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The Price Revolution in the Ottoman Context:
Economic Upheaval in the Sixteenth Century

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Introduction

The period of inflation that occurred following the discovery of the Americas, with prices in Europe increasing an average of fourfold over a hundred years, is a substantial development that merits careful examination. A further understanding of its roots, causes, and effects, beyond the context of monetary research, chips away at the core of economic theory and the mechanisms of the human economic system during the sixteenth century. Moreover, examining the transition of this inflation from Europe into the Ottoman sphere sheds light on fundamental changes within the emerging Eurasian trading network.¹

There have been many studies focused on the Price Revolution in the European context where it originated. Historians and philosophers have examined the causes of this unprecedented period of inflation as early as 1568, when French jurist and political philosopher Jean Bodin inquired into the linkage of prices with the quantity of the money supply. The most notable historians researching the topic since that time include Earl J. Hamilton, Michel Morineau, Fernand Braudel, P.H. Lindert, and Dennis Flynn. Among scholars of the Ottoman Empire, Ömer Lutfi Barkan was the first to extensively study the Price Revolution in the Ottoman context. His work was revised and expanded by Şevket Pamuk, who re-examined the price indices Barkan created. He also expanded on Barkan’s conclusions by referencing newer research in related areas including monetary history, bullion flows, and advancements in economic theory.

The work of Barkan and Pamuk is invaluable when analyzing inflationary effects within the empire. Pamuk’s book, A Monetary History of the Ottoman Empire, is a key

reference for any aspect of monetary history. Utilizing Süleymaniye Imaret expenditures and government records, Pamuk has constructed price indices that serve as exceptional data sets and visual references (Figure 1). This allows a careful examination of the significant effects and potential causes for the standout rise in prices that occurred in the first half of the 16th century. The inflationary effects and price increases had a significant impact on many aspects of Ottoman society. Key areas will be examined below.

Figure 1. Süleymaniye Imaret expenditures, 1489-1656

| I. Relevance of Inflation |

The Price Revolution of the sixteenth century had a widespread impact on Europe and its neighboring economies. Although extensively involved in international trade due to its superior position at a crossroads between Asia and Europe, the Ottoman Empire...
was primarily an agrarian self-sufficient economy. The Ottoman central administration set out to ensure the sustenance and provision of basic commodities to its subjects in order to preserve its status and avoid any unrest that could potentially grow into a rebellion. Thus, when faced with shortages of goods, the government actively sought to restrict the export of the given shortage commodity. However, the central administration achieved minimal success in these endeavors, and external market forces that originated in Europe subsequently spread to the Ottoman economy.²

The inflationary pressures of the Price Revolution had an impact on Ottoman agricultural organization, state finances, industry, and the growth of corruption.³ This analysis will examine the causes, effects, and scope of inflation in the sixteenth century. Inflation alone did not cause these drastic changes, as other very significant developments also contributed to the turbulent economic environment. However, inflation did, in fact, influence many basic transformations, including shifts in wealth, power, and the enrichment of specific social classes at the expense of others. In his studies on the military and fiscal reforms that took place toward the end of this period, Halil Inalcik noted that numerous accounts of the time indicate a widespread fear for the imminent collapse of the Empire.⁴

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II. Origins of the Price Revolution

To understand the impacts of the Price Revolution in the Ottoman context, it is first essential to examine its origins. The sixteenth century undoubtedly marked a new chapter in global economics. There is consensus among historians that the discovery of the New World and the inclusion of an ‘Atlantic Economy’ into the global economic system caused major changes in commerce and trade patterns. However, there is still much debate over how and to what extent this impact was experienced by various state economies. From the beginning of the 1500s to approximately 1650, prices in Europe increased an average of 100 to 200 percent.5

In the early 1930s, Earl J. Hamilton studied the impact of the arrival of Spanish silver bullion from the New World, and the following specie supply shock that occurred throughout the 1500s.6 There was, however, study and speculation on the linkage between bullion inflows and inflation as early as the third quarter of the sixteenth century. Jean Bodin created the line of inquiry that led to the foundation of the quantity theory of money and its ensuing application as an explanation for such inflationary effects.7

The argument of quantity theorists is supported by the equation of exchange, which was theorized in the works of John Stuart Mill and David Hume, and was later expressed algebraically by Irving Fisher in 1911. It is given as \( M \times V = P \times T \), where \( M \) denotes the money supply, \( V \) denotes the velocity of circulation, \( P \) denotes prices, and \( T \),

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the volume of transactions. Thus theoretically, P can increase as a result of either an increase in the money supply or an increase in the velocity of circulation. Both sides of this argument have been analyzed.\(^8\) Cracking the core of monetary theory, the classic and most pertinent question is: did a supply shock of bullion and specie cause inflation, or merely support it? Perhaps the answer is not well defined as one or the other, but is somewhere in between. In line with the basic concept of supply and demand, it seems likely that an influx of specie had, at the very least, a partially causal effect on inflation.

It is important to note that large silver bullion shipments continued to be imported into Europe in the seventeenth century, when prices generally declined.\(^9\) This casts significant doubt on the monetarist framework. If the monetarist framework is to be maintained in the seventeenth century, the decline in prices would have to be explained by either a constant money velocity (V) coupled with a substantial increase in the number of transactions (T), or a decline in money velocity paired with a minor rise in T. The two known variable trends are M, which continued to rise, and P, which reversed direction and started to decline after 1600 (Figure 4).

Alternative explanations for the inflation include external factors such as population growth, which would account for the fact that food prices generally increased more rapidly than prices for manufactured goods.\(^10\) Studies regarding the effects of the

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\(^8\) For a summary of arguments challenging the quantity theory, see Pamuk, “The Price Revolution in the Ottoman Empire Reconsidered,” 69-89.

\(^9\) Michel Morineau proved this in his research, and demonstrated that E.J. Hamilton failed to accurately take into account bullion shipments to Europe in the seventeenth century by underestimating the amount of smuggling. Michel Morineau, *Incroyables Gazettes et Fabuleux Métaux: Les Retours des Trésors Américains d'après les Gazettes Hollandaises (XVIe-XVIIIe siècles)* (New York: Cambridge University Press, 2009).

Price Revolution on the Ottoman Empire have mainly focused on the rise of food prices; there have been few examinations on the prices of manufactured goods.

The rampant inflation of the sixteenth century was a stark contrast to the specie shortages and ‘silver famine’ of the previous century. Due to its vast territorial expanse and diverse geographical composition, the Ottoman Empire in the 1500s was not a single currency zone. Instead, it was comprised of various currency regions. Similar to Europe, silver specie was the main medium of exchange in the Ottoman Empire. Because of periodic debasements, and the falling value of silver, gold was a preferred unit of account and store of value. The predominant silver currency was the akçe, and it was complemented by the internationally recognized gold currency of the sultânî. There were various monetary zones within the Ottoman Empire. These zones were a result of policy that maintained order in newly acquired territories and encouraged gradual integration into the empire, mainly to avoid additional resistance and limit forced change imposed by Istanbul. Integration of these zones happened more rapidly due to market forces, not government policy. However, despite the variety of currency zones, as Figure 2 displays, the mints for the akçe and sultânî were evenly dispersed across the empire in the late sixteenth century.

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11 Tezcan, “The Ottoman Monetary Crisis of 1585 Revisited,” 460-504.
12 Pamuk, A Monetary History of the Ottoman Empire, 64; Halil Sahillioğlu, Studies on Ottoman Social and Economic History (Istanbul: Yıldız Matbaacılık, 1999), 32.
The Ottomans first struck their own currency in 1326 in the name of Orhan Bey, the second Ottoman ruler. The issuance of currency was highly regarded as a symbol of sovereignty and influence. Whenever a new sultan came to power, one of his first orders of business would be the issuance of new coinage in his name. Prior to the Ottomans, the Ilkhanids of Mongol descent had successfully created a monetary sphere in the Near East, which rivaled that of the internationally dominant gold currencies of Venice (ducats) and Florence (florins). However, the initial weight of Ottoman coinage was more similar to the coinage of the Byzantines than that of the Mongols. The weight and silver content of the silver akçe was quite stable between 1489 and 1585, with the exception of two debasements enacted in 1489 and 1566 that saw the silver content decrease by 12%. In

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addition to debasements, the availability and abundance of gold and silver continually fluctuated, which led to arbitrage, and a naturally unstable relationship between the two.\textsuperscript{17}

Debasement as a means of fiscal recovery to address deficit expenditure was not a new phenomenon.\textsuperscript{18} However, the debasement of 1586 was markedly unrivaled in its scope and scale, as the akçe lost 44\% of its silver content.\textsuperscript{19} Until the end of the seventeenth century, bimetallism was not utilized in the minting of Ottoman coinage. Instead, the government mandated the striking of a given number of akçe from 100 dirhams of clean silver. Therefore when the akçe was debased, each coin became smaller and lighter. Following the debasement of 1586, there was a janissary mutiny in Cairo related to the declining market value of their salaries. This resulted in the beheading of Beylerbey Mehmed Pasha and the Treasurer (Defterdar), who were two of the men most responsible for the debasement.\textsuperscript{20} A new akçe was standardized to restore financial stability in 1589, but the volatility of the currency continued and the akçe’s value declined steadily.

With the exception of this large debasement in 1586, the akçe had gradually been losing value as shown by the rising prices in Figures 3 and 4. Figure 3 displays the price indices in terms of akçes, and Figure 4 displays prices adjusted per 1.0 gram of silver. The increase in terms of akçes is more substantial, indicating that the inflation was caused more by debasements than pure silver inflation. However, when adjusted for silver content, the general trend is still the same. This indicates that there was in fact


\textsuperscript{18} The first Ottoman sultan to regularize debasements as a scheduled recurring policy was Mehmed II, who enacted a policy of “renewal of coinage” (tecdid-i sikke) every ten Islamic calendar years. See Pamuk, \textit{A Monetary History of the Ottoman Empire}, 47-49.

\textsuperscript{19} Pamuk, \textit{A Monetary History of the Ottoman Empire}, 38.

silver inflation within the Ottoman Empire in the sixteenth century, and price inflation measured in *akçes* was not caused solely by debasements.

Figure 3. Pamuk’s price index compared with Barkan’s previous index, 1469-1700

Figure 4. Pamuk’s and Barkan’s indices adjusted per 1.0 gram of silver, 1469-1700
III. Agriculture and Industry

One of the main concerns of the Ottoman government was to sufficiently provide for the basic needs of its people. When faced with shortages, they implemented price ceilings (narhs) and restricted the export of basic commodities.\(^{21}\)

As European prices for agricultural goods rose rapidly, there was a prime opportunity for the Ottoman Empire to profit by selling agricultural goods in European markets. The reign of Mehmet II (r. 1444-46 and 1451-81) saw significant changes to the agricultural tax system, and the military. There was a substantial increase in the number of salaried soldiers, and subsequently, new tax collecting systems were applied to meet the higher expenditures of the central treasury.\(^{22}\) Instead of directly seizing productive land, the government shifted, over time, to a tax farming system (iltizam), where the rights to taxation were sold to the highest bidding tax farmer. Thus, the tithe revenues from farms that were collected in-kind went first to tax farmers who had purchased the tax rights. With lower prices in Ottoman lands, these collectors of agricultural products were enticed to elude government restrictions and sell goods to the highest bidder in European markets.\(^{23}\) As previously discussed, the higher prices for these agricultural goods in Europe may have been triggered by several factors. Since there was a frequent exchange of goods between Europe and the rest of the world, prices as a result were affected by the changes in various markets. Therefore, even in the absence of bullion flows directly from Europe, prices for goods within Ottoman territory would have increased. The Ottomans learned that narhs were ineffective in the long run, so they were

\(^{21}\) Narhs are included in Figures 3 and 4, represented by squares.

\(^{22}\) Inalcik, “Military and Fiscal Transformation in the Ottoman Empire, 1600-1700,” 283-297.

primarily implemented in major city centers during times of war or great necessity with priority given to Constantinople.\textsuperscript{24}

Since the majority of the tax system was grounded in an in-kind method of collection, it is a fair assumption that nominal inflation would have a minimal impact on the revenues of the Ottoman state. However, there are numerous other factors that burdened the Ottoman treasury. Prolonged warfare, increased lavishness and luxury expenses in the palace, and expensive construction projects bloated fiscal expenditure.\textsuperscript{25} Simultaneously, a failure to increase nominal taxes in light of inflation and an increase in corruption and embezzlement limited revenues and efficiency. As evidenced by treasury inventory records, the government underwent a financial crisis as surpluses throughout the beginning and middle of the sixteenth century devolved into deficits towards the end.\textsuperscript{26}

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|}
\hline
Year & Current akçe (millions) & Index in constant akçe & Current akçe (millions) & Index in constant akçe & Balance (millions) \\
\hline
1523–4 & 116.9 & 118.8 & 1.9 \\
1524–5 & 141.3 & 150.2 & + 14.7 \\
1527–8 & 221.6 & 171.9 & + 71.4 \\
1546–7 & 241.7 & 112.0 & + 69.8 \\
1547–8 & 198.9 & 111.3 & + 86.9 \\
1565–6 & 183.1 & 189.7 & – 6.6 \\
1567–8 & 348.5 & 221.5 & – 127.0 \\
1582–3 & 513.7 & 277.6 & + 36.1 \\
1592–3 & 293.4 & 363.4 & + 70.0 \\
1608 & 503.7 & 599.2 & – 95.5 \\
1643–4 & 514.5 & 513.8 & + 0.7 \\
1650 & 532.9 & 687.2 & – 154.3 \\
1652–3 & 517.3 & 528.9 & – 11.6 \\
1664 & 537.4 & 658.4 & – 121.0 \\
1661–2 & 581.3 & 593.6 & – 12.3 \\
1666–7 & 553.4 & 631.9 & – 78.5 \\
1669–70 & 612.5 & 637.2 & – 24.7 \\
1687–8 & 700.4 & 901.0 & – 200.6 \\
\hline
\end{tabular}
\caption{A compilation of the available budgets of the Ottoman central government, 1523–1688}
\end{table}

Figure 5. Ottoman central government budgets, 1523-1688

\textsuperscript{24} Pamuk, \textit{A Monetary History of the Ottoman Empire}, 14-15.
\textsuperscript{26} See Figure 5, a record of treasury revenues, expenditures, and budget deficits/surpluses compiled by Pamuk.
The fundamental structure of the military changed with the decline of the timar system in favor of tax farming. Instead of utilizing timar-holding cavalry, who were not salaried as the Janissaries were, the military turned to incorporating more professional soldiers. This created an additional burden on government fiscal expenditure as the cost of the military became more streamlined and directly accounted for by the imperial treasury.

<table>
<thead>
<tr>
<th>Number</th>
<th>Budget A, 1527/8</th>
<th>Budget B, 1567/8</th>
<th>Budget C, 1582/3</th>
<th>Budget D, 1669/70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Janissaries</td>
<td>7,866</td>
<td>12,798</td>
<td>18,905</td>
<td>53,499</td>
</tr>
<tr>
<td>Sipahis</td>
<td>5,088</td>
<td>8,739</td>
<td>8,366</td>
<td>14,070</td>
</tr>
<tr>
<td>Group's total pay</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Janissaries</td>
<td>15,483,446</td>
<td>34,264,772</td>
<td>39,008,019</td>
<td>133,968,556</td>
</tr>
<tr>
<td>Sipahis</td>
<td>30,957,300</td>
<td>29,460,182</td>
<td>49,799,767</td>
<td>69,456,552</td>
</tr>
<tr>
<td>Budget percentage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Janissaries</td>
<td>10.26</td>
<td>15.42</td>
<td>15.15</td>
<td>21.02</td>
</tr>
<tr>
<td>Sipahis</td>
<td>20.60</td>
<td>26.84</td>
<td>18.06</td>
<td>10.90</td>
</tr>
<tr>
<td>Individual's pay (akçe)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Janissaries</td>
<td>1,955</td>
<td>2,677</td>
<td>2,063</td>
<td>2,487</td>
</tr>
<tr>
<td>Sipahis</td>
<td>6,084</td>
<td>6,804</td>
<td>5,952</td>
<td>4,936</td>
</tr>
<tr>
<td>Individual's pay (altun)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Janissaries</td>
<td>35.50</td>
<td>44.62</td>
<td>34.38</td>
<td>20.73</td>
</tr>
<tr>
<td>Sipahis</td>
<td>110.62</td>
<td>113.40</td>
<td>99.21</td>
<td>41.14</td>
</tr>
</tbody>
</table>

Figure 6. Military Expenditures across four annual budgets, 1527-1670

Furthermore, the effects of rising prices negatively impacted Ottoman industry through shortages of basic goods, and resulted in a lag in growth from the rising prices of commodities. Barkan describes the new form of European industry as one that “intended to sell the greatest possible quantity of goods abroad, while restricting imports of any finished products.” This is perhaps a cynical view of European economic intentions, but nevertheless the pattern of exports from the Ottoman Empire gradually began to shift toward a predominantly raw resource-driven export economy, while European nations were propelled by growth in manufacturing sectors.

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27 Inalcik, “Military and Fiscal Transformation in the Ottoman Empire, 1600-1700,” 283-337.
28 See Figure 6, a table of military expenditures across four specific budget years assembled by Barkan.
A prime example of a specific raw resource-driven industry is the silk trade, a key component of the Ottoman economy. The silk trade of Bursa flourished at the beginning of the sixteenth century, but witnessed a decline in the middle of the century as shortages occurred. As viewed in Figure 7, profits from the silk tax declined mid-sixteenth century.

![Figure 7. Silk tax revenues, 1487-1638](image)

Excluding the outlier of 1521, likely caused by a blockade, the general trend holds true. In 1518, the sale of raw silk was banned in Ottoman territory, and those caught in violation were forced to pay the equivalent value of the silk sold to the treasury. The complexities of the early modern world economy make it difficult to pinpoint specific causes and effects. However, the growing silk industry in Tours that commenced in 1470, and other competing sources, likely contributed to Ottoman silk difficulties as well.

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32 Halil Inalcik, *An Economic and Social History of the Ottoman Empire*, 229. This was primarily an act of economic warfare against the Safavids.
Furthermore, Ottoman goods were not as sought-after by Europeans as Far Eastern goods. Braudel states, “…Turkey was merely a transit point for silver coins from Europe on their way East.”

With the new organization of the military, and the failure of the government to adequately salary and occupy the troops, there was a marked rise in the number of soldiers who turned to commercial activities to gain additional profit. This created a system of capitalism wherein soldiers became involved in commerce and were able to coerce and intimidate their way to economic gain by leveraging their status and privileges. In Barkan’s words, “such a capitalism was in fact a hideous instrument of waste and corruption for the state, an organization for the systemic spoliation of the people.” Dating back to the foundation of the Ottoman state, there was tension around the concept of capitalism, and the difference between ethical business and profiteering was a point of contention. With these developments, it seems clear that the integrity of the military was degraded, and along with it, the norms of society. Barkan also notes that during this period petty bribery (bahşiş) and the selling of public office became commonplace. Such practices were amplified by the declining value of silver, as the fixed salaries of Janissaries fell in real terms unless they were given raises, even if debasements were not undertaken.

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33 Braudel, Civilization and Capitalism, 459.
34 Barkan, “The Price Revolution of the Sixteenth Century,” 23-25. See also Inalcik, “Military and Fiscal Transformation in the Ottoman Empire, 1600-1700,” 290-291. This proliferated in the 17th century when the Janissary corps was expanded in Anatolian towns to combat the rising threat of armed rebels (levend-sekbâns), mainly unemployed young men who were pillaging the countryside.
36 Kafadar, “When Coins Turned into Drops of Dew and Bankers Became Robbers of Shadows.”
IV. Distributed Economic Effects, and Conclusions

The foundation of the Ottoman state was greatly weakened as corruption degraded the integrity and efficiency of the central administration. A general state of economic decline set in as prices of basic commodities increased and urban wages stagnated. The privatization of agriculture benefitted elite landholders along with the government that profited from tax farming; both amassed wealth at the expense of peasants and urban workers. Debasements as a means to deal with treasury shortages proved to be detrimental to the financial stability of the akçe currency and led to popular unrest.

The Celâlî rebellions that occurred in this period may be viewed as a direct result of the deteriorating economic conditions. Population growth, rising unemployment, and increasing costs of basic goods all contributed to an atmosphere of desperation and unrest. There were some individuals who took advantage of this environment and were able to enlist groups of young men and students to rebel against the Ottoman government. They were suppressed with violence by the Ottoman regime, and their threat to the integrity of the empire was limited in scope. However, their lasting memory is a testament to their importance within the domestic Ottoman sphere and the rising levels of dissatisfaction within certain social classes.

External inflationary pressures originating in Europe related to the inflows of silver bullion from the New World were transmitted through trade into the Ottoman economic sphere. The largest externality was perhaps a harsher climate towards the end of the sixteenth century, in which agricultural output saw more substantial fluctuations

39 Pamuk, *A Monetary History of the Ottoman Empire*. 129.
and shortages than in the previous century. These external inflationary pressures of the Price Revolution were intensified by debasements of the *akçe*. The debasement of 1586 contributed significantly to monetary instability within the empire. Furthermore, inflation magnified and, in some cases, created crises in areas including agriculture, the military, industry, and the inner workings of the central government. What followed was a period of instability characterized by financial distress, military hardship, and the decentralization of sultanic authority, circumstances that rippled through the remainder of Ottoman history.

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Bibliography


**Figure Citations**

Figure 1. Barkan, “The Price Revolution of the Sixteenth Century,” 11.

Figure 2. Pamuk, *A Monetary History of the Ottoman Empire*, 91.

Figure 3. Pamuk, *A Monetary History of the Ottoman Empire*, 121.

Figure 4. Pamuk, *A Monetary History of the Ottoman Empire*, 123.

Figure 5. Pamuk, *A Monetary History of the Ottoman Empire*, 133.


Figure 7. Pamuk, *A Monetary History of the Ottoman Empire*, 226.