 1830s.[102] In the plains, maize, like wheat was cultivated in open fields, but unlike wheat, they were usually near a water source.[103] In the rugged terrains of Trabzon Province, the cultivator usually reserved higher ground for housing or for planting cash crops like tobacco. Maize was usually planted in the lower plain where rainfall accumulated.[104] However, unlike wheat, maize was generally intercropped with other plants.[105] In nineteenth century's Trabzon,[106] maize was generally intercropped with haricot beans,[107] and rarely with a third plant. In this happy marriage, both the yields of both crops were better. Meanwhile, the beans contributed to fertility[108] by providing

102 Kuzucu, "Osmanlı Döneminde Karadeniz Bölgesinde Mısır Tarımı ve Islah Çalışmaları," 773.

103 These fields were flooded or on marshland, like the Mesoamerican *chinampa*s of maize *milpa*s, see Story and Widmer, "The Pre-Columbian Economy."

104 Palgrave, "Report on the Trade and Commerce of Trebizond During the Year 1873."

105 In pre-Colombian America, maize was cultivated as a primary food crop that for centuries was usually rotated with beans and squash, known as the "three sisters". However, lupine, quinoa, and fodder legumes could replace beans. See Mazoyer and Roudart, *A History of World Agriculture from the Neolithic Age to the Current Crisis*, 199-200.

106 Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 89.

107 "Beans and maize are sown in this country together: a measure of seven grams of beans is mixed with ten measures of maize, and it is thrown into the wind. The annual harvest of beans in the Trabzon countryside is 3,500,000 kilograms and the Ordu territory produces about as much; that of maize, in the neighborhood of Trabzon, is barely sufficient for local consumption, but Ordou, Fatsa, and Ünye produce up to a million kilograms a year. The beans go almost entirely to Marseille, the maize is exported to London, Trieste, Marseille, Egypt and Italy" quoted from Bertrand, "Commerce de Trébizonde en 1889," in *Bulletin Consulaire Français* (Paris: Imprimerie Nationale, 1889). See also Biliotti, "Report by Vice-Consul Biliotti on the Trade, Commerce and Navigation of the Port and Distinct of Trebizond for the Years of 1877-1878."; and Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1887."

108 See Mazoyer and Roudart, *A History of World Agriculture from the Neolithic Age to the Current Crisis*, 199. According to a modern inquiry made in early 1980s in Samsun, intercropping haricot with maize has a higher 31% yield than planting them separately. See Emrah Ertürk, "Mısır (Zea Mays L.) / Baklagil Birlikte Ekim Sisteminde Baklagillerin Mısır Bitkisinin Verim ve Verim Öğelerine" (Ordu Üniversitesi, 2011), 17.

suitable environment to nitrogen-fixing bacteria,[109] and the maize's stalks served both as sunshades for the haricot seeds which required shades during their germination period – and as a pillar for the flexible haricots to climb.[110] Moreover, thanks to their symbiotic relationship, both plants had a better balance of minerals and water. However, the Achilles' heel of this symbiosis was that the two crops required a constant supply of water, especially during the flowering and yielding formation periods, in which water requirements doubled.[111] The maize-bean symbiosis also bedded more diseases than grains.[112] Accordingly, maize-haricots failed after long periods of consecutive dry days, especially in mid-August and mid-September when water requirements were at a maximum. Consequently, the performance of both crop was related to rainfall, especially between mid-July and mid-September. In the second half of the nineteenth century, crop failures that occurred because of such summer

109 Ian Lane, "Chapter 8 Nitrogen Fixation in Forage Legumes," Food and Agriculture Organization of United Nations, http://www.fao.org/ag/agp/agpc/doc/tibetmanual/08._nitrogen_fixation.htm.

110 Sarınay and Gurulkan, *Osmanlı Belgelerinde Kırım Savaşı: (1853-1856)*; and Food and Agriculture Organization of United Nations, "Crop Water Information: Maize," http://www.fao.org/nr/water/cropinfo_maize.html.

111 In geographies where rainfall was lower than sufficient levels, crop yields decreases. For example, according to a study on Isparta, relatively drier area to Trabzon, crop yields of maize decrease considerably in the case of intercropping them with haricots. See M. Kamil Tiryaki, Zekeriya Akman, and Burhan Kara, "Mısır ve Fasülye Çeşitlerinin Karışık Ekim Sisteminde Verim ve Bazı Agronomik Özelliklerinin Belirlenmesi," *Tarım Bilimleri Dergisi* 10 (2004): 85-92. Likewise in the years in the nineteenth century when there was not enough rain, intercropping had a negative effect and the maize and haricot beans yields worse than if they had been cultivated alone. In the nineteenth century, the maize-haricot bean symbiosis needed water abundantly especially during the flowering and yielding periods and these crops failed if the rain was absent in late summers. For the requirement of water for maize. See Genna, "Rapport Commercial de Kérassunde et Ordou (1890)."

112 The only downside of this happy marriage is that haricot beans also was the breeding ground for harmful bacteria. See W. B. Bryan and M. B. Materu, "Intercropping Maize with Climbing Beans, Cowpeas and Velvet Beans," *Journal of Agronomy and Crop Science* 159, no. 4 (1987): 248.

droughts were in 1841,[113] 1855,[114] 1857,[115] 1858,[116] 1883,[117] 1886 and 1902.[118] Likewise, maize were yields low in 1887,[119] 1893,[120] 1897,[121] and 1904, especially in Tirebolu[122] as well as during the Russian Famine of 1891 because of poor rainfall. There were regional crop failures as well. In 1843, such a failure hit only in Batumi and Lazistan[123] and 1859, one was limited to just the area around Trabzon port.[124] From 1840s to 1910s, there was only one year, 1894, when erosion caused by heavy rains ruined the crop.[125]

113 It ended with famine, see Stevens, "Report on the Trade of Trebizond for the Year 1841."

114 "Report on the Trade of Trebizond for the Year 1856," (London: Foreign Office of the United Kingdom, 1856); and Guarracino, "Report on the Trade of Samsoon during the Year 1856."

115 "Remarks on the Trade and Navigation of Samsoon for 1857."

116 "Report on Trade and Navigation of Samsoon for the Year 1858," (London: Foreign Office of the United Kingdom, 1858).

117 Biliotti, "Report on the Trade, Commerce, and Navigation at Trebizond for the Year 1883."

118 "The crop yields of hazelnut, the main revenue of the kaza of Giresun, was low last year as well as the maize" quoted from OA DH.MKT.691.32, April 23, 1903.

119 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1887."

120 "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1893," (London: Foreign Office of the United Kingdom, 1893).

121 Like maize, haricots were sensitive to the absence of rainfall. For example, haricot beans cultivation was jeopardized because of the late rains in 1897. See Chayet, "Rapport Commercial de Trébizonde (1897)."

122 G. Grenard, "Rapport Commercial de Trébizonde (1904)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1904).

123 Richard White Stevens, "Report on the Trade of Trebizond for the Year 1843," (London: Foreign Office of the United Kingdom, 1843).

124 Except Ordu and Fatsa, see "Report on the Trade of Trebizond for the Year 1859."

125 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1894."

Figure 5.6 A Maize Farm in the Piedmont of Kurulkayası, Probably Modern Bayadıköyü (c. 1907)[126]

SOURCE Heinrich Raphael Eduard Handel-Mazetti et al., Ergebnisse Einer Botanischen Reise in Das Pontische Randgebirge Im Sandschak Trapezunt, Unternommen Im Jahre 1907 Im Auftrage der Naturwissenschaftlichen Orientvereines in Wien (Vienna: [A. Hölder], 1909),

Although maize evolved from a common ancestor with wheat,[127] it is a land-extensive, but water and labor-intensive crop.[128] If properly watered and exposed to heat, local maize grew up to three meters high and yielded more grain

126 Handel-Mazetti et al., *Ergebnisse einer Botanischen Reise in das Pontische Randgebirge im Sandschak Trapezunt, Unternommen im Jahre 1907 im Auftrage der Naturwissenschaftlichen Orientvereines in Wien*, Tafel II.

127 Mark Winfield, "Evolution of Wheat," School of Biological Sciences, University of Bristol, http://www.cerealsdb.uk.net/cerealgenomics/WheatBP/Documents/DOC_Evolution.php.

128 For the description of maize. See Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904." However, the properties of the late nineteenth century Ottoman maize and modern maize differed. For nineteenth century Ottoman maize, see Ion Ionescu de la Brad, "La Culture de Maïs," *Journal de Constantinople (Echo de l'Orient)*, October 19, 1851. For modern maize, see Sami Süzer, "Mısır Tarımı," Karadeniz Tarımsal Araştırma

than other cereals on less land. Therefore, it was possible to feed more people with maize in a rainy but rugged geography like Trabzon Province. Anatolian maize was basically a summer cereal; farmers usually windowed a mixture of maize and haricot bean seeds[129] randomly to the air sometime in late May[130] or early June,[131] according the warmth and humidity of the soil.[132] As pointed out, the performance of this symbiosis was determined by watering and drainage, because maize requires summer heat and water. The water was needed especially during the flowering and yield formation stages in the late August and early September. If this requirement of water did not meet, it would cause 50% or more loss of crop yields.[133] One solution was lazy beds,[134] which were especially used in tobacco fields. Drainage lines were much more common;

Enstitüsü Müdürlüğü, http://arastirma.tarim.gov.tr/ktae/Belgeler/brosurler/M%C4%B1s%C4%B1r%20Tar%C4%B1m%C4%B1.pdf.

129 The agricultural calendar of haricot went hand in hand with that of maize; farmers mixed the seeds at a ratio of seven to one. “Beans and maize are sown in this country together: a measure of seven bean oceans is mixed with ten measures of maize, and we throw it to the wind" quoted from Bertrand, "Commerce de Trébizonde en 1889." On the other hand, it was seven *okka*s of maize with three *okka*s of haricots per *dönüm* in Thessaly, where it was a summer crop harvests in autumn. See also Brad, "La Culture de Maïs."

130 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1894."; and Kuzucu, "Osmanlı Döneminde Karadeniz Bölgesinde Mısır Tarımı ve Islah Çalışmaları," 774; and "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde et Kérassonde)."

131 Guarracino, "Remarks on the Trade and Navigation of Samsoon for 1857."; and "Report on Trade and Navigation of Samsoon for the Year 1858."; and Stevens, "Report on the Trade of Trebizond during the Half-year Ending 30th June, 1860."

132 Like the July of 1894, see "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1894."

133 Nations, "Crop Water Information: Maize".

134 De la Brad points out that lazy beds were used in humid, rainy climates in Ottoman Empire, see Brad, "Progrès de L'Agriculture en Turquie. Le Drainage (Cinquième et Dernier Article)."

farmers grubbed the soil[135] from 30-40 down to 2-3 centimeters deep.[136] According to the amount of the late summer rainfall, the harvest was generally in September[137] but always between the late August[138] and early November.[139]

This labor routine rarely changed throughout the century and since maize cultivation required human labor like grubbing and hoeing but only small parcels of land, most big metal tools like the plow and other machines were useless. For that reason, big machines, even metal plows were rarely used in maize cultivation characterized by small, rugged fields in eastern part of Trabzon Province. Moreover, this maize-haricot symbiosis remained the same throughout the century but a third crop with which to seed or rotate entered the picture according to changes to long-distance markets in certain geographies. For example, flax and hemp were a third crop grown in a limited area between Atina and Perşembe, especially in Ünye and Terme,[140] but was abandoned by the end of the century. Another alternative to this maize-haricot symbiosis emerged after the hazel boom in the late-nineteenth century. Farmers started seeding maize and haricots in the space between two-to-four-year old saplings in hazel orchards to open up more space for the increasingly lucrative hazels.[141] On the other hand, again in the late nineteenth century, most

135 Schéfer, "Renseigement Concernant la Province de Trébizonde," 49.

136 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

137 See Kuzucu, "Osmanlı Döneminde Karadeniz Bölgesinde Mısır Tarımı ve Islah Çalışmaları," 774.

138 "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde et Kérassonde)."

139 Biliotti, "Report by Vice-Consul Biliotti on the Trade, Commerce and Navigation of the Port and Distinct of Trebizond for the Years of 1877-1878."

140 See ibid.

141 In this relation not only did both plants require similar labor, like regular hoeing, the hazels created shade protecting the maize from the exhausting summer heat in exchange for the maize drying out whole all the moisture from the soil, preventing detrimental weeds from growing. See Antreasyan, *Fındık Ziraati ve Ticareti* 30.

farmers in Canik dealing with tobacco decided to increase their wheat production either by rotating maize and wheat[142] or completely transforming maize fields into wheat fields. The reason was that while maize and tobacco were summer crops, wheat required labor during autumn and spring.

5.2.2 *Cash Crops*

5.2.2.1 Tobacco

Tobacco was the most labor-intensive crop in Southeastern Black Sea region which required strict obedience to the agricultural calendar. If any step was half-done or delayed, the quality – and hence the price – of the product could decrease considerably.[143] Therefore, farmers grew tobacco leaves with ultimate care. Tobacco seeds require heat to germinate[144] and in order to accelerate its growth,[145] farmers planted the seeds[146] into well-fertilized[147] opened or closed

142 It was reported that maize and haricot were seeded alone and were sometimes rotated with wheat but rarely with tobacco. See Schéfer, "Renseigement Concernant la Province de Trébizonde." For an example in the 1900s, see "Canik Sancağının 1328 Senesi Emval-i Ziraiyyesi [Canik Ziraat Muavinin Raporu]."

143 If one step was delayed, the drying would coincide with first rains of autumn.

144 Necmi İşler, "Tütün Tarımı," www.mku.edu.tr/getblogfile.php?keyid=1002.

145 "In general, seeds are planted in beds because most of the time natural heat cannot be enough to obtain early crops. There are many benefits in growing seedlings in bed: if seedlings can be grown quickly, collection will be early. Harvest can be done on time" quoted from Mardinîzâde, Tütüncülük, 29-30.

146 To compare: "when it comes to the amount of seeds to be planted: It varies according to need. 3 grams of seed is calculated for one square meter surface. We need 10-12 square feet of space for 10 acres. In this area, 30-35 grams of tobacco seeds are sufficient. There are 8,000 seeds in one centimeter" quoted from ibid., 34.

147 "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde et Kérassonde)."

seedbeds,[148] usually by February or March.[149] Germination normally took 20-25 days but if they were exposed to cold,[150] this period could extend to 50-60 days.[151]

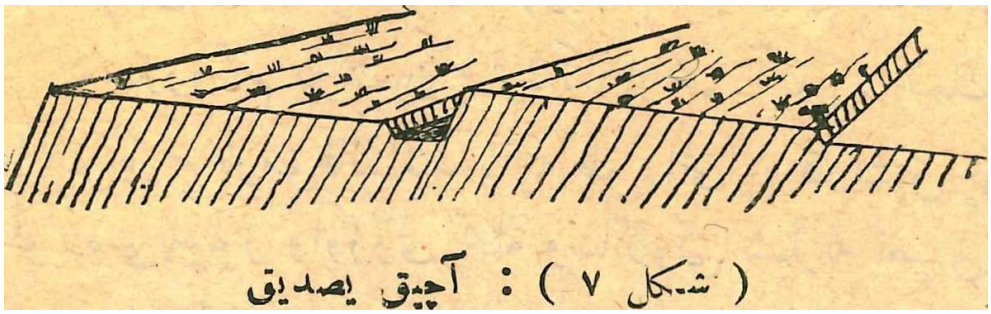


Figure 5.7 An Open Seedbed[152]

SOURCE Ahmed Cemalettin Mardinîzâde, Tütüncülük (Istanbul: Cumhuriyet Matbaası, H. 1321)

148 "Sıcak Yastıklar: Yastık için intihab olunan mahal daima fideler yetiştirmeye tahsis olunacak ise taş, tuğla, kereste gibi sağlam mevaddan inşa edilir. Bu gibi sabit ve daimi yastıkların yapılması için çiftçinin ikametgâhına yakın bir yerde 70-80 santimetre derinliğinde bir mahal kazılır. Bunun içerisi taş ve yahut tuğla ile evrilir ve yahut sağlam kalıp çam tahtalar ile ihata olunur. Bunların arazi ameliyat-ı cariyenin kolaylığı için 1-10 metre yapılır. Tavli ise çiftçinin yetiştireceği fideye göre değişir. Bu yastıklar bazen nısfi toprağın dâhilinde ve nısfi toprağın harcında tohumdan yapıldığı gibi tamamen toprağın sathında da yapılır. Bu sonuncuları ise muvakket yastıkları teşkil ederler" quoted from Tütüncülük, 30-31.

149 For February, see Bertrand, "Commerce de Trébizonde en 1889." The observation in Contanze concurs with Mardinîzâde's suggestions; March for early reseeding and April for late reseeding, see Mardinîzâde, *Tütüncülük*, 33; and Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

150 For that reason, it was essential to protect the plants from cold northern winds. See Mardinîzâde, *Tütüncülük*, 31.

151 Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 46.

152 *Mardinîzâde, Tütüncülük, 33.*

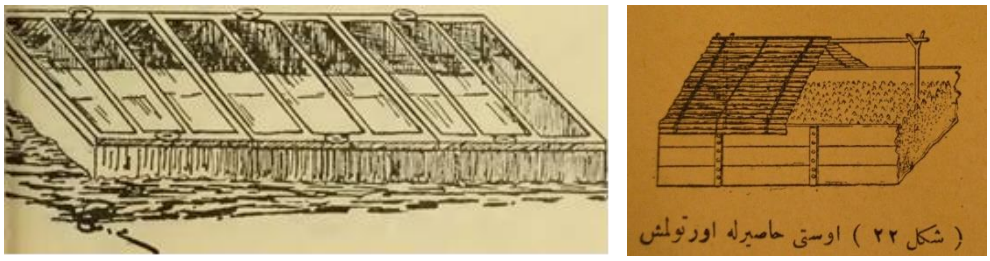
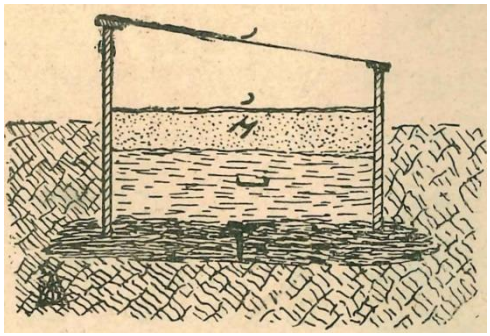


Figure 5.8 Glazed and Straw Covered Seedbeds

SOURCE Ekinci, Ziraat Ve Ticaret Muhtırası = Agenda, Aide-Mémoire Agricole et Commerciale and Ahmed Cemalettin Mardinîzâde, Tütüncülük (Istanbul: Cumhuriyet Matbaası, H. 1321)



ر	Sneezeguard
د	Mixture of mold with rotten sheep manure
ج	Mortar
ب	Farm manure
ا	Briar

Figure 5.9 Layers of a Closed Seedbed

SOURCE Ahmed Cemalettin Mardinîzâde, Tütüncülük (Istanbul: Cumhuriyet Matbaası, H. 1321)

When seedlings were approximately six thumbs long, they were reseeded in well-plowed fields in rows spaced roughly 30 centimeters apart,[153] usually in

153 "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde et Kérassonde)." The farmers usually seeded four or five plants with a one-meter-long furrow. "Seeding is done in February, and transplanting of the seedlings in May: on a furrow 1 meter long, 4 or 5 plants are placed, and the empty distance between each furrow is about 35 centimeters, so that a *dönüm* of land can contain from 3,600 to 6,300 tobacco plants"

May.[154] Approximately one month later, farmers started to prune the tips of the stalks every week for three or four weeks.[155] If everything went well, the leaves would turn red by June.[156] Plants were only hand-watered in the seedbeds: the water requirement for the fields was met by rain. This rainfall was an important factor for quality. One or two rains helped with blooming and resulted in the best quality, heavy rains blackened the leaves and decreased the quality and a total drought resulted in mediocre quality.[157] However, the crop yields of tobacco usually were not as subject to the caprices of weather as maize since tobacco fields were generally smaller enabling farmers to water their fields if necessary. Abundant rain during the early yield formation and the

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quoted from Bertrand, "Commerce de Trébizonde en 1889." To compare; Mardinîzâde's suggestion for the distance between rows (20-25 centimeters) was less than what was used in Samsun (30 centimeters). See Mardinîzâde, *Tütüncülük*, 38.

154 "And transplanting young plants done in May" quoted from Bertrand, "Commerce de Trébizonde en 1889."

155 "One month after transplanting, the tip of the stem is cut to strengthen it, and some time later all the new shoots; this last operation is repeated three times, one week apart, then they begin to pick the leaves" quoted from ibid.

156 See Renseignements sur les 30 Balles Tabacs Expediées le 24 Juilliet 1864 (undated, probably the late 1864), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN.

157 "The tobacco plants are watered only at the time of transplanting; after which, this care is left to nature; if the weather is dry with one or two rains until the maturity of the leaf, the harvest becomes abundant and of good quality; on the other hand, if the drought is constant, the harvest is mediocre and the leaf remains small, without however affecting the quality; if the weather is rainy, the harvest is abundant but at the expense of quality because the leaves are becoming black and becoming black" quoted from Bertrand, "Commerce de Trébizonde en 1889."

flowering periods could lead to an abundant, but lower-quality crop[158] has occurred in 1877,[159] 1878,[160] 1884,[161] 1893,[162] 1894,[163] 1896,[164] and 1899.[165] On the other hand, scarce rain during the same periods could cause the opposite effect – a high quality but low crop yield – as occurred in 1879,[166] 1890[167] and 1891.[168] As expected, only adequate rain would result in both good quality and abundant quantity as occurred in 1859,[169] 1882,[170] 1883[171] 1888,[172] 1890,[173] 1892,[174] 1897,[175] 1901[176] and 1909.[177]

158 Food and Agriculture Organization of United Nations, "Crop Water Information: Tobacco," http://www.fao.org/nr/water/cropinfo_tobacco.html.

159 Biliotti, "Report by Vice-Consul Biliotti on the Trade, Commerce and Navigation of the Port and Distinct of Trebizond for the Years of 1877-1878."

160 "Report on the Trade and Commerce for the Year 1878."

161 "Report on the Trade and Commerce of the District of Trebizond for the Year 1884."

162 Contanze, "Rapport Commercial de Samsoun (1897)." The tobacco was abundant but of lower quality. Because of cloudy and rainy weather in autumn, the leaves could not dry to a bright color, see Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1893."

163 "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1894."; and Contanze, "Rapport Commercial de Samsoun (1897)."

164 Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1896," (London: Foreign Office of the United Kingdom, 1896).

165 Contanze, "Rapport Commercial de Samsoun (1899)."

166 Biliotti, "Report on the Trade, Commerce, and Navigation of the District of Trebizond for the Year 1879."

167 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1890."

168 "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1891."

169 Stevens, "Report on the Trade of Trebizond for the Year 1859."

170 Alfred Biliotti, "Report on the Trade, Commerce, and Navigation at Trebizond for the Year 1882," (London: Foreign Office of the United Kingdom, 1882).

171 "Report on the Trade, Commerce, and Navigation at Trebizond for the Year 1883."

172 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1888."

173 Contanze, "Rapport Commercial de Samsoun (1897)."

174 Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1892," (London: Foreign Office of the United Kingdom, 1892).

175 Contanze, "Rapport Commercial de Samsoun (1897)."

176 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1901."

177 "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909."

An ordinary plant vendors 5–13 leaves.[178] Picking usually started in the late July or the early August[179] but could extend to early October if something went wrong.[180] For example, tobacco seeded as late as April in 1909 was picked in September.[181] In the mid-1840s, farmers collected leaves with little regarding for their condition, maturity, size, and color. However, by the turn of century, once quality standards had improved leaves were picked according to a weekly schedule starting with those at the bottom (*dip*) in the first week, the middle ones (*haşlak*)[182] in the second week, and finally those at the top (*doruk*).[183] These leaves were arranged according to size and color. After the collection, leaves were clipped to three-to-four-meter strings. These leaves were left in the open under the sun but sheltered at nights for ten to twenty-five days, usually until October.[184]

178 "Each plant, having reached all its growth, has 5 to 13 leaves " quoted from Bertrand, "Commerce de Trébizonde en 1889."

179 " These three harvests are successively from July to August" quoted from ibid.

180 Renseignements sur les 30 Balles Tabacs Expediées le 24 Juilliet 1864 (undated, probably the late 1864), Agence Consulaire de Samsoun, Les Tabacs 1863 à 1876, 605 PO/1, AMAE, CADN.

181 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909."

182 It is called *fidelik* or *orta*, today.

183 "The first cut leaves are called *dip-yaprak* and sell from 10 to 30 piasters the batman of six *okka*s; the second leaves are called *haşlak* and sell for 30 to 36 piastres the batman; finally, the third leaves called *doruk* are sold for 30 to 50 piastres the batman; these three harvests are successively from July to August" quoted from Bertrand, "Commerce de Trébizonde en 1889." Also see Biliotti, "Report by Consul Biliotti on the Town and Port of Samsoon, and on Circassian Colony in the District (1884)."; and Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1891."; and "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde et Kérassonde)."

184 Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 46.

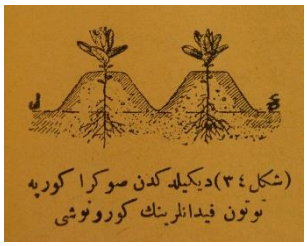

Figure 5.10 Reseeded Tobacco Seedlings in a Perfect Line

SOURCE Ekinci, Türkiye'de Tütün, Ziraat, San'at Ve Ticareti

Oriental tobacco had always been known for its perfume and color. However, when exposed to humidity, these leaves quickly lost their color, perfume and taste because of fermentation.[185] In the 1840s, farmers stacked the leaves into *bohça*s (pack)[186] without much attention. Subsequently, these leaves were not packed properly only in the ports, by which time caused loss of perfume and color, and thus quality had already occurred. By the turn of the century, farmers were increasingly obeying the standards of packing[187] and increasingly insulating the product against the humidity. The farmers carefully grouped leaves according to size, color, quality, and types. Then these arranged leaves were sowed to each other as usually ten and packed, as fast as they could, in wooden ballots.[188]

185 Bertrand, "Commerce de Trébizonde en 1889."

186 Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 116.

187 These packs were controlled by two or three hands in value chain. See "La Culture de Tabac en Turquie," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 23, 1904.

188 "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde et Kérassonde)."

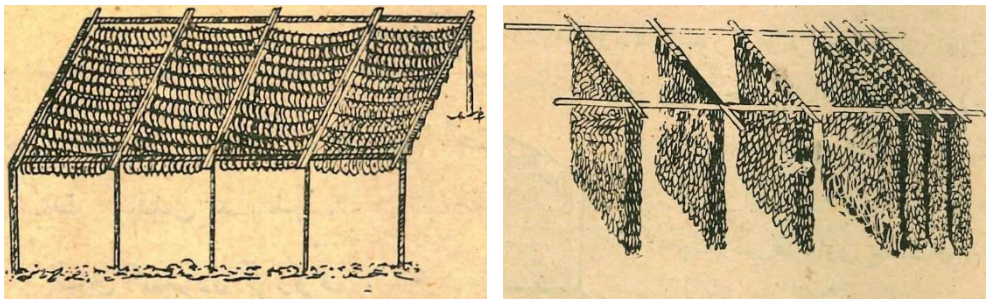

Figure 5.11 Sewing and Stringing the Leaves for Dehumidification

SOURCE Ahmed Cemalettin Mardinîzâde, Tütüncülük (Istanbul: Cumhuriyet Matbaası, H. 1321)

Tobacco farmers, especially in Canik, were most touched by technological change than others. The foremost reason was geographical proximity to ports: they suffered less from transportation and transaction costs. Second, the introduction of such tools was more rewarding because revenue from tobacco increases more handsomely with amelioration its quality. Third, they were wealthier than other farmers, which enabled them to invest more. As discussed above, the new technologies, plows and hand tools profited most in Canik. Traditionally, the primary way of restoring the fertility of soil was to rely on swelling rivers carrying silt.[189] Second, farmers depended on animal manure provided by their livestock to fertilize the soils,[190] as for other crops.[191]

189 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

190 Güran states that Anatolian animals usually produced manure 3.5 times their weight but it is impossible to know if this was the case for Southeastern Black Sea region, see Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 88.

191 According to an experiment conducted by Halkalı Agricultural School, maize yields were considerably greater when it was properly fertilized with chemical fertilizers. Mehmed Yaşar claimed that using chemical fertilizers was more lucrative as well. However, this experiment compared chemical fertilizers and no fertilizer and did not measure the difference between animal and new and chemical fertilizers, see Mehmed Yaşar, "Halkalı Ziraat Mekteb-i Âlisi Tecrübelerinden: Mısır Nebatı Üzerindeki Neticesi," *Yeni Ziraat Gazetesi*, December 1, 1920 (1 Kanun-i Evvel 1336) 1920, 11-13.

Animal excrement was also a good source of nitrates and potassium.[192] There were alternative methods to recycle animal scat into manure. The most common was to pay the owners of sheep owners to pasture their flocks over the fields for two or three nights.[193] Another way was to lay hay on the flours of barns which absorbed the urine which was rich in minerals. As hazelnut cultivation increased hay was replaced by nut shell, which were more absorbent.[194] Moreover, animal bones, which were rich in phosphates, were used as manure, and in Trabzon and Polathâne, the use of the fishbone of anchovies (*hamsi*) was also common.[195] The alternatives were plenty for tobacco farming: to ameliorate the quality of the plant, farmers profited from many by-products like ash[196] and cheese.[197] Chemical fertilizers arrived in the late nineteenth century, but their main problem was their cost,[198] which made it rational to use chemical fertilizers only for the most lucrative crops.[199] For that reason, farmers growing tobacco increasingly benefitted from chemical fertilizers in the new century, especially in the 1910s.[200] However, the distribution of these

192 Mehmet Ali Yetgin, "Organik Gübreler ve Önemi," Samsun Valiliği İl Tarım Müdürlüğü Çiftçi Eğitimi ve Yayım Şubesi, http://samsun.tarim.gov.tr/Belgeler/Yayinlar/Kitaplarimiz/organik_gubreler_ve_onemi.pdf.

193 Schéfer, "Renseigement Concernant la Province de Trébizonde," 49.

194 Antreasyan, *Fındık Ziraati ve Ticareti* 57.

195 Ekinci, *Türkiye'de Tütün, Ziraat, San'at ve Ticareti*, 40.

196 Probably with ashes in its root, see Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 46.

197 It is claimed that cheese gave tobacco its good perfume. See Ekinci, *Türkiye'de Tütün, Ziraat, San'at ve Ticareti*, 39.

198 Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 89.

199 For example, after experimenting with chemical fertilizers in the villages of Çırakman, Tekke and Diyokiris, farmers observed both a great amelioration in quality and a 31% increase in quantity, see "Canik Sancağının 1328 Senesi Emval-i Ziraiyyesi [Canik Ziraat Muavinin Raporu]." However, the cost of using such fertilizers is unknown. According to an estimate by the Halkalı Agricultural School, the cost of cultivating a wheat field of 1 *dönüm* was 76 piasters without chemical fertilizers and 119 piasters using chemical fertilizers – 56.5% higher, see *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 88.

200 Satow, "Report on the Trade and Commerce of the Vilayet of Trebizond for the Year 1912."

chemicals rarely reached the hinterland where farmers mostly used traditional manures to fertilize their soil.

Table 5.3 Effect of Chemical Fertilizers

In Kilograms per 75 m²	Stems	Kernel
Without fertilizers	14	10.5
With fertilizers	17	12.5

In Kilograms per *dönüm*	Stems	Kernel
Without fertilizers	22	14
With fertilizers	26.5	18

SOURCE Yaşar, "Halkalı Ziraat Mekteb-i Âlisi Tecrübelerinden: Mısır Nebatı Üzerindeki Neticesi"

Interestingly, tobacco is a green manure that cleans the soil, and some local farmers rotated it with wheat and maize to increase crop yields.[201] On the other hand, tobacco's quality ameliorated when it was cultivated in the same field without rotating it with another crop. Farmers rotated the crop only occasionally as a measure against the risk of pest infestation.[202] Therefore, farmers had to choose between either investing in quality tobacco or in total crop yields. The preference between these options depended on the performance of the soil.[203]

201 The first alternative on cultivating tobacco was rotating in wheat. If the well-fertilized field was seeded with tobacco the first year, wheat the second year and another cereal the third, crop yields of the cereals increased remarkably. This rotation could be repeated without fallowing. If the soil was fertilized before tobacco cultivation. See Mardinîzâde, Tütüncülük, 28-29.

202 "Tobacco cultivation is carried out in regularly fertilized fields each year. In the places planted in a row the leaves are thinner and the tobacco grows more exquisite. However, if it is continuously cultivated, it causes the emergence of a number of diseases and pests. It is more profitable to subject the tobacco to an alternation for higher crop yields" quoted from ibid., 28.

203 If farmers earned enough money from a tobacco plantation, they would dedicate all their efforts and best fields to cultivating only tobacco as occurred in some villages of Bafra and Samsun. However, if the quality was low, the farmer rotated the crop with cereals especially with wheat, as in Alaçam. If the quality of tobacco was mediocre, farmers would divide their land

Comparing tobacco cultivation in example villages would help to understand how tobacco farming works in various villages. In the adjacent villages of Çırakman, Tekke and Diyokiris, roughly fifteen kilometers east of the Samsun port, the soil enabled farmers to grow good quality *kara maaden*. For that reason, the farmers extensively cultivated tobacco for market, which provided for their well-being. Gardening and cereal cultivation were additional actively. These villagers were relatively prosperous and fully-integrated into market economics.[204] Moreover, farmers in these villages had the means in invest to ameliorating the quality of their crop. For example, they experimented with chemical fertilizers in 1909-1910, when yields 31% more than usual.[205] On the other hand, the small village of Ada was an example of villages with poor soil performance because of its hardness and high concentrations of lime.[206] Since the soil in these villages only allowed farmers to produce lower-quality tobacco, these farmers allocated their resources to maximizing crop yields by rotating tobacco with wheat and maize in fourteen-month-long crop cycle.[207] In contrast to the prosperity of the aforementioned farmers, these farmers were captured agents depended on mercantile credit to survive because these tobacco was of low quality.[208] Accordingly, qualitative and technological changes mostly happened in the region between the *kaza*s of Samsun and Bafra, not in Polathâne.

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into two and cultivated tobacco in the more fertile and intercrop maize and haricot beans in the other like in Polathâne, Trabzon, and Çarşamba.

204 In Çakırman, there was also a windmill to grind cereals for bread-cooking. This windmill is now a tourist attraction in Tekkeköy *ilçesi*. See Figure 5.12 for the picture of the mill and for the description, see "Canik Sancağının 1328 Senesi Emval-i Ziraiyyesi [Canik Ziraat Muavinin Raporu]."

205 ibid.

206 This village, which had approximately forty houses then, is now known as Adaköy in Bafra.

207 One *dönüm* of land yielded tobacco worth a maximum 500 piasters. See "Canik Sancağının 1328 Senesi Emval-i Ziraiyyesi [Canik Ziraat Muavinin Raporu]."

208 ibid.

Figure 5.12 Windmill of Çırakman Village Built in the 1860s

5.2.2.2 Hazelnuts[209]

The hazel is a perennial tree[210] that requires a specific climate[211] but generally little work[212] except for seeding and harvesting. Since a sudden change in the

209 The different types of hazelnuts were round, mixed and pointed (*sivri* and *tombul*). See "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1886."; and "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde et Kérassonde)."

210 Although it can live as long as a hundred years, the tree stop producing in round their twentieth year. "The hazel […] can last more or less long, depending on the fertility of the soil: some claim that its duration can be twenty to one hundred years" quoted from Bertrand, "Commerce de Trébizonde en 1889."; and Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909."

211 "Toprağın tabiyatı. – Bataklık, rutubetli, ve hamisi araziden mada" quoted from Antreasyan, *Fındık Ziraati ve Ticareti* 15.

212 Biliotti, "Report on the Trade, Commerce, and Navigation at Trebizond for the Year 1882."

atmosphere from heat to cold – especially frost and hard colds in April – completely spoiled the nuts, as occurred in 1841,[213] 1843,[214] and 1844,[215] hazelnut farmers followed (and still follow) two alternative calendars. According the calendar that was most widespread in nineteenth century, seedlings[216] were planted in open seedbeds after the last frosts of spring[217] (in March[218] or April[219]). Although, farmers previously planted trees randomly, to obtain better fertility given increasing global demand in the late nineteenth century, they increasingly seeded them in rows, usually 2[220]-2.75 meters apart,[221] with strict geometrical regularity.[222] The first fruits usually reached maturity by mid-June[223] and farmers collected them in July or early August[224] just before they

213 Stevens, "Report on the Trade of Trebizond for the Year 1841."

214 "Report on the Trade of Trebizond for the Year 1843."

215 "Report on the Trade of Trebizond for the Year 1844."

216 In the most case, the seeds were kept in the sand during winter and germinated in February Antreasyan, *Fındık Ziraati ve Ticareti* 17.

217 See ibid., 18. For the unease of farmers about a possible frost in March 1887. See "Nos Provinces (Trébizonde, le 26 Mars)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 9, 1887.

218 Bertrand, "Commerce de Trébizonde en 1889."

219 Antreasyan, *Fındık Ziraati ve Ticareti* 18.

220 ibid., 27.

221 See Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909." Today, with use of fertilizers and better techniques, it is recommended to seed the trees 1.5-2 meters apart. See Ali Rıza Demirbaş, "Fındık Tarımı," ed. Samsun Valiliği İl Tarım Müdürlüğü (Samsun: Samsun Valiliiği İl Tarım Müdürlüğü Çiftçi Eğitimi ve Yayım Şubesi, 2010).

222 For comparison, the same strict regulations were followed for the cultivation of walnut trees as well. The young plants were seeded in furrows 60-70 centimeters deep by 30 centimeters wide with 50 centimeters between them. The distances were carefully measured with ropes. See "Reproduction de Noyer," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, December 25, 1897.

223 The maturation in seedbeds took almost a year and they were reseeded at the end of the first winter. Antreasyan, *Fındık Ziraati ve Ticareti* 19 and 48. For example, it was the second week of June in 1897 and the Journal de la Chambre de Commerce de Constantinople provided information on the nuts, 12 June 1897. See "Revue Hebdomadaire du Marché de Constantinople (Articles d'Exportation)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 12, 1897.

224 For July, see Bertrand, "Commerce de Trébizonde en 1889." For August, see "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde

started to fall themselves.[225] According to the alternative calendar, which is more popular today, hazels were planted in autumn[226] and their fruits were collected around March.[227] After being collected, the fruits were laid out under the sun to dehydrate for some days.[228] Cracked hazelnuts became ready for transport by March-April or September-October.[229]

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et Kérassonde)."; and Antreasyan, *Fındık Ziraati ve Ticareti* 48. Except late harvests years like in 1893 or 1899, see "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1893."; and Longworth, "Report on the Trade and Commerce of the Trebizond and Sivas Vilayets for the Year 1899."

225 Because the gardens were usually infested with wild weeds, it was harder to search for them and collect them off the ground. See Antreasyan, *Fındık Ziraati ve Ticareti* 41-42.

226 See ibid., 29-30; and Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909."

227 "[…] for the time of the hazelnut shipments, which are on March and April with September and October" quoted from OA ŞD.594.13, August 5, 1902.

228 "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1886."

229 "Le Commerce à Trébizonde."; and "Revue Commerciale et Prix-Courants (September 22, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 22, 1888. Today, hazel trees are usually seeded in autumn not spring, see and Demirbaş, "Fındık Tarımı."; and H. İrfan Balık and Sinem Çoban, "Fındık Bahçesi Tesisi ve Dikim Sistemleri," ed. Fındık Araştırma İstasyonu Müdürlüğü (Giresun2013); and Sinem Çoban Selda Kayalak Balık, "Fındık Yetiştirme Tekniği," http://arastirma.tarim.gov.tr/findik/Sayfalar/Detay.aspx?SayfaId=22.

Figure 5.13 Girls from Giresun Picking Hazelnuts (Picture on the back of a 5-Lira Note in the 1950s)

SOURCE Türkiye Cumhuriyet Merkez Bankası

The most labor-consuming part of hazelnut cultivation was when the trees were still young as well as annually during the harvesting and cracking. Before the plants began giving fruits, when three to seven years old,[230] they required careful maintenance including regularly hoeing[231] and pruning of the

230 Bertrand claimed that hazel began giving fruits, when three to seven years old. See Bertrand, "Commerce de Trébizonde en 1889." "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde et Kérassonde)." Longworth claimed that the average age is four. See Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909."

231 Antreasyan, *Fındık Ziraati ve Ticareti* 30.

trunks.[232] The second labor-intensive period came every year with the collection, drying, and cracking, which were handled mainly with the help of seasonal workers.[233] Traditional methods required brute force exercised repeatedly by many people for many days.[234] After the demand boom in the 1880s, fumigation with Sulphur[235] became popular. Although this method gave the nuts a better color.[236] It imparted a disagreeable taste and was dangerous for consumer's health. Although this method was popular in the early 1880s, foreign merchants eventually started to protest,[237] and in 1887, some is nuts that had already been shipped hazelnuts were returned from England.[238] The last

232 "As soon as it no longer produces, they cut the trunks and let new stems grow from the root, […] the old branches are sometimes cut to revive the sap, and the earth is stirred around the roots" quoted from Bertrand, "Commerce de Trébizonde en 1889."

233 For different cracking methods in different parts of Trabzon Province. See Antreasyan, *Fındık Ziraati ve Ticareti* 50-53.

234 In the method without the use of a machine, harvesters walked over the fruits then repeated this procedure several times. When the sun set, the harvester started hitting them with a wooden harrow sometimes until evening. Then the harvester walked over the fruits and hit them with the harrow a second time. Finally, the hazelnuts were cracked manually. See ibid., 55-56.

235 "The nuts are sorted by revolving screens, broken down by stone mills, dried in the sun and packed in sacks. Shelling reduces the weight by half, effectively a saving 50 per cent, on the cost of freight and giving six months' employment to several thousand people. The bad practice of tinging the nuts to a fine yellow hue by exposure to sulphuric funics has not yet entirely ceased, much as it injures their flavour and adds to the cost of the article," quoted from Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909."

236 "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1886."

237 "Hazelnut in Trabzon province are collected and sold by their producers without fully maturing and, because it is being painted by exposure to sulphuric funics, it becomes harmful to health and losses consumers in European market. […] the villagers of the aforementioned province have dropped the hazelnut for a few years without fully maturing. The nuts are stored in damp places with their shell and then sold to the markets without exposure to the sun even for one day after removing the shells. The merchants buy the nuts without checking the humidity and paint them by exposure to sulphuric funics, which made the nuts harmful to health" quoted from OA ŞD.1864.14, June 22, 1909.

238 However, the sulphurization method was never entirely abandoned; "[T]he bad practice of tinging the nuts to a fine yellow hue by exposure to sulphuric funics has not yet entirely ceased, much as it injures their flavour and adds to the cost of the article" quoted from Longworth,

transformation was the arrival of simple machines most of which operated with petroleum.[239] Although, these machines ameliorated the performance of processing the fruits after harvest, they had little effect on the agricultural production process.

§ 5.3 Chapter Summary

With institutional and technological changes in long-distance markets, agricultural production in Southeastern Black Sea region went through a series of changes during the second half of the nineteenth century. This chapter focused on changes to the physical features of agricultural production, such as technology and the organization of labor. It has been argued that different crops and different geographies reacted differently and adapted the agricultural calendar or adopted new technologies in line with the formation and transformation of long-distance markets. For example, the champion of intensive growth and technologic change was tobacco. Its agricultural calendar became more and more strict with the introduction of new techniques, and tobacco farmers used chemical fertilizers the most. However, labor-saving technologies – new tools and machines rarely became part of labor-intensive tobacco production, because most such technologies were designed to replace animal power, while tobacco cultivation was essentially a "human" labor-intensive crop. Likewise, new techniques and chemical fertilizers were welcomed by farmers in Bafra and Samsun, who had a higher potential to obtain better quality-product, hence more profits.

"Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909." Antreasyan, *Fındık Ziraati ve Ticareti* 66.

239 By 1927, there were at least sixty cracking facilities, forty-five of which were operated by roughly 5.5 horsepower machines consuming petroleum. Total production in 1927 was estimated as 16,853,221 kilograms by machines and 551,000 kilograms by hand. In addition, there were two workshops dealing with the repair of these machineries. See original source ed. TCMM, *Türkiye Cumhuriyeti Devlet Salnamesi, 1927-1928* (Istanbul: Matbuat Müdüriyet-i Umumisi, 1928). and for translation Ayhan Yüksel, *Giresun Tarihi Yazıları* (Istanbul: Kitabevi, 2007), 142-45.

In addition, the institutional framework and labor-capital ratio in agriculture hardly favored technological innovation for most of the century. The economic conditions, institutions, and factor markets resisting technologic change weakened by the end of the century. However, even then, farmers invested in new technologies mostly to ameliorate the quality of cash crops, as was the case for chemical fertilizer use in tobacco cultivation. Otherwise, farmers were only interested in completely new, cheap hand tools that had no traditional precedent, like sprayers. The only exception was industrial plows, the geographic distribution of which remained limited to the hinterland of the port of Samsun and the plain of Pasinler.

On the hand, as we are going to discuss in the next chapter, agrarian change in grains consisted mainly of extensive growth. Whenever conditions favored agrarian change in grains, farmers preferred to clear land and further exploit their labor and livestock as Chayanov suggests, instead of investing in new technologies and fertilizers. For that reason, agrarian change in Southeast Black generally meant a change in labor, not in technology. In other words, farmers responded to external factors mainly by changing how they exercised the labor, not by investing in new technologies. For example, in tobacco, the emergence of the cigarette industry brought about the standardization of labor, strict obeisance to the agricultural calendar and quality standards. Likewise, hazelnut farmers increasingly planted trees with geometrical regularity and intensified the maintenance of the trees only in specific periods.

6

Agricultural Growth (1880s-1910s)

This chapter recapitulates the findings and main arguments in the previous chapters in the context of agricultural growth. However, unlike previous chapters, four which primary sources were extremely rich, research on agricultural growth is challenged by the absence and inaccuracy of primary sources. As discussed in the introduction, statistics on Southeastern Black Sea region before the 1880s are rare, and those that exist pose statistical and historiographic issues. In the cases when statistics on agricultural production are gathered mainly from consular reports, Cuinet's estimates, and the Consensus of 1909 are accurate, there are still issues. For that reason, four control variables have been added to test the accuracy of these estimates. First, since examining agricultural growth requires statistical estimates, this chapter covers only the 1880s-1910s. Second, statistics on variation in the exportation of cash crops should coincide with changes in their total production since such massively cultivated, lucrative crops like tobacco, hazelnuts, and haricot beans were rarely consumed by locals. Accordingly, the change in long-term exports of tobacco, hazelnuts, and haricot should be strictly consistent with long-term extensive growth. Third, the changes in the geographic distribution of the plants over three decades is taken into consideration because extensive growth generally resulted in geographic expansion or constriction. Finally, reports on the yearly performance of cereals are added to the picture, providing a window into long-term agrarian change.

Another reason an account of the yearly performance of cereals is added is that these also explain the factors behind long-term growth. The performance of Russian cereals and the effect of the global price pendulum of 1893-1896 on local cereals are crucial. Moreover, since the history of tobacco production is given in the fourth chapter, a short history of cereals and hazelnuts is presented in this chapter. According to the findings deduced from these statistics, extensive growth for the late nineteenth century happened mainly in cereals and hazelnuts; the percentages of cash crops remained the steady. Almost all cereals benefitted from the extensive growth trend with the major exception of maize. One reason behind the long-term extensive growth in cereals was population growth; however, when the effect of population growth is accounted for, it is clear that the Sanjaks, that most experienced extensive growth were those with emerging local flour industry and amelioration of the transportation infrastructure. For that reason, the main reasons for extensive growth were amelioration of the transportation infrastructure along with the emergence of agro-business. In other words, falling transaction, information capital and especially transportation costs lay behind the extensive growth. On the other hand, the total production of major cash crops remained stable during this period, because economic actors were invested in intensive growth of crops like tobacco and opium.

§ 6.1 Extensive Growth in Grains

It has been widely assumed that nineteenth-century Trabzon Province should have been one of the smallest areas of cultivation among Asian and African Provinces but statistics falsify this hypothesis. Trabzon Province is geographically one of the smallest provinces and its uneven mountainous terrain limits the land area available for cultivation; however, according to the Consensus of 1909, this province was ranked first in terms of the percentage of land under cultivation compared to the total size of the province – 11.7% –, and had the seventh largest total land under cultivation among Ottoman provinces in Asia and Africa.[1] On the other hand, only 5% of Sivas Province's vast lands were

1 See Map 6.1.

under cultivation and the total area of its land under cultivation only slightly surpassed that of Trabzon. For the Province of Erzurum, both the total area under cultivation and the ratio were behind those of Sivas and Trabzon. To understand how uncanny this was, consider these four facts: first, Trabzon less potential land for cultivation due to presence of mountains. Second, the consensus of 1909 did not count terrain reserved for arboriculture, and the Province of Trabzon had one of richest if not the richest of culture in Ottoman Asia and Africa. Third, the dominant crops in this Province – like maize, haricots or tobacco – were land-intensive crops that required less land to feed same number of people than wheat or barley. Finally, earlier statistics like those of Cuinet estimated that the Province of Trabzon in terms percentage of total area under cultivation should was greater in comparison to Sivas and Erzurum Provinces.[2]

2 According to Cuinet, the total area under cultivation in Sivas Province was 336,320 hectares and in Trabzon Province was 563,545 hectares, see Cuinet, "Vilayet de Trébizonde Statistique Descriptive."; and "Vilayet de Sivas Statisique Descriptive."

Map 6.1 Areas Under Cultivation and Their Population[3]

SOURCE OA HRT h.142.7 (of 1914) and 1325 senesi Asya ve Afrika-i Osmanî Ziraat İstatistiği (of 1909)

Why did Trabzon Province acquire so much land under cultivation? The first reason is the population. All statistics, like the Consensus of 1909 or and those of Cuinet point out that 60-99% of the total area under cultivation in any Province was accounted for cereals.[4] In other words, at least two thirds of any Province's total area under cultivation was cereals. Since most cereals were cultivated as food for local humans and animals, the provinces with the highest percentage of land under cultivation (Trabzon, Adana, Aydın, Hüdavendigar, and Beyrut) were also those provinces the densest populations.[5] Put another way, the denser the population of a Province, the vaster the lands under cultivation. Second, farmers in these provinces were cultivating in great scale at

3 Color index from lightest to darkest: 1-5 person per kilometer, 5-10 person per kilometer, 10-20 person per kilometer, 20-30 person per kilometer and 30-40 person per kilometer.

4 Unsurprisingly, the Province of Archipelago (*Cezair-i bahr-i sefid*) had the lowest percentage of cereal cultivation with 57% and the Province of Erzurum had the highest with 99%, see Cemâl, *1325 Senesi Asya ve Afrika-ı Osmanî Ziraat İstatistiği*, 2.

5 See Map 6.1.

least one of the lucrative cash crops, like tobacco, cotton, mulberries, or grapes. All these provinces exported these cash crops from the most active, commercialized ports of Ottoman Asia and Africa, – Izmir for Province of Aydın, Iskenderun for Adana, Beyrut for Beyrut, Mudanya for Hüdavendigar. In other words, the agriculture of these provinces fed commercial ports which reciprocally created a continuous demand on their hinterlands. The cash crops cultivated in these provinces were a source of wealth for merchants, as well. Finally, all these provinces enjoyed an infrastructure connecting the hinterland and their ports; thus, they benefitted from low transportation costs, as well. In fact, although it is beyond the scope of this dissertation to investigate the matter further; there was a clear correlation between transportation costs, population, and total area under cultivation.

This latter hypothesis of a correlation among population growth, transportation costs, and the geographic expansion of cereals can be examined for Southeastern Black Sea region. A comparison between Consensus of 1909 and that of Cuinet points to the existence of growth in cereals, especially in wheat and barley, in the Provinces of Trabzon and Sivas.[6] The geographic center of the wheat boom was immediate hinterlands of two ports: Giresun, which was also the center of extensive growth in hazelnuts and especially Samsun, which was also the center of growth in tobacco. As pointed out in chapter three, the road networks there were considerably improved in the late nineteenth century, and as discussed in chapter four, agribusiness, especially a flour industry, emerged there in the late nineteenth century.

For these reasons, it is unsurprising that extensive growth in cereals happened in the immediate hinterland of Samsun – in the triangle of Merzifon, Amasya, and Havza. Amasya, the closest Sanjak to Samsun, enjoyed fertile

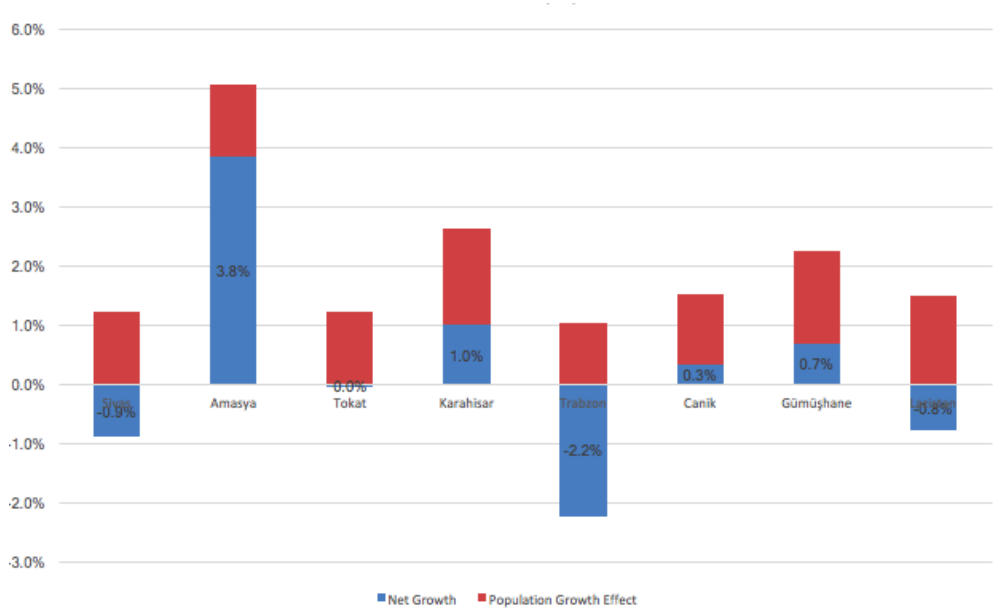
6 The estimate for long run growth is mainly based on the comparison of Cuinet with the consensus of 1909. However, I also checked their reliability by comparing with exports of cereals from the port of Samsun, which points to an increase in per capita production in the late nineteenth century. See the exports statistics in the first chapter and for the details of the calculations, see Appendix M.

wheat fields and was the champion of growth in cereals.[7] Almost doubling its total local production in just two decades. Amasya was followed by neighboring Sanjaks, especially Tokat (with 30% of growth), Canik (with 28% of growth), and Sanjaks of Sivas and Karahisar (with 54% of growth).[8] The fact that population growth was a main factor in extensive growth raises the question – of how much of the growth resulted from population growth and how much from economic factors. After calculating the growth of cereals per person, Amasya is still in first place with 3.8% growth per year, followed by 1% in Karahisar, 0.7% in Gümüşhane, and 0.3% in Canik.[9] These regions were the hinterland closest to the major ports with low transaction costs – Amasya and Canik comprised the immediate hinterland of the port of Samsun, Karahisar that of Giresun and Gümüşhane that of Trabzon. The reason for the difference in growth rates is explained by geographic factors: while vast fertile Amasya was the continually fed by rivers and the smaller Karahisar by the Yeşilırmak, Gümüşhane was relatively barren, explaining why its total production growth was milder than the others. After quantifying long-term growth, it is important to understand how this growth happened.

7 Total income and total production increased roughly 3% per annum and both amounted to roughly 2% per person.

8 Using again Cuinet and the Consensus of 1909 and accepting that the prices of the consensus are representative, in the very east of the hinterland, there was remarkable increase in total production and income in the *Sancak*s of Karahisar and Gümüşhane in the eastern part of the hinterland at the turn of the century. While total production and income in Karahisar increased roughly 2% per annum and roughly 0.5 per person; the respective numbers were ~3% and 1.5% per person in Gümüşhane.

9 Growth in the *Sancak* of Gümüşhane has been disregarded because its total production remained marginal.



Graph 6.1 Yearly Growth Rates of Food Crops per Capita

SOURCE See Appendix

6.1.1 *History of Agrarian Change in Grains (1890s – 1910s)*

6.1.1.1 Russian Famine and Short-term Prosperity in Southeast Black Sea Region (1888-1892)

> *Cette semaine encore les transactions ont été loin d'être actives. Les huitaines se succèdent sans apporter quelque amélioration dans la situation générale du marché qui est toujours triste.*
>
> *Dersaadet Ticaret Odası Gazetesi (French copy)* June 23, 1888

> *Everyone is agreed that the tragedy, which has overtaken our country this year, is huge and unparalleled in the annals.*
>
> Georgi Plekhanov

As pointed out earlier, local cereals vanished from long-distance markets after a series of commercial and agricultural crises in the early 1870s. The local cereals cultivated in the hinterland of the port of Samsun returned to long-distance markets in the period from 1888 to 1892 as the result of low performance of Russian cereals.[10] Russian cereals were consistently the most competitive crops in Europe thanks to their quality and low price:[11] however, the agricultural performance of Southern Russia waned in the 1887-1892 period[12] which

10 For the shift in demand from Russian to American cereals. See Siegelbaum, "The Odessa Grain Trade: A Case Study in Urban Growth and Development in Tsarist Russia," 25-27.

11 According to statistics quoted by Chamber of Commerce of Constantinople, Russia produced 135,000 and 122,000 million of hectoliters of wheat in 1896 and 1897, respectively but it was estimated that Anatolia produced only 11,000 and 14,500. This meant that all of Anatolia produced only ~10% -~15% of what Russia produced. See "La Recolte du Blé," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 25, 1897.

12 The Russian grain crop yields and exports for 1889-1892 were low. For the crisis in Russian cereals, see Stephen G. Wheatcroft, "Crises and the Condition of the Peasantry in the Late

created a window of opportunity for local cereals to step in. Russian cereals vanished from Constantinopolitan markets between the winter of 1887[13] and 1893 except for a brief period in 1890.[14] In 1891, the situation took a turn for the worse for Russian cereals[15] and eventually Russian government launched

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Imperial Russia," in *Peasant Economy, Culture, and Politics of European Russia, 1800-1921*, ed. Esther Kingston-Mann, Timothy Mixter, and Jeffrey Burds (Princeton: Princeton University Press, 1991), 134 and 39-40.

13 The low performances of Russian cereals can also be observed in the Constantinopolitan market which served as gate port for South Russian cereals. The market, especially the cereal market, lost momentum by mid-November 1887. See "La Semaine Revue Commerciale (November 11, 1887)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 11, 1887. The cereal market entered a deep depression in the absence of supply, which was eventually satisfied in the late 1888 with Balkan wheat. Meanwhile, Anatolian hard wheat was slow to react to harvest of 1890. As result, the main Russian expeditor ports, like Odessa and Taganrog abandoned the market by 1888. See "La Semaine Revue Commerciale (February 11, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, February 11, 1888; and "La Semaine Revue Commerciale (March 10, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 10, 1888. Hard wheat vanished from the Constantinopolitan market between the late 1887 and mid-1890s except for five wagons of hard wheat that arrived by railways in the early-June 1889. See "Revue Commerciale et Prix-Courants (June 8, 1889)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 8, 1889.

14 In 1890, the supply of Azima and Ghirka was discontinuous. First, Azima and Ghirka disappeared in mid-January. See "Revue Commerciale et Prix-Courants (January 11, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, January 11, 1890. Some wheat arrived in mid-March. See "Revue Commerciale et Prix-Courants (March 22, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 22, 1890. More started to arrive in mediocre quantities after the first week of April. See "Revue Commerciale et Prix-Courants (April 5, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 5, 1890. It slowed again in first week of October. See "Revue Commerciale et Prix-Courants (October 4, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 4, 1890. Finally completely stopped in mid-November. "Revue Commerciale et Prix-Courants (November 22, 1890)."

15 There was a crop failure in Russia. See Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1891."; and Stevens, "Report on the Trade and Commerce of Odessa for the Year 1891." Wheatcroft claims that the poor harvests in 1889 should have been weakening peasant stocks and might be the one of the causes for famine occurred in 1891. See Wheatcroft, "Crises and the Condition of the Peasantry in the Late Imperial Russia," 134. The harvest of Russian wheat was low as 12 million. See "Revue Commerciale et Prix-Courants (August 23, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 23, 1890. Consequently, rye prices in Russia more than doubled in 1891, and real rural wages decreased

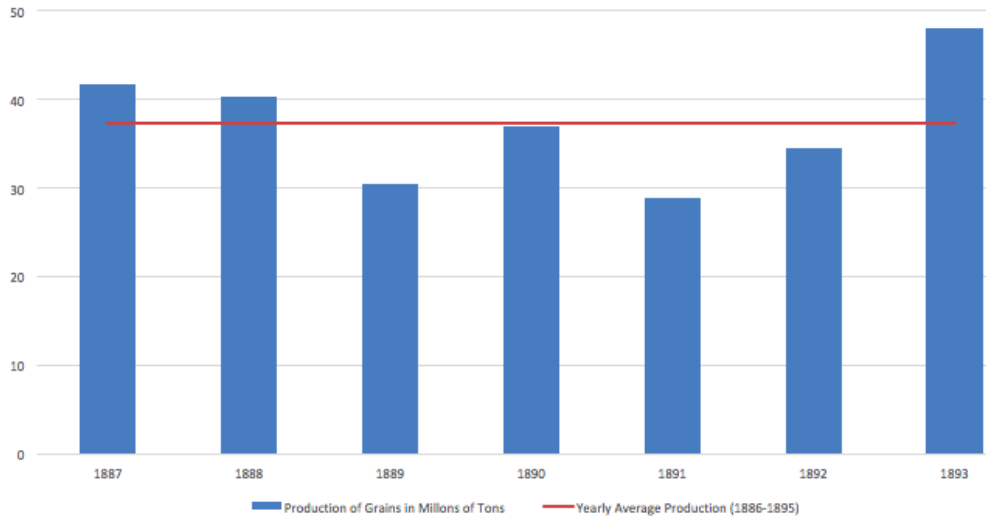
a series of measures against the risk of famine including the prohibition of the exportation of all cereals in mid-November 1891.[16] As a result of the absence of Russian cereals, agricultural prices in the Black Sea increased steeply.[17] Despite governmental measures, 1892 marked by the Great Russian Famine,[18] which was one of the largest calamities of the Russian Empire.

sharply contrary to the general tendencies. See "Crises and the Condition of the Peasantry in the Late Imperial Russia," 147-51.

16 Rye, a staple food for the peasantry, was prohibited and others followed. See Stevens, "Report on the Trade and Commerce of Odessa for the Year 1891." As a result, the exports of Russian wheat fell dramatically from 418,503,000 (1890) to 196,422,000 (1892) poods. The Russian government started to distribute crops to peasants. It has estimated that over ten per cent of Russians received help from the government. See J. Y. Simms, "The Economic Impact of the Russian Famine of 1891-92," *The Slavonic and East European Review* 60, no. 1 (1982): 67-69.

17 With insufficient crop yields in Russia, prices gradually increased to levels that reached their peak in the early 1891 due to the halt in the arrival of ships in mid-January. See "Revue Commerciale et Prix-Courants (January 17, 1891)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, January 17, 1891. Prices only started to decrease after a good harvest in Anatolia. See "Revue Commerciale et Prix-Courants (May 16, 1891)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 16, 1891.

18 The famine of 1891-1892 was one of the events in the history of nineteenth century Russia, which made socialist ideas popular among the peasants. See "The Economic Impact of the Russian Famine of 1891-92."



Graph 6.2 Grain Production in Russia

SOURCE Stephen G. Wheatcroft, "Crises and the Condition of the Peasantry in the Late Imperial Russia," in Peasant Economy, Culture, and Politics of European Russia, 1800-1921, ed. Esther Kingston-Mann, Timothy Mixter, and Jeffrey Burds (Princeton, N.J.: Princeton University Press, 1991)

Despite the low performance of Russian cereals and inflated prices,[19] it took more than two years for local cereals to return to long-distance markets mainly because of their low performance in 1888 and 1889. In 1888, total cereal performance was low in the Provinces of Erzurum and Sivas because of animal

19 In the absence of Russian wheat and given augmented price levels, there were positive expectations of a good harvest. These positive expectations turned to negative again by late July. See "La Semaine Revue Commerciale (July 28, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 28, 1888. The yields of wheat in Anatolia, including Southeastern Black Sea region, were not satisfactory because of drought. See "La Semaine Revue Commerciale (August 11, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 11, 1888. After the major crop failure in Anatolia prices and then the market entered a deep stagnation by mid-August. See "La Semaine Revue Commerciale (August 18, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 18, 1888.

plague.[20] In fact, local cereal production was so weak that the newly appointed French vice-consul in Sivas assumed that cereal commerce was a marginal business.[21] In 1889, although the poor performance of cereals in the hinterland of Samsun ended, crop yields in maize was low in eastern part of Trabzon and crop yields in Erzurum Province continued to be low because of another epizooty.[22] Subsequently, the majority of the cereal surplus produced in Samsun's hinterland was absorbed by the port of Trabzon and its hinterland.[23] Eventually in mid-June 1890, local cereals started to be exported again[24] following

20 The evidence suggests that there was a severe epizootic outbreak that ravaged Province of Trabzon and *Sancak* of Tokat. It was estimated that 60% of the livestock perished. For these estimates, see Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1888."; and "La Semaine Revue Commerciale (August 25, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 25, 1888; and "La Semaine Revue Commerciale (September 1, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 1, 1888. For description of severity of the epizooty. See "These days, it has been observed typhus outbreak on bovines around Trabzon" quoted from OA DH.MKT.1463.32, November 13, 1887, "In some villages of Tokat district, animal disease is occurring and there is mass death" quoted from OA DH.MKT.1467.11, November 29, 1887 and also OA DH.MKT.1480.20, December 5, 1887.

21 M. Séon, "Commerce de Sivas," (Agence Consulaire de Sivas, AMAE, CADN, 1888).

22 For the poor performance of maize, see Henry Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1889," (London: Foreign Office of the United Kingdom, 1889); and "Revue Commerciale et Prix-Courants (August 24, 1889)." For bovine epizooty, see OA DH.MKT.1594.24, February 13, 1889, DH.MKT.1595.107, February 18, 1889 and DH.MKT.1604.28, March 12, 1889.

23 In addition to imports from Samsun, there were imports of cereals from Russia to the city of Trabzon. See "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1889."

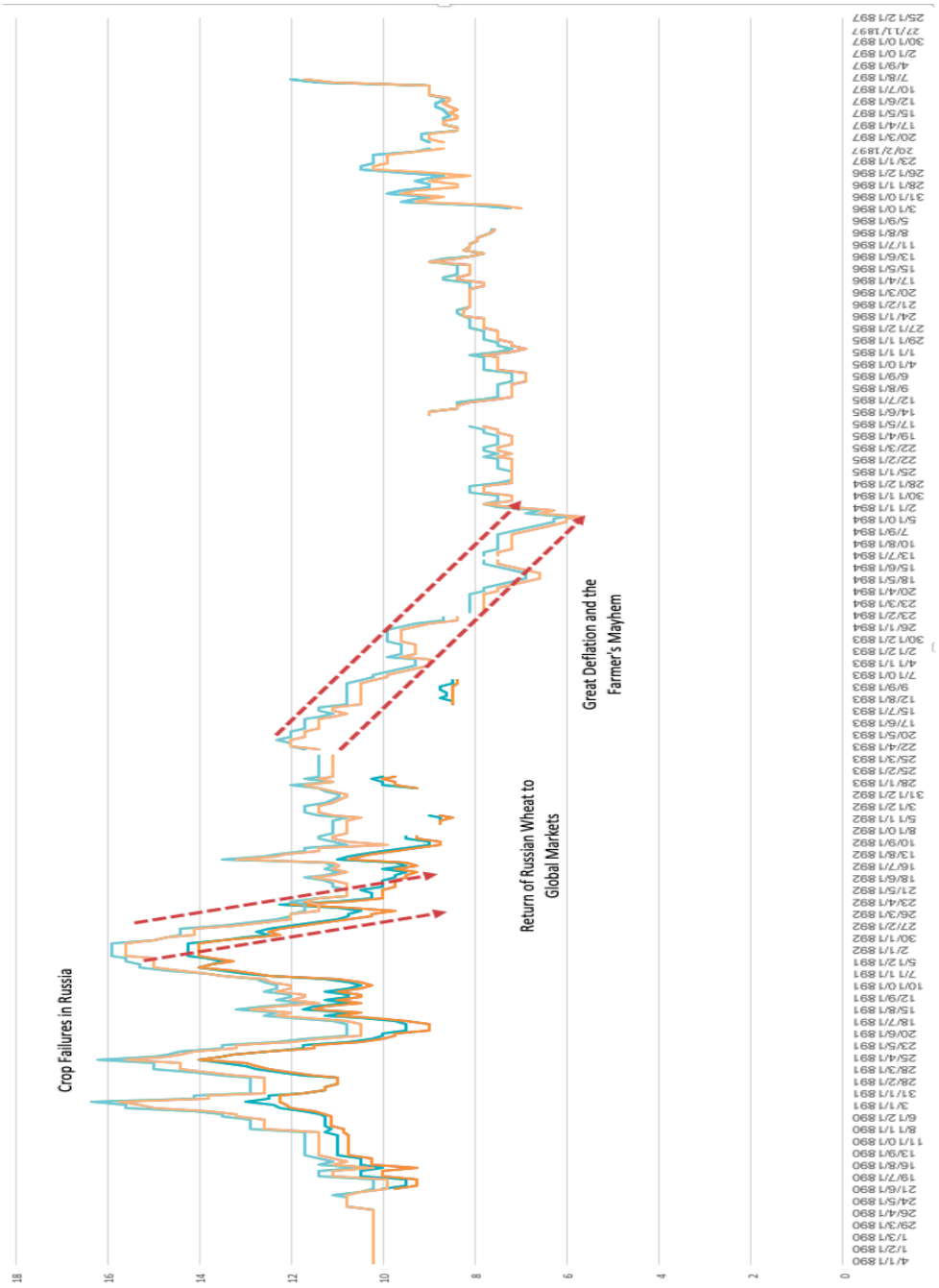
24 Massive cereal exports started with the arrival of 10,000 *kile*s of flour from Sinop and Samsun in mid-June, which followed by other massive shipments. See "Revue Commerciale et Prix-Courants (June 21, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 21, 1890; and "Revue Commerciale et Prix-Courants (June 28, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 28, 1890; and *Sivas'ın Resmi* (Istanbul: Yitik Hazine Yayınları).

years of abundant harvests in 1890[25] and 1891.[26] During this period, from the late 1880s to 1892, grain cultivation and the total land under cultivation expanded.[27]

25 Market agents worried for future harvest because of a drought in the Western Anatolia. See "Revue Commerciale et Prix-Courants (May 17,1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 17, 1890. However, all the anxiety turned to be unnecessary. See "Revue Commerciale et Prix-Courants (May 24, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 24, 1890. In fact, wheat yields were abundant in the Provinces of Kütahya, Kastamonu and Macedonia, only the Province of Aydın was middling. See "Revue Commerciale et Prix-Courants (June 7, 1890)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 7, 1890. Likewise, Sivas and Samsun had good harvests and the spring 1890 harvest of Samsun hard wheat reentered Constantinopolitan markets with a remarkable excess of supply.

26 The positive agricultural performance in Southeastern Black Sea region continued in 1891. Although, production of grain was abundant, maize and haricot beans crop yields were lower than previous year. See "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1891."

27 For a first hand observation, see Contanze, "Rapport Agricole Consulaire de l'Année (1899)." However this observation is also backed by the numbers on exports of cereals from the port of Samsun. The average cereal exports from Samsun, which was £74,660 (roughly 68,873 Ottoman Liras) in early 1880s (1879-1883), passed to £169,307 (roughly 153,915 Ottoman Liras) in late 1880s (1885-1889).

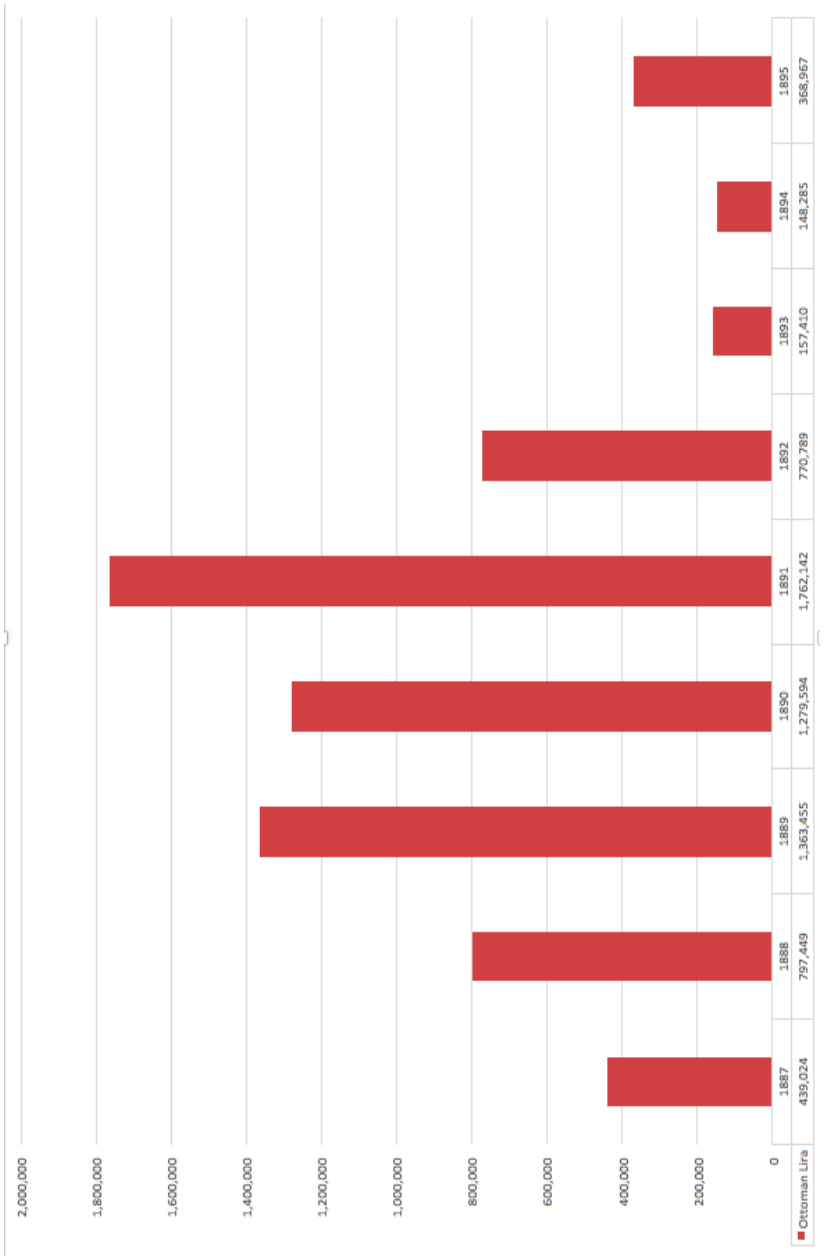


Graph 6.3 Prices of Hard Wheat in Istanbul (in Piasters per Liter from 1890 to 1897)

SOURCE See Appendix M

However, the main benefactor of the low performance of Russian cereals was Rumelian cereals, not Anatolian ones. The cereals were being transported by a newly constructed railway.[28] In other words, even though local cereals benefitted from the absence of Russian cereals, this prosperity was limited by relatively high land transportation costs due to the absence of railway lines which existed in Rumelia.

28 Unlike those of the Southeast Black region, grain from Rumelia started to pour in to Istanbul by rail as early as autumn 1888. See "Revue Commerciale et Prix-Courants (September 22, 1888)."; and "Revue Commerciale et Prix-Courants (September 29, 1888)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 29, 1888.



Graph 6.4 Wheat Exports from the Ottoman Empire (in Ottoman *Lira*)[29]

SOURCE Pamuk, 19. Yüzyılda Osmanlı Dış Ticareti = Ottoman Foreign Trade in the 19th Century

29 Şevket Pamuk, *19. Yüzyılda Osmanlı Dış Ticareti = Ottoman Foreign Trade in the 19th Century* (Ankara: T.C. Başbakanlık Devlet İstatistik Enstitüsü, 1995), 38.

6.1.1.2 Great Deflation and the Farmers' Mayhem (1892- 1896)

> *En ce qui concerne la situation commerciale, c'est toujours la même stagnation qui prévant sur notre marché.*
>
> *Dersaadet Ticaret Odası Gazetesi (French copy)*, June 10, 1893

> *Le prix de ces graines a tellement baisse que, depuis deux ans, les paysans ne se donnent plus la peine de ramasser la récolte.*
>
> Habib Siufi, "Lettre De Sivas (January 30, 1895)"

The period 1892-1897 was a perfect example of the Ricardian *pons asinorum*: the effect of severe deflation of agricultural goods over rural real incomes.[30]

30 David Ricardo first proposed a theory on the relation between prices and the incomes of various economic classes. According to Ricardo, any major increase in the general levels of agricultural real prices was beneficial for the rural classes and harmful for the urban ones and vice versa. The first inquiry into the effects of variation in corn prices on different economic classes was discussed in a David Ricardo's small pamphlet written against the Malthusian effect in 1815. Stuart Mill argued that this law, *pons asinorum* of economics was the principal theory for classical economic theory. See David Ricardo, *An Essay on the Influence of a Low Price of Corn on the Profits of Stock: Shewing the Inexpediency of Restrictions on Importation, with Remarks on Mr. Malthus' Two Last Publications: "An Inquiry into the Nature and Progress of Rent," and "the Grounds of an Opinion on the Policy of Restricting the Importation of Foreign Corn"*, ed. Piero Sraffa, Maurice Dobb, and Society Royal Economic, vol. 4, The Works and Correspondence of David Ricardo (Cambridge: Cambridge University Press for the Royal Economic Society, 1951). and for Mill's view see H. D. Macleod, *The Elements of Political Economy*, vol. 2 (London Arkose Press, 1858), 86. Accordingly, there was a relationship between rents, farmers' profits, wages and the benefit of capitalist. For the relation of rent and farmers profits, see David Ricardo, *On the Principles of Political Economy and Taxation*, ed. Piero Sraffa, The Works and Correspondence of David Ricardo Notes on Malthus, Principles of Political Economy (Cambridge: Liberty Fund, 1951), 113-18. For Laborer's wage, see ibid., 102-05. For example, if rent increased, benefit to farmers would decrease and agricultural prices would rise.

These years brought nothing but misery and suffering to local rural classes, comparable only to the 1872-1874 crisis. The severe deflationist trend was initiated by the recovery of Russian agriculture after the famine of 1892,[31] which coincided with high crop yields in other and grain-producing countries, especially the United States of America.[32] After the abolishment of the prohibition

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Because of the inflation in agricultural prices, nominal wages would also increase, but benefits from industry would decrease.

31 Many primary documents describe the unstudied crisis of 1893 and 1894. Here is a one of many quotations describing the ongoing crisis: "As far as the situation of our market is concerned, we have not yet been able to point out a noticeable change in a direction favorable to the business world. [...] On the other hand, as if to compensate for the shortcomings noted last year in the production of wheat in Russia, nature seems, this year, to have exceptionally favored the soil products of the Moscovite Empire. This situation affects grain prices in Europe's major markets. On ours, the prices are also less firm than during the last week" quoted from "Revue Commerciale et Prix-Courants (July 15, 1893)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 15, 1893. For the situation in South Russia. See C.E. Steward, "Report on the Trade and Commerce of the Consular District of Odessa for the Year 1893," (London: Foreign Office of the United Kingdom, 1893).

32 It was during the Crimean War that the American wheat was first massively imported to Europe and it entered the Constantinopolitan market in 1856. See Atack, Bateman, and Parker, "The Farm, the Farmer and the Market," 250. and for arrival in Istanbul, see "Les Farines (April 10, 1856)," *Journal de Constantinople (Echo de l'Orient)*, April 10, 1856. However, American cereals vanished from Black Sea markets during the American Civil War. After the Civil War, American wheat production increased tremendously every year. Between 1870 and 1892, the Midwest, the heart of American wheat cultivation, increased its exports fourfold. As a result, it returned to European markets by the early 1870s, though it was 1887 before it entered Constantinopolitan markets again. See "The Farm, the Farmer and the Market," 250. For its reentry to Constantinopolitan market see "Les Blés d'Amerique ", *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 30, 1887. American competition in grains and flour would increase in the following years and started to threaten role of Russian flour in the new century. Meanwhile, the American embassy actively promoted American flour in 1908. See "La Minoterie Ottomane (February 6, 1909)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, February 6, 1909; and "La Minoterie Ottomane (January 25, 1908)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, January 25, 1908; and "La Minoterie Ottomane (October 26, 1907)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 26, 1907.

on Russian cereal commerce in May 1892,[33] cereal prices started to decrease in Black Sea ports.[34] Eventually, local wheat withdrew from the long-distance market in summer.[35] In addition to heavy deflation, the opening of the Ankara railway station in 1893[36] diverted some Anatolian commerce from Samsun to Ankara. Accordingly, Samsun entered a heavy crisis period and a series of bankruptcies followed.[37] Things became worse in 1894. While severe deflation continued,[38] and political disturbances and quarantine measures were added to the picture. The deflation trend ended in autumn 1896, by which time prices had plummeted to their lowest level.

33 Expectation were for Russian wheat prices to decrease after the prohibition against the exportation of cereals was abolished. See "Revue Commerciale et Prix-Courants (May 7, 1892)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 7, 1892.

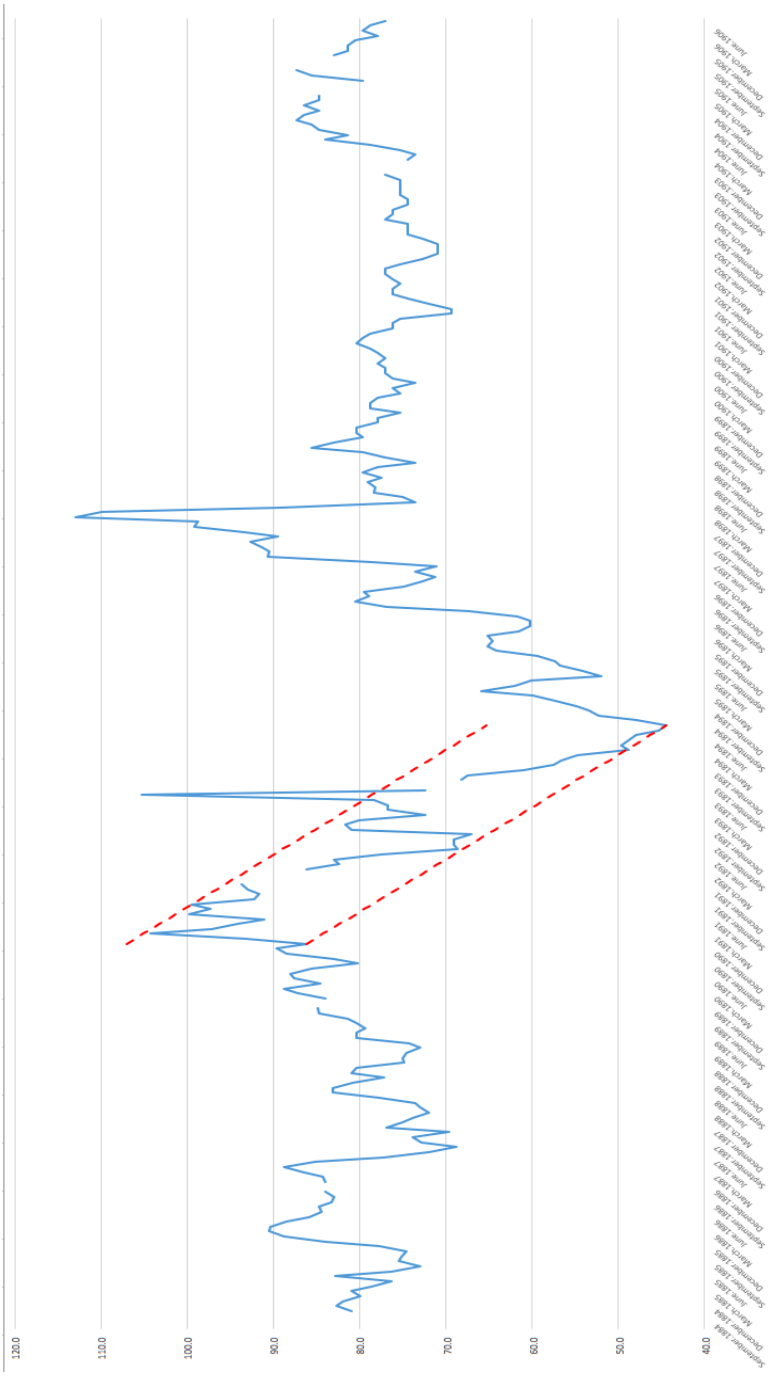
34 The cereals of Samsun suffered from the lower prices on offer in global markets even by 1892. See "Rapport Commercial de Samsoun (1892)," (Agence Consulaire de Samsoun, AMAE, CADN, 1892). Thanks to an abundant harvest, the hard wheat from Samsun returned to the market early July 1893. See "Revue Commerciale et Prix-Courants (July 8, 1893)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 8, 1893. Although local cereals were suffering from cheaper prices offered in Marseille, exports remained higher than £250,000 (roughly 227 thousand Ottoman Liras). See Spradaro, "Rapport Commercial de Samsoun (1892)."

35 When global prices decreased beneath Samsun's entry/exit level in early July (1893). See "Revue Commerciale et Prix-Courants (July 8, 1893)."

36 Cereal exports from Samsun dropped from £269,040 (1891) to £136,280 (1893) (roughly 245 and 124 thousand Ottoman Liras, respectively). See Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1893."

37 An account of the economic depression in Samsun port reads: "The depressed condition of trade has of late years been keenly felt. Slack business and small profits caused several failures, and this not only among retail but wholesale dealers. British firms had therefore better restrict themselves to cash terms only in their business transactions with these parts" quoted from ibid.

38 Because of existence of better prices in Marseille, Samsun was unable to attain the same exports level as the previous year. See Spradaro, "Rapport Commercial de Samsoun (1894)."



Graph 6.5 Prices of Wheat from Odessa (in Cents per Bushel)

SOURCE Rubinow, Russian Wheat and Wheat Flour in European Markets.

This heavy deflationist trend coincided with a series of unfortunate events. First grain yields in Erzurum and Sivas Provinces were low,[39] because an epidemic outbreak among cattle the previous year,[40] and drought hit both the Provinces of Erzurum[41] and Sivas.[42] However, 1893 was harbinger of doom. Farmers already suffering under a paucity of livestock were hit by yet another ovine disease imported from Russia.[43] Moreover, crop yields were again low in

39 Erzurum was hit by drought and it was reported that cereal yields were 1/3 of usual levels. See J. Srabian, "Lettre d'Erzéroum (October 12, 1892)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, October 12, 1892. Cereals yielded 40% lower than usual in Sivas, see Habib Suifi, "Lettre de Sivas (October 16, 1892)," ibid., October 16, 1892. In the Provinces of Konya and Aydın, cereal yields were abundant. See "Revue Commerciale et Prix-Courants (May 20, 1892)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 20, 1892.

40 This bovine epizooty especially affected the eastern of the Province of Erzurum – *Sancak*s of Tortum and İşpir in autumn. See J. Srabian, "Lettre d'Erzéroum (November 10, 1891)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, November 10, 1891. According to a report by Dr. Spatharo, the superintending sanitary officer and physician in Trabzon, the cattle plague ravaged cattle in the *Sancak* of Trabzon in January and February, became active in Lazistan from July to December, and finally reached Gümüşhane in September and lasted until December. He estimated that roughly half the cattle perished in these *sancak*s. In addition, a murrain among goats broke out in January in Tirebolu and lasted three months. Meanwhile, sheep were dying sheep rot in the first six months of 1891 in the *Sancak* of Trabzon, especially in Yomra. See Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1891."

41 It was estimated that the crop yields in cereals 40% lower than normal, see OA DH.MKT. 2005.98, September 24, 1892. Accordingly, the prices of cereals rose 2.5fold following the autumn harvest of 1892 compared to previous year. See Srabian, "Lettre d'Erzéroum (October 12, 1892)." Also see "Lettre d'Erzéroum (July 4, 1892)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, July 4, 1892.

42 Habib Suifi, "Lettre de Sivas (July 19, 1892)," ibid., July 19, 1892.

43 The effect of previous year's bovine epizooty can be observed in the decrease of bovine exportation, from 85,135 head (1892) to 32,530 head (1893). This new outbreak had nothing to do with bovines, it mainly affected ovines. Hence its effect was limited to grain cultivation. See "Faits et Notices (April 29, 1893)." This disease was probably carried from Russia. For the story, see OA DH.MKT.1919.127, February 6, 1892 and OA MV 72.89, December 21, 1892.

the following year; while just mediocre in Sivas,[44] they were catastrophically low in Erzurum[45] because of a harsh winter[46] followed by a dry spring.[47] Accordingly, total production of grains felt to critically low levels,[48] threatening survival of the farmers, especially in Erzurum Province. In addition, because of a hot August, coastal crops, like maize and haricot, were yields of half of an ordinary year,[49] which made it difficult for the government to intervene to these dangerously low harvest levels.[50] One last omen, a cholera epidemic, ravaged ports all around the Black Sea,[51] which aggravating the misery.[52] As a result of these catastrophic events, a famine was sparked in a region consisting

44 "Lettre de Sivas (January 14, 1894)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, January 14, 1894.

45 Grain failed because of drought. It was estimated that the crop yields in cereals decreased 40% in 1893 compared to 1892. See "Faits et Notices (May 20, 1893)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 20, 1893; and J. Srabian, "Lettre d'Erzéroum (La Dizette à Erzéroum)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, November 14, 1893.

46 The winter hit wheat and linen hard. See "Faits et Notices (April 29, 1893)." For a detailed description of how winter was severe, see "Lettre d'Erzéroum (March 28, 1892)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, March 28, 1892.

47 For the harsh winter and high cereal prices, see OA DH.MKT 1972.31, June 16, 1892.

48 Spradaro, "Rapport Commercial de Samsoun (1893)."

49 Gasselin, "Rapport Commercial de Trébizonde (1893)." See also Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1893."

50 The local government exported cereals and distributed maize seeds for cultivation by immigrant farmers. See BEO 386.28878, April 16, 1894.

51 The first wave of cholera came in the last trimester of 1891. See Spradaro, "Rapport Commercial de Samsoun (1892)." The second wave began in Trebizond begun October 30, 1892, and ended January 9, 1893. See Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1893."

52 Cholera spread to every major port on the Black Sea. For the damage to commerce, see "Revue Commerciale et Prix-Courants (September 2, 1893)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 2, 1893; and "Revue Commerciale et Prix-Courants (October 15, 1892)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 15, 1892; and "Revue Commerciale et Prix-Courants (August 5, 1893)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 5, 1893. For the effects of cholera on Samsun's commerce, see Spradaro, "Rapport Commercial de Samsoun (1893)."

of Northern Erzurum, [53]– Kelkit and Şiran – south of Gümüşhane and North-eastern Sivas, and Alucra.[54] The famine triggered mass emigration in the summer of 1893. While some peasants fled to Sivas Province, especially to Tokat, Ankara, and Yozgat,[55] more than 30,000 villagers from Northern Erzurum, Kelkit, and Şiran run to the coast.[56] Subsequently, quarantine measures[57] taken on account of cholera and an epizooty as well as the risk of famine[58] paralyzed commerce.

53 The winter hit wheat hard and linen was lost. Goats also suffered, it was estimated that 30% of them as well as 1.5-2 % of ewes and sheep died. See "Revue de la Semaine (May 17, 1886)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 17, 1886; and "Revue Commerciale et Prix-Courants (April 16, 1892)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 16, 1892.

54 OA A} MKT.MHM 502.66, March 3, 1892.

55 Gül, "Osmanlı Devlet'inde Kuraklık ve Kıtlık (Erzurum Örneği: 1892-1893 ve 1906-1908 Yılları)."

56 The British consul estimated the number of immigrants to be more than 20,000 by October 1893. See Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1893." However, the official estimate made in mid-April 1894 was over 30,000 peasants. See OA BEO 386.288, April 16, 1894.

57 The government made an exception for flour and cereal bags to be delivered to Erzurum Province, which was suffering from both famine and cholera outbreak, with the condition of be sealed with calcium chloride. See "Faits et Notices (December 9, 1893)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, December 9, 1893.

58 After the crop failure, the government decided to expedite 660,000 *okka*s (~850 tons) of flour from Samsun and Amasya to Erzurum. 400,000 *okka*s (~515 tons) was sold to the people, 160,000 *okka*s (~333 tons) was sent to barracks. See "Faits et Notices (April 29, 1893)." However, these government measures had limits: despite the famine and prohibition, only an estimated 12,000 tons of wheat and flour to be exported from Samsun to Erzurum. See Spradaro, "Rapport Commercial de Samsoun (1893)."

The misfortune continued in 1894. Although several measures were taken by government, the famine was aggravated.[59] Moreover, since cereal production in Sivas was low,[60] the famine spread to some parts of Sivas Province. The cholera ironically returned just after the quarantine measures were revoked.[61] As a *coup de grâce*, maize and haricots failed because of heavy rains causing flood[62]. In late 1895, the Armenian Rebels/Hamidian Massacres spread north to Sivas and Erzurum Provinces. During this period, it was reported that trade routes were plundered,[63] which effectively stopped all commerce between the ports and the hinterland for months. As a result of an economic crisis deepened by a political crisis, agricultural production hit bottom as the global prices, commercial, and financial markets hit bottom as well.[64] Although an inflation trend started in 1896, price levels were still low and recovering from the effects of the crisis was possible within a year.

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59 By mid-summer, cereals were so scarce that if any delivery of cereals arrived in the city, bakeries would close. See OA DH.MKT 2062.66, June 21, 1893. While an estimated 500,000 *kile*s of cereals was urgently required, only 30,000 *kile*s of wheat and 10,000 *kile*s of barley were delivered by December. See OA BEO 323.24224, December 7, 1893. In February 1894, the number of people needing government help rose to 10,000, 25% of the city's population, just within the city of Erzurum. See Srabian, "Lettre d'Erzéroum (La Disette)." The situation was even worse in spring 1894. See OA DH.MKT.239.20, May 22, 1894.

60 Spradaro, "Rapport Commercial de Samsoun (1894)." Especially barley was lower, see Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1894."

61 Habib Suifi, "Lettre de Sivas (May 15, 1894)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, May 15, 1894; and "Lettre de Sivas (April 17, 1894)."

62 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1894."

63 Henri de Contanze, "Rapport Commercial de Samsoun (1896)," (Agence Consulaire de Samsoun, AMAE, CADN, 1896).

64 Cereal exports from Samsun dropped from £350,000 (1891-1892) to £18,300 (1895) (roughly 318 and 16.5 thousand Ottoman Liras). Long-term foreign credit dried up. See Cillière, "Rapport Commercial de Trébizonde (1896)."; and Contanze, "Rapport Commercial de Samsoun (1896)."

6.1.1.3 Examination of Price Effect on Short-term Agricultural Production and Long-term Agrarian Change (1888-1896)

Long-term global price trends were an important positive variable for agricultural performance as in 1853-1861 and negative one in 1892-1896. For example, during the heavy deflation, total arable land in Canik was dramatically reduced.[65] Although global prices had a strong effect on short-term performance, the devastating price shifts from 1893 to 1896 had an interestingly limited effect on agriculture in the long-term. The main reason why global prices had a limited effect on long-term agrarian change was that global price fluctuations had marginal effect on prices and competitiveness of every major ports throughout the Black Sea. The reason was that fluctuations in global prices happened simultaneously in every major port on the Black Sea. In other words, cereals from Braila, Azov or Odessa (see the price list in the Appendices) were simultaneously hit by same trends as Samsun. For that reason, comparative prices and competitiveness of local crops compared to others remained largely the same in cases of severe price fluctuation. The reason local cereals were affected more than those in other ports was that local cereals were considered inferior goods compared to Russian or Romanian ones.[66]

In the long-term, input costs, especially transaction, transportation, and capital costs, determined competitiveness and long-term performance, which can be better observed in the curious case of the Erzurum Famine (1892-1894).

65 The first clue is the report that some 200-300 *dönüm*s of lands were let to fallow around Samsun ports during this period. See "Rapport Agricole Consulaire de l'Année (1899)." The second is the reduction in barley cultivation. As pointed out barley cultivation is usually correlated with clearing new lands. See the Appendix M.

66 Since local cereals' quality was lower compared to cereals from other Black Sea ports, whenever there were severe global price decreases, local cereals served as an inferior good vis-à-vis its competing goods. In other words, since buyers could purchase higher-quality cereals like Russian or Rumelian cereals thanks to decreasing prices, the quantity demanded for lower-quality local cereals reduced faster than in other ports. See for example Genna, "Rapport Commercial de Kérassunde et Ordou (1895)."

Throughout this famine, market agents in Odessa,[67] Samsun, and most of the Black Sea basin suffered from the deflationist trend and overproduction. While there was a surplus of cereals with the cheapest prices of the century waiting in Black Sea ports for potential consumers, peasants in Erzurum were starving and local prices were increasing every day.[68] The main reason for this dichotomy was high transportation costs. The cheapest way to transport cereals from Sivas to Erzurum was to first carry grain from the hinterland to Samsun, then ship it to the port of Trabzon, and then carry it to Erzurum by cart. For that reason, when the famine started, the local governor of Erzurum struggled to find a cheap, efficient to transport a sufficient quantity of cereals to the feed hungry masses.[69]

67 It was reported that in Southern Russia, landowners were prompting farmers to seed sunflowers, and other crops instead of cereals, the prices of which were decreasing fast. See Steward, "Report on the Trade and Commerce of the Consular District of Odessa for the Year 1893."

68 For the rise in prices, see OA DH.MKT. 2008.43, October 7, 1892 and DH.MKT 2013.65, October 21, 1892. However, there was hoarding and black-market trading in the countryside and the city as well. For the countryside, see OA BEO.160.11963 February 24, 1893, for the city of Erzurum, see also OA BEO 323.24224, December 7, 1893.

69 One alternate strategy to overcome high transportation costs was to send money to the port of Trabzon, where cereals were cheaper, and deliver the most expensive types of cereal from Trabzon to Erzurum to save on transportation costs. Then the Provincial government in Erzurum exchanged the cereals in local markets with cheapest cereals in order to increase cereal stock. See OA DH.MKT 2062.66, June 21, 1893 However, the government abandoned the idea of transporting cereals from Sivas Province to Samsun first then sent it from Trabzon o Erzurum by mid-summer 1893 because high transportation costs coincided with high local prices because of low crop yields. For that reason, the local government tried to transport cereals from Iran. See OA BEO 291.21807, October 1, 1893. In spring 1894, the central government first tried to buy 100,000 *kile*s of wheat from the price level of 15 piasters from tax farmers of Kastamonu, who stored their cereals in the port of İnebolu, then it decided to promote the merchants in Trabzon. See OA DH.MKT 224.19, March 7, 1894.

6.1.2 *Extensive Growth in Grains*

After troublesome years and the end of the heavy deflationist trend of 1893-1896, long-term growth resumed in 1897.[70] Agricultural output increased steadily at least until 1908.[71] Obviously, there were bad years (1899, 1902,[72] 1904,[73] and 1907[74]) as well as good years, (1898, 1900[75], 1901[76], 1903,[77] and 1905[78]) and even golden ones (1897[79] and 1906[80]), but in the end, total grain production increased considerably from the 1890s to the 1910s. This growth in grains exemplified of extensive growth. As pointed out in chapters four and five, tech-

70 While the global prices entered to a bullish trend by mid-1896 with the end of quarantine measures. See Maunsell, "Reports on the Trade and Commerce of the Trebizond and Sivas Vilayets for the Year 1897 b-Sivas Vilayet."

71 I am not claiming that this growth trend ended by 1909 but this dissertation is.

72 1902 was one of the driest years. The performance of cereals remained poor, especially in Samsun and its hinterland. See C. Collomb, "Rapport Commercial de Trébizonde (1902)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1902); and Contanze, "Rapport Commercial de Samsoun (1902)." Most farmers were saved from economic misery thanks to good crop yields in haricot beans. See Collomb, "Rapport Commercial de Trébizonde (1902)." and especially high quality of tobacco of the year. See Contanze, "Rapport Commercial de Samsoun (1902)." However crop yields in hazelnut was extremely low – as around 70.000 quintals, which was of 1/3 of the ordinary harvest of 200,000 quintals. See N. Collaro, "Rapport Commercial de Kérassunde et Ordou (1902)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1902).

73 Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

74 For the crisis of 1907, see the conclusion.

75 Especially wheat but there was a major slump in oats and a slight decrease in barley. See Collomb, "Rapport Commercial de Trébizonde (1900)."

76 Contanze, "Rapport Commercial de Samsoun (1901)."

77 Oat crop yields were low but there was a stock. "Rapport sur les Produits d'Importation et d'Exportation de la Rade de Samsoun (1903)."

78 "Rapport Commercial de Samsoun (1905-1906)."

79 The harvest of wheat was estimated at 60,000 tons in *Sancak* of Canik. See "Rapport Commercial de Samsoun (1897)." However crop yields in oats was reported low, see Chayet, "Rapport Commercial de Trébizonde (1897)."

80 There was an over-production in cereals. see Contanze, "Rapport Commercial de Samsoun (1905-1906)."; and N. Collaro, "Rapport Commercial de Kérassunde et Ordou (1905-1906)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1905-1906).

nological change and intensive growth in grains were limited; farmers responded to increasing demand usually by expanding the amount of land under cultivation. As discussed earlier, the motivators behind agricultural growth in cereals were the emergence of a local flour industry and institutional changes to the markets. Naturally, the primary benefactor of growth was common wheat, mainly used to make high-quality bread,[81] and hard wheat, mainly to make pasta, bulgur, and low-quality bread. These types enjoyed the positive effects of growth, but other types of wheat did not.[82] The increasing commercialization and cultivation of wheat triggered the cultivation of other cereals with the major exception of maize. Local barley and oats became more competitive in the market just as wheat did.[83] Especially barley was planted over more territory because of the cultivation barley prepares the soil for agriculture.[84] As a result, barley which was cultivated along the coasts in the 1860s expanded, – especially in Canik by 1910s.[85]

Another crop that benefitted from the clearing of new land was rice, the growth of which increased at a logarithmic pace in the period of 1880-1900, and decreased at same pace in the early 1900s. Rice requires more water than

81 For a detailed bread recipe from Istanbul, see "Panification et Fixation du Prix du Pain," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 5, 1895.

82 While hard wheat was dominant variety in Amasya, especially Merzion, as well as Canik, common wheat existed mainly in the *Sancak*s around the city of Sivas. See Cuinet, "Vilayet de Sivas Statisique Descriptive." A special type of common wheat, *Sarıbaş* was cultivated in Tortum, İspir, Keskim and Bayburt. For the names see Çekel, *Dünyada ve Türkiye'de Buğday*, 10, 31. For geographic distribution, see Cuinet, "Vilayet d'Erzouroum Statistique Descriptive." In the 1890s, the total production of common wheat increased in Amasya, Canik, and Tokat, and the production of hard wheat followed. On the other hand, einkorn – locally known as *kaplıca or siyez* – planted in the *Sancak*s of Erzincan, Erba, Iksefer, Karahisar, Aluca, Hamidiye, Samsun, Çarşamba and Şiran never became a dominant variety and was little affected by this trend.

83 Barley and oats were cultivated more and more because merchants were exporting these crops. Rye, once widely cultivated, became more and more scarce. See Contanze, "Rapport Agricole Consulaire de l'Année (1899)."

84 See the previous chapter.

85 Schéfer, "Renseigement Concernant la Province de Trébizonde," 50; and Contanze, "Rapport Agricole Consulaire de l'Année (1899)."

any other crop, and since it was the only crop that could breathe under water, it was usually cultivated in paddies filled with water.[86] Moreover rice can endure higher salinization levels than other crops.[87] the main problems with rice was the excessive amounts of water and labor it required; rice needed to be cultivated in humid tropical regions that received several meters of rain per year or otherwise in paddies flooded by water.[88] For these reasons, rice was cultivated in marginal lands of Southeastern Black Sea region – like marshlands, the mouths of streams, and shores of rivers – which were hostile environments for any other crop. Rice cultivation was concentrated along rivers such as Harşit River in Tirebolu,[89] Abdal River,[90] Melet River[91] of Ordu,[92] streams of Kiskim, Atina,[93] and especially along Terme River, famous for its goodly brown rice. In newly-drained but still damp marshlands, farmers would first to seed rice. In the end of the century, some 175 thousand square meters of marshland around Samsun port was drained.[94]As a result, rice cultivation increased tremendously: the percentage of rice cultivation in Canik

86 Another crop cultivated in pool was hemp. Because the farmers in Terme, Fatsa and Ünye, cultivated the hemp in muddy waters, it gained a darkish color. See "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

87 For example, rice has been cultivated for centuries among the mangroves on West African coastlines, constantly washed by ocean tides which created enough humidity. See Judith Ann Carney, *Black Rice the African Origins of Rice Cultivation in the Americas* (Cambridge: Harvard University Press, 2001), 17-25; and Mazoyer and Roudart, *A History of World Agriculture from the Neolithic Age to the Current Crisis*, 182-85.

88 *A History of World Agriculture from the Neolithic Age to the Current Crisis*, 134.

89 N. Collaro, "Rapport Commercial de Kérassunde et Ordou (1900)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1900).

90 Genna, "Rapport Commercial de Kérassunde et Ordou (1890)." The marshlands around Aptal ırmak, never dried out even during summer. See Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

91 "Le Kaza d'Ordou," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 5, 1890.

92 Palgrave, "Report on the Provinces of Trebizond, Sivas, Kastemouni, and Part of Angora for the Year 1867," 29-30.

93 ibid.

94 Doulcet, "Rapport Commercial de Samsoun (1890)."; and Mehmet Yavuz Erler, "Karadeniz'de Avrupai bir Kent: Samsun," in *Karadeniz Tarihi Sempozyumu (25-26 Mayıs 2005)* (Trabzon: Karadeniz Teknik Üniversitesi Matbaası, 2005), 541-42.

jumped from ~1% in the 1880s to ~15-20% by volume by 1905-1907.[95] The small town of Terme, started to satisfy entire demand of Trabzon city in the new century.[96]

However, the rice cultivation has a price. Paddies provided also a perfect environment for many pests and parasites, especially mosquitos. Consequently, zones where rice cultivated major public health risks like malaria were created. For example, in one major rice-producing zone in the villages of Terme, peasants completely abandoned their villages every summer.[97] On the lower plains near the Melet River, roughly 20,000 farmers including the town of Ordu and its officials went to secondary settlements on higher ground, mainly to the Plateau of Çambaşı some 12-15 hours from their winter homes, every summer.[98] With the increase in rice production, malaria spread out in nearby rural and urban zones. For example, widespread rice cultivation in Ordu was directly responsible for malaria.[99] Eventually, the Ottoman government stepped in to take precautions against plagues at the end of century, especially by drying out marshland through the planting of eucalyptus trees.[100] In addition, The Ministry of Forestry, Agriculture, and Mines issued a regulation banning rice cultivation in zones where it posed a danger to public health

95 See Appendix M.

96 Rice had been imported from India to Trabzon Province but Terme started to satisfy most local demand in the new century. See Collomb, "Rapport Commercial de Trébizonde (1900)."; and Collaro, "Rapport Commercial de Kérassunde et Ordou (1901)."

97 Only four or five people were left behind, if any from the village of three hundred peasants. See Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

98 "Le Kaza d'Ordou." Also "on each summer, the government and the community leave the town center for 12-hour away Çambaşı plateau" quoted from OA Y.PRK.UM 30.8, April 9, 1894.

99 Cuinet, "Vilayet de Trébizonde Statistique Descriptive."

100 For Trabzon, "Trabzon Vilayetinin Esval-ı Umûmiyye Ziraiyyesi [Ziraat Umurluğunu 1328 Senesine aid Raporu]."

on 27 November 1894,[101], another in 1914[102] and yet again in 1917.[103] For example, the government ordered local governments to distribute hazel saplings and drain the paddies in Ordu.[104] As a result, rice cultivation decreased and was limited to small pockets in the new century.

§ 6.2 Growth in Industrial Crops, Cash Crops, and Fruits

Despite pockets of opium, grapes, mulberries, linen, and flax in certain microclimates, only two cash crops were widely cultivated in Southeastern Black Sea region: tobacco and hazelnuts. Unlike food crops, farmers cultivated cash crops only if their efforts were remunerated by the market. For example, as pointed out in chapter four, the geographical distribution of tobacco was determined strictly by potential profits. It was the most labor and capital-intensive crop in the region that required the allocation of the most fertile land. Consequently, if the potential of the harvested leaves was not good enough, farmers did not bother cultivating such a demanding crop in their most fertile fields. Accordingly, tobacco was primarily planted in Sanjaks that rendered highest quality plants. On the other hand, in Sanjaks where it was not possible to profit from cultivating cash crops, the farmers avoided them. For that reason, the cultivation of industrial crops in the Sanjaks of Gümüşhane, Lazistan, Sivas, and Karahisar as well as the entire Province of Erzurum remained almost nonexistent from the 1850s until the 1910s because conditions in these areas were not optimum for growing cash crops.

Second as discussed in chapter four, the total area under cultivation for cash crops was limited to the most fertile lands, and the total volume of their

101 ed. Orman ve Maaden ve Ziraat Nezareti, *Pirinç Ziraati,* ed. Orman ve Maaden ve Ziraat Nezareti Kütüphanesi, vol. 5 (Istanbul: Matbaa-ı Âmire, 1912/1913 (1328)).

102 *Pirinç Ziraati mâ Pirinç Kanunu (Istanbul: Matbaa-ı Âmire, 1914).*

103 Orman ve Maaden ve Ziraat Nezareti ed., *Pirinç Ziraati Kanunnamesi*, ed. Orman ve Maaden ve Ziraat Nezareti Kütüphanesi (Istanbul: Matbaa-ı Osmaniye, 1917).

104 "With the prohibition of rice cultivation, instead of filling the paddy rice, the governement should subsidize cultivation of more useful crops like hazelnut" quoted from OA Y.PRK.UM 30.8, April 9, 1894.

production was relatively small compared to cereals. Even in Canik, the core of tobacco production in Anatolian Black Sea, total production in never surpassed 7% of agricultural production overall, and the total area under cultivation was barely5%.[105] In the case of other cash crops like opium, grapes, and mulberries, these percentages were even lower. The only major exception was hazelnuts. Farmers widely cultivated this nut, because unlike other cash crops, hazelnuts required no exhausting labor work, but higher qualities were not nearly as rewarding as tobacco or opium. Accordingly, farmers preferred to invest in ameliorating the quality rather than quantity of cash crops, other than hazelnuts. The Final point is that there was no sign of extensive growth in terms of percentage of production volume or areas under cultivation in the long run, with the exception of hazelnuts, of course. The proportion of total production of cash crops in the terms of volume and area in any given Sanjak remained strangely stable in the long run despite the successive periods of prosperity and depression. In the long run, local farmers tended to increase or reduce their production, probably with the same logic as for cereals.

6.2.1 *Intensive Growth in Tobacco*

Although considerable in Polathâne and Tokat, the core of tobacco production was always Canik. In this Sanjak, although tobacco production rarely surpassed 5% of the total volume of agricultural production in given a year, it accounted for roughly 40-60% of the total income from agriculture of a typical farmer.[106] The growth in tobacco from the 1880s to the 1910s can be divided into three periods. The first was the 1880s, where the Régie Company had limited influence. During this period, both in tobacco production was extensive with – ~6% increase per year.[107] This high growth rate resulted from the recov-

105 In the consensus of 1909, the maximum percentage of tobacco in terms of volume in Canik as 5.8%. See Cemâl, *1325 Senesi Asya ve Afrika-ı Osmanî Ziraat İstatistiği*, 2. See also Appendix M.

106 See appendices for exact numbers.

107 Vital Cuinet estimated that tobacco production in Canik was around 50 million kilograms in 1881 and surpassed 90 millions by 1890, which indicated 6% per annum growth. See Cuinet,

ery from the devastating crisis years of the 1870s. The Régie Company's statistics suggest that this was extensive growth in nature, pulled equally by geographic expansion and the enlargement of existing tobacco farms.[108]

Table 6.1 Revenue of an Average Tobacco Farmer in Samsun in Piasters[109]

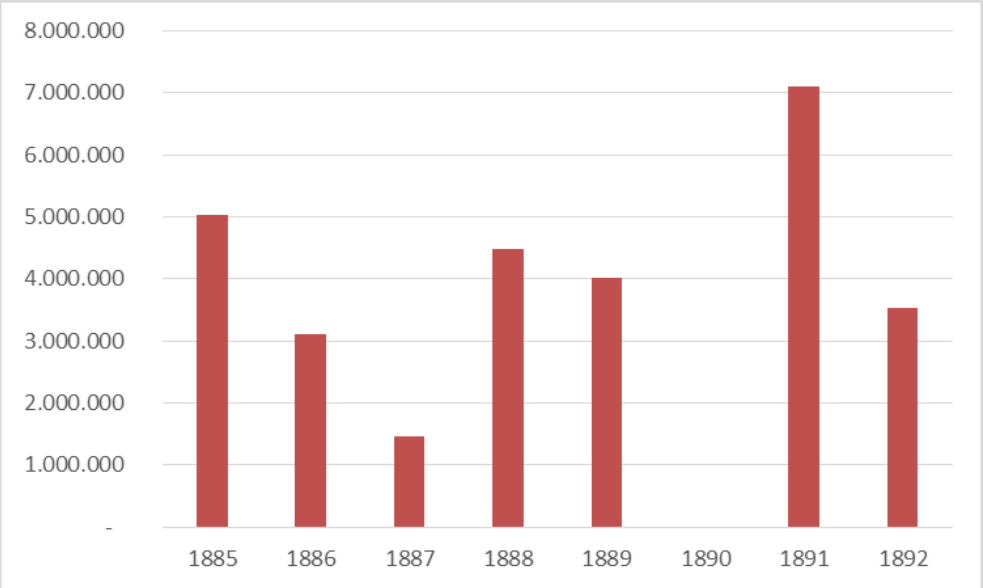
Year	Number of Producers	Total Production	Crop Yields	Quality	Revenue
1886	8000	3,000,000 kg	375	Low	375
1887	8100	1,440,000 kg	178	Low	177.78
1888	8400	3,600,000 kg	429	Low	428.57
1889	8800	3,890,000 kg	442	Good	574.66
1890	9400	4,000,000 kg	426	Good	553.19

SOURCE Rapport Commercial de Samsoun (1890), (AMAE, CADN)

"Vilayet de Trébizonde Statistique Descriptive." The rate decreased to 2.5%. See the Appendix M.

108 When the estimates by Cuinet is compared to the Consensus of 1909, it can be stated for the period of 1890-1909; in the *Sancak* of Canik, total agricultural income and production volume increased ~1.6% per annum, which meant an increase of 0.43% per person. Behind this growth, may growth in cereals and tobacco, which increased slightly 1.5%-2% per annum as both volume and income, respectively.

109 The real statistics of the Régie Company are presented in the second and third columns. I added the quality column using consular reports. See Doulcet, "Rapport Commercial de Samsoun (1890)." I made two assumptions, first that crop yields of the Régie farmers were representative of all of the farmers in the *Sancak* of Canik, and second, I estimated 1 piaster per kilogram for a bad year and 1.3 piasters for a year with good quality.



Graph 6.6 Total Tobacco Production in Canik (in Kilograms)

SOURCE See the footnote.[110]

110 5,030,350 kilograms of tobacco were produced in 1885. See Draft of *Lettre de Sous-consulat à Samsoun à Direction Génèrales des Manufactures d'Etat à Marsaille* (March 27, 1886), Agence Consulaire de Samsoun, Adjurication d'une Furniture de Tabacs pour la Régie Française 1893, 605 PO/1, AMAE, CADN. For 1887, see Draft of *Lettre de Sous-consulat à Samsoun à Direction Génèrales Des Manufactures d'Etat à Marsaille* (June 23, 1888), Agence Consulaire de Samsoun, Adjurication d'une Furniture de Tabacs pour la Régie Française 1893, 605 PO/1, AMAE, CADN. Total production was estimated as 4,476,784 kilograms in 1888 (1,848,136 from *kaza* of Samsun and 2,628,648 kilograms from *kaza* of Bafra) *Lettre de Sous-consulat à Samsoun à Consulat à Trébizonde* (June 25, 1889), Agence Consulaire de Samsoun, Adjurication d'une Furniture de Tabacs pour la Régie Française 1893, 605 PO/1, AMAE, CADN. And Draft of *Lettre de Sous-consulat à Samsoun à Direction Génèrales des Manufactures d'Etat à Marsaille (July 10, 1893)*, Agence Consulaire de Samsoun, Adjurication d'une Furniture de Tabacs pour la Régie Française 1893, 605 PO/1, AMAE, CADN. For 1889, see *Lettre de Sous-consulat à Samsoun à Consulat à Trébizonde* (June 25, 1890), Agence Consulaire de Samsoun, Adjurication d'une Furniture de Tabacs pour la Régie Française 1893, 605 PO/1, AMAE, CADN. 7,100,000 kilograms in 1891 decreased to 4,000,000 kilograms in 1892 (1,843,030 from the *kaza* of Samsun, 1,679,180 from *kaza* of Bafra and 419,916 kilograms from the *kaza* of Alaçam) *Lettre de Sous-consulat à Samsoun à Consulat à Trébizonde* (January, 10 1893), Agence Consulaire de

In the 1890s, the Régie gained considerable power over producers, enabling it to implement policies of ameliorating the quality of tobacco and preventing tax evasion.[111] For these reasons, the Régie prohibited the cultivation of tobacco in low performance areas[112] and even annihilated production[113] like in Ordu, Yomra, and Kastamonu.[114] For that reason, tobacco cultivation was eventually concentrated in a zone between the Bafra and Çarşamba deltas along with small pockets like Akçaabad, Niksar, Tokat, and Erbaa.[115] In addition to geographic downsizing, export prices and first-hand observations suggest that in areas where tobacco cultivation was allowed, farmers rarely increased production.[116]

Samsoun, Adjurication d'une Furniture de Tabacs pour la Régie Française 1893, 605 PO/1, AMAE, CADN. And Draft of *Lettre de Sous-consulat à Samsoun à Direction Génèrales des Manufactures d'Etat à Marsaille* (July 10, 1893), Agence Consulaire de Samsoun, Adjurication d'une Furniture de Tabacs pour la Régie Française 1893, 605 PO/1, AMAE, CADN.

111 After its establishment, the Régie Company faced two major problems; smuggling, (see Dığıroğlu, *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*.}) and the mixing of lower-quality tobaccos with better ones. Although these two practices were beneficial for some economic actors, they meant considerable profit losses for the Régie Company, because of tax evasion and dramatically decreases in quality as well as prices

112 "Revue Commerciale et Prix-Courants (April 27, 1895)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 27, 1895.

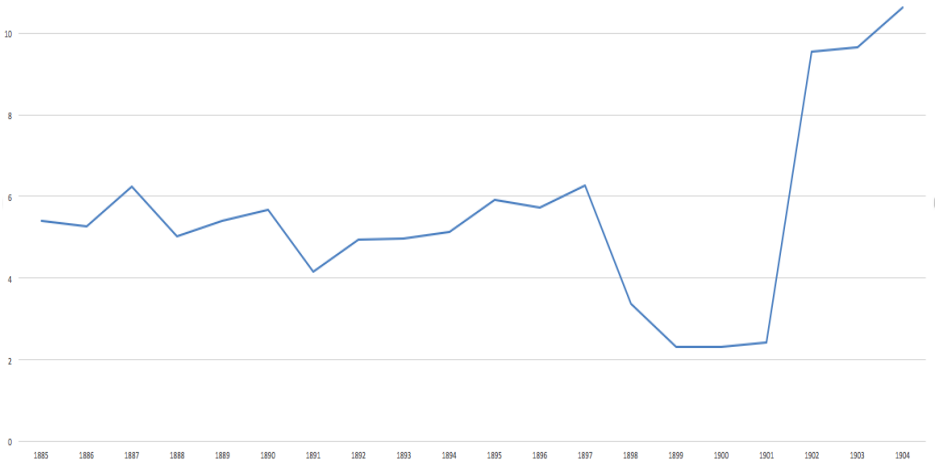
113 "Faits et Notices (January 30, 1897)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, January 30, 1897.

114 *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*, 65 and 69.

115 Maunsell, "Reports on the Trade and Commerce of the Trebizond and Sivas Vilayets for the Year 1897 b-Sivas Vilayet."

116 The effect of limitation the land available for cultivating in tobacco by the Régie was also observable, when the percentage of production in *Sancak*s of Canik and Trabzon compared with the entire empire, it passed from 25.7% in 1888 to 17.5% in 1905. For 1888, see "Le Tabac," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 20, 1888. For 1905, see ed. Régie Co-interessée des Tabacs de l'Empire Ottoman, *Régie Co-interessée des Tabacs de l'Empire Ottoman: Statistique et Exploitation Comparative des XVII and XVIII Exercices*, ed. Nazarets (Paris: Gérard Frères, 1905).

In the new century, there were two major changes in tobacco production. First, the area under cultivation expanded albeit more or less under the control of the Régie Company. As a result, despite bad years like 1898 and 1899,[117] total production of tobacco increased modestly ~1%- 3% per year. Second, the amelioration in quality discussed in chapters four and five happened mostly during the first decade of new century. As explained in the chapter three, the emerging cigarette industry required a specific standard of quality. It was demonstrated that tobacco's quality increasingly closed on global standards. As argued several times, for tobacco, higher quality meant higher prices, which contributed more to farmer's and merchant's incomes than increases in total production.[118] As discussed in the previous chapters, in order to catch up with global standards, merchants increasingly invested in the vertical integration of farms. Consequently, tobacco was the crop for which intensive growth and technological change were most common.



Graph 6.7 Average Prices of Tobacco Exported from Samsun (in Gold Piasters per Kilogram)

SOURCE See Appendix M.

117 Contanze, "Rapport Agricole Consulaire de l'Année (1899)."

118 This qualitative change was also observable in prices. The effect of the change became apparent in 1901 when its average price doubled.

6.2.2 *Unequal Growth in Hazelnuts*

The most astonishing example of extensive growth was the hazelnut. From the 1890s to the 1910s, not only did its total production volume increase ~12% per year in the Province of Trabzon but the zone of hazel arboriculture expanded from small zone between Ordu and Trabzon to the entire eastern region of Southeastern Black Sea region coastline. However, as pointed out in chapter four, the marvelous growth of hazelnuts was also an example of unequal growth. Not everybody were the winners of this growth. While the most prominent producers and merchants received the lion's share of the profits, even petty agents were among the losers. Even though, the prominent local hazelnut merchants had never been among the most powerful or rich families in Trabzon Province before the 1880s, in just two decades characterized by the growth in hazelnuts, they gained incredible power over the market by speculating on the prices of hazelnuts and stockpiling them. These speculative activities peaked in the period 1899-1902. During this period, powerful market actors saturated the market after every harvest, which decreased the prices. Then they bought the newly harvested hazelnuts as cheaper as they could. Then these pulled their lots from the market in order to the prices could increase again. After establishing control over the local market, these merchants grasped control over the long-distance market and became the price setters in the Istanbul market after 1903 with the help of a cracking industry fully-integrated into their arboriculture.

In the eastern part of Trabzon Province, hazels were mainly planted within fifty kilometers of the sea,[119] ideally at altitudes between 250[120]-500[121] meters.

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119 "Trabzon Vilayetinin Esval-ı Umûmiyye Ziraiyyesi [Ziraat Umurluğunu 1328 Senesine aid Raporu]."; and Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909."

120 "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde et Kérassonde)."

121 "Trabzon Vilayetinin Esval-ı Umûmiyye Ziraiyyesi [Ziraat Umurluğunu 1328 Senesine aid Raporu]." Although it was possible to cultivate hazels at elevations above 500-600 meters, these hazels produced fruits every three or four years instead of every year. See Antreasyan, *Fındık Ziraati ve Ticareti* 12-13.

However, although the quality of the fruit would decrease considerably, plantations could be high as 1,200 meters;[122] hazel orchards also infiltrated semi-urban areas near ports such as in Kovata/Ortahisar,[123] especially when the etesian winds were suitable. From the 1860s to the 1880s, the core of hazelnut planting was concentrated in a zone that paralleled to sea between Fatsa and Atina. However, after the boom in demand mostly thanks to the chocolate industry in the 1880s, the area over which hazels stretched from Inebolu – in the west – to Russian Caucasia[124] – in the east. By the new century, hazels were found in every garden in Giresun[125] as well as in most of Trabzon, Ordu, Ünye, Lazistan, Fatsa,[126] and even Erzurum.[127] Eventually the tree gained so much international popularity that several governments around the Black Sea promoted its arbouring. For example, some 10 thousand hazelnut saplings were exported from Trabzon and Giresun to Hungary in 1888,[128] and other trees were exported to Romania. Likewise, the Ottoman Ministry of Agriculture attempted to seed hazels imported from Trabzon Province in Şile in the mid-1910s but this effort failed because of issue with salinization.[129]

122 "Mouvement Commercial du Vilayet de Trébizonde pendant les Années 1910 et 1911 (Ports de Trébizonde et Kérassonde)."

123 Palgrave, "Report on Anatolian Coast, and the Corresponding Inland Districts, Between the Longitudes of Sinope and Trebizond, in the Summer of the Year 1869."

124 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909."

125 Antreasyan, *Fındık Ziraati ve Ticareti* 3.

126 ibid., 4.

127 Chayet, "Rapport Commercial de Trébizonde (1898)." Round hazelnuts were found everywhere. Long and pointed hazelnuts grew from Ordu to Fol and the large round ones only in Foça. See Satow, "Report on the Trade and Commerce of the Vilayet of Trebizond for the Year 1912."

128 Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1888."

129 "İstanbul vilayetince bi-l-mübayaa Şileye gönderilen fındık fidanlarının kökleri kuruyarak tutmadığı ve azamiyyet livasınca Trabzon'dan celeb edilen binlerce fidanında ancak %3 nihayet %5 raddesinde tuttuğu ve Trabzon'dan getirilen işbu fidanların tutmaması" quoted from "Fındık Fidanları Hakkında Tahrirat-ı Umumiyesi," *Ticaret ve Ziraat Nezareti Mecmuası*, no. 11.

The center of the growth of hazelnuts was Giresun but not everyone enjoyed this growth equally.[130] Big investors started to eliminate petty merchants (possessing capital of 100-300 Ottoman Lira)[131] from the market by speculating in the 1890s and the early 1900s. Especially between 1899 and 1902. After the harvest of 1899, prices fell to 140-150 piasters per quintal, quickly increasing to 190-195 piasters per quintal due to speculation.[132] Total production in 1900 was even more abundant,[133] but local prices rose even higher (210 piasters per quintal) due to speculation. These prices were impossibly high, since the prices of hazelnuts from Giresun fluctuated between 170-200 piasters per quintal in Istanbul. After a while, big stock holders cooperated to sell their product together, triggering a ripple effect in the market. Local prices crashed to 80-90 piasters per quintal, which ruined petty agents.[134] The following year, 1901, total production in Giresun was even greater,[135] but the prices quickly rose to 140 piasters per quintal.[136] Even though, global prices increased dramatically from 50 to 200 piasters per quintal [137] that year, most of petty players had already been economically ruined. For that reason, after three years of heavy speculation, most petty farmers who earned their income from hazelnuts started to cultivate other crops in 1902. The most popular alternatives

130 Comparing the numbers from Cuinet and Consensus of 1909, Giresun had the highest growth rate of ~10% per annum.

131 Aristote G. Néophytos, "Lettre de Kérassunde (January 22, 1894)," *Revue Commerciale du Levant (Bulletin Mensuel de la Chambre de Commerce Français de Constantinople)*, January 22, 1894.

132 N. Collaro, "Rapport Commercial de Kérassunde et Ordou (1899)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1899).

133 It was estimated as 140,000 quintals (1900) up from 110,000 for the preceding year. See Collomb, "Rapport Commercial de Trébizonde (1900)."

134 Collaro, "Rapport Commercial de Kérassunde et Ordou (1900)."

135 While the harvest of hazelnuts in 1900 was only 140,000 quintals (7,885,000 kilograms), the harvest in 1901 was 200,000 (11,260,000 kilograms). See "Rapport Commercial de Kérassunde et Ordou (1901)."

136 ibid.

137 "Revue Commerciale et Prix-Courants (January 1, 1898)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, January 1, 1898; and "Revue Commerciale et Prix-Courants (October 20, 1900)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 20, 1900.

were sheep-breading,[138] tobacco cultivation,[139] and the arboriculture of fruits – especially apples.

With decreasing production from petty players, the prominent players in Giresun established indisputable hegemony over production in 1903. Moreover, these producers started to establish small manufacturing plants to crack hazelnuts, operated either by man power or more commonly by simple engines run with petroleum. Thanks to this light industrialization, they further managed to bring long-distance value-chains under their control. Consequently, local big actors became price setters in global value-chains of hazelnuts and its by-products by 1903. For example, when it was clear that the forthcoming harvest would be abundant in Trabzon Province,[140] prices of cracked hazelnuts dropped from 319 to 242 piasters per quintal in a week's time.[141] Likewise, following two good years there were signals that the autumn harvest of 1906 would be relatively smaller,[142] and global prices jumped from 214.5 to 341 piasters per quintal.[143] After a good autumn harvest in 1907, prices again plummeted from 396 to 297 piasters per quintal[144] within a week. Therefore, prominent local market actors in Giresun enjoyed not only immense yearly growth rates but also mark-up profits that allowed them to accumulate capital and power over the market. Moreover, these agents invested in their hazelnut

138 Exports was shifted from 1180 to 3140 per head in 1902. ("Rapport Commercial de Kérassunde et Ordou (1902).")

139 ibid.

140 G. Grenard, "Rapport Commercial de Trébizonde (1903)," (Agence Consulaire de Trébizonde, AMAE, CADN, 1903).

141 From the first week to second week of August. See Longworth, "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1894."; and "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1900."

142 The estimates for 1905 was 260,000 quintals (14,643,000 kilograms) and it was 170,000 quintals (9,575,000 kilograms) for 1906. See Collaro, "Rapport Commercial de Kérassunde et Ordou (1905-1906)."

143 "Revue Commerciale et Prix-Courants (June 20, 1906)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 20, 1906; and "Revue Commerciale et Prix-Courants (October 27, 1906)."

144 By mid-June 1907 "Revue Commerciale et Prix-Courants (June 19, 1907)." Prices remained stable until the late September 1907, see "Revue Commerciale et Prix-Courants (September 28, 1907)."

production. On the other hand, most petty merchants were eliminated from the market by the turn of the century.

§ 6.3 Chapter Summary

As argued starting in chapter two, yearly agricultural performance was determined in the short run strictly by natural factors, climate, and long-term global price fluctuations. However, price fluctuations and climate had a limited effect on long-term agricultural transformation. As discussed above, the conditions for extensive growth in agriculture of Southeastern Black Sea region already existed in the late 1880s. Local cereals returned to global markets, and hazelnuts and tobacco were increasingly exported. However, the heaviest deflation trend of the century (1893-1896) brought the four horsemen of the apocalypse: war, disease, famine, and death. One would expect recession to follow, and indeed. I expected at the beginning of this research that the calamities of 1893-1896 period would have long-term negative effects. However, this hypothesis was falsified by the increasing value of exports in the statistical, in yearly reports pointing to improvement in yearly agricultural performance and in other primary sources. Eventually, I concluded that the period 1893-1896 delayed and apparent positive trend, but did not stop it. In fact, inflation in 1853-1856 and 1861-1865 brought about economic prosperity in cereals but not a transformation in agriculture. The only crops that benefitted from the favorable prices from the mid-1850s to 1865 were those less subjected to transportation and information costs, tobacco and haricot beans.

The main reasons for long-term extensive growth are factors pointed out in the third and fourth chapters: the decrease in transportation costs due to improvements to the roads and changes to financial and commercial institutions with emergence of agro-industries. The reason why capital, transaction, information, and especially transportation costs determined the long-term growth, whereas the long-term price rarely affected the competitiveness of the crops. On the other hand, transaction costs emerged from various factors like inconsistent quality standards (discussed in the chapter four), inadequate institutions (discussed in the chapter three), and high transportation costs arising from geographic features and inadequacies road system (as discussed in

the second and third chapters) effected the competitiveness of the crop. Likewise, the cost of factors of production, capital, labor and land, were also important factors but capital was usually the missing element that prevented extensive growth. On the other hand, as pointed out in the chapter two, information and maritime transaction costs neared global levels, especially in the 1860s and in the 1890s and 1900s. For that reason, long-term agrarian change in the late nineteenth century was triggered by the arrival of banks which facilitated transactions and decreased interest rates by improvement to the road system which reduced land transportation costs, and by the emergence of horizontal commodity-chains that decreased transaction costs.

7

Conclusion

This dissertation contributes to the extent literature in two ways: first as a comprehensive history of agrarian and commercial change in part of Anatolia, namely the Southeastern Black Sea region, from the 1850s to the 1910s, and second, as a series of economic arguments proposed to explain how and why this commercial and agrarian change occurred. For that reason, this conclusion could be written in two possible ways. The first, a comprehensive historical count of agrarian change, would appeal mainly to the interests of researchers dealing with Southeastern Black Sea region but few others. The second option is to conclude by summarizing the discussion of and arguments about how and why commercial and agrarian change occurred. Such a conclusion focusing on arguments would provide opportunities for future researchers to compare their findings against Ottoman agriculture and commerce. As pointed out in the introduction, the choice of geography and time period mattered little for the purposes of this study; the Southeastern Black Sea region from the 1860s to the 1910s was selected because it provides a perfect geography in which to examine the commercialization of agriculture in nineteenth century over a short period of time, which enabled the research to examine agricultural production and commerce from bottom to top.

This conclusion neither provides a mere a repetition of the main chapters nor their structure. Throughout the dissertation, the history of agrarian and commercial change in Southeastern Black Sea region has been sliced into five

layers – five chapters – for pragmatic reasons. Each chapter considers the same story from the mid-1850s to the 1910s but approaches commercial and agrarian change from a different perspective (ratione materiae). Therefore, each chapter provides a fragment of the entire story, and deals partially with the main argument and question. Accordingly, a chronological account of historical facts and arguments is required. For that reason, this conclusion summarizes the dissertation in the chronological order of events, not according to the logic of the chapters. This will underscore the relations among chapters, arguments, and events in a different perspective.

This dissertation also provides an account of agrarian change in Southeastern Black Sea region between the mid-1850s and the 1910s to answer the question of how and why agricultural production and commerce changed, as local markets and agriculture became integrated into long-distance markets. This dissertation has proposed a strict order of causalities answering the questions of why, how, how much, and in what direction agrarian change in Southeastern Black Sea region took place. It was argued that the industrial revolution and emergence of global markets was the ultimate cause of agrarian change but transformations in financial and commercial institutions, the emergence of agribusiness, and technological change were the actual causes, albeit bound by ecological and climatic constraints. This long and complicated main argument requires a recapitulation piece by piece. The ultimate reason agricultural production and commerce transformed in Southeastern Black Sea region from the mid-1850s to the 1910s is no doubt the capitalism and emergence of global markets. The agrarian change that occurred in different parts of world – Anatolia, the Balkans, Egypt, East Asia, East Europe, West Africa and Latin America – in the second half of the century was an immanent result of the industrial revolution and integration into global markets. This simple, causal link elucidates why there was agrarian change throughout the world but does not explain the differing directions of agrarian change in different places. In other words, the emergence of global markets does not shed light to the reasons why agrarian changes in Southern Russia, Romania, Bulgaria, Eastern Thrace, and the Southeastern Black Sea region diverged to great extend even though these geographies shared similar political and commercial

histories in the nineteenth century. For that reason, the emerging global markets do not provide answers to the question of what made agrarian change in Southeastern Black Sea region is different. Although the examination of the relationship between emerging global markets and agrarian change in the pre-capitalist world during the nineteenth century is an interesting, intriguing topic, this dissertation is not the kind of study seeks to answer such broad questions.

The main subject of this dissertation is the actual causes of agrarian change, and it explains how agricultural commerce and production in Southeastern Black Sea region reacted to integration into long-distance markets. This dissertation suggests that the direction of agricultural change to the Southeastern Black Sea region was determined by changes in commercial and financial institutions, the arrival of new transportation and information technologies in the region, and the emergence of agro-industries, all of which constrained by ecological, geographic and climatic features. Since economic theory suggests that factors of change in this argument can be expressed in terms of cost the main argument can be articulated as follows: information, transportation, transaction, and capital costs determined the direction and intensity of agrarian and commercial change. This dissertation has argued that to understand the direction and causality behind agrarian change, it is essential to understand the changes in commercial, financial institutions, technologic change in information and transportation technologies, and the emergence of global markets. In other words, it is obligatory to approach the change in agricultural production and commerce by examining the costs of capital, transportation, transaction and information in both agricultural production and commerce.

As pointed out in the second and third chapters, there were two periods (from the mid-1850s to the late 1860 and from the late 1880s to the 1910s) when institutional change, technological innovation, and the emergence of agro-industries took place. Put another way, there were two periods when the costs of capital, transaction, transportation, and information were characterized by a bearish trend. As examined in the chapter two with the respect to shipping, the first steamships arrived as early as the 1840s, but steamships only came to prevail in the 1860s. Meanwhile, thanks to postal services carried out by

steamers and governmental investments in the telegraph, the communications sector became part of global markets during the same period as did shipping. Accordingly, the shipping and information sectors were fully integrated into western capitalism by the 1860s, and shipping and information costs decreased to global levels that same decade. Subsequently, these sectors were subject to spontaneous changes in global markets for the remaining duration of the century.

Chapter three argues that for the 1860s, market agents suffered from high transaction costs resulting from inadequate legal institutions, asymmetrically information, and inadequate market standards and regulations. Horizontal integration partially solved the issues of high transaction costs that emerged from imperfections in local and global markets at micro-level. As discussed in the second and third chapters, the introduction of new information and transportation technologies in the mid-1850s made the circulation of commodities and information around the globe possible as never before. Accordingly, local market agents were subsequently able to exchange commodities, information, and money with far away ports and cities. In other words, the Crimean War not only introduced the telegraph and steamships, but also new, horizontally-integrated markets with new financial and commercial institutions. In this sense, horizontal marketing was not a novelty but horizontally-integrated global markets were.

These horizontal commodity chains were described in the third chapter. The circulation of crops and credit were accomplished via horizontally-integrated commodity chains. Consider a hypothetical transaction from Tokat to Prague: the crops cultivated in Tokat were delivered by one agent and commercialized in local ports by another in Samsun. The transactions were made by different agent in Istanbul, and completed by faraway agent in Trieste. The final buyer was in Prague. In this long-distance commodity chain, the risks and transaction costs arising from imperfect markets and inadequate of formal institutions were handled by third-party market agents. For example, in the case of a commodity chains stretching Tokat-Samsun-Trieste-Prague, the Austro-Hungarian merchant in Prague would handle its issues with the partner in Trieste instead of dealing with the market agent in Tokat. Likewise, the one in Trieste would deal with the one in Istanbul, the one in Istanbul with the

one in Samsun and the one in Samsun with the one in Tokat. Accordingly, this market structure allowed local crops to be marketed around the world even though local market agents had neither de facto nor de jure connection to far-away market agents.

As discussed in the third chapter, these long-distance commodity chains partially solved the issue of perpetual insufficiency of money, which was a major obstacle to the growth of local markets. In this horizontally integrated market, foreign capital started to flow in the opposite direction of exported crops via the same commodity chain. In other words, market agents in Istanbul generally provided credit to local port merchants, who in turn provided credit to local merchants and who finally provided it to farmers – with higher interest rates at each step. As argued in the second and third chapters, credit distribution was a key factor in establishing dominance over other market agents. For that reason, market agents in Istanbul established control over local port merchants, local port merchants established it over local market agents, who in turn established control over farmers.

The effects of the transformation of these commodity chains was discussed in the fourth chapter. Since the natural features of each crop was different, each crop reacted differently to these changing economic factors in the two periods under consideration. Put another way, changes to commercial and financial institutions, amelioration of transportation and information technologies, and emergence of agro-industries affected each major crop in a dissimilar way to different degrees. The best example of intensive growth throughout the century was that of tobacco, for which there are two reasons. First reason is the nature of its demand: tobacco is an addictive crop for which its consumers were willing to pay more for a better quality. For that reason, the difference in price for the highest and lowest quality product was greater than for other crops. Accordingly, high quality tobacco meant higher profits. Naturally, market agents who controlled the commodity chains were more willing to invest in ameliorating the quality of tobacco than that of other crops. On the other hand, as discussed in the fifth chapter, tobacco required extensive, delicate labor, strict obedience to the agricultural calendar, and even more liquidity than other crops to achieve changing quality standards. Hence, the cultivation of tobacco was always more money- and labor-consuming such that no farmer

would cultivate it without considerably high potential profits. And these could only be secured by cultivating the highest quality tobacco in line with changing western standards. Because of the high potential for greater profits, tobacco can be formed to the changing quality standards of global markets more than other crops.

As demonstrated in the fourth chapter, exporting local tobacco in the late 1840s created high additional transaction costs for several reasons including not meeting quality standards and issues preserving the tobacco's aroma. In addition, the cost of information and transportation was significant compared to other alternatives. For that reason, as demonstrated in detail in fourth chapter, the French Tobacco Monopoly gave up on buying local tobacco by the late 1840s after several attempts. After the transportation and information costs decreased considerably during the Crimean War, tobacco became an international commodity. However, it was thanks to the American Civil War and a tobacco famine that local tobacco became an established good in long-distance markets. During the tobacco famine, local farmers increasingly planted those types of tobacco that western buyers preferred like Samsun *Karamaden*. Moreover, by the 1860s market agents were increasingly paying more attention to the size, color and aroma of the harvested leaves as the western market demanded.

As reasoned in several chapter, the motivations for the changes in cereals was opposite to those to tobacco in many ways. First, cereals were cultivated by farmers primarily as a food crop, not a cash crop. A typical farmer previously cultivated wheat, barley, and maize primarily to satisfy the needs of their families and livestock, free from the conditions of the market. Only the remaining surplus was sold at market. In theory, farmers could have continued earning their living by producing cereals for their own consumption and as in-kind taxes forever. For that reason, the preference for the cultivation of cereals was less dependent on market conditions. Second, the range of prices between high and low-quality cereals was narrow compared to that for cash crops. Accordingly, during the periods 1853-1856, 1861-1865, 1888-1892, and 1897-1906 when the market favored their cultivation, it was more rational for farmers to invest in expending the land area under cultivation rather than to invest to improvement in quality. However, when market trends took turn for

the worse, farmers were inclined to decrease production to the level of subsistence as occurred in 1893-1896. During the nineteenth century, the common way farmers increased production was to clear land, opening new fallowed lands. However, in order to maintain the production of wheat and maize in the long-term, these farmers rotated these crops with other cereals, usually barley and oats. In addition, as demonstrated in detail in the fourth chapter, farmers along the coast intercropped maize and haricot beans to increase the crop yields of maize. For that reason, positive trends for wheat resulted in increases in the production of barley and oats, haricots increased only in the case when maize increased.

In the period from the mid-1850s to the late 1860s, impossibly high-demand and hyperinflation made it possible for local cereals enter to long-distance markets. However, when these good years ended, farmers decreased their production, a trend that was followed by years of disaster, crop failures and famines in the 1870s. More importantly, during years of inflation, farmers simply expanded the total land area under cultivation. Therefore, the first period during the 1860s had a marginal effect on cereal cultivation, except for the symbiosis of maize and especially haricot. The success of this symbiosis relied on the fact that maize and haricot suffered less from high land transportation costs because they were cultivated along the coasts. Put another way, the failure of other cereals cultivated in the hinterland, like wheat, barley, and oats, resulted from inadequate land transportation. On the other hand, farmers who cultivated maize and haricot beans together, rarely consumed haricots. Accordingly, most haricots cultivated were sold at market. For that reason, positive commercial trends worked mainly for the benefit of haricot cultivators, and as demonstrated in the fourth chapter, the haricot became the most exported crop by volume from Trabzon Province by the 1860sand remained unchallenged until the hazelnut boom of the late 1890s.

A second wave of change started in the late 1880s because of a series of changes to commercial and financial institutions and emerging agro-industry. First, new financial agents, especially banks and bankers, arrived in the Southeast Black Sea region, which decreased local interest rates at least for port merchants. Second, these new financial agents provided new payment instruments that secured the payment of any debt. In other words, with the

emergence of bonds, checks, and other such internationally-valid instruments, risks and hence transaction costs considerably decreased. Thanks to decreasing risks, transaction costs and interest rates, local port merchants were able to expand the frontiers of their business by investing vertically in the commodity chains. While some of these port merchants preferred to open branches in other major ports; such as Istanbul, Marseille, Trieste, and Brussels, others – especially tobacco merchants – invested in order to increase control over production. In addition, the Régie Company and Ottoman Agricultural Bank helped spread new techniques, chemical fertilizers, machinery and tools. Moreover, the telegraph lines and roads stretched out further into the hinterland, connecting the production-sides with the ports and decreasing transportation and information costs once again at the end of the century. Finally, as discussed in the fourth chapter, the agro-industries that emerged in and outside of Ottoman territory had played an important role in shaping the market and local crops.

The cigarette industry, especially the Egyptian cigarette industry compelled the tobacco cultivation to conform to global standards. As discussed in the chapter four, the second wave of change for tobacco started in the 1880s with the emergence of the cigarette industry. This industry required blends of specific types of tobacco with predetermined quality standards. Accordingly, the emergence of the cigarette industry meant increasing possibilities for high profit but also more risk given heavy transaction costs. As pointed out in the third and fourth chapters, thanks to the arrival of new financial institutions and innovation in transportation and information technologies, some prominent port merchants started to vertically integrate long-distance market commodity chains. Tobacco was the market where such vertical integration occurred most. While some of these agents disintermediated commodity chains by establishing long-term regular partnerships with faraway port agents, other leading port merchants increasingly established control over production to enforce quality standards. Others, like the Régie tried to do both. vertical integration strategy to control production was especially important.

First tool to establish dominance over tobacco cultivators was credit. The Régie Company distributed credit with no interest against the future harvests but imposed certain quality standards. Likewise, merchants distributed credit

at significantly lower rates of 20-25% in comparison to cereals. The second strategy was pricing, whereby the Régie Company and merchants paid more for tobaccos that meant certain quality standards required by the cigarette industry. Finally, the Régie Company and merchants intervened in production by supervising and distributing fertilizer and tools. The main motivators behind agricultural change in tobacco were transportation and transaction costs. Transportation costs played a more important role in the earlier transformation while transaction costs were the main reason behind the transformation in the 1880s-1910s. For that reason, given increasing demand from the cigarette industry, the main actors increasingly transformed production in line with changing quality standards. As a result, the quality of local tobacco improved considerably by the turn of the century and its price on the global market rose accordingly.

The second agro-industry was flour, which transformed wheat and barley. As discussed in detail in the fourth, fifth and especially the sixth chapter in detail, the second wave of change for cereals started modestly in the late 1880s when local cereals from the hinterland of the port of Samsun, mainly from Amasya, started to be exported to faraway ports, especially Istanbul. However, this trend was interrupted by the heaviest deflation of the century from 1892 to 1896, which was followed by a series of calamities: crop failures, disease, famines, revolts and massacres. However, after this period, in 1897 agrarian change continued, as if nothing had happened. The reason for the extensive growth was decreasing transportation costs and the emergence of flour industry in the late nineteenth century. As a result, as discussed in the sixth chapter, the production of cereals per capita increased in the hinterland of the ports of Samsun and Giresun especially in Amasya and Karahisar-ı Şarkî. Meanwhile, as pointed out in the fifth chapter, new plows and new hand tools began to spread out. However, the geographic concentration of these plows was around Canik and the great majority of farmers continued to use the traditional ard. In addition to wheat, barley, and oats was the weird case of rice, the production of which increased at a logarithmic pace in the 1890s as land was cleared for it. However, rice crashed, when the Ottoman government took precautions to geographically confine the cultivation of this disease-harboring crop.

The third agro-industries were the chocolate, confectionery, and perfumery industries which boosted the demand for hazelnuts. Agrarian change for other crops were followed the examples of tobacco or cereals but was generally somewhere in between. However, the case of hazelnuts diverged from these two patterns. First of all, hazelnut was a nut that could be grown in the wild every year. With three years of intensive care and protection from pests and frost it simply produced better yields. In addition, the quality of the crop did not matter as it did with tobacco, opium or grapes. All farmers needed to cultivate hazelnut was a suitable orchard. On the other hand, hazelnuts were a cash crop. For that reason, there was a stronger connection between market demand and total cultivation than for cash crops. For that reason, with the increasing use of hazelnuts in the chocolate, confectionery, and perfumery industries in the late nineteenth century, farmers increasingly cultivated hazel trees. Hazelnut production increased logarithmically in terms of total production. Likewise, there were slight changes in hazelnut arboriculture like seeding trees in order and the integration of cracking and oil-extracting industries into production. For that reason, the hazelnut was the only case of extensive growth among cash crops.

§ 7.1 Geographical, Ecological and Economical Premises

In this dissertation there are several premises that support the main argument but that do not offer answers to the main question. Among these premises are three which are more important. For that reason, these premises need further explication. The first premise concerns geography and climate: the Pontic Mountains draw a strict line between rainy coasts and vast hinterland dominated by continental climate. Accordingly, major crops cultivated along the coasts and in the hinterland, have distinctly different ecological features. For that reason, different crops reacted inversely to changing ecological and climatic conditions. The dominant crop along the coasts was maize usually sown together with a nitrogen-fixing crop, namely haricot beans. These crops required extensive heat and water but little land. As pointed out in the chapter four, the Achilles' heel of this symbiosis was that both crops would fail if

drought hit during late summer. The main cash crop along the coast was tobacco, which was the most labor-intensive crop in Southeastern Black Sea region. Unlike maize and haricot, farmers would cultivate this demanding crop only if they could achieve a particular quality level. For that reason, its total cultivation rarely exceeded 5% even in Sanjak of Canik. Although tobacco could fail in summer drought like maize, farmers could better intervene in an imminent shortage of water since tobacco cultivation was done in farms in relatively small quantities. The other major cash crop was hazelnuts. Since the hazelnut is a nut, it grew naturally in the wild unlike other crops. Except in the cases of infestations or sudden spring frosts, hazel trees produced nuts every year almost without human intervention. However, if the tree was cared for properly, especially for its first three or four years, it yielded more abundant, tastier nuts. Another factor in increasing its fertility was altitude – above 500 meters was ideal. For that reason, farmers planted the trees on higher ground and spent most of their time protecting the tree from pests and frosts in spring. The only other time hazel required extensive labor was during and after the collection of the nut.

The dominant food crop of the hinterland was wheat, which was typically rotated with other cereals. For cereals, a three-course rotation (three-field system) was much more common. A winter crop was seeded from autumn to the late spring, followed by a summer crop followed by periods of fallowing according to the need of the soil. Summer crops along the coasts were mainly maize and haricot beans and wheat, barley, and oats were usually cultivated as winter crop in the rotation. In the hinterland, maize cultivation was marginal and was replaced with other cereals. In the hinterland, while wheat was almost always cultivated as a winter or summer crop, the preference among other cereals was variable. The cereals in the hinterland, especially barley, were generally resistant to the long periods of drought except during the flowering period. For that reason, wheat, oats, and barley did not necessarily fail every time rainfall decreased as did maize. Unlike maize or tobacco, grain cultivation usually required little human labor. On the other hand, it need extensive animal labor, especially that of bovines. Accordingly, the physical condition of bovines was the most important factor for crop yields of grain. For that reason,

as pointed out in the fifth chapter, epizooty outbreaks in the hinterland had substantial consequences for the total production of grain.

The geographic and ecological divergence of crops cultivated along the coasts and in the hinterland, leads to the second premise. As argued in the introduction and chapter two, Southeastern Black Sea region could be divided into two climatic regimes a rainy, cold oceanic regime on the coasts and a continental climate in the hinterland. Moreover, these climatic regimes are punctuated by micro climates, and there are regional climatic differences. For that reason, the nineteenth century's Southeastern Black Sea region's fauna was highly diverse. For example, according to the experiments undertaken on the model farm in Canik, it was possible to cultivate a long list of cash crops in the late nineteenth century especially olives, hazels, grapes,[1] anise, sesame, and cotton.[2] As discussed in the fifth chapter, climatic and ecological diversity meant that a generalized crop windfall or failure was improbable, in both short and long run – at least never occurred from the 1850s to the 1910s. Indeed, it was virtually impossible that climatic or ecological events like total crop carriers and droughts would create global effects like famine or general depression that would affect the entire Provinces of Trabzon, Sivas and Erzurum simultaneously. Natural explanations cannot account for general short or long run trends that affected the entire Southeastern Black Sea region. One or several economic factors must have been in motion.

This latter argument challenges Ottoman agricultural historians, who accept the Ottoman Anatolian agriculture as homogenous, monotonous and unchanging for centuries. Anatolia is a county positioned in cross-sections of major weather systems having eight different major climate zones with uncountable number of micro climates. Knowing that Southeastern Black Sea

1 Model Farm was 50 hectares (500 *dönüm*s) just outside of the city (by Hamdi Paşa). It contains 30 *dönüm*s of vineyard, 4 hectares of hazel trees, 10.5 hectares of fruit trees with 10,759 trees (1050 different types), olive trees in İlyasköy and Kadıköy, roses of Kayzanlık (Bulgaristan), asparagus, mangel-wurzel, see Contanze, "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904."

2 "Nouvelles des Provinces (May 20, 1899)," *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 20, 1899.

region is not an exception, this argument should have been valid for entire Anatolia as well. In other words, a general trend, total crop failures, high prosperity or heavy depression in agriculture in entire Anatolia was more impossible because of co-existence of eight climate regimes with highly diverse fauna. For that reason, the arguments explaining low or high performances on entire Anatolia in short or long-term like would have hardly been caused by climatic or ecological factors. For example, Selim İlkin and İlhan Tekeli argue that crop yields of 1928 was low due a general drought in Anatolia,[3] which is highly improbable, because existence of such drought should have been caused by global catastrophe, which should have been hit not only Turkey but also East Mediterranean zone, Balkan peninsula, Middle East and Russia for an entire year. More logical explication could be the sever bearish price movement of 1928-1933 with 30-40% deflation in agricultural prices. This price scissors triggered many agricultural crises over the globe like in USA, which inspired The Grapes of Wrath, or famous Soviet grain procurement crisis of 1928, which marked the end NEP experiment for collectivization.[4]

Second, although it is custom to make generalization on Anatolian agriculture using primary sources gathered from different geographies and period, this might lead to several mistakes. One of good example is Tevfik Güran's book "*19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*", which is cornerstone work on Ottoman agriculture with comprehensive study on primary source. I want to give this book as an example not because it is underachieved study but because of its value, which is shadowed only by the approach of generalization. In this study, Güran drew a general picture of nineteenth century Anatolian agriculture by gathering primary sources form different periods and geographies from nineteenth century Anatolia. If he were dealing with a small country with modest biodiversity like Netherlands or a country dealing with monocrop like nineteenth century Egypt, this generalization would not

3 İlhan Tekeli and Selim İlkin, "Devletçilik Dönemi Tarım Politikaları," in *Türkiye'de Tarımsal Yapılar: [Bildiriler]*, ed. Şevket Pamuk and Zafer Toprak (Ankara: Yurt Yayınları, 1988), 281-362.

4 Michal Reiman, *Stalinizmin Doğuşu "İkinci Devrim"in Arifesinde SSCB*, trans. Bülent Tanatar (Istanbul: Metis Yayınları, 1998), 71-86.

cause big issues. On the other hand, in some cases in Anatolia, this approach creates big inaccuracies. For example, he claims that Anatolian farmers did not use animal manure; because it requires rainy weather to decompose.[5] This statement might have been true for semi-arid zones like Konya or Diyarbekir Provinces but for some other parts of Anatolia, like Trabzon, Erzurum, Aydın Hüdavendigar or Sivas Provinces, it is wrong.

Third premise is economic; it is argued that climate and long-term price fluctuations were main determinants of yearly crop yields. For example, it is argued that in the fourth and fifth chapters, the climate was the main determinant in yearly supply, only exception was the grain, where animal husbandry also might have been more important role. For example, if maize-haricot or tobacco received enough rain in the late summers, they yielded abundantly, if a drought occurred in the late summer they failed. Likewise, spring frost or rainfall before the harvest could be detrimental for hazelnuts. As argued in the fifth chapter with numerous examples, the prices, especially global prices represented the demand. For example, while the 1853-1856 periods marked as prosperity years for agriculture, the heavy deflationist years of 1893-1896 was followed by sequential crises. It is important to note that the reaction of the production to the global prices was hardly automatic as the climate affected the supply; usually it took one or two years/courses to adjust. For example, the local grain production reacted only two years after to the increasing demand due the low performances in Russian cereals in 1888-1892. To sum up, it can be argued that climatic factors and long-distance market prices were the main determinants of total production in the short-term.

§ 7.2 Areas for Further Research

There are three observations that are outside of the scope of this dissertation but need further investigation. First is that if every major crop reacted differently to agrarian change and if the distribution of crops in Southeastern Black Sea region was heterogeneous, there must have been inequalities among different *Kaza*s and Sanjaks. In other words, if commercialization had different

5 Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 88.

effects on different crops, the commercialization would have caused uneven but net agrarian growth in the agriculture of Southeastern Black Sea region. Because of considerable ecological and climatic differences, the same factors behind agrarian change should have caused great discrepancies in terms of agricultural revenues among different *Kaza*s and Sanjaks. If representative farmers in the *Kaza*s of Bafra and Gürün produced exactly according to the distribution of crops in their *Kazas* in the 1880s. They would have been touched differently by the transformation in the 1880s-1910s. For example, since the total production of wheat increased according to population growth in the southern part of Sivas Province and the cultivation of cash crops did not really exist in Gürün, the effect would have been marginal for farmer living in Gürün. They would have engaged similar agricultural activities with similar techniques and they would have been earning approximately the same income from their agricultural activities at the end of thirty-year period. In other words, time was frozen in Gürün. On the other hand, representative farmers in Bafra would have spent more time in their tobacco fields in the 1910s compared to the 1880s. They would have started using chemical fertilizers, new hand tools, and if lucky maybe even a new manufactured plow. Moreover, these farmers would also increase her/his cereal production, especially barley. Accordingly, this farmer would have been earning more income from their agricultural activities at the end of thirty years. To sum up, statistics and other factors points to a net but uneven growth among *kaza*s. This statement could even be true for smaller geographic units, especially considering the examples of the villages of Canik given in the chapter four. However further investigation is needed to understand the extent of these inequalities.

The signs of inequality in different geographies raise another obvious question: how did agricultural change and growth affect different social classes. This dissertation has circumnavigated the question of how different classes were affected by agricultural change without fully answering. In this dissertation, farmers, merchants and other economic agents have been scrutinized as economic classes in line with descriptions by David Ricardo centuries ago that are now widely welcomed even by liberal economists. In theory, the difference between Ricardian economic classes and Marxist social classes is that economic classes react to changing economic conditions, but

social classes involve actively in distribution of wealth. These economic actors could easily be described as active social classes instead of reactive economic classes but there are two reasons for the preference to describe them as reactive economic agents. The main reason is again the absence of secondary sources, despite the existence of primary sources. For example, as pointed out in the chapter three, members of prominent local merchant families held key offices in local and the central government; they were ministers, deputy governors, mayors, members of municipality or provincial councils, and judges. Many incidences demonstrate that prominent merchant families like the Muslim Nemlizâde family, the Armenian Marimian family, and the Greek Mavrides family were above the law and untouchable. On the other hand, peasants had political power as well; for example, there were the farmers' market manifestations. Villages who arrived in the town to sell goods at the farmers' market who wished to demonstrate malcontent with some subject would organize brief manifestations in front of the residence of the most powerful political officer. These demonstrations were short and non-violent, and these farmers vanished without incident after they filed their petition with this office. The many faces of the politicization of the local bourgeoisie and farmers is an intriguing subject, but somehow understudied!

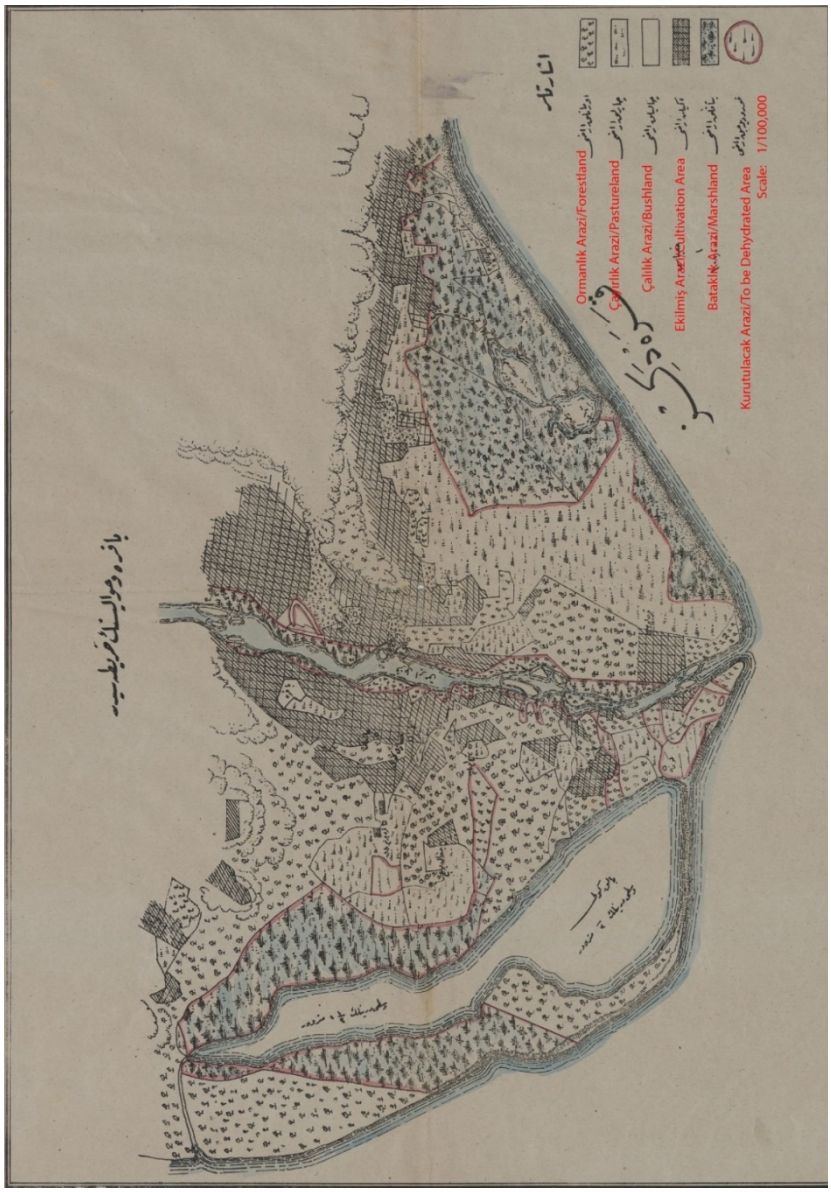
It is not essential for this dissertation to have dealt especially with social classes instead of economic ones. The articulation of social classes does not enter the picture at the level of production and commercialization, with which this dissertation deals. Rather social classes become important when dealing with the distribution of wealth. When examining productive forces even Marxists ignore the distinction between economic and social classes. Accepting social classes instead of economic ones offer no contribution to the main topic of this dissertation: moreover, to understand such relations requires additional archival work given the absence of secondary sources. This dissertation therefore focused on the effect of change on the sector as whole without addressing distribution of wealth among classes.

Final point to make is that this dissertation claims to benefit from ecological approach but a crucial component in agricultural change, animal husbandry had been generally omitted. The bovines had always been an essential part of farmer's life for several reasons. First, as argued in the fifth chapter,

that one of the most important factor in Anatolian farmers was the husbandry's livestock, especially the bovines, in determining the annual performance of wheat. For most labor work of a wheat farm, clearing, like tilling or manuring couldn't be done without the help of bovines. Moreover, the bovines pulled the ox-cart for transportation, they provided additional sources of food and income. For that reason, the main source of misery for farmers was the epizooty as the Ottoman Agricultural Bank report stated. In the fifth chapter, it has been discussed that every time a major epizooty hit the bovines, it brought the chance of crop failure for wheat and famine for the farmers. Likewise, the ovine was crucial in transporting organic material from wild to farming zones as provider fertilizer. As Nişan Antreasyan claimed the number of ovine was hardy sufficient for farming in Trabzon Province.[6] Accordingly, any argument made on ecology would be incomplete without a discussion on what happened in animal husbandry. However, in defense, one of the biggest historiographic gap in Ottoman economic history is the absence of researches on animal husbandry, despite the existence of archival materials on the subject.

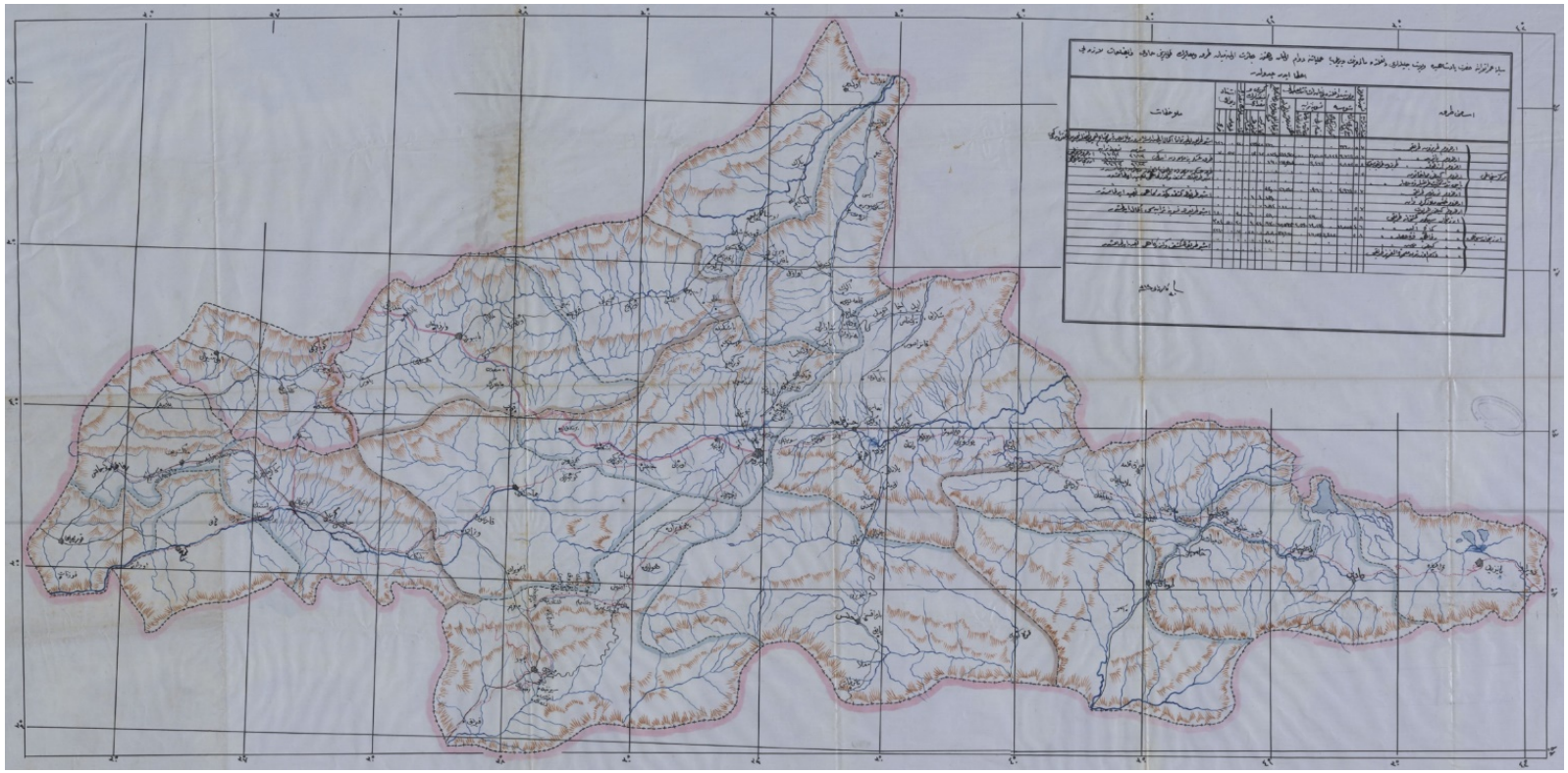
6 Here it is important to understand that with increasing commercialization of agriculture in the nineteenth century, migration of inorganic materials should have increased as well, which should have been compensated by outside factors, either by chemical fertilizers or new technologies cutting deeper the soil. However, most probably, grazing shepherds over the lands should have been most common way. Therefore, transhumance and agriculture should have become increasingly interdependent in the Southeastern Black Sea region as Palairet suggests for Balkans. See M. R. Palairet, *Balkan Economies c.1800-1914: Evolution without Development.* (Cambridge; New York: Cambridge University Press, 1997), 60-62. In fact, Antreasyan points out that farmers utilized increasingly manures extracted from shepherds but in 1910s, total livestock in transhumance was not enough for fertilizing entire Trabzon District. See Antreasyan, *Fındık Ziraati ve Ticareti* 34.

Appendix A Maps



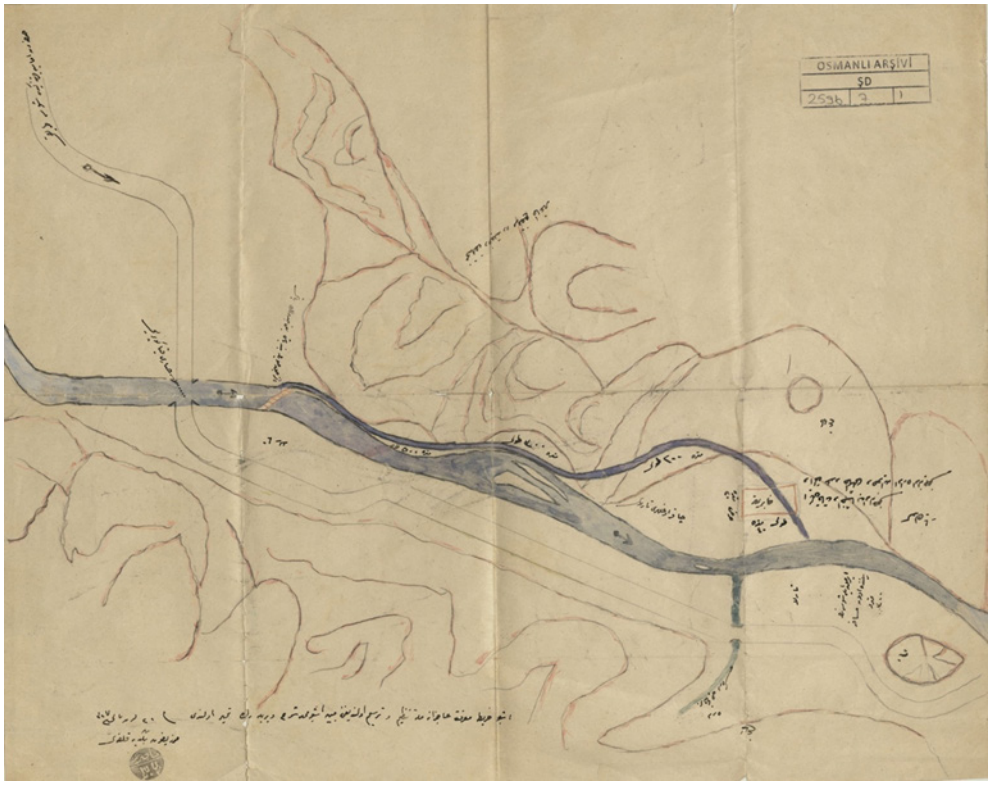
MAP A.1 Cultivation Area Map of Bafra

SOURCE OA HRT 1715



MAP A.2 Province of Sivas

SOURCE OA HRT 1355



MAP A.3 Factory of Merzifonlu Hacı Bakizade Ahmed and Arslan-yan Karabet in the Yarbaşı Quarter of the Kaza of Havza

SOURCE OA ŞD 2596.07

Appendix B Photos

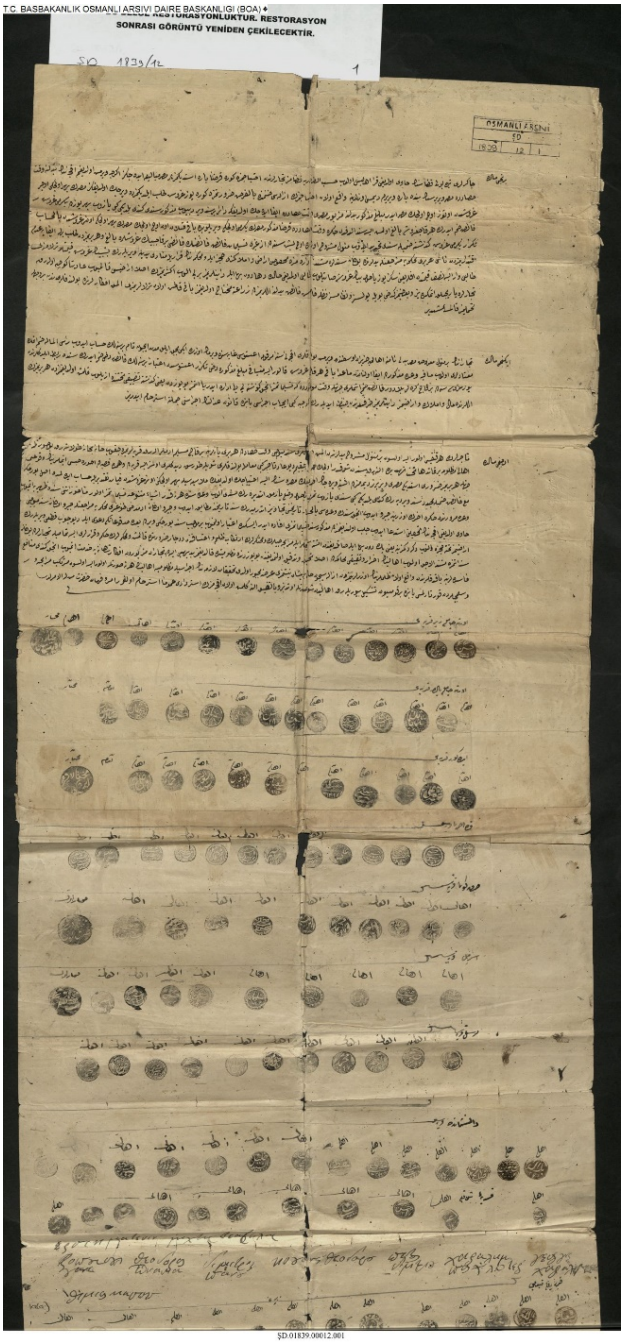


Figure B.1 Petition of Peasants from Tirebolu Complaining about Usury

SOURCE OA ŞD.1839.12

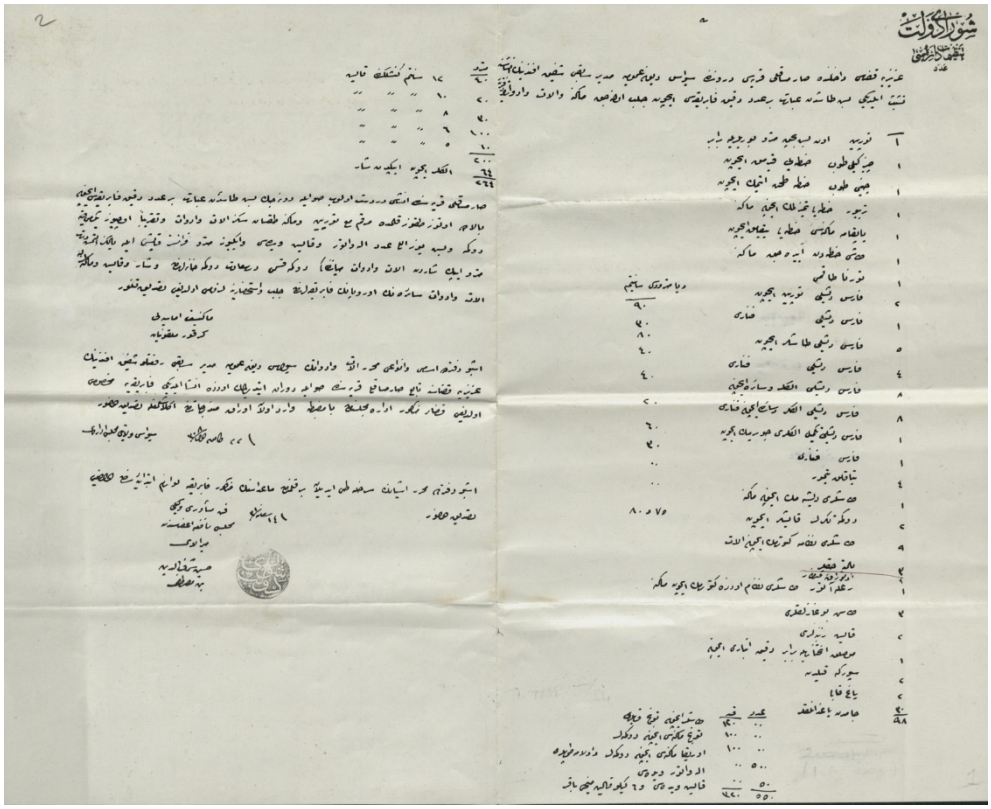
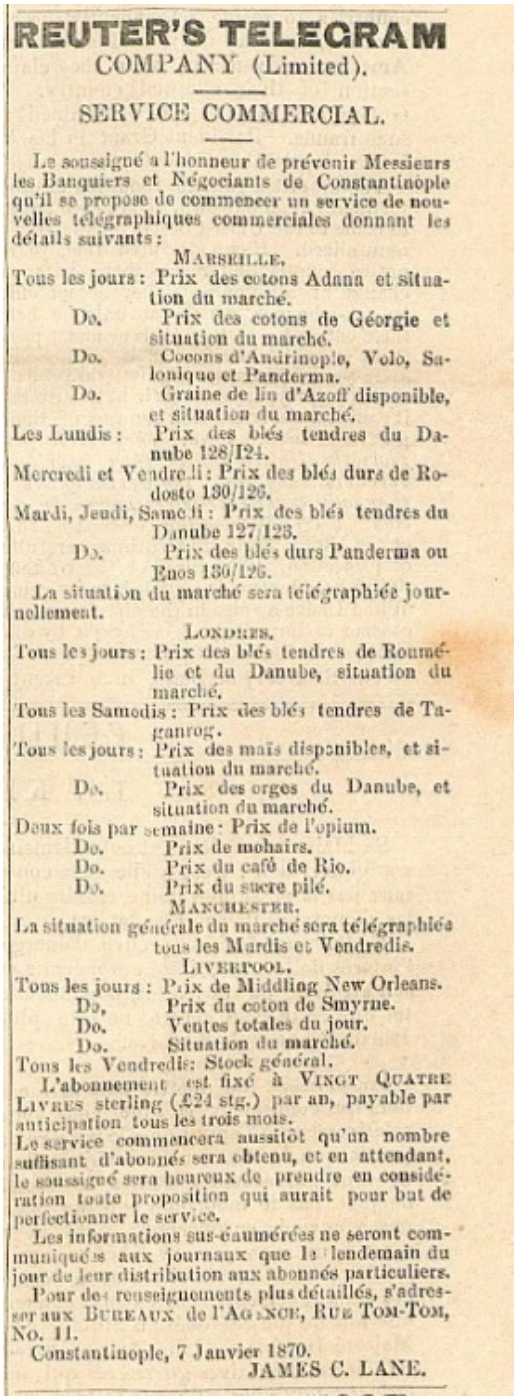


Figure B.2 List of Machinery and Tools for the Water-operated Floor Mill in the Village of Sarımsaklı of Aziziye

SOURCE OA İ.TNF 2.34



REUTER'S TELEGRAM
COMPANY (Limited).

SERVICE COMMERCIAL.

Le soussigné a l'honneur de prévenir Messieurs les Banquiers et Négociants de Constantinople qu'il se propose de commencer un service de nouvelles télégraphiques commerciales donnant les détails suivants:

MARSEILLE.

Tous les jours: Prix des cotons Adana et situation du marché.
Do. Prix des cotons de Géorgie et situation du marché.
Do. Cocons d'Andrinople, Volo, Salonique et Panderma.
Do. Graine de lin d'Azoff disponible, et situation du marché.
Les Lundis: Prix des blés tendres du Danube 128/124.
Mercredi et Vendredi: Prix des blés durs de Rodosto 130/126.
Mardi, Jeudi, Samedi: Prix des blés tendres du Danube 127/123.
Do. Prix des blés durs Panderma ou Enos 130/126.

La situation du marché sera télégraphiée journellement.

LONDRES.

Tous les jours: Prix des blés tendres de Roumélie et du Danube, situation du marché.
Tous les Samedis: Prix des blés tendres de Taganrog.
Tous les jours: Prix des maïs disponibles, et situation du marché.
Do. Prix des orges du Danube, et situation du marché.
Deux fois par semaine: Prix de l'opium.
Do. Prix de mohairs.
Do. Prix du café de Rio.
Do. Prix du sucre pilé.

MANCHESTER.

La situation générale du marché sera télégraphiée tous les Mardis et Vendredis.

LIVERPOOL.

Tous les jours: Prix de Middling New Orleans.
Do. Prix du coton de Smyrne.
Do. Ventes totales du jour.
Do. Situation du marché.
Tous les Vendredis: Stock général.

L'abonnement est fixé à VINGT QUATRE LIVRES sterling (£24 stg.) par an, payable par anticipation tous les trois mois.

Le service commencera aussitôt qu'un nombre suffisant d'abonnés sera obtenu, et en attendant, le soussigné sera heureux de prendre en considération toute proposition qui aurait pour but de perfectionner le service.

Les informations sus-énumérées ne seront communiquées aux journaux que le lendemain du jour de leur distribution aux abonnés particuliers.

Pour des renseignements plus détaillés, s'adresser aux BUREAUX de l'AGENCE, RUE TOM-TOM, No. 11.

Constantinople, 7 Janvier 1870.

JAMES C. LANE.

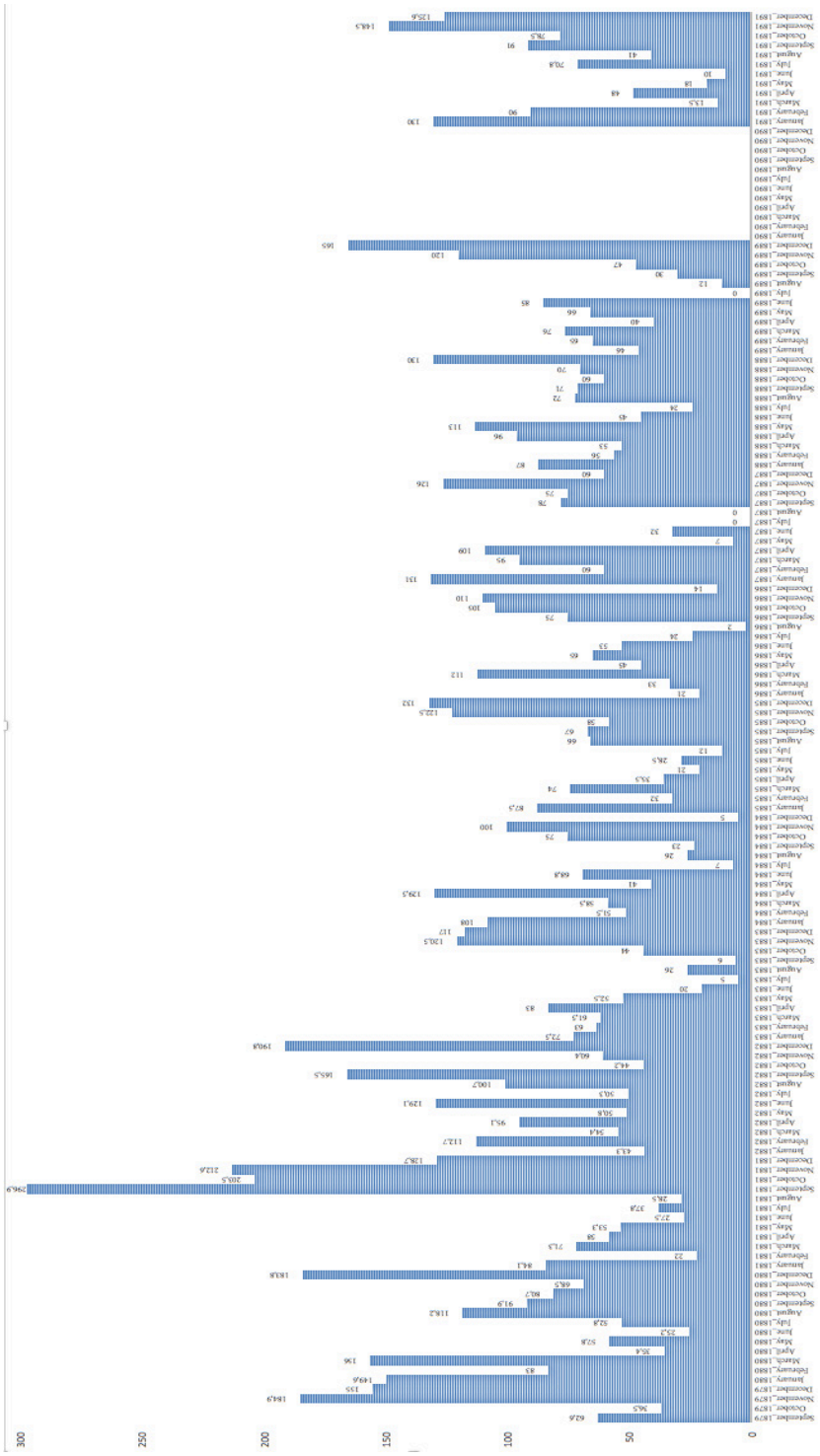
Figure B.3 Reuters' Advertising for their Daily and Weekly Price Information Service for Manchester, London, and Marseilles

SOURCE "Reuter's Telegram Company," *The Levant Herald*, January 7, 1870.

Figure B.4 Advertising of Laughton & Chisnell (1881) and the Mouradyan Brothers (1885)

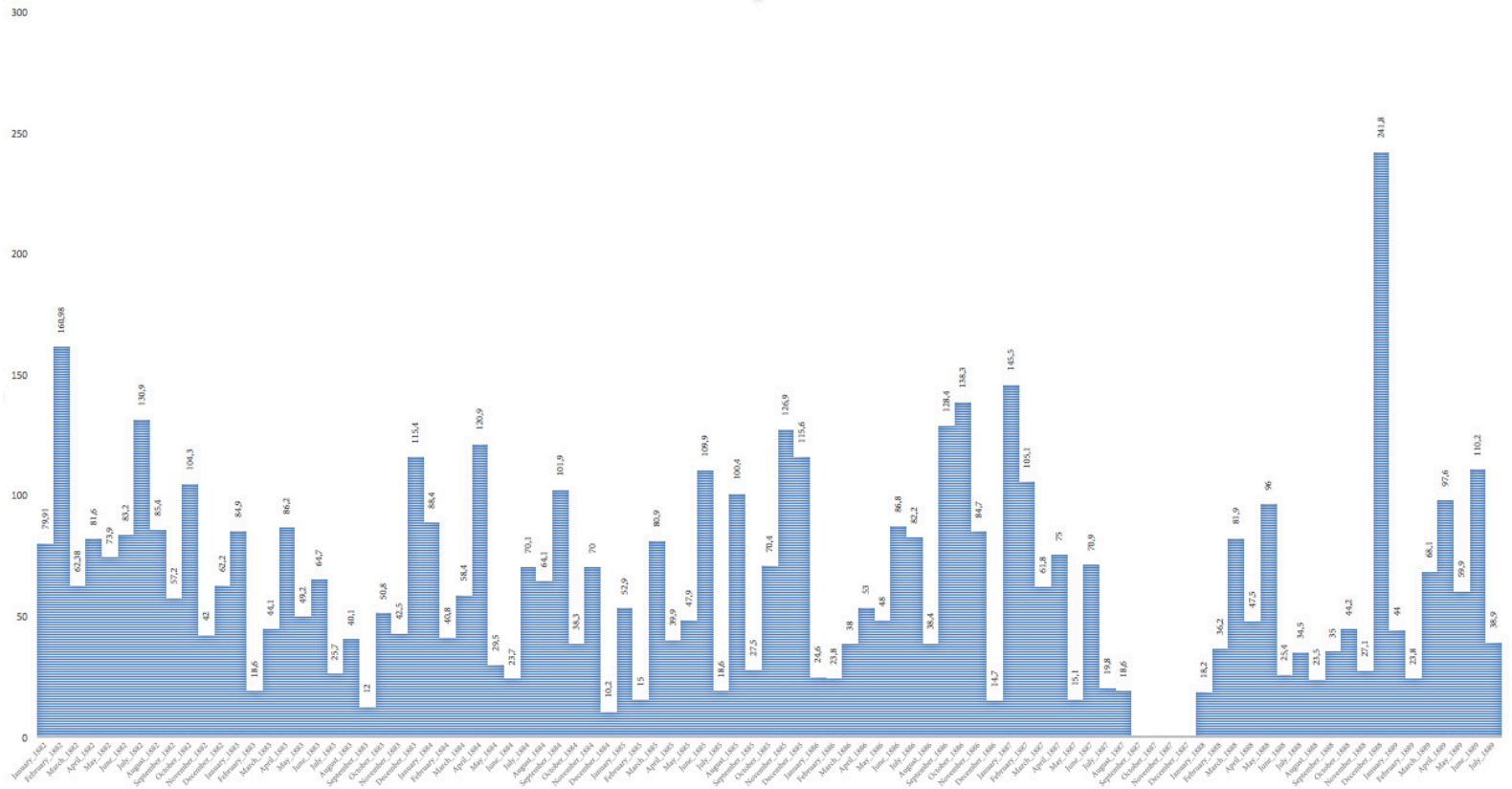
SOURCE For Mouradyan, see "Recommandée Aux Agriculteurs!." For Laughton & Chisnell, see Cervati, Annuaire Oriental Du Commerce, De L'industrie, De L'administration Et De La Magistrature (1881)

Appendix C Climate



Graph C.1 Monthly Rainfall in Millimeters in Samsun (1879-1892)

SOURCE La Météo France



Graph C.2 Monthly Rainfall in Millimeters in Trabzon (1879-1892)

SOURCE La Météo France

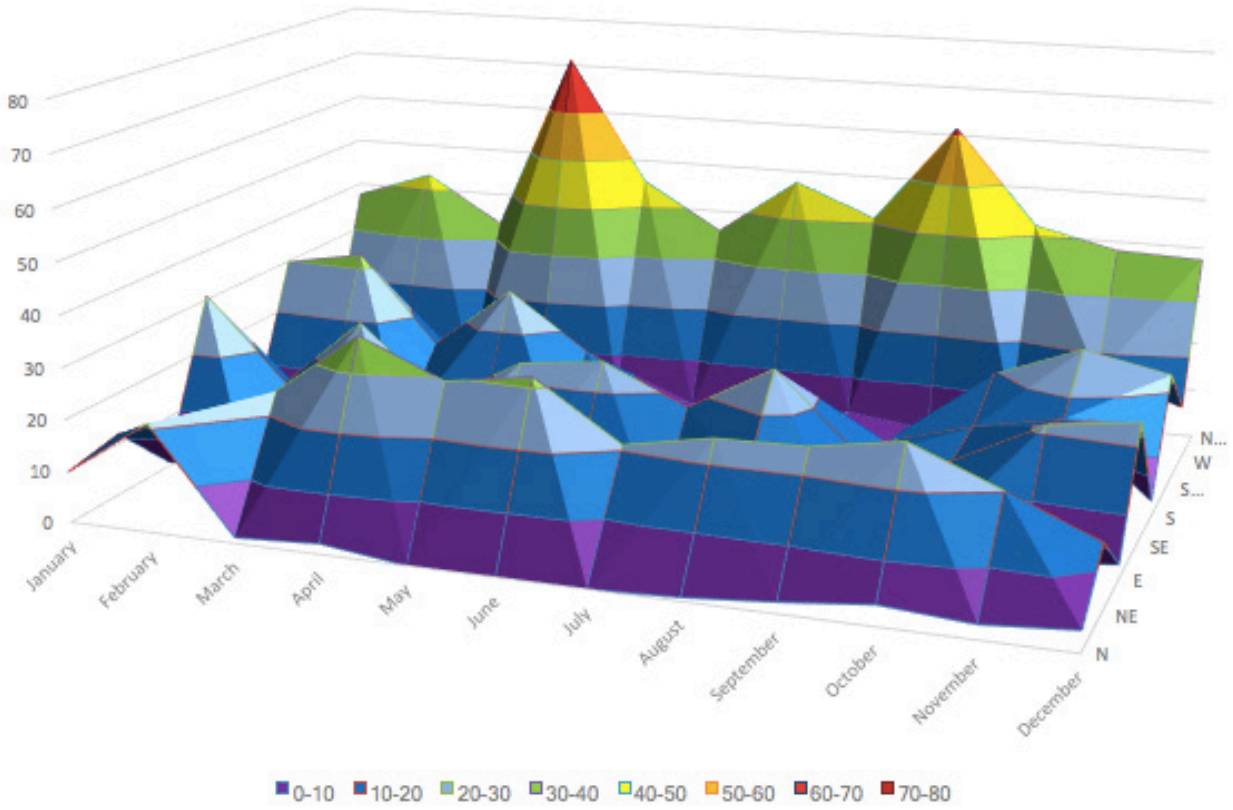
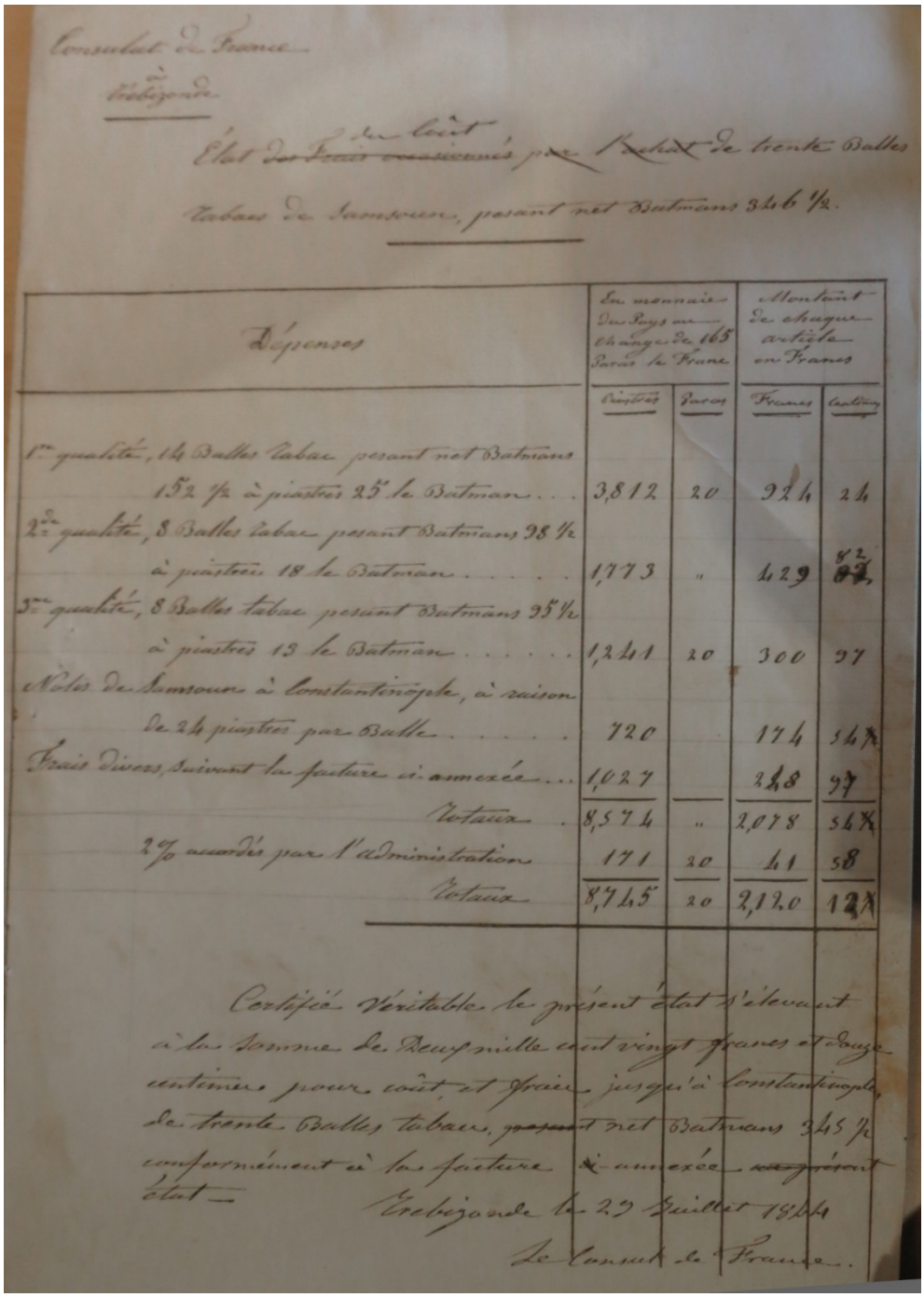


Figure C.3 Wind Distribution in the Port of Samsun (1894-1903)

SOURCE Henri de Contanze, Rapport Commercial de Samsoun (1902)." AMAE, CADN.

Appendix D Tobacco Expedition of 1844-1847

SOURCE FOR ALL FIGURES IN APPENDIX D Agence Consulaire de Samsoun, Les Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN.



Consulat de France
à
Trébizonde

État ~~des Frais occasionnés par l'achat~~ du coût de trente Balles tabacs de Samsoun, pesant net Batmans 346 ½.

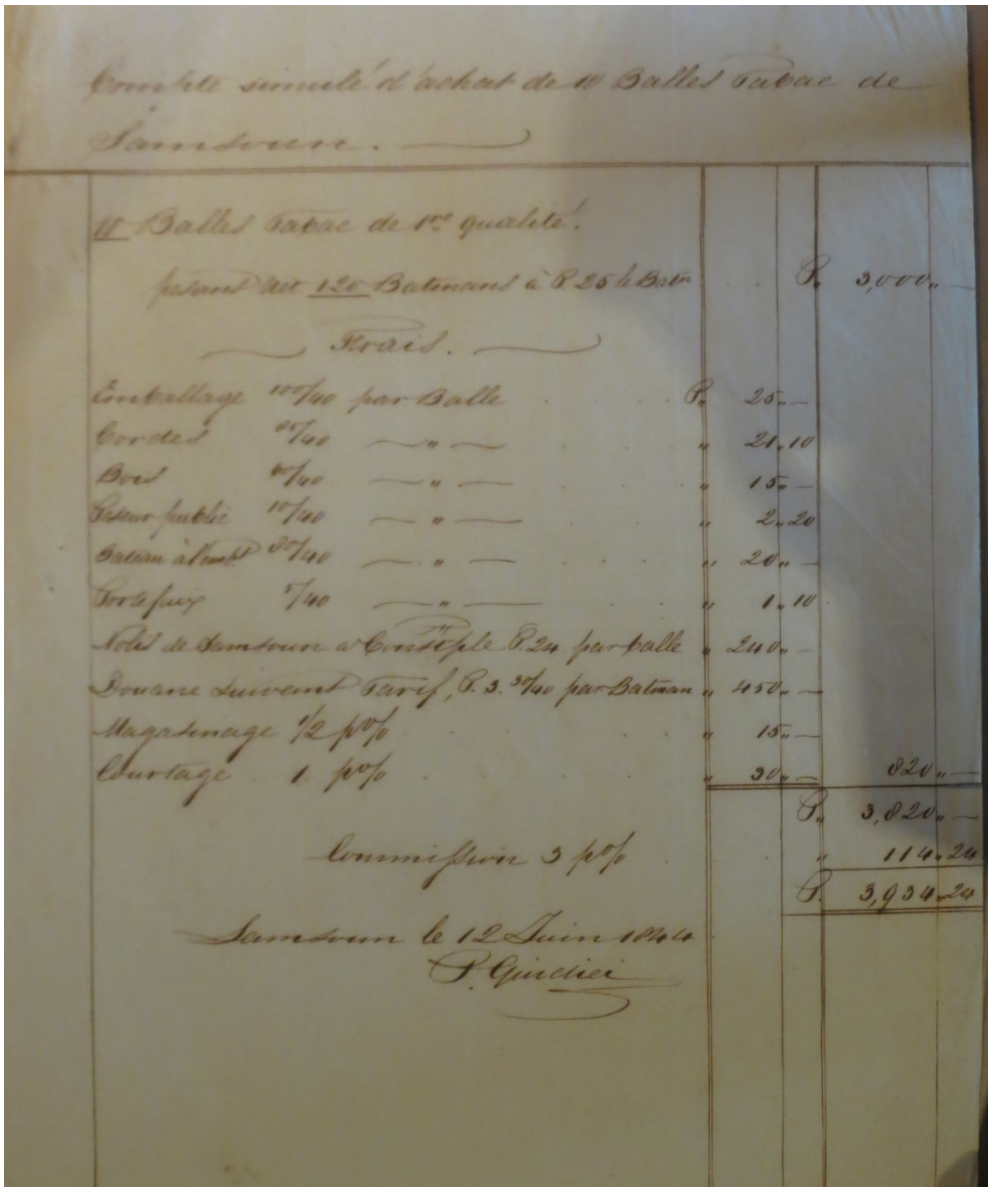
Dépenses	En monnaie du Pays au change de 165 Paras le Franc		Montant de chaque article en Francs	
	Piastres	Paras	Francs	Centimes
1re qualité, 14 Balles tabac pesant net Batmans 152 ½ à piastres 25 le Batman . . .	3,812	20	924	24
2de qualité, 8 Balles tabac pesant Batmans 98 ½ à piastres 18 le Batman	1,773	"	429	82
3me qualité, 8 Balles tabac pesant Batmans 95 ½ à piastres 13 le Batman	1,241	20	300	97
Nolis de Samsoun à Constantinople, à raison de 24 piastres par Balle	720		174	54
Frais divers, suivant la facture ci-annexée . . .	1,027		248	97
Totaux .	8,574	"	2,078	54
2% accordés par l'administration	171	20	41	58
Totaux	8,745	20	2,120	12

Certifié véritable le présent état s'élevant à la somme de Deux mille cent vingt francs et douze centimes pour coût, et frais jusqu'à Constantinople, de trente Balles tabacs, ~~pesant~~ net Batmans 345 ½ conformément à la facture ci-annexée ~~au présent~~ état —

Trebizonde le 29 Juillet 1844

Le Consul de France.

Figure D.1 Invoice for Tobacco bought from Samsun to Istanbul by the French Consulate in Trabzon (1844)



Compte simulé d'achat de 10 Balles Tabac de Samsoun.

10 Balles Tabac de 1re qualité.

pesant net 120 Batmans à P. 25 le Batm. . . . P. 3,000 „ —

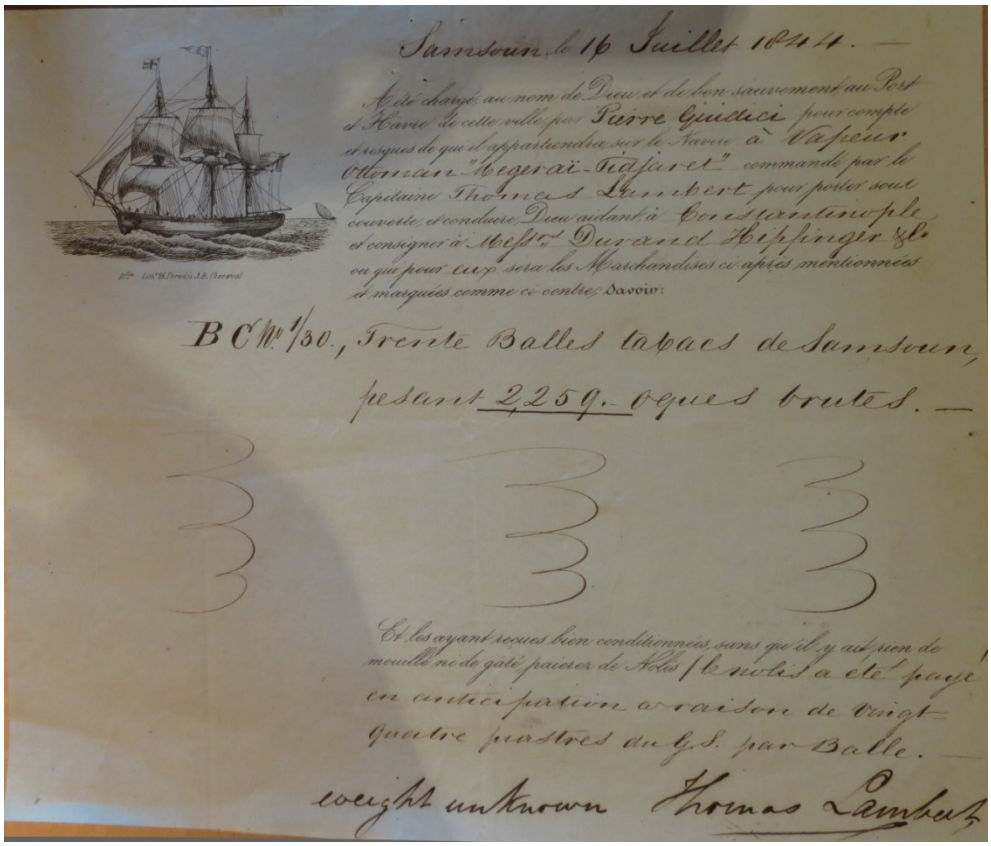
Frais.

Emballage 100/40 par Balle	P.	25 „ —	
Cordes 85/40 — „ —	„	21 „ 10	
Bois 60/40 — „ —	„	15 „ —	
Peseur public 10/40 — „ —	„	2 „ 20	
Bateau à l'emb.t 80/40 — „ —	„	20 „ —	
Portefeux 5/40 — „ —	„	1 „ 10	
Nolis de Samsoun à Constple P. 24 par balle	„	240 „ —	
Douane suivant Tarif, P. 3. 30/40 par Batman	„	450 „ —	
Magasinage 1/2 p%	„	15 „ —	
Courtage 1 p%	„	30 „ —	820 „ —
		P.	3,820 „ —
Commission 3 p%		„	114 „ 24
		P.	3,934 „ 24

Samsoun le 12 Juin 1844

P. Giudici

Figure D.2 List of Logistics Fees by the Consulate of France in Trabzon (1844)



Samsoun le 16 Juillet 1844. —

A été chargé, au nom de Dieu et de bon sauvement au Port et Havre de cette ville par Pierre Giudici pour compte et risques de qui il appartiendra sur le Navire à Vapeur Ottoman "Megeraï-Tidjaret" commandé par le Capitaine Thomas Lambert pour porter sous couverte, et conduire, Dieu aidant, à Constantinople et consigner à Messrs Durand Hippinger & Co ou qui pour eux sera les Marchandises ci après mentionnées et marquées comme ci contre, savoir:

BC No 1/30., Trente Balles tabacs de Samsoun, pesant 2,259. oques brutes. —

Et les ayant reçues bien conditionnées, sans qu'il y ait rien de mouillé ni de gâté, paierez de Nolis (le nolis a été payé en anticipation a raison de vingt-quatre piastres du G.S. par Balle. —

weight unknown Thomas Lambert

Figure D.3 Shipping Paper from Samsun to Istanbul (1844)

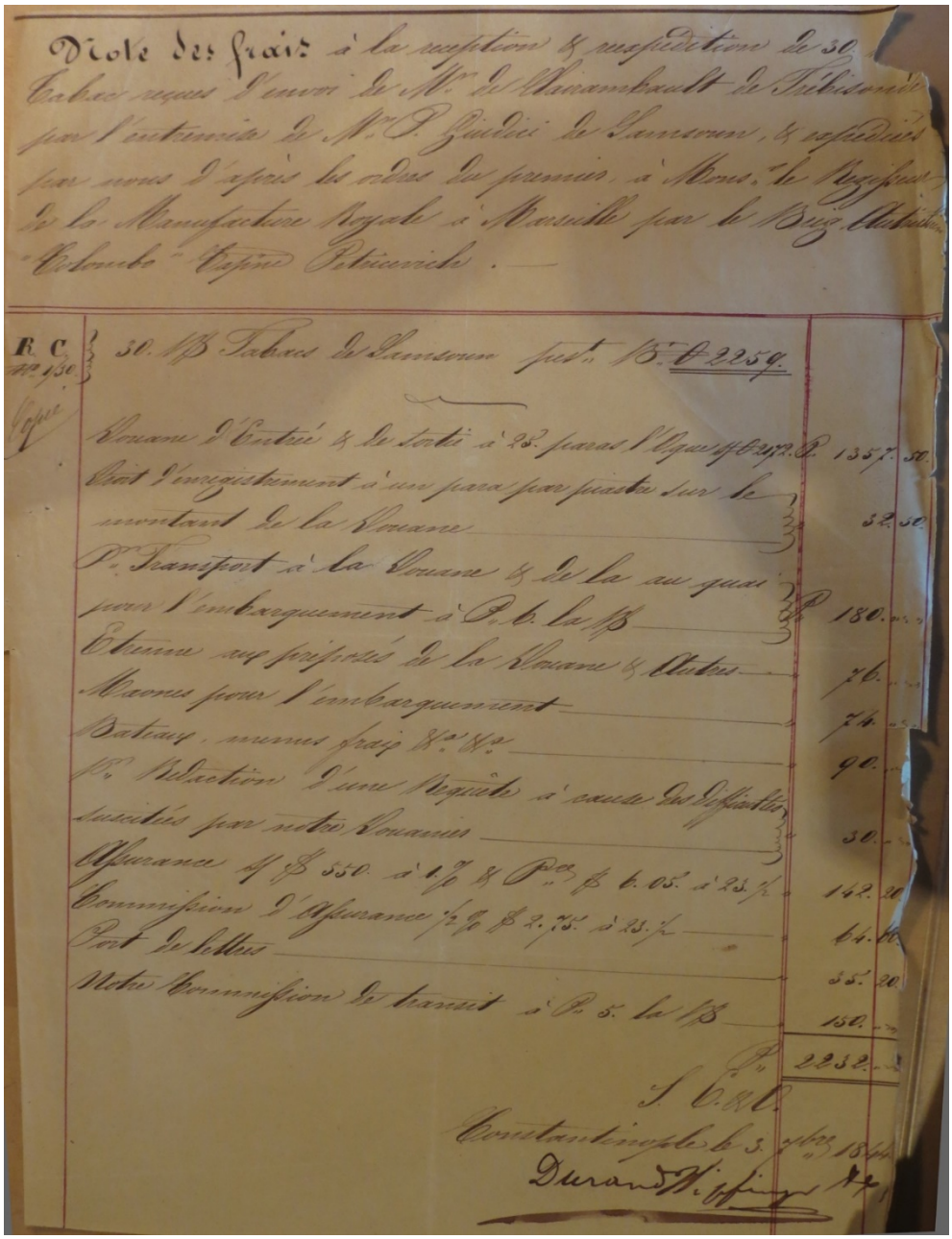


Figure D.4 Bill of Fees Paid in Istanbul (1844)

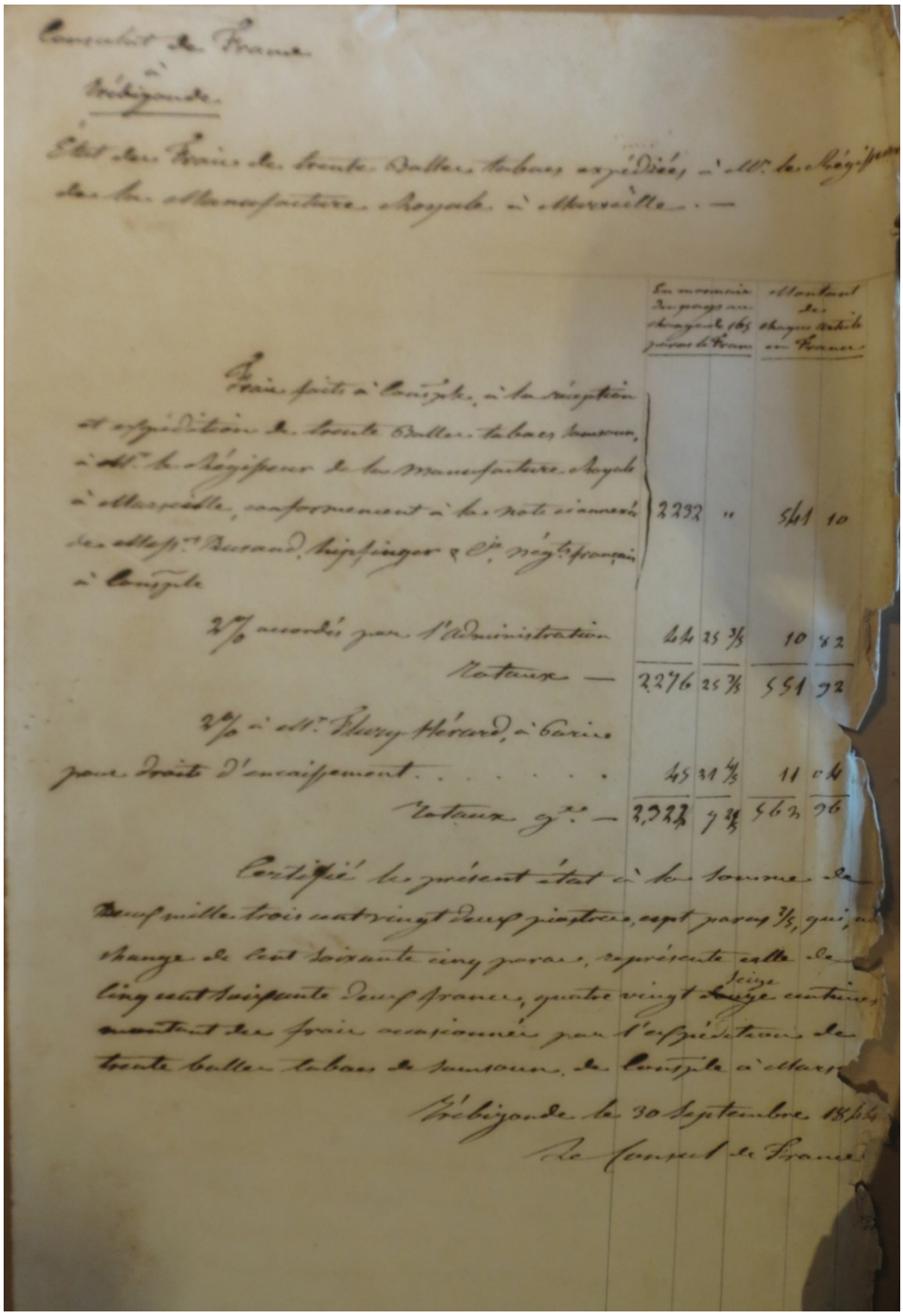
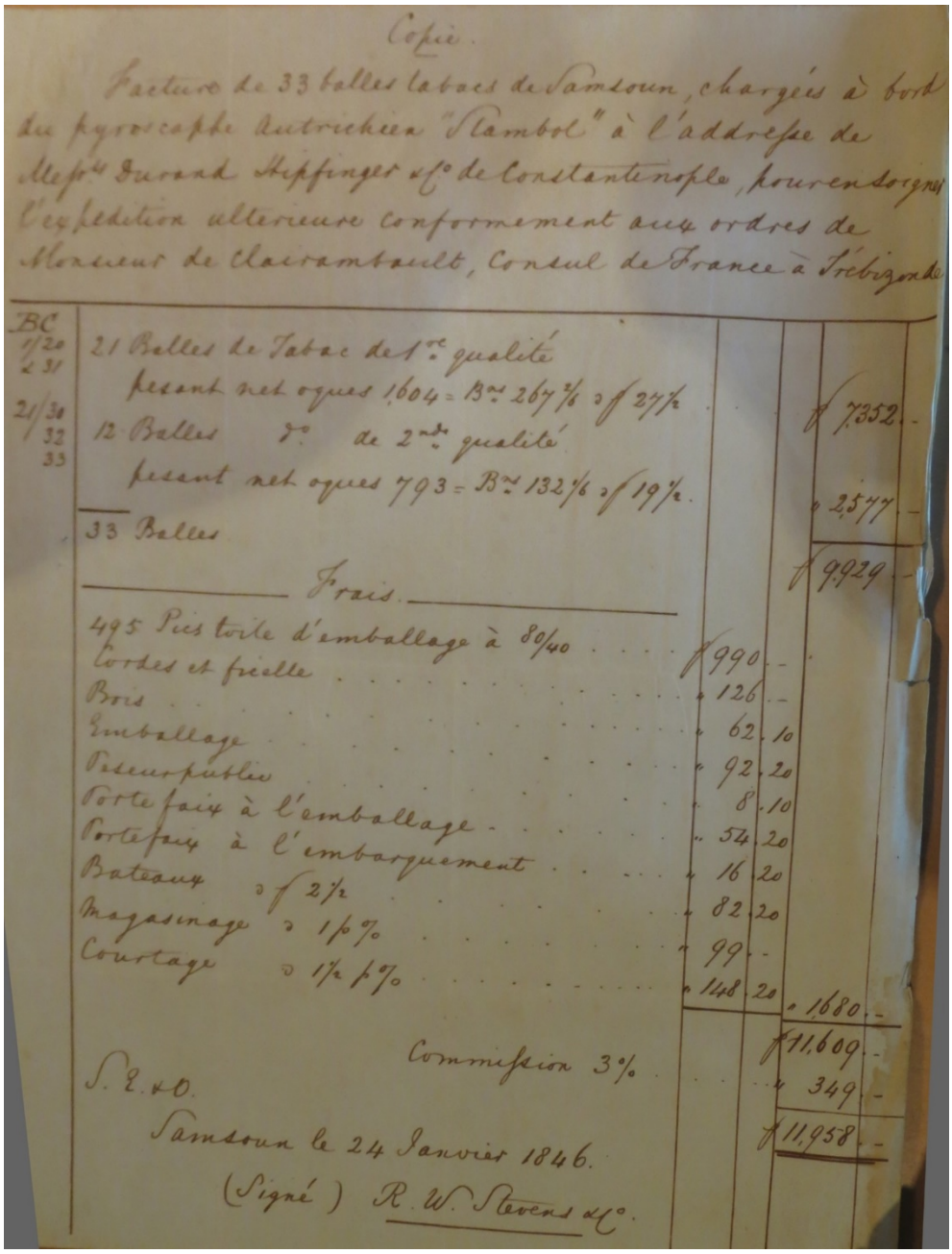


Figure D.5 Operational Fees (1844)



Copie.

Facture de 33 balles tabacs de Samsoun, chargées à bord du pyroscaphe Autrichien "Stambol" à l'addresse de Messrs Durand Hipfinger & Co de Constantinople, pour en soigner l'expedition ulterieure conformement aux ordres de Monsieur de Clairambault, Consul de France à Trébizonde

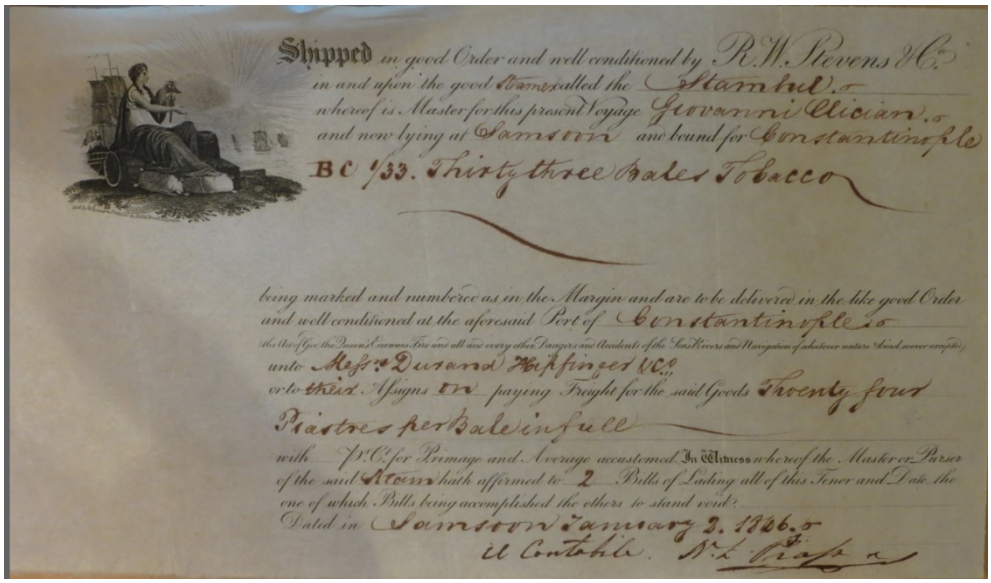
BC			
1/20 & 31	21 Balles de Tabac de 1re qualité pesant net oques 1,604 = Bns 267 2/6 à f 27½		f 7,352 -
21/30 32 33	12 Balles do de 2nde qualité pesant net oques 793 = Bns 132 1/6 à f 19½		" 2,577 -
	33 Balles		f 9,929 -
	Frais.		
	495 Pics toile d'emballage à 80/40	f 990 -	
	Cordes et ficelle	" 126 -	
	Bois	" 62 . 10	
	Emballage	" 92 . 20	
	Peseur public	" 8 . 10	
	Portefaix à l'emballage	" 54 . 20	
	Portefaix à l'embarquement	" 16 . 20	
	Bateaux à f 2½	" 82 . 20	
	Magasinage à 1 p%	" 99 -	
	Courtage à 1½ p%	" 148 . 20	" 1,680 -
			f 11,609 -
	Commission 3%		" 349 -
			f 11,958 -

S. E. & O.

Samsoun le 24 Janvier 1846.

(Signé) R. W. Stevens & Co.

Figure D.6 Operational Fees Paid in Samsun (1846)



Shipped in good Order and well conditioned by R. W. Stevens & Co.
in and upon the good Stamer called the Stambul.
whereof is Master for this present Voyage Giovanni Clician.
and now lying at Samsoon and bound for Constantinople
BC 1/33. Thirty three Bales Tobacco

being marked and numbered as in the Margin and are to be delivered in the like good Order
and well conditioned at the aforesaid Port of Constantinople
(the Act of God the Queen's Enemies Fire and all and every other Dangers and Accidents of the Seas Rivers and Navigation of whatever nature & kind soever excepted)
unto Messrs Durand Hopfinger & Co.
or to their Assigns on paying Freight for the said Goods Twenty four
Piastres per Bale in full
with Pr. Cs. for Primage and Average accustomed. In Witness whereof the Master or Purser
of the said Stam hath affirmed to 2 Bills of Lading all of this Tenor and Date, the
one of which Bills being accomplished the others to stand void.
Dated in Samsoon January 2. 1846.
Il Contabile. N. L. Piaf

Figure D.7 Shipping Paper from Samsun to Istanbul (1846)

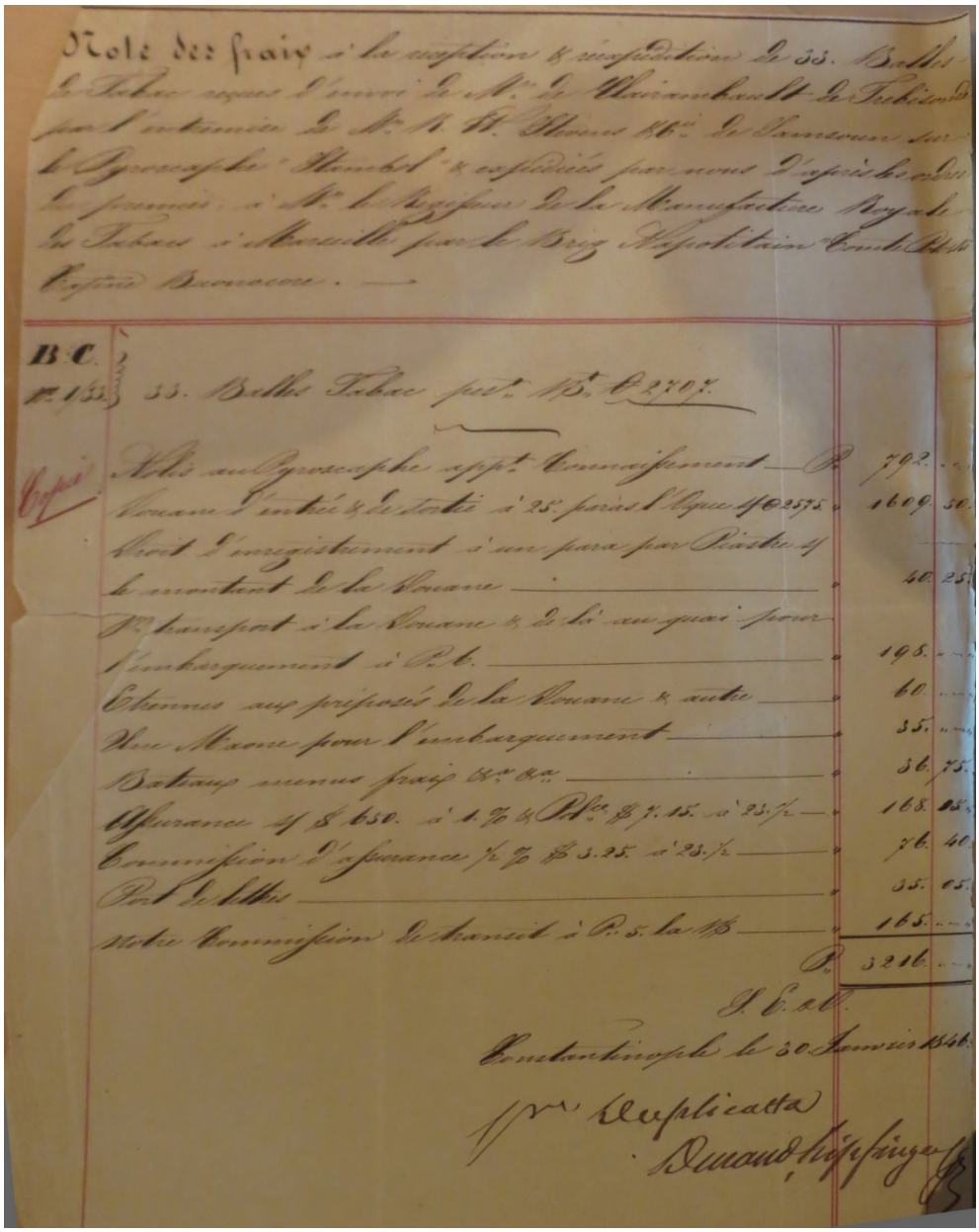


Figure D.8 Operational Fees Paid in Istanbul (1846)

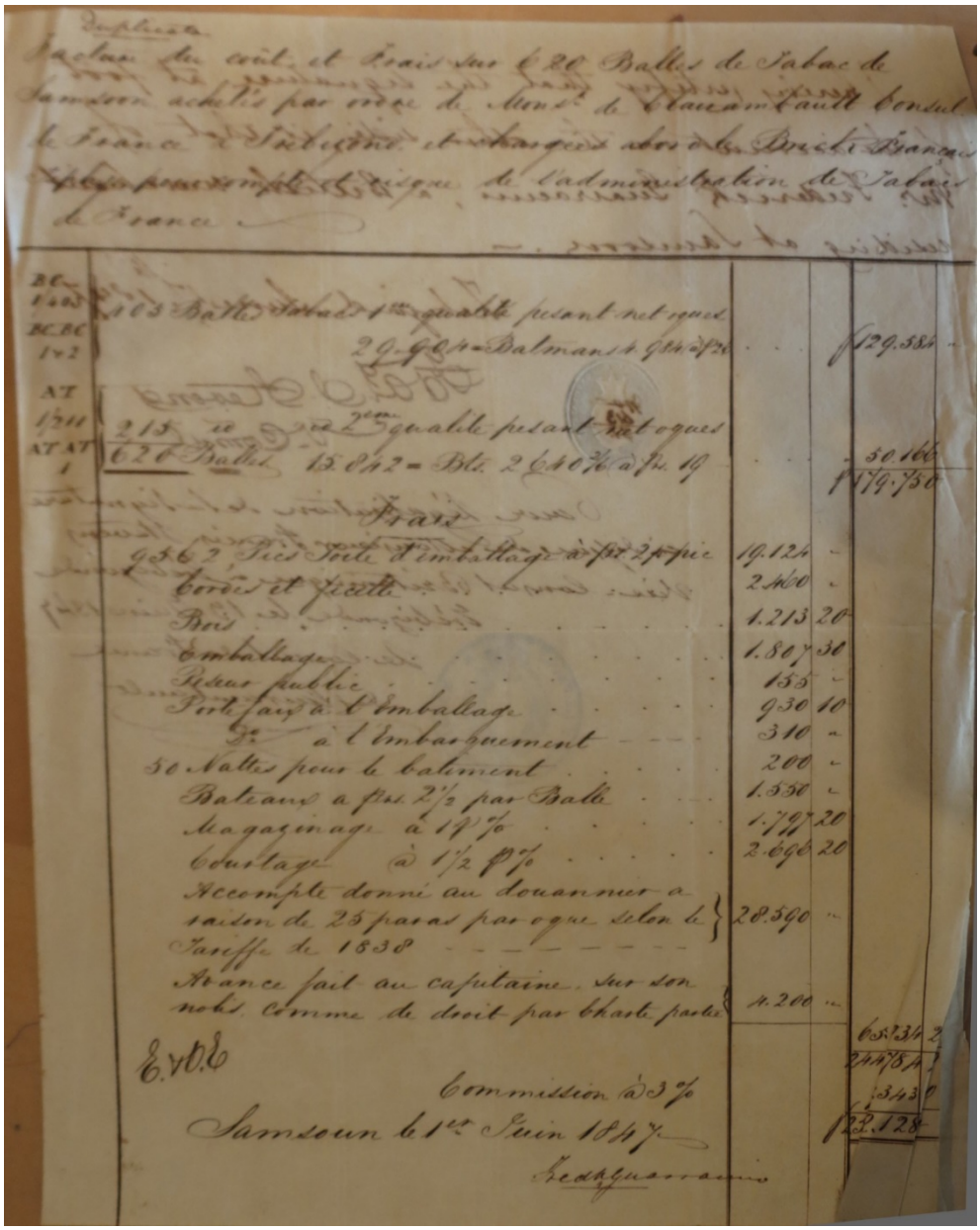


Figure D.9 Operational Fees paid in Samsun (First Page) (1847)

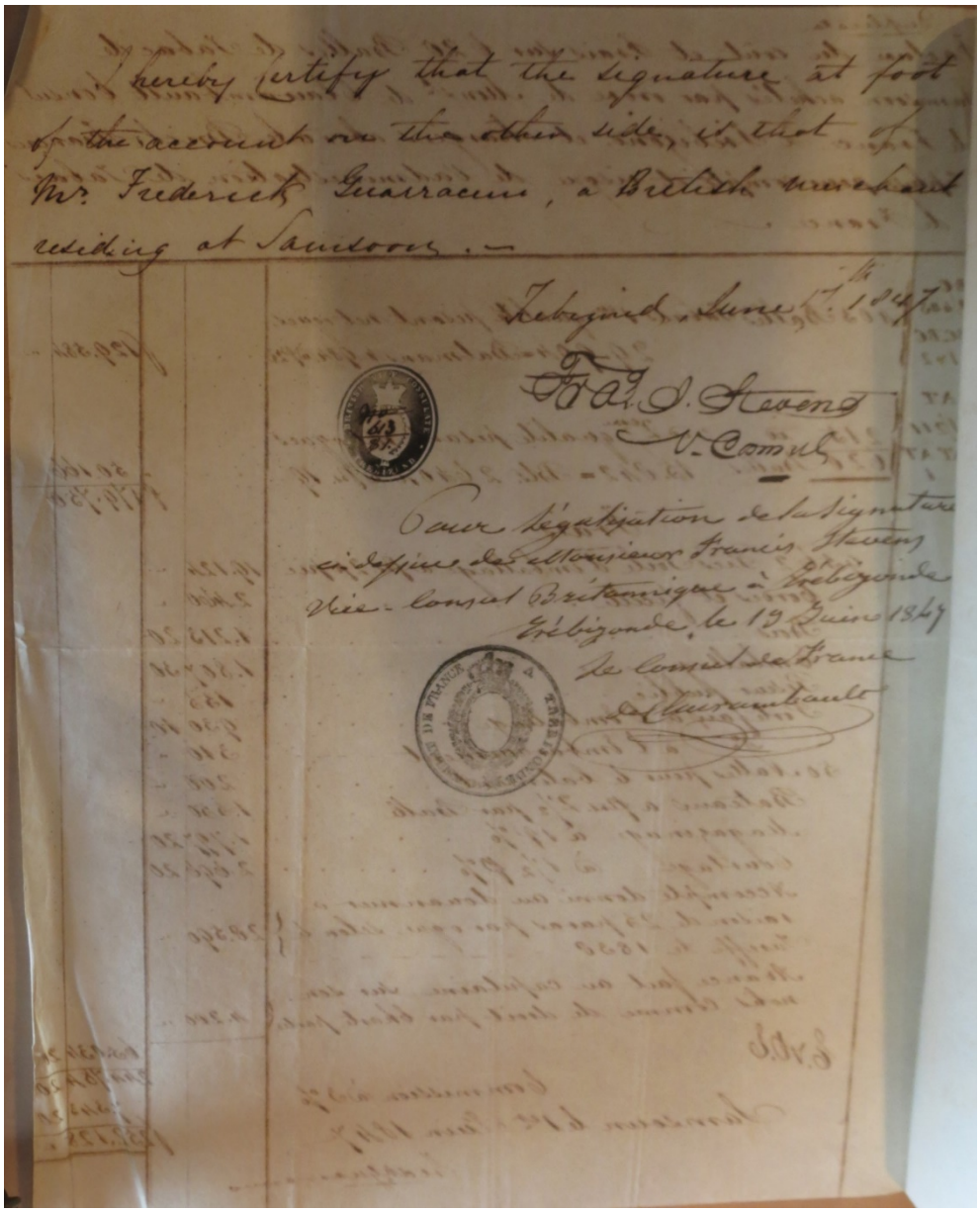
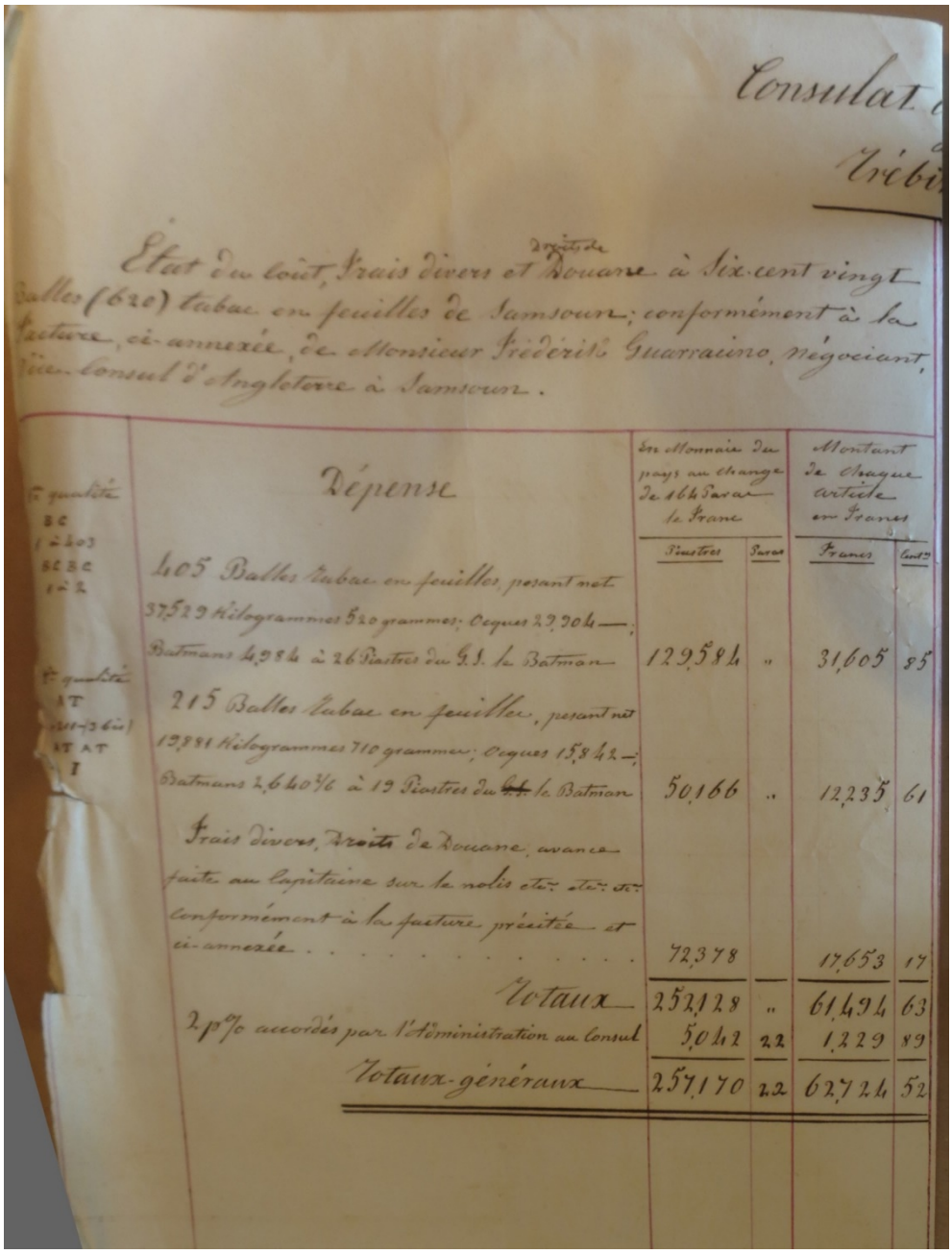


Figure D.10 Operational Fees paid in Samsun (Last Page) (1847)



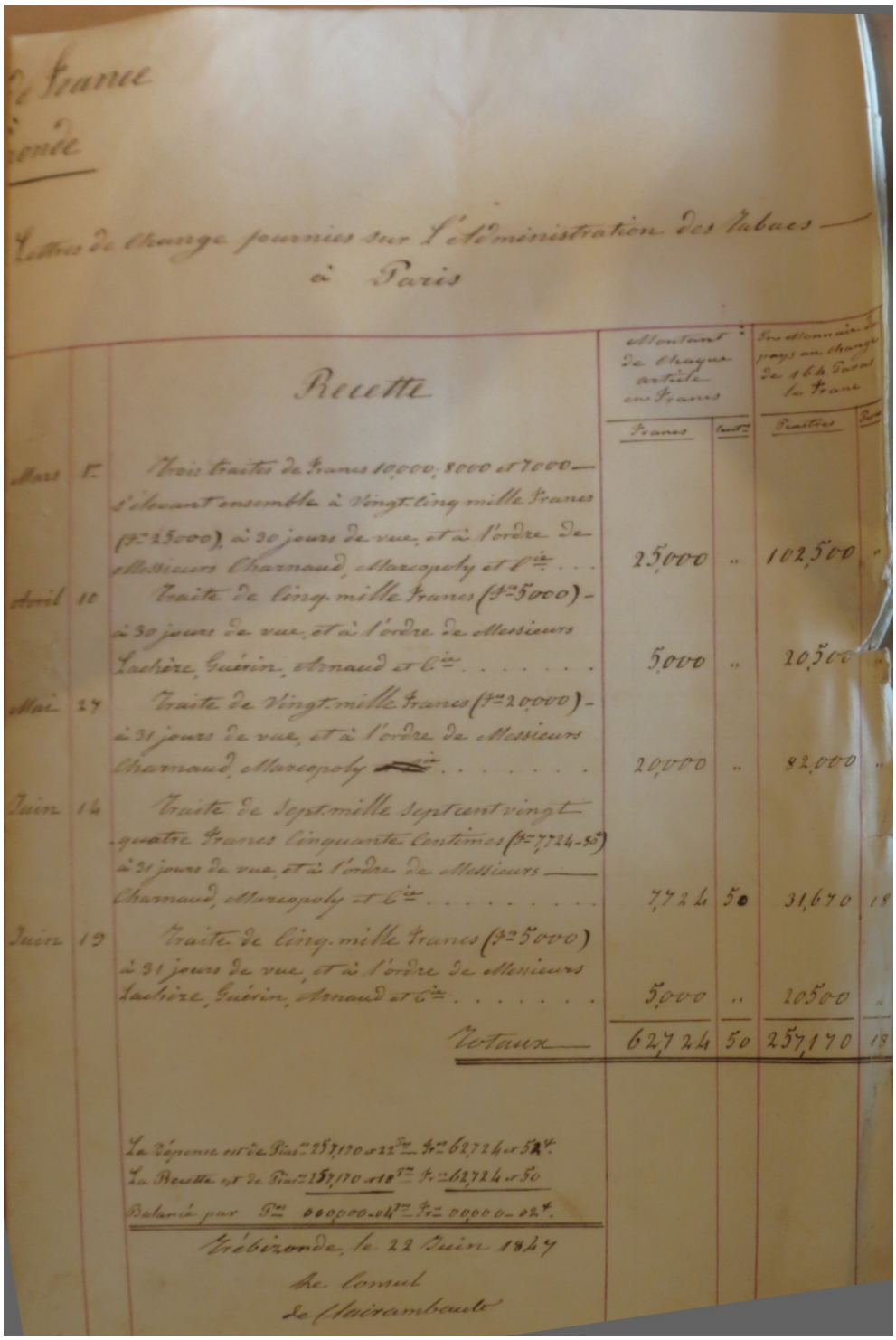
Consulat

Tréb

État du coût, frais divers et droits de Douane à Six-cent vingt Balles (620) tabac en feuilles de Samsoun; conformément à la facture, ci-annexée, de Monsieur Frédérik Guarraino, négociant, Vice-Consul d'Angleterre à Samsoun.

1re qualité BC 1 2 3 BC BC 1re 2	Dépense	En Monnaie du pays au change de 164 Paras le Franc		Montant de chaque article en Francs	
		Piastres	Paras	Francs	Cents
	405 Balles tabac en feuilles, pesant net 37,529 Kilogrammes 520 grammes; Oques 29,204 —;				
1re qualité AT (illegible) AT AT I	Batmans 4,984 à 26 Piastres du G.S. le Batman	129,584	..	31,605	85
	215 Balles tabac en feuilles, pesant net 13,381 Kilogrammes 710 grammes; Oques 15,842 —;				
	Batmans 2,640 3/6 à 19 Piastres du ~~G.S.~~ le Batman	50,166	..	12,235	61
	Frais divers, ~~Droits~~ de Douane, avance faite au Capitaine sur le nolis etc: etc: etc conformément à la facture précitée et ci-annexée	72,378		17,653	17
	Totaux	252,128	..	61,494	63
	2 p% accordés par l'Administration au Consul	5,042	22	1,229	89
	Totaux-généraux	257,170	22	62,724	52

Figure D.11 Assets/Expenses on the Balance Sheet for the Tobacco of Samsun (1847)



de France
à
Trébizonde

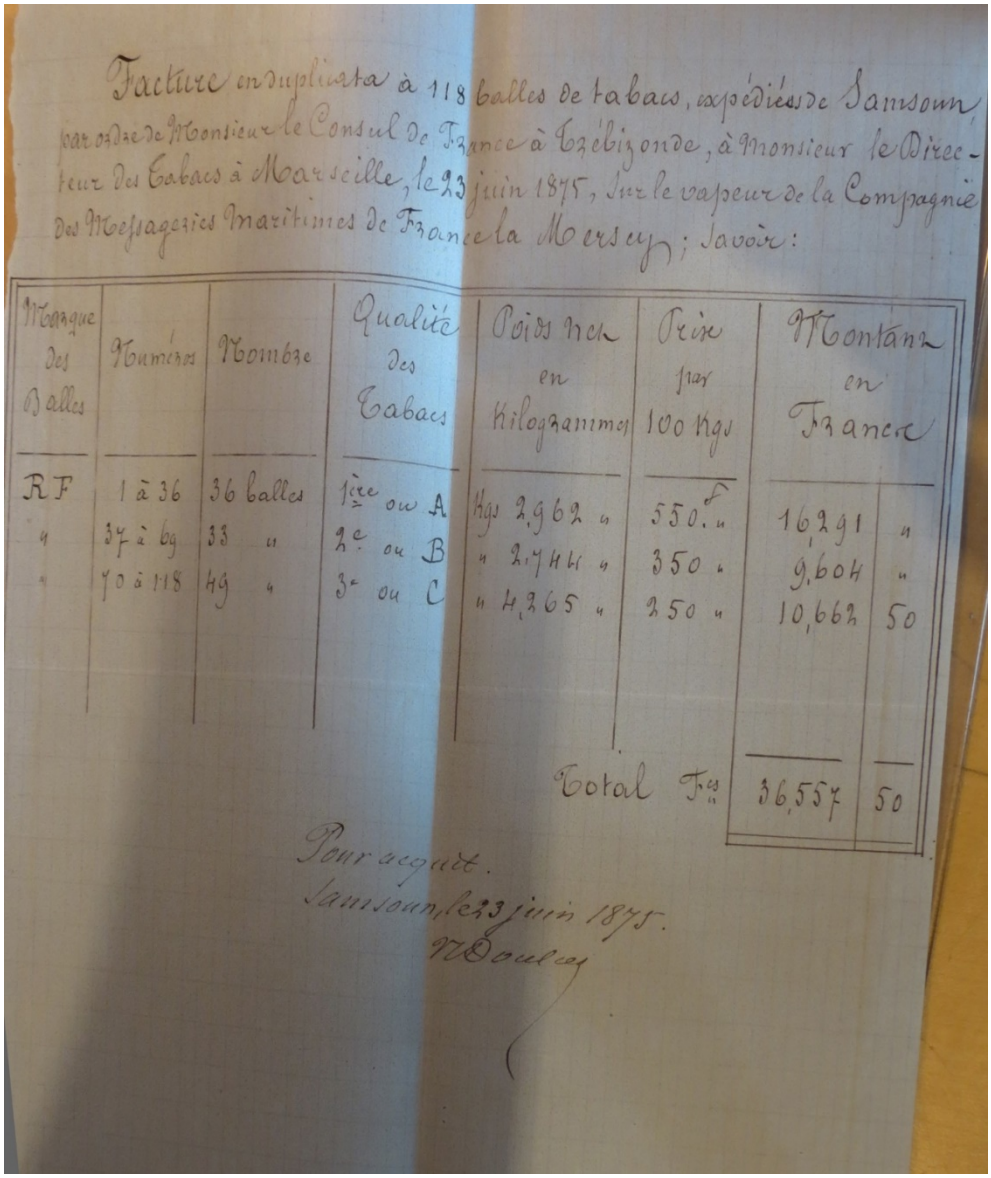
Lettres de change fournies sur l'Administration des Tabacs
à Paris

		Recette	Montant de chaque article en Francs		En Monnaie du pays au change de 164 Paras le Franc	
			Francs	Cent.s	Piastres	Paras
Mars	1er	Trois traites de Francs 10,000, 8000 et 7000 — s'élevant ensemble à Vingt-cinq mille Francs (Fr. 25000), à 30 jours de vue, et à l'ordre de Messieurs Charnaud, Marcopoly et Cie . . .	25,000	..	102,500	..
Avril	10	Traite de Cinq mille Francs (Fr. 5000) — à 30 jours de vue, et à l'ordre de Messieurs Lachère, Guérin, Arnaud et Cie	5,000	..	20,500	..
Mai	27	Traite de Vingt mille Francs (Fr. 20,000) — à 31 jours de vue, et à l'ordre de Messieurs Charnaud, Marcopoly Cie	20,000	..	82,000	..
Juin	14	Traite de Sept mille Sept cent vingt quatre Francs Cinquante Centimes (Fr. 7,724-50) à 31 jours de vue, et à l'ordre de Messieurs Charnaud, Marcopoly et Cie	7,724	50	31,670	18
Juin	19	Traite de Cinq mille Francs (Fr. 5000) à 31 jours de vue, et à l'ordre de Messieurs Lachère, Guérin, Arnaud et Cie	5,000	..	20500	..
		Totaux	62,724	50	257,170	18

La Dépense est de Piastres 257,170 et 22 Paras — Fr. 62,724 et 52 c.
La Recette est de Piastres 257,170 et 18 Paras — Fr. 62,724 et 50
Balancé par Pas 000,000-04 Paras — Fr. 00,000-02 c.

Trébizonde, le 22 Juin 1847
Le Consul
de Clairambault

Figure D.12 Liabilities on the Balance Sheet for the Tobacco of Samsun (1847)



Facture en duplicata à 118 balles de tabacs, expédiées de Samsoun, par ordre de Monsieur le Consul de France à Trébizonde, à Monsieur le Directeur des Tabacs à Marseille, le 23 juin 1875, sur le vapeur de la Compagnie des Messageries Maritimes de France la Mersey; savoir:

Marque des balles	Numéros	Nombre	Qualité des Tabacs	Poids net en Kilogrammes	Prix par 100 kgs	Montant en France	
RF	1 à 36	36 balles	1ère ou A	Kgs 2,962 "	550.f "	16,291	"
"	37 à 69	33 "	2e ou B	" 2,744 "	350 "	9,604	"
"	70 à 118	49 "	3e ou C	" 4,265 "	250 "	10,662	50
					Total Frs	36,557	50

Pour acquit.
Samsoun, le 23 juin 1875.
W Dowley

Figure D.14 Second Bill for the Tobacco of Samsun sent to France (1875)

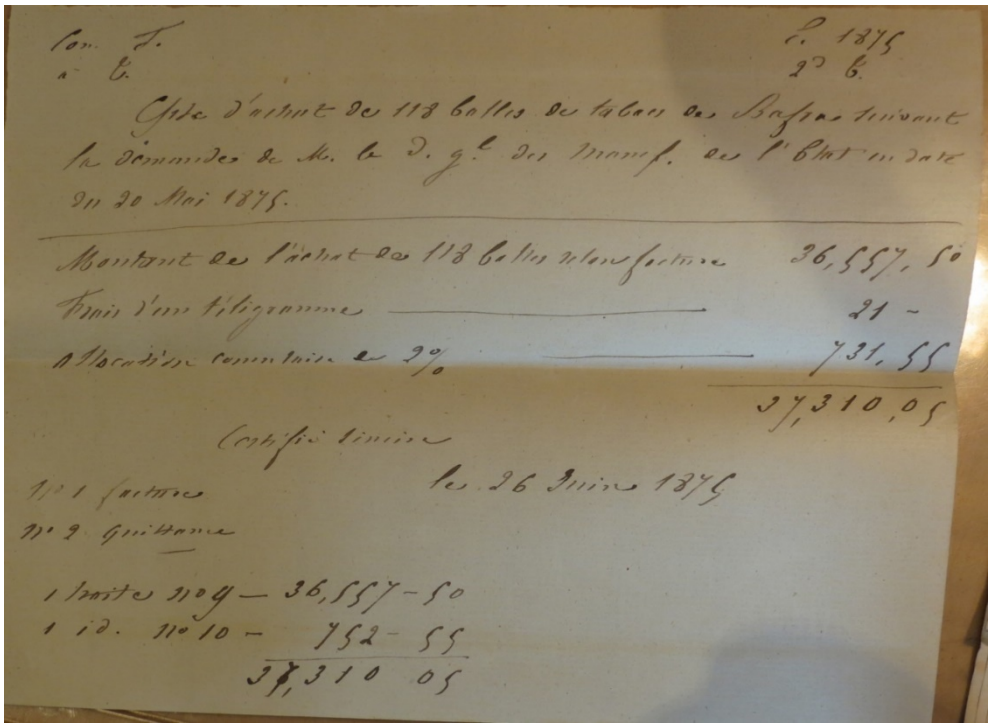


Figure D.15 Calculation for the Tobacco of Samsun sent to France (1875)

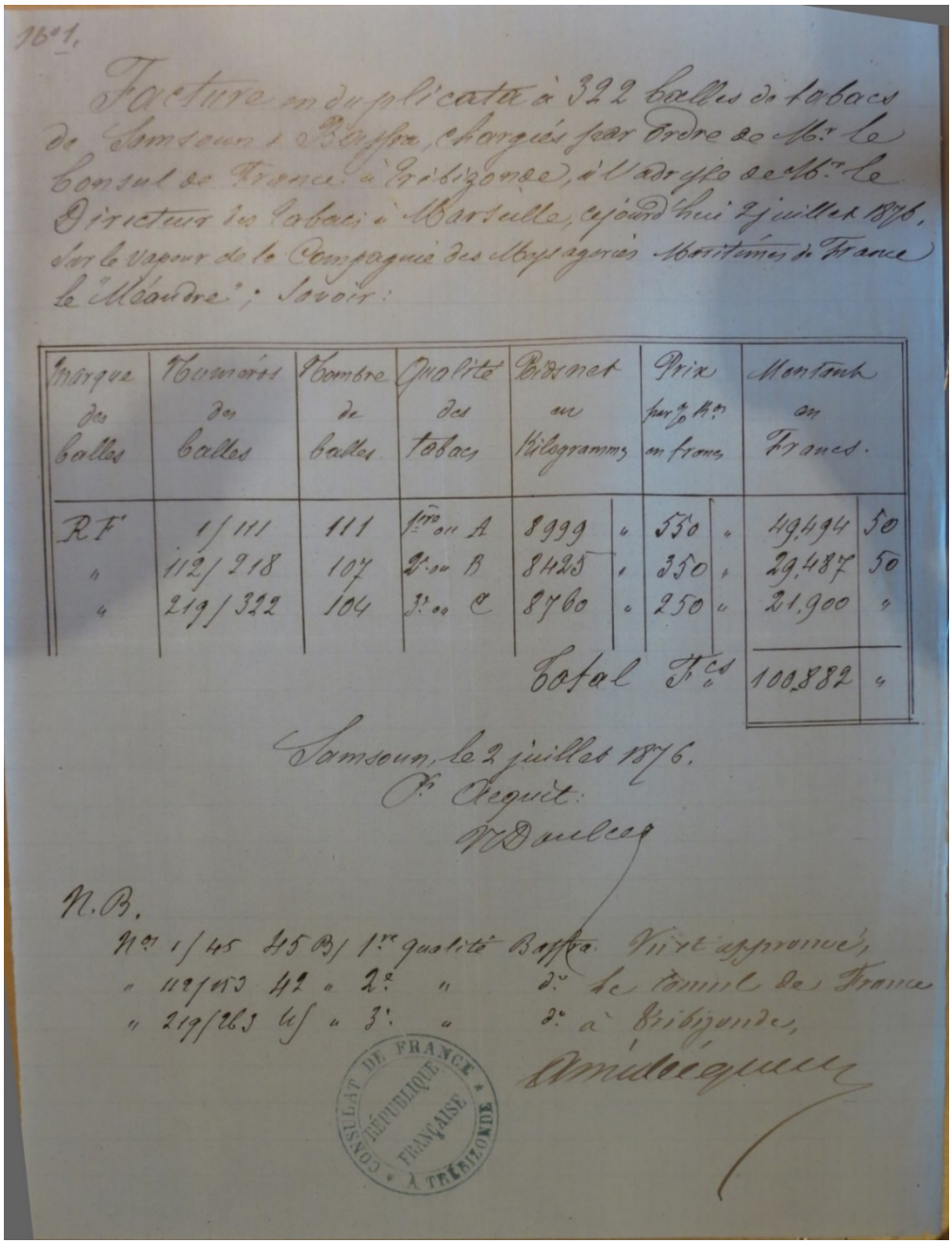


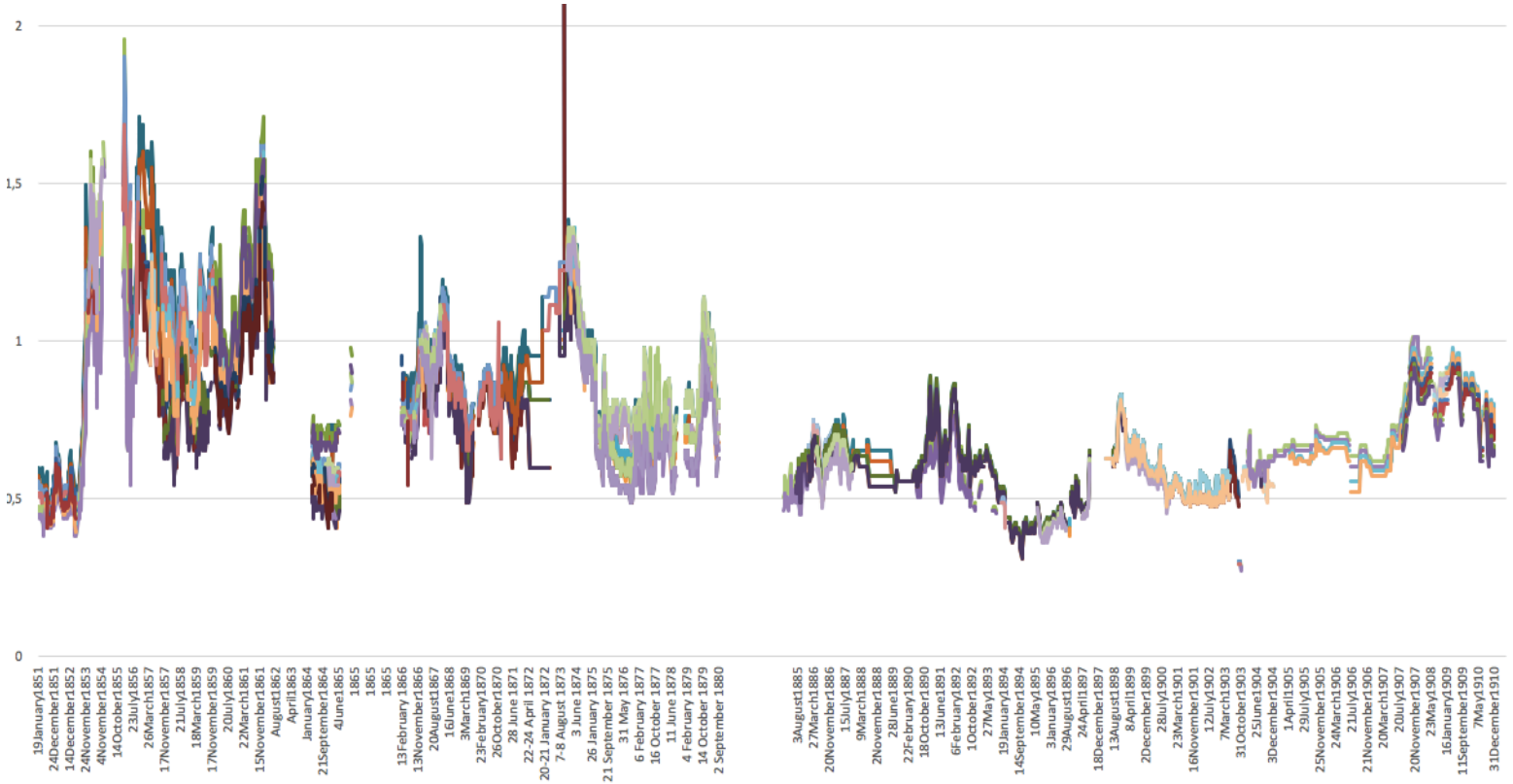
Figure D.16 Bill for the Tobacco of Samsun sent to France (1876)

Appendix E Long-term Prices of Hard Wheat

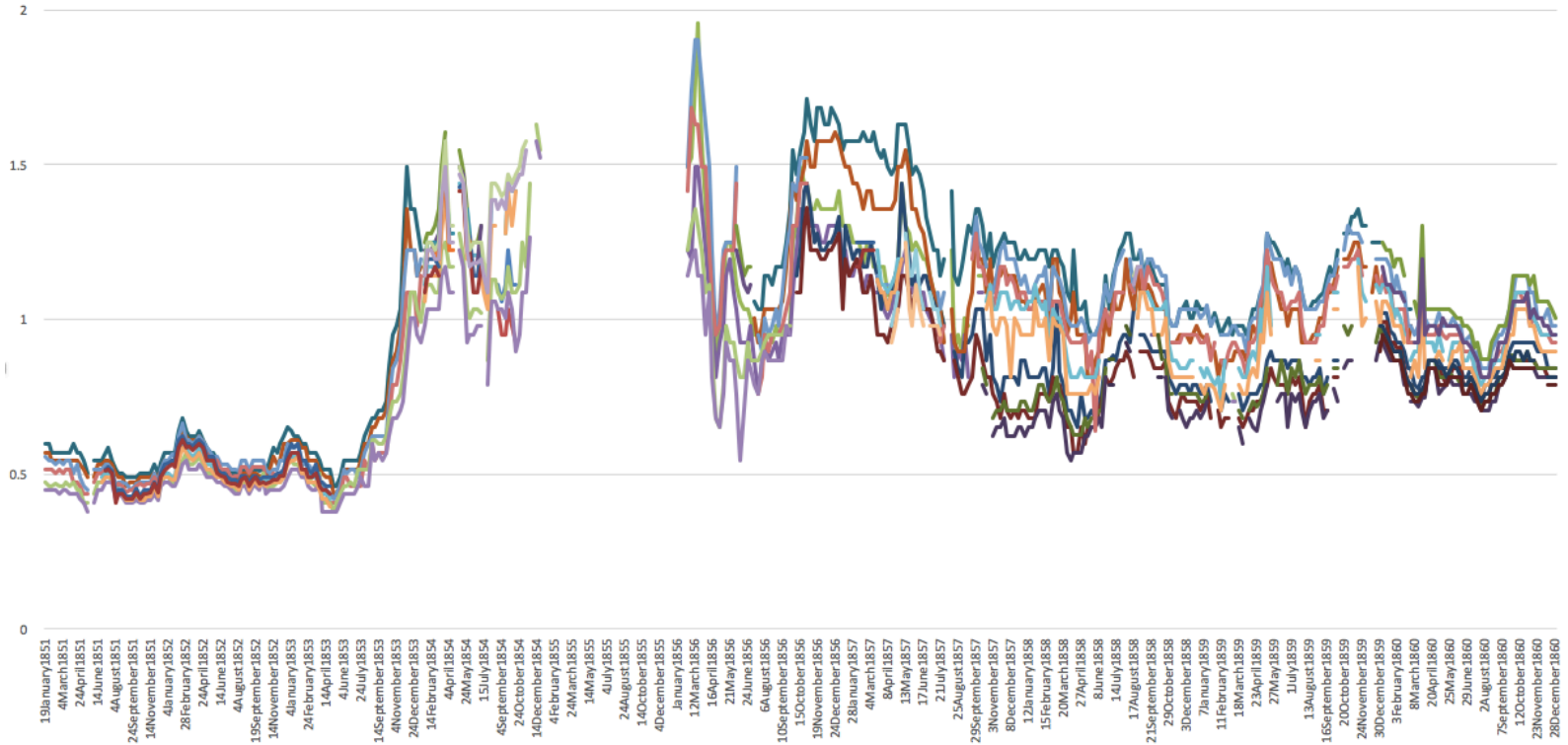
SOURCE FOR ALL GRAPHS IN APPENDIX E See the Introduction.

NOTE FOR ALL GRAPHS All prices are in metallic piaster per litre. The prices originally given for *kile*s are converted into liters. Old *kile*s were calculated as 36.8 liters and new *kile* as 40 liters. The *okka* per *para* prices are transformed into metallic piasters at rate of 40 *para*s to 1 metallic piaster. The conversion rates between *okka*s and *kile*s are listed in the notes. The prices are mainly weekly prices; for the exceptions see the Introduction. Therefore, the years are representative but days and months on the y axes are generated randomly by the computer.

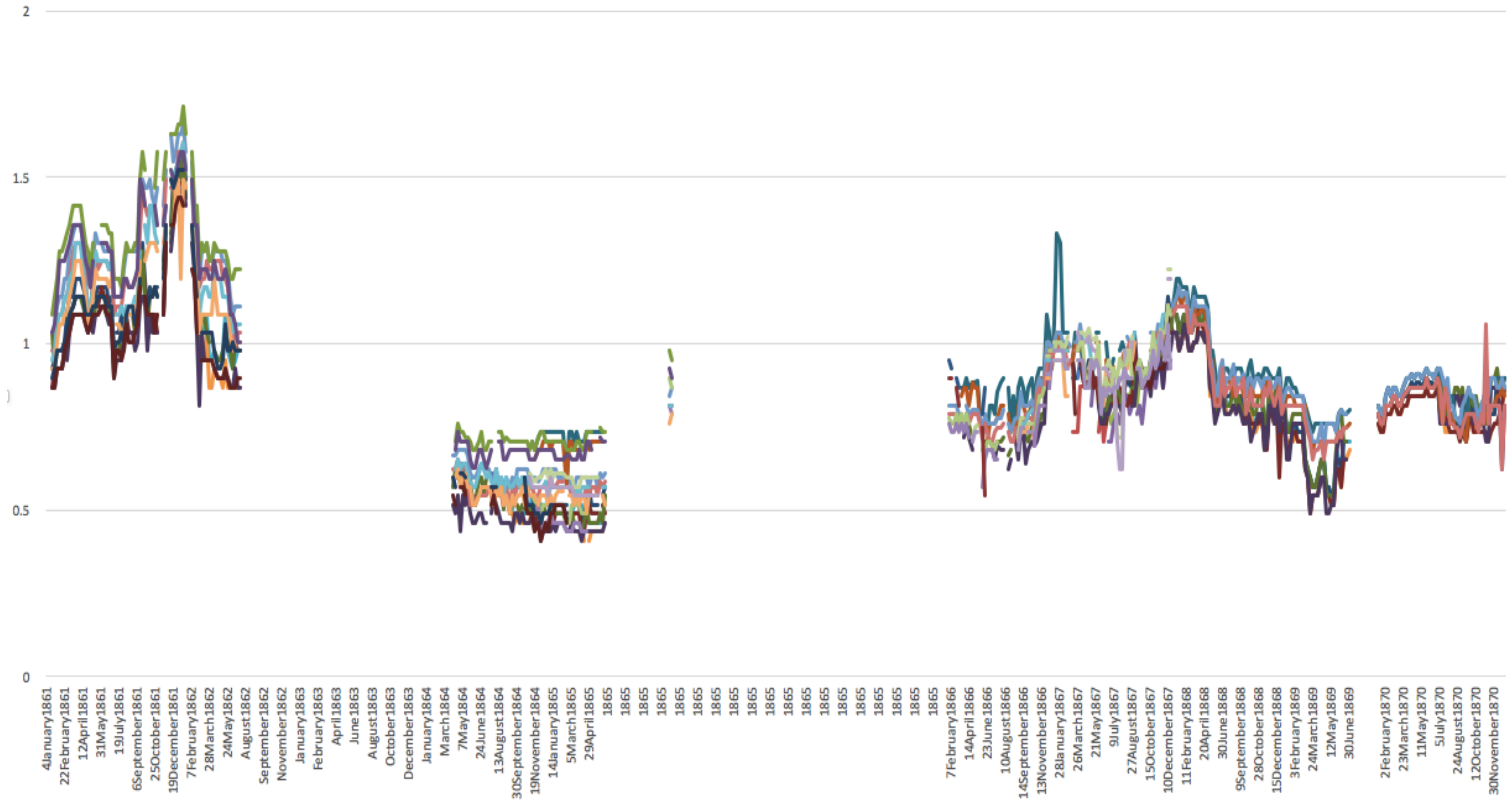
Figure E.1 Index for Hard Wheat Graphs



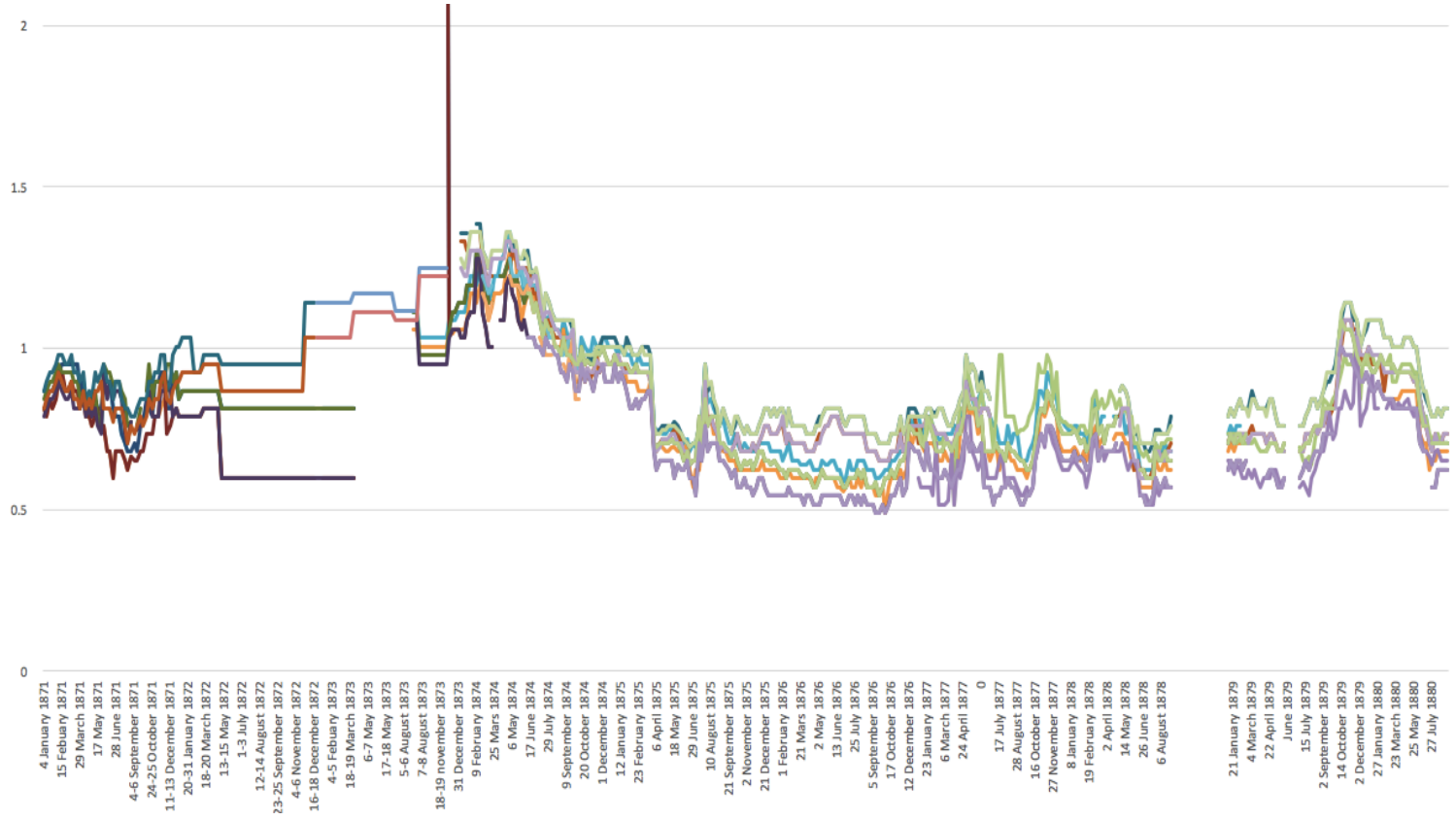
G raph E.1 Long-term Hard Wheat Prices (1851-1910)



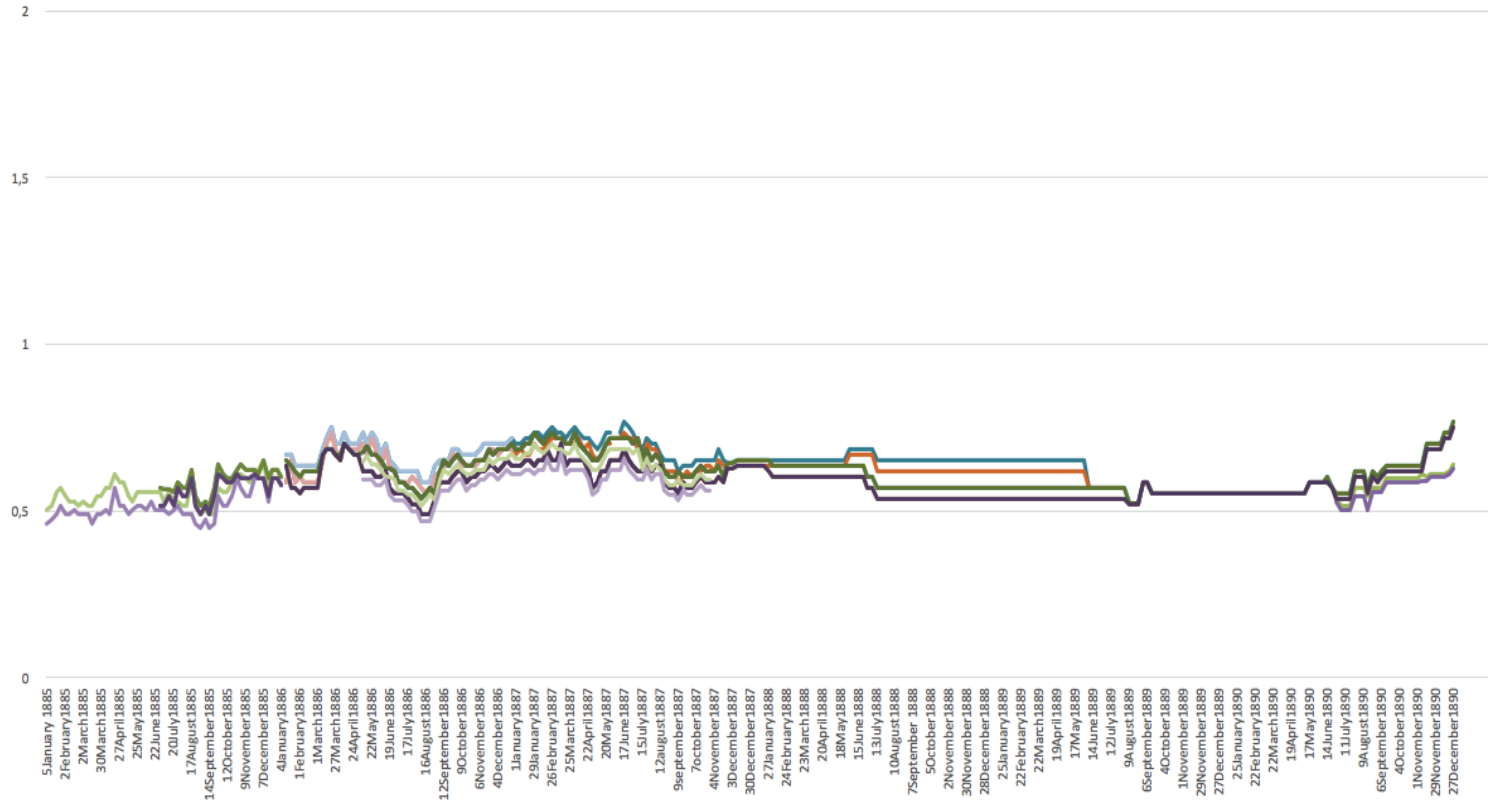
Graph E.2 Long-term Hard Wheat Prices (1851-1860)



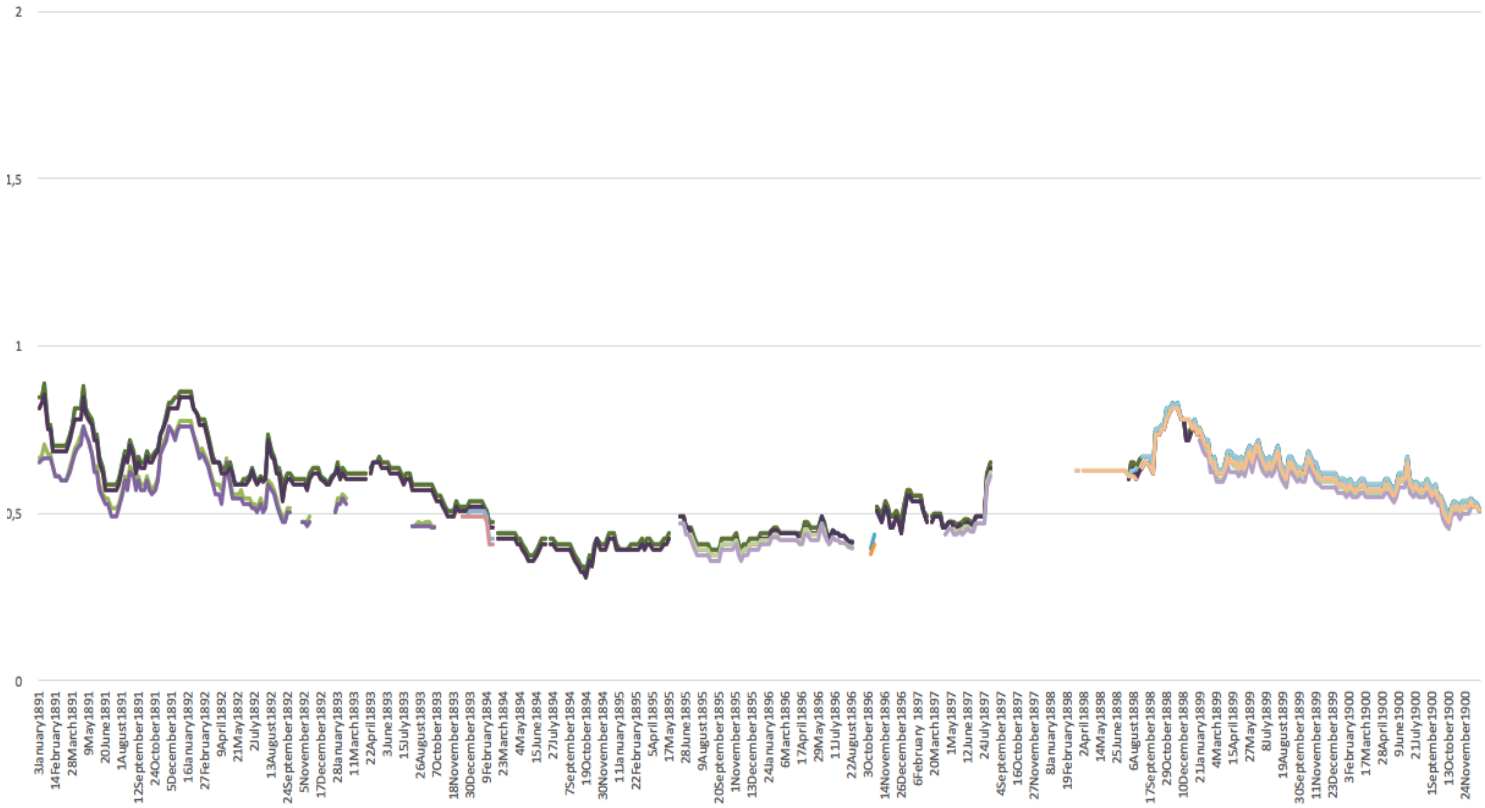
G raph E.3 Long-term Hard Wheat Prices (1861-1870)



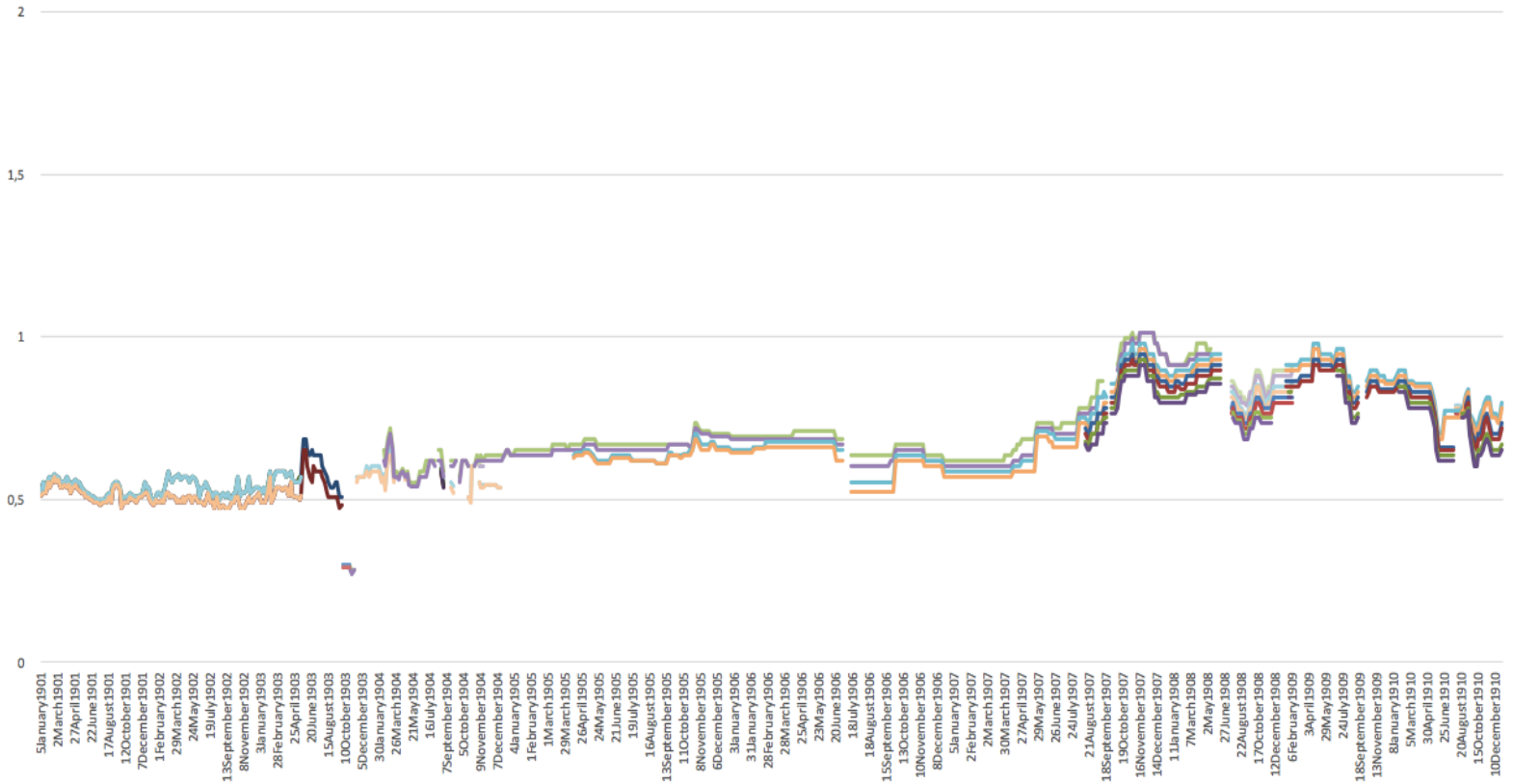
Graph E.4 Long-term Hard Wheat Prices (1871-1880)



Graph E.5 Long-term Hard Wheat Prices (1885-1890)



Graph E.6 Long-term Hard Wheat Prices (1891-1900)



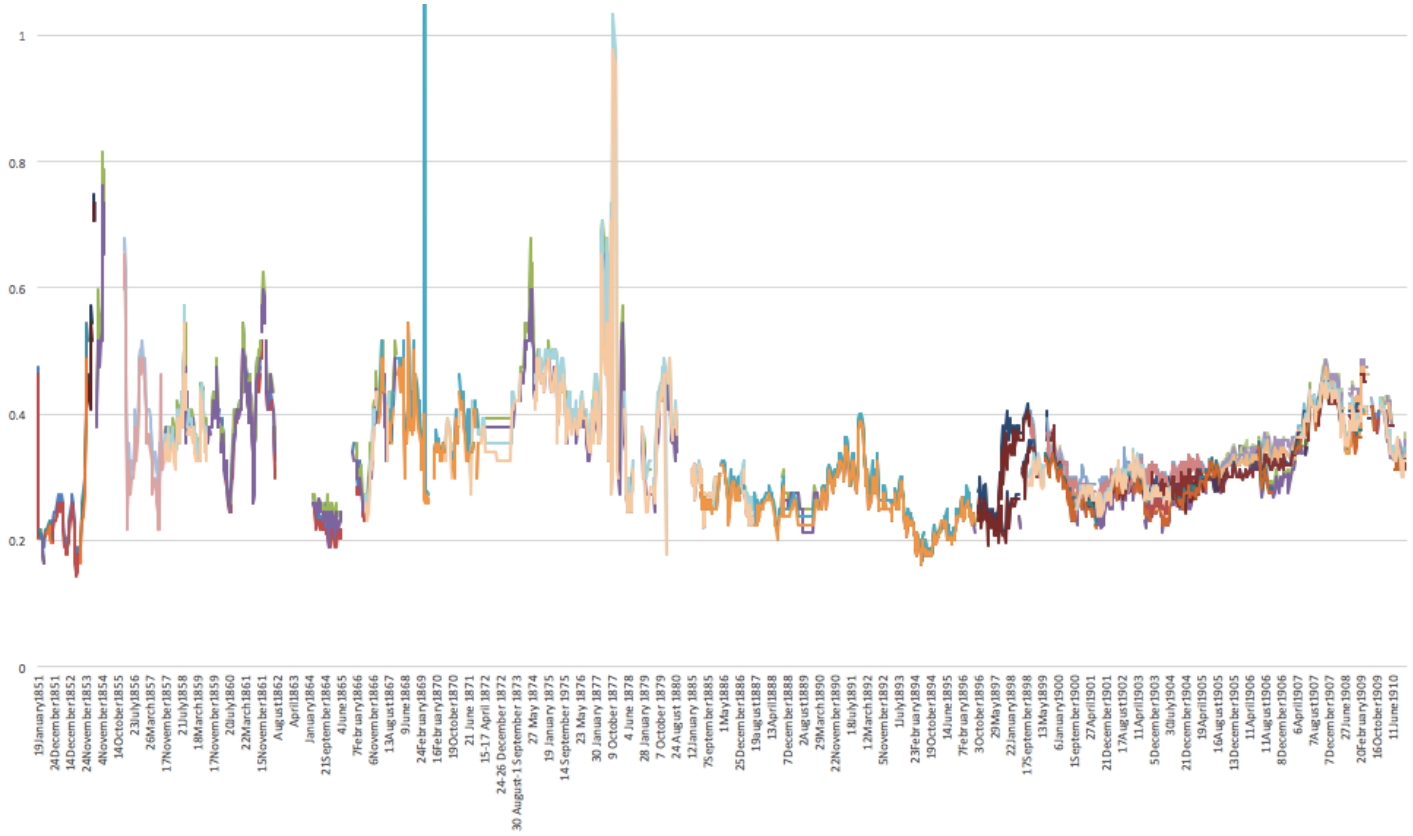
Graph E.7 Long-term Hard Wheat Prices (1901-1910)

Appendix F Long-term Prices of Barley

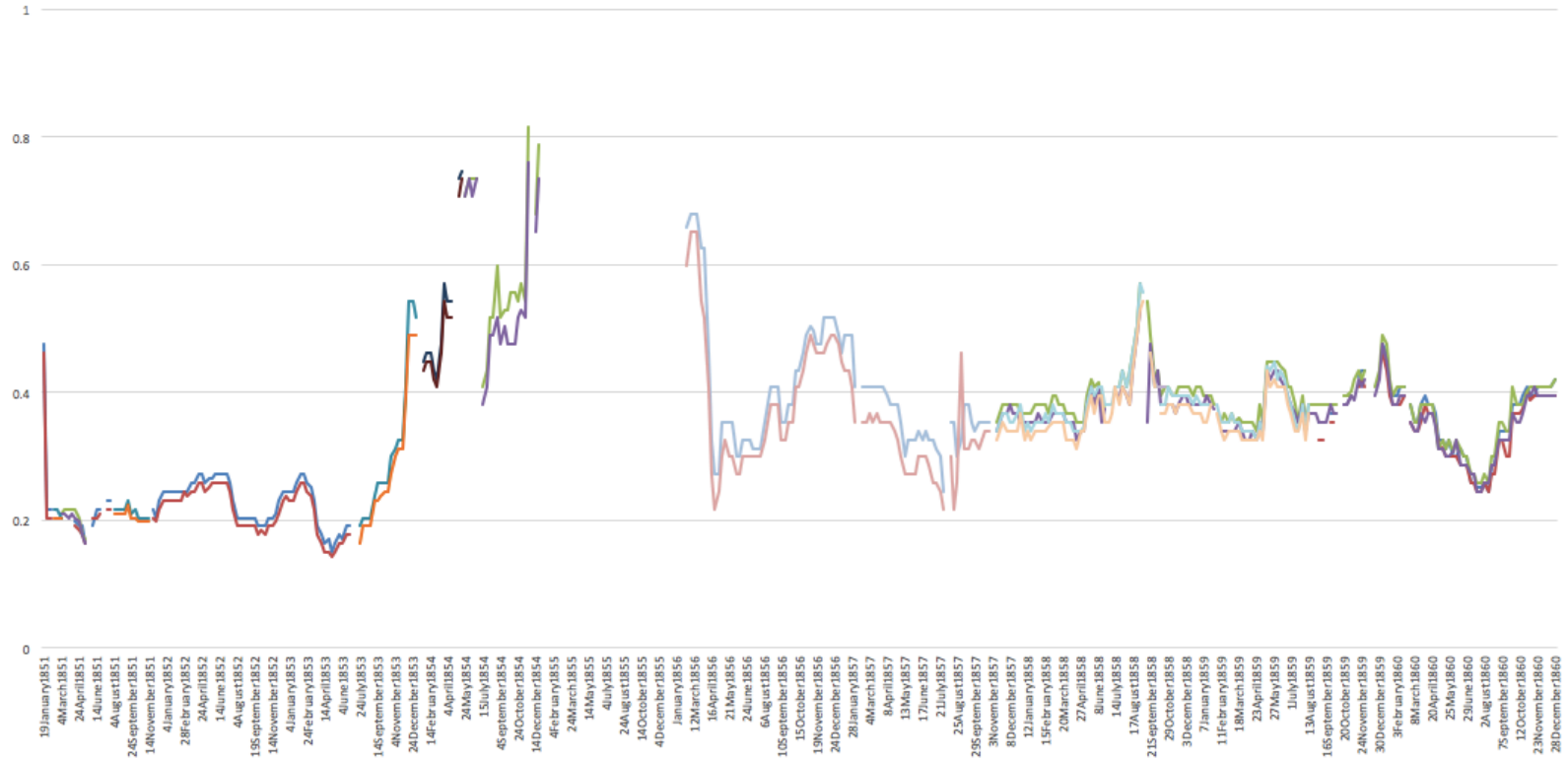
SOURCE FOR ALL GRAPHS IN APPENDIX F See the Introduction.

NOTE FOR ALL THE GRAPHS IN APPENDIX F All prices are in metallic piaster per litre. The prices originally given for *kile*s are converted into liters. Old *kile*s was accepted as 36.8 liters and new *kile* as 40 liters. All the prices are mainly weekly prices; for the exceptions see the Introduction. Therefore, the years are representative but days and months on the y axes are generated randomly by the computer.

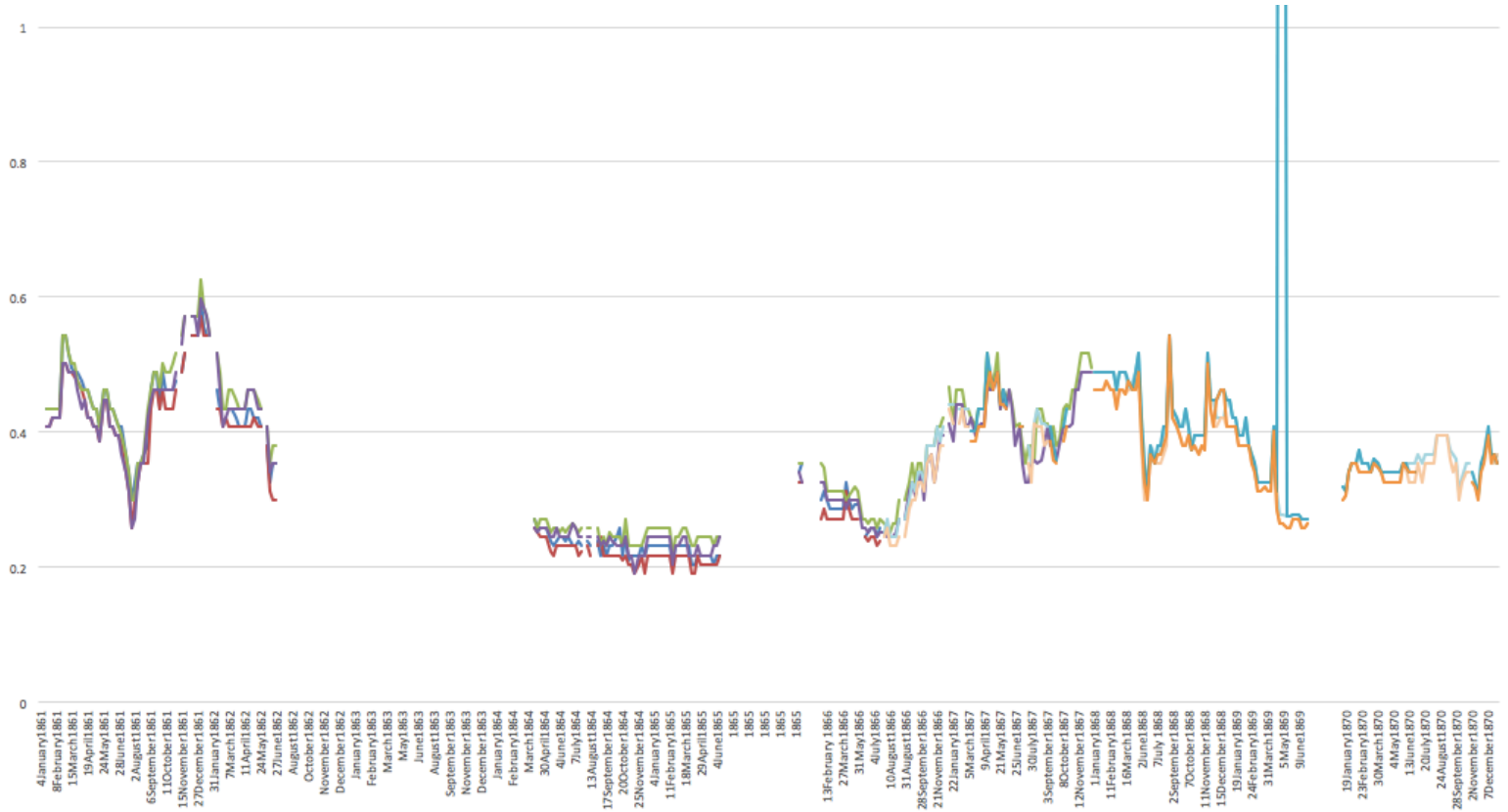
Figure F.1 Index for Barley Graphs



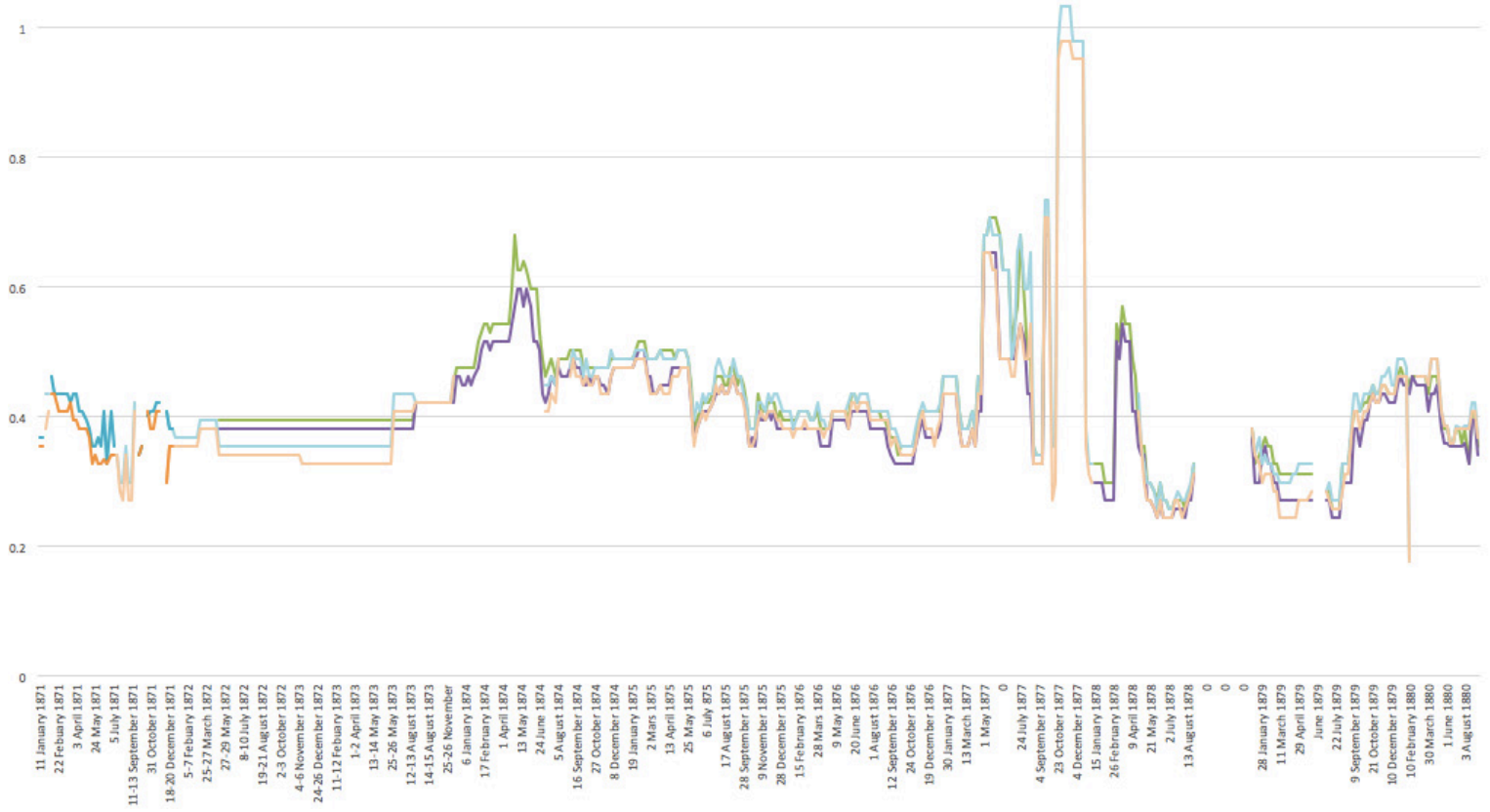
Graph F.1 Long-term Barley Prices (1850-1910)



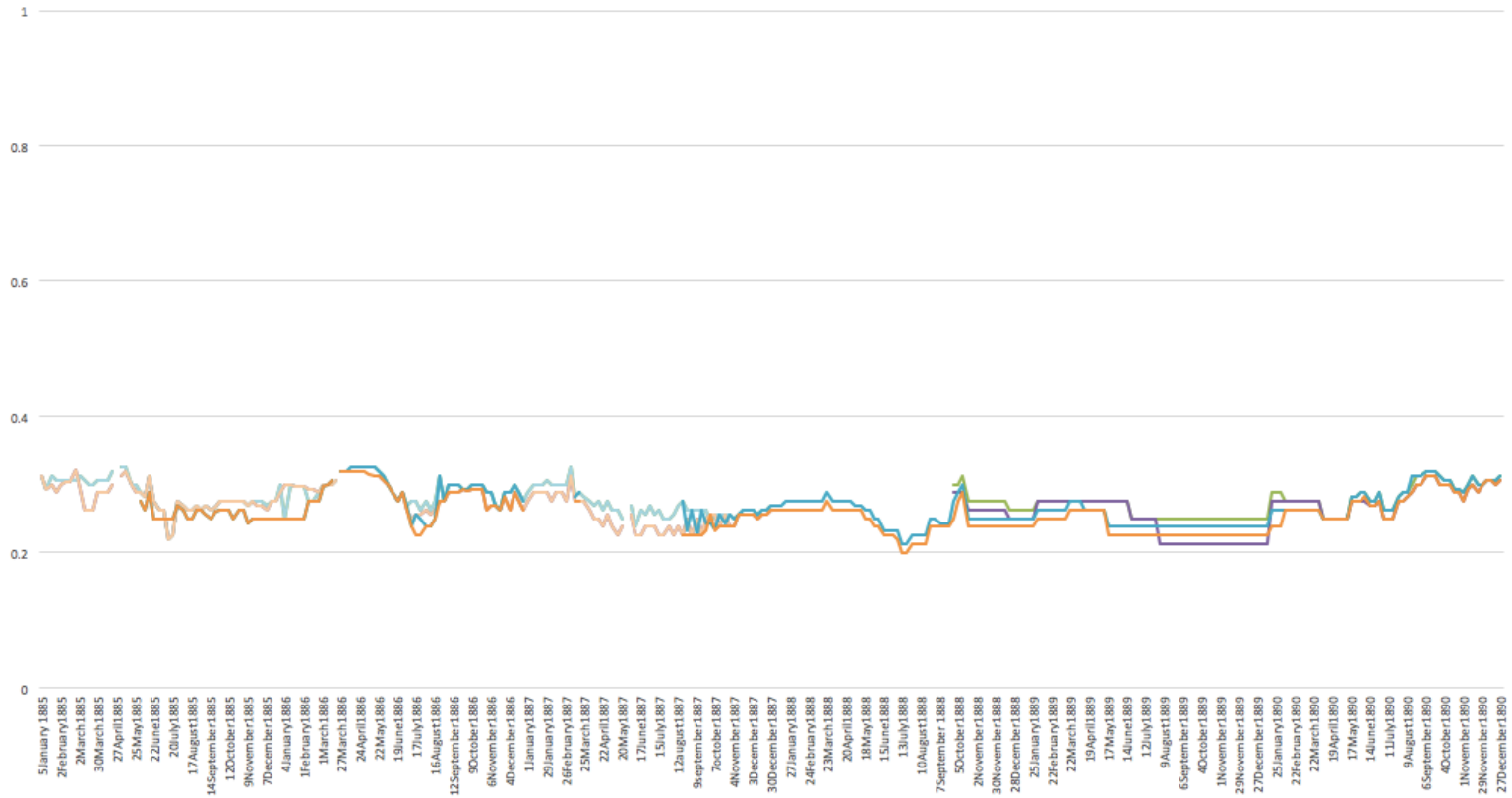
Graph F.2 Long-term Barley Prices (1851-1860)



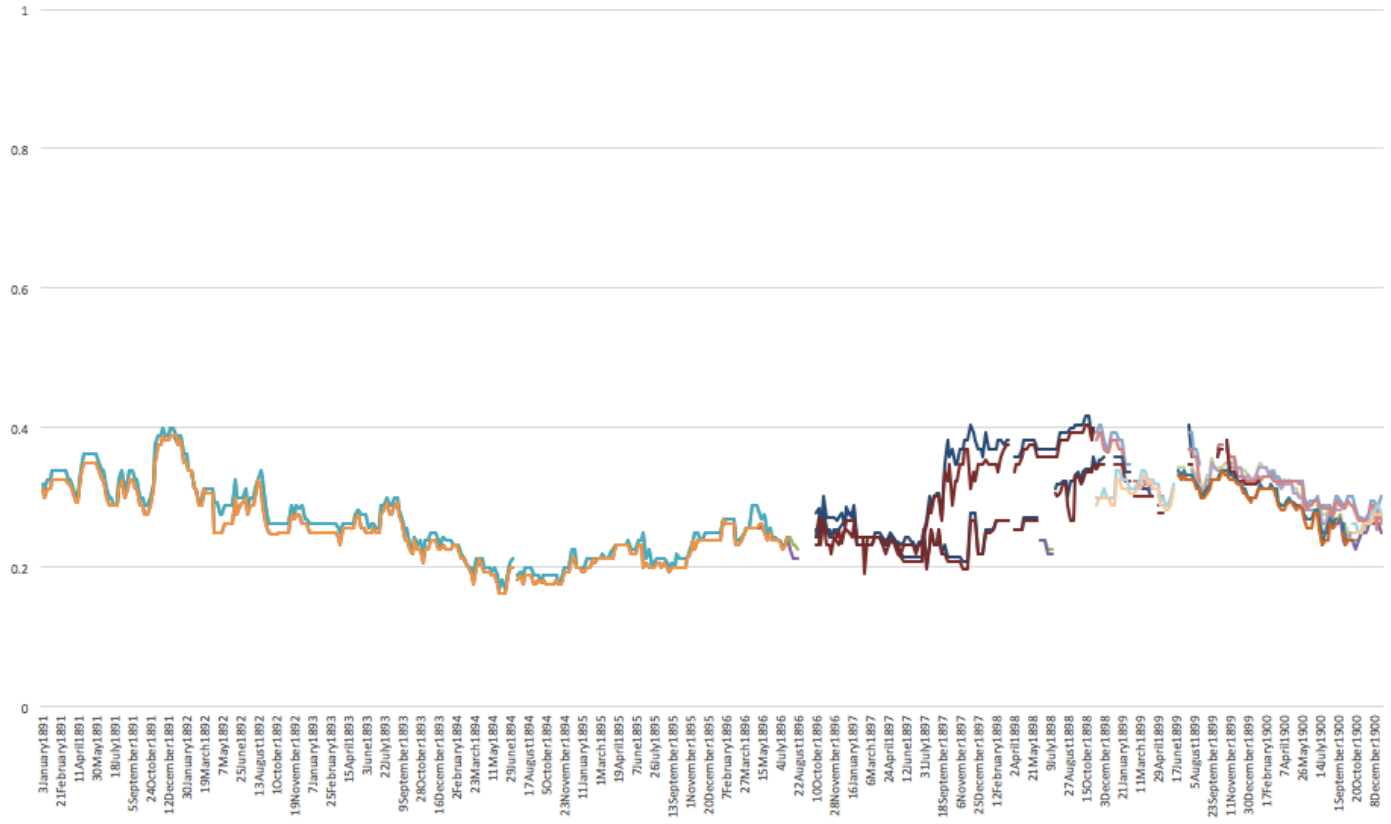
Graph F.3 Long-term Barley Prices (1861-1870)



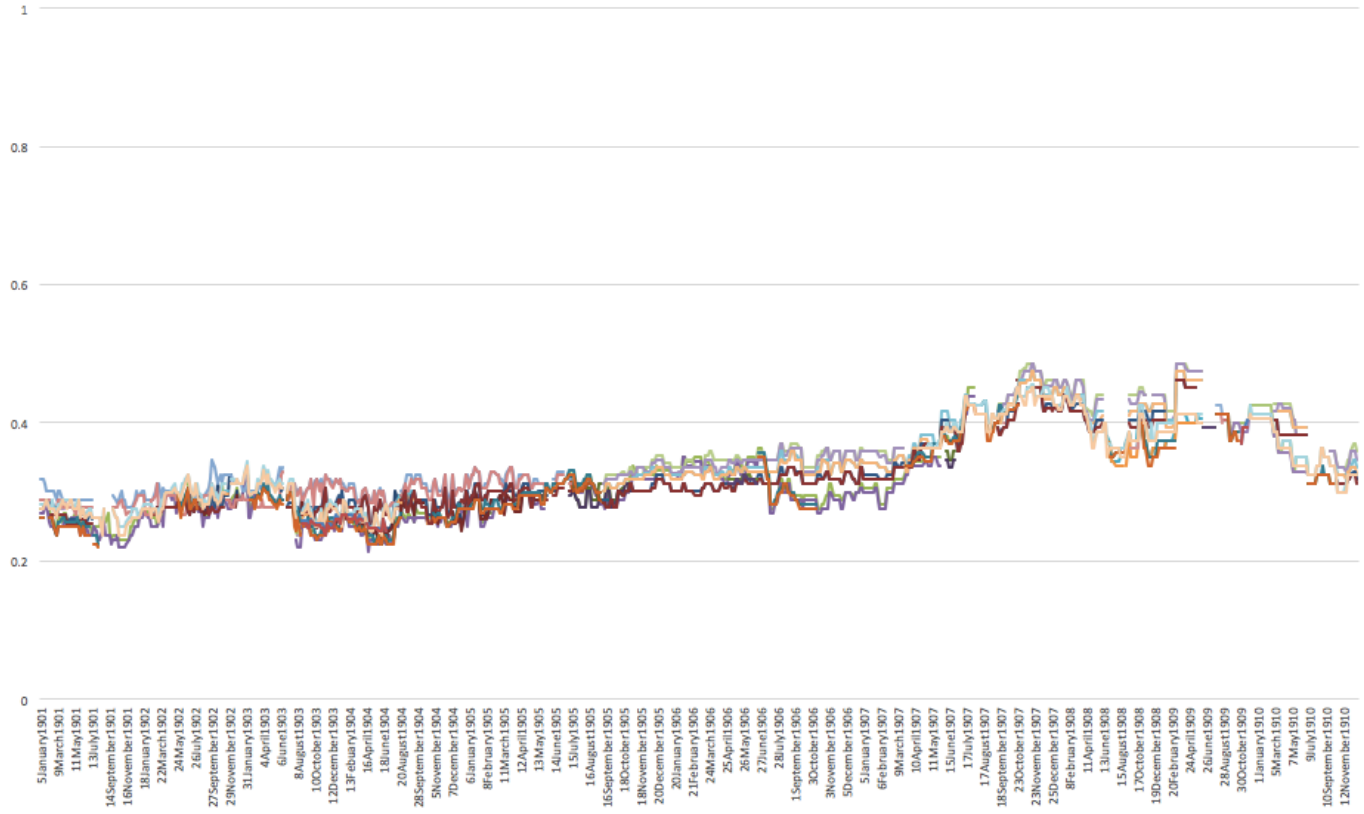
Graph F.4 Long-term Barley Prices (1871-1880)



G G raph F.5 Long-term Barley Prices (1885-1990)



Graph F.6 Long-term Barley Prices (1891-1900)



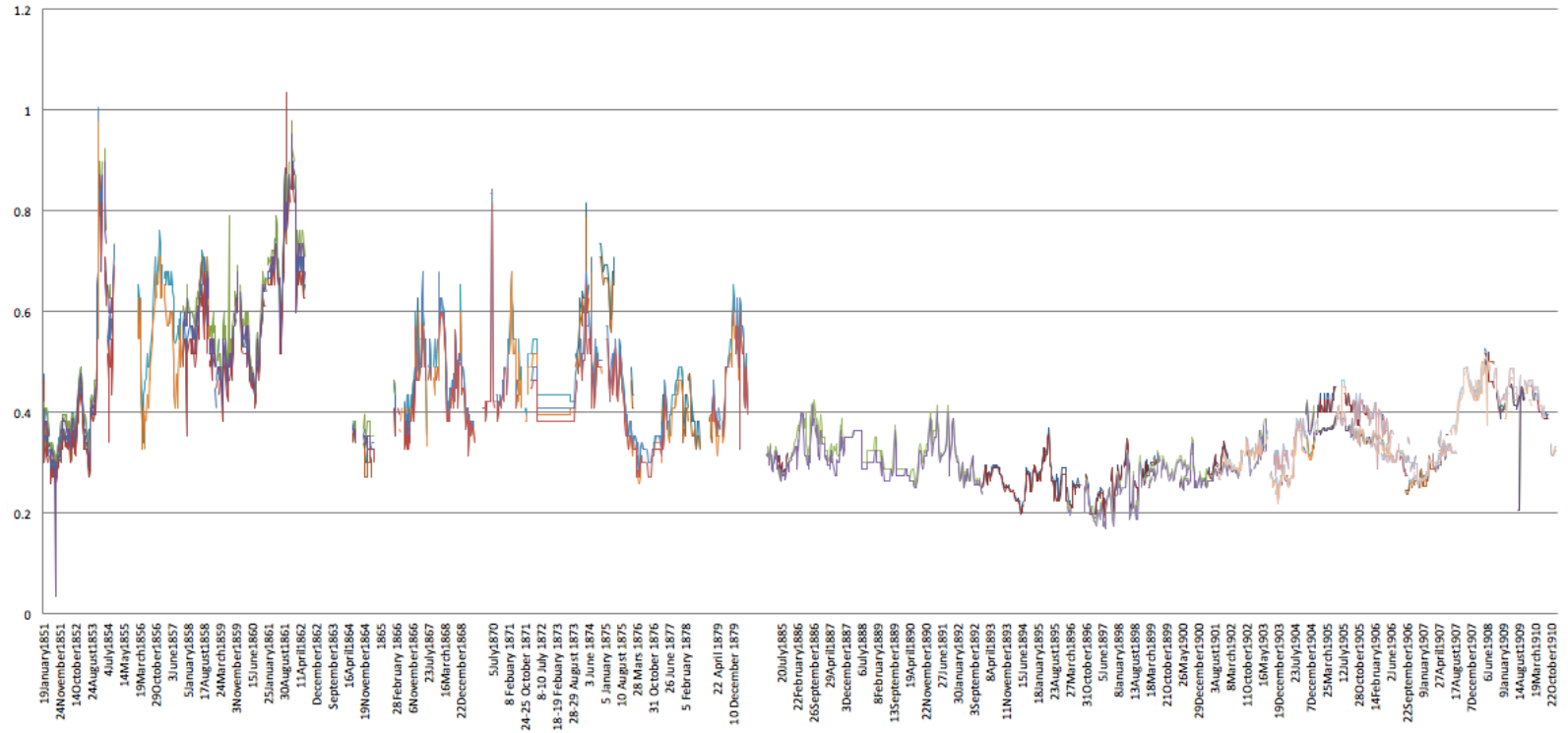
Graph F.7 Long-term Barley Prices (1901-1910)

Appendix G Long-term Prices of Maize

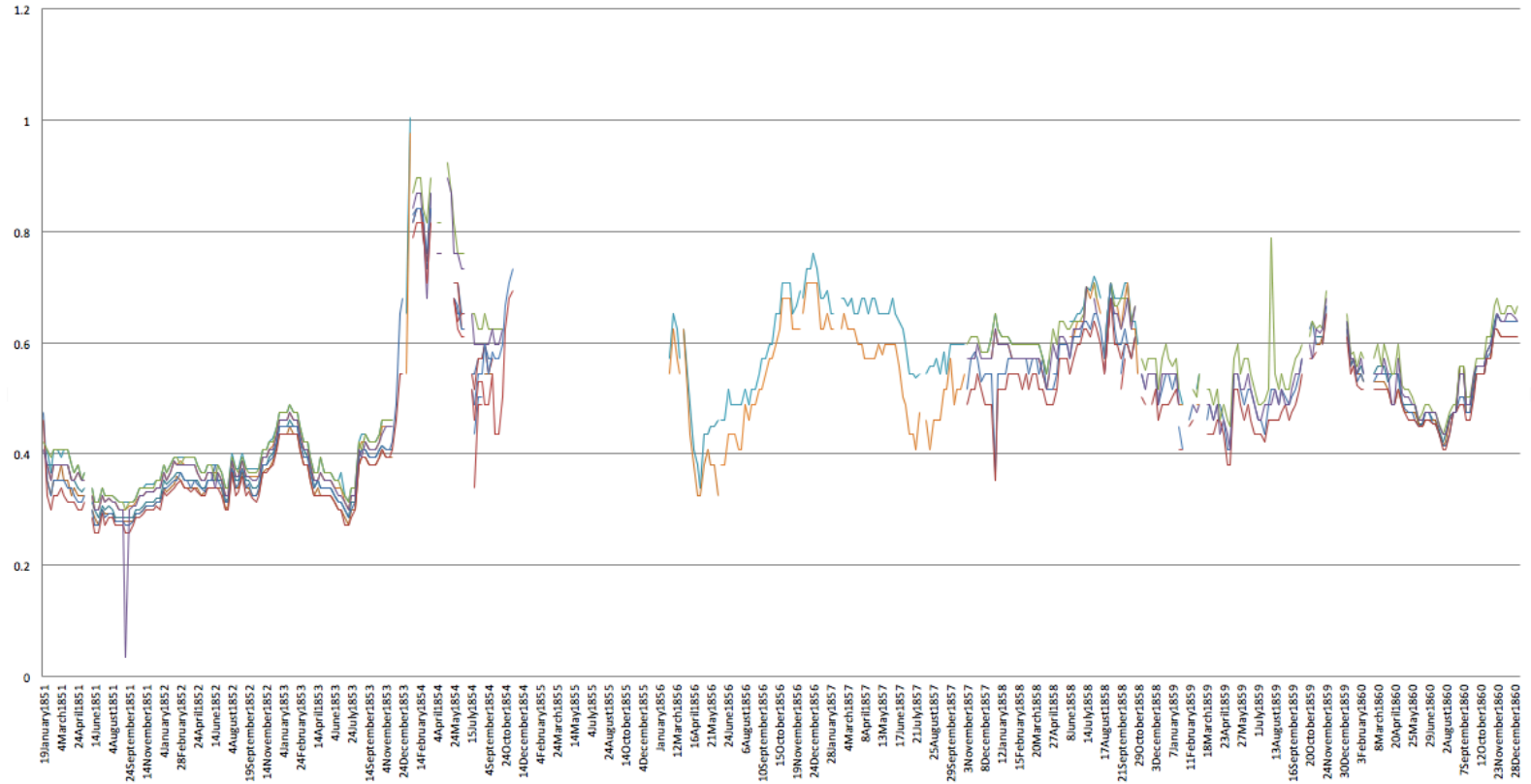
SOURCE FOR ALL GRAPHS IN THE APPENDIX G See the Introduction.

NOTE FOR THE GRAPHS IN APPENDIX G All prices are in metallic piaster per liter. The prices originally given for *kile*s are converted into liters. Old *kile*s were calculated as 36.8 liters, new *kile* as 40 liters. The *okka* per *para* prices are converted into metallic piasters at the rate of 40 *para*s to 1 metallic piaster. The conversion rates between *okka*s and *kile*s are listed in the notes. The prices are mainly weekly prices; for the exceptions see the Introduction. Therefore, the years are representative but days and months on the y axes are generated randomly by the computer.

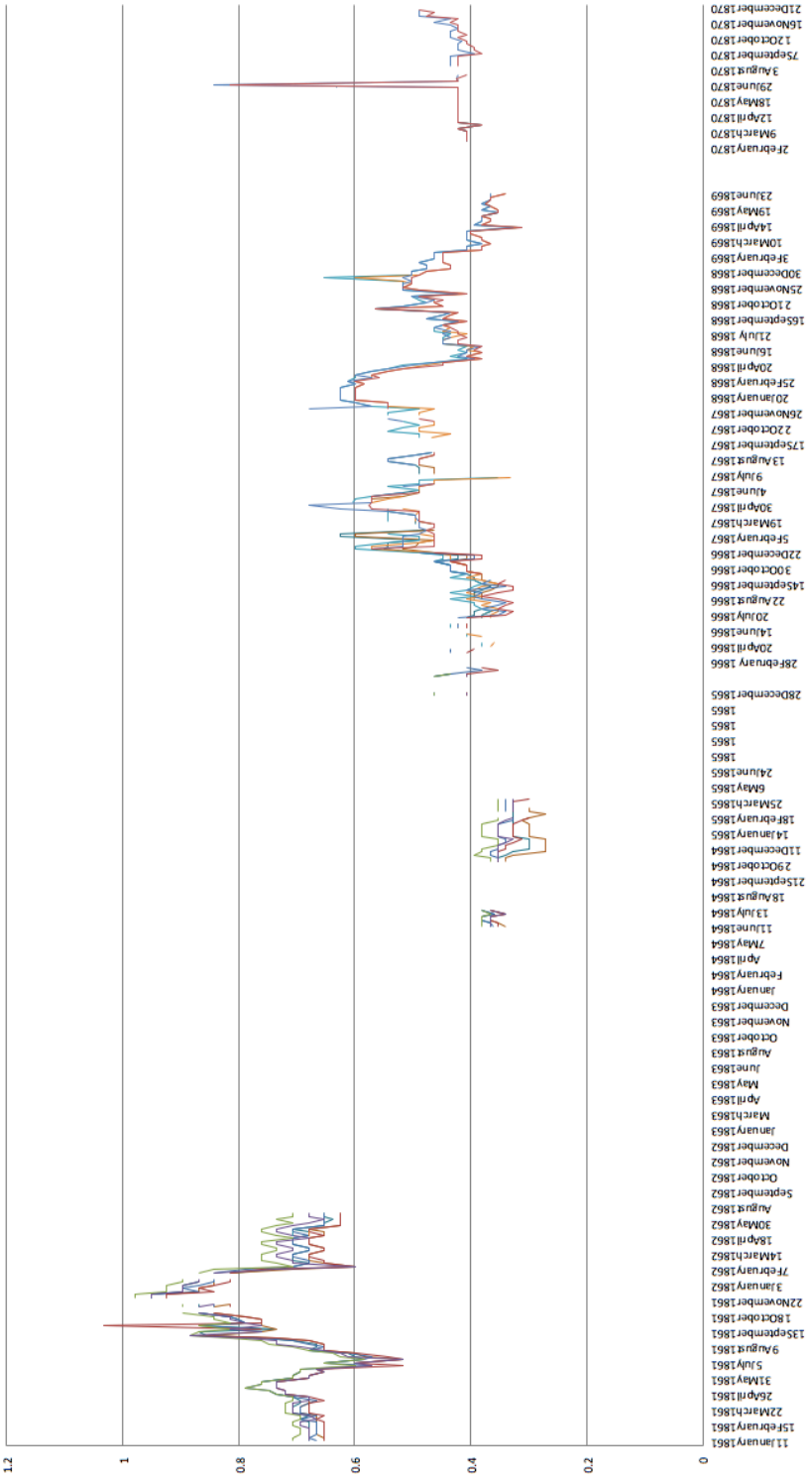
Figure G.1 Index for Maize Graphs



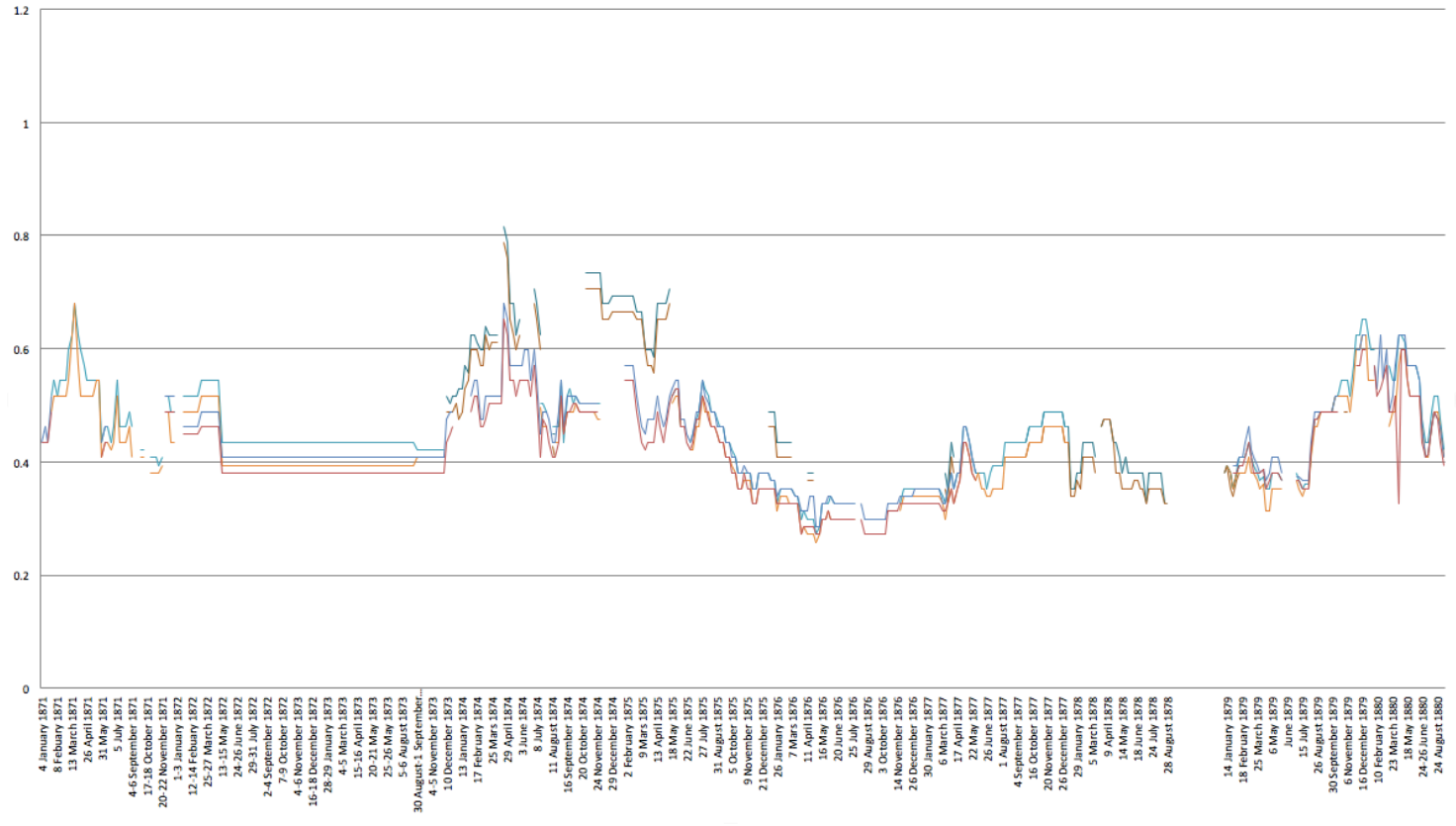
Graph G.1 Long-term Maize Prices (1850s-1910s)



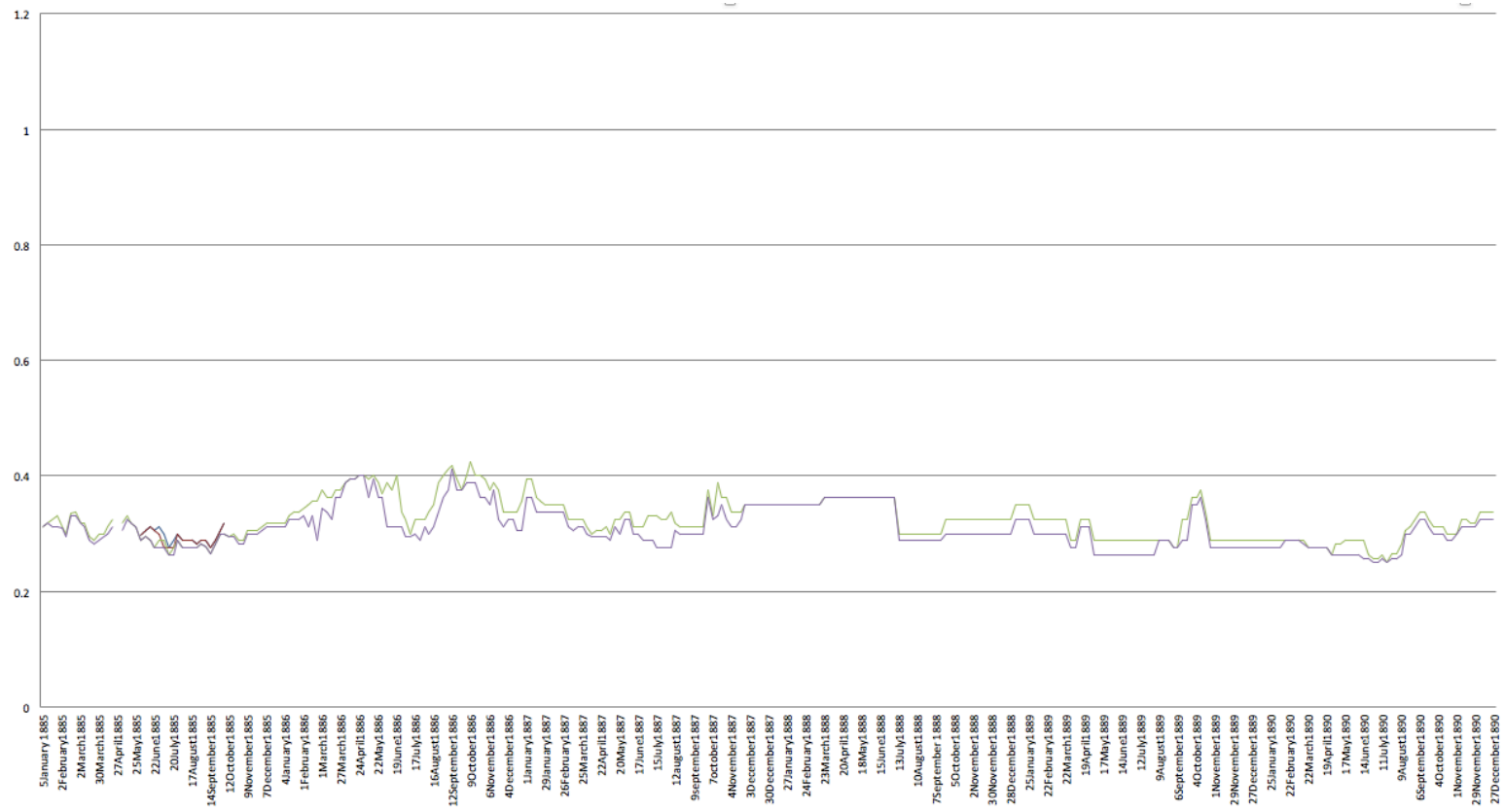
Graph G.2 Long-term Maize Prices (1851-1860)



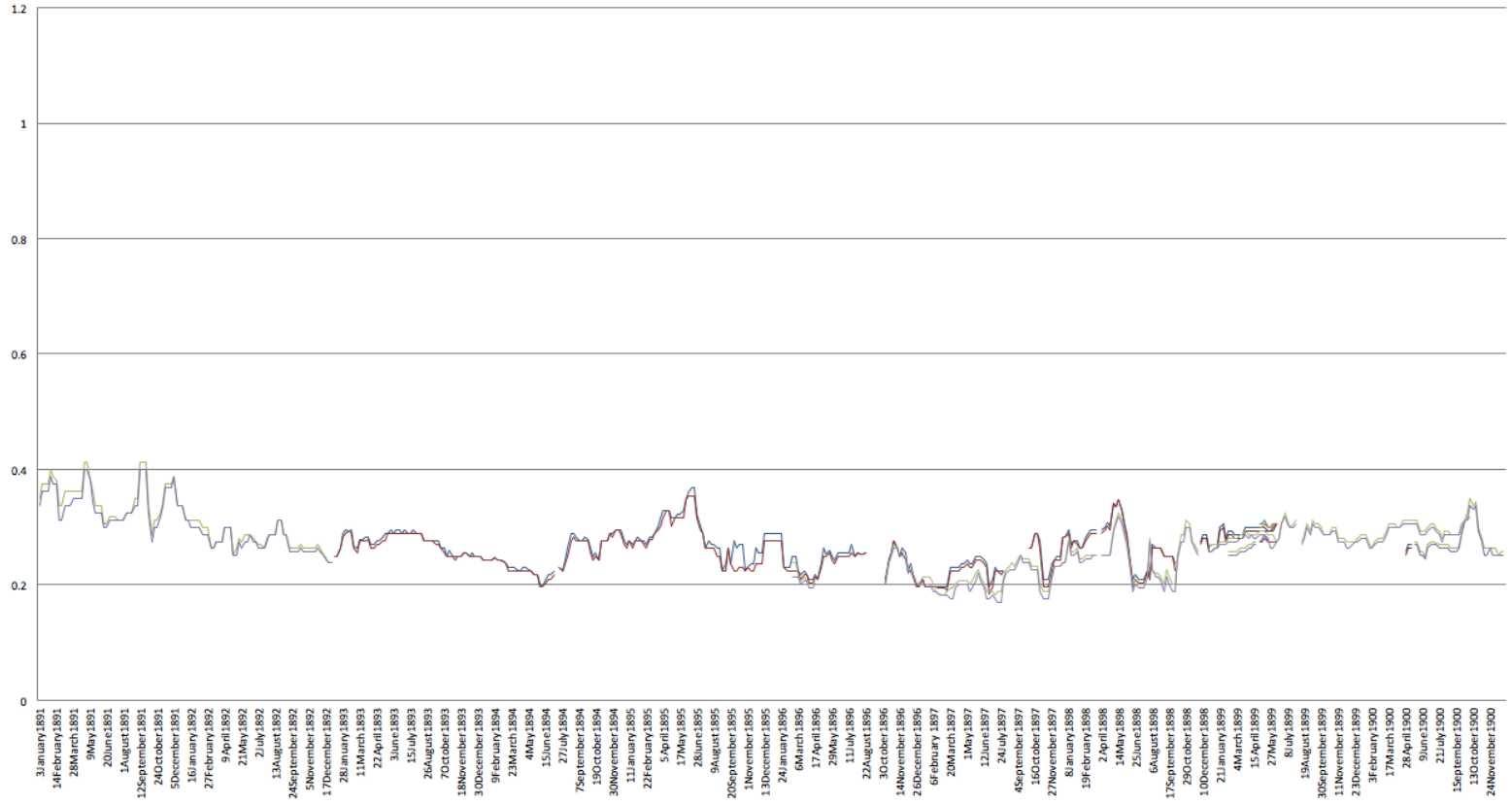
Graph G.3 Long-term Maize Prices (1861-1870)



Graph G.4 Long-term Maize Prices (1871-1880)



G Graph G.5 Long-term Maize Prices (1885-1890)



Graph G.6 Long-term Maize Prices (1891-1900)

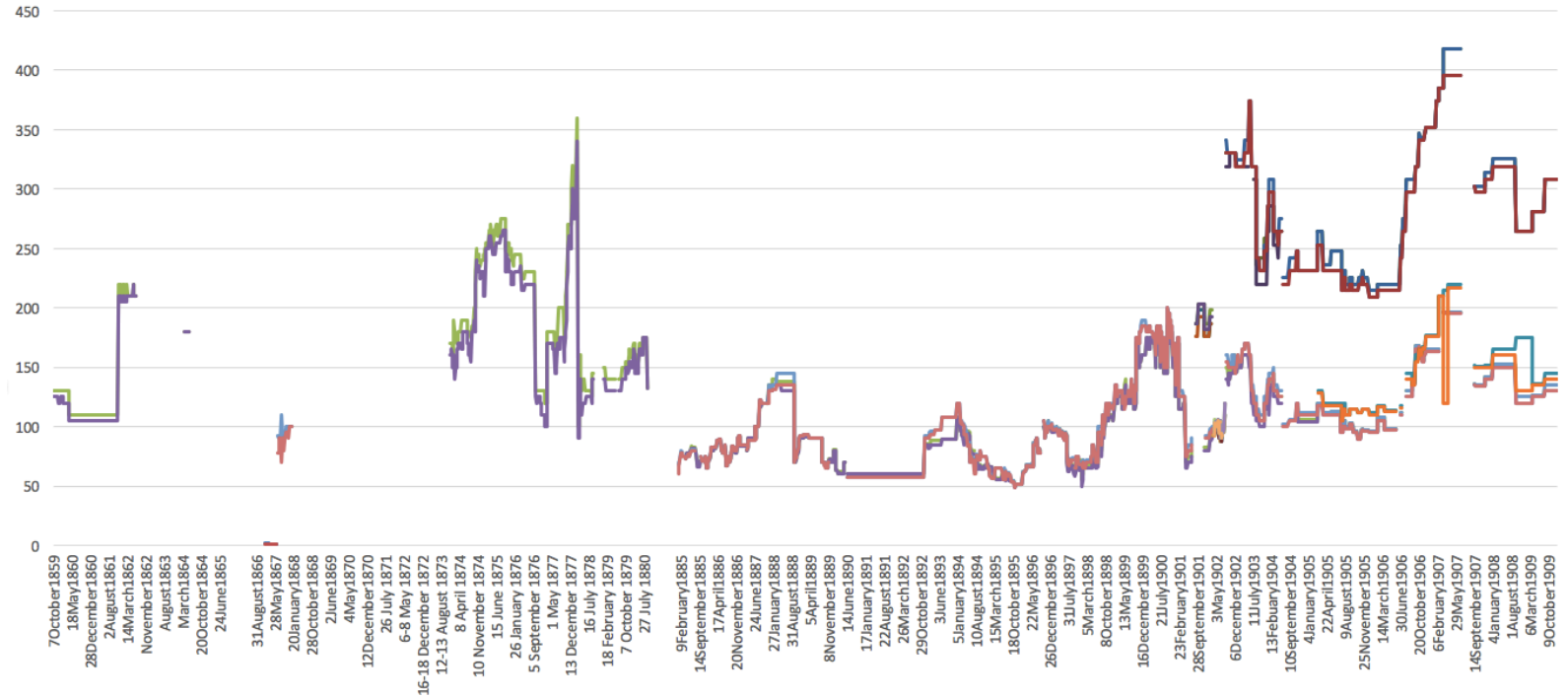
Graph G.7 Long-term Maize Prices (1901-1910)

Appendix H Long-term Prices of Hazelnut

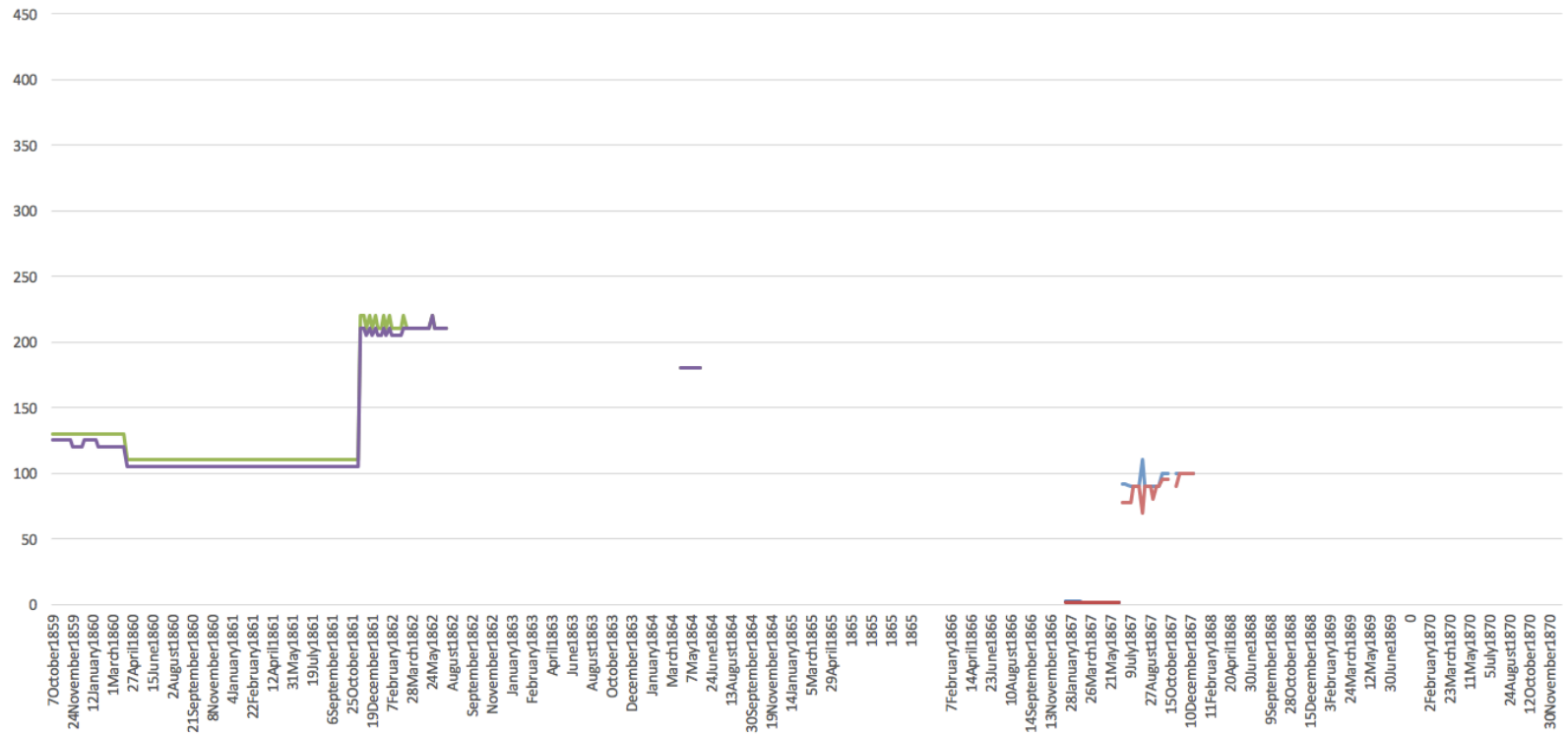
SOURCE FOR ALL GRAPHS IN THE APPENDIX H See the Introduction.

NOTE FOR ALL THE TABLES All prices given in metallic piasters per quintal as the original. The prices are mainly weekly price; for the exceptions see the Introduction. Therefore, the years are representative, but days and months on the y axes are generated randomly by the computer.

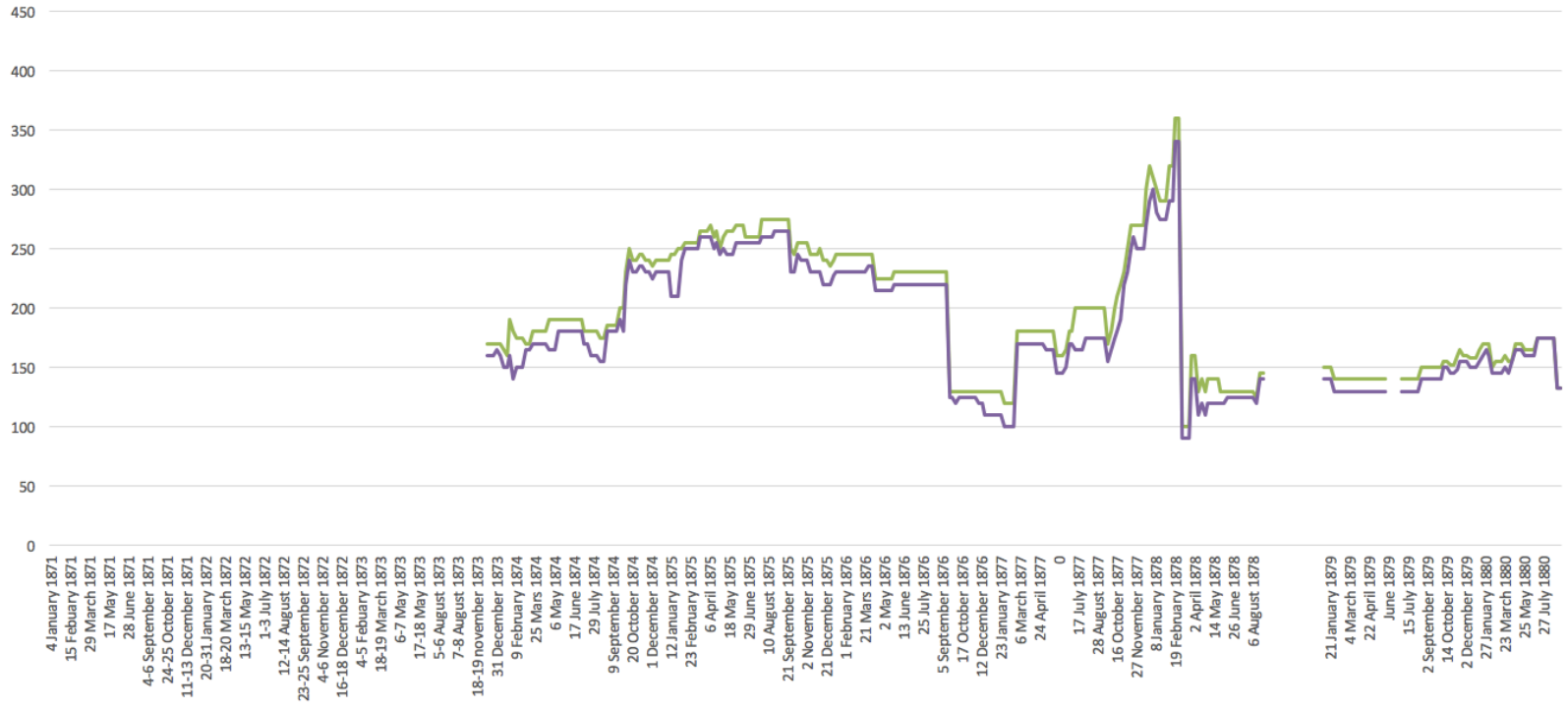
Figure H.1 Index for Hazelnut Graphs



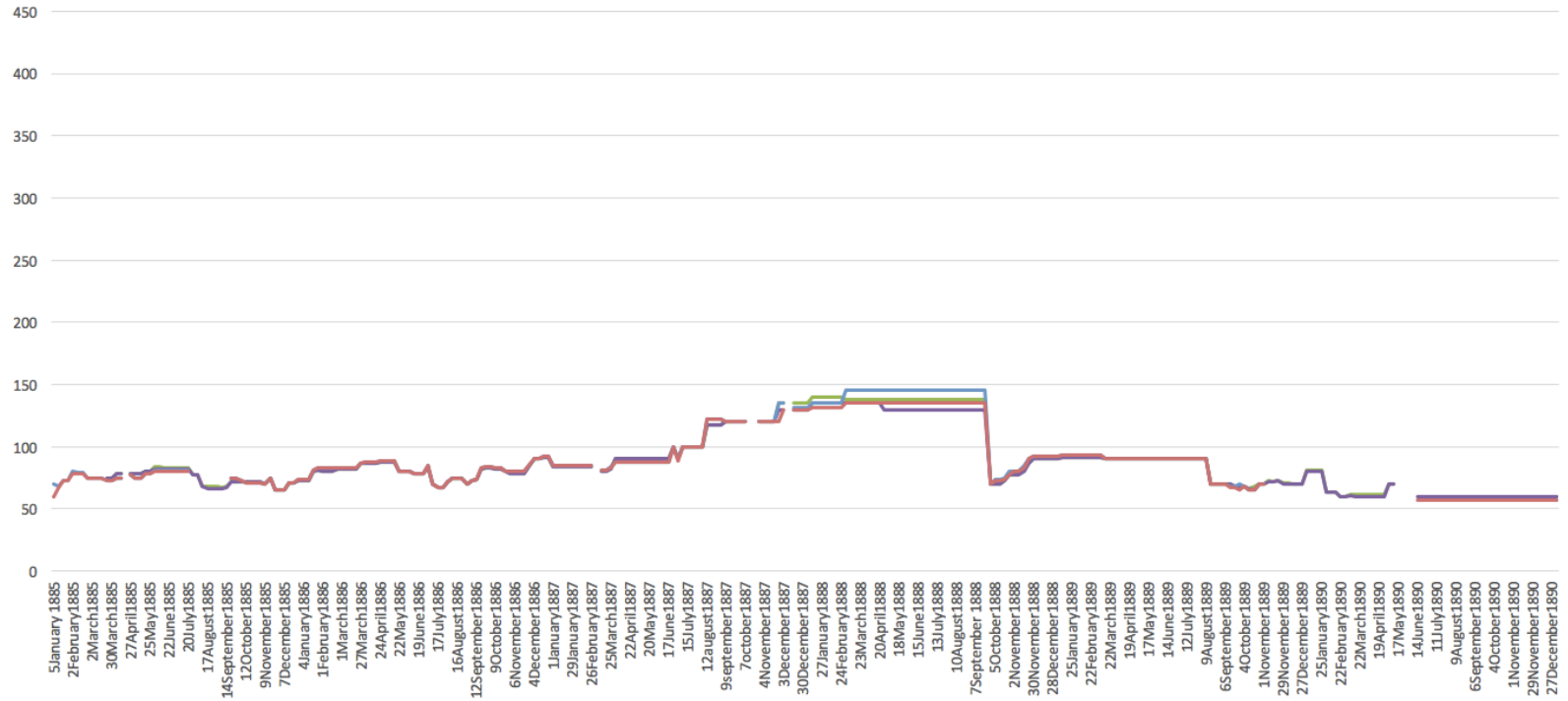
Graph H.1 Long-term Hazelnut Prices (1859-1910)



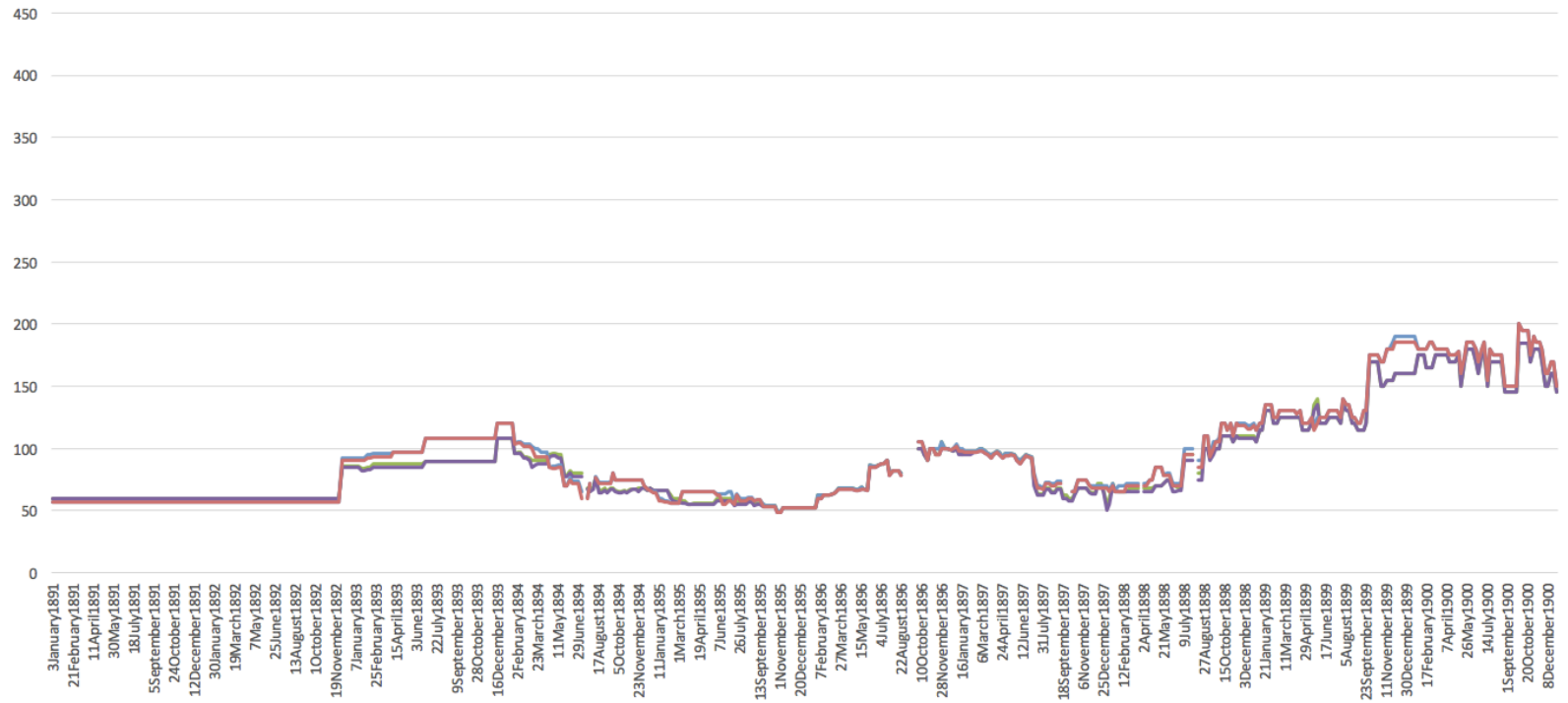
Graph H.2 Long-term Hazelnut Prices (1859-1970)



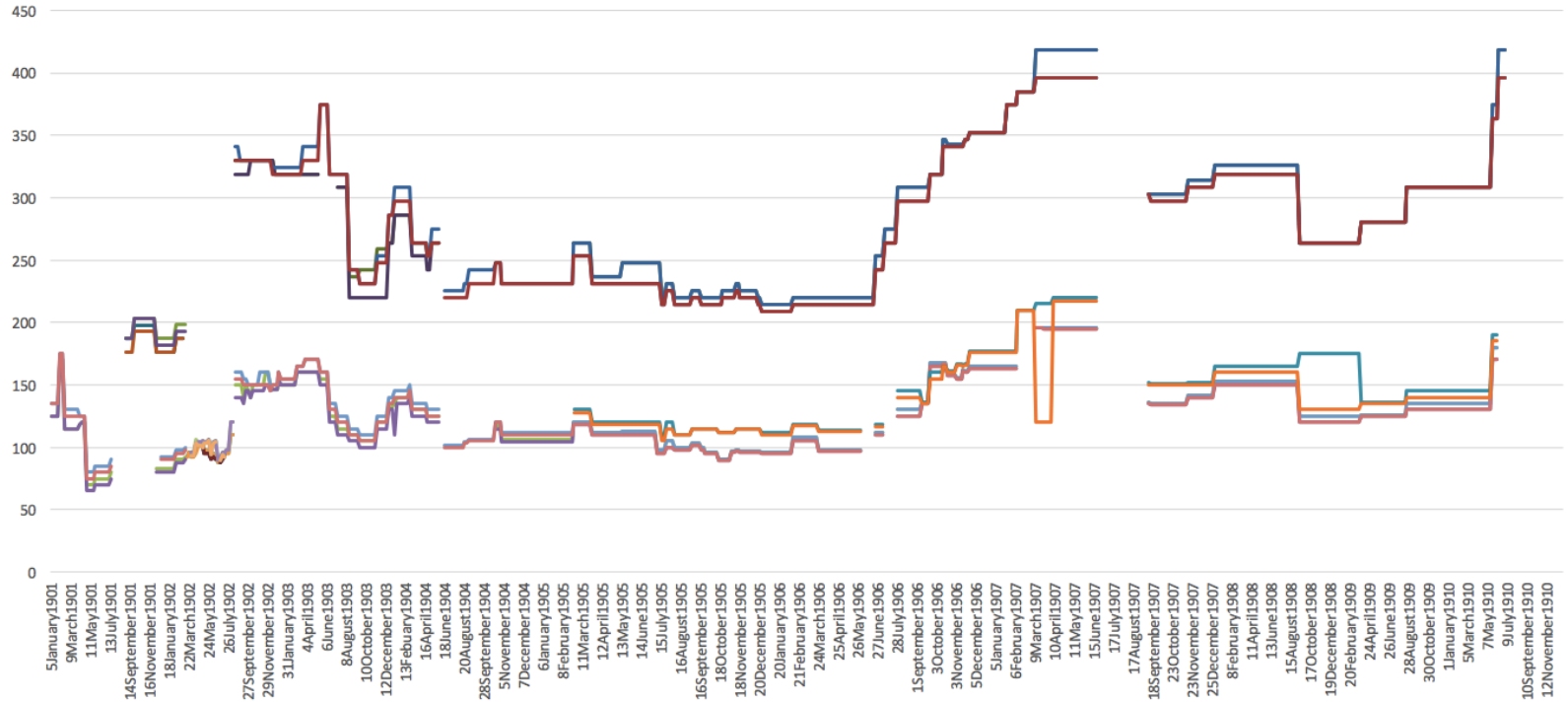
Graph H.3 Long-term Hazelnut Prices (1871-1880)



Graph H.4 Long-term Hazelnut Prices (1885-1890)



G Graph H.5 Long-term Hazelnut Prices (1891-1900)



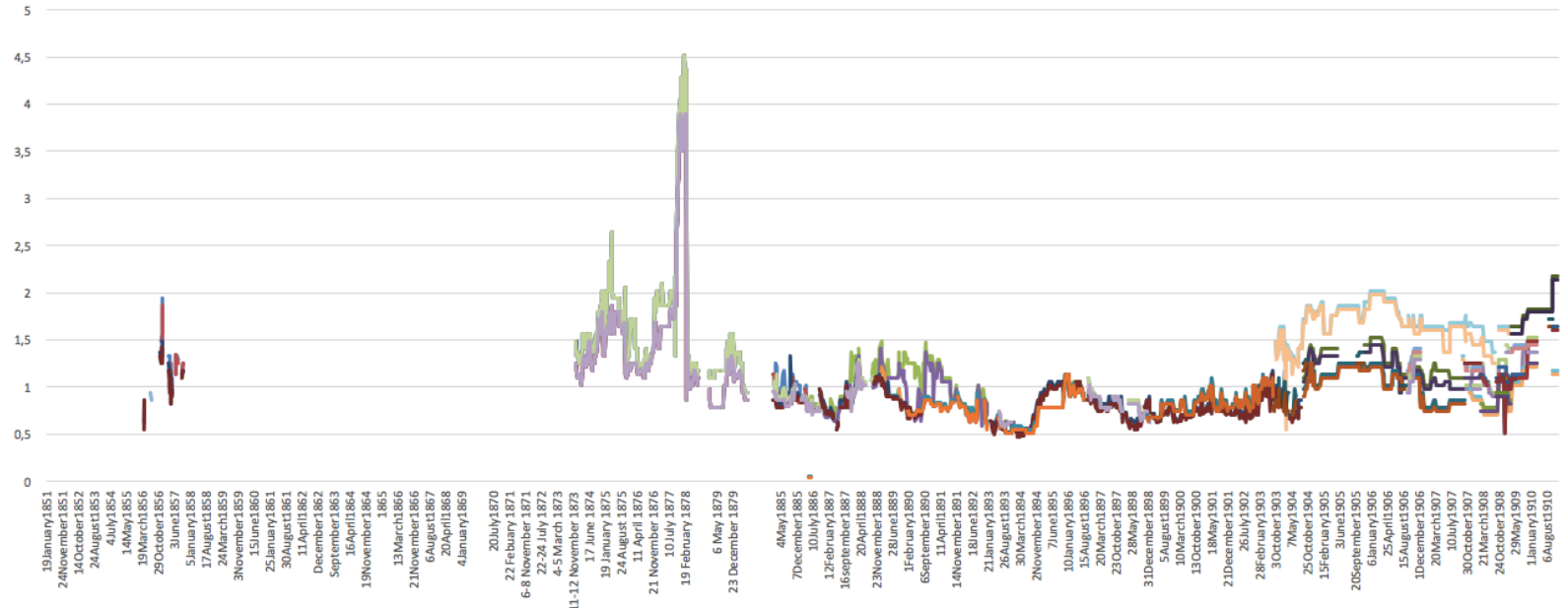
Graph H.6 Long-term Hazelnut Prices (1901-1910)

Appendix I Long-term Prices of Haricot Bean

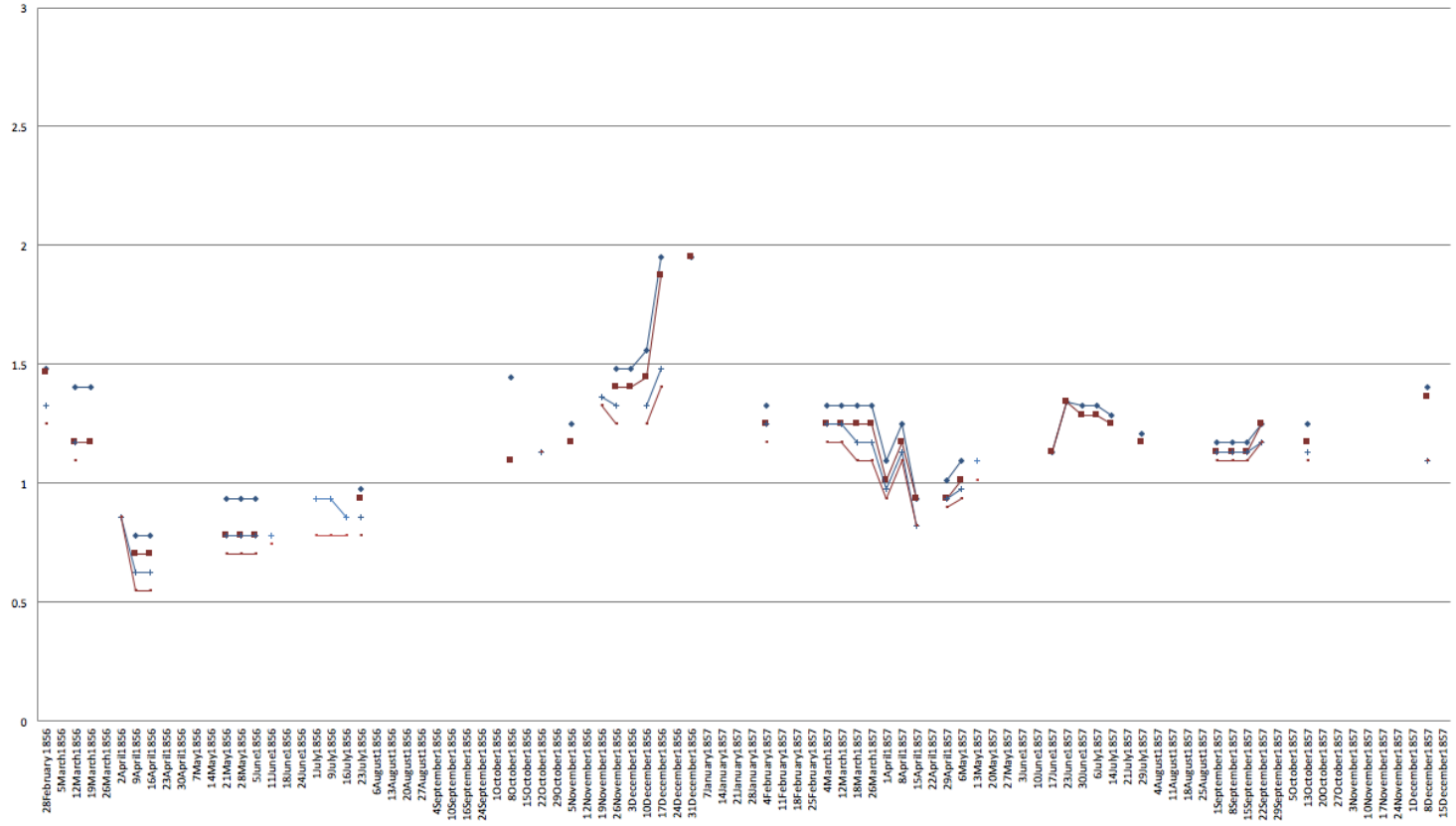
SOURCE FOR ALL GRAPHS IN THE APPENDIX I See the Introduction.

NOTE FOR ALL THE GRAPHS All prices are in metallic piaster per kilogram. The prices originally given for 100 *okka*s are converted into kilogram at the rate of 1 *okka* to 1.282945 kilogram. The y axis in Graph I.2 Long-term Haricot Bean Prices (1856-1857) represents reality. Otherwise, all the prices are mainly weekly prices, for the exceptions see the introduction. Therefore, the years are representative but days and months on the y axes are generated randomly by the computer.

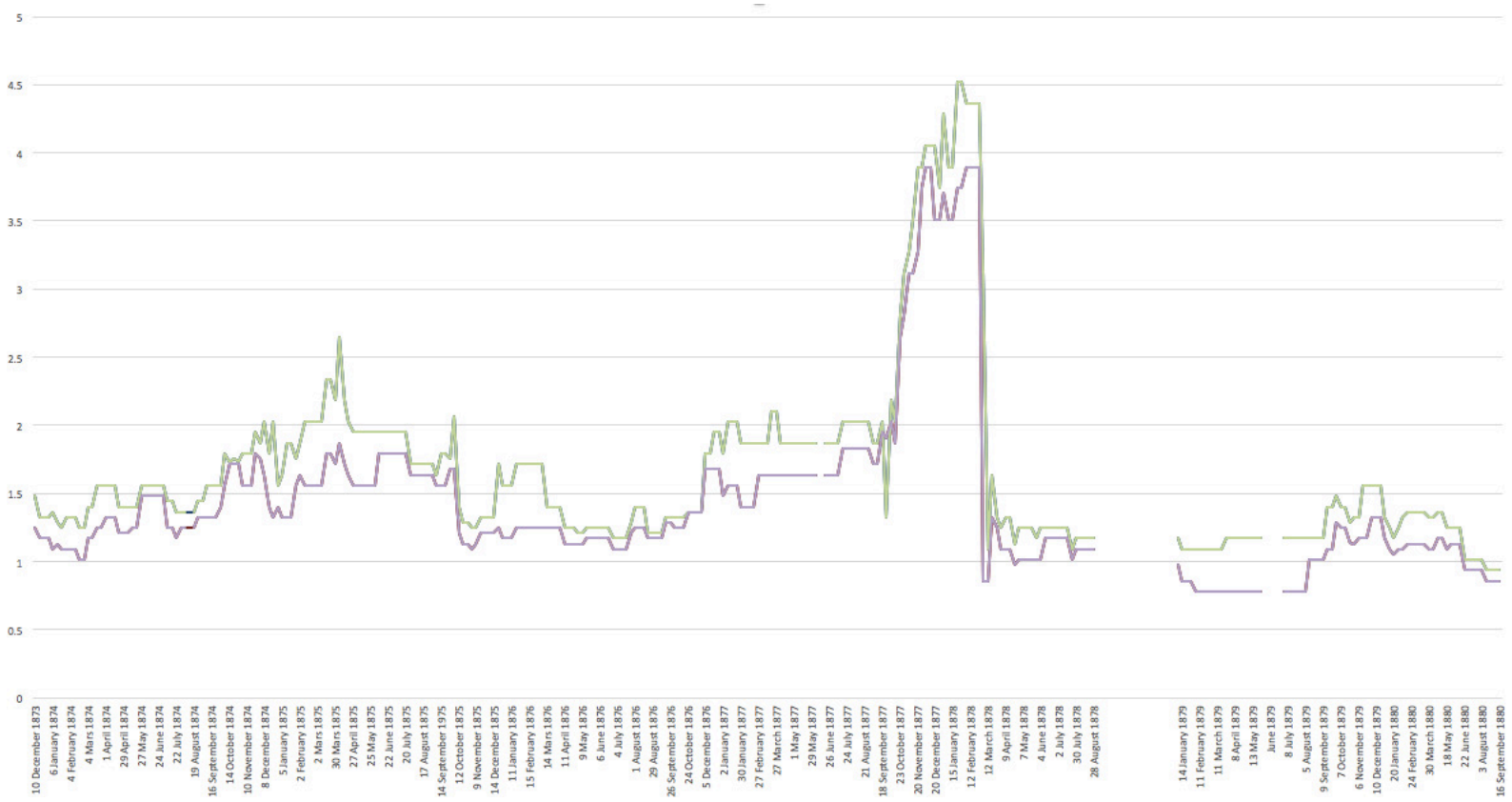
Figure I.1 Index for Haricot Bean Graphs



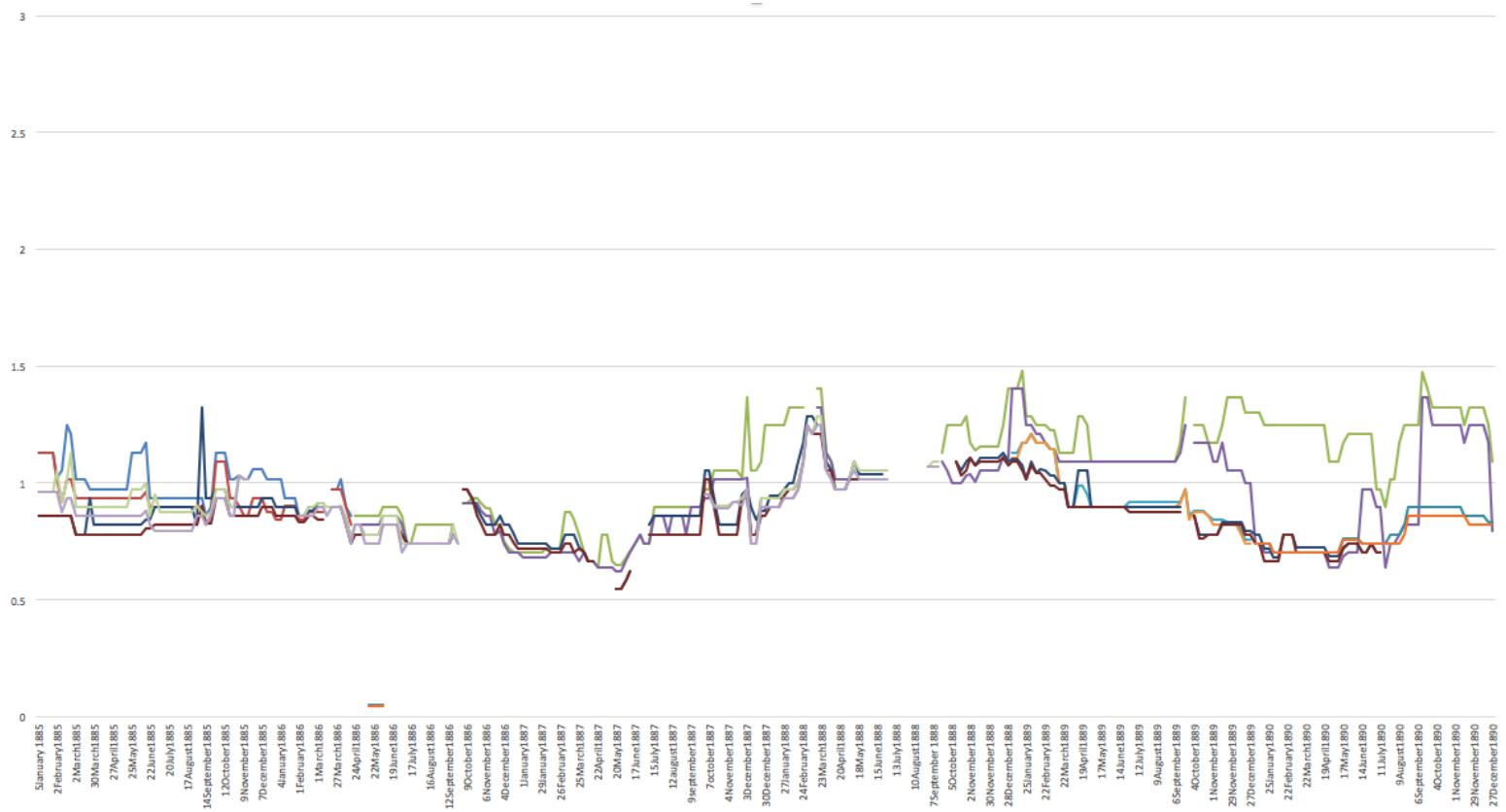
Graph I.1 Long-term Haricot Bean Prices (1859-1910)



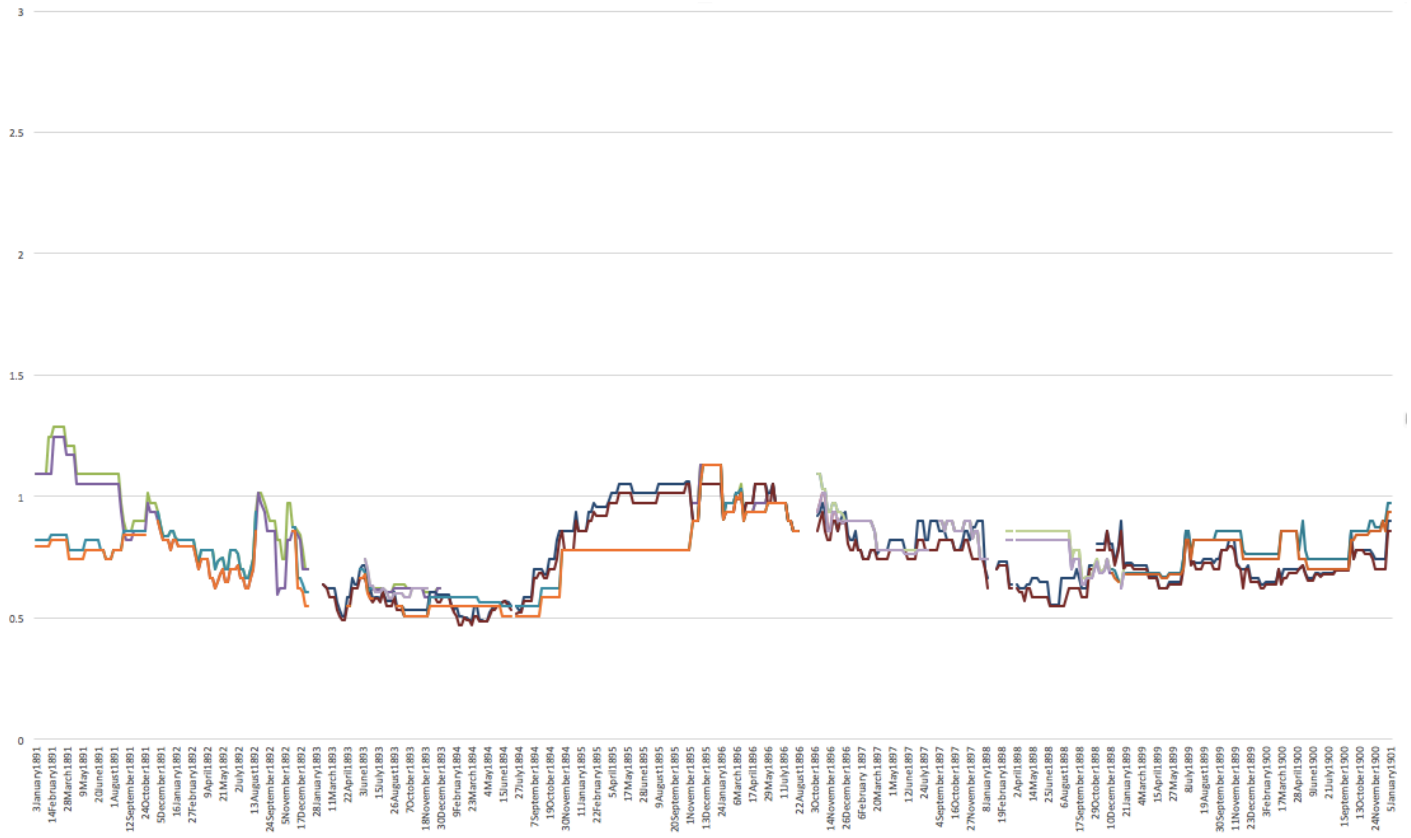
Graph I.2 Long-term Haricot Bean Prices (1856-1857)



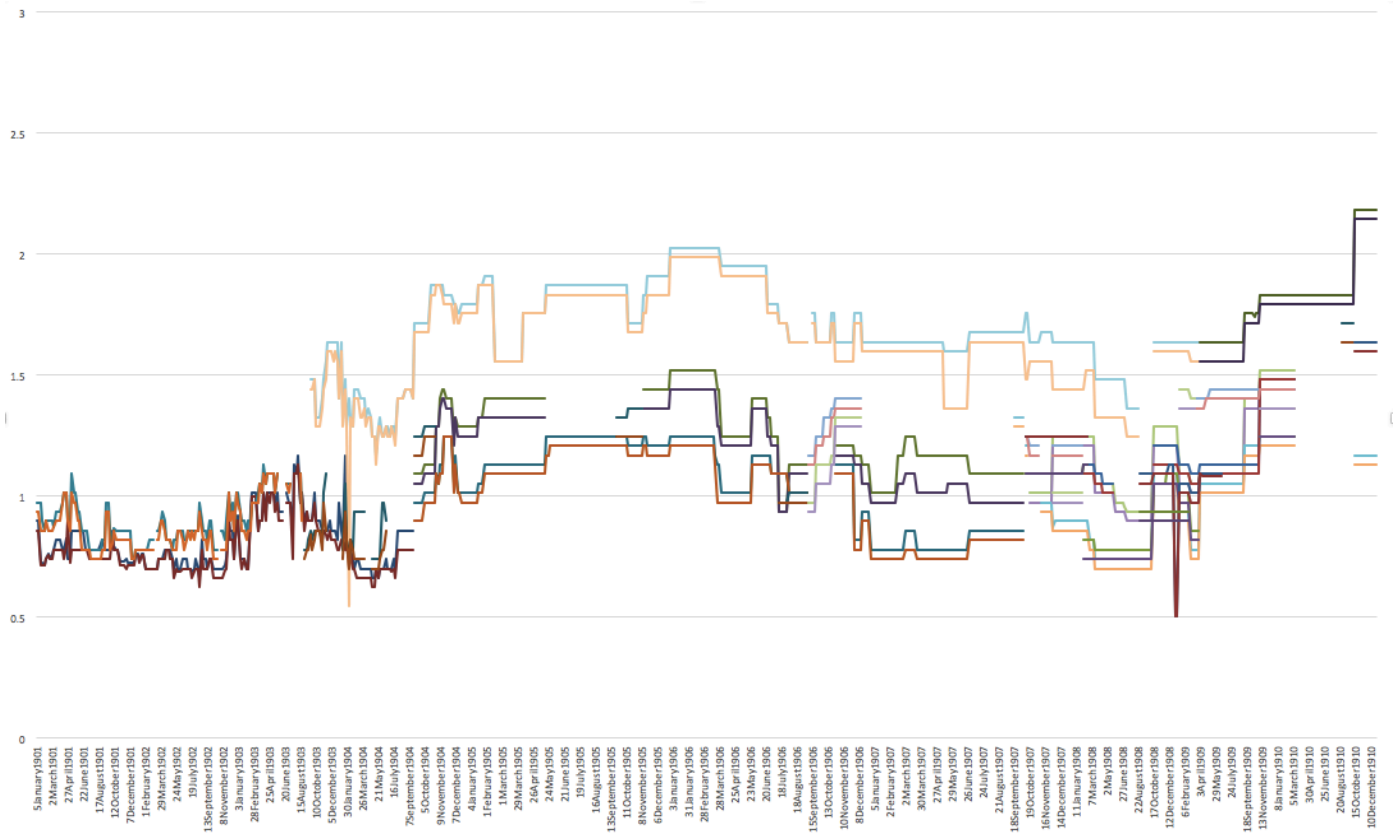
Graph I.3 Long-term Haricot Bean Prices (1873-1880)



Graph I.4 Long-term Haricot Bean Prices (1881-1890)



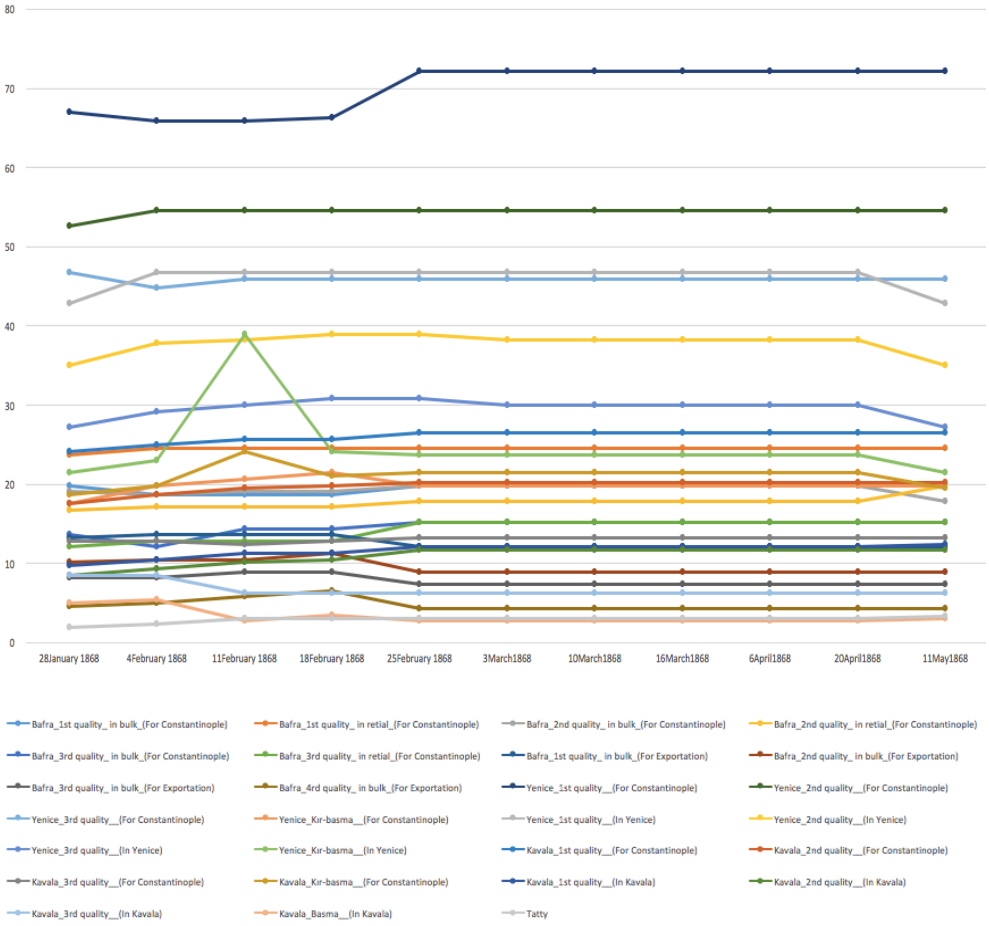
Graph I.5 Long-term Haricot Bean Prices (1891-1900)



Graph I.6 Long-term Haricot Bean Prices (1901-1910)

Appendix J Prices of Tobacco

Graph J.1 Tobacco Prices during the First Four Month of 1868 in Istanbul



NOTE All the prices are in metallic piaster per kilogram.

SOURCE La Turquie

Appendix K Population Statistics

Figure K.1 Population of *Kaza*s of Erzurum, Sivas, and Trabzon for 1881 and 1906

		1881	1906
Kazas of Erzurum	Erzurum	394,868	430,646
	Beyazıd	57,067	141,656
	Erzincan	107,090	77,342
	Hınıs		26,211
	Total	559,025	675,855
Kazas of Sivas	Sivas	384,015	487,926
	Amasya	208,120	258,260
	Karahisar-ı Şarki	133,800	169,631
	Tokat	189,925	278,555
	Total	915,860	1,194,372
Kazas of Trabzon	Trabzon	521,706	627,523
	Canik	293,412	369,027
	Lazistan	136,280	197,120
	Gümüşhane	104,839	149,108
	Total	1,056,237	1,342,778
Provinces	Erzurum	559,025	675,855
	Sivas	926,671	1,194,372
	Trabzon	1,056,237	1,342,778
	Total	2,541,933	3,213,005

SOURCE Karpat Kemal H. *Ottoman Population, 1830-1914: Demographic and Social Characteristics.* [in English] Madison, Wis.: University of Wisconsin Press, 1985.

Appendix L Various Agricultural Estimations

Figure L.1 Annual Production of Hazelnuts in early-1900s

Sanjaks	Maximum	Minimum
Giresun	400,000	200,000
Merkez-i Trabzon, Vakfıkebir, Akçaabad, Sürmene, and Of	200,000	100,000
Ordu	120,000	60,000
Tirebolu and Görele	100,000	50,000
Lazistan	50,000	30,000
Total	870,000	440,000

SOURCE Antreasyan, Nişan. *Fındık Ziraati Ve Ticareti* İstanbul: Matbaa-ı Hayriyye ve Şürekası, 1915/1916 (1331).

Figure L.2 Official Estimates for the Production of Cereals in Spring of 1900

Province/Sanjaks	Wheat	Barley
Sivas	1,187,250	766,000
Kastamonu	1,713,099	
Manastır	1,348,428	566,381
Bağdad	31,000	
Mamürat-ül Aziz	15,300	
Kosova	4,612,000	87,000
Çatalca	42,500	93,000
İzmid	297,000	221,000
Kudüs	115,500	418,500

SOURCE *Dersaadet Ticaret Odası Gazetesi (French copy),* April, 14 1900

Figure L.3 Total Agricultural Production per kilogram in 1881

	Trabzon	Canik	Gümüşhane	Lazistan	Total
Wheat	2,159,771.51	5143267,613	1321669,568	20537,38356	8645246,075
Barley	1756383.009	2922946,821	1291125,026	1120771,053	7091225,908
Maize	37706925,98	33770637,8	504895,9357	17290442,84	89272902,56
Millet	0	775519,9307	3965,839584	191446,1847	970931,9549
Oats	171192,0754	4041402,048	0	0	4212594,123
Rye	137488,9306	92370,42349	1152768,863	0	1382628,217
Vetches	379883,1705	6503753,06	10015,39738	0	6893651,628
Rice	697.152	910.609	0	47.677	1655437,817
Eincorn	2.284	8.403	0	0	10686,93185
Haricot	4.799.016	1.762.151	53.557	1.259.076	7873799,104
Fava bean	205	2.989	0	0	3194,53305
Lentil	180	1.803	0	192	2174,591775
Potato	86.535	0	35.762	2.887	125183,3584
Grape	1.184.723	61.383	552	522.082	1768738,539
Chesnut	199.152	233.701	1.437	129.744	564033,9398
Hazelnut	7.628.173	8.025	0	57.938	7694135,487
Other Fruits	3.940.380	3.345.927	760.183	1.581.948	9628438,078
Linen (raw)	0	237.063	0	0	237062,5771
Tobacco	926.408	3.734.428	0	0	4660836,549
Olive	19.898	5.234	0	49.175	74308,1744
Hemp	346.568	311.226	0	191.449	849242,8769
Hemp Seed	13.022	236.909	0	54.031	303961,7441
Vegetables	3.539.703	4.304.808	423.962	1.794.680	10063152,44
Walnut	199.152	233.701	1.437	129.744	564033,9398
Total	65.894.194	68.648.256	5.561.330	24.443.820	164.547.601

SOURCE Biliotti, Alfred. "Report on the Trade, Commerce, and Navigation of the Port of Trebizond for the Year of 1881." Foreign Office, 1881.

Appendix M Agricultural Estimations of late-1880s and 1909

SOURCE FOR ALL THE GRAPHS For the Charts and Graphs for late-1880s, see Cuinet, Vital. "Vilayet de Trébizonde Statistique Descriptive." In *La Turquie d'Asie; Géographie Administrative, Statistique, Descriptive et Raisonnée de Chaque Province de l'Asie-Mineure*. For the Charts and Graphs for 1909, see 1325 Senesi Asya Ve Afrika-ı Osmanî Ziraat İstatistiği. Ziraat İstatistikler. Vol. 2, Istanbul: Matbaa-ı Osmaniye, 1911.

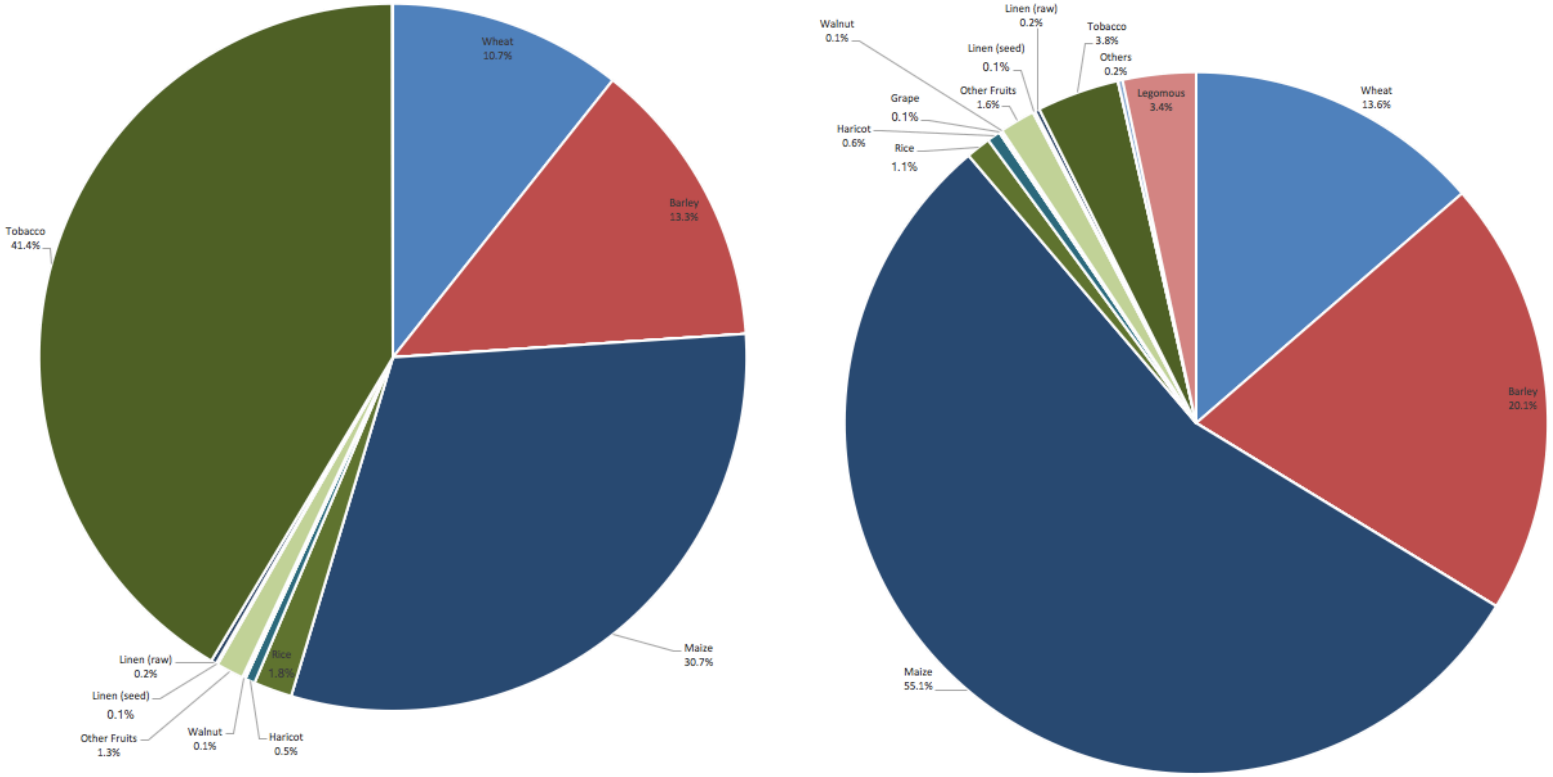


Chart M.1 Production Quantities (left) and Values (right) in the Sanjak of Canik (late-1880s)

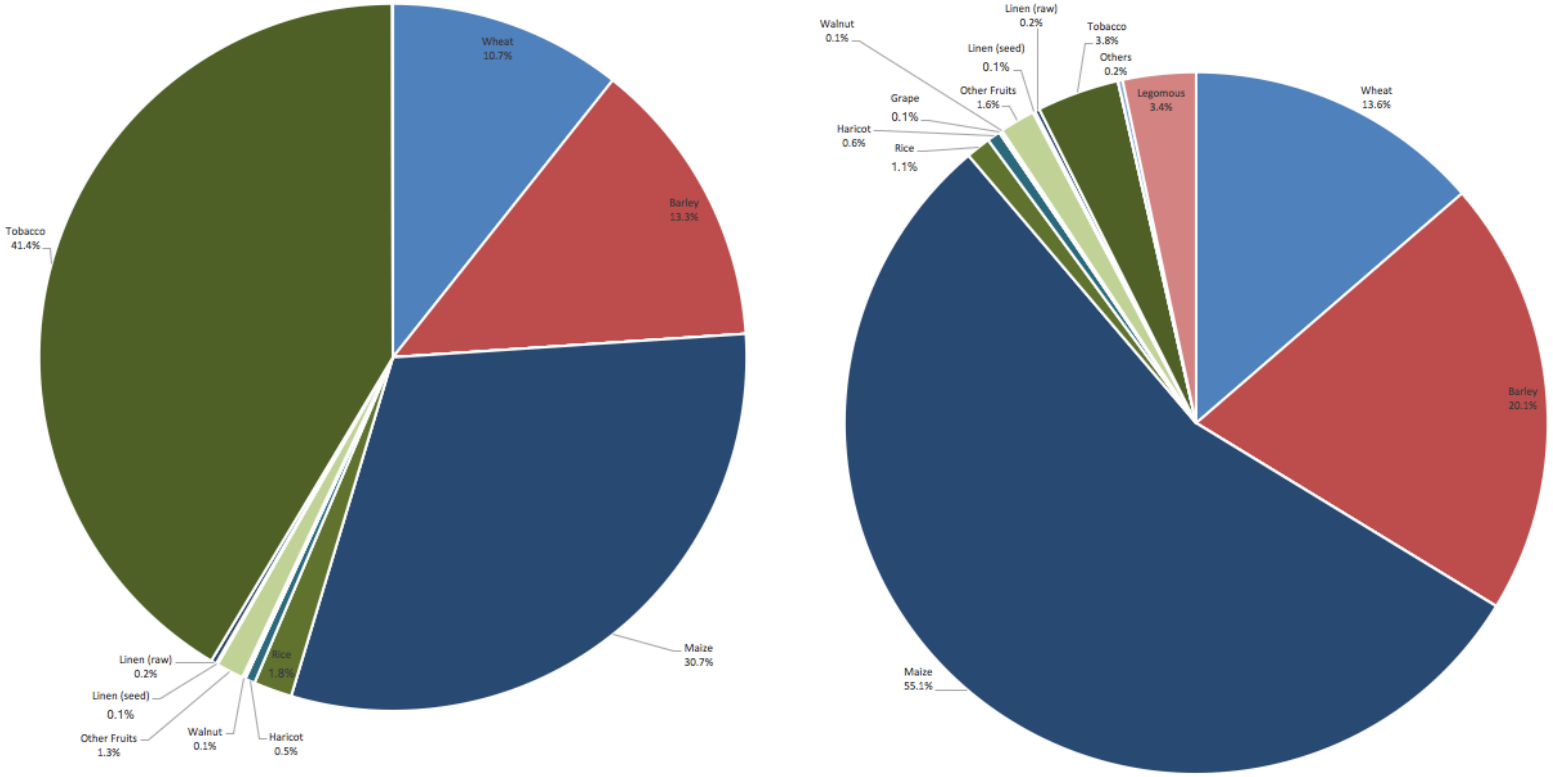


Chart M.2 Production Quantities (left) and Values (right) in the Sanjak of Trabzon (late-1880s)

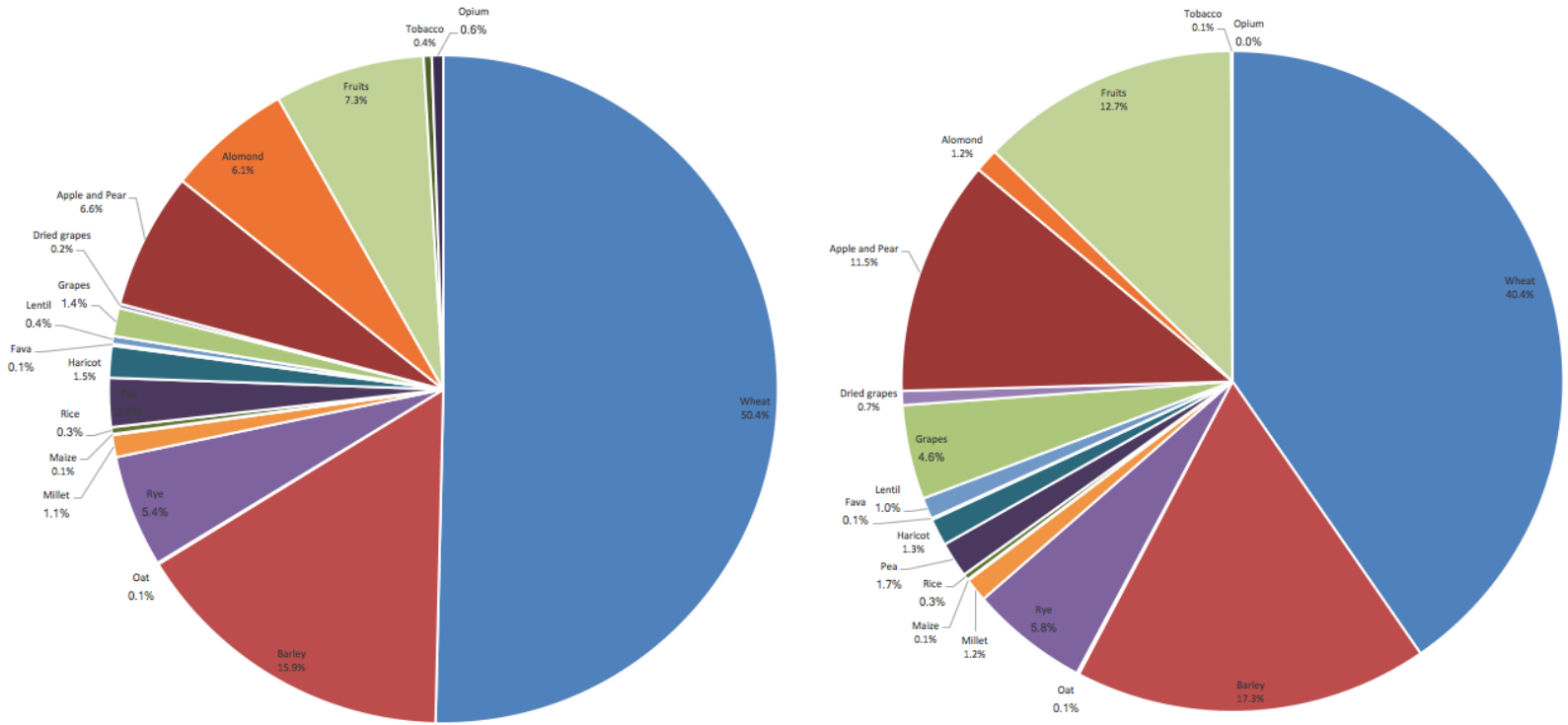


Chart M.3 Production Quantities (left) and Values (right) in the Sanjak of Amasya (late-1880s)

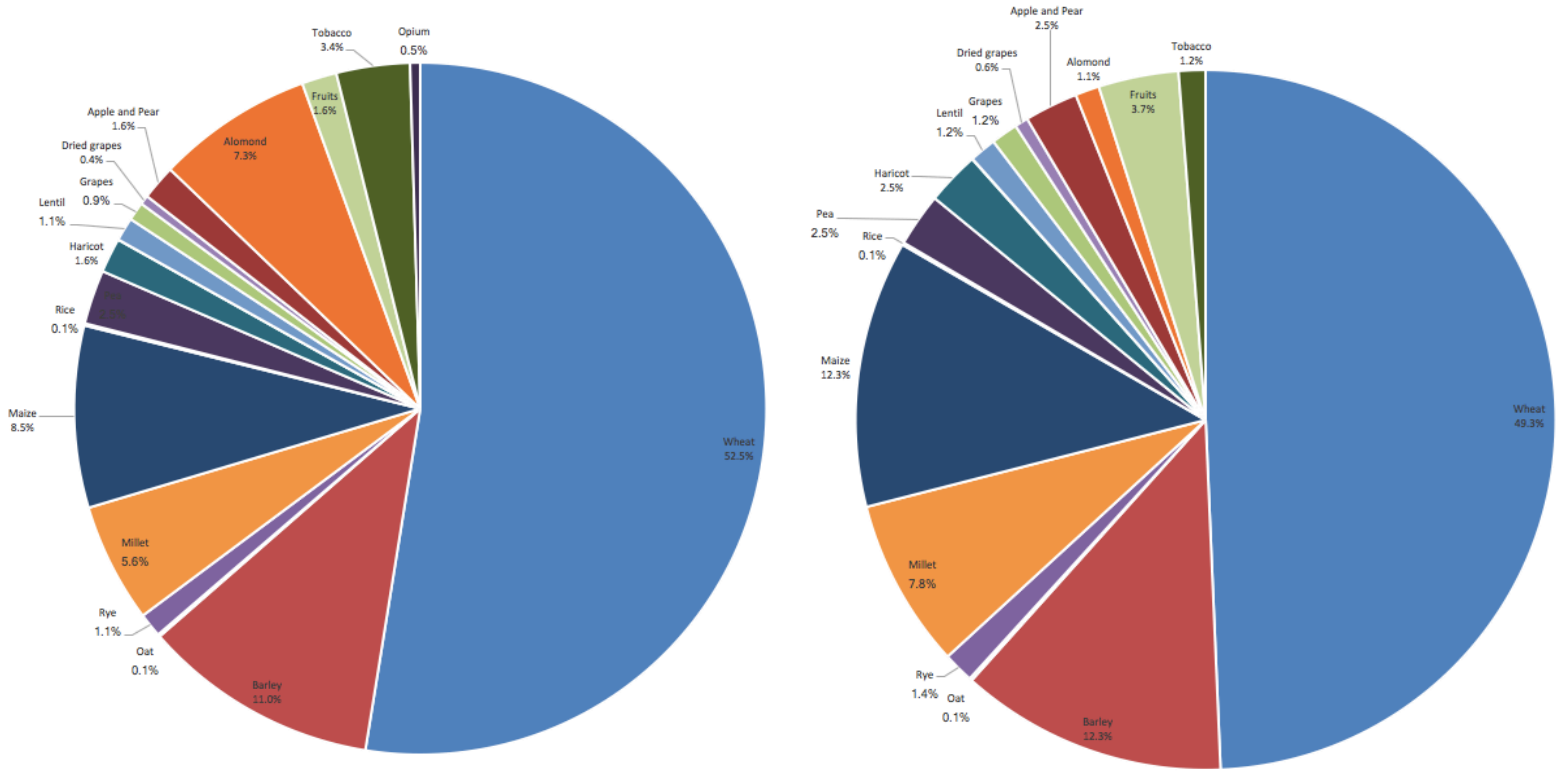


Chart M.4 Production Quantities (left) and Values (right) in the Sanjak of Tokat (late-1880s)

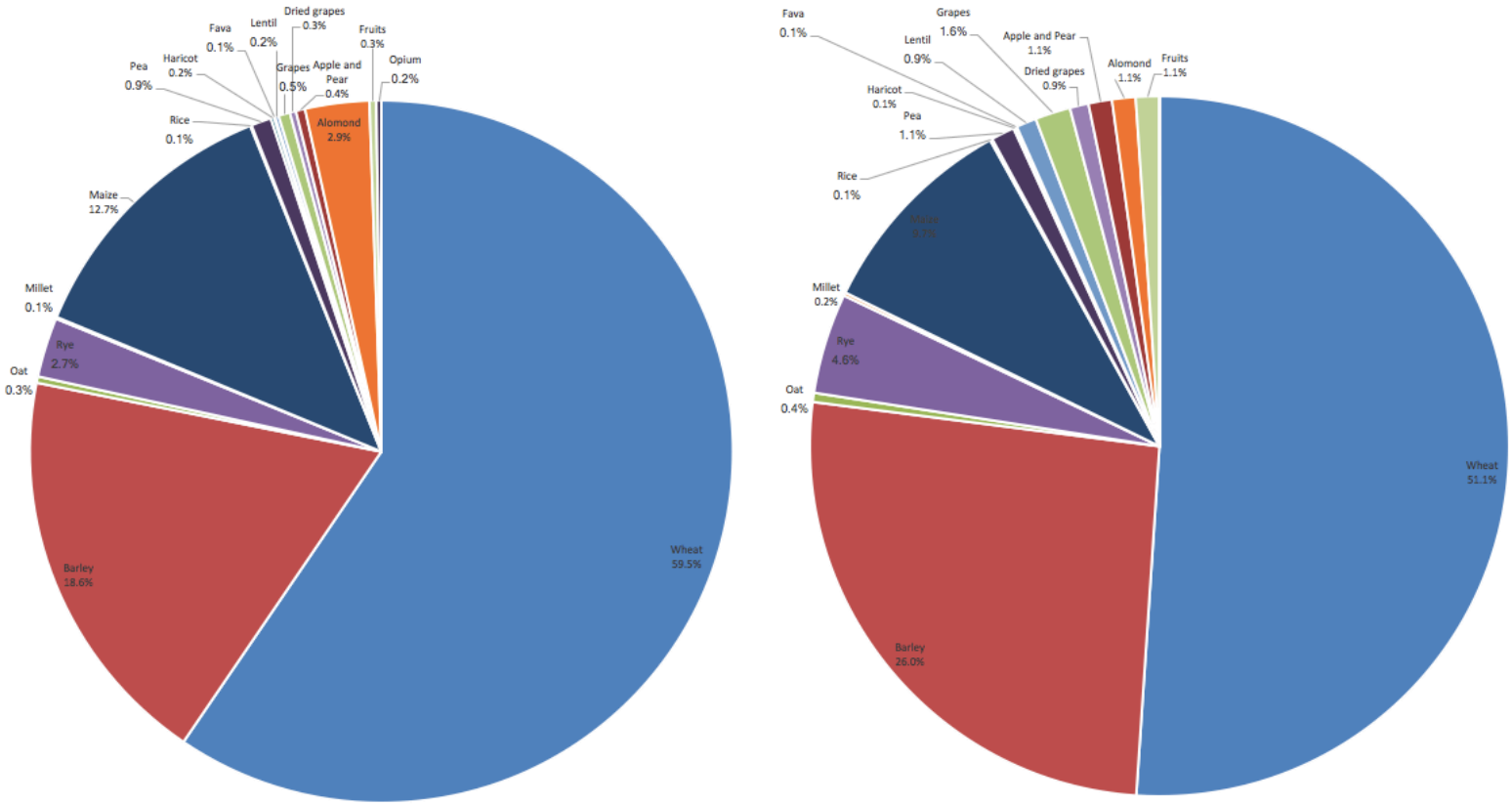


Chart M.5 Production Quantities (left) and Values (right) in the Sanjak of Sivas (late-1880s)

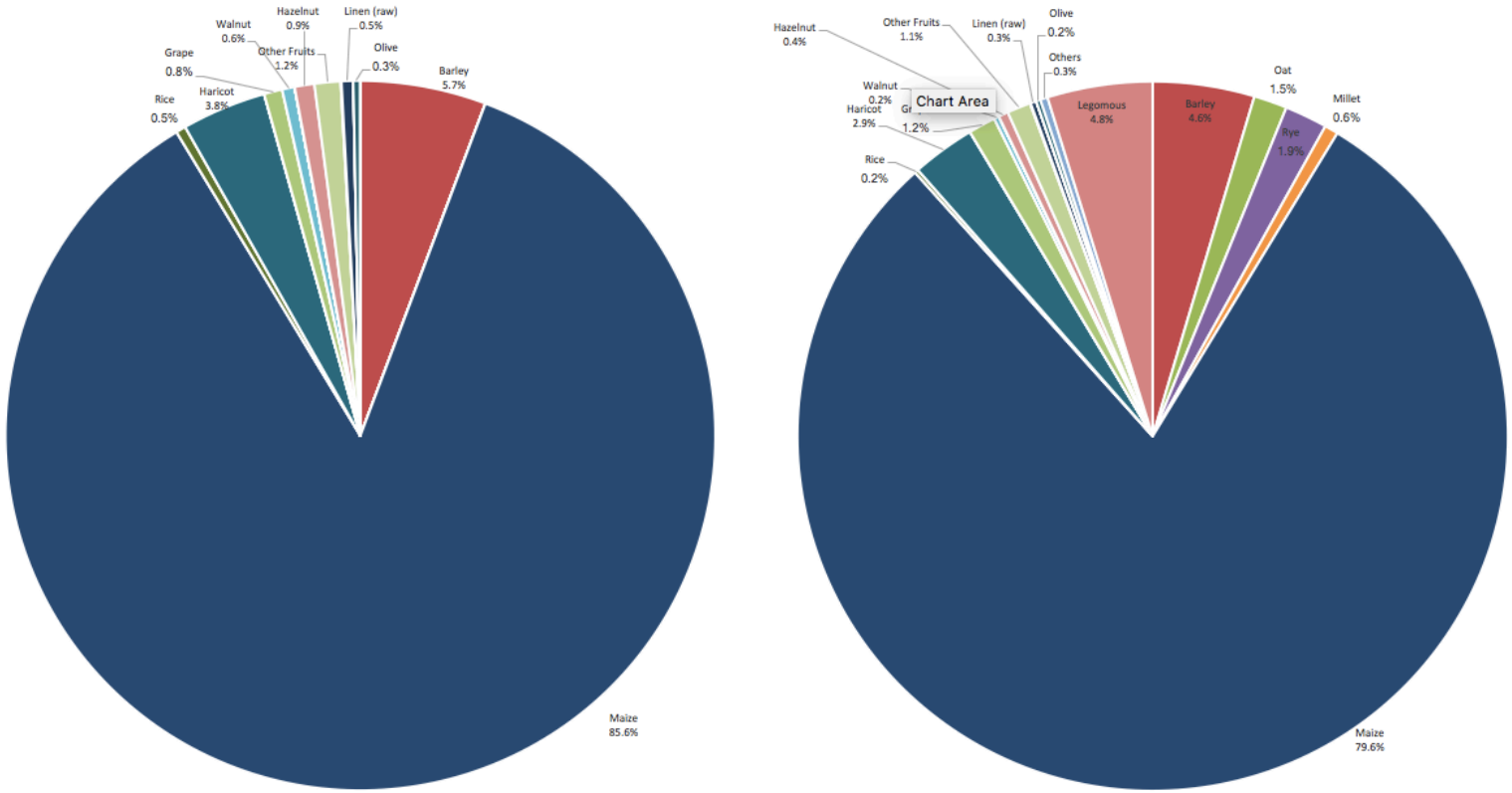


Chart M.6 Production Quantities (left) and Values (right) in the Sanjak of Lazistan (late-1880s)

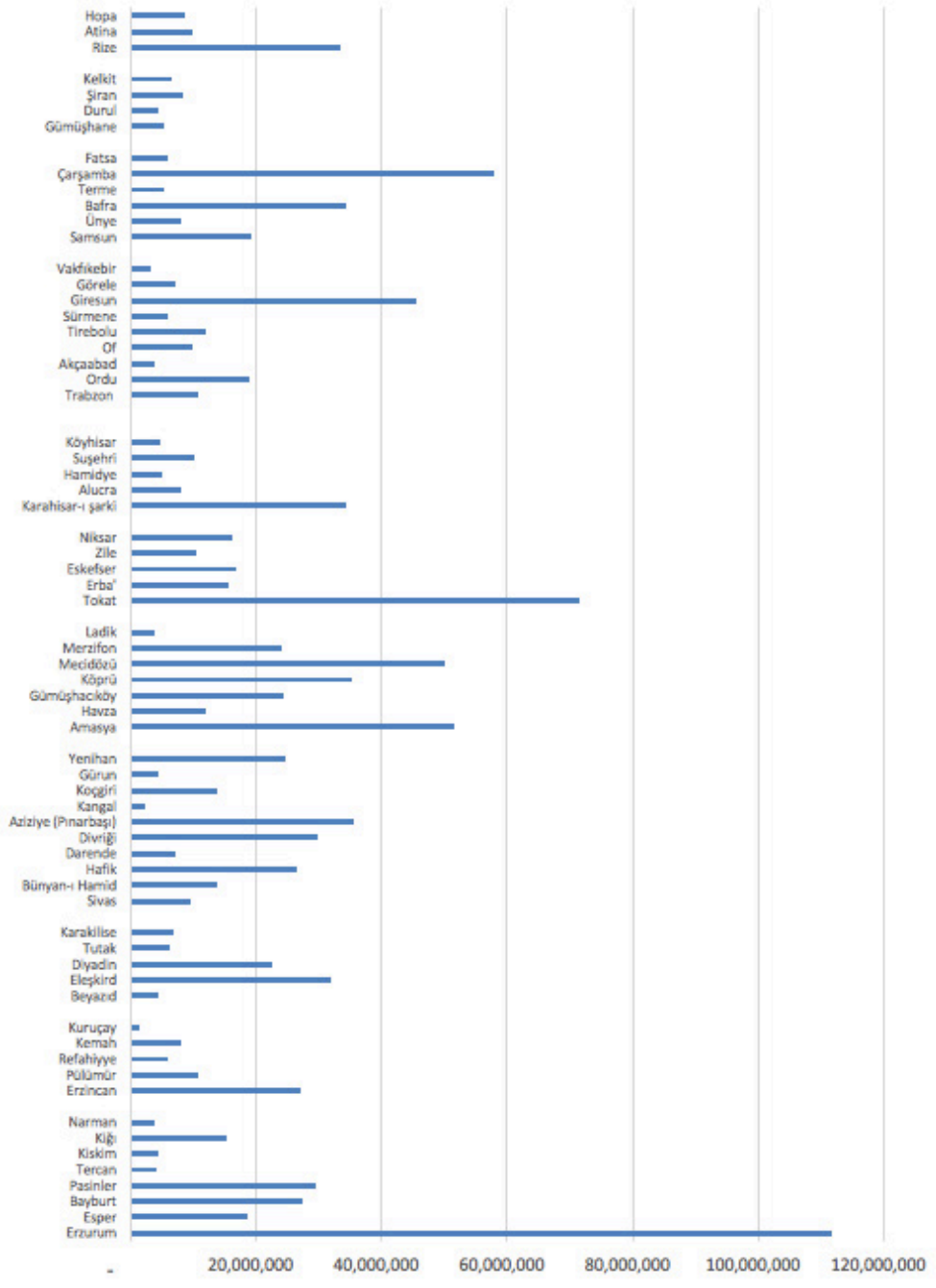


Figure M.1 Total Agricultural Production in Kilograms in 1909

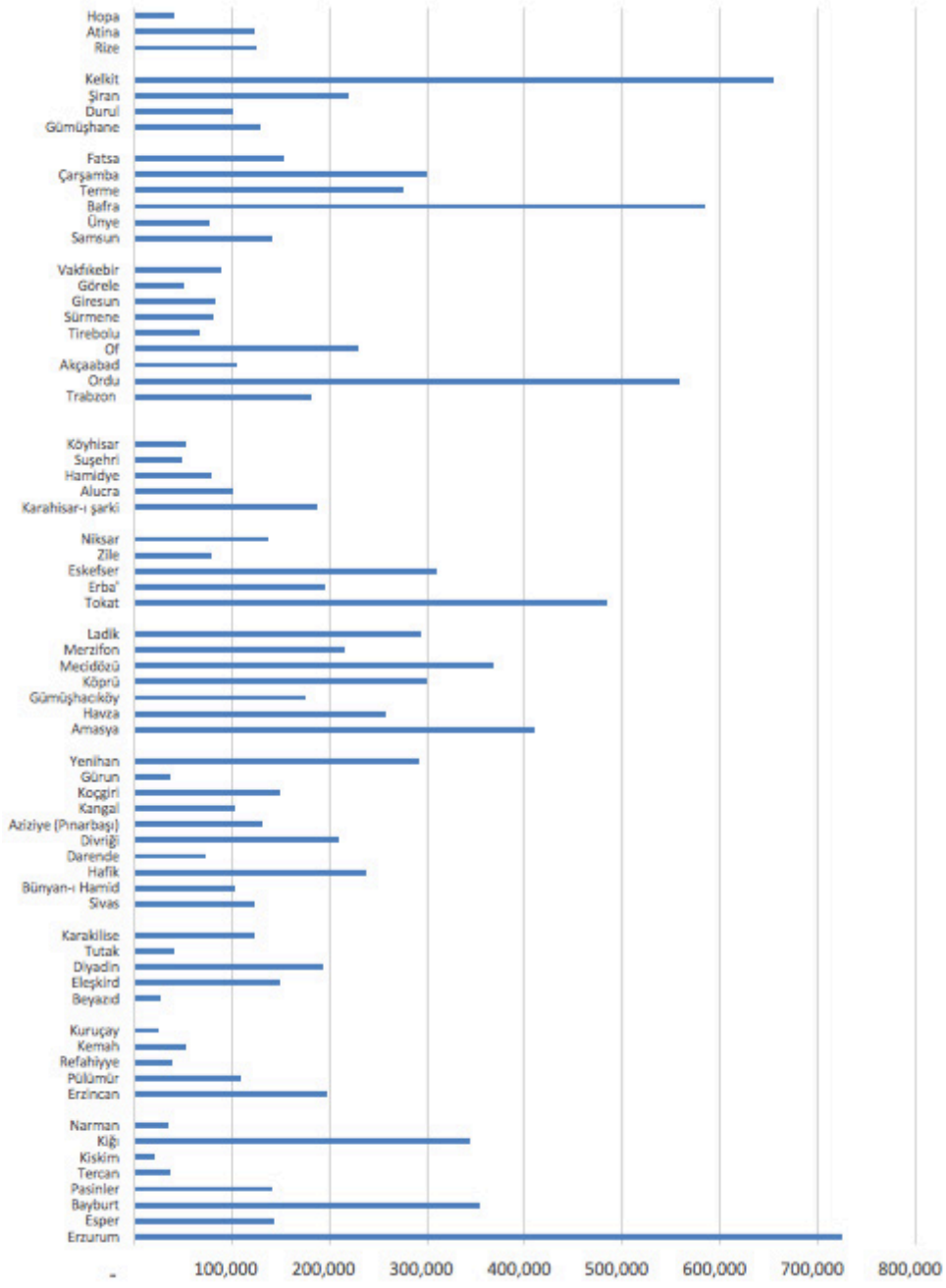


Figure M.2 Total Cultivation Area in *Dönüm*s in 1909

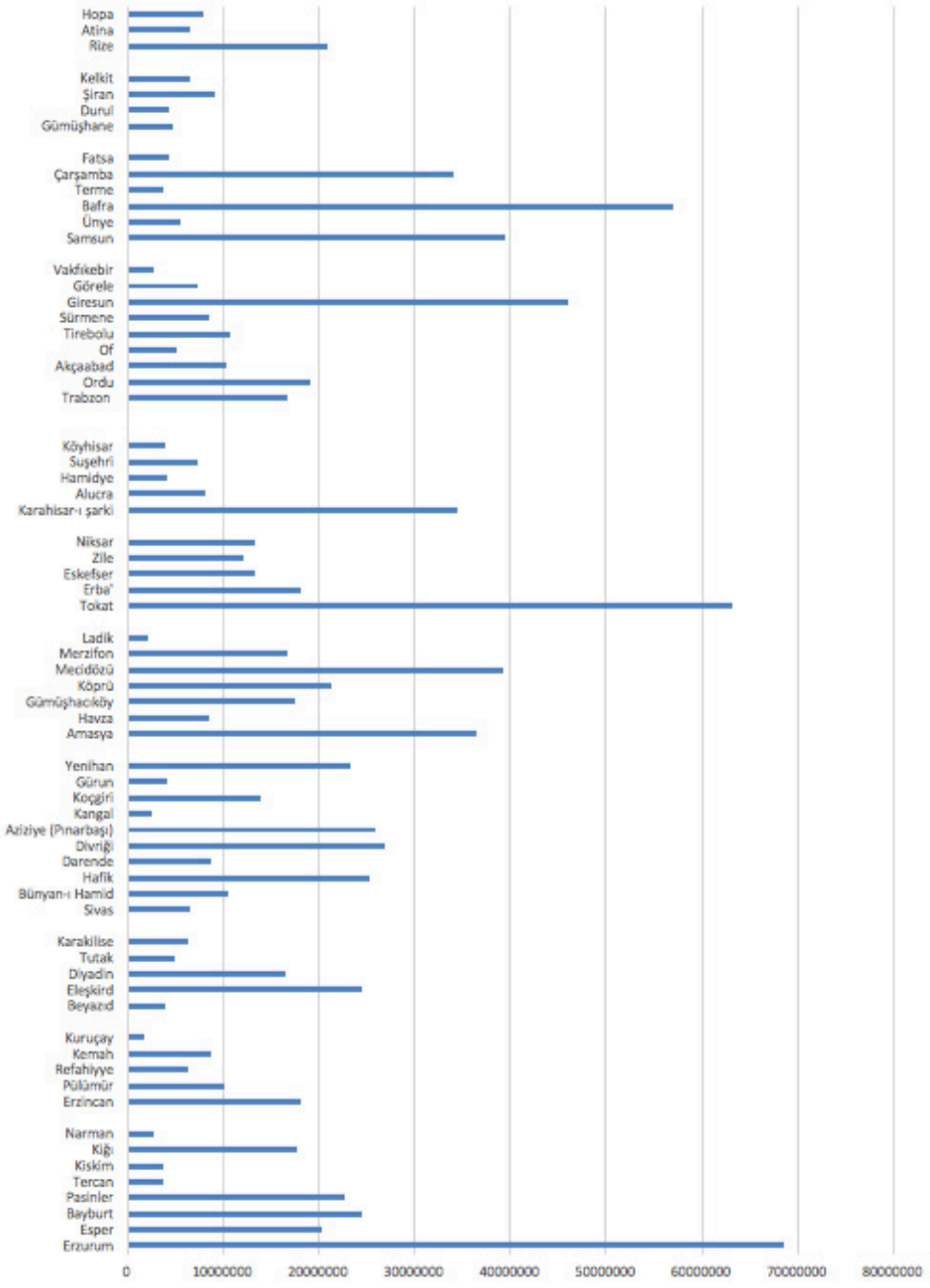


Figure M.3 Total Income in Piasters in 1909

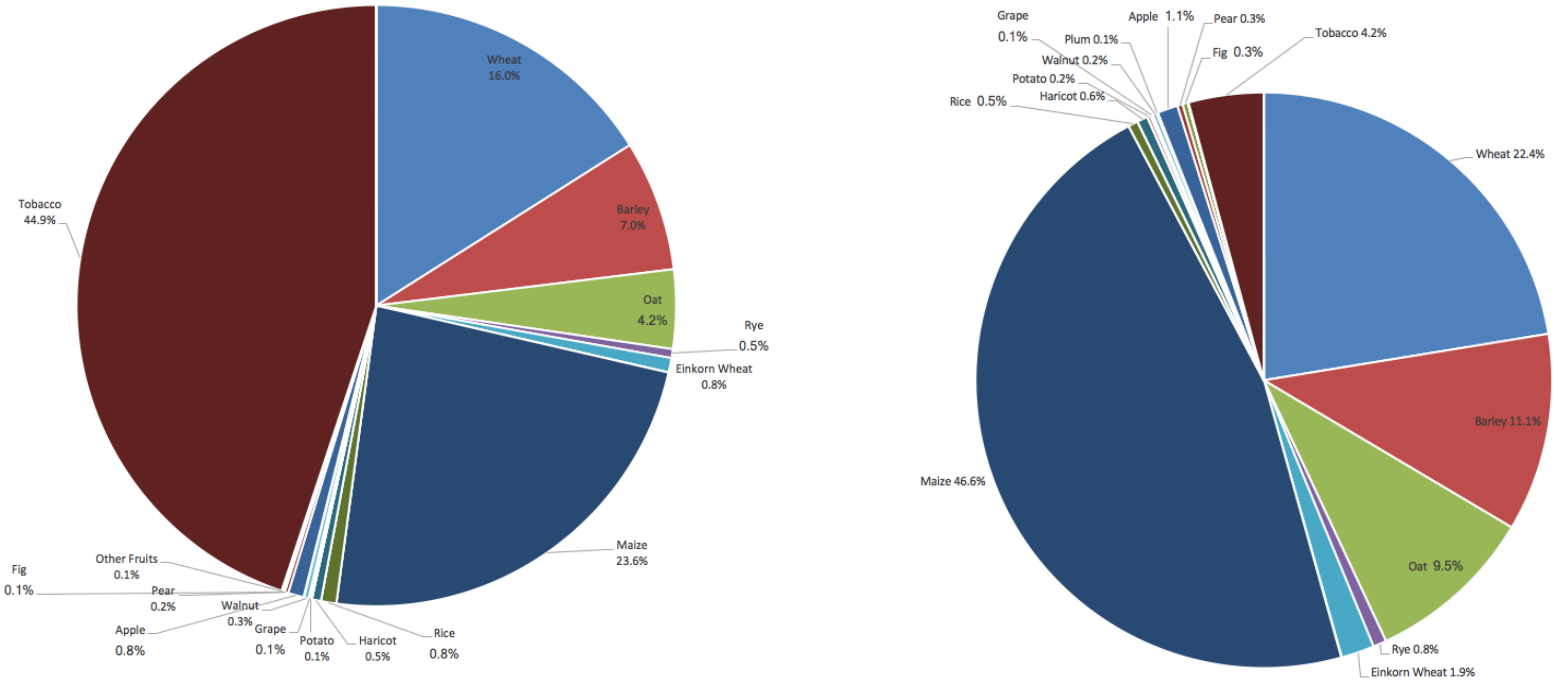


Chart M.7 Production Quantities (left) and Values (right) in the Sanjak of Canik (1909)

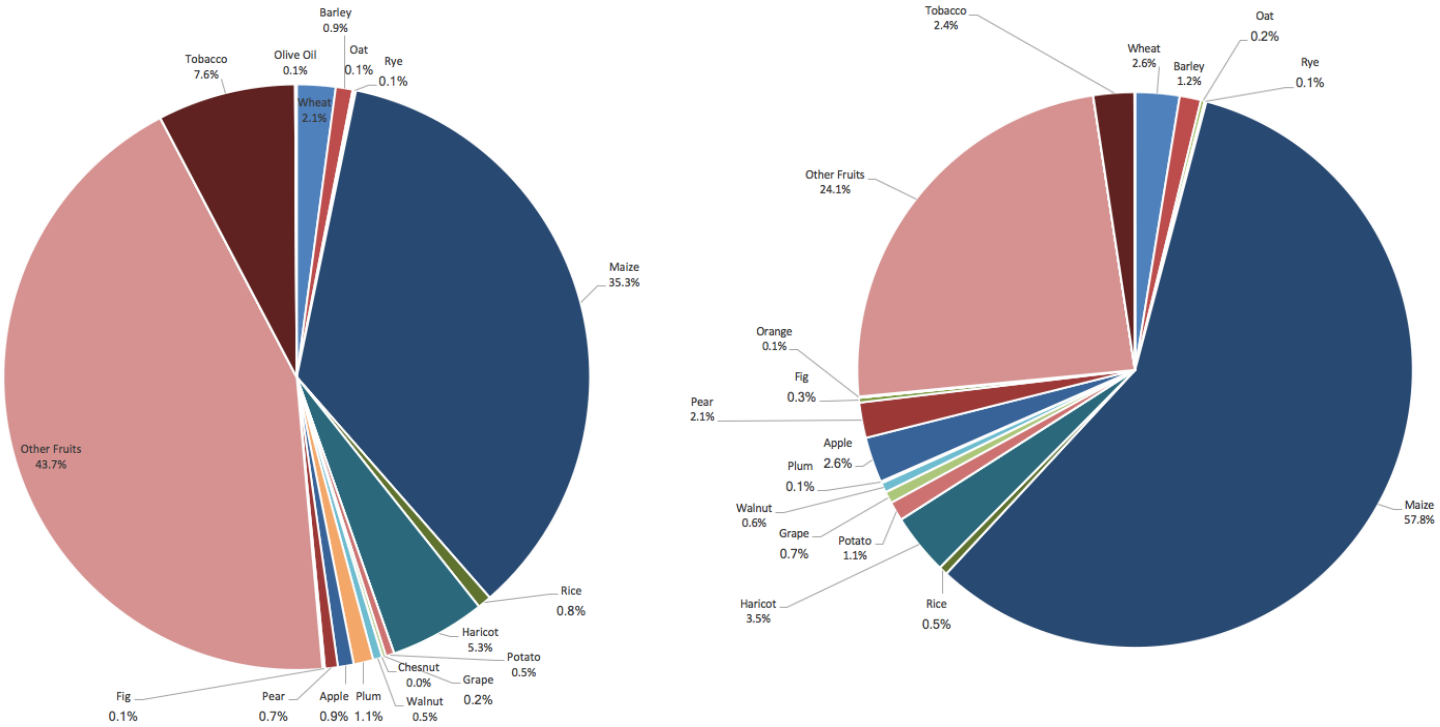


Chart M.8 Production Quantities (left) and Values (right) in the Sanjak of Trabzon (1909)

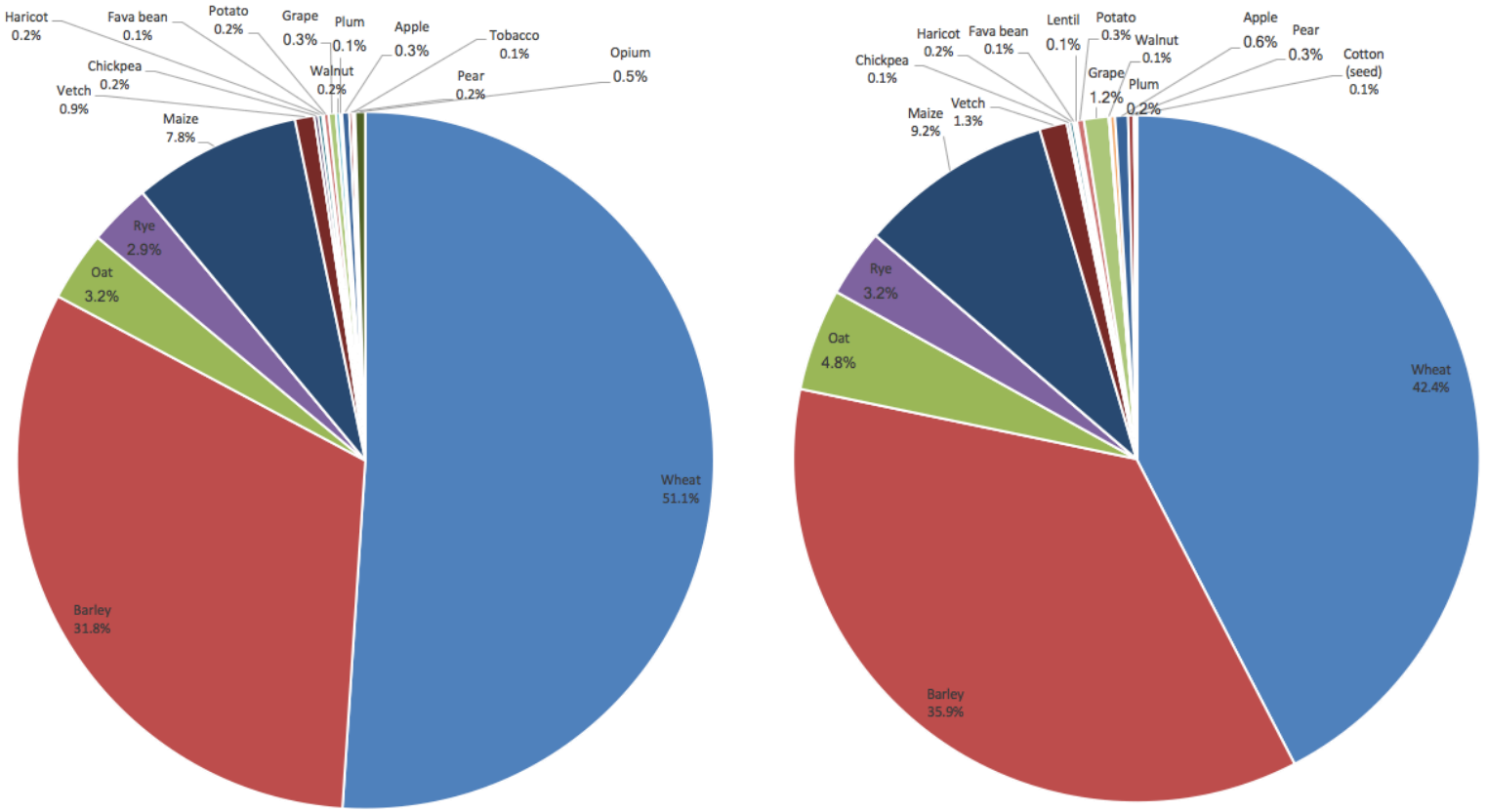


Chart M.9 Production Quantities (left) and Values (right) in the Sanjak of Amasya (1909)

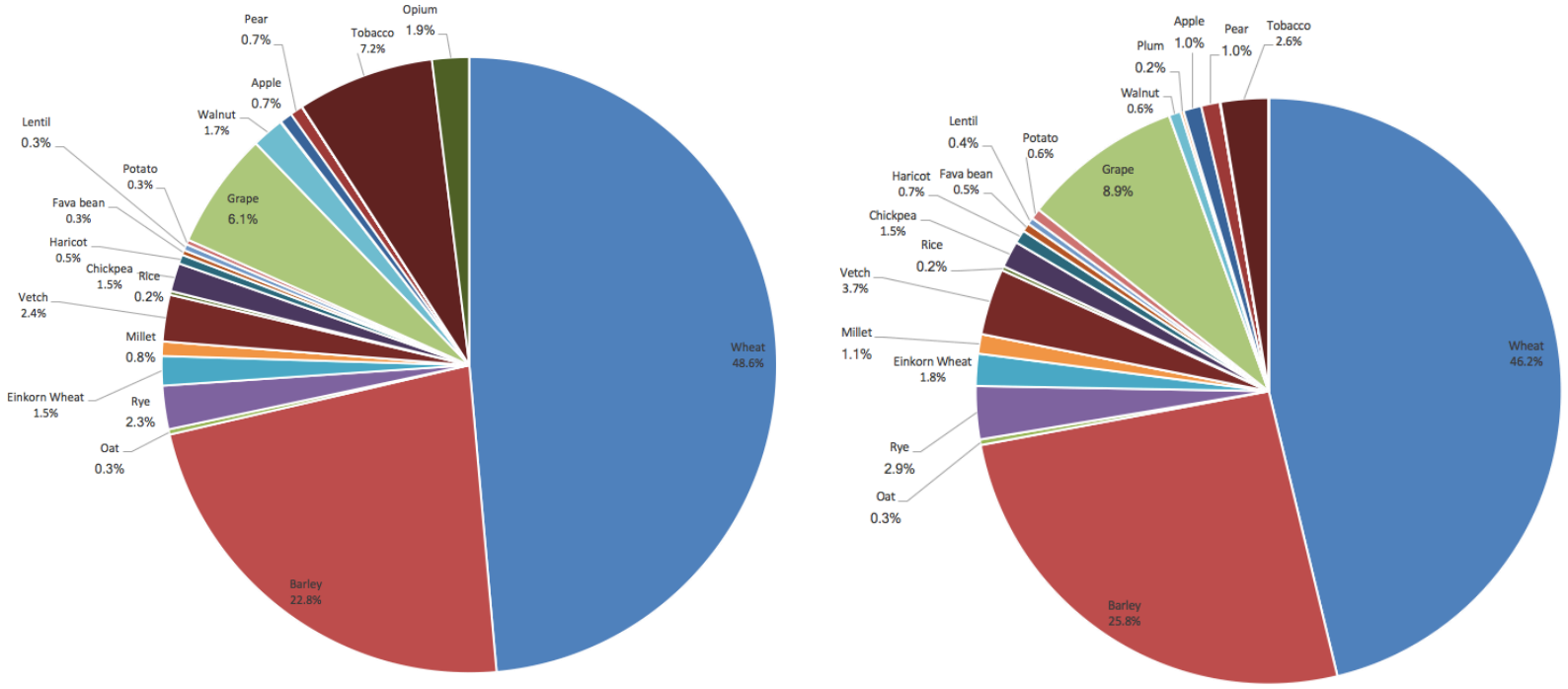


Chart M.10 Production Quantities (left) and Values (right) in the Sanjak of Tokat (1909)

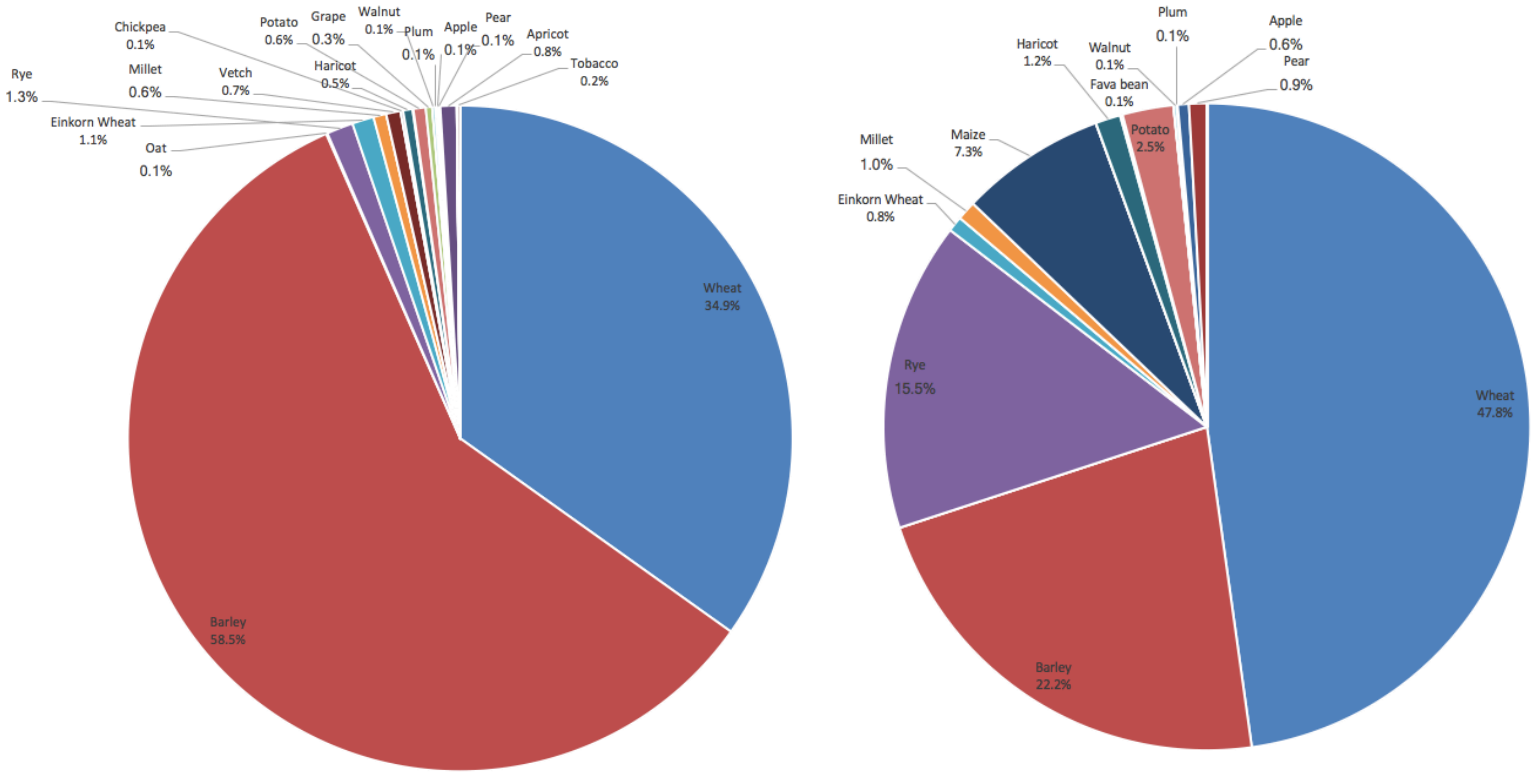


Chart M.11 Production Quantities (left) and Values (right) in the Sanjak of Karahisar (1909)

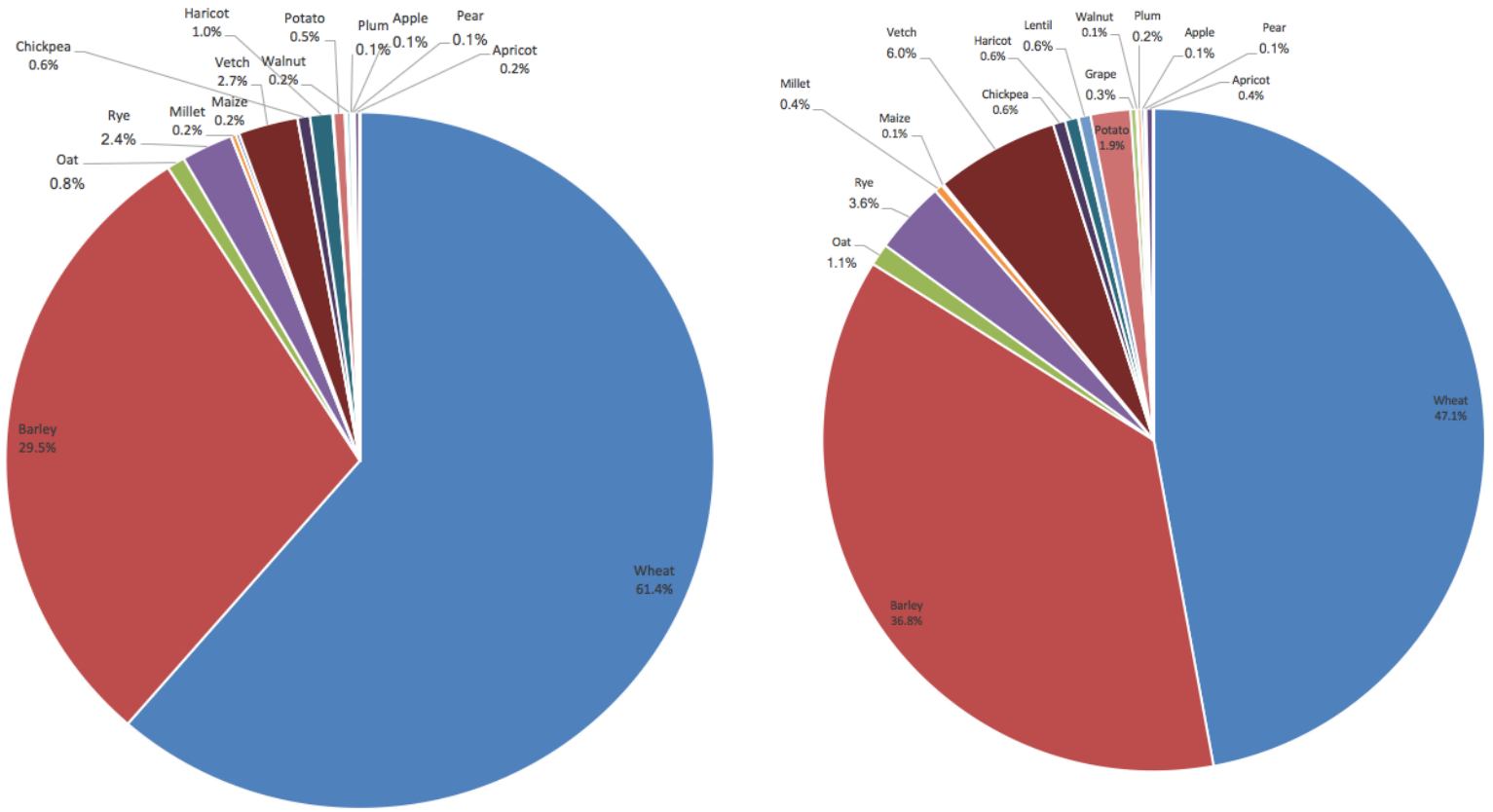


Chart M.12 Production Quantities (left) and Values (right) in the Sanjak of Sivas (1909)

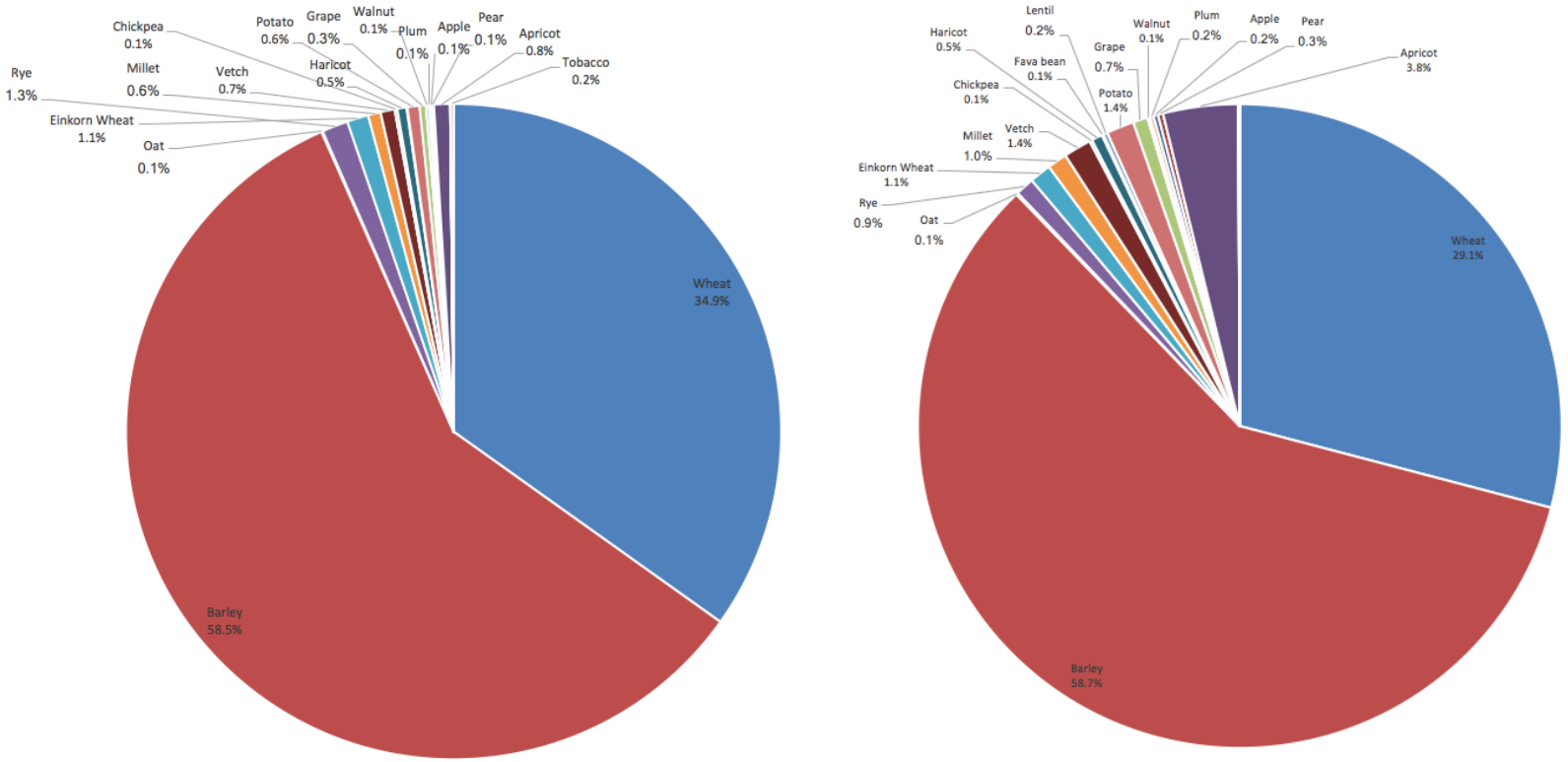


Chart M.13 Production Quantities (left) and Values (right) in the Sanjak of Karahisar-ı Şarki (1909)

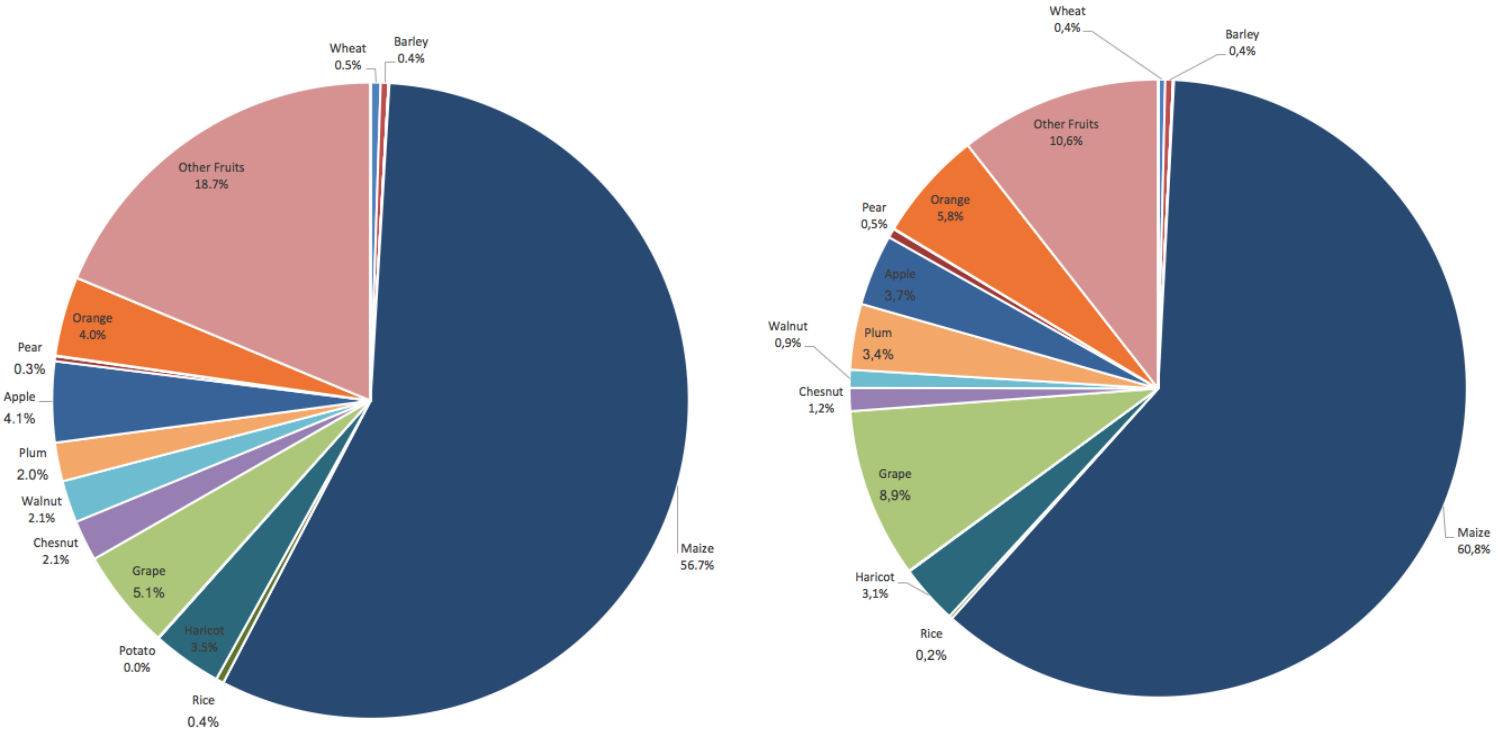


Chart M.14 Production Quantities (left) and Values (right) in the Sanjak of Lazistan (1909)

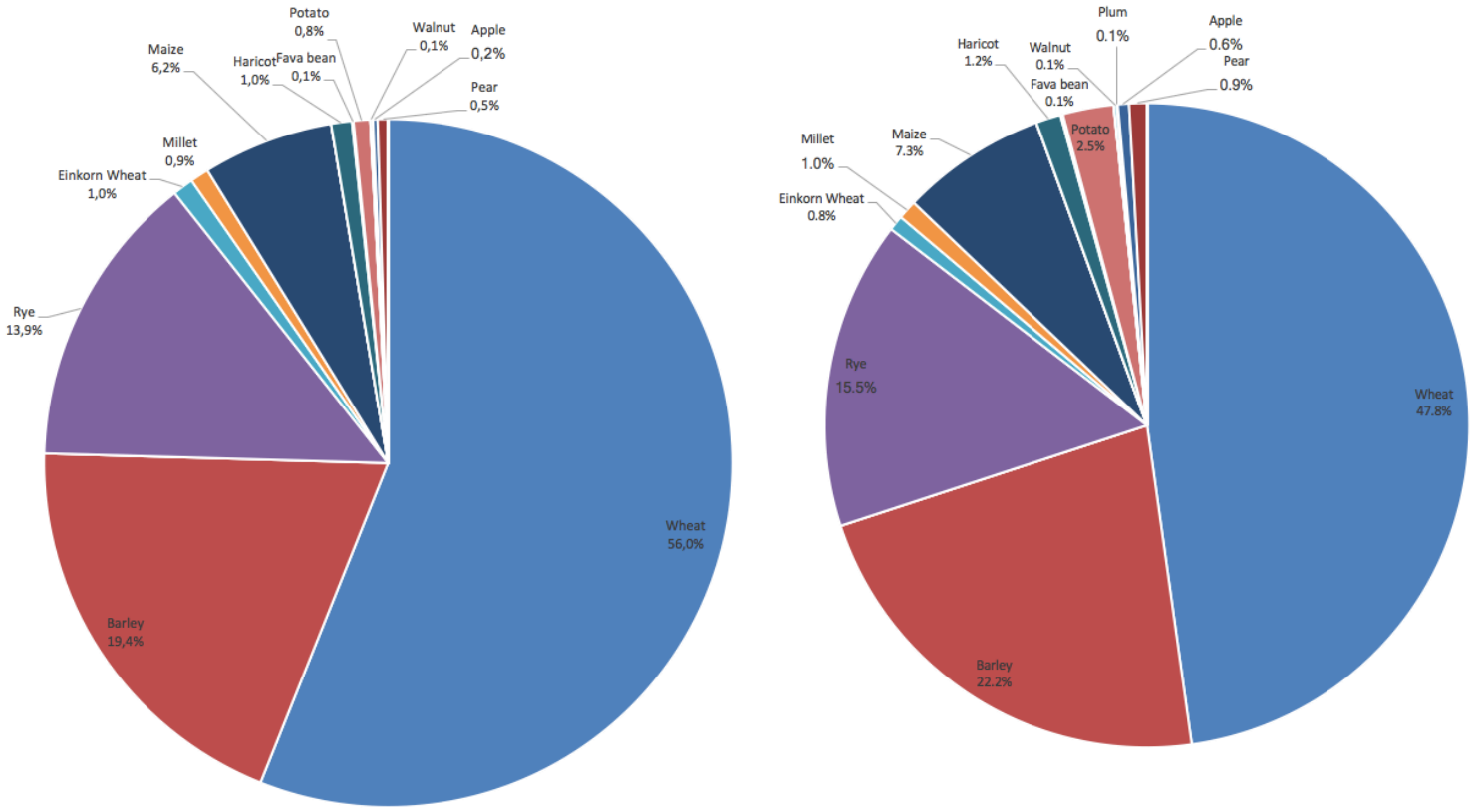


Chart M.15 Production Quantities (left) and Values (right) in the Sanjak of Gümüşhane (1909)

Figure M.4 Agricultural Production in Kilograms in the Late-1880s

Sanjak	Food Crops	Legumes	Fruits	Industrial Crops	Total
Erzurum	124,587,430	1,312,838	3,802,906	318,940	130,022,114
Erzincan	86,519,886	986,328	2,619,453	143,626	90,269,293
Beyazıd	25,460,685	21,169	189,234	283,531	25,954,619
Sivas	108,823,000	2,584,069	6,800,635	5,773	118,213,477
Amasya	72,351,683	4,641,054	34,126,337	80,184	111,199,258
Tokat	86,843,073	6,434,611	9,493,793	1,286,152	104,057,629
Karahisar-ı Şarki	34,331,608	2,623,623	3,637,149	1,540	40,593,919
Trabzon	95,377,051	6,411,940	5,274,940	1,837,990	108,901,921
Canik	93,919,969	635,620	155,820	4,302,900	99,014,309
Gümüşhane	14,666,757	63,480	32,260	2,450	14,764,947
Lazistan	27,845,966	910,390	602,120	154,240	29,512,716

Figure M.5 Value of Agricultural Production in Metallic Piasters in the Late-1880s

Sanjak	From Food Crops	From Legumes	From Fruits	From Industrial Crops	Total
Erzurum	94,634,179	1,778,325	3,108,989	217,206	99,738,699
Erzincan	72,860,354	780,474	1,219,833	93,500	74,954,162
Beyazıd	20,208,479	15,228	84,015	187,000	20,494,721
Sivas	149,563,463	2,071,876	7,146,882	364,776	159,146,998
Amasya	55,414,584	3,308,639	16,271,113	717,662	75,711,998
Tokat	72,501,736	4,828,945	10,894,630	3,584,978	91,810,289
Karahisar-ı Şarki	36,352,690	1,604,711	1,501,198	7,161	39,465,760
Trabzon	67,848,484	13,591,068	9,693,166	6,298,191	97,430,908
Canik	59,742,321	482,417	156,253	44,216,312	104,597,303
Gümüşhane	14,711,186	49,662	20,024	2,865	14,783,737
Lazistan	17,093,693	709,370	424,286	163,825	18,391,175

Figure M.6 Agricultural Production in Kilogram in 1909

Sanjak	Food Crops	Legumes	Fruits	Industrial Crops	Total
Erzurum	211,270,415	1,376,279	2,347,533	23,350	215,017,577
Erzincan	46,562,829	747,313	5,988,672	3,207	53,302,021
Beyazıd	71,624,115	473,278	12,188	65,774	72,175,355
Sivas	116,446,965	4,640,797	1,370,985	295	122,459,041
Amasya	194,475,421	1,619,855	4,743,766	189,902	201,028,944
Tokat	109,943,422	4,853,767	15,720,336	3,546,763	134,064,287
Karahisar-ı Şarki	57,566,173	1,466,932	3,320,287	29,354	62,382,746
Trabzon	74,947,586	5,595,308	36,646,807	2,900,599	120,090,300
Canik	126,687,977	1,079,542	3,031,314	5,750,647	136,549,480
Gümüşhane	22,817,741	947,776	399,637	-	24,165,154
Lazistan	32,036,291	1,625,235	18,159,608	2,181	51,823,315

Figure M.7 Value of Agricultural Production in Metallic Piasters in 1909

Sanjak	From Food Crops	From Legumes	From Fruits	From Industrial Crops	Total
Erzurum	161,846,661	791,660	1,293,050	–	163,931,371
Erzincan	41,761,646	571,893	2,442,565	–	44,776,104
Beyazıd	55,805,846	318,165	14,750	51,168	56,189,929
Sivas	143,336,370	3,151,900	985,537	27,600	147,501,407
Amasya	138,426,853	933,219	1,601,134	791,600	141,752,805
Tokat	94,561,736	3,357,899	10,997,965	10,974,636	119,892,236
Karahisar-ı Şarki	56,105,458	704,310	870,985	88,800	57,769,553
Trabzon	49,768,889	7,275,125	59,748,588	9,745,564	126,538,166
Canik	76,254,122	827,764	2,285,676	64,611,200	143,978,762
Gümüşhane	23,924,500	447,188	205,000	–	24,576,688
Lazistan	20,523,550	1,263,600	13,558,405	8,500	35,354,055

Bibliography

ARCHIVES

CADN; AMAE	Archives du Ministère des Affaires Etrangères, Centre des Archives Diplomatiques de Nantes, Nantes
Foreign Office	Foreign Office of the United Kingdom, London
OA	T.C. Cumhurbaşkanlığı Devlet Arşivleri Başkanlığı, Osmanlı Arşivleri Genel Müdürlüğü, Istanbul

COMMERCIAL REPORTS

Arnaud, H. "Receuil Consulaire de Trébizonde (1857)." Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1857.

————. "Receuil Consulaire de Trébizonde (1858)." Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1858.

————. "Receuil Consulaire de Trébizonde (1860)." Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1860.

————. "Receuil Consulaire de Trébizonde (1861)." Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1861.

Barker. "Report on the Trade of Samsoon for the Year 1861; and on the Corn Trade for Six Months ended June 30th 1862." London: Foreign Office of the United Kingdom, 1861-1862.

Bertrand. "Rapport Commercial de Trébizonde (1889)." Agence Consulaire de Trébizonde, AMAE, CADN, 1889.

Biliotti, Alfred. "Report by Consul Biliotti on the Town and Port of Samsoon, and on Circassian Colony in the District (1884)." London: Foreign Office of the United Kingdom, 1884.

————. "Report by Vice-Consul Biliotti on the Trade, Commerce and Navigation of the Port and Distinct of Trebizond for the Years of 1877-1878." London: Foreign Office of the United Kingdom, 1877-1878.

————. "Report on the Trade and Commerce for the Year 1878." London: Foreign Office of the United Kingdom, 1878.

————. "Report on the Trade and Commerce of the District of Trebizond for the Year 1884." London: Foreign Office of the United Kingdom, 1884.

————. "Report on the Trade and Commerce of Trebizond for the Year 1874." London: Foreign Office of the United Kingdom, 1874.

————. "Report on the Trade and Commerce of Trebizond for the Year 1875." London: Foreign Office of the United Kingdom, 1875.

————. "Report on the Trade, Commerce, and Navigation at Trebizond for the Year 1882." London: Foreign Office of the United Kingdom, 1882.

————. "Report on the Trade, Commerce, and Navigation at Trebizond for the Year 1883." London: Foreign Office of the United Kingdom, 1883.

————. "Report on the Trade, Commerce, and Navigation in the Vilayet of Trebizond from the Year 1873 to the Year 1882 Inclusive." London: Foreign Office of the United Kingdom, 1882.

————. "Report on the Trade, Commerce, and Navigation of the Port of Trebizond for the Year of 1881." London: Foreign Office of the United Kingdom, 1881.

————. "Reports on the Trade, Commerce and Navigation of the District of Trebizond for the Year 1879." London: Foreign Office of the United Kingdom, 1879.

————. "Supplementary Report for the Year 1873." London: Foreign Office of the United Kingdom, 1873.

Brant, James. "Remarks by Consul Henry Suter on the Trade of Trebizond for the Year 1833." London: Foreign Office of the United Kingdom, 1833.

————. "Report by Consul James Brant on the Trade of Trebizond for the Year 1832." London: Foreign Office of the United Kingdom, 1832.

————. "Report by Consul James Brant on the Trade of Trebizond for the Year 1834." London: Foreign Office of the United Kingdom, 1834.

————. "Report on the Trade of Trebizond for the Year 1840." London: Foreign Office of the United Kingdom, 1840.

Chayet, A. "Rapport Commercial de Trébizonde (1897)." Agence Consulaire de Trébizonde, AMAE, CADN, 1897.

————. "Rapport Commercial de Trébizonde (1898)." Agence Consulaire de Trébizonde, AMAE, CADN, 1898.

Cillière, Alphonse. "Rapport Commercial de Trébizonde (1895)." Agence Consulaire de Trébizonde, AMAE, CADN, 1895.

————. "Rapport Commercial de Trébizonde (1896)." Agence Consulaire de Trébizonde, AMAE, CADN, 1896.

Collaro, N. "Rapport Commercial de Kérassunde (1910)." Agence Consulaire de Trébizonde, AMAE, CADN, 1910.

————. "Rapport Commercial de Kérassunde et Ordou (1898)." Agence Consulaire de Trébizonde, AMAE, CADN, 1898.

————. "Rapport Commercial de Kérassunde et Ordou (1899)." Agence Consulaire de Trébizonde, AMAE, CADN, 1899.

————. "Rapport Commercial de Kérassunde et Ordou (1900)." Agence Consulaire de Trébizonde, AMAE, CADN, 1900.

————. "Rapport Commercial de Kérassunde et Ordou (1901)." Agence Consulaire de Trébizonde, AMAE, CADN, 1901.

————. "Rapport Commercial de Kérassunde et Ordou (1902)." Agence Consulaire de Trébizonde, AMAE, CADN, 1902.

————. "Rapport Commercial de Kérassunde et Ordou (1904)." Agence Consulaire de Trébizonde, AMAE, CADN, 1904.

————. "Rapport Commercial de Kérassunde et Ordou (1905-1906)." Agence Consulaire de Trébizonde, AMAE, CADN, 1905-1906.

Collomb, C. "Rapport Commercial de Trébizonde (1900)." Agence Consulaire de Trébizonde, AMAE, CADN, 1900.

————. "Rapport Commercial de Trébizonde (1902)." Agence Consulaire de Trébizonde, AMAE, CADN, 1902.

Contanze, Henri de. "Rapport Agricole Consulaire de l'Année (1899)." Agence Consulaire de Samsoun, AMAE, CADN, 1899.

————. "Rapport Commercial de Samsoun (1896)." Agence Consulaire de Samsoun, AMAE, CADN, 1896.

————. "Rapport Commercial de Samsoun (1897)." Agence Consulaire de Samsoun, AMAE, CADN, 1897.

————. "Rapport Commercial de Samsoun (1899)." Agence Consulaire de Samsoun, AMAE, CADN, 1899.

————. "Rapport Commercial de Samsoun (1900)." Agence Consulaire de Samsoun, AMAE, CADN, 1900.

————. "Rapport Commercial de Samsoun (1901)." Agence Consulaire de Samsoun, AMAE, CADN, 1901.

————. "Rapport Commercial de Samsoun (1902)." Agence Consulaire de Samsoun, AMAE, CADN, 1902.

————. "Rapport Commercial de Samsoun (1905-1906)." Agence Consulaire de Samsoun, AMAE, CADN, 1905-1906.

————. "Rapport Commercial de Tirépoli (1898)." Agence Consulaire de Samsoun, AMAE, CADN, 1898.

————. "Rapport Financier de l'Année (1899)." Agence Consulaire de Samsoun, AMAE, CADN, 1899.

————. "Rapport Maritime de Samsoun (1903)." Agence Consulaire de Samsoun, AMAE, CADN, 1903.

————. "Rapport sur l'Agriculture de la Province de Samsoun pendant l'Exercice 1904." Agence Consulaire de Samsoun, AMAE, CADN, 1904.

————. "Rapport sur les Produits d'Importation et d'Exportation de la Rade de Samsoun (1903)." Agence Consulaire de Samsoun, AMAE, CADN, 1903.

Doulcet, Numa. "Rapport Commercial de Samsoun (1876)." Agence Consulaire de Samsoun, AMAE, CADN, 1876.

————. "Rapport Commercial de Samsoun (1878)." Agence Consulaire de Samsoun, AMAE, CADN, 1878.

————. "Rapport Commercial de Samsoun (1879)." Agence Consulaire de Samsoun, AMAE, CADN, 1879.

————. "Rapport Commercial de Samsoun (1881)." Agence Consulaire de Samsoun, AMAE, CADN, 1881.

————. "Rapport Commercial de Samsoun (1887)." Agence Consulaire de Samsoun, AMAE, CADN, 1887.

————. "Rapport Commercial de Samsoun (1890)." Agence Consulaire de Samsoun, AMAE, CADN, 1890.

Fawcett, Henry. "Report on the Trade and Commerce of Constantinople for the Years 1887 and 1888." London: Foreign Office of the United Kingdom, 1888.

Fornier. "Rapport Commercial de Trébizonde (1905-1906)." Agence Consulaire de Trébizonde, AMAE, CADN, 1905-1906.

Gasselin, E. "Rapport Commercial de Trébizonde (1890)." Agence Consulaire de Trébizonde, AMAE, CADN, 1890.

————. "Rapport Commercial de Trébizonde (1893)." Agence Consulaire de Trébizonde, AMAE, CADN, 1893.

Genna, G. "Rapport Commercial de Kérassunde et Ordou (1890)." Agence Consulaire de Trébizonde, AMAE, CADN, 1890.

————. "Rapport Commercial de Kérassunde et Ordou (1894)." Agence Consulaire de Trébizonde, AMAE, CADN, 1894.

————. "Rapport Commercial de Kérassunde et Ordou (1895)." Agence Consulaire de Trébizonde, AMAE, CADN, 1895.

Grenard, G. "Rapport Commercial de Trébizonde (1903)." Agence Consulaire de Trébizonde, AMAE, CADN, 1903.

————. "Rapport Commercial de Trébizonde (1904)." Agence Consulaire de Trébizonde, AMAE, CADN, 1904.

Guarracino. "Remarks on the Trade and Navigation of Samsoon for 1857." London: Foreign Office of the United Kingdom, 1857.

————. "Report on the Trade of Samsoon during the Year 1856." London: Foreign Office of the United Kingdom, 1856.

————. "Report on Trade and Navigation of Samsoon for the Year 1858." London: Foreign Office of the United Kingdom, 1858.

Kühn. "Report by Kühn on the Trade of Samsoon for the Year 1858." London: Foreign Office of the United Kingdom, 1858.

Longworth, Henry. "Report on the Trade and Commerce of the Trebizond and Sivas Vilayets for the Year 1899." London: Foreign Office of the United Kingdom, 1899.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1886." London: Foreign Office of the United Kingdom, 1886.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1887." London: Foreign Office of the United Kingdom, 1887.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1888." London: Foreign Office of the United Kingdom, 1888.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1889." London: Foreign Office of the United Kingdom, 1889.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1890." London: Foreign Office of the United Kingdom, 1890.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1891." London: Foreign Office of the United Kingdom, 1891.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1892." London: Foreign Office of the United Kingdom, 1892.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1893." London: Foreign Office of the United Kingdom, 1893.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1894." London: Foreign Office of the United Kingdom, 1894.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1895." London: Foreign Office of the United Kingdom, 1895.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1896." London: Foreign Office of the United Kingdom, 1896.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1900." London: Foreign Office of the United Kingdom, 1900.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1901." London: Foreign Office of the United Kingdom, 1901.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1903." London: Foreign Office of the United Kingdom, 1903.

————. "Report on the Trade and Commerce of the Trebizond Vilayet for the Year 1909." London: Foreign Office of the United Kingdom, 1909.

————. "Report on the Trade and Commerce of Trebizond and Samsoon for the Year 1885." London: Foreign Office of the United Kingdom, 1885.

————. "Report on the Trade of the Trebizond Vilayet for the Year 1898." London: Foreign Office of the United Kingdom, 1898.

Maunsell, Captain. "Reports on the Trade and Commerce of the Trebizond and Sivas Vilayets for the Year 1897 b-Sivas Vilayet." London: Foreign Office of the United Kingdom, 1897.

Middleton, R.D. "Remarks on the Weather at Trebizond in November and December 1831 by Master of the Schooner Syeed Khan." London: Foreign Office of the United Kingdom, 1831.

Outray, Adémie. "Extrait d'un Rapport sur la Province du Djanik (fait par Adémie Outray Chancelier Honoreux du France à Trébizonde)." Agence Consulaire de Samsoun, Tabacs 1844 à 1847, 605 PO/1, AMAE, CADN, 1847.

Palgrave, Gifford. "Report on Anatolian Coast, and the Corresponding Inland Districts, Between the Longitudes of Sinope and Trebizond, in the Summer of the Year 1869." London: Foreign Office of the United Kingdom, 1869.

————. "Report on the Provinces of Trebizond, Sivas, Kastemouni, and Part of Angora for the Year 1867." London: Foreign Office of the United Kingdom, 1867.

————. "Report on the Trade and Commerce of Trebizond During the Year 1872." London: Foreign Office of the United Kingdom, 1872.

————. "Report on the Trade and Commerce of Trebizond During the Year 1873." London: Foreign Office of the United Kingdom, 1873.

————. "Report on the Trade and Commerce of Trebizond for the Year 1869." London: Foreign Office of the United Kingdom, 1869.

————. "Report on the Trade and Commerce of Trebizond, Black Sea for the year 1870." London: Foreign Office of the United Kingdom, 1870.

Paulis, Jules. "Receuil Consulaire de Samsoun, Sinope et Kérassounde (1856)." Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1856.

————. "Receuil Consulaire de Trébizonde (1855)." Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1855.

————. "Receuil Consulaire de Trébizonde (1856)." Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1856.

————. "Receuil Consulaire de Trébizonde (1857)." Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1857.

Querry, M.A. "Rapport Commercial de Trébizonde (1887)." Agence Consulaire de Trébizonde, AMAE, CADN, 1887.

"Rapport Commercial de Sivas (1866)." Agence Consulaire de Sivas, AMAE, CADN, 1866.

Reboul, L. "Receuil Consulaire de Trébizonde (1865)." Brussels: Ministre des Affaires Étrangères du Royaume de Belgique, 1865.

Satow, Harold Eustace. "Report on the Trade and Commerce of the Vilayet of Trebizond for the Year 1912." London: Foreign Office of the United Kingdom, 1912.

Schéfer, M. Jules. "Renseigement Concernant la Province de Trébizonde." In *Enquête Agricole: Quatrième Série Document Recueillis à l'Entranger*. Paris: Imprimerie Impériale, 1868.

Séon, M. "Commerce de Sivas." Agence Consulaire de Sivas, AMAE, CADN, 1888.

Spradaro, Alfred. "Rapport Commercial de Samsoun (1892)." Agence Consulaire de Samsoun, AMAE, CADN, 1892.

————. "Rapport Commercial de Samsoun (1893)." Agence Consulaire de Samsoun, AMAE, CADN, 1893.

————. "Rapport Commercial de Samsoun (1894)." Agence Consulaire de Samsoun, AMAE, CADN, 1894.

Stevens, P. "Report on the Trade and Commerce of Odessa for the Year 1891." London: Foreign Office of the United Kingdom, 1891.

Stevens, Richard White. "Report by Consul Stevens on the Trade of Trebizond for the Year 1841." London: Foreign Office of the United Kingdom, 1841.

————. "Report by Consul Stevens on the Trade of Trebizond for the Year 1842." London: Foreign Office of the United Kingdom, 1842.

————. "Report on the Fair of Zilleh for the Year 1840." London: Foreign Office of the United Kingdom, 1840.

————. "Report on the Trade of Djanik for the Year 1839." London: Foreign Office of the United Kingdom, 1839.

————. "Report on the Trade of Trebizond during the Half-year Ending 30th June, 1860." London: Foreign Office of the United Kingdom, 1860.

————. "Report on the Trade of Trebizond during the Year 1858." London: Foreign Office of the United Kingdom, 1858.

————. "Report on the Trade of Trebizond for the Year 1841." London: Foreign Office of the United Kingdom, 1841.

————. "Report on the Trade of Trebizond for the Year 1843." London: Foreign Office of the United Kingdom, 1843.

————. "Report on the Trade of Trebizond for the Year 1844." London: Foreign Office of the United Kingdom, 1844.

————. "Report on the Trade of Trebizond for the Year 1854." London: Foreign Office of the United Kingdom, 1854.

————. "Report on the Trade of Trebizond for the Year 1856." London: Foreign Office of the United Kingdom, 1856.

————. "Report on the Trade of Trebizond for the Year 1859." London: Foreign Office of the United Kingdom, 1859.

Steward, C.E. "Report on the Trade and Commerce of the Consular District of Odessa for the Year 1893." London: Foreign Office of the United Kingdom, 1893.

Suter, Henry. "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1835." London: Foreign Office of the United Kingdom, 1835.

————. "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1837." London: Foreign Office of the United Kingdom, 1837.

————. "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1838." London: Foreign Office of the United Kingdom, 1838.

————. "Report by Consul Henry Suter on the Trade of Trebizond for the Year 1839." London: Foreign Office of the United Kingdom, 1839.

————. "Report on the Trade of Trebizond for the Year 1839." London: Foreign Office of the United Kingdom, 1839.

————. "Report on the Trade of Trebizond for the Year 1840." London: Foreign Office of the United Kingdom, 1840.

Waugh. "Report on the Trade of Constantinople for the Year 1902." London: Foreign Office of the United Kingdom, 1902.

ARTICLES

"Agriculture Nouvelles Diverses (April 11, 1896)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 11, 1896.

"Agriculture Nouvelles Diverses (December 13, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, December 13, 1890.

"Agriculture Nouvelles Diverses (February 2, 1897)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, February 2, 1897.

"Aristakès Effendi Azarian." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 22, 1897.

"Bulletin Commercial (July 17, 1856)." *Journal de Constantinople (Echo de l'Orient)*, July 17, 1856.

"Bulletin Commercial Hebdomadaire (June 5, 1886)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 5, 1886.

"Convention entre la Turquie et l'Autriche pour Regler la Transmission des Dépèches Télègraphiques." *Journal de Constantinople (Echo de l'Orient)*, December 5, 1857.

"Courtage en Turquie (November 10, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 10, 1888.

"Courtage en Turquie (November 24, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 24, 1888.

"De la Tolérance de Chargement." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 27, 1908.

"Faits et Notices (April 19, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 19, 1890.

"Faits et Notices (April 20, 1901)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 20, 1901.

"Faits et Notices (April 29, 1893)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 29, 1893.

"Faits et Notices (December 9, 1893)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, December 9, 1893.

"Faits et Notices (January 30, 1897)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, January 30, 1897.

"Faits et Notices (July 4, 1896) ". *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 4, 1896.

"Faits et Notices (March 23, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 23, 1889.

"Faits et Notices (May 20, 1893)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 20, 1893.

"Faits et Notices (September 27, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 27, 1890.

"Faits et Notices (September 28, 1899)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 28, 1899.

Kypriotti. "On Nous Écrit de Trébizonde: Trébizonde, 28 Septembre." *Journal de Constantinople (Echo de l'Orient)*, October 6, 1858.

"L'Approvisionnement du Blé de la Capitale." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 26, 1887.

"L'Importation des Blés." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 19, 1887.

"L'Usure et ses Effets." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 6, 1890.

"La Banque Agricole (March 26, 1892)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 26, 1892.

"La Banque Agricole (November 19, 1892)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 19, 1892.

"La Banque Agricole (October 20, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 20, 1888.

"La Culture de Tabac en Turquie." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 23, 1904.

"La Minoterie Ottomane (February 6, 1909)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, February 6, 1909.

"La Minoterie Ottomane (January 25, 1908)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, January 25, 1908.

"La Minoterie Ottomane (October 26, 1907)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 26, 1907.

"La Recolte du Blé." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 25, 1897.

"La Semaine Revue Commerciale (August 11, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 11, 1888.

"La Semaine Revue Commerciale (August 18, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 18, 1888.

"La Semaine Revue Commerciale (August 25, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 25, 1888.

"La Semaine Revue Commerciale (February 11, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, February 11, 1888.

"La Semaine Revue Commerciale (July 28, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 28, 1888.

"La Semaine Revue Commerciale (March 10, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 10, 1888.

"La Semaine Revue Commerciale (November 11, 1887)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 11, 1887.

"La Semaine Revue Commerciale (September 1, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 1, 1888.

"Le Commerce à Trébizonde." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 2, 1892.

"Le Courtage." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 15, 1890.

"Le Droit de Douane Intérieur." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 2, 1902.

"Le Hannetonage." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 29, 1897.

"Le Kaza d'Ordou." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 5, 1890.

"Le Tabac." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 20, 1888.

"Le Transport des Blés." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 10, 1890.

"Le Vilayet d'Ankara (April 18, 1896)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 18, 1896.

"Les Blés d'Amerique ". *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 30, 1887.

"Les Blés Sélectionnés." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 7, 1905.

"Les Bons Blés de Semence." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 3, 1906

"Les Bourses de Commerce." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 21, 1891.

"Les Courtiers." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 31, 1890.

"Les Farines (April 10, 1856)." *Journal de Constantinople (Echo de l'Orient)*, April 10, 1856.

"Les Vins en Turquie." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 5, 1896.

"Mouvement du Port (January 23, 1867)." *La Turquie*, January 23, 1867.

"Mouvement du Port (September 18, 1866)." *La Turquie*, September 18, 1866.

"Nos Provinces (Trébizonde, le 26 Mars)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 9, 1887.

"Nouvelles des Provinces (June 3, 1899)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 3, 1899.

"Nouvelles des Provinces (May 20, 1899)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 20, 1899.

"Opérations à Terme sur les Marchandises." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 4, 1892.

"Panification et Fixation du Prix du Pain." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 5, 1895.

"Réglement sur les Courtiers Santionné par Iradé Impérial." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 3, 1888.

"Reproduction de Noyer." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, December 25, 1897.

"Revue Commerciale et Prix-Courants (April 5, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 5, 1890.

"Revue Commerciale et Prix-Courants (April 16, 1892)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 16, 1892.

"Revue Commerciale et Prix-Courants (April 27, 1895)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, April 27, 1895.

"Revue Commerciale et Prix-Courants (August 5, 1893)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 5, 1893.

"Revue Commerciale et Prix-Courants (August 23, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 23, 1890.

"Revue Commerciale et Prix-Courants (August 24, 1889)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, August 24, 1889.

"Revue Commerciale et Prix-Courants (January 1, 1898)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, January 1, 1898.

"Revue Commerciale et Prix-Courants (January 11, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, January 11, 1890.

"Revue Commerciale et Prix-Courants (January 17, 1891)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, January 17, 1891.

"Revue Commerciale et Prix-Courants (July 8, 1893)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 8, 1893.

"Revue Commerciale et Prix-Courants (July 15, 1893)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, July 15, 1893.

"Revue Commerciale et Prix-Courants (June 7, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 7, 1890.

"Revue Commerciale et Prix-Courants (June 8, 1889)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 8, 1889.

"Revue Commerciale et Prix-Courants (June 19, 1907)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 19, 1907.

"Revue Commerciale et Prix-Courants (June 20, 1906)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 20, 1906.

"Revue Commerciale et Prix-Courants (June 21, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 21, 1890.

"Revue Commerciale et Prix-Courants (June 28, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 28, 1890.

"Revue Commerciale et Prix-Courants (March 22, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, March 22, 1890.

"Revue Commerciale et Prix-Courants (May 7, 1892)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 7, 1892.

"Revue Commerciale et Prix-Courants (May 16, 1891)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 16, 1891.

"Revue Commerciale et Prix-Courants (May 17,1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 17, 1890.

"Revue Commerciale et Prix-Courants (May 20, 1892)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 20, 1892.

"Revue Commerciale et Prix-Courants (May 24, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 24, 1890.

"Revue Commerciale et Prix-Courants (November 22, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 22, 1890.

"Revue Commerciale et Prix-Courants (October 4, 1890)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 4, 1890.

"Revue Commerciale et Prix-Courants (October 15, 1892)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 15, 1892.

"Revue Commerciale et Prix-Courants (October 20, 1900)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 20, 1900.

"Revue Commerciale et Prix-Courants (October 27, 1906)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, October 27, 1906.

"Revue Commerciale et Prix-Courants (September 2, 1893)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 2, 1893.

"Revue Commerciale et Prix-Courants (September 22, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 22, 1888.

"Revue Commerciale et Prix-Courants (September 28, 1907)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 28, 1907.

"Revue Commerciale et Prix-Courants (September 29, 1888)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, September 29, 1888.

"Revue de la Semaine (February 15, 1886)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, February 15, 1886.

"Revue de la Semaine (February 22, 1886)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, February 22, 1886.

"Revue de la Semaine (May 17, 1886)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 17, 1886.

"Revue Hebdomadaire du Marché de Constantinople (Articles d'Exportation)." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, June 12, 1897.

"Tarif des Dépèches Télègraphiques." *Journal de Constantinople (Echo de l'Orient)*, November 29, 1855.

"Trébisonde (January 29, 1857)." *Journal de Constantinople (Echo de l'Orient)*, January 29, 1857.

"Turkish Cigarette Company." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, May 27, 1893.

"Une Machine à Cigarette." *Dersaadet Ticaret Odası Gazetesi (French Copy)*, November 17, 1894.

SECONDARY SOURCES

Acemoğlu, Daron. *Why Nations Fail.* New York: Random House, 2012.

Acemoğlu, Daron, Simon H. Johnson, and James A. Robinson. "The Rise of Europe: Atlantic Trade, Institutional Change and Economic Growth." *American Economic Review* 95 (2005): 546-79.

Acemoğlu, Daron, and James A. Robinson. *Economic Origins of Dictatorship and Democracy.* Cambridge: Cambridge University Press, 2009.

————. "Economics versus Politics: Pitfalls of Policy Advice." *The Journal of Economic Perspectives* 27, no. 2 (2013): 173-92.

————. "Persistence of Power, Elites, and Institutions." *The American Economic Review* 98, no. 1 (2008): 267-93.

Ackerberg, Daniel A., and Maristella Botticini. "The Choice of Agrarian Contracts in Early Renaissance Tuscany: Risk Sharing, Moral Hazard, or Capital Market Imperfections?". *Explorations in Economic History* 37, no. 3 (2000): 241-57.

Açıkel, Ali, and Murat Hanilçe. "Sivas Vilayetinde Ulaşım." In *Ciepo 6. Ara Dönem Sempozyumu 14-17 Nisan 2011*, edited by Tuncer Baykaya and Adnan Şişman, 71-103. Uşak: Uşak İli Kalkınma Vakfı, 2011.

Akerlof, George A. "The Market for "Lemons": Quality Uncertainty and the Market Mechanism." *The Quarterly Journal of Economics* 84, no. 3 (1970): 488-500.

Akkemik, Ünal, Nesibe Köse, Aliye Aras, and H. Nüzhet Dalfes. "Anadolu'nun Son 350 Yılında Yaşanan Önemli Kurak ve Yağişlı Yıllar." In *Türkiye Kuvaterner Sempozyumu*, 129-35. İTÜ Avrasya Yer Bilimleri Enstitüsü, 2005.

Akram-Lodhi, A. Haroon. "Review Essay: Land, Labour and Agrarian Transition in Vietnam." *Journal of Agrarian Change* 10, no. 4 (2010): 564-80.

————. "Vietnam's Agriculture: Processes of Rich Peasant Accumulation and Mechanisms of Social Differentiation." *Journal of Agrarian Change* 5, no. 1 (2005): 73-116.

Al, Hüseyin, Şevket K Akar, and Kaya Bayraktar. *Devlet-i Aliyye-i Osmaniyye'de Merkez Bankası Arayışları.* Edited by Türkiye Cumhuryet Merkez Bankası. Istanbul: Denizaltı Ofset, 2014.

Alkan, Ahmet Turan, and Halûk Çağdaş. *Sivas'ın Resmi.* Istanbul: Yitik Hazine Yayınları, 2012.

Allen, Robert C. "The Efficiency and Distributional Consequences of Eighteenth Century Enclosures." *The Economic Journal* 92, no. 368 (1982): 937-53.

————. "Inferring Yields from Probate Inventories." *The Journal of Economic History* 48, no. 1 (1988): 117-25.

————. "The Nitrogen Hypothesis and the English Agricultural Revolution: A Biological Analysis." *The Journal of Economic History* 68, no. 1 (2008): 182-210.

————. "The Price of Freehold Land and the Interest Rate in the Seventeenth and Eighteenth Centuries." *The Economic History Review* 41, no. 1 (1988): 33-50.

Alston, Lee J. "Tenure Choice in Southern Agriculture, 1930-1960." *Explorations in Economic History* 18, no. 3 (1981): 211-32.

Alston, Lee J., and K. D. Kauffman. "Agricultural Chutes and Ladders: New Estimates of Sharecroppers and "True Tenants" in the South, 1900-1920." *The Journal of Economic History* 57, no. 2 (1997): 464-75.

Ananich, Boris. "Russian Economy and the Banking System." In *The Cambridge History of Russia Imperial Russia, 1689-1917*, edited by Dominic Lieven, 394-426. Cambridge: Cambridge University Press, 2006.

Andersen, Esben. "Schumpeter's Evolutionary Economics: A Theoretical, Historical and Statistical Analysis of the Engine of Capitalism." (2012).

Antreasyan, Nişan. *Fındık Ziraati ve Ticareti* Istanbul: Matbaa-ı Hayriyye ve Şürekası, 1915/1916 (1331).

Aoki, Masahiko. *Information, Corporate Governance, and Institutional Diversity: Competitiveness in Japan, the USA, and the Transitional Economies.* Oxford: Oxford University Press, 2000.

————. "Institutional Evolution as Punctuated Equilibria." In *Institutions, Contracts and Organizations: Perspectives from New Institutional Economics*, edited by Claude Ménard, 11-37. Cheltenham: Edward Elgar Publishing, 2003.

————. *Toward a Comparative Institutional Analysis.* Cambridge: MIT Press, 2001.

Ardeleanu, Constantin. *International Trade and Diplomacy at the Lower Danube: The Sulina Question and the Economic Premises of the Crimean War (1829-1853).* Braila: Muzeul Brailei, Editura Istros, 2014.

Atack, Jeremy, Fred Bateman, and William N. Parker. "The Farm, the Farmer and the Market." In *Cambridge Economic History of the United States*, edited by Stanley L. Engerman and Robert E. Gallman, 245-84. Cambridge: Cambridge University Press, 2000.

Atasağun, Yusuf Saim. *Türkiye Cumhuriyeti Ziraat Bankası: 1888-1939.* Istanbul: Kenan Basımevi ve Klişe Fabrikası, 1939.

Autheman, André. *Bank-ı Osman-ı Şahane: Tanzimat'tan Cumhuriyet'e Osmanlı Bankası.* Translated by Ali Berktay. Istanbul: Osmanli Bankası Arşiv ve Araştırma Merkezi, 2002.

Aynural, Salih. *Istanbul Değirmenleri ve Fırınları: Zahire Ticareti, 1740-1840.* Istanbul: Türkiye Ekonomik ve Toplumsal Tarih Vakfı, 2002.

Ayres, Robert U. *A Handbook of Industrial Ecology.* Cheltenham: Edward Elgar Publishing, 2002.

Ayres, Robert U., and Benjamin Warr. *The Economic Growth Engine: How Energy and Work Drive Material Prosperity.* Cheltenham: Edward Elgar Publishing, 2010.

Backhaus, Jürgen G. *Evolutionary Economic Thought: European Contributions and Concepts.* Northampton: Edward Elgar Publishing, 2003.

Bailey, C.F., and A.W. Petre. "The Modern Cigarette Industry." *Industrial & Engineering Chemistry Research* 29 (January 1937 1937): 11-18.

Bailleux, Nathalie, and Jeanne Bourin. *The Book of Chocolate.* Paris; New York: Flammarion, 1996.

Balcı, Sezai. *Giresun Rumları ve Gayrimüslim bir Belediye Başkanı: Kaptan Yorgi Konstantinidi Paşa.* Istanbul: Libra Kitapçılık ve Yayıncılık, 2013.

Balık, H. İrfan, and Sinem Çoban. "Fındık Bahçesi Tesisi ve Dikim Sistemleri." edited by Fındık Araştırma İstasyonu Müdürlüğü. Giresun, 2013.

Barkan, Ömer Lütfi. *Toplu Eserler 1.* Istanbul: Gözlem Yayınları, 1980.

————. *Türkiye'de Toprak Meselesi.* Istanbul: Gözlem Yayınları, 1980.

Barker. "Report on the Trade of Samsoon for the Year 1861; and on the Corn Trade for Six Months ended June 30th 1862." London: Foreign Office of the United Kingdom, 1861-1862.

Batman, Mustafa. *Tobacco Smuggling in the Black Sea Region of the Ottoman Empire, 1883-1914.* Istanbul: Libra Kitapçılık ve Yayıncılık, 2016.

Bektaş, Yakup. "The Sultan's Messenger: Cultural Constructions of Ottoman Telegraphy, 1847–1880." *Technology and Culture* 41, no. 4 (October 2000): 669-96.

Benjamin, D. Michelle, L. Brandt, and Daniel Lee. "Agriculture and Income Distribution in Rural Vietnam under Economic Reforms: A Tale of Two Regions." William Davidson Institute Working Paper No. 519, 2002.

Bilici, Faruk. *La Politique Française en Mer Noire, 1747-1789: Vicissitudes d'une Implantation.* Istanbul: Les Éditions Isis, 1992.

Bloch, Marc. *La Société Féodale.* Paris: Albin Michel, 2017.

Bostan, İdris. *Beylikten İmparatorluğa Osmanlı Denizciliği.* Istanbul: Kitap Yayınevi, 2006.

————. "Rusya'nın Karadeniz'de Ticarete Başlaması ve Osmanlı İmparatorluğu (1700-1787)." *Belleten* CLIX S.23 (1995): 353-94.

Botticini, Maristella. "Institutions, Information, and Markets in Fifteenth-Century Tuscany." *The Journal of Economic History* 59, no. 2 (1999): 456-59.

Bourdieu, Pierre. *Practical Reason: On the Theory of Action*. Cambridge: Polity Press, 2008.

Bowden, Peter J. "Agricultural Prices, Wages, Farm Profits, and Rents." In *The Agrarian History of England and Wales, Agrarian Change 1640-1750*, edited by Joan Thirsk, 593-695. Cambridge: Cambridge University Press, 1985.

Braudel, Fernand. *Civilisation Matérielle, Economie et Capitalisme: XVe-XVIIIe Siècle.* Paris: Armand Colin, 1993.

————. *La Mediterranée et le Monde Mediterranéen à l'Epoque de Philippe II.* Paris: Armand Colin, 1990.

————. *Villages Désertés et Histoire Economique XIe-XVIIIe Siècles.* Paris: S.E.V.P.E.N, 1965.

Bruce, M. S. Campbell, and Mark Overton. "A New Perspective on Medieval and Early Modern Agriculture: Six Centuries of Norfolk Farming c.1250-c.1850." *Past & Present*, no. 141 (1993): 38-105.

Brunt, Liam. "Nature or Nurture? Explaining English Wheat Yields in the Industrial Revolution, c.1770." *The Journal of Economic History* 64, no. 1 (2004): 193-225.

Bryan, W. B., and M. B. Materu. "Intercropping Maize with Climbing Beans, Cowpeas and Velvet Beans." *Journal of Agronomy and Crop Science* 159, no. 4 (1987): 245-50.

"Buğday Yetiştiriciliği." http://ankara.tarim.gov.tr/Belgeler/liftet/bugdayyetistiriciligi.pdf.

"Canik Sancağının 1328 Senesi Emval-i Ziraiyyesi [Canik Ziraat Muavinin Raporu]." In *Ticaret ve Ziraat Nezâreti Mecmuası*. Istanbul: Ziraat Nezareti, 1912-1913.

Carney, Judith Ann. *Black Rice the African Origins of Rice Cultivation in the Americas*. Cambridge: Harvard University Press, 2001.

Case, Nick. "Evolution of Trust." https://ncase.me/trust/.

Cemâl, ed. *1325 Senesi Asya ve Afrika-ı Osmanî Ziraat İstatistiği*. Ziraat İstatistikleri. Edited by Cemâl (Orman ve Maden ve Ziraat Nezareti Kalem-i Mahsus Müdürü). Vol. 2, Istanbul: Matbaa-ı Osmaniye, 1911.

Cernovodeanu, Paul, and Beatrice Marinescu. "British Trade in the Danubian Ports of Galatz and Braila between 1837 and 1853." *The Journal of European Economic History* VIII (3) (1976): 707-41.

Cervati, R. Cesar. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1881)*. Istanbul: The Annuaire Oriental and Printing Company Limited, 1881.

————. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1883)*. Istanbul: The Annuaire Oriental and Printing Company Limited, 1883.

————. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1885)*. Istanbul: The Annuaire Oriental and Printing Company Limited, 1885.

————. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1889)*. Istanbul: The Annuaire Oriental and Printing Company Limited, 1889.

————. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1891)*. Istanbul: The Annuaire Oriental and Printing Company Limited, 1891.

————. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1894).* Istanbul: The Annuaire Oriental and Printing Company Limited, 1894.

————. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1895).* Istanbul: The Annuaire Oriental and Printing Company Limited, 1895.

————. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1902).* Istanbul: The Annuaire Oriental and Printing Company Limited, 1902.

————. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1904).* Istanbul: The Annuaire Oriental and Printing Company Limited, 1904.

————. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1909).* Istanbul: The Annuaire Oriental and Printing Company Limited, 1909.

————. *Annuaire Oriental du Commerce de l'Industrie, de l'Administration et de la Magistrature (1914).* Istanbul: The Annuaire Oriental and Printing Company Limited, 1914.

Chayanov, Alexander V. *The Theory of Peasant Economy.* Delhi: Oxford University Press, 1987.

Chorley, G. P. H. "The Agricultural Revolution in Northern Europe, 1750-1880: Nitrogen, Legumes, and Crop Productivity." *The Economic History Review* 34, no. 1 (1981): 71-93.

Clark, Gregory. "Productivity Growth without Technical Change in European Agriculture before 1850." *The Journal of Economic History* 47, no. 2 (1987): 419-32.

————. "Productivity Growth without Technical Change in European Agriculture: Reply to Komlos." *The Journal of Economic History* 49, no. 4 (1989): 979-91.

"Climate Model Simulations of the Last 1,000 Years ". https://www.ncdc.noaa.gov/global-warming/last-1000-years.

Coase, R. H. "The Nature of the Firm." *Economica* 4, no. 16 (1937): 386-405.

Collins, E. J. T. "Rural and Agricultural Change." In *the Agrarian History of England and Wales 1850-1914*, edited by E. J. T. Collins, 138-207. Cambridge: Cambridge University Press, 2011.

Commerce, International Chamber of. "Incoterms® Rules History." https://iccwbo.org/resources-for-business/incoterms-rules/incoterms-rules-history/.

Cora, Yaşar Tolga. "A Muslim Great Merchant [Tüccar] Family in the Late Ottoman Empire: A Case Study of the Nemlizades, 1860-1930 ". *International Journal of Turkish Studies* 19, no. 1/2 (2013): 1-29.

Cotterrell, Roger. *Law, Culture and Society: Legal Ideas in the Mirror of Social Theory*. London: Routledge, 2017.

Cronon, William. *Nature's Metropolis: Chicago and the Great West* New York W.W. Norton, 1991.

Cuinet, Vital. "Vilayet d'Erzouroum Statistique Descriptive." In *La Turquie d'Asie; Géographie Administrative, Statistique, Descriptive et Raisonnée de Chaque Province de l'Asie-mineure*. Paris: Ernest Leroux, 1892.

————. "Vilayet de Sivas Statisique Descriptive." In *La Turquie d'Asie; Géographie Administrative, Statistique, Descriptive et Raisonnée de Chaque Province de l'Asie-mineure*. Paris: Ernest Leroux, 1892.

————. "Vilayet de Trébizonde Statistique Descriptive." In *La Turquie d'Asie; Géographie Administrative, Statistique, Descriptive et Raisonnée de Chaque Province de l'Asie-mineure*. Paris: Ernest Leroux, 1892.

Çağlar, Keyder, and Zafer Yanal. "Agrarian Change under Globalization: Markets and Insecurity in Turkish Agriculture." *Journal of Agrarian Change* 11, no. 1 (2011): 60-86.

Çağlayan, Kaya Tuncer. "İngiliz Konsolosluk Raporlarına Göre 1841 Yılında Samsun ve Çevresinde Ticaret." In *Geçmişten Geleceğe Samsun*, edited by Cevdet Yılmaz, 283-98. Samsun: Samsun Büyükşehir Belediyesi. Kültür ve Eğitim Hizmetleri Daire Başkanlığı, 2006.

Çakır, Çoşkun. "Osmanlı Türk Tarihçiliğinde Bir Klasik Ömer Lütfi Barkan, XV ve XVIıncı Asırlarda Osmanlı Imparatorluğu'nda Ziraî Ekonominin Hukukî ve Malî Esasları, Birinci Cilt: Kanunlar." *Türkiye Araştırmaları Literatür Dergisi* 3, no. 5 (2005): 781-90.

Çekel, Ziya. *Dünyada ve Türkiye'de Buğday.* Istanbul Ticaret Odası Mecmuası (Ayrı Basıları). Vol. 10, Istanbul: İstanbul Ticaret Odası Mecmuası, 1960.

Çelik, Buket. "19. Yüzyılda Sivas Eyaleti'nde Sarraflık Faaliyetleri." Unpublished MA Thesis, 2013.

İslam Ansiklopedisi. Istanbul.

Daley, Elizabeth. "Land and Social Change in a Tanzanian Village 1: Kinyanambo, 1920s–1990." *Journal of Agrarian Change* 5, no. 3 (2005): 363-404.

Daly, Herman E. "Georgescu-Roegen versus Solow/Stiglitz." *Ecological Economics* 22, no. 3 (1997): 261-66.

Daviron, Benoit, and Peter Gibbon. "Global Commodity Chains and African Export Agriculture." *Journal of Agrarian Change* 2, no. 2 (2002): 137-61.

Demirbaş, Ali Rıza. "Fındık Tarımı." edited by Samsun Valiliği İl Tarım Müdürlüğü. Samsun: Samsun Valiliiği İl Tarım Müdürlüğü Çiftçi Eğitimi ve Yayım Şubesi, 2010.

Demirel, Esat. *La Banque Agricole de Turquie et la Nécessité de sa Réorganisation.* Lausanne: C. Risold & Fils, 1935.

Demiryürek, Mehmet. "İngiliz İdaresi Döneminde Kıbrıs'ta Filoksera (Asmabiti) ile Mücadele (1878-1895)." *Kebikeç*, no. 23 (2007).

Der Matossian, Bedross. "The Armenian Commercial Houses and Merchant Networks in the 19th Century Ottoman Empire." *Turcica* 39 (2007): 147-74.

Dığıroğlu, Filiz. *Memalik-i Osmaniye Duhanları Müşterekü'l-Menfaa Reji Şirketi: Trabzon Reji İdaresi, 1883-1914*. Istanbul: Osmanli Bankası Arşiv ve Araştırma Merkezi, 2007.

Direction Générale des Manufactures de L'Etat, ed. "Cahiers des Charges et Conditions de l'Adjudication des Tabacs et Feuilles de Samsoun Ordinaire." edited by Direction Générale des Manufactures de L'Etat (France). Istanbul: Imprimerie Nationale, 1891.

Divitçioğlu, Sencer. *Asya Tipi Üretim Tarzı ve Az-gelişmiş Ülkeler.* Istanbul: Elif Yayinları, 1966.

————. "Modèle Economique de la Société Ottomane (les XIVe et XVe Siècles)." *La Pensée* 144, no. Apvril (1966): 83-92.

Dobb, Maurice. *Transition from Feudalism to Capitalism.* London: [History Group of the Communist Party], 1963.

Dobb, Maurice, Paul M. Sweezy, Christopher Hill, Georges Lefebvre, Kohachiro Takshashi, Guiliano Procacci, John Merrington, and Eric Hobsbawn. *The Transition from Feudalism to Capitalism.* London: Aakar Books, 1954.

Dodgshon, Robert A. "Land Improvement in Scottish Farming: Marl and Lime in Roxburghshire and Berwickshire in the Eighteenth Century." *The Agricultural History Review* 26, no. 1 (1978): 1-14.

Dorfman, Joseph. *Institutional Economics. Veblen, Commons, and Mitchell Reconsidered. A Series of Lectures by Joseph Dorfman, C.E. Ayres, Neil W. Chamberlain, Simon Kuznets.* Berkeley; Los Angeles: University of California Press, 1963.

Dosi, Giovanni, Christopher Freeman, and Silvia Fabiani. "The Process of Economic Development: Introducing Some Stylized Facts and Theories on Technologies, Firms and Institutions." *Industrial and Corporate Change* 3, no. 1 (1994): 1-45.

Duygu, Süleyman. *Yozgat Tarihi ve Çapanoğulları.* Istanbul: Sayar Basımevi, 1974.

Ekinci, İlhan. "Osmanlı Denizciliğinde Sened-i Bahri Uygulaması." 6, no. 28 (2013).

Ekinci, Salih Zeki. *Mükemmel Ameli Tavukçuluk.* Istanbul: Şark Kütüphanesi, 1925.

————. *Türkiye'de Tütün, Ziraat, San'at ve Ticareti.* Istanbul: Cumhuriyet Matbaası, 1928.

————. *Ziraat ve Ticaret Muhtırası = Agenda, Aide-Mémoire Agricole et Commerciale.* Istanbul: İlhami ve Fevzi Matbaası, 1926.

Eldem, Edhem. *French Trade in Istanbul in the Eighteeth Century.* Leiden; Boston: Brill, 1999.

Emecen, Feridun M. *Doğu Karadeniz'de İki Kıyı Kasabasının Tarihi: Bulancak-Piraziz.* Istanbul: Kitabevi, 2005.

Emiroğlu, Kudret. *Trabzon Vilayeti Salnameleri Yer ve Kişi Adları.* Ankara: Trabzon İli ve İlçeleri, Eğitim, Kültür ve Sosyal Yardımlaşma Vakfı, 2012.

Engels, Friedrich, and Tristram Hunt. *The Origin of the Family, Private Property, and the State.* London; New York: Penguin Classics, 2010.

Engerman, Stanley L. "Slavery and its Consequences for the South in the Nineteenth Century." In *the Cambridge Economic History of the United States*, 329-66. New York: Cambridge University Press, 2000.

Engerman, Stanley L., and Robert E. Gallman. *The Cambridge Economic History of the United States.* Cambridge: Cambridge Univesity Press, 1996.

Engerman, Stanley L., and Kenneth Sokoloff. "Colonialism, Inequality, and Long-Run Paths of Development." *NBER Working Paper* (2005).

Entner, Marvin L. *Russo-Persian Commercial Relations.* Gainesville: University of Florida Press, 1965.

Erler, Mehmet Yavuz. "Karadeniz'de Avrupai bir Kent: Samsun." In *Karadeniz Tarihi Sempozyumu (25-26 Mayıs 2005)*, 541-69. Trabzon: Karadeniz Teknik Üniversitesi Matbaası, 2005.

———. *Osmanlı Devleti'nde Kuraklık, 1800-1880*. Istanbul: Libra Kitap, 2012.

Ertem, Özge. "Sick Men of Asia Minor in an Ailing Empire: Famine, Villagers and Government in Missionary Accounts (1873-75)." *International Review of Turkish Studies* 2, no. 1 (2012): 72-94.

Ertürk, Emrah. "Mısır (Zea Mays L.) / Baklagil Birlikte Ekim Sisteminde Baklagillerin Mısır Bitkisinin Verim ve Verim Öğelerine." Ordu Üniversitesi, 2011.

The Famine in Asia-minor: Its History, Compiled from the Pages of the "Levant Herald.". Istanbul: Isis Press, 1989.

Feynman, Richard Phillips. *The Strange Theory of Light and Matter*. Princeton: Princeton University Press, 1988.

Fogel, Robert William, and Stanley L. Engerman. *Time on the Cross*. Boston: Little, Brown & Co., 1995.

Frangakis-Syrett, Elena. "Trade between Ottoman Empire and Western Europe: The Case of Izmir in the Eighteenth Century." *New Perspectives on Turkey* 2 (1998): 1-9.

Frangakis-Syrett, Elena, and Spoudon Kentro Mikrasiatikon. *The Commerce of Smyrna in the Eighteenth Century, 1700-1820*. Athens: Center for Asia Minor Studies, 1992.

Freeman, Christopher, and Elgar. *Systems of Innovation: Selected Essays in Evolutionary Economics*. Cheltenham: Edward Elgar Publishing, 2008.

Freeman, Christopher, and Luc Soete. *Economics of Industrial Innovation*. Cambridge: MIT Press, 1997.

Furubotn, Eirik Grundtvig, and Rudolf Richter. *Institutions and Economic Theory: The Contribution of the New Institutional Economics.* Ann Arbor: University of Michigan Press, 1997.

Galbraith, John Kenneth. *The New Industrial State.* Princeton: Princeton University Press, 2015.

Genç, Mehmet. "Osmanlı Devlet'inde İç Gümrük Rejimi." In *Tanzimat'tan Cumhuriyet'e Türkiye Ansiklopedisi*, edited by Vedat Çakmak and Murat Belge. Istanbul: İletişim Yayınları, 1985.

Geoffrey M. Hodgson, ed. *The Elgar Companion to Institutional and Evolutionary Economics.* Aldershot: Edward Elgar Publishing, 1994.

Georgescu-Roegen, Nicholas. *The Entropy Law and the Economic Process.* Cambridge: Harvard University Press, 2013.

Gibbon, Peter. "Cooperative Cotton Marketing, Liberalization and 'Civil Society' in Tanzania." *Journal of Agrarian Change* 1, no. 3 (2001): 389-439.

Gilbar, Gad G. "The Muslim Big Merchant-Entrepreneurs of the Middle East, 1860-1914." *Die Welt des Islams* 43, no. 1 (2003): 1-36.

————. "Muslim Tujjâr of the Middle East and their Commercial Networks in the Long Nineteenth Century." *Studia Islamica*, no. 100/101 (2005): 183-202.

Gimpel, Jean. *The Medieval Machine: The Industrial Revolution of the Middle Ages.* New York: Holt, Rinehart and Winston, 1976.

Godelier, Maurice. *Asya-tipi Üretim Tarzı ve Marksist Şemalara Göre Toplumların Evrimleri.* Translated by Attila Tokatlı. Vol. 15, Istanbul: Sosyal Yayınlar, 1966.

————. *L'Enigme du Don.* Paris: Flammarion, 2008.

————. *Lévi-Strauss.* Paris: Édition du Seuil, 2013.

————. *La Notion de "Mode de Production Asiatique" et Les Schémas Marxistes d'Evolution des Sociétés.* Paris: Centre d'Etudes et de Recherches Marxistes, 1974.

Goffman, Daniel. "Izmir." In *the Ottoman City between East and West Aleppo, Izmir, and Istanbul*, edited by Edhem Eldem, Daniel Goffman and Bruce Masters, 79-135. Cambridge: Cambridge University Press, 2005.

Webster's Third New International Dictionary of the English Language. Springfield: Merriam-Webster, 2008.

Greif, Avner. "History Lessons: The Birth of Impersonal Exchange: The Community Responsibility System and Impartial Justice." *The Journal of Economic Perspectives* 20, no. 2 (2006): 221-36.

————. *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade.* Cambridge; New York: Cambridge University Press, 2006.

————. "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders." *The Journal of Economic History* 49, no. 4 (1989): 857-82.

Gül, Abdülkadir. "Osmanlı Devlet'inde Kuraklık ve Kıtlık (Erzurum Örneği: 1892-1893 ve 1906-1908 Yılları)." *Uluslararası Sosyal Araştırmalar Dergisi* 2, no. 9 (2009): 144-58.

Günal, Nurten. "Türkiye'de İklimin Doğal Bitki Örtüsü Üzerindeki Etkileri." *Acta Turcica* V, no. 1 (2013).

Güran, Tevfik. *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar.* Istanbul: Eren, 1998.

————. *Osmanlı Dönemi Tarım İstatistikleri 1909, 1913 Ve 1914 = Agricultural Statistics of Turkey During the Ottoman Period.* Ankara: T.C. Başbakanlık Devlet İstatistik Enstitüsü, 1997.

Habakkuk, Hrothgar John. *American and British Technology in the Nineteenth Century.* Cambridge: Cambridge University Press, 1967.

Handel-Mazetti, Heinrich Raphael Eduard, Franz Bubak, Victor Felix Schiffner, Julius Steiner, and Siegfried Stockmayer. *Ergebnisse einer Botanischen Reise in das Pontische Randgebirge im Sandschak Trapezunt, Unternommen im Jahre 1907 im Auftrage der Naturwissenschaftlichen Orientvereines in Wien.* Vienna: A. Hölder, 1909.

Harlaftis, Gelina. *A History of Greek-Owned Shipping: The Making of an International Tramp Fleet.* London: Routledge, 1996.

————. "Maritime Transport Systems in Southeastern Europe in the Nineteenth Century." In *the Economic Development of Southeastern Europe in the 19th Century*, edited by Edhem Eldem and Socrates Petmezas. Athens: Alpha Bank Historical Archives, 2011.

Havinden, M. A. "Agricultural Progress in Open-Field Oxfordshire." *The Agricultural History Review* 9, no. 2 (1961): 73-83.

Hawksley, Humphrey "Nestlé 'Failing' on Child Labour Abuse, Says FLA Report." BBC News, http://www.bbc.com/news/world-africa-18644870.

Helfgott, Leonard M. *Ties That Bind: A Social History of the Iranian Carpet.* Washington: Smithsonian Institute Press, 1994.

Henry, John F., Tae-Hee Jo, and Frederic S. Lee. *Marx, Veblen, and the Foundations of Heterodox Economics: Essays in Honor of John F. Henry.* London: Routledge, 2016.

Hertogh, M. L. M. *Living Law: Reconsidering Eugen Ehrlich.* Portland: Hart Publishing, 2009.

Hobsbawm, Eric. *The Age of Empire: 1875-1914.* London: Abacus, 2013.

Hodgson, Geoffrey Martin. *After Marx and Sraffa: Essays in Political Economy.* New York: St. Martin's Press, 1991.

————. *Darwinism and Economics.* Cheltenham: Edward Elgar Publishing, 2009.

————. *Evolution and Institutions: On Evolutionary Economics and the Evolution of Economics.* Cheltenham: Edward Elgar Publishing, 2001.

————. *Labour at the Crossroads the Political and Economic Challenge to the Labour Party in the 1980s.* Oxford: M. Robertson, 1981.

————. *A Modern Reader in Institutional and Evolutionary Economics: Key Concepts.* Cheltenham: Edward Elgar Publishing, 2002.

————. *Socialism and Parliamentary Democracy.* Nottingham: Bertrand Russell Peace Foundation for 'Spokesman', 1977.

Hodgson, Geoffrey Martin, Marc R. Tool, and Warren J. Samuels. *The Elgar Companion to Institutional and Evolutionary Economics.* Aldershot: Edward Elgar Publishing, 1994.

Hollingsworth, J. Rogers. "Doing Institutional Analysis: Implications for the Study of Innovations." *Review of International Political Economy* 7, no. 4 (2000): 595-644.

Humphrey, John, and Hubert Schmitz. "Governance in Global Value Chains." In *Local Enterprises in the Global Economy Issues of Governance and Upgrading*, edited by Hubert Schmitz, 19-29. Cheltenham: Edward Elgar Publishing, 2004.

Islamoglu, Huricihan. *Osmanlı İmparatorluğunda Devlet ve Köylü.* Edited by Ayşe Çavdar. Istanbul: İletişim Yayınları, 2010.

Issawi, Charles. "British Trade and the Rise of Beirut, 1830-1860." *International Journal of Middle East Studies* 8, no. 1 (1977): 91-101.

————. "European Economic Penetration." In *the Cambridge History of Iran: Vol. 7, From Nadir Shah to the Islamic Republic* edited by Peter Avery, Gavin Hambly and C. P. Melville, 590-607. Cambridge: Cambridge University Press, 2008.

————. "The Tabriz-Trabzon Trade, 1830-1900: Rise and Decline of a Route." *International Journal of Middle East Studies* 1, no. 1 (1970): 18-27.

İnalcık, Halil. *Osmanlı İmparatorluğu: Toplum ve Ekonomi.* Istanbul: Eren, 2009.

İngiliz Said Paşa. *İngiliz Said Paşa ve Günlüğü (Jurnal).* Translated by Burhan Çağlar. Istanbul: Ari Sanat, 2010.

İşler, Necmi. "Tütün Tarımı." www.mku.edu.tr/getblogfile.php?keyid=1002.

Jean Suret-Canale, ed. *Asya Tipi Üretim Tarzı.* Translated by İrvem Keskinoğlu. Istanbul: Ant Yayınları, 1970.

————. *Sur le "Mode de Production Asiatique".* Paris: Centre d'Etudes et de Recherches Marxistes, 1969.

Jean-Michael Glachant, Éric Brousseau, ed. *New Institutional Economics A Guidebook.* Cambridge: Cambridge University Press, 2008.

Johansen, Bruce E. *The Encyclopedia of Native American Economic History.* Westport: Greenwood Press, 1999.

Karpat, Kemal H. *Ottoman Population, 1830-1914: Demographic and Social Characteristics.* Madison: University of Wisconsin Press, 1985.

Kasaba, Reşat. "Migrant Labour in West Anatolia." In *Landholding and Commercial Agriculture in the Middle East*, edited by Çağlar Keyder and Faruk Tabak, 113-21. Albany (N.Y.): State University of New York Press, 1991.

Kasper, Wolfgang, Manfred E. Streit, and Peter J. Boettke. *Institutional Economics: Property, Competition, Policies.* Cheltenham: Edward Elgar Publishing, 2013.

Kayaoğlu, Turan. *Legal Imperialism: Sovereignty and Extraterritoriality in Japan, the Ottoman Empire, and China.* New York: Cambridge University Press, 2014.

Keyder, Çağlar, and Faruk Tabak, ed. *Landholding and Commercial Agriculture in the Middle East.* Albany (N.Y.): State University of New York Press, 1991.

Khodorowsky, Katherine. *The Little Book of Chocolate.* Paris; London: Flammarion; Thames & Hudson, 2001.

The Elgar companion to Post Keynesian Economics. Cheltenham: Edward Elgar Publishing, 2013.

Koç, Mustafa. "The Transformation of Oriental Tobacco Production in the Aegean Turkey." *New Perspectives on Turkey* 4 (2015): 31-55.

Köse, Yavuz. "Nestlé: A Brief History of the Marketing Strategies of the First Multinational Company in the Ottoman Empire." *Journal of Macromarketing* 27, no. 1 (March 1, 2007): 724-61.

Krugman, Paul. *The Accidental Theorist: and Other Dispatches from the Dismal Science.* London: Penguin Books, 1999.

————. *Geography and Trade.* Leuven: Leuven University Press; Cambridge; MIT Press, c1993.

————. *The Great Unravelling: from Boom to Bust in three Scandalous Years.* London: Allen Lane, 2003.

Kudret Emiroğlu, ed. *Trabzon Vilayeti Salnamesi.* Translated by Kudret Emiroğlu. Vol. 3, Trabzon: Trabzon İli ve İlçeleri, Eğitim, Kültür ve Sosyal Yardımlaşma Vakfı, 1993.

————. *Trabzon Vilayeti Salnamesi 1892.* Translated by Kudret Emiroğlu. Vol. 14, Trabzon: Trabzon İli ve İlçeleri, Eğitim, Kültür ve Sosyal Yardımlaşma Vakfı, 1995.

Kupferschmidt, Uri M. *European Department Stores and Middle Eastern Consumers: the Orosdi-Back Saga.* Istanbul: Osmanlı Bankası Arşiv ve Araştırma Merkezi, 2007.

Kuran, Timur. *The Long Divergence: How Islamic Law Held Back the Middle East.* Princeton; Oxford: Princeton University Press, 2013.

Kuzucu, Kemalletin. "Osmanlı Döneminde Karadeniz Bölgesinde Mısır Tarımı ve Islah Çalışmaları." In *Karadeniz Tarihi Sempozyumu (25-26 Mayıs 2005)*, edited by Kenan İnan, Hikmet Öksüz, Mehmet Okur and Veysel Usta, 113-27. Trabzon: Karadeniz Teknik Üniversitesi Matbaası, c2005.

————. "Osmanlı'nın Son Döneminde Uluslararası Kaçakçılığa Konu Olan "Tokat Çayı"nın Serüveni." In *Tokat Sempozyumu*, 183-97. Tokat, 2012.

Küçükömer, İdris. "Asya Tipi Üretim Biçimi, Yeniden Üretim ve Sivil Toplum = Mode de Production Asiatique, Nouvelle Production et Société Civile." *Toplum ve Bilim* 2 (Summer 1977): 4-30.

Laiou, Angeliki E. "Exchange and Trade, Seventh–Twelfth Centuries." In *the Economic History of Byzantium: From the Seventh through the Fifteenth Century*, edited by Angeliki E. Laiou and Charalampos Bouras, 697-770. Washington: Dumbarton Oaks Research Library and Collection, 2002.

Lamoreaux, Naomi R., and Kenneth L. Sokoloff. "Long-Term Change in the Organization of Inventive Activity." *Proceedings of the National Academy of Sciences* 93, no. 23 (1996).

Lane, Ian. "Chapter 8 Nitrogen Fixation in Forage Legumes." Food and Agriculture Organization of United Nations, http://www.fao.org/ag/agp/agpc/doc/tibetmanual/08._nitrogen_fixation.htm.

Laurent, John, and Geoffrey Martin Hodgson. *Evolutionary Economics and Human Nature.* Cheltenham: Edward Elgar Publishing, 2003.

Le Roy Ladurie, Emmanuel. *La Civilisation Rurale.* Paris: Allia, 2012.

————. *Les Paysans de Languedoc.* Paris: S.E.V.P.E.N., 1966.

————. *Paysages, Paysans: l'Art et la Terre en Europe du Moyen Âge au XXe Siècle.* Paris: Bibliothèque Nationale de France, 1994.

Lenin, Vladimir Il'ich. *Imperialism: The Highest Stage of Capitalism.* London: Penguin Books, 2010.

Leydesdorff, L. A., Peter van den Besselaar, and Peter M. Allen. *Evolutionary Economics and Chaos Theory: New Directions in Technology Studies.* New York: St. Martin's Press, 1994.

Lun, Y.H.V., K.-H. Lai, and T.C.E. Cheng. *Shipping and Logistics Management.* London: Springer, 2010.

Lyberatos, Andreas. "The Usury Cases of the Black Sea Region: State Legitimation and Bourgeois Rule of Law in 19th Century Dobrudzha." *Études Balkaniques* XLIX, no. 3-4 (2013): 59-94.

Martin, Alexander M. "Russian Economy and the Legacy of 1812." In *the Cambrigde History of Russia Imperial Russia, 1689-1917*, edited by Dominic Lieven, 145-62. Cambrigde: Cambrigde University Press, 2006.

Macleod, H. D. *The Elements of Political Economy.* Vol. 2, London Arkose Press, 1858.

Madsen, A.W. "The State as Manufacturer and Trade." *The Spectator*, November 4, 1916, 10.

Mahmuzlu, Ekin. "Transformation of Mercantile Shipping in Southeast Black Sea Ports between 1834 and 1914." In *Istanbul and the Black Sea Coast: Shipping and trade, (1770-1920)*, edited by Edhem Eldem and Sophia Laiou. Istanbul: Isis Press, 2018.

Mardinîzâde, Ahmed Cemalettin. *Tütüncülük.* Istanbul: Cumhuriyet Matbaası, H. 1321.

Martinez-Alier, Joan, and Inge Røpke. *Recent Developments in Ecological Economics Volume 1.* Cheltenham: Edward Elgar Publishing, 2008.

————. *Recent Developments in Ecological Economics Volume 2.* Cheltenham: Edward Elgar Publishing, 2008.

Marvin, Charles Thomas. *The Region of the Eternal Fire: An Account of a Journey to the Petroleum Region of the Caspian in 1883.* London: Woodfall and Kinder Printers, 1888.

Marx, Karl. *Kapitalizm Öncesi Ekonomi Şekilleri.* Edited by Eric Hobsbawn. Ankara: Sol Yayınları, 1967.

Masters, Bruce. "The Sultan's Entrepreneurs: The Avrupa Tuccaris and the Hayriye Tuccaris in Syria." *International Journal of Middle East Studies* 24, no. 4 (1992): 579-97.

Mathew, W. M. "Marling in British Agriculture: A Case of Partial Identity." *The Agricultural History Review* 41, no. 2 (1993): 97-110.

Maunsell, Captain. "Reports on the Trade and Commerce of the Trebizond and Sivas Vilayets for the Year 1897 b-Sivas Vilayet." London: Foreign Office of the United Kingdom, 1897.

Mauss, Marcel. "Essai Sur le Don: Forme et Raison de L'Echange dans les Sociétés Archaiques." *Sociologie et Anthropologie* (1960): 143-279.

Mauss, Marcel, and Florence Weber. *Essai sur le Don: Forme et Raison de l'Echange dans les Sociétés Archaiques.* Paris: Presses Universitaires de France, 2012.

Mazoyer, Marcel, and Laurence Roudart. *A History of World Agriculture from the Neolithic Age to the Current Crisis.* New York: Monthly Review Press, 2006.

McCloskey, Donald [Deirdre]. "The Economics of Enclosure: A Market Analysis." Review of European Peasants and Their Markets: Essays in Agrarian Economic History, William N. Parker, Eric L. Jones. *The American Historical Review* 82, no. 1 (1977): 83-84.

————. "The Enclosure of Open Fields: Preface to a Study of Its Impact on the Efficiency of English Agriculture in the Eighteenth Century." *The Journal of Economic History* 32, no. 1 (1972): 15-35.

Mentzel, Peter. *Transportation Technology and Imperialism in the Ottoman Empire, 1800-1923.* Washington: D.C.: American Historical Association, 2006.

Middleton, R.D. "Remarks on the Weather at Trebizond in November and December 1831 by Master of the Schooner Syeed Khan." London: Foreign Office of the United Kingdom, 1831.

Miller, Micheal B. *Europe and The Maritime World: A Twentieth-century History.* New York: Cambridge University Press, 2012.

Minoglou, Ioanna Pepelasis. "Ethnic Minority Groups in International Banking: Greek Diaspora Bankers of Constantinople and Ottoman State Finances, c. 1840-81." *Financial History Review* 9, no. 2 (2002): 125-46.

"Missirian S.A. | Leaf Tobacco." www.missirian.gr/history.html.

Miwa, Yoshiro, and J. Mark Ramseyer. "Japanese Industrial Finance at the Close of the 19th Century: Trade Credit and Financial Intermediation." *Explorations in Economic History* 43, no. 1 (2006): 94-118.

Morgan, Lewis Henry. *Ancient Society: Or, Researches in the Lines of Human Progress from Savagery through Barbarism to Civilization*. Calcutta: Bharati Library, 1887.

Morison, S. E. "Forcing the Dardanelles in 1810: With Some Account of the Early Levant Trade of Massachusetts." *The New England Quarterly*, no. 2 (April 1928 1928).

Moss, Walter G. *A History of Russia: To 1917* Vol. 1, London: Anthem Press, 2005.

Mundy, Martha, and Richard Saumarez Smith. *Governing Property, Making the Modern State Law, Administration and Production in Ottoman Syria*. London: I.B. Tauris, 2007.

Murphey, Rhoads. "Tobacco Cultivation in Northern Syria and Conditions of its Marketing and Distribution in the Late Eighteenth Century." *Turcica* 16 (1985): 205-26.

Nations, Food and Agriculture Organization of United. "Crop Water Information: Maize." http://www.fao.org/nr/water/cropinfo_maize.html.

————. "Crop Water Information: Tobacco." http://www.fao.org/nr/water/cropinfo_tobacco.html.

————. "Crop Water Information: Wheat." http://www.fao.org/nr/water/cropinfo_wheat.html.

Nelson, Richard R. "How New Is New Growth Theory?". *Challenge* 40, no. 5 (1997): 29-58.

————. "Modelling the Connections in the Cross Section between Technical Progress and R&D Intensity." *The RAND Journal of Economics* 19, no. 3 (1988): 478-85.

Nelson, Richard R., and Bhaven N. Sampat. "Making Sense of Institutions as a Factor Shaping Economic Performance." *Journal of Economic Behavior & Organization* 44, no. 1 (2001): 31-54.

Nelson, Richard R., and Sidney G. Winter. *An Evolutionary Theory of Economic Change.* Cambridge: The Belknap Press of Harvard University Press, 2004.

Nielsen, Klaus, Björn Johnson, and Eaepe Conference of. *Institutions and Economic Change: New Perspectives on Markets, Firms and Technology.* Cheltenham: Edward Elgar Publishing: European Association for Evolutionary Political Economy, 1998.

North, Douglass Cecil. *Institutions, Institutional Change and Economic Performance.* Cambridge; New York: Cambridge University Press, 2017.

————. *Structure and Change in Economic History.* New York: W.W. Norton, 2008.

————. *Understanding the Process of Economic Change.* London: Princeton University Press, 2005.

North, Douglass Cecil, and Robert Paul Thomas. *The Rise of the Western World: a New Economic History.* Cambridge: Cambridge University Press, 2009.

O'Hara, Phillip Anthony. *The Contemporary Relevance of Thorstein Veblen's Institutional-Evolutionary Economics.* Perth: Curtin University of Technology, School of Economics and Finance, 2000.

Oikonomides, Nicolas. "The Role of the Byzantine State in the Economy." In *the Economic History of Byzantium: From the Seventh through the Fifteenth Century*, edited by Angeliki E. Laiou, 973-1058. Washington: Dumbarton Oaks Research Library and Collection, 2002.

Okazaki, Shoko. "The Great Persian Famine of 1870-71." *Bulletin of the School of Oriental and African Studies, University of London* 49, no. 1 (1986): 183-92.

Olmstead, Alan L., and Paul W. Rhode. "The Red Queen and the Hard Reds: Productivity Growth in American Wheat, 1800-1940." *The Journal of Economic History* 62, no. 4 (2002): 929-66.

Orman ve Maaden ve Ziraat Nezareti, ed. *Pirinç Ziraati.* Edited by Orman ve Maaden ve Ziraat Nezareti Kütüphanesi. Vol. 5, Istanbul: Matbaa-ı Âmire, 1912/1913 (1328).

————. *Pirinç Ziraati mâ Pirinç Kanunu.* Istanbul: Matbaa-ı Âmire, 1914.

————. *Pirinç Ziraati Kanunnamesi.* Edited by Orman ve Maaden ve Ziraat Nezareti Kütüphanesi. Istanbul: Matbaa-ı Osmaniye, 1917.

Osborne, Martin J. *An Introduction to Game Theory.* New Delhi: Oxford University Press, 2014.

Overton, Mark. *Agricultural Revolution in England: The Transformation of the Agrarian Economy 1500-1850.* Cambridge: Cambridge University Press, 1996.

————. "The Diffusion of Agricultural Innovations in Early Modern England: Turnips and Clover in Norfolk and Suffolk, 1580-1740." *Transactions of the Institute of British Geographers* 10, no. 2 (1985): 205-21.

————. "Estimating Crop Yields from Probate Inventories: An Example from East Anglia, 1585-1735." *The Journal of Economic History* 39, no. 2 (1979): 363-78.

————. "Re-estimating Crop Yields from Probate Inventories: A Comment." *The Journal of Economic History* 50, no. 4 (1990): 931-35.

————. "Weather and Agricultural Change in England, 1660-1739." *Agricultural History* 63, no. 2 (1989): 77-88.

Özbek, Nadir. "“Anadolu Islahatı”, “Ermeni Sorunu” ve Vergi Tahsildarlığı, 1895-1908." *Tarih ve Toplum Yeni Yaklaşımlar* 9 (2009): 59-85.

————. *İmparatorluğun Bedeli: Osmanlı'da Vergi, Siyaset ve Toplumsal Adalet (1839-1908).* Istanbul: Boğaziçi Üniversitesi Yayınevi, 2015.

Özen, Saadet. *Çukulata: Çikolatanin Yerli Tarihi.* Istanbul: Yapı Kredi Yayınları, 2014.

Özkan, Fulya. *A Road to Rebellion, a History on the Move: The Social History of the Trabzon-Bayezid Road and the Formation of the Modern State in the Late Ottoman World.* New York: UMI Dissertation Publisher, 2012.

Özyüksel, Murat. *The Berlin-Baghdad Railway and the Ottoman Empire: Industrialization, Imperial Germany and the Middle East.* London: I.B. Tauris & Co. Ltd., 2016.

Palairet, M. R. *Balkan Economies c.1800-1914: Evolution without Development.* Cambridge; New York: Cambridge University Press, 1997.

Pamuk, Şevket. *19. Yüzyılda Osmanlı Dış Ticareti = Ottoman Foreign Trade in the 19th Century.* Ankara: T.C. Başbakanlık Devlet İstatistik Enstitüsü, 1995.

————. "Institutional Change and the Longevity of the Ottoman Empire, 1500-1800." *The Journal of Interdisciplinary History* 35, no. 2 (2004): 225-47.

————. *Osmanlı Ekonomisinde Bağımlılık ve Büyüme.* Istanbul: Tarih Vakfı Yurt Yayınları, 1994.

————. *The Ottoman Economy and its Institutions.* Aldershot: Ashgate, 2009.

————. "The Ottoman Empire in the "Great Depression" of 1873-1896." *The Journal of Economic History* 44, no. 1 (1984): 107-18.

Pamuk, Şevket, and Zafer Toprak. *Türkiye'de Tarımsal Yapılar: [Bildiriler].* Ankara: Yurt Yayınları, 1988.

"Pasinler Kazasının Esval-ı Tabiyye ve Ziraiyyesi [Erzurum Merkez Ziraat Mualimliğinin 13 Ağustos 1329 Senesine aid Raporu]." In *Ticaret ve Ziraat Nezâreti Mecmuası*. Istanbul, 1913.

Pasteur, Louis. *Œuvres de Pasteur. Etudes sur la Maladie des Vers à Soie.* Paris: Gautier-Villars, 1870.

Perold, Abraham Izaak. *A Treatise on Viticulture.* London; New York: Macmillan, 1927.

Petit, Nicolas. "Ethiopia's Coffee Sector: A Bitter or Better Future?". *Journal of Agrarian Change* 7, no. 2 (2007): 225-63.

"Pisani & Rickertsen GMBH." http://www.pisani.de/en/index.html.

Polanyi, Karl. *The Great Transformation: The Political and Economic Origins of Our Time.* Boston: Beacon Press, 2001.

Polanyi, Karl, and George Dalton. *Primitive, Archaic and Modern Economies: Essays of Karl Polanyi.* New york: Beacon Press, 1971.

Price, Jacob M. *France and the Chesapeake; a History of the French Tobacco Monopoly, 1674-1791, and of Its Relationship to the British and American Tobacco Trades.* Ann Arbor: University of Michigan Press, 1973.

Quataert, Donald. *Anadolu'da Osmanlı Reformu ve Tarım, 1876 - 1908.* Translated by Azat Zana; Gündoğan and Nilay Özok Gündoğan. Istanbul: Türkiye İş Bankası Kültür Yayinları, 2008.

————. "Dilemma of Development: The Agricultural Bank and Agricultural Reform in Ottoman Turkey, 1888-1908." *International Journal of Middle East Studies* 6, no. 2 (1975): 210-27.

————. *Manufacturing and Technology Transfer in the Ottoman Empire, 1800-1914* Centre de Recherche sur la Civilisation Ottomane et le Domaine Turc Contemporain Université de Science Humaines de Strasbourg. Istanbul: Isis Press, 1992.

————. *Ottoman Manufacturing in the Age of the Industrial Revolution.* Cambridge; New York: Cambridge University Press, 1993.

Ragstale, Hugh. "Russian foreign policy, 1725–1815." In *the Cambridge History of Russia: Imperial Russia, 1689-1917*, edited by Dominic Lieven, 504-29. Cambridge: Cambridge University Press 2006.

Rambert, Louis. *Notes et Impressions de Turquie: l'Empire Ottoman sous Abdul-Hamid.* Geneva: Édition Atar, 1926.

Ravallion, Martin, and Dominique van de Walle. "Land in Transition: Reform and Poverty in Rural Vietnam." edited by World Bank: World Bank and Palgrave Macmillan, 2008.

Régie Co-interessée des Tabacs de l'Empire Ottoman, ed. *Régie Co-interessée des Tabacs de l'Empire Ottoman: Statistique et Exploitation Comparative des XVII and XVIII Exercices.* Edited by Nazarets. Paris: Gérard Frères, 1905.

Reiman, Michal. *Stalinizmin Doğuşu "İkinci Devrim"in Arifesinde SSCB.* Translated by Bülent Tanatar. Istanbul: Metis Yayınları, 1998.

Revesz, Rachel. "Nestlé Is Being Sued for Allegedly Using Child Slaves on Cocoa Farms." Independent, http://www.independent.co.uk/news/world/americas/nestle-is-being-sued-for-allegedly-using-child-slaves-on-cocoa-farms-a6806646.html.

Ricardo, David. *An Essay on the Influence of a Low Price of Corn on the Profits of Stock: Shewing the Inexpediency of Restrictions on Importation, with Remarks on Mr. Malthus' Two Last Publications: "An Inquiry into the Nature and Progress of Rent," and "the Grounds of an Opinion on the Policy of Restricting the Importation of Foreign Corn".* The Works and Correspondence of David Ricardo. Edited by Piero Sraffa, Maurice Dobb and Society Royal Economic. Vol. 4, Cambridge: Cambridge University Press for the Royal Economic Society, 1951.

———. *On the Principles of Political Economy and Taxation.* The Works and Correspondence of David Ricardo Notes on Malthus, Principles of Political Economy. Edited by Piero Sraffa. Cambridge: Liberty Fund, 1951.

Robinson, M. "The Extent of Farm Underdrainage in England and Wales, Prior to 1939." *The Agricultural History Review* 34, no. 1 (1986): 79-85.

Rutherford, Malcolm. "Institutional Economics: Then and Now." *The Journal of Economic Perspectives* 15, no. 3 (2001): 173-94.

Salaman, Redcliffe N., W. G. Burton, and J. G. Hawkes. *The History and Social Influence of the Potato.* Cambridge; New York: Cambridge University Press, 1985.

Sarınay, Yusuf, and Kemal Gurulkan. *Osmanlı Belgelerinde Kırım Savaşı: (1853-1856).* Ankara: T.C. Başbakanlık Devlet Arşivleri Genel Müdürlüğü, 2006.

Schacht, Joseph. *An Introduction to Islamic Law.* Oxford: Clarendon Press, 1964.

Schenk, Karl Ernst. *Economic Institutions and Complexity: Structures, Interactions and Emergent Properties.* Cheltenham: Edward Elgar Publishing, 2003.

Schofield, Norman, and Gonzalo Caballero. *The Political Economy of Governance: Institutions, Political Performance and Elections.* London: Springer, 2015.

Schumpeter, Joseph A. *Capitalism, Socialism, and Democracy.* Mansfield Centre: Martino, 2011.

Selda Kayalak Balık, Sinem Çoban. "Fındık Yetiştirme Tekniği." http://arastirma.tarim.gov.tr/findik/Sayfalar/Detay.aspx?SayfaId=22.

Sen, Amartya. *Poverty and Famines an Essay on Entitlement and Deprivation.* Oxford: Oxford University Press, 2010.

Sencer, Muzaffer. *Osmanlı Toplum Yapısı.* Istanbul: May, 1982.

————. *Osmanlı Toplum Yapısı: Eleştirel bir Yaklaşım.* Istanbul: Sarmal Yayinevi, 1999.

Sertel, Yıldız. "Le Concept de “Mode de Production Asiatique” et les Interprétations de l’Histoire Ottomane." *La Pensée* 186, no. April (1976): 77-92.

Seyidoğlu, Halil. *Ekonomik Terimler: Ansiklopedik Sözlük.* Ankara: Güzem Yayınları, 1992.

Shaw, Stanford J., and Ezel Kural Shaw. *History of the Ottoman Empire and Modern Turkey.* Vol. 2, New York Cambridge University Press, 1976-1977.

Shechter, Relli. *Smoking, Culture and Economy in the Middle East the Egyptian Tobacco Market 1850-2000*. London; New York: I.B. Tauris, 2006.

Shiel, Robert S. "Improving Soil Productivity in the Pre-fertiliser Era." In *Land, Labour, and Livestock: Historical Studies in European Agricultural Productivity*, edited by B. M. S. Campbell and Mark Overton, 51-78. Manchester; New York: Manchester University Press, 1991.

Shields, Sarah D. "Regional Trade and 19th-Century Mosul: Revising the Role of Europe in the Middle East Economy." *International Journal of Middle East Studies* 23, no. 1 (1991): 19-37.

Siegelbaum, Lewis. "The Odessa Grain Trade: A Case Study in Urban Growth and Development in Tsarist Russia." *The Journal of European Economic History* 9, no. (Spring 1980) (1980): 113-47.

Sifneos, Evridiki. "The Dark Side of the Moon: Rivalry and Riots for Shelter and Occupation between the Greek and Jewish Populations in Multi-ethnic Nineteenth-century Odessa." *The Historical Review/La Revue Historique* 3 (2006): 189-204.

————. "P.M. Courtgi and the Birth of a Greek-Ottoman Liner Company." In *Following the Nereids: Sea Routes and Maritime Business, 16th-20th Centuries*, edited by Maria Christina Chatzeioannou and Gelina Harlaftis. Athens: Kerkyra Publications, 2006.

Simms, J. Y. "The Economic Impact of the Russian Famine of 1891-92." *The Slavonic and East European Review* 60, no. 1 (1982): 63-74.

Skarstein, Rune. "Economic Liberalization and Smallholder Productivity in Tanzania. From Promised Success to Real Failure, 1985–1998." *Journal of Agrarian Change* 5, no. 3 (2005): 334-62.

Solow, Robert. "Georgescu-Roegen versus Solow-Stiglitz." *Ecological Economics* 22, no. 3 (1997): 267-68.

Stiglitz, Joseph E. "Georgescu-Roegen versus Solow/Stiglitz." *Ecological Economics* 22, no. 3 (1997): 269-70.

————. *Globalization and its Discontents.* New York: W.W. Norton, 2003.

Story, Rebecca, and Randolph J. Widmer. "The Pre-Columbian Economy." In *the Cambridge Economic History of Latin America*, edited by John H. Coatsworth and Roberto Cortés Conde, 73-106. Cambridge: Cambridge University Press, 2008.

Streeck, Wolfgang. "Beyond Continuity: Institutional Change in Advanced Political Economies." Oxford, 2010.

Süzer, Sami. "Mısır Tarımı." Karadeniz Tarımsal Araştırma Enstitüsü Müdürlüğü, http://arastirma.tarim.gov.tr/ktae/Belgeler/brosurler/M%C4%B1s%C4%B1r Tar%C4%B1m%C4%B1.pdf.

Şaşmaz, Musa. *Trade Reports of the Trebizond Province on British Documents, 1830-1914 = İngiliz Belgelerine Göre Trabzon Vilayeti Ticari Raporları, 1830-1914.* Ankara: Türk Tarih Kurumu, 2014.

TCMM, ed. *Türkiye Cumhuriyeti Devlet Salnamesi, 1927-1928.* Istanbul: Matbuat Müdüriyet-i Umumisi, 1928.

Tekeli, İlhan, and Selim İlkin. "Devletçilik Dönemi Tarım Politikaları." In *Türkiye'de Tarımsal Yapılar: [Bildiriler]*, edited by Şevket Pamuk and Zafer Toprak, 281-362. Ankara: Yurt Yayınları, 1988.

Temin, Peter. *Causal Factors in American Economic Growth in the Nineteenth Century.* London: Macmillan, 1975.

"Thalis Black Sea Research Project." https://blacksea.gr/.

Thirsk, Joan. "New Crops and Their Diffusion: Tobacco-growing in Seventeenth-century England." In *the Rural Economy of England*, edited by Joan Thirsk, 259-87. London: Hambledon Continuum, 2003.

Tietenberg, Thomas H. Lewis Lynne. *Environmental and Natural Resource Economics.* London: Routledge, 2018.

Tiryaki, M. Kamil, Zekeriya Akman, and Burhan Kara. "Mısır ve Fasülye Çeşitlerinin Karışık Ekim Sisteminde Verim ve Bazı Agronomik Özelliklerinin Belirlenmesi." *Tarım Bilimleri Dergisi* 10 (2004): 85-92.

Toksöz, Meltem. "Ottoman Mersin: The Making of an Eastern Mediterranean Port-town." *New Perspectives on Turkey* 31 (2015): 71-89.

Turan, Metin, and Abdülrahim T. Göksoy. "Ünite 10." In *Tarım Bitkileri*, edited by Süleyman Eripek. Ankara: Anadolu Üniversitesi Açıköğretim Fakültesi, 1995.

Turgay, Üner. "Trabzon." In *Doğu Akdeniz'de Liman Kentleri, 1800-1914*, edited by Çağlar Keyder, Y. Eyüp Özveren, Donald Quataert and Gül Çağali-Güven, 45-73. Istanbul: Tarih Vakfı Yurt Yayınları, 1994.

van Zanden, Jan Luiten. "The First Green Revolution: The Growth of Production and Productivity in European Agriculture, 1870-1914." *The Economic History Review* 44, no. 2 (1991): 215-39.

————. "On the Efficiency of Markets for Agricultural Products: Rice Prices and Capital Markets in Java, 1823-1853." *The Journal of Economic History* 64, no. 4 (2004): 1028-55.

Veblen, Thorstein. *The Theory of the Leisure Class.* Translated by C. Wright Mills. New York: Dover Publications, 1994.

Vromen, Jack J. "Economic Evolution: An Inquiry into the Foundations of the New Institutional Economics." Routledge, 2007.

Weiss, Harry B., and Edgar L. Dickerson. "The European Mole Cricket, Gryllotalpa Gryllotalpa L, An Introduced Insect Pest." *Journal New York Entomological Society* XXVI: 18-23.

Wheatcroft, Stephen G. "Crises and the Condition of the Peasantry in the Late Imperial Russia." In *Peasant Economy, Culture, and Politics of European Russia, 1800-1921*, edited by Esther Kingston-Mann, Timothy Mixter and Jeffrey Burds, 128-74. Princeton: Princeton University Press, 1991.

White, Sam. *The Climate of Rebellion in the Early Modern Ottoman Empire.* New York: Cambridge University Press, 2013.

Williams, Ann, and G. H. Martin. *Domesday Book: A Complete Translation.* London; New York: Penguin Books, 2003.

Williamson, Oliver E. *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting.* New York: Free Press, 2010.

————. "The New Institutional Economics: Taking Stock, Looking Ahead." *Journal of Economic Literature* 38, no. 3 (2000): 595-613.

Willis, F. Roy. "The Contribution of the "Annales" School to Agrarian History: A Review Essay." *Agricultural History* 52, no. 4 (1978): 538-48.

Winfield, Mark. "Evolution of Wheat." School of Biological Sciences, University of Bristol, http://www.cerealsdb.uk.net/cerealgenomics/WheatBP/Documents/DOC_Evolution.php.

Wittfogel, Karl August. *Oriental Despotism: A Comparative Study of Total Power.* New York: Random House, 1981.

Yağcı, Adem, and Adnan Erdem. "Amerikan Asma Anaçlarının Kullanım Nedenleri ve Bazı Anaçların Özellikleri." T.C. Gıda Tarım ve Hayvancılık Bakanlığı, http://arastirma.tarim.gov.tr/manisabagcilik/Belgeler/genel-bagcilik/AMERIKAN ANACLARI ADEM YAGCI.pdf.

"Yapaz (I)." Türk Dil Kurumu, http://www.tdk.gov.tr/index.php?option=com_ttas&view=ttas&kategori1=derlay&kelime1=yapaz.

Yaşar, Mehmed. "Halkalı Ziraat Mekteb-i Âlisi Tecrübelerinden: Mısır Nebatı Üzerindeki Neticesi." *Yeni Ziraat Gazetesi*, December 1, 1920 (1 Kanun-i Evvel 1336) 1920.

Yelling, J. A. *Common Field and Enclosure in England, 1450-1850.* London: MacMillan Press, 1984.

Yetgin, Mehmet Ali. "Organik Gübreler ve Önemi." Samsun Valiliği İl Tarım Müdürlüğü Çiftçi Eğitimi ve Yayım Şubesi, http://samsun.tarim.gov.tr/Belgeler/Yayinlar/Kitaplarimiz/organik_gubreler_ve_onemi.pdf.

Yüksel, Ayhan. *Giresun Tarihi Yazıları.* Istanbul: Kitabevi, 2007.

Zandi-Sayek, Sibel. *Ottoman Izmir the Rise of a Cosmopolitan Port, 1840-1880.* Minneapolis; London: University of Minnesota Press, 2012.

Ziraat Bankası, ed. "Alat-ı Cedide ve Tohum ve Damızlık Hayvanat Tedarikiyle Islahat ve Teşebbüsat-ı Ziraiyede Bulunacak Olan Çiftcilere Ziraat Bankası'nca İcra Olunacak Teshilat ve Muavenat-ı Mukteziyeyi Mübeyyin Talimatname." Istanbul: Matbaa-ı Âmire, 1910.

Zubritski, Y., V Kerov, and Mitropolski. *İlkel Toplum, Köleci Toplum, Feodal Toplum.* Translated by Sevim Belli. Ankara: Sol Yayınları, 1968.

———. *Kapitalist Toplum.* Translated by Sevim Belli. Ankara: Sol Yayınları, 1969.