

# The Effects of Outflow of Precious Metals from New World to Europe and the Price Revolution<sup>1</sup>

Zeynep Karacor<sup>1</sup>, Rahime Hulya Ozturk<sup>2</sup>

<sup>1</sup>Economics, Selcuk University, Konya, Turkey

<sup>2</sup>Economics, Selcuk University, Konya, Turkey

## Abstract

Together with discovery of the continental America, the amount of silver and gold arriving to the European Ports from the new continent reached the surprising dimensions. There are two causes of oversea travels beginning together with the geographical discoveries. These are to become rich thanks to the precious metals and to make Christianity prevalent all over the world.

In 16<sup>th</sup> century, especially Spain, the increase of the prices in the continental Europe in unusual rate and inflationist process experienced is called price revolution. When the factors causing this revolution is examined, in the literature, two dominant views reveal: Bodinian and Malthusian views. The claim of Bodin, together with discovery of the continental America, is that the precious metal inflow increasing in Spain caused price increase. Malthus puts forward that population increase and decrease of labor incomes caused price increase.

In this study the effects of outflow of precious metals from New World to Europe is examined. Also 16<sup>th</sup> century price revolution and its effects are studied.

**Key Words:** Inflation, Price Revolution, Precious Metals, Europe

## 1. Introduction

Bernard Diaz, among the solders of Cortes waging war with Aztecs in new continent, in his letter, discloses the reasons for his being in new continent as “serving the god and your majesty, shedding light on those in dark, and also becoming rich”. Pizzaro, who struggled with Incas, replied a priest asking a question to him about spreading the religious belief, saying that “I did not come here for these aims. I came for acquiring their gold” (Burbank, Cooper, 2011:171).

In writings in the form of this letter and many letters like these and journals that can survive, it is seen that the wealth and religious senses form the driving force of oversea journeys. It is understood that journeys serve their aims. Albeit it was considered that one reached India not a new continent in that date, in fact, a new continent was discovered. In these lands newly set foot, a thousands of people not knowing about Christianity lived. Thus, teaching Christianity to these people means serving one of two driving forces. In addition, gold and silver mines that are existent in the new world also served the aim of becoming rich.

## 2. Outflow of Precious Metals From New World to Europe

In the years of 1450 -1750, the common economic view that was dominant in the continental Europe was Mercantilist system. Among the main doctrines of this system, the approach affecting economic system the most deeply was that the power was expressed by the wealth. In a simpler expression, a country having more gold and silver means a rich and powerful country. In addition, again in Mercantilist thought system, a country must not export precious metal. Due to economic thought system and decrease of mine production, soon after, shortage of precious metal broke out in the continental Europe (Koç, 2009:280, Peker, 2015:3).

Gold and silver mines found in the New World turned Spanish and Portuguese people's head. Access to these mines was not easy. The local people living in the continent, Aztecs and Incas, resisted against the Spanish and Portuguese. However, in this resistance, the conditions are not equal. The arms and horses the Spanish used in the attacks were very different from the wars and techniques the local people used. In addition, the diseases smallpox and influenza brought by the Spanish led to the death of

<sup>1</sup> This article is derived from the thesis ‘16<sup>th</sup> Century Price Revolution and It's Effects on Konya Economy’ Supervised by Zeynep Karaçor

local people, whose immunity systems are resistless against these microbes. The historians, among the reasons for these empires to sustain a defeat, note that the local people cannot decide about whether the white man is god, divine power or allied to be waged war together with them against the empire; and that the local people gives support but partly due to the tricks and plots of the Spanish (Burbank,Cooper,2011:172).

Local people living in Central America and in the north of South America were not ready for resisting against the attacks of the Europeans from the technical and psychological point of view. The steel swords and guns of the Spanish forces and horses the local people did not see earlier helped invaders win a victory in some important areas. Psychological advantages of firearms and horses were more than their mere military usefulness. The hegemonic attitudes of the Spanish frightened American Indians and shook the confidences to their abilities to win a victory. On the other hand, that the Spanish inserted smallpox to Mexico and the other factors such as onset of epidemic disease, demoralizing American Indians and leading them to suspect of their own Gods against the Spanish Christians, much more strengthened the advantages of the Spanish (Arnold,1995:26-27).

The Spanish forces in the leadership of Francisco Pizarro, killing the local people, who were fell into decline in view of the numerous diseases they did not earlier develop immunity to, seized power and terminated Inca Empire. In 1494, with Tordesillas Treaty, in the continent divided between Portugal and Spain, the new lives, new business fields, and new diseases were available. A hundreds of sculptors, architectures, astronomers, and skilled American Indians were employed as navy in mines (GüneyAmerika Raporu,2016:9-10).

About a half century later from the Spanish's setting foot in the continent, Mexico population that was 25 million fell to 2.65 million and Peru population that was 9 million, to 1.3 million. Such a decrease of population shows the magnitude of the tragedy experienced. However, economic importance of this population that decreased reveals in the form of decrease of labor force. When the Spanish began to establish colony, settling in the New World, they met many new agricultural products. These products were sent to Iberian Peninsula and studied whether or not they were suitable for agricultural activities in that region. In the new continent, plantations were established and the local people were employed as agricultural workers. However, since such a decrease in population reduced the local labor

forces, just as immigrations from Spain to the new continent, were made so that they could be employed as agricultural workers, the slaves were also brought from Africa. Until 1570, 120 thousand of Spanish arrived to the continent and until 1650 of the Spanish more than 400 thousand and 100 thousand of Portuguese (Burbank,Cooper,2011:131-176).

Between the years of 1500 and 1800, about 80% of silver production in the world were provided from the continental America. In this period, the Spanish Peso became the most important global currency unit (Burbank,Cooper,2011:129-130). As a result of being discovered of mercury mine in Peru, a new mine processing technology revealed and this new technology became mine processing more productive. In 1545, the discovery of Potosi, Zacatecas and Guanajuato mines increased the production and it reached peak level in 1600. Following this, while the production of Potosi was decreasing, the other mines continued high production until 1630; however, after this date, the production decreased (Heaton,1995:223). In Peru and Mexico, while the new silver mines were founded, in Germany and Hungary, silver mines began to expire (Seignobos,1960:243). In 1590, the amount precious metal entering Spain reached the highest level and, then, the fall has begun (Heaton,1995:223).



Resource :Marichal,31

This map indicates mineral deposits that are found in the newly discovered continent. Some part of these mineral deposits was in active with short duration and, some part of them, presenting permanence, mine was permanently extracted from them. Potosi mineral deposit in Bolivia, one of the most important deposits, sent mine to Europe for long years.

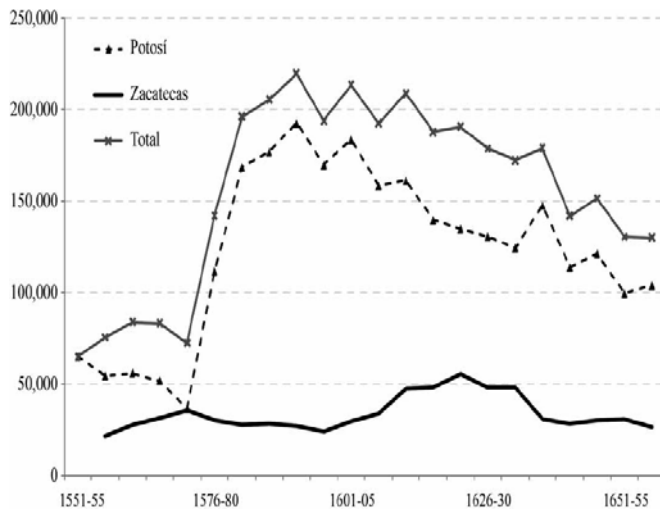
aristocracy gained importance. Especially church, trying to prove its power with inquisition applications, affected social life and cultural and political thought styles of individuals (Arıbaş,Kara,2010:68).

Table 2: Inflow of annual average precious metal in respect with ten-year periods

Period	Public	Private	Total
1503-1510	75,176.13	211,756.2	286,932.5
1511-1520	114,690.5	323,059.4	437,749.9
1521-1530	61,444.6	173,076.6	234,521.2
1531-1540	356,649.1	760,975.7	1,117,624.9
1541-1550	470,092.0	1,622,451.2	2,092,543.2
1551-1560	1039,400.4	2,533,505.5	3,572,905.9
1561-1570	1,120,855.2	3,948,895.0	5,069,750.2
1571-1580	1,989,667.8	3,842,042.2	5,831,710.0
1581-1590	3,118,763.3	7,522,685.2	10,641,448.5
1591-1600	4,199,533.3	9,723,139.3	13,922,672.6
1601-1610	3,013,912.9	8,147,794.1	11,161,707.0
1611-1620	2,312,141.9	8,615,974.2	10,928,116.1
1621-1630	1,901,991.4	8,491,049.6	10,393,041.0
1631-1640	1,885,025.5	4,800,065.7	6,685,091.2
1641-1650	1,261,754.9	3,845,115.0	5,106,869.9
1651-1660	569,080.4	1,561,896.1	2,130,976.5

Resource :Hamilton, 1929:464

Figure 3:



Resource:Feldman,2014:562

The figure shows mines extracted in America in respect with the years. In 1590s, it is seen that Potosi mines reached peak point and the efficiency of mine deposit was at the highest level. Beginning from this date, it is seen that mine production followed a fluctuated course until 1620 and, beginning from 1626, entered decrease tendency. It is seen that Zacatecas mines reached peak point in the period, when Potosi mine entered decrease tendency and, then, was in the decrease tendency. Zacatecas mine could not reach the production capacity of Potosi mine in any period, when it was in active.

Between the years of 1591 and 1600, the amount of precious metal entering from the continental America to Spain is 13,922,672.6 peso as the total of private and public enterprises. After this date, decreases began in inflow of mine and, beginning from the second half of 17<sup>th</sup> century, it regressed to considerably low.

After 1550, gold and silver reaching Spain enabled kingship to pay for the bankers in Germany, Italy, and Netherlands, In addition, for the trade of the other products European countries made from Eastern countries, especially spices, there was a need for gold coming from the new world (Burbank,Cooper,2011:129).

The ships transporting the previous metals to Spain were accompanied with warships There were two reasons for this: First was to protect ships against attacks of pirates and the second was to prevent from the precious metals to enter peninsula through the illegal ways (Burbank, Cooper,2011:131).

### 3. Effects of Precious Metals

Inflow of precious metal caused the Spanish economy to exhibit a structure importing industrial products. In the social order, income inequality between the rich and the poor increased and

Seamen arriving to the New World not only met gold and silver but also the products such as big fishes, timber, tobacco, cacao, corn, potatoes, tomato, and dried beans had been the first met products. These products also spread to Europe together with the precious metal. That the increasing

trade gains global dimension encouraged the development of banking and financial system (Heaton,1995:222,Kerr,2011:67).

Wheat, rice, sugar cane, bananas, coffee, sheep, goat, horse, chicken, cattle, and pig were transported from the other countries to the newly discovered region. Among these products, sugar cane has a distinct place and importance, That the continental America is suitable for the production of sugar cane enabled plantations to be established in the continent in a short time(Ferguson,2011:75, Avci,1997:230).

Just as the precious metals coming to Spain were used to pay for the debts, they also went to France, England, Netherlands, Italy, and Portugal for the payments of fish, finished goods, and spices and, thus, gold of New World spread to Europe (Heaton,1995:224). Another element causing the precious metals to be off Spanish' hand became army sent for quashing the riot occurring in Netherlands. The expenditures made to keep Netherlands under pressure later flowed to Central Europe (Lee,2002:142).

Between 1521 and 1560, approx..18,000 tons of silver and 200 tons of gold arrived to Spain (Heaton,1995:224).

Table 3: Inflow of Gold and Silver

Period	Silver percentage as weight	Gold percentage as weight
1521-1530	2.949	97.051
1531-1540	89.602	10.398
1541-1550	87.677	12.323
1551-1560	87.672	12.328
1561-1570	98.803	1.197
1571-1580	99.164	.836
1581-1590	99.428	.572
1591-1600	99.287	.713
1601-1610	99.466	.534
1611-1620	99.598	.402
1621-1630	99.819	.181
1631-1640	99.911	.089
1641-1650	99.848	.152
1651-1660	99.890	.110

Resource :Hamilton,1929:468

In 1530s, gold inflow, beginning from considerably high, regressed to very low levels in 1570s. In inflow of silver mine, there is no such a

decrease and it continued in stable way in respect with years.

#### 4. The Rise of Prices

In the early 16<sup>th</sup> century, Spain, which was the most powerful government of the world with the precious metals coming from the colonies, could not maintain this position for the long time. Very strict bans imposed regarding drawing out the gold to abroad negatively affected the military and political power of Spain toward the end of century. Due to adulteration made before the precious metals arrive to Spain, price increase was seen. The precious metals coming from the colonies triggered this increase. Upon this, when mine export from the country strictly was forbidden, the measures taken rebounded. When the goods prices reached very high levels compared to the other countries, large amount of goods was imported. So, the Spanish economy entered dead-end. Export was not being made and, since foreign trade balance worsened, import was not being permitted. The prices were increasing and purchasing power of individuals were falling. For closing foreign trade deficits, gold export was started (Turanh,2000:31).

#### 5. Price Revolution

According to Heaton, there are 4 important elements leading to price increases: decrease occurring in the product supply due to seasonal condition, officially manipulating the metal content of money, population increase, and changes in demand. Finally, depending on abounding of mines, their value fell and paying for more per goods required(Heaton,1995:225)

With moving from Fisher Equation, Hamilton, in the equation  $M.V=P.T$ , if V and T is fixed, stating that the increases in M will cause the increase in the same rate as P, expresses that in Spain, the inflow of precious metal caused the price increases.

However, 16<sup>th</sup> century became a century, in which many important changes occurred. Together with the increase of silver, trade increased with the Baltic countries and East; the developments experienced in agricultural production techniques increased the production; and population increase was observed. Therefore, the variables V and T are not fixed and they must be determined (Goldstone,1984:1124).

According to Goldstone, the main elements causing the price increases in Spain are population increase, acceleration of urbanization together with it, and increase in velocity of circulation of money. In

addition, increase of credit opportunities, development of trade, and professional specialization increased monetary demand. Implementation of the new techniques in agriculture increased the agricultural production but this increase fell behind population increase and urbanization rate. This increase at the level of 2% a year, observed on the prices between the years of 1500 and 1650, was called as price revolution. In increase of monetary supply, rather than the effects of mines coming from the continental America, the increase of credit opportunities and instrument functioning as money became effective (Goldstone,1984:1152-1154).

According to Neal, the study carried out by Hamilton causes discussions. However, two cases are appropriate for describing price revolution. Firstly, prices increased more rapidly than monetary supply. However, nominal interest rates in the important trade centers are in the tendency of falling but inflation should have been in the tendency to raise the interest rates. Secondly, across Europe, the value of calculation units in terms of silver was in the tendency to fall, while silver inflow should have raised its value. This case shows that the bullion supply of governments could not keep in step with their demands. While their demands depended on price increases such as lofty goal of army, their supplies depended on their taxing power. The main reason for price increase was the supply of capital that is necessary for financing oversea journeys, and increasing financial instruments, intermediary institutions, and credit opportunities due to trade expanding as a result of these results(Neal,2002:3-4).

Streb expresses that inflation in Spain revealed in 1520s i.e. before precious metals come to Spain. Thus, he expresses that the reason for price increases is not inflow of precious metal. What gives rise to increase is mine crisis seen in Germany and Central Europe. In Spain, price index based on silver rose from 99 to 321 between the years of 1511-1515 and 1596 -1600 and to 343 between the years of 1646-1650 (Streb,2010:13).

According to the study, carried out by Findlay and Lundahl, in the long term, economy is in balance with population, monetary supply, and capital stock. Silver coming from America increases silver stock as an external variable and production possibilities curve shifts on the silver axis. This increase in real income and monetary supply at the beginning are fixed (metallic silver money is in circulation). The first effect is the relative increase of metallic silver prices in terms of goods and a deflationist effect is seen at the level of the prices of goods in terms of silver.

Supply curve representing silver inflow will shift to the right and, since silver prices in terms of goods increase, silver outflow will increase. Demand for luxurious goods will increase but this demand increase will be less than silver supply and, in turn, surplus of silver supply will occur. American mines made extra contribution by 50% to world silver stock in 16<sup>th</sup> century and 85% in 17<sup>th</sup> century. Other than this contribution, in 16<sup>th</sup> century, 71% of American silver passed to Europe and, in 17<sup>th</sup> century, 71%, to Europe, and 40%, to Asia. Between 1493-1600, the production of America reached 74% of world silver stock and, between 1601-1700, 85% of that. With the motive of extra operation made to the monetary stock, in the light of increase in monetary demand, silver prices in terms of goods will fall. So, inflation will be seen and this inflation will be recalled as price revolution of 16<sup>th</sup> century(Findlay,Lundahl,25).

Bodin, in 1568, revealed that there was a relationship between precious metal inflow and inflation. Before him, in 1556, Azpilcueta Navarro showed inflow of precious metal as the cause of high cost of living. In 1559, the relationship between inflow of precious metal was dealt with by Fray Tomas de Mercado(Lynch,388).

Braudel, although he has some drawbacks, also accepts that inflow of precious metal affect price increases (Braudel,1993:617).

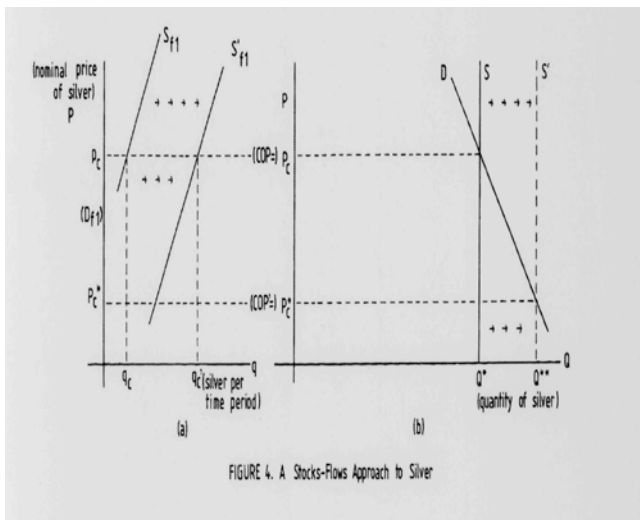
Lynch emphasizes that in Spain, the prices are higher in the first half of 16<sup>th</sup> century. In the other sections of Europe, price increases realized later and more moderate than Spain. However, this situation does not give the possibility to exactly measure cost of living in the countries. For example, cereal became more expensive in France across inflationist period than Spain. Another point is that the Spanish silver diffused abroad and that money was substituted by the different instruments. Together with population increase seen between 1460- 1620, nurturing, protecting, and clothing more people became necessary and this case increased demand. In the face of increasing demand, new agricultural areas were begun to be sowed and marginal cost increased. The price of cereal products increased more rapidly and much more than that of the other products(Lynch,388-389).

Mayhew, in analysis he carried out, in contrast to Miskimin and Goldstone, expresses that between 1300-1700, credit mechanism depended on monetary supply (M) and that, if M increases, for credit and monetary volume not to cause an increase more than M in Y, V should fall. In only mid-16<sup>th</sup> century, Y increase actualized more than M increase(Mayhew,1995:254).



Flynn, criticizing the analysis of Hamilton, expresses that only considering the inflow of precious metal to Spain is erroneous and that world mine stock should also be taken into consideration. Although Hamilton builds its analysis on Fisher equation, not taking into consideration the existing mine stock, only made a relationship between mine inflows in the form of stream and prices. Flynn, in the analysis he carried out, considers world mine stock and expresses that when the value of silver in world markets reaches balance in the new and lower production costs, price revolution terminates.

Figure 5:



In this graph, in the horizontal axis, the silver turning and not into money are considered together, whereby abstracted element is silver. Quantity axis does not consider the dimension time and expresses a stock in a certain moment. Stock supply curve shows the amount of mine accumulation actualizing until that time. S curve the existing world silver stock that is existent in a time before price revolution. Demand curve indicates silver level at which world market provides utility maximization at every price level. At  $P_c$  and  $Q_c$  levels, world silver market is in balance. Together with finding the new techniques, in 15<sup>th</sup> century and the first half of 16<sup>th</sup> century, silver production of Europe reached the peak point. Without considering the other factors, when one only looks at costs, the cost of silver production lowered to  $COP_1$ . New stream supply curve,  $S_{f1}$ , expresses total shift in world silver production. Even if very serious increase occurs in the production, the increase in stock supply will be expressed by percentages. This case explains the fall in the market value of silver along price revolution.

The price increases across Europe reflect the relative mass in world silver production. When the market value of silver reaches the balance at the new price level in production cost ( $COP_1$ ), price revolution will terminate (Flynn, Doherty, 1989:5).

Fisher, in the analyses he carried out, expressed that the precious metals coming from America caused inflation in Spain and the other European countries (Fisher, 1989:898)

According to Gould, there are weak bases of Hamilton's deduction. Firstly, such a variation seen in income distribution will increase the saving level of society. This case, when considered that there is no balancing conditions, will create a motivation balancing deflationist tendencies. It can be expected that, if a strong increase is provided in the investments like technological innovation, this causes long term growth in industry. Profit inflation introduced by Hamilton becomes an inadequate explanation. In addition, in the different countries and different products, the different increases were experienced. Hamilton underestimates the increases experienced in costs (Gould, 1964:262-263).

According to Lindert, population increase generally resulted in the price increases and increased the relative price of food substances. Rapid population increase increased the demand for food substances more rapidly than monetary demand and this case also led to increase in the prices. Rapid population increase means the need for more children per household, in turn, more need for food substance. This cases led households to reduce their saving levels. That the rate of household wealth to household income is low means that the demand for consumer goods and services are more compared to monetary demand. There is a probability that population increase increases income inequality. It is expected that the decrease of real wages of workers and increase of their rent levels make an effect increasing income inequality (Lindert, 1985:620-632).

According to the results of the study carried out by Glassman and Redish for France, between the years of 1550 -1600, monetary stock increased by 120%. The increase in comparable monetary stock has a quality supporting that the inflation experienced in France in the late 16<sup>th</sup> century results from the monetary reasons. However, price revolution does not coincide with the period, when the most monetary increase was experienced. Between the years of 1640-1680, monetary stock increased around 175%. However, this period is not a period, when inflation was intensively

experienced. Relating inflation to only monetary expansion is a quite simple approach (Glassman, Redish, 1985:45).

Bauernfeind and Woitek expresses that in Germany, cereal prices between the years of 1490 -1620 showed a two times more increase compared to the other products. In the study they carried out, they tried to present the effects of climatic variations in the fluctuations in the series containing cereal prices in Germany between the years of 1500 and 1599. According to the results, the changes occurring in climate affected the cereal prices in Germany (Woitek, Bauernfeind, 1999:320).

Barkan emphasizes that it will be unfavorable to attribute the elements causing price increases to the gold and silver stock coming from only the continental America and that velocity of circulation of money, credit letters, and deferred and on demand payment instruments should be considered. In addition, scarcity of mine, population increase,, arrangements in the precious metal of money, and price increase occurring in Europe are also the causes of price increases (Barkan, 1970:589-590).

Pamuk, expressing that Barkan pointed out the price increases in the late 16<sup>th</sup> century as the reason for Ottoman State to lose its power, objects to this. According to Pamuk, the effect of silver inflation on Ottoman state became more limited than what Barkan claimed. Ottoman State, in 16<sup>th</sup> century and the first half of 17<sup>th</sup> century, faced with many problems. However, the source of these problems became very different reasons from silver inflation (Pamuk, 2001:85).

Miskimin expresses that the index value he obtained in the form of 50 years averages was 106.5 and that in 16<sup>th</sup> century, this value rose to 124.5. According to him, in the bullion prices of the goods, a slight increase was seen in about 300 years. The data does not support that there were more precious metals in 16<sup>th</sup> century than in 14<sup>th</sup> century. In addition, price series does not show a significant increase in bullion prices of goods in the next century. Nominal inflation experienced in 16<sup>th</sup> century originates from minting. Population increase seen during 16<sup>th</sup> century caused increase in the velocity of circulation and monetary demand increased. Even if any increase in precious metal does not occur, the increase in the velocity of circulation of money will create inflationist effect (Miskimin, 1975:183-186).

## 5. Conclusion

Together with discovery of the continental America, the amount of silver and gold arriving to the European Ports from the new continent reached

the surprising dimensions. As a result of being discovered of mercury mine in Peru, a new mine processing technology revealed and this new technology became mine processing more productive. In 1545, the discovery of Potosi, Zacatecas and Guanajuato mines increased the production and it reached peak level in 1600. Following this, while the production of Potosi was decreasing, the other mines continued high production until 1630; however, after this date, the production decreased. Between the years of 1500 and 1800, about 80% of silver production in the world were provided from the continental America. In this period, the Spanish Peso became the most important global currency unit. Inflow of precious metal caused the Spanish economy to exhibit a structure importing industrial products. In the social order, income inequality between the rich and the poor increased and aristocracy gained importance.

In 16<sup>th</sup> century, especially Spain, the increase of the prices in the continental Europe in unusual rate and inflationist process experienced is called price revolution. There are 4 important elements leading to price increases: decrease occurring in the product supply due to seasonal condition, officially manipulating the metal content of money, population increase, and changes in demand. Finally, depending on abounding of mines, their value fell and paying for more per goods required.

## References

- [1] Arıbaş, Kenan, Kara, Hasan. (2010). Siyasi Coğrafya Açısından İspanya. Doğu Coğrafya Dergisi, cilt 15, sayı 24, 61-85
- [2] Arnold, David. (1995). Coğrafi Keşifler Tarihi. İstanbul: Alan Yayıncılık
- [3] Avcı, Sedat. (1997). Dünyada Şeker Sanayinin Dağılışı ve Gelişmesini Etkileyen Unsurlar. İstanbul Üniversitesi Edebiyat Fakültesi Coğrafya Dergisi, 227-258
- [4] Barkan, Ömer Lütfi. (1970). Asrın 2. Yarısında Türkiye'de Fiyat Hareketleri. Belleten XXXIV, Ekim 1970, sayı: 36, 557-608
- [5] Bauernfeind, Walter, Woitek, Ulrich. (1999). The Influence of Climatic Change on Price Fluctuations in Germany During The 16th Century Price Revolution. Climatic Change 43, 303-321
- [6] Braudel, Fernand. (1993). II. Felipe Dönemi'nde Akdeniz ve Akdeniz Dünyası 1. Ankara: İmge Kitabevi
- [7] Burbank, Jane. Cooper, Frederick. (2011). İmparatorluklar Tarihi Farklılıkların Yönetimi ve Egemenlik. İnkılap Yayınları
- [8] Feldman, Germán David. (2014). Money, Prices and the Silver Industry during the

Price Revolution. Review of Political Economy, Vol. 26, No. 4, 557–573

[9]Ferguson,Niall.(2011).İmparatorluk:Britanya'nın Modern Dünyayı Biçimlendirdiği.İstanbul:Yapı Kredi Yayınları

[10] Findlay,Ronald,Lundahl,Mats.Towards A Factor Proportions Approach To Economic History: Population, Precious Metals and Prices from the Black Death to the Price Revolution.

[11]Fisher, Douglas.(1989)The Price Revolution: A Monetary Interpretation. The Journal of Economic History, Vol. 49, No. 4,883-902

[12]Flynn, Dennis,Doherty,Kerry W.(1989). A Microeconomic Quantity Theory of Money and the Price Revolution.

[13]Glassman,Debra,Redish,Angela.(1985). New Estimates of The Money Stock in France,1493-1680. Journal of Economic History,45,March,31-46

[14] Goldstone,Jack A.(1984).Urbanization and Inflation :Lessons From English Price Revolution of the Sixteenth and Seventeenth Centuries. American Journal of Sociology,Vol. 89, No. 5,1122-1160

[15]Gould, J. D.(1964). The Price Revolution Reconsidered.The Economic History Review, New Series, Vol. 17, No. 2.249-266

[16] Hamilton,Earl J.(1929). A Imports of American Gold and Silver into Spain(1503-1660).The Quarterly Journal Of Economics,V:43,I:3,436-472

[17]Heaton,Herbert.(1995).Avrupa İktisat Tarihi İlkçağdan Sanayi Devrimine.Ankara:İmge Kitabevi

[18]Karabostan,Selahattin.(2016).Güney Amerika Raporu. Türkiye Diyanet Vakfı

[19]Kerr,Gordon.(2011).Charlemagne'dan Lizbon Antlaşması'na Avrupa'nın Kısa Tarihi.İstanbul: Kalkedon Yayınları

[20]Koç,Ümit.(2009). XV. Yüzyıldan XVII. Yüzyıl Ortalarına Değişen Gümüş Arzı ve Yansımaları Üzerine Bazı Değerlendirmeler.Elektronik Sosyal Bilimler Dergisi,cilt 8, sayı 27, 269-286

[21] Larry,Neal.(2002).The Rise of Financial Capitalism International Capital Markets in The Age of Reason .Cambridge University Press.

[22] Lee,Stephen.(2002).Avrupa Tarihinden Kesitler 1494-4789.Dost Kitabevi

[23] Lindert, Peter H.(1985). English Population, Wages, and Prices: 1541-1913.The Journal of Interdisciplinary History, Vol. 15, No. 4, Population and Economy: From the Traditional to the Modern World,609-634

[24]Lynch,John.Spain During the Price Revolution.www.p12.nysed.gov.Erişim Tarihi 12.10.2015

[25]Marichal,Carlos.The Spanish-American Silver Peso:Export Commodity and Global Money of The Ancien Regime,1550-1800.25-39

[26]Mayhew,N.J.(1995).Population Money Supply and the Velocity of Circulation in England 1300-1700. Economic History Review, XLViii, 2, 238-257

[27]Miskimin, H.A. (1975). Population growth and the price revolution in England. Journal of European Economic History, 4(Spring), 179-186.

[28]Pamuk,Şevket.(2001). The Price Revolution in The Ottoman Empire Reconsidered. Int. J. Middle East Stud. 33, 69–89. Printed in the United States of America,69-89

[29]Peker,Hasan S.(2015). Avrupa'da Merkantilist Uygulamalar ve Osmanlı Ekonomisi İle Bir Karşılaştırma. Çankırı Karatekin Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, cilt 5, Sayı 1,1-12

[30]Seignobos,Charles.(1960).Avrupa Milletlerinin Mukayeseli Tarihi.İstanbul:Varlık Yayınları

[31]Streb, Jorge M..(2010). Hume's Specie-Flow Mechanism and The 16th Century Price Revolution.

[32]Turanlı,Rona.(2000). İktisadi Düşünce Tarihi.İstanbul:Bilim Teknik Yayınevi