

# IV

## Ottoman Empire: from 1830 to 1914

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### I MAJOR MONETARY EVENTS

The 19th century was characterised by the efforts of the Ottoman government to bring the monetary system in line with the global trends towards bimetallism and the gold standard. A chronology of the major monetary events and reforms since 1834 is provided in Table 1. In a nutshell, in 1834 the Ottoman government took its first step towards *de facto* bimetallism by accepting gold and silver as legal tender. In 1844, the new bimetallic system was officially introduced together with a monetary reform, which brought an end to the long history of debasements.

**TABLE 1** Chronology of monetary standards and the type of currency in circulation, 1844–1914

Year	Monetary event	Monetary standard	Currency in circulation
1834	Gold and silver declared to be legal tender	Silver standard/ Bimetallism	Gold coins Silver coins
1840	Issue of interest-bearing state notes (kaime)	Silver standard/ Bimetallism/ Silver convertible paper money	Gold coins Silver coins State notes
1844	Coinage reform (tashih-i sikke) and the end of debasements	Bimetallism/ Silver convertible paper money	Gold coins Silver coins State notes
1852	Issue of non-interest bearing kaime notes	Bimetallism/ Non-convertible paper money	Gold coins Silver coins State notes
1863	Withdrawal of kaime notes and the foundation of the IOB	Bimetallism/ Gold convertible paper money	Gold coins Silver coins IOB notes
1876	Default on foreign debt and the issue of silver convertible kaime notes	Bimetallism/ Gold convertible paper money/ Silver convertible paper money	Gold coins Silver coins IOB notes State notes
1880	Monetary reform, withdrawal of kaime and the end of free-minting of silver	Limping standard	Gold coins Silver coins IOB notes
1914	World War I and issue of state notes	Fiat money standard	Gold coins Silver coins IOB notes State notes

Source: Authors' compilation.

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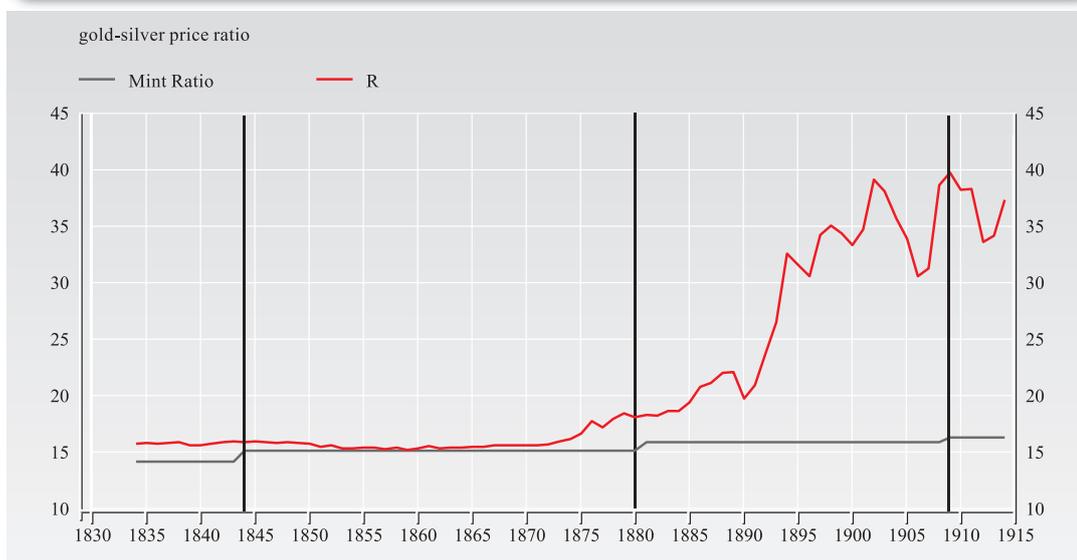
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Moreover, during the 1840s, in the absence of any private banks of issue, the government started experimenting with paper money in the form of state notes (*kaime*). A turning point in the history of the paper currency was the foundation of the Imperial Ottoman Bank (IOB) in 1863. The IOB was a private bank, funded by British and French capital and was granted the exclusive privilege of issuing gold convertible banknotes in the Ottoman lands. During the Russo-Turkish War of 1877–78, the government suspended this privilege by issuing its own state notes in order to finance its budget deficits. In 1880, the privilege of the IOB was restored, and state notes were withdrawn from circulation with the help of foreign loans. Moreover, the government declared the gold *lira* to be the legal tender and closed down the minting of silver coinage, thus adopting a ‘limping standard’.

### 1.1 EPISODES OF COMMODITY MONEY

Most of the contributions to the 19th century monetary history of the Ottoman Empire commonly highlight the ‘coinage adjustment’ reform (*tashih-i sikke*) of 1844 as the main turning point in modernisation of the monetary system.<sup>3</sup> In that year, the Ottoman government *formally* announced the introduction of bimetallism with a fixed gold-silver ratio, and the long history of raising revenues through debasements came to an end. The gold *lira*, the silver *kuruş* and the copper *para* were declared to be legal tender, freely convertible to each other at the fixed rate of 40 para for one *kuruş* and 100 *kuruş* for one gold *lira*.<sup>4</sup> This corresponded to a mint ratio between gold and silver of 15.09, which was slightly lower than the international gold-silver ratio at the time (see Figure 1).

FIGURE 1 International Gold-Silver Ratio and Mint Ratio



Sources and notes: Vertical lines refer to changes in the monetary regulation. Mint ratio is based on Table 2, whereas R is elaborated from Officer (2008).

<sup>3</sup> See, for example, Ferid (1914), Belin (1931, pp. 284–285), Kuyucak (1947, pp. 196–197), Kolerkılıç (1958, p. 129), Eldem (1970, p. 225) and Pamuk (2000, p. 205). More recent contributions point out a preceding arrangement in 1834, when the Mint issued a new series of gold and silver coins corresponding to an implicit bimetallic ratio. According to this regulation, the value of the gold *lira* was linked to the silver *kuruş* at a rate of 1:20 with a gold/silver ratio of 14.133. For details, see Eldem (2011). Therefore, 1834 can be interpreted as a transition to a *de facto* bimetallic standard.

<sup>4</sup> It would be wrong to consider this monetary standard as ‘trimetallism’, given that copper served only as a fiduciary currency, it was not freely minted and its circulation was limited to only small denominations.

TABLE 2 Coins of the Ottoman Empire: 1834–1914

Regulation Year	Weight (gr.)	Fineness (%)	Metallic Content (gr.)	Legal Value (kuruş)	Mint Equivalent	R	Mint Ratio
<b>1834</b>						15.73	14.13
<i>Silver kuruş</i>	2.138	44	0.940	1	1.063		
<i>Gold lira</i>	1.604	83	1.331	20	15.020		
<b>1844</b>						15.85	15.09
<i>Silver kuruş</i>	1.203	83	0.998	1	1.002		
<i>Gold lira</i>	7.216	91.67	6.614	100	15.117		
<b>1880</b>						18.05	15.88
<i>Silver kuruş</i>	1.203	83	0.998	1	1.002		
<i>Gold lira</i>	7.216	91.67	6.614	105.25	15.913		
<b>1909</b>						39.74	16.30
<i>Silver kuruş</i>	1.203	83	0.998	1	1.002		
<i>Gold lira</i>	7.216	91.67	6.614	108	16.329		

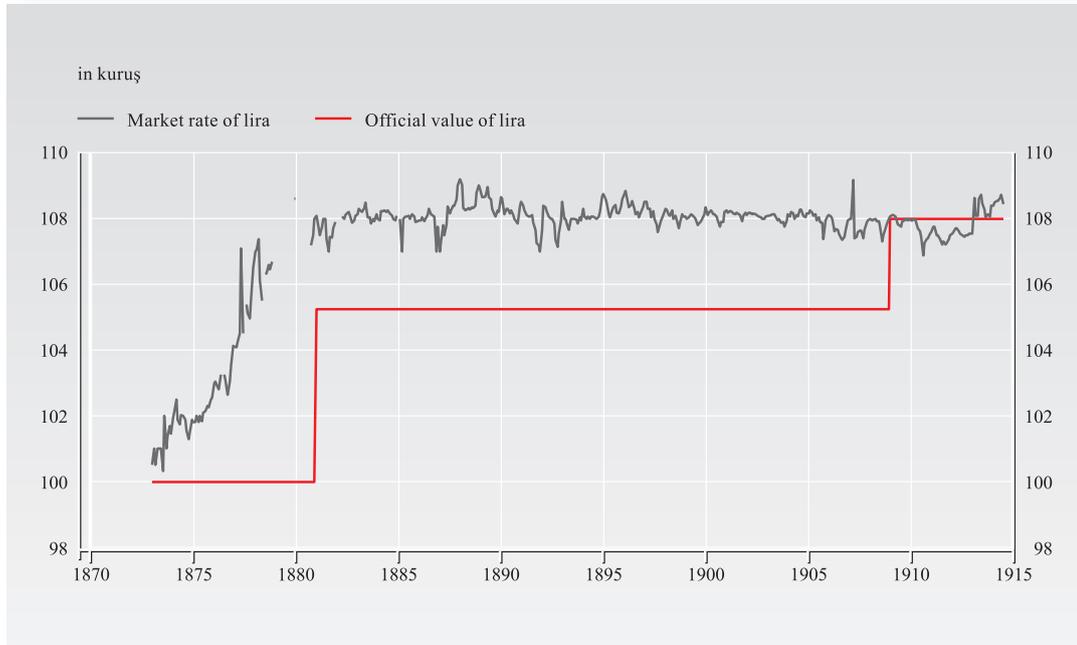
Sources and notes: Elaborated from Kuyucak (1948), Schneider et al. (1994) and Young (1906). In line with the terminology of Redish (2006), metallic content of a coin refers to its net gold and silver content, which is the product of the weight of a coin and its fineness. Legal value is the nominal value of the coin, which is shown in denominations of the kuruş. The intrinsic value of a coin is expressed by its mint equivalent, which is by definition the value of a coin divided by the product of its fineness and its weight. The mint ratio is simply the ratio of the mint equivalent of gold to silver, showing the official relationship between 1 gram of gold and 1 gram of silver. R is the international gold and silver ratio calculated in a similar way.

New gold coins began to be produced in 1843 and new silver coins were issued the following year along with an official declaration. Silver *kuruş* was issued with denominations of 20 (*mecidiye*), 10, 5, 2, 1. The other legal tender was the gold lira with denominations of 5, 2½, 1, ½. A problem with the 1844 reform was the existing overvalued coinage, which had been introduced in 1834. Although old gold coins were redeemed, overvalued silver currency (*beşlik and altılık* – “*fivers*” and “*sixers*”) was still in circulation. As the government did not possess sufficient resources to withdraw all previous coinage from circulation, it was forced to recognise them as legal tender. These two different types of silver coins circulated together in the market until 1888, when finally the government found resources to redeem all overvalued silver coins (see Table 2).<sup>5</sup>

From 1844 to 1880, the Ottoman Empire sustained the mint ratio of 1:15.88 (see Figure 1). However, in 1876, as the Latin Monetary Union came to an end, depreciation of silver had already gained pace in the world markets. In a parallel way, the market value of one gold lira in terms of silver kuruş started increasing from that date onwards (see Figure 2). From 1876 to 1879, the Ottoman Mint continued to accept unlimited amounts of silver. Finally at the end of 1879, because of further depreciation of the silver kuruş, the Ottoman government moved away from bimetallism, and gold was accepted as the new standard for the Ottoman currency. According to the new decree, which was issued on 13 December 1879, the monetary standard of the Empire would be the gold lira of 100 kuruş, and this standard would be applied in all revenues of the state, starting from 13 March 1880. Moreover, in article 4 of the decree it was specified ‘in order to bring the value of silver to a level equal to the value of gold, the value of *mecidiye* (20 kuruş

<sup>5</sup> For details, see Pamuk (2000, pp. 206–208).

FIGURE 2 Official and Market Rates of one Gold Lira (in silver kuruş)



Sources: LHEE (1881–1913), Schneider et al. (1994), Biliotti (1909).

silver coin) is reduced to 19 kuruş'.<sup>6</sup> Although it was not stated directly, in practical terms, this last point meant that the state was fixing the effective rate of the gold lira at 105.26 silver kuruş (see Figure 2).<sup>7</sup>

Thus, with the reform of 1880, the Ottoman Empire was adopting the 'gold standard' by closing down minting of silver coinage, *but* at the same time accepting the silver with a reduced rate of 105.26 instead of 100 kuruş. The mint ratio, with a 5 per cent increase over the previous bimetallic ratio of 15.09 now stood at 15.88 (see Table 2). In other words, the state was moving towards a 'limping standard' by preserving a fixed ratio between gold and silver. The Ottoman economy continued to rely heavily on silver for most daily transactions. Gold was at the centre especially in relations with the world economy, while silver fluctuated according to supply and demand in internal commerce.<sup>8</sup> From 1880 to 1914, although the intrinsic value of the gold lira in terms of the silver kuruş depreciated heavily due to an increase of the gold-silver price ratio in international markets, the exchange rate of the kuruş in Istanbul was stable, and fluctuating within a range of 107 to 109 kuruş. In other words, the government effectively eliminated the *agio* on silver in Istanbul. The *agio* reached a maximum value of 8 per cent in 1879, just on the eve of the monetary reform. Following the reform and the increase in the official value of the silver kuruş, it fluctuated around an average value of 2.5 per cent until 1909, when finally it disappeared completely with another monetary regulation which brought the official value of the gold lira to 102.6 kuruş.<sup>9</sup>

<sup>6</sup> The decree also reduced the value of debased coins by 50 per cent and the value of *altınk* (6 kuruş silver coin) to 5 kuruş. See Kuyucak (1947, pp. 212–213).

<sup>7</sup> Calculated as  $[100 * (20/19)]$ .

<sup>8</sup> See Pamuk (2008 and 2000, p. 217).

<sup>9</sup> Kuyucak (1947, p. 199), Toprak (1985, p. 765) and Tuncer (2013).

## 1.2 EPISODES OF PAPER MONEY

Greater stability of coinage did not however mean the end of fiscal difficulties or of the need to raise additional revenue. Throughout the 19th century, Ottoman administrations faced difficulties in bringing the budget under control and resorted to a variety of methods to deal with the fiscal problems. One method of raising fiscal revenue which began to be used in 1840 was the printing and circulation in the Istanbul area of interest-bearing paper money called *kaime-i muteber-i nakdiyye*, or *kaime* for short. In the second half of the 1830s, with pressing military needs and the financial requirements of reform, many government departments had been allowed to issue notes of indebtedness (*sergi*) to suppliers when their assigned funds were exhausted. Thus large amounts of short-term debt had been accumulated, owed mostly to the Galata bankers. The government also made inquiries to some London bankers regarding the possibility of a loan to see it through the crisis. When an agreement could not be reached, however, it turned to the printing of interest-bearing paper bills.<sup>10</sup>

The earliest *kaime* was issued in denominations of 500 kuruş (approximately 4.5 pounds sterling). It carried an annual interest rate of one eighth or 12.5% and had a term of eight years. The government declared repeatedly that *kaime* notes were issued solely for the purpose of facilitating commerce and that it was to be accepted as legal tender just like gold and silver coins. It also announced that these bills would be accepted by tax collectors in the provinces and by the Treasury at Istanbul. Subsequently, smaller denominations were also issued in order to facilitate daily transactions. The total volume of the first and second rounds of *kaime* issue in 1840 equalled 40 million kuruş (about 360 thousand pounds sterling).

In time, the government began to refer to these issues also as *sehim kaimesi* apparently because it wanted to build on the earlier *esham* system which linked government payments to specific revenue sources of the state. In the years between 1840 and 1844 the merchants of Istanbul gradually accepted these issues and *kaime* notes circulated at par against the coins.<sup>11</sup> Another round of *kaime* was issued in 1844, with the interest rate reduced to 6% per annum. In the second half of the 1840s, new series of *kaime* continued to be issued with denominations ranging from 50 to 10,000 kuruş. The higher denominations were used mostly by merchants. The amount of *kaime* notes in circulation is not known for this early period, but judging from the stability of prices, their supply was not excessive.

From the very beginning, however, the circulation of the *kaime* was plagued by counterfeiting. The first round of notes were written by hand on large sheets of paper. For the second issue, indelible ink was used for the figures but the counterfeiters proved equal to the challenge. Eventually in 1842 the *kaime* began to be printed with an embossed seal of the sultan (*tuğra*) and other protections against forgery, and the earlier issues were exchanged for the printed *kaime*. The government also decided to terminate the circulation of *kaime* notes in the provinces in 1841 not only because of counterfeiting but also because of the difficulties in having it accepted.

Since their volume remained limited, the *kaime* performed reasonably well until 1852. A new phase in the history of the *kaime* began that year, when paper money that did not bear any interest was put into circulation for the first time ever. The denominations were lower than before, 10 and 20 kuruş. While the official explanation emphasised that these low denominations facilitated small

<sup>10</sup> Akyıldız (1996, pp. 25–49) and Davison (1980, pp. 243–244).

<sup>11</sup> Akyıldız (1996, pp. 41–49).

daily transactions, it is clear that they also helped the Treasury raise a considerable amount of new revenue. In 1853, the volume of kaime notes in circulation reached 175 million kuruş, or about 1.6 million pounds sterling, still not a very large sum. During the Crimean War, however, large amounts of kaime were printed and the market price expressed in gold liras declined to less than half the nominal value. One gold lira began to exchange for 200–220 kuruş in kaime. In 1861, a record volume of kaime worth 1,250 million kuruş flooded the markets, and the exchange rate against the gold lira plummeted to 400 paper kuruş. The first experiment in paper money thus resulted, more than a decade after its initiation, in a major wave of inflation. With popular protests and general discontent, the government finally agreed to retire the kaime in 1862 with the help of short-term loans obtained from the Imperial Ottoman Bank.<sup>12</sup>

There was one other occasion until World War I on which the government resorted to non-convertible paper money. After the Ottoman government declared a moratorium on external debt payments in 1876, it became impossible to borrow from the European financial markets or the Imperial Ottoman Bank. With the Serbian uprising and the outbreak of the War of 1877–78 with Russia, the need to raise fiscal revenue became even more urgent. Kaime notes were issued in both low and high denominations ranging from 1 kuruş to 500 kuruş and was proclaimed legal tender in all parts of the Empire. Very quickly their volume reached 16 million liras (14.4 million pounds sterling). The government paid its employees with the new issues. The peasants, in turn, sold their crops and paid taxes in kaime. Because of the large volume, however, the exchange rate of the kaime declined within two years, to 450 kuruş for one gold lira. They remained in circulation for close to three years and were retired at the end of the decade.<sup>13</sup>

The withdrawal of kaime notes coincided with the monetary reform of 1880. As mentioned above, the reform not only marked the beginning of the ‘limping standard’, but also restored the monopoly of the IOB in issuing gold-backed banknotes. From that year onwards until 1914, the quantity of the IOB notes in circulation increased steadily, and they remained the only legal tender paper money circulating in parallel with the gold and silver coins. The beginning of World War I marked the end of the gold standard for most core and peripheral countries across the world, and the Ottoman Empire was no exception. During the first couple of months of the Great War, in order to finance the extraordinary military expenditures, the government increased the upper limit of issue of the IOB to 4 million current liras. Later, in April 1915, the Ottoman government suspended the IOB’s exclusive privilege to issue notes and authorised the Ministry of Finance to issue 6.5 million current liras of paper money, under the name of *evrak-ı nakdiye*.<sup>14</sup>

Finally, it is important to note that the presentation of the evolution of the monetary standards of the Ottoman Empire reflects mostly the developments in the financial and economic centre of the Empire, namely Istanbul, but not the provinces. In the rest of the Empire, including the European provinces under the Ottoman rule, gold coins were rarely seen in circulation apart from major trade centres and port cities, and hoarding of gold was a common phenomenon. As the monetary base continued to rely on silver rather than gold or gold-convertible banknotes, the silver currency served as fiduciary money, with only a limited connection to its intrinsic value. The widespread use of silver coins coincided with lack of paper currency in the Ottoman provinces. By 1913, the IOB had more than 80 branches across the Empire. However, despite this extensive branch network, its notes never became widespread in the provinces, but circulated only within a small segment

<sup>12</sup> Akyıldız (1996, pp. 50–90), Davison (1980, p. 245) and Erol (1970, pp. 5–7).

<sup>13</sup> Akyıldız (1996, pp. 91–174), Erol (1970, pp. 15–27).

<sup>14</sup> Eldem (1999, pp. 257–308).

of the Istanbul economy. This was not only because the banknotes could never become a widely used means of exchange but also because the IOB, primarily a foreign commercial bank, did not act as central bank of issue on behalf of the state, as in other parts of Southeast Europe.<sup>15</sup>

## 2 DEFINITION AND DESCRIPTION OF VARIABLES

We present a comprehensive long-term historical database on key macroeconomic time series classified in six groups of variables, namely monetary variables; interest rates; exchange rates; government finances; prices, production and labour; national accounts and population. The accompanying index table provides important information on the list of variables, the series' codes and the list of tables, the unit of account, the time span and the data frequency.

**INDEX TABLE - Country: OTTOMAN EMPIRE**

*continue*

List of Variables	Time Span	Data Frequency	Unit of Account	Series Code
<b>1. MONETARY VARIABLES</b>				
<i>Total reserves (of IOB)</i>	1863–1913	annual	in pound sterling (thous.), end-of-period	OE1A_A
<i>Banknotes in circulation (IOB)</i>	1863–1913	annual	in pound sterling (thous.), end-of-period	OE1B_A
<i>Gold coinage</i>	1875–1913	annual	in local currency (thous.), end-of-period	OE1C_A
<i>Silver coinage</i>	1875–1913	annual	in local currency (thous.), end-of-period	OE1D_A
<i>Bronze and nickel coinage</i>	1875–1913	annual	in local currency (thous.), end-of-period	OE1E_A
<b>2. INTEREST RATES</b>				
N/A	N/A	N/A	N/A	N/A
<b>3. EXCHANGE RATES</b>				
<b>Table OE2</b>				
<b>3. EXCHANGE RATES</b>				
<b>Table OE3</b>				
<i>Pound sterling (sovereign)</i>	1880–1913	annual	in local currency, annual averages	OE3A_A
<i>Pound sterling (3-month bills of exchange)</i>	1880–1913	annual	in local currency, annual averages	OE3B_A
<i>Pound sterling (mint parity)</i>	1880–1913	annual	in local currency, annual averages	OE3C_A
<i>French franc (gold Napoleon)</i>	1880–1913	annual	in local currency, annual averages	OE3D_A
<i>French franc (3-month bills of exchange)</i>	1880–1913	annual	in local currency, annual averages	OE3E_A
<i>French franc (mint parity)</i>	1880–1913	annual	in local currency, annual averages	OE3F_A
<b>4. GOVERNMENT FINANCES</b>				
<b>Table OE4</b>				
<i>Total government revenue</i>	1846–1918	annual	in local currency (thous.)	OE4A_A
<i>Total government expenditure</i>	1846–1918	annual	in local currency (thous.)	OE4B_A
<i>Foreign government debt</i>	1854–1914	annual	in pound sterling (thous.), end-of-period	OE4C_A
<i>Interest service on foreign government debt</i>	1854–1914	annual	in pound sterling (thous.), end-of-period	OE4D_A

<sup>15</sup> Tuncer (2013).

## INDEX TABLE - Country: OTTOMAN EMPIRE

List of Variables	Time Span	Data Frequency	Unit of Account	Series Code
<b>5. PRICES, PRODUCTION AND LABOUR</b>				
<b>Table OE5</b>				
<i>Consumer price index</i> (in local currency, 1913=100)	1840–1913	annual	index number	OE5A_A
<b>6. NATIONAL ACCOUNTS AND POPULATION</b>				
<b>Table OE6</b>				
<i>Commodity exports (FOB)</i>	1830–1913	annual	in pound sterling (millions)	OE6A_A
<i>Commodity imports (CIF)</i>	1830–1913	annual	in pound sterling (millions)	OE6B_A
<i>GDP, nominal terms</i>	1840–1914	benchmark years	in local currency (millions), at current prices	OE6C_A
<i>Population</i>	1840–1914	benchmark years	in million inhabitants	OE6D_A

Notes: The code of each variable is generated by the country prefix (OE), the number of the variable group (1, 2, 3, 4, 5 and 6) and a letter identifying the respective time series within the group (A, B, C...); at the end, A stands for annual data.

## 2.1 MONETARY VARIABLES

## 2.1.1 Reserves and banknotes

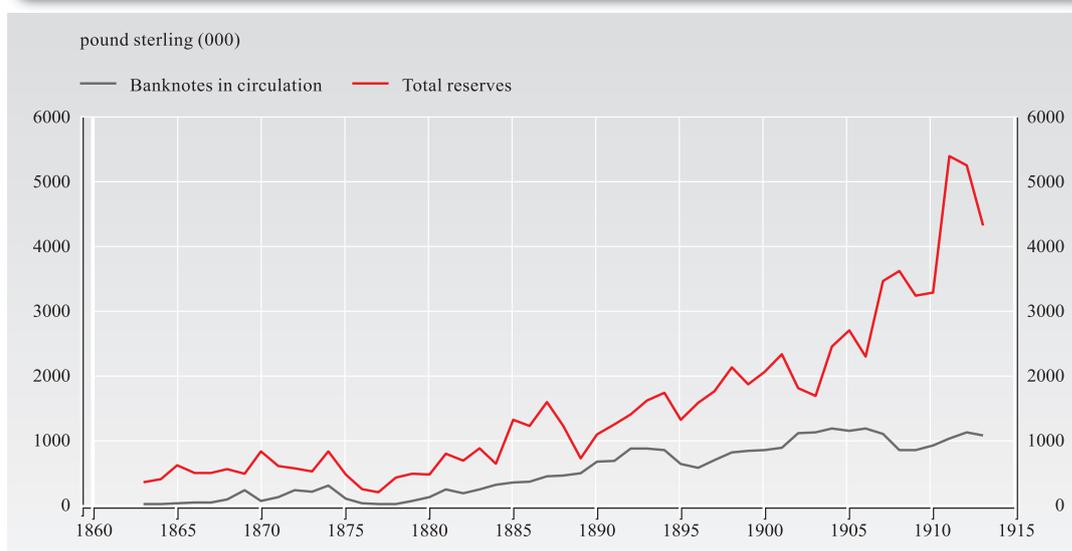
Figure 3 shows the total reserves of the IOB together with banknotes in circulation at the end of each calendar year based on Table OE1\_A. Series OE1B\_A, reported in pound sterling, include data on gold, silver and foreign exchange reserves in Istanbul, London, Paris and other branches of the IOB, at annual time intervals. Unfortunately, at our current level of knowledge, it is not possible to acquire branch-specific information or to have detailed time series for different components of the reserves.

As briefly outlined above, from 1863 onwards the IOB was granted with the exclusive privilege of issuing gold convertible banknotes. Series OE1A\_A displays the data figures. The payment of these banknotes would only be demandable at the place of issue, i.e. Istanbul. The only limitation on the banknote issue was the requirement for the IOB ‘for a period of two years from the date of its opening shall keep a reserve in hand equal in amount to at least half its notes in circulation and, after that two-year period has elapsed, to the amount at least of one third’.<sup>16</sup> This one-third cover ratio requirement was in line with the statutes of most of the European banks of issue. However, throughout the period under study the total reserves of the IOB remained well above the required amount. From 1863 to 1876, the IOB notes in circulation showed a steady increase, which came to a halt with the global financial crisis of 1873 and the ensuing suspension of convertibility. This resulted in a decline in banknote circulation; concerns about the convertibility of the state notes (kaime) also had an impact on the holders of IOB notes.

Starting with the reform of 1880 and the redemption of kaime notes, the IOB gradually increased the amount of banknotes in circulation. Because of the rapid increase of banknotes in circulation, on 20 January 1893 the government imposed a limit on the bank’s right of issue with a decree, restricting the banknote issue to a maximum of 1.5 million liras. Following this decision, in 1894, the bank brought its total issue to 1.4 million gold liras and put these banknotes into circulation gradually until 1905.<sup>17</sup> This picture of a steady increase, however, can be deceiving. Throughout

<sup>16</sup> IOB (1875), Pamuk (2000, p. 212), Eldem (1999, pp. 463–466).

<sup>17</sup> Pamuk (2000, p. 212), Eldem (1999, p. 161 and pp. 463–466).

**FIGURE 3 Banknotes in Circulation and Total Reserves, 1863–1914**

Sources: IOB (1863–1914) and Eldem (1999).

the period, the banknotes in circulation remained relatively low compared with the total reserves of the bank and consisted only of a very small part of total money supply. Due to the restriction of convertibility only in Istanbul and the relatively high denominations of the issued notes, banknote circulation remained limited within a small segment of the Istanbul economy.<sup>18</sup>

### 2.1.2 Gold, silver and bronze coinage

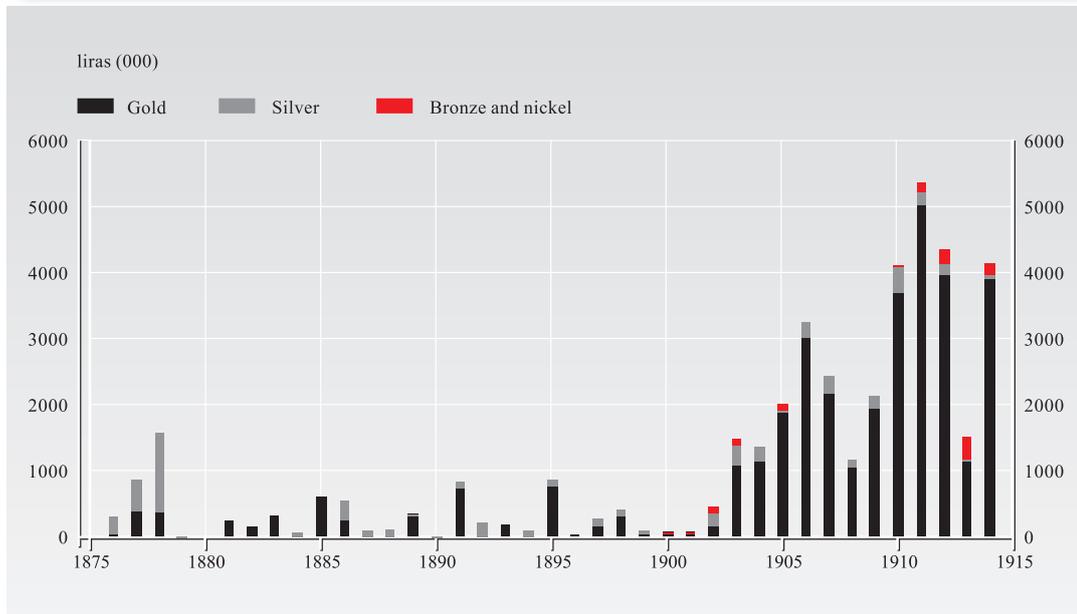
Considering the variety of monetary zones, the different types of coins in circulation and the extensive private minting and counterfeiting activity in the Ottoman lands, obtaining reliable estimates for the volume of the coins in circulation in the Ottoman Empire is a task beyond the scope of the chapter. Nevertheless, it may be useful to bring a number of different assessments together to get a broad picture of the volume of coins in circulation. Earlier estimates mostly rely on the mint output of gold and silver as a proxy for the coins in circulation. According to Ferid (1914), the mint output for gold and silver minted under the rule of each Ottoman Sultan is summarised as follows:

**TABLE 4: Mint output of gold and silver by dynasty in millions of liras, 1844–1913**

Dynasty	Period	Total gold minted	Total silver minted
<i>Abdulmecid</i>	1844–1860	14.49	3.86
<i>Abdulaziz</i>	1861–1875	14.98	3.21
<i>Murad V</i>	1876	0.02	0.03
<i>Abdulhamid</i>	1876–1908	16.45	4.74
<i>Mehmed V</i>	1909–1913	20.27	1.08
<b>TOTAL</b>	1844–1913	66.18	12.91

Source: Ferid (1914).

<sup>18</sup> Tuncer (2013).

**FIGURE 4 Mint Output of Gold, Silver, Bronze and Nickel, 1876–1913**

Sources: Ferid (1914) and Tunçer (2013).

Similarly, it is possible to reconstruct the annual mint output by using the same source. These figures represent the net increase in coinage, therefore the minting from worn coins are not included into the calculations (see Figure 4).

Evidently, the mint output does not necessarily correspond to actual gold and silver coins in circulation. According to the estimates provided by Eldem (1970), in 1913 total gold coins in circulation were around 32 million liras, silver coins in circulation were around 11.6 million and nickel and bronze coins in circulation were around 1.1 million liras, whereas foreign coins in circulation were estimated at 5 million liras. According to Eldem (1970), around 30 million gold liras, almost half of the amount minted from 1844 to 1914, were being hoarded. Similarly, the extensive qualitative evidence of private minting and counterfeiting activity suggests that the foreign coins in circulation could be well above 5 million gold liras. Despite these broad estimates, building reliable data series on the monetary aggregates for the Ottoman Empire needs further research.

## 2.2 INTEREST RATES

The discounting and re-discounting of bills of exchange, which is one of the primary activities of any commercial bank, was only a minor activity of the IOB. The bank did not ever set an official interest rate. Narrative accounts suggest that loan terms were dependent upon the creditworthiness of the customer. Moreover, the discount rate varied substantially across different types of operations with respect to the guarantees pledged. In 1909, according to Adrien Biliotti, an employee of the IOB in Istanbul, the bank could apply interest rates from 7 to 9% to bills of exchange operations; in provinces this rate was even higher.<sup>19</sup> In the absence of any official discount rate, however, it is not possible to construct time series data on interest rates.

<sup>19</sup> Biliotti (1907, p. 209).



## 2.3 EXCHANGE RATES

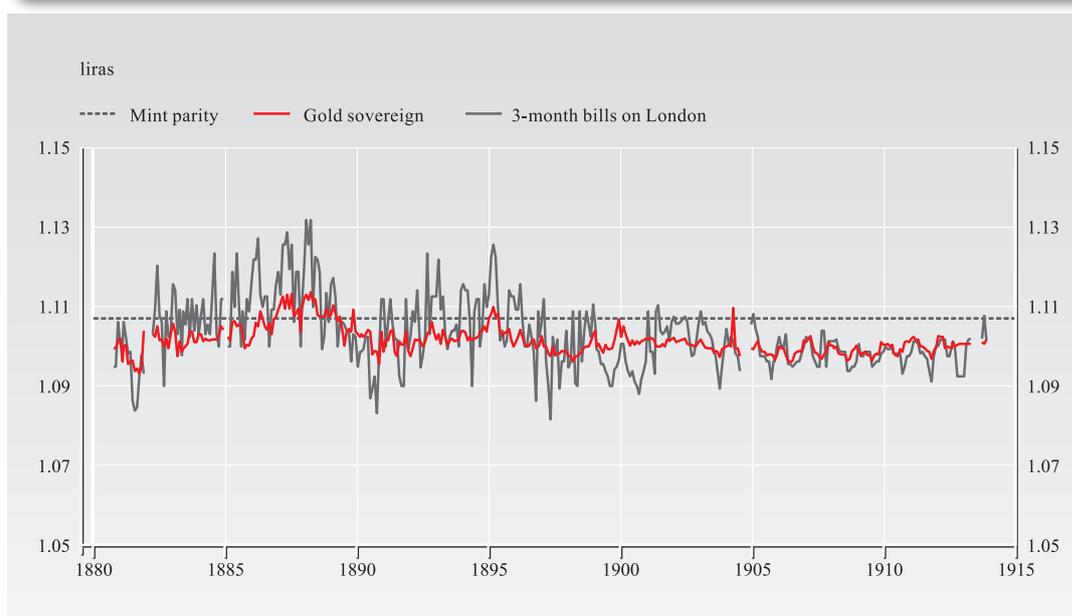
The exchange rate of the Ottoman lira against major European currencies remained relatively stable from 1840s to 1914. In order to clarify the terminology, however, we should first point out the difference between the ‘mint parity’ and ‘exchange rate’ as referred in the contemporary literature. The mint parity can be considered as a *hypothetical* exchange rate, which is the relative pure-specie content of the two countries’ currencies, or in other terms the ratio of countries’ mint prices expressed in common fineness.<sup>20</sup> To calculate the mint parity in terms of liras, the fine-metal value of a foreign gold coin can simply be divided into fine-metal value Ottoman gold lira. As shown in Table 5, from 1880 to 1914 the mint parity between the Ottoman gold lira and two leading European currencies remained constant.

**TABLE 5: Mint parity of the Ottoman gold lira per pound sterling and the French franc, 1880–1914**

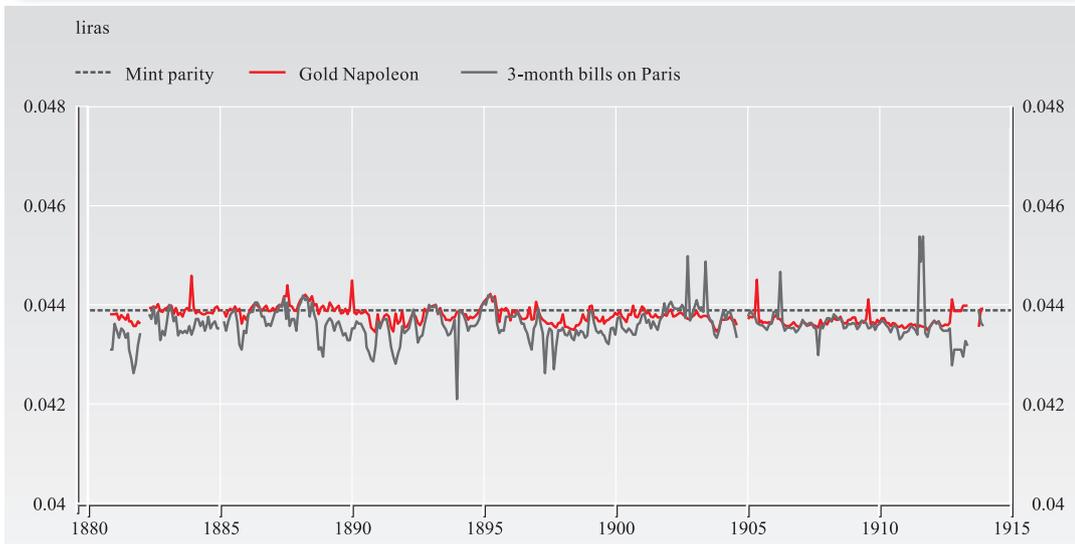
Currency	Fine-metal value (gr.)	Mint Parity (lira equivalent)
Pound sterling	7.322	1.107
French franc	0.290	0.044
Ottoman lira	6.614	1

Source: The metallic content of the pound sterling and the French franc is elaborated from Kelly (1832) and BA (1876–1915). For the Ottoman lira, see Table 2.

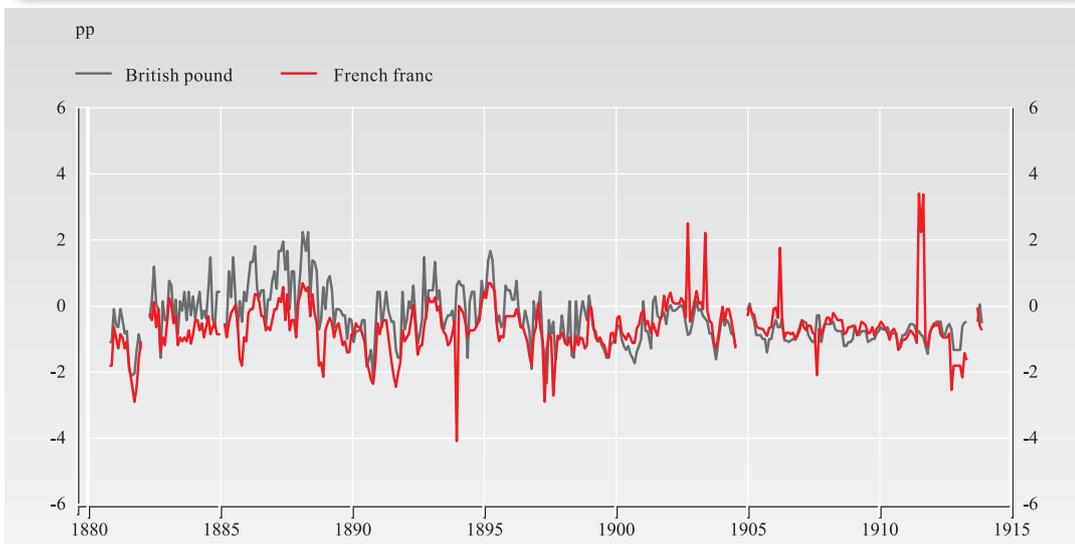
**FIGURE 5 The Ottoman Lira/Pound Sterling Exchange Rate in Istanbul, 1880–1914**



<sup>20</sup> Officer (1996, p. 49).

**FIGURE 6 The Ottoman Lira/French Franc Exchange Rate in Istanbul, 1880–1914**

Source: LHEE (1880–1914).

**FIGURE 7 Deviations of the Exchange Rate from the Mint Parity, 1880–1914**

Source: LHEE (1880–1914).

However, mint-parity was not the ‘rate of exchange’ in the contemporary terminology. The exchange rate, in a broad sense, would also include the fluctuations caused by the gold points. Moreover, during the period under study, exchange-market transactions mostly relied on bills of exchange rather than on specie. A bill of exchange was an order to pay a specified amount of money (on a specified future date) in cash in the city/country on which was drawn. Since these were the most common exchange-market instruments, they might be considered representative measures of the exchange rate between two countries. The exchange rate of the French gold coin against

kuruş has been calculated by using the data for 20 francs valued gold *Napoleon*. The bills of exchange for 3 months drawn on London were quoted in terms of the gold lira, which were converted into kuruş at the rate of 1 gold lira = 100 kuruş.

As shown in Figures 5 and 6, from 1880 to 1914, the value of the pound sterling mostly fluctuated within a range of 109 to 113 kuruş, whereas the bills of exchange drawn on Paris fluctuated within a range of 420 to 450 kuruş. Throughout the period, the deviations from the mint parity for both currencies did not exceed 4 percentage points (see Figure 7).<sup>21</sup>

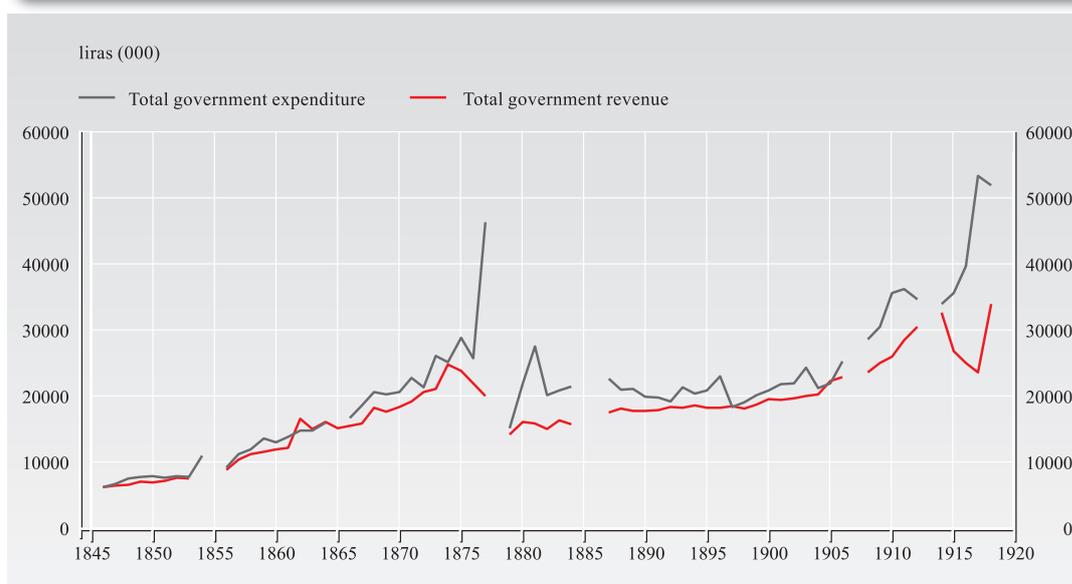
As mentioned previously, this picture of stability was, however, an exception. Although during this period the exchange rates were kept stable in Istanbul, the widespread circulation of foreign silver coins and provincial currency zones remained major problems, despite the attempts of the government to ban the import of silver coins to the Empire.<sup>22</sup>

## 2.4 GOVERNMENT FINANCES

### 2.4.1 Revenue and expenditure

The detailed budget figures of the Ottoman central government have recently been brought together by Güran (2003) to enable us interpret the long-term evolution of the central government expenditures and revenues. These figures are reported in Ottoman fiscal year, which, based on the *Rumi* calendar, started on 1 March. Government spending comprises ordinary and extraordinary expenditures including military spending and interest service on government debt (Table OE4\_A; Series OE4B\_A).

**FIGURE 8 Total Government Revenue and Expenditure, 1844–1918**



Source: Güran (2003).

<sup>21</sup> Deviations from the mint parity are calculated by  $[100 * (\text{exchange rate} / \text{mint parity}) - 1]$ . A negative value denotes a discount. See Tuncer (2011).

<sup>22</sup> See Eldem (1999, p. 207) and Young (1906, p.14).

Until the 1840s, the Ottoman Empire experienced large budget deficits which were financed either by various means of domestic borrowing (such as granting life-long tax-farming rights) or by debasement. However, debasements had serious political costs; therefore, as outlined above, the 1844 monetary reform (*tashih-i sikke*) brought the era of debasements to an end. In order to finance the costly reforms and the centralisation of the state, beginning with Mahmud II the government repeatedly but unsuccessfully attempted to replace tax farming with centralised tax collection. The first official attempt to abolish tax farming was after the *Tanzimat Decree* in 1839, but the government took a back step in 1842 because of the financial losses. The 1856 decree ordered the ‘final’ abolition of tax farming but with no better results than in 1838. In the early 1880s, the state again abolished tax farming, but reassessed its position in 1886, since the reformed system was too costly. Tax farming remained the norm throughout the Empire until 1914.<sup>23</sup> Long-run changes in total government revenue were mostly determined by the fiscal reform efforts of the government to increase the state’s capacity to collect further revenue. State expenditure, on the other hand, was mostly driven by the costly military campaigns, as well as by interest payments on foreign debt.

#### 2.4.2 Foreign government debt and interest service

In 1854, for the first time, the Ottoman government began to sell long-term bonds in the international financial markets in order to finance the Crimean War. In the absence of seigniorage revenue given debasements or the issuance of paper currency, foreign capital became the most important way of dealing with budgetary difficulties. By 1863 the government had already contracted six loans with a total face value of 39 million pounds sterling. These loans were secured by several direct and indirect tax revenues, custom duties and the Egyptian tribute. Apart from the IOB, the intermediary institutions located in London and Paris, such as Dent Palmer, the Rothschilds, Crédit Mobilier, Comptoir d’Escompte were acting as underwriters. By the second half of the 1860s, due to continuous budget deficits, the government needed to issue new bonds. Therefore, from 1863 onwards, a phase of increasing borrowing began, which was facilitated by the establishment of the IOB and eventually led to further accumulated debts.

The global economic crisis of 1873 led to a decline in supply of foreign capital, and in 1875–76, the Ottoman government declared a moratorium on its outstanding debt, which then stood at almost £200 million pounds sterling. From 1876 to 1881, the international financial markets were closed to the Ottoman Empire. Therefore, the government turned to domestic means of finance, namely issuing state notes, in order to finance its extraordinary expenses, such as the cost of the Russo-Turkish War of 1877–78. The post-war years were marked by efforts to regain solvency. The Congress of Berlin in June 1878 brought an end to the Ottoman conflict with Russia. It was in fact during the Berlin Congress that the claims of the bondholders first received official acknowledgement by the Powers. However, formal negotiations between the representatives of the foreign creditors and the Ottoman government did not start until September 1881. In that year, the first meeting between parties took place in Istanbul, and after lengthy negotiations the decree of Muharrem was signed on 20 December 1881. Representatives of the British, French, Dutch, German, Italian and Austro-Hungarian bondholders and the Ottoman government agreed that the outstanding debt of the Empire would be reduced from about 191 million pounds sterling to 96 million. Outstanding interest payments, which were around 62 million, were reduced to approximately 10 million. Finally, the interest service on the debt was also reduced from approximately 13.6 million to 2.7 million pounds sterling.<sup>24</sup>

<sup>23</sup> Pamuk (2012), Karaman and Pamuk (2010) and Quataert (1994, p. 855).

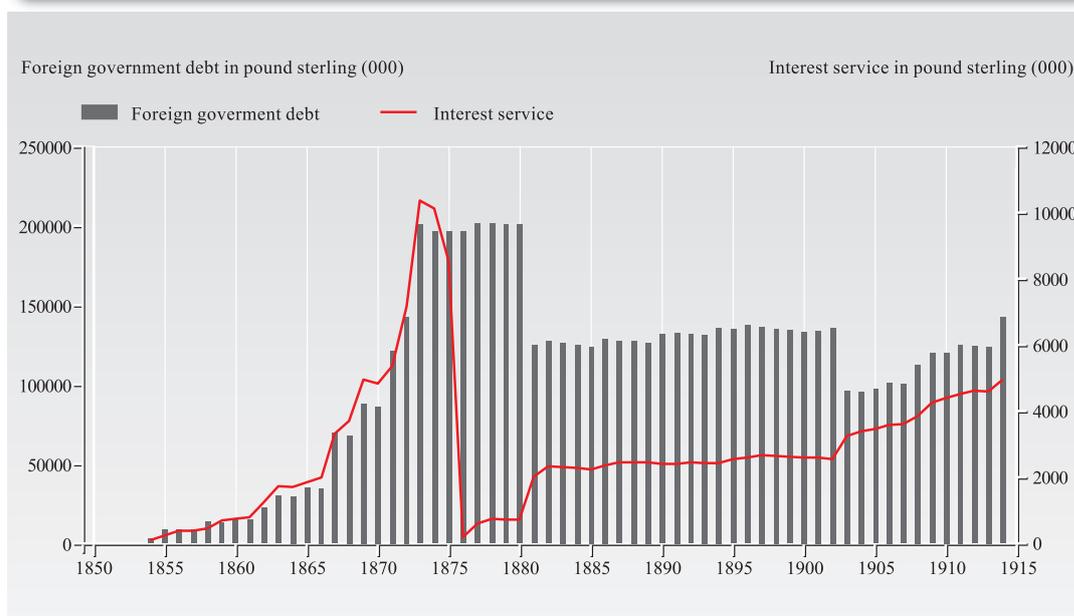
<sup>24</sup> Blaisdell (1966) and Kiray (1988).

From 1886 to 1914, the Ottoman state managed to contract another 23 loans, totalling just over 150 million pounds sterling at an average issue rate of over 85% and an average nominal interest rate of barely more than 4%. In contrast, the effective rates of interest paid by the government before 1875 had fluctuated between 10% and 12% despite stable international prices. As regards the outstanding amount of debt, the debt stock was reduced to a more manageable level. Although in 1903 the Ottoman Empire benefited from another debt consolidation, on the eve of World War 1, the total debt stock remained around 140 million pounds sterling.<sup>25</sup> OE4C\_A and OE4D\_A show the data series.

## 2.5 PRICES, PRODUCTION AND LABOUR

The time series for the consumer prices in Istanbul from 1489 to 1914 have been published in Pamuk (2001). The prices from 1844 to 1914 are reproduced below using 1913 as a base year.<sup>26</sup> A detailed discussion of the methodology and the sources used for calculating the consumer price index can be found in Pamuk (2001). The trends in consumer prices in Istanbul are consistent with the above presentation of monetary events. As outlined above, from 1844 to 1914 the Ottoman silver coins maintained their metallic content; therefore the Ottoman economy was not subject to domestic inflationary pressures due to debasements. Although during this period the silver lost its value in international markets, the Ottoman silver coins did not have much connection with their intrinsic value and retained a stable level due to scarcity of means of exchange and high money demand. The price index also reflects the inflationary impact of the kaime (state notes) experiment, which took place between 1852 and 1863. After the foundation of the IOB and the withdrawal of kaime notes, there were no further money supply shocks that could lead to a price surge, therefore price levels fol-

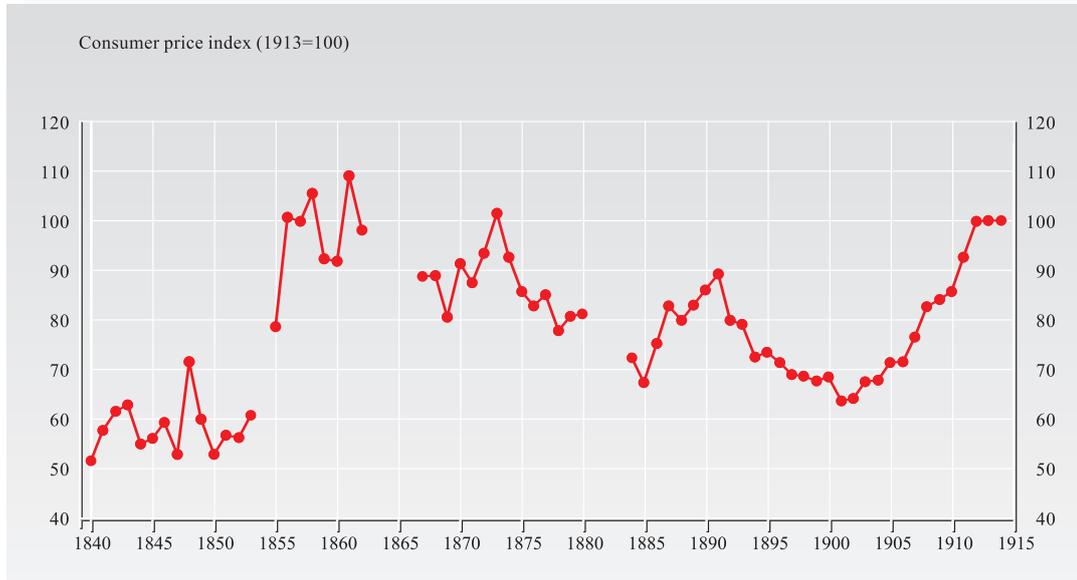
**FIGURE 9 Foreign Government Debt and Interest Service, 1854–1914**



Source: Tuncer (2011).

<sup>25</sup> Tuncer (2011, pp. 175–182).

<sup>26</sup> Pamuk (2001).

**FIGURE 10 Consumer Prices in Istanbul, 1844–1914**

Source: Pamuk (2001).

lowed mostly international trends. Following the global financial crisis of 1873, in line with global deflationary trends experienced by the gold standard countries, consumer prices in Istanbul also went through a declining trend, which only started reversing after 1900.

## 2.6 NATIONAL ACCOUNTS AND POPULATION

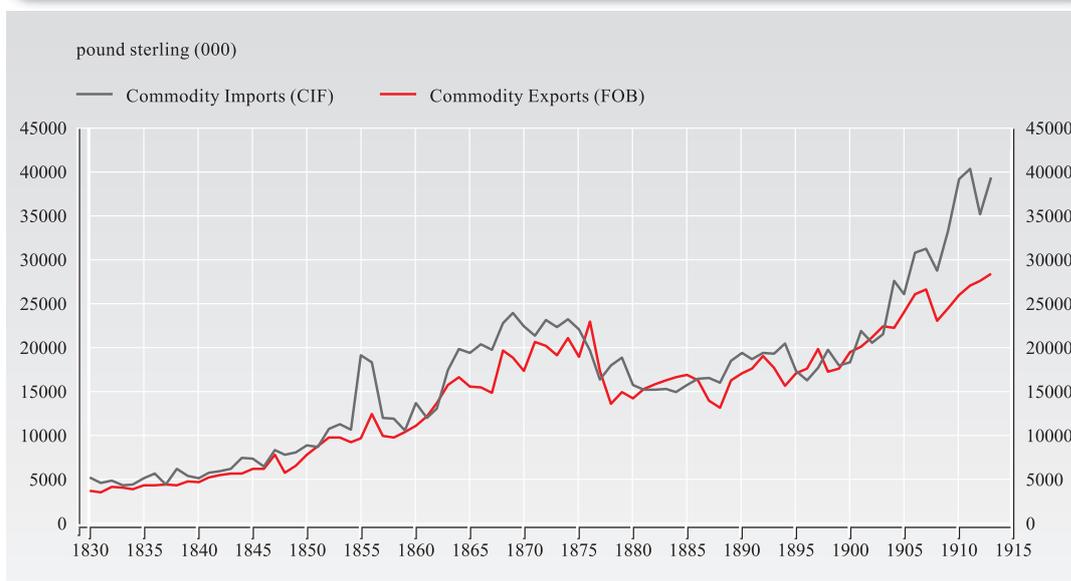
### 2.6.1 Foreign trade

Similar to the rest of Southeast Europe and the peripheries, the 19th and early 20th centuries were characterised by the commercialisation of Ottoman agriculture and a rapid expansion of foreign trade. Figure 11 shows commodity exports and imports of the Ottoman Empire for the period 1830–1913, expressed in millions of pounds sterling (see Table OE6\_A; Series OE6A\_A and OE6B\_A). The Ottoman Empire excludes Egypt and Libya for the whole period under study. However, in line with the territorial changes of the 19th century, the coverage is adjusted accordingly.<sup>27</sup> Therefore, Romanian principalities until 1856, Bosnia, Montenegro, and Bulgaria until 1877, Cyprus and Crete until 1907, and Macedonia until 1912 are included in the estimates. Moreover, Syria and Palestine are included in the calculations for the whole period. A detailed discussion of the methodology and sources can be found in Pamuk (1987 and 2003).

Overall, growth in Ottoman international trade followed similar patterns as in other European countries during the 19th century. The rapid increase in the volume of foreign trade from 1840 to 1879 slowed down with the depression in the international markets. From 1898 onwards another phase of rapid expansion in foreign trade started, which was fuelled by the demand from Europe for the Ottoman raw materials and the expansion of the railway network connecting domestic markets to foreign ports.<sup>28</sup>

<sup>27</sup> Pamuk (2003, p. 23).

<sup>28</sup> Pamuk (1987).

**FIGURE II Commodity Exports and Imports, 1830–1913**

Sources: Pamuk (1987, 2003).

### 2.6.2 GDP and population

The first available GDP estimates for the Ottoman Empire go back to Eldem (1970), where fiscal, agricultural, industrial and foreign trade series were utilised to reach GDP and GDP per capita estimates for the whole Ottoman Empire. These numbers have recently been revised by Pamuk (2006), who provides a detailed discussion of the methodology and sources used in calculations. The results, summarised in Table 6, exclude Romania, Egypt, and the Arabian Peninsula but include areas in the Balkans as well as Anatolia, Syria, and Iraq. From 1840 to 1914 the decline in total population was due to the loss of territory in the Balkans. Moreover, the results suggest a significant increase in GDP per capita in nominal terms from 1840s to 1914.<sup>29</sup> Despite these positive growth rates of GDP per capita, the income gap between the Western European countries and the Ottoman Empire steadily increased from the 1840s to 1914.

**TABLE 6: Population and GDP of the Ottoman Empire, 1840–1914**

Years	Population Million inhabitants	GDP at current prices millions of current Ottoman liras
1840–1842	26.0	130.0
1880–1882	20.0	160.0
1913–1914	22.0	260.0

Source: Ferid (1914).

<sup>29</sup> Pamuk (2006).

### 3 DATA SOURCES

The dualistic character of the Ottoman monetary system is also reflected in the nature and availability of the data sources. The IOB, as a foreign bank, has a considerable range of primary data sources located in the main archives of the bank in Istanbul, Paris and London. Similarly, there is extensive secondary literature on the history of the bank, which allows us to reconstruct and interpret some of the fundamental monetary time series of the bank.<sup>30</sup> In this study, we mostly relied on the annual reports and the balance sheets of the bank located in the London archives of the bank and on the extensive data appendix provided by Eldem (1999).<sup>31</sup> As for the second dimension of the Ottoman monetary system, we relied on coinage information provided in Ferid (1914). This source, published by the director of the Ottoman Mint, relies on official reports of the mint and so far it has been the most prominent reference point for major contributions in Ottoman monetary history. The end-of-month data for exchange rates have been published in Tuncer (2011), and the numbers are based on the daily edition of *The Levant Herald and Eastern Express* (1880–1914). Annual averages of the end-of-month data points have been reproduced in the data tables in section 2.

The time series data on foreign government debt and interest service were published for the first time by Pamuk (1987) as part of the balance of payments estimates. More recently, these figures have been revised by Tuncer (2011) by using individual bond information. These new estimates take into account the nominal face value, interest, the amortisation rate and the maturity period of each loan from 1854 to 1914. These figures are then aggregated in order to reach the total outstanding foreign debt and interest service. Bonds issued in different currencies are converted into pounds sterling at the prevailing exchange rate.<sup>32</sup> Government revenue and expenditure data figures are reported as at the end of Ottoman fiscal year and are taken from Güran (2003), who provides detailed budgets of the Ottoman government based on official figures.

The Ottoman foreign trade statistics published in Pamuk (1987) provide the most comprehensive estimates on the long-run evolution of Ottoman commodity exports and imports from 1830 to 1913. These figures address some of the major problems of the official Ottoman trade statistics and utilise foreign trade statistics of all the countries with which the Ottoman Empire maintained commercial relations. Further methodological discussion regarding the estimates can be found in Pamuk (1987). For the period under study, there are no official estimates of GDP or the consumer price index. For these two series we preferred to reproduce the most reliable estimates available in the literature without going into the details of the methodology and sources used.<sup>33</sup>

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<sup>30</sup> See, for example, Biliotti (1909), Autheman (2002), Eldem (1999), Clay (1990, 1994) and Thobie (1991).

<sup>31</sup> IOB (1863–1914).

<sup>32</sup> Tuncer (2011, p. 315).

<sup>33</sup> Pamuk (2001, 2006).

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**Note:** In the following tables “..” indicates that the item did not exist; in case of reconstructed data, that the entry was not calculated for that point in time. “.” indicates missing value. An absolute zero is coded as “-“, while “0.0” codes a rounded zero. For details on the unit of the series, see index table in section 2.

TABLE OEI\_A Monetary variables, 1863–1914

Year	Banknotes in circulation (IOB)	Total reserves of IOB	Gold coinage	Silver coinage	Bronze and nickel coinage
	OE1A_A	OE1B_A	OE1C_A	OE1D_A	OE1E_A
1863	7.9	366.7	.	.	.
1864	6.8	416.9	.	.	.
1865	22.9	634.9	.	.	.
1866	36.3	506.6	.	.	.
1867	38.6	516.1	.	.	.
1868	87.8	565.5	.	.	.
1869	224.0	498.5	.	.	.
1870	62.3	849.5	.	.	.
1871	121.9	613.8	.	.	.
1872	225.1	582.8	.	.	.
1873	202.6	535.9	.	.	.
1874	295.1	838.2	.	.	.
1875	99.2	490.7	.	.	.
1876	22.3	260.7	77.8	257.7	0.0
1877	16.5	219.5	410.3	472.2	0.0
1878	16.1	444.4	406.7	1189.2	0.0
1879	63.7	495.3	4.3	23.8	0.0
1880	123.5	481.5	0.0	0.0	0.0
1881	239.9	809.9	249.2	0.0	0.0
1882	172.3	700.2	137.5	0.0	0.0
1883	236.6	885.8	305.6	10.0	0.0
1884	312.8	651.7	35.1	48.8	0.0
1885	348.6	1333.9	585.5	0.0	0.0
1886	351.7	1230.0	285.4	280.0	0.0
1887	438.8	1601.7	13.0	111.3	0.0
1888	452.1	1231.2	22.6	127.1	0.0
1889	492.0	741.7	336.9	19.0	0.0
1890	665.0	1105.3	10.2	9.7	0.0
1891	682.6	1257.2	759.6	105.3	0.0
1892	870.1	1416.9	32.0	201.0	0.0
1893	865.7	1623.8	175.9	1.5	0.0
1894	838.8	1746.9	20.2	102.4	0.0
1895	625.8	1327.6	789.5	100.1	0.0
1896	566.7	1597.8	21.9	1.7	0.0
1897	691.6	1771.5	200.0	99.8	0.0
1898	810.8	2144.5	325.0	100.7	0.0
1899	832.3	1873.5	62.4	56.5	0.0
1900	846.2	2064.7	78.3	1.8	12.9
1901	880.5	2335.2	68.3	1.3	34.1
1902	1106.9	1819.1	196.1	194.0	81.0
1903	1117.5	1697.2	1098.2	313.0	96.0
1904	1177.8	2456.3	1165.7	226.6	0.0
1905	1142.0	2709.4	1893.8	36.3	98.5
1906	1181.8	2310.4	3018.5	237.8	0.0
1907	1090.8	3468.0	2188.0	268.1	0.0
1908	840.0	3621.1	1063.3	133.1	0.0
1909	844.7	3246.1	1958.6	193.7	0.0
1910	916.9	3296.8	3680.6	415.4	16.0
1911	1021.9	5391.0	5021.7	196.0	151.0
1912	1116.8	5257.0	3967.0	172.0	214.0
1913	1069.2	4327.6	1174.4	19.1	331.0
1914	.	.	3904.4	79.0	165.0

Notes: Banknotes in circulation and total reserves of the IOB are in thousands of pounds sterling. Total Reserves include gold, silver and foreign exchange reserves in Istanbul, London, Paris and other branches of the IOB. Coinage values refer to net coinage excluding re-coinages and are reported in thousands of gold liras.

TABLE OE3\_A Exchange rates, 1880–1913

Year	Lira/ pound sterling (gold sovereign)	Lira/ pound sterling (3-month bill)	Lira/ pound sterling (mint parity)	Lira/ French franc (gold Napoleon)	Lira/ French franc (3-month bill)	Lira/ French franc (mint parity)
	OE3A_A	OE3B_A	OE3C_A	OE3D_A	OE3E_A	OE3F_A
1880	1.098	1.097	1.107	0.044	0.043	0.044
1881	1.097	1.095	1.107	0.044	0.043	0.044
1882	1.102	1.106	1.107	0.044	0.044	0.044
1883	1.101	1.108	1.107	0.044	0.044	0.044
1884	1.103	1.108	1.107	0.044	0.044	0.044
1885	1.103	1.109	1.107	0.044	0.044	0.044
1886	1.105	1.114	1.107	0.044	0.044	0.044
1887	1.110	1.118	1.107	0.044	0.044	0.044
1888	1.110	1.117	1.107	0.044	0.044	0.044
1889	1.106	1.106	1.107	0.044	0.044	0.044
1890	1.102	1.097	1.107	0.044	0.043	0.044
1891	1.101	1.102	1.107	0.044	0.043	0.044
1892	1.102	1.107	1.107	0.044	0.044	0.044
1893	1.102	1.108	1.107	0.044	0.044	0.044
1894	1.103	1.109	1.107	0.044	0.044	0.044
1895	1.105	1.112	1.107	0.044	0.044	0.044
1896	1.101	1.104	1.107	0.044	0.044	0.044
1897	1.099	1.098	1.107	0.044	0.043	0.044
1898	1.099	1.101	1.107	0.044	0.044	0.044
1899	1.101	1.096	1.107	0.044	0.044	0.044
1900	1.102	1.094	1.107	0.044	0.044	0.044
1901	1.101	1.104	1.107	0.044	0.044	0.044
1902	1.101	1.104	1.107	0.044	0.044	0.044
1903	1.100	1.100	1.107	0.044	0.044	0.044
1904	1.101	1.101	1.107	0.044	0.044	0.044
1905	1.099	1.099	1.107	0.044	0.044	0.044
1906	1.099	1.098	1.107	0.044	0.044	0.044
1907	1.100	1.100	1.107	0.044	0.044	0.044
1908	1.099	1.098	1.107	0.044	0.044	0.044
1909	1.099	1.098	1.107	0.044	0.044	0.044
1910	1.100	1.098	1.107	0.044	0.044	0.044
1911	1.100	1.098	1.107	0.044	0.044	0.044
1912	1.101	1.098	1.107	0.044	0.043	0.044
1913	1.101	1.101	1.107	0.044	0.043	0.044

Notes: 1 gold lira, consisting of 100 kurus, includes 6.614 gr of gold. Values refer to annual averages of monthly figures.

TABLE OE4\_A Government finances, 1846–1918

Year	Total government revenue	Total government expenditure	Foreign debt	Interest service	Year	Total government revenue	Total government expenditure	Foreign debt	Interest service
	OE4A_A	OE4B_A	OE4C_A	OE4D_A		OE4A_A	OE4B_A	OE4C_A	OE4D_A
1846	6250.0	6332.1	..	..	1883	16355.0	20909.9	126079.2	2309.4
1847	6535.0	6786.7	..	..	1884	15769.0	21534.3	125053.4	2277.0
1848	6662.3	7544.6	..	..	1885	.	.	123977.0	2243.6
1849	7100.0	7888.9	..	..	1886	.	.	128725.5	2355.6
1850	7021.3	8010.3	..	..	1887	17573.8	22721.1	127476.4	2463.8
1851	7244.0	7780.3	..	..	1888	18137.6	21017.1	127647.6	2456.6
1852	7729.7	7943.9	..	..	1889	17795.5	21154.0	126233.0	2446.8
1853	7574.6	7791.2	..	..	1890	17767.4	19927.3	131779.3	2416.6
1854	.	11081.3	2981.2	90.0	1891	17922.4	19842.1	132752.7	2399.4
1855	.	.	8442.2	233.9	1892	18371.8	19290.9	131907.0	2449.0
1856	8880.5	9293.6	8400.2	396.5	1893	18299.9	21422.2	131037.9	2427.7
1857	10429.5	11315.9	8355.2	394.0	1894	18656.6	20411.0	135556.3	2426.2
1858	11333.0	12006.7	13291.7	466.3	1895	18325.9	20952.6	134715.7	2545.3
1859	11613.8	13672.0	13142.9	687.5	1896	18291.1	23010.4	137118.1	2607.2
1860	12000.7	13116.4	15010.7	740.4	1897	18511.3	18449.3	136219.1	2668.4
1861	12211.8	13934.1	14819.3	792.0	1898	18126.6	19090.5	135296.5	2646.3
1862	16610.2	14906.9	22520.2	1261.3	1899	18829.3	20176.5	134351.5	2623.3
1863	15052.7	14845.0	30111.6	1724.2	1900	19612.3	20877.8	133382.5	2599.6
1864	16211.1	16028.4	29675.8	1700.4	1901	19434.7	21872.5	133519.7	2597.8
1865	15255.8	.	35150.9	1855.1	1902	19764.0	21978.4	135847.2	2558.6
1866	15585.7	16795.9	34415.5	2004.0	1903	20062.4	24393.5	96334.5	3237.5
1867	15979.9	18683.2	69590.0	3325.4	1904	20258.2	21232.0	95473.8	3401.6
1868	18258.7	20728.7	68213.5	3711.8	1905	22291.3	21962.2	97064.0	3471.0
1869	17751.4	20360.8	88282.1	4954.1	1906	22904.9	25364.6	101177.2	3588.8
1870	18394.8	20709.3	86173.5	4844.1	1907	.	.	100265.2	3608.1
1871	19200.8	22765.3	121083.8	5368.5	1908	23649.5	28687.1	112654.3	3842.8
1872	20637.2	21404.5	142617.9	7158.4	1909	25079.0	30539.5	119853.1	4245.9
1873	21099.3	26186.6	201096.8	10353.1	1910	26015.1	35693.8	120244.4	4409.0
1874	24807.4	25134.6	196391.4	10117.5	1911	28477.4	36233.2	125383.5	4526.1
1875	23882.9	28929.1	196337.7	8533.3	1912	30514.2	34676.7	124024.0	4607.9
1876	22027.5	25726.2	196337.7	190.0	1913	.	.	123583.1	4582.1
1877	20071.0	46283.2	201271.4	612.5	1914	32697.0	34012.0	142094.6	4954.9
1878	.	.	201198.4	734.3	1915	26836.4	35657.5	.	.
1879	14285.8	15236.6	201121.1	730.6	1916	25012.6	39724.7	.	.
1880	16155.8	21950.0	201039.3	726.7	1917	23584.2	53304.5	.	.
1881	15942.5	27568.5	124992.6	2014.8	1918	34028.7	51969.7	.	.
1882	15059.0	20197.9	127057.9	2338.8					

Notes: Government revenue and expenditure are based on the Rumi calendar; the Ottoman fiscal year starts on 1 March; in thousands of gold liras. The estimates of foreign debt and interest service are reported in thousands of pounds sterling.

**TABLE OE5\_A Prices, production and labour, 1840–1914***(1913=100, consumer prices in Istanbul, in silver akçes)*

Consumer price index		Consumer price index	
Year	OE5A_A	Year	OE5A_A
1840	51.56	1881	.
1841	57.78	1882	.
1842	61.55	1883	.
1843	62.79	1884	72.42
1844	55.02	1885	67.38
1845	56.07	1886	75.28
1846	59.30	1887	82.83
1847	52.88	1888	79.92
1848	71.58	1889	82.97
1849	59.99	1890	86.00
1850	52.94	1891	89.22
1851	56.76	1892	79.91
1852	56.30	1893	79.12
1853	60.75	1894	72.51
1854	.	1895	73.45
1855	78.70	1896	71.43
1856	100.68	1897	69.00
1857	99.89	1898	68.71
1858	105.46	1899	67.75
1859	92.32	1900	68.51
1860	91.80	1901	63.63
1861	109.09	1902	64.17
1862	98.14	1903	67.51
1863	.	1904	67.90
1864	.	1905	71.38
1865	.	1906	71.59
1866	.	1907	76.49
1867	88.79	1908	82.68
1868	88.88	1909	84.18
1869	80.57	1910	85.78
1870	91.33	1911	92.63
1871	87.45	1912	99.80
1872	93.47	1913	100.00
1873	101.46	1914	100.00
1874	92.68		
1875	85.64		
1876	82.87		
1877	85.15		
1878	77.89		
1879	80.73		
1880	81.17		

TABLE OE6\_A Trade, 1830–1913

(in thousands of pounds sterling)

Year	Commodity exports	Commodity imports	Year	Commodity exports	Commodity imports
	(FOB)	(CIF)		(FOB)	(CIF)
	OE6A_A	OE6B_A		OE6A_A	OE6B_A
1830	3700	5300	1872	20200	23200
1831	3600	4600	1873	19200	22400
1832	4200	4900	1874	21100	23300
1833	4100	4400	1875	19000	22100
1834	3900	4500	1876	23000	19700
1835	4400	5200	1877	17400	16400
1836	4400	5700	1878	13600	18000
1837	4500	4500	1879	15000	18900
1838	4400	6200	1880	14300	15800
1839	4800	5400	1881	15300	15200
1840	4700	5200	1882	15900	15200
1841	5300	5800	1883	16300	15300
1842	5500	6000	1884	16700	15000
1843	5700	6200	1885	16900	15800
1844	5700	7500	1886	16300	16500
1845	6200	7400	1887	14000	16600
1846	6200	6500	1888	13200	16000
1847	7800	8400	1889	16300	18500
1848	5800	7800	1890	17100	19400
1849	6600	8100	1891	17600	18700
1850	7800	8900	1892	19100	19400
1851	8800	8700	1893	17700	19300
1852	9800	10800	1894	15700	20500
1853	9800	11300	1895	17100	17400
1854	9300	10700	1896	17600	16300
1855	9700	19200	1897	19900	17700
1856	12500	18400	1898	17300	19800
1857	10000	12000	1899	17600	18000
1858	9800	11900	1900	19500	18400
1859	10400	10600	1901	20100	21900
1860	11100	13700	1902	21200	20600
1861	12200	12000	1903	22500	21600
1862	13700	13100	1904	22300	27600
1863	15800	17500	1905	24100	26100
1864	16700	19900	1906	26100	30800
1865	15600	19400	1907	26600	31300
1866	15500	20400	1908	23100	28800
1867	14900	19800	1909	24500	33300
1868	19700	22800	1910	26000	39200
1869	18900	24000	1911	27100	40400
1870	17400	22500	1912	27600	35200
1871	20700	21400	1913	28400	39400

**TABLE OE6\_A GDP and population***(OE6C\_A in millions of current Ottoman liras; OE6D\_A million inhabitants)*

Years	GDP		Population	
	OE6C_A		OE6D_A	
1840–1842	130.0		26.0	
1880–1882	160.0		20.0	
1913–1914	260.0		22.0	

