

Correlation Between Tax Rates and Tax Revenues in the Ottoman Empire in Respect to Laffer Theorem as Applied to Raki and Wine Figures (1792-1839)

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**Abstract**

This study aims to calculate the relationship between tax rates and revenues of wine and raki coming to Istanbul for consumption from different regions of the Ottoman Empire in the period 1792-1839 with the T Test and interpret it according to the Laffer theorem. The main question of the study can be formulated as what kind of change did the increases in the tax rates of wine and raki in 1810, 1822 and 1831 cause in the tax revenue of these goods. This question can also be expressed as whether the Ottoman Empire should or should not increase the tax rates of wine and raki in order to increase tax revenue. In order to achieve this goal and resolve the question, the tax revenues of the period 1792-1839 were obtained from the financial records in various funds of the Presidential Ottoman Archives (BOA) and the changes in these revenues

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with the change in tax rates were calculated with the T Test. The results of the test will show, according to the Laffer Theorem, whether the Ottoman Empire increased the tax rates of wine and rakı, causing an increase or decrease in the tax revenues of these goods, that is, whether the tax rates were above or below the optimum tax rate. The possible result expected to be obtained from this study is that the increase in the tax rates of rakı and wine in the Ottoman Empire did not cause an increase in tax revenue, but on the contrary, a decrease. In other words, it can be said that the tax rate increases in these two goods in the Ottoman Empire fell behind the price increases.

**Keywords:** Laffer Theorem, Tax Rates, Ottoman Public Finance, Ottoman Tax System, Tax Revenue.

## Rakı ve Şarap Verilerine Göre Laffer Teoremi Açısından Osmanlı İmparatorluğu'nda Vergi Oranları ile Vergi Gelirleri Arasındaki İlişki (1792-1839)

### Öz

Bu çalışma 1792-1839 döneminde Osmanlı İmparatorluğu'nun değişik bölgelerinden tüketilmek üzere İstanbul'a gelen şarap ve rakının vergi oranları ile hasılları arasındaki ilişkiyi T Testi ile hesaplamak ve Laffer teoremine göre yorumlamayı amaçlamaktadır. Çalışmanın temel sorusu, şarap ve rakının vergi oranlarına 1810, 1822 ve 1831 yıllarında yapılan zamların bu malların vergi hasıllarında nasıl bir değişikliğe neden olduğu şeklinde formüle edilebilir. Bu soru, Osmanlı Devleti'nin vergi hasıllarını artırmak amacıyla şarap ve rakının vergi oranlarına yaptığı zamları yapmalı mıydı yoksa yapmamalı mıydı şeklinde de ifade edilebilir. Söz konusu amaca ulaşmak ve soruyu çözmek için Başkanlık Osmanlı Arşivi'nin (BOA) değişik fonlarında yer alan maliye kayıtlarından hareketle 1792-1839 dönemindeki vergi hasıllarına ulaşılarak bu hasılların vergi oranlarının değişimi ile nasıl bir değişikliğe uğradığı T Testi ile hesaplanmıştır. Testin sonuçları, Laffer Teoremi'ne göre, Osmanlı Devleti'nin şarap ve rakının vergi oranlarını artırarak bu malların vergi hasıllarında bir artışa mı bir azalmaya mı neden olduğunu, yani vergi oranlarının optimum vergi oranının üzerinde mi yoksa altında mı olduğunu gösterecektir. Bu çalışmadan elde edilmesi umulan muhtemel sonuç, Osmanlı İmparatorluğu'nda rakı ve şarabın vergi oranlarındaki artışın vergi hasıllarında bir artışa değil aksine bir azalmaya neden olduğudur. Bir başka deyişle, Osmanlı İmparatorluğu bu iki maldaki vergi oranı artışları fiyat yükselişlerinin gerisinde kalmıştır denilebilir.

**Anahtar Kelimeler:** Laffer Teoremi, Vergi Oranları, Osmanlı Maliyesi, Osmanlı Vergi Sistemi, Vergi Geliri.

## Introduction

The failure of the second siege of Vienna in 1683 by the Ottoman Empire not only put an end to the common perception of Ottoman superiority in Europe, but also marked the beginning of land losses for the Empire.<sup>1</sup> From this year on, the Empire tended to lose the overall political and economic superiority even though it gained lands and political dominance to some degree. Moreover, the long peace period which would last from 1739 to 1768 as well as the economic expansion in the first 60 years of the 18<sup>th</sup> century resulted in failure rather than a restoration or reform. Even the success in the Pruth River Campaign in 1711 was not able to make up for the land losses in the Treaty of Karlowitz in 1696. This period of military defeats seemed to have ended about a hundred years later, in 1798, when Napoleon invaded Egypt.<sup>2</sup>

Even though the state put into effect certain practices like *malikâne* in order to repel financial pressures and switch to monetary economy towards the end of the 17<sup>th</sup> century, the only state budget which had budget surplus out of all seven budgets from 1660 to 1701 was the 1701 budget.<sup>3</sup> These reforms the Ottoman society and bureaucracy carried out in the areas of monetary institutions and public financing enabled the Empire to maintain its power only for a certain period of time.<sup>4</sup> Despite the military defeats and financial problems experienced towards the end of the 17<sup>th</sup> century, the first half of the 18<sup>th</sup> century became a period of economic revival for the Ottoman Empire. From 1700 to 1750, the lost lands were partially reclaimed. All the sectors in the economy, such as agriculture, manufacturing and trade improved, and the amount of investment was on the rise. Even though it is of no doubt that some new taxes being introduced and the sources in *timar* being transferred into *mukataa* played a certain role in the fact that the state budget revenue went from 10 million kuruş to 14,5 million kuruş in the periods of 1700-10 and 1700-65, the main reason was this economic improvement.<sup>5</sup>

1 Alan Palmer, *Osmanlı İmparatorluğu'nun Gerileyiş ve Çöküş Tarihi*, trans. Belkis Ç. Dişbudak, Alfa Yayınları, İstanbul 2014, pp. 34-57.

2 Donald Quataert, *The Ottoman Empire 1700–1922*, Second Edition, Cambridge University Press, New York 2005, p. 38.

3 Mehmet Genç, “Osmanlı Maliyesinde Malikâne Sistemi”, *Osmanlı'da Devlet ve Ekonomi*, 10<sup>th</sup> Edition, Ötüken Yayınları, İstanbul 2000, pp. 96-100.

4 Şevket Pamuk, “The Evolution of Financial Institutions in the Ottoman Empire, 1600-1914”, *Financial History Review*, Vol. XI/No. 1, 2004, p. 8.

5 Mehmet Genç, “18. Yüzyılda Osmanlı Ekonomisi ve Savaş”, *Osmanlı'da Devlet ve Ekonomi*, 10<sup>th</sup>

The second half of the 18<sup>th</sup> century, contrary to the first, witnessed the deterioration of the economic and financial situation. So much so that, the Cretan War, which started in 1645 and lasted 25 years, signified the beginning of the period of everlasting, costly wars. However, although Ottoman statesmen implemented some innovations, they generally sought solutions to financial problems not by increasing the volume of production and trade, but by rearranging how they would distribute the income, and they became overly dependent on financial problems. This policy only made the existing structure more stagnant rather than delivering any kind of solution.<sup>6</sup>

Towards the end of the 18<sup>th</sup> century, especially during the reign of Selim III (1789-1807), the Empire was in a state of financial and military crisis. As much as the wars being fought against Russia in the second half of the 18<sup>th</sup> century played a role in this crisis; France invading Egypt in 1798, the Serbian uprising in 1804, and the Russian wars after the year of 1806 also had an impact.<sup>7</sup> Increases in prices went beyond %200 from 1760 to 1800. During the ten-year period from 1790 to 1800, the yearly price increases reached %5 threshold as never before. The yearly expense amount went up by %30 between 1761 and 1785, and %100 during the years of war. In parallel with this increase in expenses, tax revenues of the budget remained stagnant because of the shrinking economic activity despite new sources of tax being added and the current tax rates being increased.<sup>8</sup>

However, the decline in real production levels and the insistence on the financial tradition of the classical period were not the only reasons for financial disruption. It is certain that the conditions of the domestic and international conjuncture had an impact on economic and financial disruption as well. Among these conditions were the increase in military expenses, excessive state bureaucracy, domestic insecurity, uprisings, banditry practices, different forms of corruption,

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Edition, Ötügen Yayınları, İstanbul 2000, pp. 210-211. See also Bruce McGowan, "Ayanlar Çağı 1699-1812", trans. Ayşe Berktaş, *Osmanlı İmparatorluğu'nun Ekonomik ve Sosyal Tarihi*, ed. Halil İnalcık-Donald Quataert, Vol. 2, Eren Yayınları, İstanbul 2004, p. 761.

6 Yavuz Cezar, *Osmanlı Maliyesinde Bunalım ve Değişim Dönemi*, Alan Yayıncılık, İstanbul 1986, pp. 31-32; Yavuz Cezar, "The Role of Financial Factors in the Structural Changes in the Organization of the Ottoman Empire in the 18<sup>th</sup> Century", *İstanbul Üniversitesi Siyasal Bilgiler Fakültesi Dergisi*, No. 11-13, 1995, pp. 111-114.

7 Ariel Salzman, "An Ancient Regime Revisited: Privatization and Political Economy in the Eighteenth-Century Ottoman Society", *Politics and Society*, Vol. XXI/No. 4, 1993, pp. 406-407.

8 Genç, "18. Yüzyılda Osmanlı Ekonomisi ve Savaş", p. 213.

the weakening of the central authority, migration from rural areas to cities, transformations in world trade, movements of money in the world, and the fact that the countries which used to form the counter-Ottoman group turned up the pressure by gaining power.<sup>9</sup>

The end of the 18<sup>th</sup> century and the beginning of the 19<sup>th</sup> century became an era of reforms in the Ottoman Empire.<sup>10</sup> Some military innovation efforts started by Abdulhamid I (1774-89) were maintained by Selim III. When the reforms carried out by Selim III in the military were met with negative reaction by the traditional structure, they were completed by Mahmud II (1808-39). Mahmud II became relatively more successful in terms of making the country more open to the developments in the West by transforming not only the military, but also the central administration, media activities, the treasury, and clothing habits. The Imperial Edict of Gülhane (Tanzimât Fermânı), declared at the time of Abdulmecid I (1839-61) in 1839, was a representation of the peak point of these reforms.<sup>11</sup>

The financial structure of the Empire had its share of these reform movements as well. The central administration of the Ottoman Empire diversified the new tax-collection methods started towards the end of the 17<sup>th</sup> century by transferring income from the private treasury to the central treasury, *müsadere* (confiscation) practices, debasement, taking precautions against squandering, domestic and foreign indebtedment, and rendering new pieces of land available for *esham*. However, one of the most prominent policies to fix the financial structure was imposing new taxes. Extraordinary monetary taxes collected under the name of *imdadı seferiye* during the times of war, and *imdadı hazariye* during the times of peace were accompanied by types of tax-in-kind such as *nüzul* and *sürsat*.<sup>12</sup> These taxes which were collected in a state of emergency would soon turn into regular taxes, and new taxes would be added to these in accordance with innovation efforts.

- 9 Ahmet Tabakoğlu, *Gerileme Dönemine Girenken Osmanlı Maliyesi*, Dergâh Yayınları, İstanbul 1985, pp. 205-247.
- 10 Roderic H. Davidson, *Osmanlı İmparatorluğu'nda Reform, 1856-1876*, trans. Osman Akinhay, Agora Yayınları, İstanbul 2005, pp. 1-52.
- 11 Roderic H. Davidson, *Osmanlı Türk Tarihi (1774-1923)*, trans. Mehmet Morali, Alkım Yayınları, İstanbul 2004, p. 51-54. See also Alan Palmer, *Son Üç Yüz Yıl Osmanlı İmparatorluğu*, trans. Belkis Ç. Dişbudak, Türkiye İş Bankası Yayınları, İstanbul 2003, pp. 61-72.
- 12 Tabakoğlu, *Gerileme Dönemine Girenken Osmanlı Maliyesi*, pp. 265-278; Coşkun Çakır, *Tanzimat Dönemi Osmanlı Maliyesi*, Küre Yayınları, İstanbul 2001, pp. 18-21. Nüzul is tax in kind in which people living in locations along the route used by the army when going to war provide certain goods for the army.

**Table 1:** Tax Increase Rates of Wine and Raki (1792-1839)

Years	TAX RATES							
	WINE				RAKI			
	KIYYE*		KG		KIYYE		KG	
	Pare**	Piaster	Pare	Piaster	Pare	Piaster	Pare	Piaster
1792	2	0,05	1,55	0,039	4	3,10	3,11	0,078
1810	4	0,10	3,11	0,078	8	0,20	6,23	0,156
1822	6	0,15	4,67	0,117	12	0,30	9,35	0,234
1831	10	0,25	7,79	0,195	20	0,50	15,58	0,390

**Source:** Compiled from archive documents in the bibliography.

One other factor leading to the diversification of taxes was the foundation of the treasury of *irad-ı cedid* in 1793. Among these taxes, a significant one was tax of *zecriye*, which was an old type of tax collected on alcoholic drinks. Though this tax was legislated away as alcoholic drinks were occasionally prohibited, it was put back into effect on April 4, 1792 with the foundation of the new treasury.<sup>13</sup>

Imposing new taxes was not the only thing done by the Ottoman administration in order to overcome the financial difficulties; it was also aiming to raise state revenues by increasing tax rates. For instance, when tax of *zecriye* was brought to state agenda again in 1792, taxes laid on wine and raki per kiyye<sup>14</sup> were increased as per the additions introduced in 1810, 1822, and 1831 (Table 1). The Ottoman administration must have hoped to raise the revenues of the central treasury with these tax additions.

The first mention of the correlation between tax revenues and increase in tax rates was in *Kitābu l'ibar* (Muqaddimah) by Ibn Khaldun.<sup>15</sup> Khaldun pointed out that the correlation between tax rates and tax revenues would not always show a linear trend, but increasing tax rates, after a certain point, might cause a decline in tax revenues. A similar correlation was re-studied by Arthur Betz Laffer in the second half of the 20<sup>th</sup> century. The result obtained from this study was identical to the result Khaldun ended up with. Accordingly, increases in tax rates could

\* 1 Kiyye=1.283 gr.

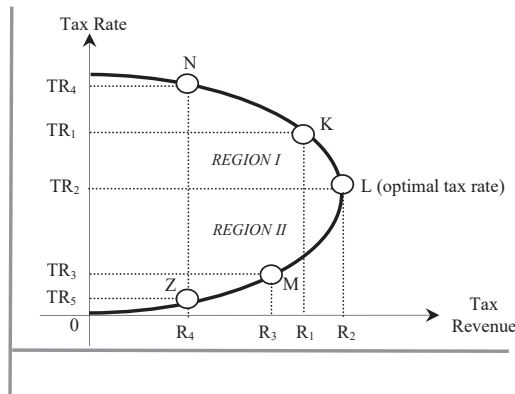
\*\* 1 Piaster (kuruş)=40 Pare=120 Coin (akçe).

13 Cezar, *Osmanlı Maliyesinde Bunalm ve Değişim Dönemi*, p. 183.

14 The kiyye measure used in archive documents is the standard Istanbul kiyye, which corresponds to 400 dirhams and 1,283 kilograms. See Halil İnalçık, *Osmanlı İmparatorluğu'nun Ekonomik ve Sosyal Tarihi 1300-1600*, trans. Halil Berktaş, Vol. 1, Eren Yayıncılık, İstanbul 2000, p. 446.

15 İbn-i Haldun, *Mukaddime*, trans. Bekir Z. Çoban, Vol. 2, Millî Eğitim Bakanlığı Yayınları, İstanbul 1991, p. 60.

possibly reduce, rather than raise, tax revenues when beyond a certain level. In other words, it might at times be necessary to decrease tax rates instead of increasing them in order to raise tax revenues; increasing tax rates in order to raise tax revenues was not guaranteed to turn out well for the economic structure. Even though the correlation between tax rates and tax revenues is a matter of mild controversy, some historical data in the USA and England confirmed that there was a correlation between the two.<sup>16</sup>



**Graph 1:** Laffer Curve

According to Arthur B. Laffer, change in tax rates would have two effects, namely arithmetic and economic. Arithmetic effect meant that increase in tax rates would raise tax revenues; decrease in tax rates would reduce tax revenues. That is, there was a linear correlation between tax rates and tax revenues. On the other hand, economic effect meant that decreasing or increasing tax rates could affect tax revenues in the opposite direction by affecting production (investment), employment and tax assessment. Laffer thought that this was the reason why there were two tax rates between 0 and 100, one being high and the other being low, which would generate the same amount of tax revenues.<sup>17</sup> (See, Graph 1, TR<sup>4</sup> and TR<sup>5</sup> points).

<sup>16</sup> See E. C. Pasour, "Supply Side Economics: A Return to Basic Principles", *Modern Age*, 1982, p. 59.

<sup>17</sup> Arthur B. Laffer, "The Laffer Curve: Past, Present and Future", *The Heritage Foundation*, No. 1765, 2004, pp. 1-3; Arthur B. Laffer, "The Laffer Curve and the Failure of Stimulus Spending", *Lecture*, The Institute of Economic Affairs, Paper No. 38, 2012, pp. 1-14; Arthur B. Laffer at all, "Taxes Really Do Matter: Look at the States", *The Laffer Center Publication*, 2012, p. 3-19; Lilianna Bunescu-Carmen Comaniciu, "Graphical Analysis of Laffer's Theory for European Union Member States", *Annals of the Constantin Brâncuși, University of Târgu Jiu, Economy Series*, No. 2, 2013, pp. 16-23.

This study is aiming to answer the questions of in what ways the tax additions by the Ottoman Empire in 1810, 1822 and 1831 on wine and raki brought to Istanbul affected tax revenues, and where the Ottoman economy stands on the Laffer curve. In other words, the purpose of the study is to investigate whether the Ottoman Empire, which wanted to raise its tax revenues, was able to do so by increasing the tax rates on wine and raki, and whether these additions were actually necessary to impose in this regard.

To answer these questions, by applying the T Test to the tax revenues of the periods before and after the tax increase, this study will pin down the direction of growth or decline in tax revenues as well as whether it was the tax rates or external factors, which in this study are assumed stable, that caused the change. All in all, the efficiency of the Ottoman policy of increasing the tax rates on wine and raki will be tested as well.

### **1. Processes and Methodology of the Study**

This study has been composed of data from 55 archived sources (books and documents) in Istanbul Presidential Ottoman Archive (BOA). Available data include detailed records of wine and raki a number of merchants brought to Istanbul in the period from 1792 to 1839. In these records were processed the name of the merchant who brought the wine or raki, the amount of the good brought, and the amount of taxes these goods were subject to based on the currency and weight unit used in the Ottoman Empire. In this period, it is observed that wine and raki were taxed per kıyye (1 kıyye=1,283 kg) in pare (1 kuruş=40 pare), and that the tax rates on both wine and raki were increased in 1810, 1822 and 1831.

In order to use the data in the documents statistically, following the transcription of the documents, all data processed within Hijri calendar whose records were kept on a daily basis have been arranged according to the Gregorian calendar on a monthly basis. Moreover, the data related to the goods measured in kıyye and taxed over this weight unit in pare have been converted to kilogram and kuruş. Because the taxes collected on wine and raki being nominal requires deflating the inflation, the amounts of nominal taxes have been turned into real taxes using the consumer prices index.<sup>18</sup> (See: Table 2 and Appendix).

In Table 2, the tax rates per kilogram of wine and raki in the period from 1792 to 1839, nominal and real additions to these rates as well as the average tax revenues

18 Şevket Pamuk, *İstanbul ve Diğer Kentlerde 500 Yıllık Fiyatlar ve Ücretler 1469-1998*, DİE Yayınları, Ankara 2000, pp. 16-17, Table 1.1.



in taxation periods have been calculated, and the findings obtained have been demonstrated in the graphs. To be able to determine whether the decline in the average tax revenues is statistically meaningful, the T Test has been applied to both wine and raki revenues based on annual tax revenues before and after the tax additions in 1810 and 1822. This way, it has been tested whether the decline in the tax revenues of wine and raki following the increase in tax rates is statistically meaningful. The meaningfulness obtained through the T Test shows that the increase in tax rates is directly related to the decline in tax revenues; meaninglessness, on the other hand, shows that not the tax rates, but the external factors assumed stable cause the decline in tax revenues. Thereby, it has been possible to figure out where the Ottoman economy stands on the Laffer Curve in cases where there is meaningfulness between increase in tax rates and decline in tax revenues, and whether it was really a necessity for the Ottoman administration to increase the tax rates.

While doing these, the study has been grounded upon some assumptions and limitations, which are as follows:

- ❖ This study takes into consideration only the correlation between tax rates and tax revenues in the period from 1792 to 1839. Therefore, it has limitations in terms of both time and goods.
- ❖ In the period from 1792 to 1839, despite there being three tax additions (1810, 1822, 1831) in wine and raki, the correlation between the increase in tax rates and the change in revenues in 1831 has not been incorporated into the analysis. This is because even though the first two tax additions (1810, 1822) were above the increase in the general level of prices, the one in 1831 was below it. In other words, the tax rates in 1810 and 1822 increased in real terms; however, the tax rates in 1831 increased only nominally, but decreased in real terms. (See: Table 1).
- ❖ In this study, the variables which affected tax revenues such as wars, land losses, changes in the costs of production and transport, climate irregularities, social unrests, uprisings, legal regulations, and developments in international economy and political conjuncture have been taken as external factors. Hence, these factors are the cause for the decline in tax revenues in cases where there is meaninglessness in the T Test; yet, in cases where there is meaningfulness, the increase in tax rates is the cause for the decline in tax revenues.

## 2. Analyzing of The Relations Between Tax Rates and Tax Revenues: T Test

The Ottoman State put *zecriye* tax collected on wine and raki back into effect in 1792 so as to overcome the financial difficulties it was going through. It started collecting 0,039 kuruş of tax per kilogram of wine, and 0,078 kuruş per kilogram of raki from 1792 to 1810. Nonetheless, in 1810, 1822 and 1831, it decided to increase the tax rates on these two goods at varying rates.

**Table 2:** Price Increase, Tax Rate, Nominal and Reel Tax Addition and Average Wine Tax Revenue in Wine and Raki (1792-1839)

	Years	Price Index 1469=100 <sup>19</sup>	Price Increase With Regard to Index	Tax (Kıyye/Pare) <sup>20</sup>	Tax (Kg/Plaster)	Nominal Tax Addition %	Reel Tax Addition %	Average Tax Revenue (Plaster) <sup>21</sup>
<i>WINE</i>								
1	1792	22,09		2	0,039			697,07
2	1793	24,85		2	0,039			
3	1795	23,63		2	0,039			
4	1796	24,34		2	0,039			
5	1797	28,71		2	0,039			
6	1798	24,04		2	0,039			
7	1799	23,81		2	0,039			
8	1801	24,83		2	0,039			
9	1802	23,30		2	0,039			
10	1803	28,15		2	0,039			
11	1804	32,67		2	0,039			
12	1805	41,50		2	0,039			
13	1806	33,44		2	0,039			
14	1807	42,64		2	0,039			
15	1808	42,12		2	0,039			
16	1809	43,75		2	0,039			
17	1810 <sup>22</sup>	37,61	70	4	0,078	100	30	735,97
18	1811	58,32		4	0,078			

19 Pamuk, *İstanbul ve Diğer Kentlerde 500 Yıllık Fiyatlar ve Ücretler 1469-1998*, pp. 16-17, Table 1.1.

20 1 Kıyye (okka) equals 1,283 gr, and 1 pare 1/40 kuruş. Kıyye is converted to kilogram, and pare to kuruş.

21 Real tax increases have been obtained by subtracting price increase rates from nominal tax increases.

22 In the period from 1792 to 1810, prices went up by %70.  $[(37,61 \times 100) / 22,09]$ .

19	1812	44,60		4	0,078			735,97
20	1813	44,80		4	0,078			
21	1814	45,99		4	0,078			
22	1815	45,93		4	0,078			
23	1816	48,84		4	0,078			
24	1817	50,03		4	0,078			
25	1818	51,46		4	0,078			
26	1819	67,05		4	0,078			
27	1820	49,34		4	0,078			
28	1821	51,81		4	0,078			
29	1822 <sup>23</sup>	52,69	40	6	0,117	50	10	576,40
30	1823	53,32		6	0,117			
31	1824	51,66		6	0,117			
32	1825	51,97		6	0,117			
33	1826	66,27		6	0,117			
34	1827	73,05		6	0,117			
35	1828	92,59		6	0,117			
36	1829	85,67		6	0,117			
37	1830	85,39		6	0,117			
38	1831 <sup>24</sup>	110,42	109	10	0,195	58,33	-50,67	
39	1832	114,96		10	0,195			
40	1833	115,25		10	0,195			
41	1834	122,58		10	0,195			
42	1835	135,22		10	0,195			
43	1836	112,71		10	0,195			
44	1837	193,28		10	0,195			
45	1838	161,11		10	0,195			
46	1839	150,02		10	0,195			
<i>RAKİ</i>								
1	1792	22,09		4	0,078			286,17
2	1793	24,85		4	0,078			
3	1795	23,63		4	0,078			
4	1796	24,34		4	0,078			
5	1797	28,71		4	0,078			
6	1798	24,04		4	0,078			
7	1799	23,81		4	0,078			
8	1801	24,83		4	0,078			
9	1802	23,30		4	0,078			
10	1803	28,15		4	0,078			

23 In the period from 1810 to 1822, prices went up by %40.  $[(52,69 \times 100) / 37,61]$ .

24 In the period from 1822 to 1831, prices went up by %109.  $[(110,42 \times 100) / 52,69]$ .

11	1804	32,67		4	0,078			286,17
12	1805	41,50		4	0,078			
13	1806	33,44		4	0,078			
14	1807	42,64		4	0,078			
15	1808	42,12		4	0,078			
16	1809	43,75		4	0,078			
17	1810 <sup>25</sup>	37,61	70	8	0,156	100	30	184,69
18	1811	58,32		8	0,156			
19	1812	44,60		8	0,156			
20	1813	44,80		8	0,156			
21	1814	45,99		8	0,156			
22	1815	45,93		8	0,156			
23	1816	48,84		8	0,156			
24	1817	50,03		8	0,156			
25	1818	51,46		8	0,156			
26	1819	67,05		8	0,156			
27	1820	49,34		8	0,156			
28	1821	51,81		8	0,156			
29	1822 <sup>26</sup>	52,69	40	12	0,234	43,75	3,75	144,53
30	1823	53,32		12	0,234			
31	1824	51,66		12	0,234			
32	1825	51,97		12	0,234			
33	1826	66,27		12	0,234			
34	1827	73,05		12	0,234			
35	1828	92,59		12	0,234			
36	1829	85,67		12	0,234			
37	1830	85,39		12	0,234			
38	1831 <sup>27</sup>	110,42	109	20	0,390	69,56	-39,44	114,89
39	1832	114,96		20	0,390			
40	1833	115,25		20	0,390			
41	1834	122,58		20	0,390			
42	1835	135,22		20	0,390			
43	1836	112,71		20	0,390			
44	1837	193,28		20	0,390			
45	1838	161,11		20	0,390			
46	1839	150,02		20	0,390			

**Source:** Compiled from archive documents in the bibliography.

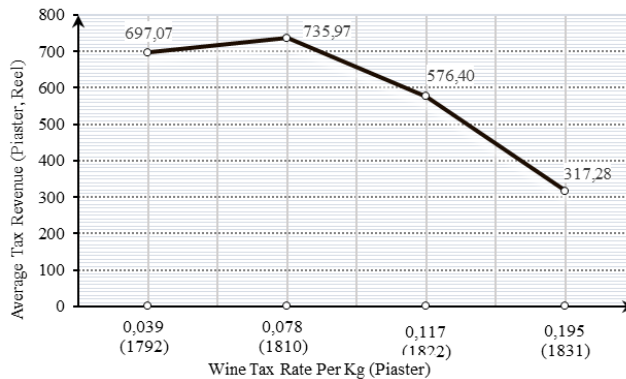
25 In the period from 1792 to 1810, prices went up by %70.  $[(37,61 \times 100) / 22,09]$ .

26 In the period from 1810 to 1822, prices went up by %40.  $[(52,69 \times 100) / 37,61]$ .

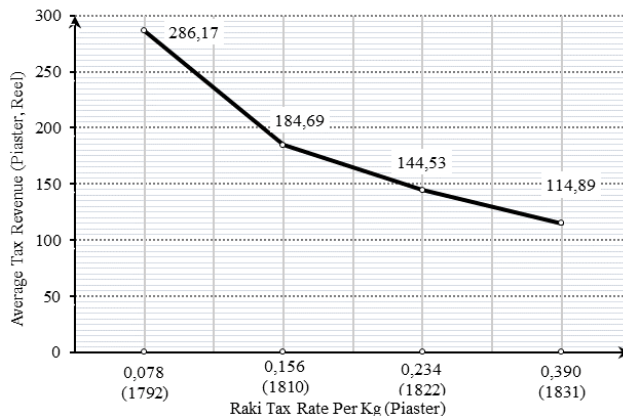
27 In the period from 1822 to 1831, prices went up by %109.  $[(110,42 \times 100) / 52,69]$ .

Table 2 demonstrates the tax rates on wine and raki, the increase in these rates (nominal and real), price index, price increase rates, and the averages of the tax revenues in the taxation periods from 1792 to 1839. Analysis of the averages of the tax revenues of both wine and raki in each taxation period shows that tax revenues tended to decline from 1792 to 1839. (See Graph 2 and 3). Although this decline at first seems to have been caused by the increase in tax rates, to confirm this statistically and determine whether the decline in tax revenues occurred because of the increase in tax rates or other external factors apart from tax rates, it is necessary to investigate whether the decline is statistically meaningful by applying the T Test to the tax revenues before and after the tax increase years of 1810 and 1822.

**Graph 2:** Correlation Between Wine Tax Rates and Average Reel Revenues (1792-1839)



**Graph 3:** Correlation Between Raki Tax Rates and Average Reel Revenues (1792-1839)



Through the T Test whose results are shown in Table 3, it is calculated whether there is any meaningful and statistical relation between the tax additions in 1810 and 1822 and tax revenues. Accordingly, tax revenues collected on wine and raki in the period from 1792 to 1839 have an overall tendency for decrease. Looking at the increase in average, it is seen that only the tax addition in wine in 1810 might have raised tax revenues.

The cause for the growth in the tax revenues of wine in 1810 is not the increase in tax rates; it is the external factors that determine tax revenues. So much so that, the result obtained from the T Test marks this increase as meaningless; that is, there is not any correlation between the increase in tax rates and the growth in tax revenues. Nevertheless, the cause for the decline in the tax revenues of raki in the same year is the increase in tax rates, which means the result obtained from the T Test is meaningful. So, it must be noted that the Ottoman economy stands on the first region of the Laffer Curve in regards to the increase in the tax rates on raki in 1810. (See: Graph 1).

**Table 3:** Tax Additions in Wine and Raki and the Changes in Reel Tax Revenues: T Test

Tax Addition Period	Date of Tax Addition	N	Average	Standard Deviation	t	p	Meaningfulness*
Wine I	1810	196	697,07	303,66	0,933	0,351	Insignificant
		76	735,97	330,00	---	---	
Wine II	1822	76	735,97	330,00	2,640	0,009	Significant
		60	576,39	378,78	---	---	
Raki I	1810	196	286,17	165,18	5,733	0,000	Significant
		78	184,69	116,55	---	---	
Raki II	1822	78	184,69	116,55	1,944	0,054	Insignificant
		60	144,53	125,01	--	--	

In other words, Ottoman statesmen should not have increased the tax rates on raki in 1810; on the contrary, they should have decreased it. Yet, Ottoman statesmen chose to increase tax rates in order to avoid the financial pressure they

\* As per the result of the T Test, in order for the correlation between tax rates and revenues to be meaningful, p must be smaller than 0,05, and t must be bigger than 1,96.

were exposed to, which brought along with it not a growth in the tax revenues gained from raki, but a decline in accordance with Laffer theorem. That is to say, Ottoman statesmen pursued a policy that they should not have.

On the other hand, the cause for the decline in the tax revenues of raki in 1822 is not the increase in tax rates; it is the external factors that determine tax revenues. Nevertheless, the cause for the decline in the tax revenues of wine in the same year is the increase in tax rates. So, it must be noted that the Ottoman economy stands on the first region of the Laffer Curve in regards to the increase in the tax rates on wine in 1822. (See: Graph 1). In other words, Ottoman statesmen should not have increased the tax rates on wine in 1822; on the contrary, they should have decreased it. Yet, Ottoman statesmen chose to increase tax rates in order to avoid the financial pressure they were exposed to, which brought along with it not a growth in the tax revenues gained from wine, but a decline in accordance with Laffer theorem. That is to say, Ottoman statesmen pursued a policy that they should not have.

### **Conclusion**

All in all, the conclusion obtained from this study is that there was an overall tendency of the tax revenues of wine and raki to decline in the Ottoman economy;<sup>28</sup> and this decline was caused sometimes by the increase in tax rates, other times by other factors that affect tax revenues. Only in 1810, there was a growth in wine revenue, yet this growth was not caused by the increase in tax rates but by external factors. Therefore, it is safe to say that the Ottoman central administration's decision to increase tax rates in order to come out of financial depression failed. In other words, the Ottoman central authority marked up the prices of raki in 1810, and wine in 1822 while it should not have done so. The increase in the prices of wine in 1810, and raki in 1822 failed to have any impact in terms of raising tax revenues because of external factors. The most general conclusion is that tax additions did not raise the incomes of the Ottoman central treasury, but it reduced it on the contrary. Yet, it is clear that more comparison is required among tax rates and tax revenues of more goods to be able to generalize this conclusion.

28 It is safe to say that the Ottoman Empire fell behind European countries in terms of the capability to collect taxes in the 17<sup>th</sup> and 18<sup>th</sup> centuries and was thus able to react to the military defeats it faced only in the 19<sup>th</sup> century. See Kıvanç Karaman-Şevket Pamuk, "Ottoman State Finances in European Perspective 1500-1914", *The Journal of Economic History*, Vol. VXX/No. 3, 2010, pp. 593-629.

**Author Contributions**

Conceiving the Study	Author-1 (%60) - Author-2 (%40)
Data Collection	Author-1 (%80) - Author-2 (%20)
Data Analysis	Author-1 (%30) - Author-2 (%70)
Writing up	Author-1 (%30) - Author-2 (%60)
Submission and Revision	Author-1 (%50) - Author-2 (%50)

The Author(s) declare(s) that there is no conflict of interest / Çıkar çatışması beyan edilmemiştir.



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**APPENDIX**

## Tax Rates, Tax Revenues and the Amount of Wine and Raki Transferred from Ottoman Interior to Istanbul (1792-1839)\*

Period	Date (From)	Date (to)	Consumer Price Index (1469=100) * (A)	Wine Tax Rate (Per kg/piaster)	Wine Amount (Ton)	Nominal Wine Tax Revenue (Piaster) (B)	Real Wine Tax Revenue (Piaster) (B/A)	Raki Tax Rate (Per kg/piaster)	Raki Amount (Ton)	Nominal Raki Tax Revenue (Piaster) (C)	Real Raki Tax Revenue (Piaster) (C/A)
1	01 May 1792	22 May 1792	22,09	0,039	120,32	4.692,50	212,43	0,078	49,72	3.878,00	175,55
2	23 May 1792	20 June 1792	22,09	0,039	506,02	19.735,55	893,42	0,078	110,84	8.640,15	391,13
3	21 June 1792	23 July 1792	22,09	0,039	440,23	17.169,60	777,26	0,078	118,14	9.214,90	417,15
4	21 July 1792	18 August 1792	22,09	0,039	190,95	7.447,25	337,13	0,078	80,99	6.317,80	286,00
5	19 August 1792	17 September 1792	22,09	0,039	310,86	12.124,10	548,85	0,078	170,40	13.292,10	601,72
6	18 September 1792	16 October 1792	22,09	0,039	238,41	9.298,25	420,93	0,078	48,90	3.814,50	172,68
7	17 October 1792	15 November 1792	22,09	0,039	417,45	16.281,20	737,04	0,078	68,29	5.327,00	241,15

\* The reason for the absence of data in certain periods is that periods in which no data was recorded despite the presence of records in the archive between the years of 1792 and 1839 have been deducted from the table. The amount of wine and raki brought to Istanbul is stated in kıyye (1,283 kg). The related figures are converted to kilogram. In the original documents taxes collected from wine and raki are stated per kıyye and pare (1/40 kuruş); however, in this table the data has been converted to per kilogram and kuruş.

\*\* While converting the tax revenues of wine and raki in the table from nominal to real, the price index devised by Şevket Pamuk for the Ottoman Empire has been used. See: Pamuk, *İstanbul ve Diğer Kentlerde 500 Yıllık Fiyatlar ve Ücretler 1469-1998*, p. 16-17, Table 1.1.

8	16 November 1792	14 December 1792	22,09	0,039	281,77	10.989,55	497,49	0,078	70,73	5.517,30	249,76
9	15 December 1792	13 January 1793	22,09	0,039	235,63	9.190,00	416,03	0,078	54,36	4.240,50	191,96
10	14 January 1793	11 February 1793	24,85	0,039	260,05	10.142,30	408,14	0,078	70,68	5.513,40	221,87
11	12 February 1793	13 March 1793	24,85	0,039	370,93	14.466,90	582,17	0,078	104,36	8.140,30	327,58
12	14 March 1793	11 April 1793	24,85	0,039	537,73	20.972,15	843,95	0,078	195,49	15.248,80	613,63
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20262, p. 5-29											
13	12 April 1793	11 May 1793	24,85	0,039	339,87	13.255,50	533,42	0,078	78,65	6.134,60	246,87
14	12 May 1793	09 June 1793	24,85	0,039	344,87	13.450,65	541,27	0,078	73,01	5.694,80	229,17
15	10 June 1793	09 July 1793	24,85	0,039	399,26	15.571,75	626,63	0,078	121,86	9.505,60	382,52
16	10 July 1793	08 August 1793	24,85	0,039	758,60	29.586,45	1.190,60	0,078	134,25	10.472,30	421,42
17	09 August 1793	07 September 1793	24,85	0,039	273,54	10.668,55	429,32	0,078	25,38	1.979,50	79,66
18	08 September 1793	06 October 1793	24,85	0,039	403,52	15.737,95	633,32	0,078	86,38	6.738,10	271,15
19	07 October 17983	05 November 1793	24,85	0,039	693,47	27.046,60	1.088,39	0,078	89,55	6.985,30	281,10
20	06 November 1793	04 December 1793	24,85	0,039	486,16	18.961,00	763,02	0,078	72,63	5.665,00	227,97
21	05 December 1793	03 January 1794	24,85	0,039	673,54	26.269,10	1.057,11	0,078	188,04	14.667,60	590,25
22	04 January 1794	01 February 1794	24,85	0,039	348,05	13.574,45	546,26	0,078	162,39	12.667,00	509,74
23	02 February 1794	03 March 1794	24,85	0,039	492,35	19.202,50	772,74	0,078	151,14	11.789,30	474,42

24	04 March 1794	01 April 1794	24,85	0,039	28,90	1.127,00	45,35	0,078	28,91	2.255,00	90,74
25	02 April 1794	01 May 1794	24,85	0,039	494,34	19.279,95	775,85	0,078	138,12	10.774,10	433,57
26	02 May 1794	30 May 1794	24,85	0,039	344,35	13.430,30	540,45	0,078	43,81	3.417,20	137,51
27	31 May 1794	29 June 1794	24,85	0,039	466,82	18.206,90	732,67	0,078	143,37	11.183,30	450,03
28	30 June 1794	28 July 1794	24,85	0,039	457,66	17.849,35	718,28	0,078	75,34	5.876,50	236,48
29	29 July 1794	27 August 1794	24,85	0,039	456,11	17.788,85	715,85	0,078	86,80	6.770,50	272,45
30	28 August 1794	25 September 1794	24,85	0,039	656,61	25.608,75	1.030,53	0,078	86,42	6.741,10	271,27
31	26 September 1794	25 October 1794	24,85	0,039	264,64	10.321,50	415,35	0,078	34,06	2.656,50	106,90
32	26 October 1794	23 November 1794	24,85	0,039	372,80	14.539,75	585,10	0,078	26,68	2.081,00	83,74
33	24 November 1794	23 December 1794	24,85	0,039	403,71	15.745,35	633,62	0,078	116,09	9.055,50	364,41
34	24 December 1794	21 January 1795	23,63	0,039	154,17	6.013,00	254,46	0,078	41,04	3.201,60	135,49
35	22 January 1795	20 February 1795	23,63	0,039	468,84	18.285,60	773,83	0,078	97,04	7.569,20	320,32
36	21 February 1795	21 March 1795	23,63	0,039	243,98	9.515,75	402,70	0,078	69,33	5.408,00	228,86
37	22 March 1795	20 April 1795	23,63	0,039	494,40	19.282,30	816,01	0,078	90,25	7.039,50	297,91
38	21 April 1795	19 May 1795	23,63	0,039	605,96	23.633,25	1.000,14	0,078	101,73	7.935,50	335,82
39	20 May 1795	18 June 1795	23,63	0,039	412,20	16.076,25	680,33	0,078	138,02	10.765,70	455,59
40	19 June 1795	17 July 1795	23,63	0,039	350,73	13.679,00	578,88	0,078	28,70	2.239,00	94,75

41	18 July 1795	16 August 1795	23,63	0,039	285,22	11.123,90	470,75	0,078	67,73	5.283,50	223,59
42	17 August 1795	14 September 1795	23,63	0,039	633,47	24.706,50	1.045,56	0,078	55,22	4.307,30	182,28
43	15 September 1795	14 October 1795	23,63	0,039	516,97	20.162,60	853,26	0,078	116,27	9.069,50	383,81
44	15 October 1795	12 November 1795	23,63	0,039	356,05	13.886,35	587,66	0,078	99,42	7.755,00	328,18
45	13 November 1795	12 December 1795	23,63	0,039	447,73	17.462,00	738,98	0,078	104,76	8.171,80	345,82
46	13 December 1795	10 January 1796	24,34	0,039	861,42	33.596,60	1.380,30	0,078	127,28	9.928,00	407,89
47	11 January 1796	09 February 1796	24,34	0,039	580,44	22.638,15	930,08	0,078	197,24	15.385,70	632,12
48	10 February 1796	09 March 1796	24,34	0,039	469,53	18.312,55	752,36	0,078	184,39	14.382,70	590,91
49	10 March 1796	08 April 1796	24,34	0,039	364,83	14.229,00	584,59	0,078	85,15	6.641,60	272,87
50	09 April 1796	07 May 1796	24,34	0,039	416,83	16.257,00	667,91	0,078	105,44	8.224,50	337,90
51	08 May 1796	06 June 1796	24,34	0,039	473,40	18.463,50	758,57	0,078	38,34	2.990,70	122,87
52	07 June 1796	05 July 1796	24,34	0,039	607,24	23.683,25	973,02	0,078	103,81	8.097,60	332,69
53	06 July 1796	05 August 1796	24,34	0,039	486,65	18.980,00	779,79	0,078	82,15	6.408,10	263,27
54	06 August 1796	03 September 1796	24,34	0,039	626,12	24.419,50	1.003,27	0,078	74,03	5.774,50	237,24
55	04 September 1796	03 October 1796	24,34	0,039	286,69	11.181,20	459,38	0,078	72,05	5.620,00	230,90
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20262, s. 5-29											
56	04 October 1796	01 November 1796	24,34	0,039	357,04	13.925,00	572,10	0,078	54,68	4.265,00	175,23

57	02 November 1796	01 December 1796	24,34	0,039	367,66	14.339,50	589,13	0,078	175,53	13.692,00	562,53
58	02 December 1796	30 December 1796	24,34	0,039	569,20	22.199,50	912,06	0,078	296,35	23.116,50	949,73
59	31 December 1796	19 January 1797	28,71	0,039	202,43	7.895,00	274,99	0,078	111,85	8.725,00	303,90
60	20 January 1797	27 February 1797	28,71	0,039	628,18	24.499,90	853,36	0,078	303,42	23.667,60	824,37
61	28 February 1797	29 March 1797	28,71	0,039	319,01	12.442,00	433,37	0,078	113,94	8.888,00	309,58
62	30 March 1797	27 April 1797	28,71	0,039	577,67	22.530,00	784,74	0,078	122,66	9.568,00	333,26
63	28 April 1797	27 May 1797	28,71	0,039	754,15	29.413,00	1.024,49	0,078	174,54	13.614,30	474,20
64	28 May 1797	25 June 1797	28,71	0,039	707,91	27.609,50	961,67	0,078	110,68	8.633,00	300,70
<b>Source:</b> BOA. MAD. d. 5600, s. 142-160											
65	26 June 1797	25 July 1797	28,71	0,039	643,64	25.103,00	874,36	0,078	171,86	13.405,50	466,93
66	26 July 1797	23 August 1797	28,71	0,039	524,84	20.469,50	712,97	0,078	96,84	7.553,50	263,10
67	24 August 1797	22 September 1797	28,71	0,039	414,60	16.170,00	563,22	0,078	54,10	4.220,00	146,99
68	23 September 1797	21 October 1797	28,71	0,039	419,39	16.357,00	569,73	0,078	52,02	4.058,00	141,34
69	22 October 1797	20 November 1797	28,71	0,039	437,16	17.050,00	593,87	0,078	65,41	5.102,00	177,71
70	21 November 1797	19 December 1797	28,71	0,039	350,61	13.674,50	476,30	0,078	174,29	13.595,00	473,53
71	20 December 1797	18 January 1798	24,04	0,039	77,43	3.020,00	125,62	0,078	96,69	7.542,00	313,73
72	19 January 1798	16 February 1798	24,04	0,039	334,00	13.026,50	541,87	0,078	122,92	9.588,50	398,86

73	17 February 1798	18 March 1798	24,04	0,039	157,76	6.153,00	255,95	0,078	77,19	6.021,00	250,46
74	19 March 1798	16 April 1798	24,04	0,039	92,37	3.602,50	149,85	0,078	101,02	7.880,00	327,79
75	17 April 1798	16 May 1798	24,04	0,039	207,62	8.097,50	336,83	0,078	75,19	5.865,00	243,97
76	17 May 1798	14 June 1798	24,04	0,039	331,61	12.933,50	538,00	0,078	74,13	5.782,30	240,53
77	15 June 1798	14 July 1798	24,04	0,039	166,85	6.507,25	270,68	0,078	140,53	10.962,00	455,99
78	15 July 1798	12 August 1798	24,04	0,039	313,88	12.242,00	509,23	0,078	111,73	8.715,00	362,52
79	13 August 1798	11 September 1798	24,04	0,039	293,81	11.459,00	476,66	0,078	87,46	6.822,00	283,78
80	12 September 1798	10 October 1798	24,04	0,039	251,02	9.790,00	407,24	0,078	51,18	3.992,00	166,06
81	11 October 1798	09 November 1798	24,04	0,039	343,19	13.385,00	556,78	0,078	112,24	8.755,00	364,18
82	10 November 1798	08 December 1798	24,04	0,039	593,82	23.160,00	963,39	0,078	105,73	8.247,00	343,05
83	09 December 1798	07 January 1799	23,81	0,039	302,42	11.795,00	495,38	0,078	26,54	2.070,00	86,94
84	08 January 1799	05 February 1799	23,81	0,039	606,45	23.652,50	993,39	0,078	116,20	9.064,00	380,68
85	06 February 1799	07 March 1799	23,81	0,039	171,02	6.670,00	280,13	0,078	53,45	4.169,00	175,09
86	08 March 1799	05 April 1799	23,81	0,039	195,20	7.613,00	319,74	0,078	57,34	4.472,50	187,84
87	06 April 1799	05 May 1799	23,81	0,039	164,99	6.435,00	270,26	0,078	18,45	1.439,00	60,44
88	06 May 1799	03 June 1799	23,81	0,039	324,20	12.644,50	531,06	0,078	74,20	5.787,50	243,07
<b>Source:</b> BOA, MAD. d. 4051, s. 38-44											



89	03 August 1799	01 September 1799	23,81	0,039	281,42	10.975,75	460,97	0,078	58,41	4.556,50	191,37
90	02 September 1799	30 September 1799	23,81	0,039	840,80	32.792,65	1.377,26	0,078	111,60	8.705,00	363,60
91	01 October 1799	30 October 1799	23,81	0,039	423,86	16.531,10	694,29	0,078	27,33	2.132,00	89,54
92	31 October 1799	28 November 1799	23,81	0,039	393,04	15.329,30	643,82	0,078	40,71	3.175,20	133,36
93	29 November 1799	28 December 1799	23,81	0,039	684,06	26.679,25	1.120,51	0,078	203,73	15.891,40	667,43
94	29 December 1799	26 January 1800	23,81	0,039	399,92	15.597,50	655,08	0,078	141,18	11.012,80	462,53
95	27 January 1800	25 February 1800	23,81	0,039	572,00	22.309,00	936,96	0,078	181,15	14.130,00	593,45
96	26 February 1800	26 March 1800	23,81	0,039	151,47	5.907,50	248,11	0,078	52,13	4.060,15	170,52
97	26 April 1800	24 May 1800	23,81	0,039	746,94	29.132,00	1.223,52	0,078	124,60	9.719,00	408,19
98	25 May 1800	23 June 1800	23,81	0,039	814,53	31.767,75	1.334,22	0,078	219,98	17.159,00	720,66
99	24 June 1800	22 July 1800	23,81	0,039	854,12	33.312,00	1.399,08	0,078	81,27	6.339,50	266,25
100	23 July 1800	21 August 1800	23,81	0,039	300,17	11.707,00	491,68	0,078	28,67	2.236,50	93,93
101	22 August 180	19 September 1800	23,81	0,039	927,09	36.158,00	1.518,61	0,078	233,81	18.238,00	763,98
102	20 September 1800	19 October 1800	23,81	0,039	579,81	22.613,65	949,75	0,078	20,35	1.587,00	66,65
103	20 October 1800	17 November 1800	23,81	0,039	815,18	31.793,25	1.335,29	0,078	109,54	8.544,50	358,86
104	18 November 1800	17 December 1800	23,81	0,039	516,56	20.146,65	846,14	0,078	185,54	14.472,50	607,83
105	18 December 1800	15 January 1801	24,83	0,039	648,29	25.284,40	1.018,30	0,078	176,91	13.799,50	553,76

106	16 January 1801	14 February 1801	24,83	0,039	615,45	24.003,50	966,71	0,078	111,69	8.712,50	350,89
107	16 March 1801	14 April 1801	24,83	0,039	722,07	28.161,75	1.134,18	0,078	185,53	14.472,00	582,84
108	15 April 1801	13 May 1801	24,83	0,039	733,95	28.625,00	1.152,84	0,078	90,87	7.088,00	285,46
109	14 May 1801	12 June 1801	24,83	0,039	692,16	26.995,50	1.087,21	0,078	175,78	13.711,00	552,19
110	11 August 1801	08 September 1801	24,83	0,039	792,33	30.902,00	1.244,54	0,078	61,67	4.810,50	193,74
111	09 September 1801	08 October 1801	24,83	0,039	515,57	20.108,00	809,83	0,078	21,06	1.642,50	66,15
112	09 October 1801	06 November 1801	24,83	0,039	622,60	24.282,50	977,95	0,078	49,92	3.894,00	156,83
113	07 November 1801	06 December 1801	24,83	0,039	545,26	21.260,15	856,23	0,078	124,71	9.728,00	391,78
114	07 December 1801	04 January 1802	23,30	0,039	466,86	18.208,15	781,47	0,078	123,00	9.594,50	411,78
115	05 January 1802	03 February 1802	23,30	0,039	293,83	11.460,00	491,85	0,078	108,36	8.452,50	362,77
116	04 February 1802	04 March 1802	23,30	0,039	666,21	25.983,25	1.115,16	0,078	150,10	11.708,50	502,51
117	05 March 1802	03 April 1802	23,30	0,039	674,09	26.290,75	1.128,36	0,078	160,22	12.498,00	536,39
118	04 April 1802	02 May 1802	23,30	0,039	566,09	22.078,50	947,58	0,078	94,32	7.357,50	315,77
119	03 May 1802	12 June 1802	23,30	0,039	928,58	36.216,15	1.554,34	0,078	104,42	8.145,10	349,58
120	13 June 1802	11 July 1802	23,30	0,039	545,68	21.282,50	913,41	0,078	78,02	6.085,50	261,18
121	12 July 1802	31 July 1802	23,30	0,039	460,71	17.968,50	771,18	0,078	99,66	7.774,00	333,65
<b>Source:</b> BOA. MAD. d. 4051, s. 40; MAD. d. 5600, s. 160-192											

Correlation Between Tax Rates and Tax Revenues (1792-1839)

122	01 August 1802	29 August 1802	23,30	0,039	597,34	23.297,25	999,88	0,078	85,32	6.655,50	285,64
123	30 August 1802	28 September 1802	23,30	0,039	702,55	27.400,50	1.175,99	0,078	56,66	4.419,50	189,68
124	29 September 1802	27 October 1802	23,30	0,039	436,25	17.014,45	730,23	0,078	19,13	1.492,50	64,06
125	28 October 1802	26 November 1802	23,30	0,039	865,99	33.774,90	1.449,57	0,078	95,03	7.412,50	318,13
126	27 November 1802	26 December 1802	23,30	0,039	418,65	16.328,00	700,77	0,078	137,11	10.695,00	459,01
127	27 December 1802	24 January 1803	28,15	0,039	548,17	21.379,50	759,48	0,078	151,40	11.809,50	419,52
128	25 January 1803	22 February 1803	28,15	0,039	429,29	16.742,80	594,77	0,078	112,24	8.755,00	311,01
129	23 February 1803	24 March 1803	28,15	0,039	555,83	21.678,40	770,10	0,078	131,02	10.220,00	363,06
130	25 March 1803	22 April 1803	28,15	0,039	523,81	20.429,25	725,73	0,078	105,44	8.224,50	292,17
131	23 April 1803	22 May 1803	28,15	0,039	954,58	37.232,00	1.322,63	0,078	134,10	10.460,50	371,60
132	23 May 1803	20 June 1803	28,15	0,039	797,59	31.107,25	1.105,05	0,078	54,14	4.222,70	150,01
133	21 June 1803	20 July 1803	28,15	0,039	780,07	30.424,00	1.080,78	0,078	42,46	3.312,00	117,66
134	21 July 1803	18 August 1803	28,15	0,039	301,53	11.760,00	417,76	0,078	70,47	5.497,00	195,28
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20300, s. 2-14											
135	19 August 1803	17 September 1803	28,15	0,039	736,14	28.710,75	1.019,92	0,078	125,05	9.754,00	346,50
136	18 September 1803	16 October 1803	28,15	0,039	304,27	11.866,85	421,56	0,078	36,66	2.859,70	101,59
137	17 October 1803	15 November 1803	28,15	0,039	556,12	21.689,40	770,49	0,078	23,70	1.849,00	65,68

138	16 November 1803	14 December 1803	28,15	0,039	357,35	13.937,25	495,11	0,078	32,41	2.527,90	89,80
139	15 December 1803	13 January 1804	32,67	0,039	633,49	24.707,25	756,27	0,078	153,67	11.986,90	366,91
140	14 January 1804	11 February 1804	32,67	0,039	406,39	15.849,85	485,15	0,078	166,76	13.007,50	398,15
141	12 February 1804	12 March 1804	32,67	0,039	435,21	16.973,75	519,55	0,078	89,97	7.018,00	214,81
142	13 March 1804	10 April 1804	32,67	0,039	568,34	22.166,30	678,49	0,078	71,46	5.574,00	170,62
143	11 April 1804	11 May 1804	32,67	0,039	673,01	26.248,55	803,45	0,078	87,98	6.863,00	210,07
144	12 May 1804	09 June 1804	32,67	0,039	989,58	38.595,25	1.181,37	0,078	90,61	7.068,00	216,35
145	10 June 1804	09 July 1804	32,67	0,039	754,45	29.424,85	900,67	0,078	49,61	3.874,00	118,58
146	10 July 1804	07 August 1804	32,67	0,039	1.100,43	42.918,50	1.313,70	0,078	86,76	6.767,50	207,15
147	08 August 1804	06 September 1804	32,67	0,039	397,23	15.492,50	474,21	0,078	55,93	4.363,10	133,55
148	07 September 1804	05 October 1804	32,67	0,039	731,64	28.535,25	873,44	0,078	110,26	8.601,00	263,27
149	06 October 1804	04 November 1804	32,67	0,039	440,65	17.180,15	525,87	0,078	31,07	2.423,50	74,18
150	05 November 1804	03 December 1804	32,67	0,039	532,16	20.755,25	635,30	0,078	103,57	8.078,50	247,28
151	04 December 1804	02 January 1805	41,50	0,039	388,27	15.143,20	364,90	0,078	125,58	9.795,50	236,04
152	03 January 1805	31 January 1805	41,50	0,039	470,09	18.334,05	441,78	0,078	107,76	8.405,50	202,54
153	01 February 1805	02 March 1805	41,50	0,039	689,33	26.885,00	647,83	0,078	100,81	7.863,80	189,49
154	03 March 1805	31 March 1805	41,50	0,039	230,29	8.981,60	216,42	0,078	84,40	6.583,50	158,64

155	01 April 1805	30 April 1805	41,50	0,039	825,52	32.196,60	775,82	0,078	151,51	11.818,00	284,77
156	01 May 1805	29 May 1805	41,50	0,039	822,23	32.068,10	772,73	0,078	87,50	6.825,00	164,46
157	30 May 1805	28 June 1805	41,50	0,039	789,42	30.788,75	741,90	0,078	90,78	7.081,00	170,63
158	29 June 1805	28 July 1805	41,50	0,039	494,70	19.294,00	464,92	0,078	56,41	4.400,00	106,02
159	29 July 1805	25 August 1805	41,50	0,039	647,59	25.257,15	608,61	0,078	71,05	5.541,80	133,54
160	26 August 1805	24 September 1805	41,50	0,039	800,07	31.204,00	751,90	0,078	85,32	6.655,00	160,36
161	25 September 1805	23 October 1805	41,50	0,039	397,59	15.506,50	373,65	0,078	21,40	1.669,00	40,22
162	24 October 1805	22 November 1805	41,50	0,039	414,56	16.168,50	389,60	0,078	26,63	2.077,00	50,05
163	23 November 1805	21 December 1805	41,50	0,039	612,92	23.904,70	576,02	0,078	254,17	19.826,30	477,74
164	22 December 1805	20 January 1806	33,44	0,039	500,28	19.511,75	583,49	0,078	212,05	16.540,50	494,63
165	21 January 1806	19 February 1806	33,44	0,039	677,86	26.437,75	790,60	0,078	144,67	11.285,00	337,47
166	20 February 1806	20 March 1806	33,44	0,039	448,46	17.490,50	523,04	0,078	151,89	11.848,00	354,31
167	21 March 1806	08 April 1806	33,44	0,039	659,66	25.727,75	769,37	0,078	168,17	13.118,00	392,28
168	19 April 1806	18 May 1806	33,44	0,039	992,69	38.716,50	1.157,79	0,078	164,66	12.844,00	384,09
169	19 May 1806	17 June 1806	33,44	0,039	748,73	29.201,50	873,25	0,078	114,73	8.949,30	267,62
170	18 June 1806	16 July 1806	33,44	0,039	720,02	28.082,00	839,77	0,078	206,56	16.112,50	481,83
171	17 July 1806	15 August 1806	33,44	0,039	725,47	28.294,45	846,13	0,078	236,00	18.408,40	550,49

172	16 August 1806	13 September 1806	33,44	0,039	694,94	27.103,55	810,51	0,078	146,80	11.451,00	342,43
173	14 September 1806	13 October 1806	33,44	0,039	421,73	16.448,00	491,87	0,078	31,02	2.420,00	72,37
174	10 January 1807	08 February 1807	42,64	0,039	500,27	19.511,50	457,59	0,078	121,23	9.450,15	221,63
175	08 June 1807	07 July 1807	42,64	0,039	265,95	10.372,50	243,26	0,078	55,74	4.348,00	101,97
176	08 July 1807	05 August 1807	42,64	0,039	662,04	25.820,50	605,55	0,078	46,63	3.637,50	85,31
177	06 August 1807	03 September 1807	42,64	0,039	416,91	16.260,00	381,33	0,078	66,48	5.185,50	121,61
178	04 September 1807	03 October 1807	42,64	0,039	756,93	29.521,50	692,34	0,078	109,47	8.539,00	200,26
179	04 October 1807	01 November 1807	42,64	0,039	342,15	13.344,50	312,96	0,078	24,33	1.898,00	44,51
<b>Source:</b> BOA. MAD. d. 6507, s. 121; D. BŞM. d. 07462; CML, 442-17847; CML, 303-12322; MAD. d. 01699, s. 4-53											
180	02 November 1807	01 December 1807	42,64	0,039	435,29	16.977,00	398,15	0,078	56,56	4.412,00	103,47
181	02 December 1807	30 December 1807	42,64	0,039	376,83	14.697,00	344,68	0,078	121,05	9.442,50	221,45
182	31 December 1807	29 January 1808	42,12	0,039	272,49	10.627,50	252,31	0,078	33,50	2.613,00	62,04
183	30 January 1808	27 February 1808	42,12	0,039	535,18	20.873,00	495,56	0,078	198,76	15.504,00	368,09
184	28 February 1808	28 March 1808	42,12	0,039	249,66	9.737,00	231,17	0,078	61,32	4.783,00	113,56
185	29 March 1808	26 April 1808	42,12	0,039	667,93	26.050,50	618,48	0,078	165,89	12.940,00	307,22
186	27 April 1808	26 May 1808	42,12	0,039	698,84	27.250,15	646,96	0,078	86,20	6.723,50	159,63
187	27 May 1808	24 June 1808	42,12	0,039	601,72	23.468,00	557,17	0,078	42,18	3.290,00	78,11

188	25 June 1808	24 July 1808	42,12	0,039	477,96	18.641,00	442,57	0,078	43,36	3.382,00	80,29
<b>Source:</b> BOA. CML. 265-10841; D. BŞM. ZCR. d. 20310, s. 4-29; MAD. d. 6507, s. 121-122											
189	16 May 1809	13 June 1809	43,75	0,039	522,85	20.392,00	466,10	0,078	78,23	6.102,00	139,47
190	14 June 1809	13 July 1809	43,75	0,039	281,94	10.990,15	251,20	0,078	26,23	2.040,15	46,63
191	14 July 1809	11 August 1809	43,75	0,039	734,41	28.643,00	654,70	0,078	135,92	10.602,00	242,33
192	12 August 1809	10 September 1809	43,75	0,039	891,98	34.788,55	795,17	0,078	171,77	13.398,50	306,25
<b>Source:</b> BOA. CML. 400-16240, 696-28491; D. BŞM. d. 07646, s. 2-4											
193	06 May 1810	03 June 1810	37,61	0,039	292,58	11.411,00	303,40	0,078	45,90	3.580,00	95,19
194	04 June 1810	03 July 1810	37,61	0,039	267,57	10.435,50	277,47	0,078	52,61	4.103,50	109,11
195	04 July 1810	01 August 1810	37,61	0,039	463,62	18.082,00	480,78	0,078	120,97	9.430,15	250,74
196	02 August 1810	31 August 1810	37,61	0,039	260,85	10.173,50	270,50	0,078	21,99	1.715,00	45,60
197	01 September 1810	29 September 1810***	37,61	0,078	891,58	69.540,15	1.848,98	0,156	177,20	27.644,00	735,02
<b>Source:</b> BOA. D. BŞM. d. 07773, s. 2-7; D. BŞM. ZCR. d. 20326, s. 2-3											
198	30 September 1810	29 October 1810	37,61	0,078	635,26	49.552,00	1.317,52	0,156	60,36	9.410,15	250,20
199	30 October 1810	27 November 1810	37,61	0,078	596,58	46.535,00	1.237,30	0,156	80,80	12.600,15	335,02
200	26 January 1811	24 February 1811	58,32	0,078	429,35	33.491,00	574,26	0,156	80,00	12.480,00	213,99
201	25 February 1811	25 March 1811	58,32	0,078	230,45	17.970,15	308,13	0,156	86,95	13.564,00	232,58

\*\*\* In 1810 wine tax went up from 0,039 kuruş per kilo to 0,078 kuruş per kilo; and raki tax from 0,078 kuruş per kilo to 0,156 kuruş per kilo. See: BOA. D. BŞM. d. 07773, p. 27; D. BŞM. ZCR. d. 20326, p. 23.

202	26 March 1811	24 April 1811	58,32	0,078	486,58	37.955,00	650,81	0,156	70,09	10.934,00	187,48
203	25 April 1811	23 May 1811	58,32	0,078	837,06	65.293,00	1.119,56	0,156	103,09	16.082,00	275,75
204	24 May 1811	22 June 1811	58,32	0,078	425,48	33.189,00	569,08	0,156	31,28	4.880,00	83,68
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20331, s. 1-2; D. BŞM. ZCR. d. 20332, s. 2-6; D. BŞM. ZCR. d. 20331, s. 1; D. BŞM. d. 07862, s. 1-2; Cİ. 31-1511											
205	23 June 1811	21 July 1811	58,32	0,078	293,62	22.903,00	392,71	0,156	24,69	3.852,00	66,05
206	22 July 1811	20 August 1811	58,32	0,078	195,34	15.237,00	261,27	0,156	18,56	2.890,15	49,56
207	21 August 1811	18 September 1811	58,32	0,078	713,01	55.617,00	953,65	0,156	60,23	9.390,15	161,01
208	19 September 1811	18 October 1811	58,32	0,078	269,98	21.059,00	361,09	0,156	25,88	4.038,00	69,24
209	19 October 1811	16 November 1811	58,32	0,078	697,62	54.416,30	933,06	0,156	30,44	4.749,00	81,43
210	17 November 1811	16 December 1811	58,32	0,078	211,88	16.527,00	283,38	0,156	58,80	9.173,00	157,29
211	17 December 1811	14 January 1812	44,60	0,078	572,54	44.660,00	1.001,35	0,156	103,87	16.204,00	363,32
212	15 January 1812	14 February 1812	44,60	0,078	272,04	21.220,00	475,78	0,156	51,84	8.087,00	181,32
213	15 February 1812	14 March 1812	44,60	0,078	668,17	52.119,50	1.168,60	0,156	104,65	16.320,15	365,92
214	15 March 1812	13 April 1812	44,60	0,078	688,53	53.707,60	1.204,21	0,156	93,65	14.610,00	327,58
215	14 April 1812	12 May 1812	44,60	0,078	607,98	47.424,00	1.063,32	0,156	70,78	11.042,00	247,58
216	13 May 1812	11 June 1812	44,60	0,078	449,32	35.048,00	785,83	0,156	35,85	5.593,00	125,40
217	12 June 1812	10 July 1812	44,60	0,078	616,83	48.115,00	1.078,81	0,156	61,26	9.557,00	214,28



218	11 July 1812	09 August 1812	44,60	0,078	684,14	53.365,00	1.196,52	0,156	103,30	16.110,15	361,21
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20334, s. 2-45											
219	10 August 1812	07 September 1812	44,60	0,078	417,73	32.584,10	730,59	0,156	102,19	15.942,00	357,44
220	08 September 1812	06 October 1812	44,60	0,078	175,92	13.722,00	307,67	0,156	29,73	4.638,20	104,00
221	07 October 1812	05 November 1812	44,60	0,078	272,09	21.223,50	475,86	0,156	13,47	2.102,00	47,13
222	06 November 1812	05 December 1812	44,60	0,078	449,58	35.069,00	786,30	0,156	23,83	3.717,00	83,34
223	06 December 1812	03 January 1813	44,80	0,078	308,71	24.080,00	537,50	0,156	113,07	17.639,00	393,73
224	04 January 1813	01 February 1813	44,80	0,078	128,35	10.011,70	223,48	0,156	38,77	6.049,00	135,02
225	02 February 1813	03 March 1813	44,80	0,078	780,37	60.871,00	1.358,73	0,156	84,98	13.258,00	295,94
226	04 March 1813	02 April 1813	44,80	0,078	402,78	31.418,20	701,30	0,156	116,35	18.152,00	405,18
227	03 April 1813	01 May 1813	44,80	0,078	753,10	58.744,50	1.311,26	0,156	98,36	15.344,00	342,50
228	02 May 1813	31 May 1813	44,80	0,078	709,95	55.378,00	1.236,12	0,156	31,77	4.950,15	110,49
229	01 June 1813	29 June 1813	44,80	0,078	587,93	45.860,50	1.023,67	0,156	57,23	8.928,00	199,29
230	30 June 1813	29 July 1813	44,80	0,078	536,94	41.882,70	934,88	0,156	55,45	8.650,00	193,08
231	30 July 1813	27 August 1813	44,80	0,078	392,26	30.597,70	682,98	0,156	36,59	5.708,00	127,41
<b>Source:</b> BOA. MAD. d. 0738, s. 4-71											
232	28 August 1813	26 September 1813	44,80	0,078	643,44	50.190,50	1.120,32	0,156	74,42	11.610,00	259,15
233	27 September 1813	25 October 1813	44,80	0,078	183,96	14.349,70	320,31	0,156	18,81	2.935,00	65,51

234	26 October 1813	24 October 1813	44,80	0,078	387,62	30.235,30	674,90	0,156	11,70	1.820,15	40,63
235	25 October 1813	23 December 1813	44,80	0,078	379,86	29.630,00	661,38	0,156	48,81	7.615,00	169,98
236	24 December 1813	22 January 1813	44,80	0,078	317,33	24.753,00	552,52	0,156	92,45	14.422,00	321,92
237	23 January 1813	20 February 1813	44,80	0,078	256,27	19.989,50	446,19	0,156	37,49	5.848,00	130,54
238	21 February 1813	22 March 1813	44,80	0,078	332,53	25.938,00	578,97	0,156	67,57	10.541,00	235,29
239	23 March 1813	20 April 1813	44,80	0,078	514,87	40.161,40	896,46	0,156	53,07	8.280,00	184,82
240	21 April 1813	20 May 1813	44,80	0,078	599,06	46.728,70	1.043,05	0,156	71,25	11.115,00	248,10
241	21 May 1813	18 June 1813	44,80	0,078	624,34	48.704,00	1.087,14	0,156	25,78	4.022,00	89,78
242	19 June 1813	18 July 1813	44,80	0,078	457,43	35.680,80	796,45	0,156	34,42	5.370,00	119,87
<b>Source:</b> BOA. KK. d. 05487, s. 4-48											
243	19 July 1813	16 August 1813	44,80	0,078	338,56	26.408,70	589,48	0,156	36,88	5.754,00	128,44
244	17 August 1813	15 September 1813	44,80	0,078	453,96	35.410,00	790,40	0,156	28,72	4.480,00	100,00
245	16 September 1813	14 October 1813	44,80	0,078	490,55	38.264,20	854,11	0,156	55,87	8.710,15	194,42
246	15 October 1813	13 November 1813	44,80	0,078	232,00	18.096,70	403,94	0,156	7,28	1.130,15	25,23
247	14 November 1813	12 December 1813	44,80	0,078	387,21	30.203,50	674,19	0,156	66,26	10.337,40	230,75
248	13 December 1813	12 January 1814	45,99	0,078	469,26	36.604,00	795,91	0,156	104,88	16.362,00	355,77
249	13 January 1814	10 February 1814	45,99	0,078	420,72	32.817,50	713,58	0,156	64,18	10.012,00	217,70

250	11 February 1814	12 March 1814	45,99	0,078	378,02	29.487,00	641,16	0,156	71,63	11.174,00	242,97
251	13 March 1814	10 April 1814	45,99	0,078	554,00	43.214,00	939,64	0,156	21,94	3.422,00	74,41
252	11 April 1814	10 May 1814	45,99	0,078	479,42	37.395,90	813,13	0,156	54,48	8.499,00	184,80
253	11 May 1814	08 June 1814	45,99	0,078	488,01	38.060,15	827,57	0,156	53,22	8.302,00	180,52
254	09 June 1814	08 July 1814	45,99	0,078	514,04	40.097,00	871,86	0,156	28,22	4.402,00	95,72
255	09 July 1814	06 August 1814	45,99	0,078	343,43	26.788,70	582,49	0,156	44,59	6.950,15	151,12
256	07 August 1814	05 September 1814	45,99	0,078	88,20	6.880,00	149,60	0,156	62,84	9.804,00	213,18
257	06 September 1814	04 October 1814	45,99	0,078	520,94	40.635,00	883,56	0,156	69,45	10.835,00	235,59
258	31 January 1816	29 February 1816	48,84	0,078	308,95	24.099,00	493,43	0,156	20,29	3.160,15	64,70
259	30 March 1816	28 April 1816	48,84	0,078	670,58	52.307,00	1.070,99	0,156	67,02	10.450,15	213,97
260	27 June 1816	13 July 1816	48,84	0,078	349,28	27.245,00	557,84	0,156	20,70	3.230,00	66,13
261	14 July 1816	24 August 1816	48,84	0,078	328,29	25.608,00	524,32	0,156	20,83	3.250,00	66,54
262	23 October 1816	20 November 1816	48,84	0,078	613,14	47.827,00	979,26	0,156	26,72	4.168,00	85,34
263	21 November 1816	20 December 1816	48,84	0,078	186,47	14.545,00	297,81	0,156	66,60	10.390,00	212,74
264	21 December 1816	18 January 1817	50,03	0,078	367,51	28.667,00	573,00	0,156	30,54	4.764,00	95,22
265	19 January 1817	17 February 1817	50,03	0,078	326,12	25.438,00	508,45	0,156	69,93	10.910,00	218,07
266	19 March 1817	15 May 1817	50,03	0,078	399,09	31.130,00	622,23	0,156	42,95	6.700,00	133,92

267	17 May 1817	15 June 1817	50,03	0,078	415,18	32.385,00	647,31	0,156	42,69	6.660,00	133,12
268	16 June 1817	14 July 1817	50,03	0,078	426,88	33.298,00	665,56	0,156	50,96	7.950,00	158,90
269	15 July 1817	13 August 1817	50,03	0,078	386,41	30.141,00	602,46	0,156	45,59	7.112,00	142,15
270	02 October 1818	16 October 1818	51,46	0,078	126,79	9.890,00	192,19	0,156	17,95	2.800,00	54,41
271	17 October 1818	27 December 1818	51,46	0,078	361,75	28.218,00	548,35	0,156	40,05	6.248,00	121,41
272	28 March 1818	25 April 1818	51,46	0,078	526,24	41.048,00	797,67	0,156	49,82	7.772,00	151,03
<p><b>Source:</b> BOA. D. BŞM. ZCR. d. 20384, s. 2-3; CML. 260-10694; CML. 444-17903; CML. 402-16509; CML. 401-16490; CML. 355-14574; D. BŞM. ZCR. d. 20371; CML. 360-14741; D. BŞM. d. 41869, s. 2-3; D. BŞM. d. 08328, s. 2-3; CML. 662-27072; CML. 3-124; CML. 290-11877; CML. 110-4870; CML. 658-26905; D. BŞM. ZCR. d. 20351, s. 2-53</p>											
273	15 August 1822	16 September 1822	52,69	0,078	166,03	12.951,00	245,80	0,156	26,85	4.188,00	79,48
274	17 September 1822	17 October 1822	52,69	0,078	185,93	14.503,00	275,25	0,156	11,19	1.740,15	33,03
275	18 October 1822	15 November 1822****	52,69	0,117	205,72	24.070,50	456,83	0,234	12,22	2.859,00	54,26
276	16 November 1822	15 December 1822	52,69	0,117	325,06	38.034,00	721,84	0,234	4,37	1.023,00	19,42
277	16 December 1822	13 January 1823	53,32	0,117	117,89	13.794,00	258,70	0,234	31,05	7.260,15	136,16
278	14 January 1823	12 February 1823	53,32	0,117	345,21	40.391,55	757,53	0,234	124,66	29.171,40	547,10
279	13 February 1823	13 March 1823	53,32	0,117	282,91	33.102,00	620,82	0,234	62,72	14.670,15	275,13
280	14 March 1823	12 April 1823	53,32	0,117	270,19	31.614,00	592,91	0,234	37,74	8.832,00	165,64
281	13 April 1823	11 May 1823	53,32	0,117	63,38	7.410,15	138,98	0,234	2,51	588,00	11,03

\*\*\*\* In 1822 wine tax went up from 0,078 kuruş per kilo to 0,117 kuruş per kilo; and raki tax from 0,156 kuruş per kilo to 0,234 kuruş per kilo. See: BOA. KK. d. 5502, p. 10-44.

282	12 May 1823	10 June 1823	53,32	0,117	639,03	74.769,00	1.402,27	0,234	60,58	14.177,40	265,89
283	11 June 1823	09 July 1823	53,32	0,117	351,69	41.149,50	771,75	0,234	33,01	7.723,50	144,85
284	10 July 1823	08 August 1823	53,32	0,117	438,38	51.292,80	961,98	0,234	18,96	4.437,00	83,21
285	09 August 1823	06 September 1823	53,32	0,117	327,39	38.306,25	718,42	0,234	10,61	2.484,00	46,59
<b>Source:</b> BOA. KK. d. 5502, s. 10-44											
286	28 July 1824	14 August 1824	51,66	0,117	305,32	35.723,40	691,51	0,234	9,22	2.157,60	41,77
287	15 August 1824	24 September 1824	51,66	0,117	409,73	47.940,00	927,99	0,234	31,42	7.353,00	142,33
288	25 September 1824	23 October 1824	51,66	0,117	121,87	14.259,00	276,02	0,234	14,70	3.441,00	66,61
289	24 October 1824	22 November 1824	51,66	0,117	515,76	60.346,05	1.168,14	0,234	45,92	10.740,15	207,90
290	23 November 1824	22 December 1824	51,66	0,117	397,98	46.565,70	901,39	0,234	104,77	24.510,15	474,45
291	23 December 1824	20 January 1825	51,97	0,117	236,84	27.711,60	533,22	0,234	87,60	20.498,10	394,42
292	21 January 1825	18 February 1825	51,97	0,117	319,61	37.395,75	719,56	0,234	48,76	11.410,80	219,57
293	19 February 1825	20 March 1825	51,97	0,117	34,60	4.048,50	77,90	0,234	9,74	2.280,00	43,87
294	21 March 1825	18 April 1825	51,97	0,117	556,55	65.118,45	1.253,00	0,234	107,33	25.110,15	483,17
295	19 April 1825	18 May 1825	51,97	0,117	469,89	54.979,50	1.057,91	0,234	39,58	9.261,00	178,20
296	19 May 1825	16 June 1825	51,97	0,117	573,02	67.045,50	1.290,08	0,234	95,17	22.271,70	428,55
297	17 June 1825	16 July 1825	51,97	0,117	323,75	37.880,70	728,90	0,234	12,32	2.883,30	55,48

298	17 July 1825	15 August 1825	51,97	0,117	620,13	72.558,00	1.396,15	0,234	62,12	14.535,60	279,69
<b>Source:</b> BOA. KK. d. 5503, s. 6-38											
299	05 August 1826	03 September 1826	66,27	0,117	79,07	9.252,00	139,61	0,234	16,87	3.948,00	59,57
300	04 September 1826	02 October 1826	66,27	0,117	262,00	30.655,50	462,58	0,234	29,60	6.927,00	104,53
301	03 October 1826	01 November 1826	66,27	0,117	134,28	15.711,75	237,09	0,234	30,03	7.027,50	106,04
302	02 November 1826	30 November 1826	66,27	0,117	427,20	49.984,35	754,25	0,234	23,27	5.446,50	82,19
<b>Source:</b> BOA. KK. d. 5504, s. 4; D. BŞM. ZCR. d. 29439, s. 13-14											
303	01 December 1826	30 December 1826	66,27	0,117	558,25	65.318,40	985,64	0,234	90,74	21.234,00	320,42
304	31 December 1826	28 January 1827	73,05	0,117	425,12	49.741,50	680,92	0,234	62,75	14.683,50	201,01
305	29 January 1827	27 February 1827	73,05	0,117	294,03	34.402,50	470,94	0,234	40,30	9.430,50	129,10
306	28 February 1827	28 March 1827	73,05	0,117	361,10	42.250,50	578,38	0,234	76,59	17.922,00	245,34
<b>Source:</b> BOA. D. BŞM. ZCR. d. 29439, s. 1-13											
307	28 April 1827	26 May 1827	73,05	0,117	1.061,47	124.197,00	1.700,16	0,234	63,13	14.772,00	202,22
308	27 May 1827	25 June 1827	73,05	0,117	295,24	34.545,00	472,90	0,234	61,46	14.382,00	196,88
309	26 June 1827	24 July 1827	73,05	0,117	244,70	28.630,50	391,93	0,234	38,72	9.060,00	124,02
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20442, s. 1-2											
310	25 July 1827	23 August 1827	73,05	0,117	352,24	41.214,00	564,19	0,234	20,45	4.785,00	65,50
311	24 August 1827	21 September 1827	73,05	0,117	565,59	66.177,00	905,91	0,234	43,69	10.224,00	139,96

312	22 September 1827	21 October 1827	73,05	0,117	55,78	6.526,50	89,34	0,234	3,42	801,00	10,97
313	22 October 1827	19 November 1827	73,05	0,117	265,46	31.060,50	425,20	0,234	15,38	3.600,00	49,28
314	10 November 1827	18 December 1827	73,05	0,117	235,13	27.511,50	376,61	0,234	36,22	8.475,00	116,02
315	19 December 1827	20 January 1828	92,59	0,117	741,14	86.716,50	936,56	0,234	79,67	18.643,50	201,36
316	21 January 1828	16 February 1828	92,59	0,117	249,67	29.212,50	315,50	0,234	54,42	12.735,00	137,54
317	17 February 1828	16 March 1828	92,59	0,117	383,22	44.838,00	484,26	0,234	29,01	6.789,00	73,32
318	17 March 1828	14 April 1828	92,59	0,117	589,94	69.025,50	745,50	0,234	36,81	8.613,00	93,02
319	15 April 1828	15 May 1828	92,59	0,117	470,58	55.060,50	594,67	0,234	43,11	10.089,00	108,96
320	16 May 1828	13 June 1828	92,59	0,117	196,38	22.977,00	248,16	0,234	17,33	4.050,15	43,74
321	14 June 1828	12 July 1828	92,59	0,117	166,12	19.437,00	209,93	0,234	2,26	528,00	5,70
322	13 July 1828	23 August 1828	92,59	0,117	176,49	20.650,50	223,03	0,234	25,82	6.042,00	65,26
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20442, s. 7; D. BŞM. ZCR. d. 20453, s. 4-47											
323	24 August 1828	21 September 1828	92,59	0,117	332,45	38.898,00	420,11	0,234	23,32	5.457,00	58,94
324	22 September 1828	21 October 1828	92,59	0,117	267,34	31.279,50	337,83	0,234	3,64	852,00	9,20
325	20 November 1828	19 December 1828	92,59	0,117	343,02	40.135,50	433,48	0,234	18,42	4.311,00	46,56
326	20 December 1828	17 January 1829	85,67	0,117	391,68	45.828,00	534,94	0,234	63,45	14.847,00	173,30
327	18 January 1829	15 February 1829	85,67	0,117	216,63	25.346,25	295,86	0,234	47,45	11.103,00	129,60

328	16 February 1829	16 March 1829	85,67	0,117	271,18	31.728,75	370,36	0,234	65,81	15.400,50	179,77
329	17 March 1829	15 April 1829	85,67	0,117	208,24	24.364,50	284,40	0,234	76,51	17.904,00	208,99
330	16 April 1829	14 May 1829	85,67	0,117	99,71	11.667,00	136,19	0,234	8,03	1.878,00	21,92
331	15 May 1829	14 June 1829	85,67	0,117	10,85	1.269,00	14,81	0,234	22,38	5.238,00	61,14
332	15 June 1829	12 July 1829	85,67	0,117	205,68	24.060,15	280,85	0,234	19,08	4.464,00	52,11
333	13 July 1829	14 August 1829	85,67	0,117	2,56	300,00	3,50	0,234	4,20	982,50	11,47
334	15 August 1829	30 August 1829	85,67	0,117	39,93	4.672,50	54,54	0,234	26,20	6.132,00	71,58
<b>Source:</b> BOA. D. BŞM. d. 9446, s. 2-5											
335	10 August 1831	08 September 1831****	110,42	0,195	151,43	29.530,00	267,43	0,390	13,87	5.410,00	48,99
336	09 September 1831	07 October 1831	110,42	0,195	252,58	49.255,00	446,07	0,390	52,96	20.655,00	187,06
337	08 October 1831	06 November 1831	110,42	0,195	111,98	21.836,50	197,76	0,390	23,99	9.355,00	84,72
338	07 November 1831	05 December 1831	110,42	0,195	389,74	76.002,00	688,30	0,390	10,24	3.995,00	36,18
339	06 December 1831	04 January 1832	114,96	0,195	87,79	17.120,00	148,92	0,390	14,87	5.800,00	50,45
340	05 January 1832	02 February 1832	114,96	0,195	238,46	46.502,50	404,51	0,390	67,01	26.135,00	227,34
341	03 February 1832	03 March 1832	114,96	0,195	120,48	23.495,00	204,38	0,390	6,42	2.505,00	21,79
342	04 March 1832	01 April 1832	114,96	0,195	166,79	32.525,00	282,92	0,390	14,38	5.610,00	48,80

\*\*\*\* In 1831 wine tax went up from 0,117 kuruş per kilo to 0,195 kuruş per kilo; and raki tax from 0,234 kuruş per kilo to 0,390 kuruş per kilo. See: BOA. CML. 546-22436.



343	02 April 1832	01 May 1832	114,96	0,195	301,14	58.725,00	510,83	0,390	21,24	8.285,00	72,07
344	02 May 1832	30 May 1832	114,96	0,195	174,72	34.072,50	296,39	0,390	46,69	18.211,50	158,42
345	31 May 1832	29 June 1832	114,96	0,195	461,62	90.020,00	783,05	0,390	31,47	12.275,00	106,78
346	30 June 1832	28 July 1832	114,96	0,195	148,52	28.962,50	251,94	0,390	6,01	2.345,00	20,40
347	29 July 1832	27 August 1832	114,96	0,195	71,77	13.995,00	121,74	0,390	6,91	2.695,00	23,44
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20478, s. 2; KK. d. 5507, s. 4-26.											
348	28 August 1832	25 September 1832	114,96	0,19	288,73	56.305,00	489,78	0,390	12,68	4.945,00	43,01
349	26 September 1832	25 October 1832	114,96	0,195	77,37	15.087,50	131,24	0,390	6,85	2.670,00	23,23
350	26 October 1832	23 November 1832	114,96	0,195	117,12	22.840,00	198,68	0,390	6,08	2.370,00	20,62
351	24 November 1832	23 December 1832	114,96	0,195	51,75	10.092,50	87,79	0,390	3,54	1.380,00	12,00
352	24 December 1832	21 January 1833	115,25	0,195	171,17	33.380,00	289,63	0,390	26,43	10.310,00	89,46
353	22 January 1833	20 February 1833	115,25	0,195	548,77	107.015,00	928,55	0,390	28,48	11.107,50	96,38
354	21 February 1833	21 March 1833	115,25	0,195	163,02	31.790,00	275,84	0,390	40,64	15.850,00	137,53
355	22 March 1833	20 April 1833	115,25	0,195	98,05	19.120,00	165,90	0,390	6,81	2.655,00	23,04
356	21 April 1833	19 May 1833	115,25	0,195	220,89	43.075,00	373,75	0,390	11,60	4.525,00	39,26
357	20 May 1833	19 June 1833	115,25	0,195	201,35	39.265,00	340,69	0,390	10,94	4.265,00	37,01
358	20 June 1833	18 July 1833	115,25	0,195	133,19	25.972,50	225,36	0,390	16,31	6.360,00	55,18

359	19 July 1833	17 August 1833	115,25	0,195	170,66	33.280,00	288,76	0,390	9,95	3.880,00	33,67
360	18 August 1833	15 September 1833	115,25	0,195	275,98	53.817,50	466,96	0,390	6,05	2.360,00	20,48
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20491, s. 2-10											
361	16 September 1833	15 October 1833	115,25	0,195	387,39	75.545,00	655,49	0,390	15,61	6.090,00	52,84
362	16 October 1833	13 November 1833	115,25	0,195	64,15	12.510,00	108,55	0,390	10,68	4.165,00	36,14
363	14 November 1833	13 December 1833	115,25	0,195	416,87	81.292,50	705,36	0,390	14,72	5.740,00	49,80
364	14 December 1833	11 January 1834	122,58	0,195	86,04	16.778,75	136,88	0,390	12,88	5.025,00	40,99
365	12 January 1834	09 February 1834	122,58	0,195	69,83	13.617,50	111,09	0,390	11,70	4.562,50	37,22
366	10 February 1834	11 March 1834	122,58	0,195	57,70	11.252,50	91,80	0,390	15,98	6.232,50	50,84
367	12 March 1834	10 April 1834	122,58	0,195	286,91	55.950,00	456,44	0,390	2,31	900,00	7,34
368	11 April 1834	09 May 1834	122,58	0,195	251,36	49.017,50	399,88	0,390	9,25	3.606,50	29,42
369	10 May 1834	08 June 1834	122,58	0,195	159,98	31.197,50	254,51	0,390	8,10	3.160,00	25,78
370	09 June 1834	07 July 1834	122,58	0,195	75,16	14.657,50	119,57	0,390	4,47	1.745,00	14,24
371	08 July 1834	06 August 1834	122,58	0,195	116,89	22.795,00	185,96	0,390	13,65	5.325,00	43,44
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20505, s. 2-8											
372	07 August 1834	04 September 1834	122,58	0,195	432,68	84.375,00	688,33	0,390	10,53	4.105,00	33,49
373	05 September 1834	04 October 1834	122,58	0,195	21,54	4.200,00	34,26	0,390	19,41	7.569,50	61,75
374	05 October 1834	02 November 1834	122,58	0,195	41,79	8.150,00	66,49	0,390	0,02	7,50	0,06

375	03 November 1834	02 December 1834	122,58	0,195	100,12	19.525,00	159,28	0,390	7,26	2.830,00	23,09
376	03 December 1834	31 December 1834	122,58	0,195	164,10	32.000,00	261,05	0,390	20,54	8.010,00	65,35
377	01 January 1835	30 January 1835	135,22	0,195	294,28	57.387,50	424,40	0,390	32,00	12.480,00	92,29
378	31 January 1835	28 February 1835	135,22	0,195	82,82	16.150,00	119,43	0,390	18,77	7.320,00	54,13
379	01 March 1835	30 March 1835	135,22	0,195	176,56	34.430,00	254,62	0,390	18,46	7.200,00	53,25
380	31 March 1835	28 April 1835	135,22	0,195	187,92	36.645,00	271,00	0,390	0,00	0,00	0,00
381	29 April 1835	27 May 1835	135,22	0,195	145,92	28.455,00	210,43	0,390	16,03	6.250,00	46,22
382	28 May 1835	26 June 1835	135,22	0,195	85,82	16.735,00	123,76	0,390	24,93	9.725,00	71,92
383	27 June 1835	26 July 1835	135,22	0,195	131,02	25.550,00	188,95	0,390	1,35	525,00	3,88
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20510, s. 2-7											
384	27 July 1835	24 August 1835	135,22	0,195	264,25	51.530,00	381,08	0,390	12,50	4.875,00	36,05
385	25 August 1835	23 September 1835	135,22	0,195	95,64	18.650,00	137,92	0,390	14,13	5.510,00	40,75
386	24 September 1835	22 October 1835	135,22	0,195	18,00	3.510,00	25,96	0,390	0,00	0,00	0,00
387	23 October 1835	21 November 1835	135,22	0,195	222,80	43.447,50	321,31	0,390	0,90	350,00	2,59
388	22 November 1835	20 December 1835	135,22	0,195	81,66	15.925,00	117,77	0,390	12,22	4.765,00	35,24
389	21 December 1835	19 January 1836	112,71	0,195	137,94	26.900,00	238,67	0,390	65,38	25.500,00	226,24
390	20 January 1936	17 February 1836	112,71	0,195	153,43	29.920,00	265,46	0,390	4,10	1.600,00	14,20

391	18 February 1836	18 March 1836	112,71	0,195	262,17	51.125,00	453,60	0,390	33,65	13.125,00	116,45
392	19 March 1836	16 April 1836	112,71	0,195	119,56	23.315,00	206,86	0,390	31,99	12.475,00	110,68
393	17 April 1836	17 May 1836	112,71	0,195	341,32	66.560,00	590,54	0,390	22,88	8.925,00	79,19
394	18 May 1836	15 June 1836	112,71	0,195	43,08	8.400,00	74,53	0,390	8,97	3.500,00	31,05
395	16 June 1836	15 July 1836	112,71	0,195	124,35	24.250,00	215,15	0,390	22,31	8.700,00	77,19
396	16 July 1836	13 August 1836	112,71	0,195	312,88	61.015,00	541,35	0,390	28,37	11.065,00	98,17
397	14 August 1836	12 September 1836	112,71	0,195	302,16	58.924,17	522,79	0,390	188,77	73.621,33	653,19
398	13 September 1836	11 October 1836	112,71	0,195	302,16	58.924,17	522,79	0,390	188,77	73.621,33	653,19
399	12 October 1836	10 November 1836	112,71	0,195	302,16	58.924,17	522,79	0,390	188,77	73.621,33	653,19
400	11 November 1836	09 December 1836	112,71	0,195	302,16	58.924,17	522,79	0,390	188,77	73.621,33	653,19
401	10 December 1836	08 January 1837	193,28	0,195	302,16	58.924,17	304,86	0,390	188,77	73.621,33	380,91
402	09 January 1837	06 February 1837	193,28	0,195	302,16	58.924,17	304,86	0,390	188,77	73.621,33	380,91
403	07 February 1837	08 March 1837	193,28	0,195	302,16	58.924,17	304,86	0,390	188,77	73.621,33	380,91
<b>Source:</b> BOA. D. BŞM. ZCR. d. 20518, s. 2-10											
404	23 July 1838	21 August 1838	161,11	0,195	267,23	52.111,79	323,45	0,390	63,29	24.682,14	153,20
405	22 August 1838	19 September 1838	161,11	0,195	267,23	52.111,79	323,45	0,390	63,29	24.682,14	153,20
406	20 September 1838	19 October 1838	161,11	0,195	267,23	52.111,79	323,45	0,390	63,29	24.682,14	153,20

Correlation Between Tax Rates and Tax Revenues (1792-1839)

407	20 October 1838	17 November 1838	161,11	0,195	267,23	52.111,79	323,45	0,390	63,29	24.682,14	153,20
408	18 November 1838	17 December 1838	161,11	0,195	267,23	52.111,79	323,45	0,390	63,29	24.682,14	153,20
409	18 December 1838	15 January 1839	150,02	0,195	267,23	52.111,79	347,37	0,390	63,29	24.682,14	164,53
410	16 January 1839	14 February 1839	150,02	0,195	267,23	52.111,79	347,37	0,390	63,29	24.682,14	164,53
411	15 February 1839	15 March 1839	150,02	0,195	244,86	47.750,00	318,29	0,390	49,54	19.320,00	128,78
412	16 March 1839	14 April 1839	150,02	0,195	370,27	72.205,00	481,30	0,390	103,29	40.285,00	268,53
413	15 April 1839	14 May 1839	150,02	0,195	488,67	95.295,00	635,22	0,390	104,19	40.635,00	270,86
414	15 May 1839	13 June 1839	150,02	0,195	173,33	33.800,00	225,30	0,390	58,28	22.730,00	151,51
415	14 June 1839	12 July 1839	150,02	0,195	93,36	18.205,00	121,35	0,390	49,57	19.335,00	128,88
416	13 July 1839	11 August 1839	150,02	0,195	348,37	67.935,00	452,84	0,390	55,01	21.455,00	143,01

Source: BOA. D. BŞM. ZCR. d. 20542, s. 2-25