Hacettepe University Graduate School of Social Sciences

Department of Economics

Master's Program

THE ROLE OF THE PRICE REVOLUTION IN EUROPEAN INDUSTRIALIZATION: AN EXPLANATION WITH RESPECT TO THE SOCIAL AND ECONOMIC TRANSFORMATION OF EUROPE

Buğra Altuğ YILMAZ

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ACCEPTANCE AND APPROVAL

The jury finds that Buğra Altuğ YILMAZ has on the date of 29/05/2019 successfully passed the defense examination and approves his Master Thesis titled "The Role of The Price Revolution In European Industrialization: An Explanation With Respect to the Social And Economic Transformation of Europe"

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ETİK BEYAN

Bu çalışmadaki bütün bilgi ve belgeleri akademik kurallar çerçevesinde elde ettiğimi, görsel, işitsel ve yazılı tüm bilgi ve sonuçları bilimsel ahlak kurallarına uygun olarak sunduğumu, kullandığım verilerde herhangi bir tahrifat yapmadığımı, yararlandığım kaynaklara bilimsel normlara uygun olarak atıfta bulunduğumu, tezimin kaynak gösterilen durumlar dışında özgün olduğunu, Tez Danışmanının **Doç. Dr. Muammer KAYMAK** danışmanlığında tarafımdan üretildiğini ve Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü Tez Yazım Yönergesine göre yazıldığını beyan ederim.

Buğra Altuğ YILMAZ

ABSTRACT

[YILMAZ, Buğra Altuğ]. [The Role of the Price Revolution in European Industrializatıon: An Explanation With Respect to the Social and Economic Transformation of Europe]. [Master Thesis], Ankara, [2019].

The industrialization period of Europe was a milestone in the economic history. Its consequences are still faced by modern nation states. Hence, the roots of the Price Revolution – the great inflation of sixteenth century which was experienced in Europe – and its effects to this process was questioned in this thesis.

First of all the social transformation of Europe – transition from feudalism to capitalism – was briefly analyzed by considering the mercantilist era as well. This period was important for us to focus on the monetization of the economies. At the same time, the relationship between the precious metal inflow, minting activities and the inflation was questioned. To create an insight on the case, price indexes of various cities in Europe and price trends of different sectors were given. Then, the demand base of the Price Revolution – its relationship with the population – was considered in the frame of quantity theory of money. Secondly, the real effects of the inflation was deciphered. Thus, the claim of profit inflation was questioned via real wages. Also, consumption patterns was taken into question to make a consistent analysis on the real effects of the prices. To illustrate, it was questioned that whether there was any alternative consumption good or not. This was important to understand capital accumulation among sectors. Consequently, the magnitude of prices on profits was analyzed. All in all, costs of energy as an input – coal prices – was examined to measure the real cause of the profitability. Finally, the exaggerated effects of the inflation on the industrialization of European economies was pointed out. Instead of looking at the role of inflation in the production process, it was shown that it is more convenient to look its role on the social transformation which have carried the economies to the industrialization by investigating the enclosure movements as well.

Key Words: Price Revolution, enclosure movements, industrialization, mercantilism real wages, inflation, quantity theory, energy prices, coal, minting.

ÖZET

[YILMAZ, Buğra Altuğ]. [Fiyat Devrimi'nin Avrupa'nın Endüstrileşmesindeki Rolü: Avrupa'daki Sosyal ve Ekonomik Dönüşümler Üzerinden Bir Açıklama]. [Yüksek Lisans Tezi], Ankara, [2019].

Avrupa'nın endüstrileşme süreci iktisat tarihinde bir dönüm noktası oldu. Öyle ki, bu sürecin etkileri hala modern ulus devletler üzerinde görülüyor. Bu sebeple, sürece önemli etkisi olduğu düşünülen Fiyat Devrimi – 16. Yüzyılda Avrupa'da gerçekleşen yüksek enflasyon – konusu sonuçları ve sebepleri ile bu tezde ele alındı.

İlk olarak, Avrupa'nın sosyal dönüşümü – feodal yapıdan kapitalist topluma geçiş aşaması – merkantilist çağ da dikkate alınarak ele alındı. Bu aşama ekonomilerin parasallaşması konusunu anlamamız bakımından çok önemlidir. Bu aşama anlatıldıktan sonra, enflasyonun bağlı olduğu metal ithalatı, tağşiş gibi farklı değişkenler üzerinde duruldu. Bununla birlikte, konunun bir fotoğrafını çekmek üzere çeşitli şehirlerdeki fiyat endeksleri ve farklı sektörlerdeki fiyat düzeyleri verildi. Bu aşamadan sonra ise Fiyat Devrimi konusu talep bağlamında, paranın miktar teorisi referans alınarak açıklandı. Ardından, enflasyonun reel etkileri üzerinde duruldu. Buradan hareketle reel ücretler baz alınarak kar enflasyonu konusu açıklanıp gerçek etkileri ayrıştırılmaya çalışıldı. Ek olarak, kar enflasyonu konusunu daha iyi anlatabilmek adına tüketim kalıplarındaki değişimler verildi. Buradaki amaç fiyat yükselişlerinin sektörlere her zaman kar ettirmeyeceği, kişilerin alternatif tüketim mallarına yönelmiş olabileceği gerçeğini vurgulamaktı. Böylece Avrupa'daki endüstri devrimi öncesi sermaye birikimi konusu da genel geçer değerlendirmeler bir kenara bırakılıp verilere dayalı olarak tekrar ele alınmış oldu. Tüm bunların üzerine, endüstrileşmeye giden yolda bir girdi olarak enerji fiyatlarının, kömürün, etkisi tartışıldı. Sonuç olarak bu tez Fiyat Devrimi'nin sanayileşme üzerindeki abartılmış etkilerini hafifletip konuyu sosyal dönüşümler bağlamında tekrar ele alıp sanayileşmeye giden yolda bu dönüşümlerin önemini çitleme hareketlerini de referans alarak vurgulamış oldu.

Anahtar Kelimeler: Fiyat Devrimi, çitleme hareketleri, merkantilizm, endüstrileşme, reel ücret, enflasyon, miktar teorisi, enerji fiyatları, kömür, tağşiş.

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INTRODUCTION

In this study, an analysis that includes a relatively long period will be made on the industrialization period of Europe. Although the aim of the thesis is not to make an analysis which comprehends such a long period, it is somewhere necessary to mention some important cases that belong to different centuries. Also, some answers can only be given to such kind of former analysis which consider wide time periods. Therefore, the transition period from feudalism to industrialism will be explained. Contemporary debate on this issue is the role of the general increasing trend of the prices of consumer goods during this period. Therefore, the case of Price Revolution – the great inflation of Europe – will constitute the center of this thesis. For this reason, the background of this inflationist era will be explained in the first part of the thesis. As it is mentioned above, the nature of social and economic structure of the feudalism will be analyzed in the beginning. Organization of this relatively independent medieval patterns will give us clues about the changing environment. After a brief investigation, this study will focus on the monetization of the economies which will bring us to the period of Bullionism, the early Mercantilist trend. Bullionist era will form the initial step to the center analysis of this work because inflationist attitudes of the European economies has accelerated within this period. Mercantilist states have started to focus on overseas trade, mainly on specie. At this point, signs of the Price Revolution will be noticed in this analysis. After the discovery of the "New World", American coins were transported to the Europe. Eventually, these activities have stimulated the general price levels mostly in England, Spain, France and some other west European countries. However, it is important to turn back to the starting point at this part. European economic structure owes this transformation not only to precious metal inflow, but also to changes in domestic social and economic structures.

Here, the most important discussion of this thesis will take the role. Main purpose of this study is to analyze the reasons and results of the increase in the general price levels during the sixteenth and seventeenth centuries. Discussions on the effects of the Price Revolution among economists will be taken into consideration in the second part of this study. This study's purpose is to analyze whether the general rising trend on the price

levels has vital effects on the industrialization of the European states or not. To illustrate, according to Earl J. Hamilton, who has made the initial explanations regarding this period, oversupply of the precious metals has caused the general price level to increase. However, wage rates were not able to catch this trend. Therefore, this gap has given a hand to employers in the case of capital accumulation. Consequently, industrialization period started. On the other hand, according to a reliable data set that was compiled by John U. Nef, including different commodity bundles that was bought and sold in the late sixteenth and early seventeenth centuries, a strict increase cannot be observed in the prices of industrial goods as compared with agricultural goods. Thus, this view prevents economic historians to interpret the general increase in the price level for the sake of industrial capital. For that reason, different views on this issue will be compared in order to make a reliable interpretation. Last but not least, this work will focus on the quantity-theory-of-money based analysis. At this point, demographic structure of the continental Europe will be taken into account because of the very nature of the mentioned theorem. Consequently, it will be paid attention to socio-economic historical conjuncture while making quantitative interpretations.

All in all, consequences of this inflationist structure will be considered in the third part of this study. It is important to point out that, the real effects of the Price Revolution – income distribution, consumption habits, purchasing power and industrial profits – constitutes the major part of this analysis. At the same time, that was a period as like which was not faced before with respect to prices of the consumer goods. However, there isn’t still a common conclusion on the reasons and results of this rising trend. Thus, the thesis will focus on industrial results of the inflation in this part as well as its effects on different social classes.

In the last part of this study, the whole period will be evaluated in accordance with the conclusions. Although contemporary interpretations on the effects of the Price Revolution states that the real consequences of the mentioned period is exaggerated, this issue is still open to debate because the inflationist era coincides with the great transformation of the European economies.

CHAPTER 1

THE BACKGROUND OF THE PRICE REVOLUTION

1.1 FROM CRISIS OF FEUDALISM TO CAPITALISM

To begin with the social structure of the pre-capitalist period, economic activities, relationships, governmental forms and demographic distribution were far different from the order of the industrial states. We are dealing with an environment that was composed of interdependent social groups. The absence of the strong, absolutist states in the continental Europe – significantly around twelfth century – has caused the people to form their own structural units in order to survive. Before the capitalist period, the socio-political order was called as Feudalism. In this system, wealthy land owners have assured the serfs - peasants in the feudalist era - to protect them for the agricultural product that was demanded by these farmers. In return for payments of money, food, labor, or military allegiance, overlords granted the fief, or feudum – a hereditary right to use the land – to their vassals (Hunt, 2011: 6). As it is understood from the structure of these units, serfs have made the harvest for the sake of the landlord. Thus, they have no ability to accumulate the product for themselves. However, serfs were not slaves. They were in the process. Actually, natural rules - mainly the culture - of the manorialism did not allow them to act like this. A significant portion of lands were belonged to the lord, and serfs were insufficient to control the economic mechanism. In addition to this possession, church in medieval Europe was controlling the other portion of the lands. At the same time, clergy was collecting a kind of tax called tithes from these lands. Since the peasant, in contrast to the slave, possessed his own piece of land where he produced the means of his livelihood, our problem at first glance seems to be by how much the product of the average peasant holding was reduced for the benefit of the landlord, the church, and the feudal state (Rosdolsky, 1951: 248). Actually, the dissolution of these ties will be emphasized in the frame of monetization and trade in this study.

Volume of the trade among the manors was not frequent enough to encourage the serfs to face these kinds of activities. At the same time, social instability was not allowing any residents of the manor to make connections with the neighborhood. These conditions were leading the social structure to stay close to the interactions and

improvements. As it will be explained in the following parts, increasing volume of the long-distance trade, increase in the market-oriented production, dissolution of traditional ties and capital accumulation would alter the whole structure. However, it will be more convenient to explain the social, economic and juridical features of the feudalism at this stage. Eventually, a more consistent analysis can be done related with the period of monetization.

To continue with the juridical structure of the manorialism, traditional laws of the mentioned system have formed the relationships between the classes of this unit. One of the most important details of the feudalist system can be considered as the limits of the power of the landlords. In a remote manor that is governed by the lord, a conflict between the serfs or between the serfs and the lords was undoubtedly judged by the courts that were closer to the landlords than serfs. Therefore, it can be realized that a social pressure was made on the peasants during the feudalist period. However, it is important to state again that serfs were not treated as the slaves in the manor. They were considered as the important parts of the whole unit. Therefore, landlords were trying to get rid of hazardous conflicts in the system. Moreover, a constant unfair treatment was probably punished by an upper lord. An upper lord had the power to impose sanctions on the jurisdiction of the vassals. Consequently, it is obvious that the relationship between the serfs and the lords are quite different from the ties between the slave and the master. On the other hand, the agreement between the serfs and the lords was the base for the modern law even though it seems like a primitive juridical order. It was the strengthening of these obligations and the nobleman's ability to enforce them through a long hierarchy of vassals over a wide area that eventually led to the emergence of modern nation-states (Hunt, 2011: 9). It is important to note here that the social dynamics of the manorialism gives us important clues about the following changes in the economic structure of the European states. Therefore, the mentioned order should be considered as a transition period to the capitalism.

The center emphasis in this part is the conditions that have prepared the feudal economy to the stated transition period. As it is explained above, the interior dynamics of the manorialism contains certain answers to the discussion. Therefore, the volume of the trade, the extent of the production, the conditions of serfs and the relations among the

residents of the manor were tried to be analyzed in order to understand that transition period. However, only searching for the interior features may be misleading at some points. Although it is important to make internal interpretations, external reasons which have caused the feudalism to collapse also help us to reach a more consistent conclusion in this sense. Hence, the characteristics of the stated period, both internal and external, should be studied simultaneously. For that reason, environmental effects on the feudalist structure will be explained in the following paragraphs.

While analyzing the collapse of the feudalism with respect to stated principles above, the external reasons will be emphasized. Although some facts are considered as the results of the interior details of the manorialism, they are now interpreted as the reflections of the altering economic environment of the Western Europe. First of all, the notion of production in a feudalist form was for the consumption necessities at the first place. Trade was not filling the activities of the serfs. Also, this was valid for the concerns of the landlords. However, market places were started to gain significance towards the fifteenth century. The reason for this improvement was the increasing interconnections between the states with the help of long distance trade. Trade has changed the perception on the consumption goods. In addition to the consumption affairs, serfs have begun to produce for the market. This extra production could not be blocked by the vassals or by the landlords because they were becoming more dependent on the serf commodities. Within the changing consumption schedules, necessities of the landlords were increased as well. The transition from a primitive, subsistence economy to a monetized, trade based economy was beginning. However, the basis for this transformation was not strong enough to provide this rapid change. It would take relatively too much time to found a monetary based economy.

As well as the economic features of this period, social facts of the feudalism have played an important role during the transition. It is mentioned earlier in this study that the role and the power of the serfs were not the same as the slaves. However, they were not as free as our modern constitutional individuals. A deep pressure by the vassals on the serfs can be easily observed. Since this pressure was supported by the improvements in the alternative living conditions in the Western Europe, a migration wave from the manors to the cities has occurred during the late feudalist period. Although the social

and economic pressure has played the initial role in this attempt, charming nature of the newly founded cities has triggered the stated migration wave. A debate that was taken by M. Dobb and P. Sweezy on this issue has a supportive nature on this argument. Lastly, the development of the cities which were the centers and the base of the exchange economy have provided an opportunity for the servant people of the rural districts a better and freer conditions (Dobb, Sweezy and Hill, 2006: 28-29). Therefore, peasants have started to abandon the lands for the possibilities that were promised by the cities. Their existence provided a basis for money dealings, and hence for money payments from peasant to lord (which, however, were never entirely absent during the feudal period) ; and, if the pressure of feudal exploitation and the decline of agriculture helped to feed the towns with immigrants, the existence of the towns, as more or less free oases in an unfree society, itself acted as a magnet to the rural population, encouraging that exodus from the manors to escape the pressure of feudal exactions which played the powerful role in the declining phase of the feudal system that we have tried to describe (Dobb, 1946: 70). Living conditions, salaries and circumstances were much better in these cities compared to the manors. Consequently, main components of the exchange economy was built. Increasing population of the cities has allowed the workers to produce for the market. However, it is important to say that the increasing population should not be only attributed to the better living conditions in cities. Although population will be investigated by considering the data of the age, a schedule which points out the natural rhythm – ups and downs – of the population which was asserted by Russel. Thus, the traces of the Malthusian framework regarding the population can be found in the historical context. On the other hand, natural checks were one of the important explanatories in this sense. Therefore, fluctuations in population should be read by including these variables into the case as well. It can be argued that (population) growth rates increased slowly and fairly evenly until the middle of the fourteenth century when the plague brought negative rates which endured for more or less a century. Presumably, growth became positive again by the last part of the fifteenth century, and rates increased slowly from then on following the same general trend as is shown by the estimated figures for 1650 and later years (Robinson, 1959: 73). To continue with the features of the age's socio-economic environment, overproduction of the goods has led the merchants to sell these commodities to distant

centers. Hence, a trade web was constructed. Lastly, structure of the property ownership has evolved. Eventually, this new form has weakened the already harmed feudal relations. The very first examples of the capitalist mode of production - in primitive forms for sure - was started to seen during the sixteenth century onwards.

The collapse of the feudalism was stemmed from these fundamental issues. However, the aim of this study is not to ignore the sociological, governmental and hierarchical reasons of that situation. This thesis rather focuses on the economical roots of the transition period in this part. Thus, increasing significance of the trade would give a different shape to the economic environment. Although the notion of the trade can be faced in the medieval economies, it was pretty different from the one which coincides with the late times of the feudalism. Increasing efficiency in the European fields with the altering crop rotation technic, weakening traditional ties and monetization process of the economies encourage - somewhere forced - the peasants to make profit. The surplus that was produced by serfs was started to be exchanged in the market. These activities have changed the place of the peasants. These were the first steps of capital accumulation which would help to create a freer working class who had the direct control on the capital. Another important consequence of the money oriented transactions of the peasants was commutation. Peasants can directly pay cash to the landlord instead of paying their obligations in the form of commodity. This system gave peasants a higher incentive to produce, and, thereby, increased their surplus marketing, which led to more commutations, more subsequent marketing, and so forth (Hunt, 2011: 15). Therefore, monetary needs of these people were triggered. They have put more emphasis on the market relations. Trade has become a vital part of the social structure. Enriching former peasants have started to possess their own economic activities in the cities. In the following decades, capital ownership would become the indispensable part of the contemporary economic structure. However, it is important to point out that the volume of the regional trade should not be considered apart from the general economic structure of Western Europe. This environment was fed by the age of discoveries as well.

Contemporaneously, European states – mostly the kingdoms that were found on the lands of modern-day France and Spain – were regaining their power and strengthening

their absolutist exercises by the late fifteenth century. The growth of population in the European cities was helping the feudal ties to break down as well. Although agriculture was still protecting the initial place as an economic activity, it was no longer constitute the skeleton of the social relations. From another point of view, cities were expanding and subsidizing these centers were the responsibility of the states. As well as the expenditures on the population of the cities, expenditures on the units of the states – on the military, bureaucracy etc. – has soared up. Money was taking the key role on the economic transactions. Consequently, these circumstances gave precious metals a more important role as an economic instrument because they were the raw material of the European specie. At the same time, they were seeking to impose economic and political unity on their subjects, the rulers of Europe were aggressively competing with one another for extension of territory and control of overseas possessions and trade (Cameron, 1993: 130). As it is easily seen, the states were expanding through the trade. Portugueses – who were expert on the shipping – were taking the leading role during this period. Their trade between the far-east has constituted the modern example of the overseas trade. Then, other European countries have followed these technics.

In conclusion, the social and economic structure have altered related with these developments in the Western Europe. Also, the nature and source of the wealth were reconsidered. A new age was about to begin.

1.2 EARLY MERCANTILIST PERIOD

In the first part of this study, changing nature of the economic structure was explained. During the feudalism, it was observed that the needs of the people were limited with the subsistence levels. An important reason for that structure was especially the absence of the specialization. There were standard types of groups who possess the certain roles in the social environment. At the same time, traditional ties were not allowing the individuals to alter their places. However, circumstances were improved within the expanding states. Social relations left its dependent nature. Trade networks paved the way for human to make their living conditions better-off with their earnings. Last but not the least, this new form has given the opportunity to peasants to have their own

capital stock which would be the one of the most important reasons that pushed the agrarian economies to be industrial giants. However, this will be the case of later chapters. In this part, the thesis rather focuses on the need of the money. Increasing volume of economic transactions has led the states, entrepreneurs and merchants to focus on an economic system that puts the trade into the center. Eventually, money were taking the primary role in this structure.

Mercantilism, a new economic form after feudalism, was based on the overseas trade activities of the people. However, it would be misleading if this system is considered as the result of the efforts of only the individual economic actors. On the contrary, it was supported mostly by the European states. Since the monetary needs of the economies was in a rising trend as it was explained above, policy makers have aimed to increase the money flow in their states. Therefore, in the earlier period of the Mercantilism – which was called as Bullionism – it was aimed to import precious metals to the homeland. These transportations were made by the strict control of the government officials. Consequently, this period was considered as the economic nationalism according to some economists. Moreover, geographical explorations were supported by the states. Actually, the main concern was to discover new gold and silver mines. In addition, processed metals were expected to import. All in all, Spain has the leading role in the early Mercantilist era. After a very long time of conflicts, the Queen Isabella and the King Ferdinand of Spain have established the control over the Spanish lands towards the end of the fifteenth century. After the unification, they aimed to support profitable discoveries. Therefore, Isabella and Ferdinand have financed the expeditions of the explorers. Also, they charged their army members to control the newly discovered lands. This earlier period of Mercantilism would be resulted in huge amounts of precious metal inflow to Europe which will be explained in the following parts. However, before this kind of an analysis, it is more convenient to understand the features of the period. In order to construct a stronger frame, it is important to perceive the nature of the newly formed economic relations.

To continue with the next stages of the Mercantilist era, the components of the trade have changed through the improving cities. Although precious metal imports were still counted as an important part of the period, the consumption goods trade became the

primary account of the economic activity. However, the application of the trade was quite different from the previous exercises. Already applied protectionist methods of the Mercantilist states have strengthened after the Bullionist era. Organization of the merchant activities has been organized by the state officials. This was the age of economic nationalism as it is mentioned before. Also, this economic nationalism was stemmed from the nationalization of the kingdoms in its essence. European states were trying to achieve their superiority by adjusting their internal economic structure. For this purpose, policy-makers of that ages have imposed several objectives. These applications were both aimed to protect the domestic economy from the activities of the other leading states. In order to save the national shipping trade from the threats of their rivals', officials of the England put the Navigation Acts into action in the late seventeenth century. The intent here was to protect national merchandising activities. Since the purpose of the mercantilist policy-makers was to construct both sufficient amounts of gold and silver stocks, and a thriving trade balance, they have put effort into building a nationalist frame in their trade fields. At the same time, these mercantilist bureaucrats in the England have enforced Corn Laws after the eighteenth century again for the protective purposes. The Corn Laws fostered the nation's agriculture and aimed to realize the ideal of self-sufficiency as regards food supply (Nettels, 1952: 105)

Adam Smith, who was the first to define this period as Mercantilism, has criticized its protectionist features. From his point of view, strict controls on the economy would be resulted in the misallocation of the economic resources. At the same, these efforts have constituted barriers on human liberties which prevent the growth. However, these were the first steps that were carrying the economic environment to industrialism. Furthermore, trade monopolies were founded by the state of England. Since the competition of the firms lowers down the prices, monopolistic firms were supported to make more profitable sales. This profit was divided among the elite merchants, noblemen and the governing class for sure. The balance of trade purposes of governments were tried to be maintained by these precautions. As it is stated, the source of the wealth was described as the abundancy of trade components during the mercantilist age. This belief was reflected into writings of the scholars of that age as well. Thomas Mun wrote his by now much-quoted sentence, ' the ordinary means... to increase our wealth and treasure is by foreign trade wherein we must ever observe this

rule: to sell more to strangers yearly than we consume of theirs in value', he was doing little more than elaborate, as had Montaigne and Bacon in different ways and in different contexts, on an ancient maxim (Coleman, 1980: 786). This kind of an economic system was apart from the Smith's theory of the self-adjusting markets. Mercantilism was the economic policy of the states. Therefore, it has accompanied the nationalism as an ideology. From their point of view, restrictions on the economic activities were implemented for the sake of the nations.

These ideas were reasonable up to some point because the economic structure of the states were not strong enough to focus on the efficient allocation of the resources, or the well-functioning of the markets. Consequently, newly born forms may have been required to be protected. On the other hand, there was not any market to be considered at all. Economic policies of the stated period were the responses to the contemporary circumstances. Also, a tendency to dwell on trade and on bullionism may be seen as justified due to reasons that are acceptable even today and not due to a lack of economic sophistication. Bullionism was a possible response to the long lasting wars in this sense.

The age of Mercantilism was a stage that comes after the feudalism and before the industrialism. At the same time, this stage brings the economic literature to the age of capitalism. Thus, some of the significant features of the stated period should be analyzed in detail. For that reason, early attempts of the Mercantilist ideas – which would originate the general tendency of the whole period – must be considered as the milestone of the mentioned transformation period. As it was introduced at the beginning of the thesis, the concerns on the determinants of the wealth have given a frame to the economic routine. This fashion has stimulated the economic actors to work on the trade based policies which focuses on the monetary side of these relations. Eventually, efforts that were put on searching for the precious metals by these Mercantilists for the purpose of increasing their stocks would be resulted in an inflow from the New World.

The Mercantilist era was explained with respect to economic activities that were arranged by the states up to here. In this sense, British example was put forward to analyze the examples of the states during this period. Britain was the leading economy which was able to impose these protective exercises for the economy to improve. Therefore, it will be seen that this country would take the primary role during the

industrialization period. However, it would be misleading to underestimate the role of Spain in this period. As it is explained in the previous paragraphs, continental Europe owed the flow of the precious metals to the power of the Spain in the case of overseas expansion. Therefore, the consequences of this flow will be explained in the next part of this chapter which will take the discussion the age of Price Revolution.

1.3 PRECIOUS METAL INFLOW TO EUROPE

The earliest period of the Mercantilism, called Bullionism, has relied on the importation of the precious mines to the Europe. Those were the days which the source of the wealth was transforming. Despite a few counterexample, money was becoming the general unit of exchange throughout the world. As well as the merchants, workers and artisans have necessitated the money, this environment has reflected the needs of the states. Therefore, European states have accelerated their gold imports towards the end of the fifteenth century. Although these states were shipping African gold to the mainland, enlarging trade relations have increased the requirements. The west European kings and the queens have risen their interests on the new financial resources in around sixteenth century. Newly discovered lands were the perfect fields to search for the precious metals.

Hernan Cortes, a Spanish military officer who set foot to Vera Cruz in 1519, invaded the Aztec Empire from the East with his limited numbers of men (600 soldiers and 16 horses) and 6000 native people who joined him during the conquest. (Cipolla, 2003: 2) His journey has continued until he discovered their gold mines. Cortes' and his army were in accordance with the Spanish Royals. In one of the letters that Hernan Cortes has sent to Queen Dona and to the Emperor Charles V, he gives detailed information about his journey: "On the following day, at the hour of vespers, there came two Indians on behalf of their chieftains bringing certain gold ornaments which were very thin and of little value; and they told the captain that they were bringing these trinkets so that he should depart without doing them further harm, and leave their land as it had been before" (Cortes, 1986: 20). However, they did not leave. After they realized that there were an abundance of precious mines, Spanish conquistadors have given priority to invade these lands. These small group of Spanish soldiers have conquered the great

Aztec Empire with their swords, and their infectious disease. At the same time, they have massacred the people of that isolated state. Between the years 1519 and 1921, Cortes and his army have established the absolute control on the Aztec country. As Hernan Cortes did, Francisco Pizarro, another Spanish conquistador, undertook a journey to the South America with his fleet in 1530. He has entered a war between the Inca Empire after this date. Eventually, he and his soldiers have gained the control over the Inca lands. The cities of Inca Empire were full of precious metals both as processed and as crude. At the same time, the amount of silver and gold mines were significant enough to take the mainland's attention. Therefore, the Spanish have settled down the lands they have conquered. After the conquest of Inca and Aztec Empires, these lands have been entered under the Spanish administration and mining activities were accelerated. The silver mines were processed by the European technic from 1530s to 1570s. These transactions were made by the help of the German engineers who were specialized on the mining process. German miners and engineers had introduced in the New World mines an instrument resembling a heavy iron pick which was used in contemporary European industry to cut the ore from the lode (Chaudhuri, 1994: 267). After 1570s, improvements in the mining technics such as the discovery of cyanide as an extraction tool has increased the amount of precious metals that were hoisted from the American mines. Therefore, the quantity of silver and gold that were transported to the Europe has soared up.

The volume of the metals that were shipped to the homeland was something that had been never witnessed before. Dozens of ships have carried gold and silver from Central and Southern America to the Europe for years. New ports became important in the European coasts. One of them was Casa de la Contraction which was found in Seville. Overseas trade of Spain was controlled from this port. At the same time, this foundation was the center of the trade between the New World and Spain. As well as the transportation of gold and silver was made via this port, it became the center of the Mediterranean trade during the early seventeenth century.

As it was emphasized in the previous paragraphs, European kingdoms have started to necessitate a stock of precious metals since the economies had entered the transformation period. These states were facing a period that every single economic

happening improved their journey towards the capitalism. The flow of the gold and silver has affected the economical units in the Europe and the Mediterranean region.

It is obvious that this flow has enriched the trading countries but the discussions about the consequences of this process is not certain in the economic literature. The effect of the precious metal inflow on the European prices is still in question. The general tendency of the economists is to interpret the case of inflation with respect to the money supply while every other variables are constant. However, the notion of ceteris paribus may somewhere be unadaptable. Especially, it may be misleading while explaining the long periods. Consequently, the results of this period will be investigated in the following chapter from various point of views. The Price Revolution, the great inflation that was experienced from the late sixteenth century to the eighteenth century in Europe, will be analyzed.

CHAPTER 2

THE ANALYSIS OF THE PRICE REVOLUTION

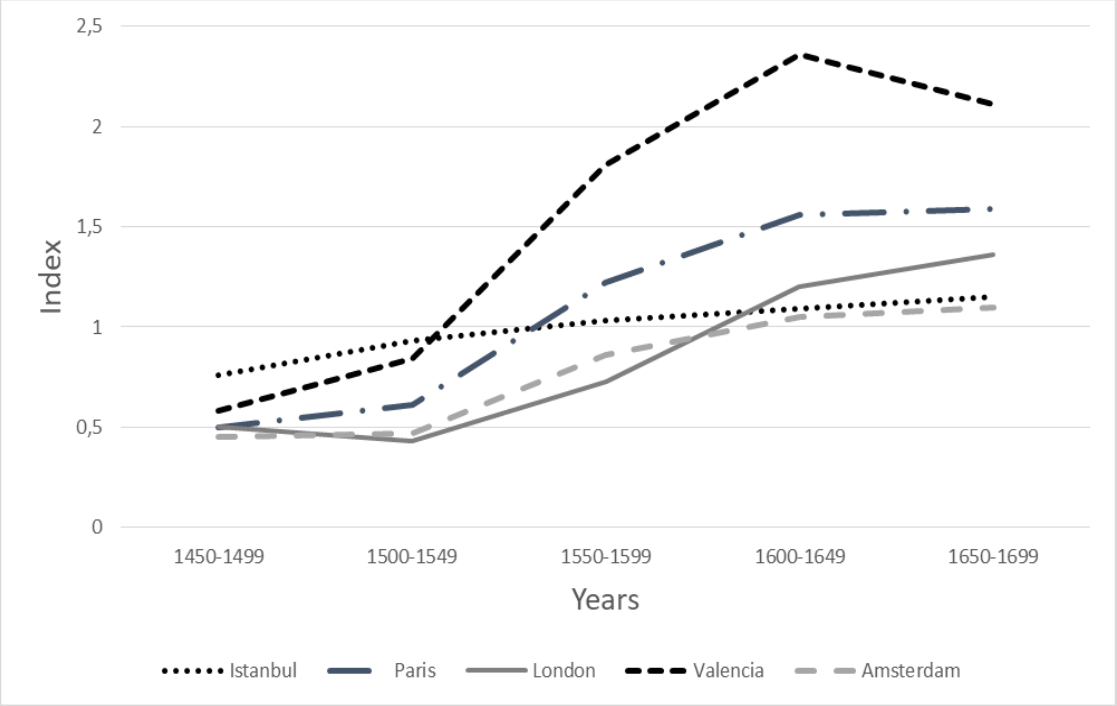
2.1 AN ANALYSIS ON THE GENERAL TRENDS IN PRICES (1450-1700)

In the first chapter of this study, the transformation period of the European economies was emphasized. The subsistence level of agricultural production was the key point in understanding the volume of the economic activity during the late middle ages. At the same time, intensity of the population in the continental Europe gives us some clues in order to perceive the nature of the agrarian times. Therefore, the comparison between the two different eras can be made properly. The flow of the history, while explaining the changes that were occur in the cores of the social and economic units, helps us to understand where this thesis is trying to reach. In this flow, it was explained that the attempts on the change did not arise as such. This was the natural direction of these efforts. The power of the feudal landlords has been weakened within the increasing rate of the trade relations. This period has taken approximately three centuries to complete its dissolution. Also, Black Death has dealt a big blow to the continental Europe towards the end of the fourteenth century. Even though the plague was thought it was temporary, the epidemic would last until the end of the seventeenth century. If the plague years were marked alongside every town they touched, no city would escape even this brief survey and fail to score (Braudel, 1972: 332). After the structure of the feudalism was ruined, the conditions of the serfs were started to be questioned by themselves. They have undertaken new sorts of activities which have triggered them to start the change. Increasing width of the trade relations among the peasants have carried the agrarian communities to trade based societies. These transformations have created the cities. Eventually, stronger states were born in the Europe with their absolutist applications which have led their people to find new sources for compensating their losses. Therefore, the age of discoveries was begun. Since the background of the precious metal inflow was explained in the previous part, the effects of that period will be considered in this chapter. It is now convenient to explain the features of the Price Revolution after this brief introduction.

The monetization period of these economies have processed after the dissolution of the traditional medieval forms. Money has become the medium of exchange in all aspects. The system of prices, the money and a complex economic web did not occur out of clear sky. Increasing volume of trade and liberation of small peasant markets have made the money more important in daily life. As the cities have grown up in size and in population, monetary transactions were started between large trader groups after the end of the fifteenth century. States and their monopolistic trade companies would be added this fashion after the seventeenth century. The complexity of the economic structure in the Western Europe was widening. Merchants were exchanging commodities with different countries. However, the exact value of the goods traded by a region became uncertain with respect to other state's unit of currency. The need for a common measure was born during this period. A money of account was tried to be maintained by the European policy-makers and merchants in order to simplify the transaction of the long-distance trade. It is a unit of measurement for gold coin, silver, billon (that is, small change coined from more copper than silver) or copper; it brings them into a valid relationship with one another and itself becomes part of that relationship (Braudel & Spooner, 1967: 379). This exercise has created a difference between the values of the coins of European and Mediterranean states. While the usage of the English sterling, Spanish real, Italian lire, French franc and Ottoman asper was increased, their values were differentiated from each other. Eventually, prices has taken the place of the materials of the subsistence economy.

To continue with the evolution of the monetary system, European economies have experienced sharp rises in the price levels during the late sixteenth century as it was stated in the previous chapter. The degree of this upswing was never seen before in the continent. This inflation was first faced by the Spain, especially in their ports, then it spread to the other European centers, even to Istanbul. The distribution of this rise to the good bundles will be explained later. Now, it is important to pay attention to the price trend in European cities. According to data which was compiled by Hamilton and Allen, an increasing trend in the prices can be perceived in the Western Europe after the early sixteenth century. At the same time, Pamuk has adjusted these data set and added information about the price levels in Istanbul.

Graph 2.1 Consumer Price Index in European Cities (1450-1699)



Source: Pamuk, 2000: 93-94

In the Graph 2.1, the consumer price indexes of five different European cities are given beginning from the second half of the fifteenth century. Although Warsaw and Leipzig were included in the original work, these cities are not counted in this study because of the absence of the concrete data regarding the sixteenth century. Since one of the main purposes of this thesis is to question whether the inflation was stemmed from an increase in the money supply – precious metal inflow – Valencia constitutes the most important component of the conjuncture. As it is seen from the graph 2.1, the sharpest and the greater increase in the consumer price index observed in Valencia. Actually, the significant date for this interpretation is the date after Cortes and Pizarro conquered the Aztec and Inca Empires. The metals were started to be transported to the mainland after the second half of the sixteenth century in significant amounts. Similarly, the sharpest

increases in the price levels encounter with this period. Although the aim of this study is not to try to prove a correlation between these two data, it is necessary to pay attention to important facts for the future analysis.

To continue with the other cities, the second sharpest increase is seen in the path of Paris. Here, the factor of neighborhood may had an effect on this direction. Since the trade relations were in their strongest frequency from the medieval times, it is not surprising that increasing levels in Spain have reflected the consumer prices in France. At the same time, internal developments are another powerful source to be taken into account while analyzing the price movements. However, the direction of the price level is more important than its reasons in this part. The sources of the general increase in prices will be explained in the future analysis.

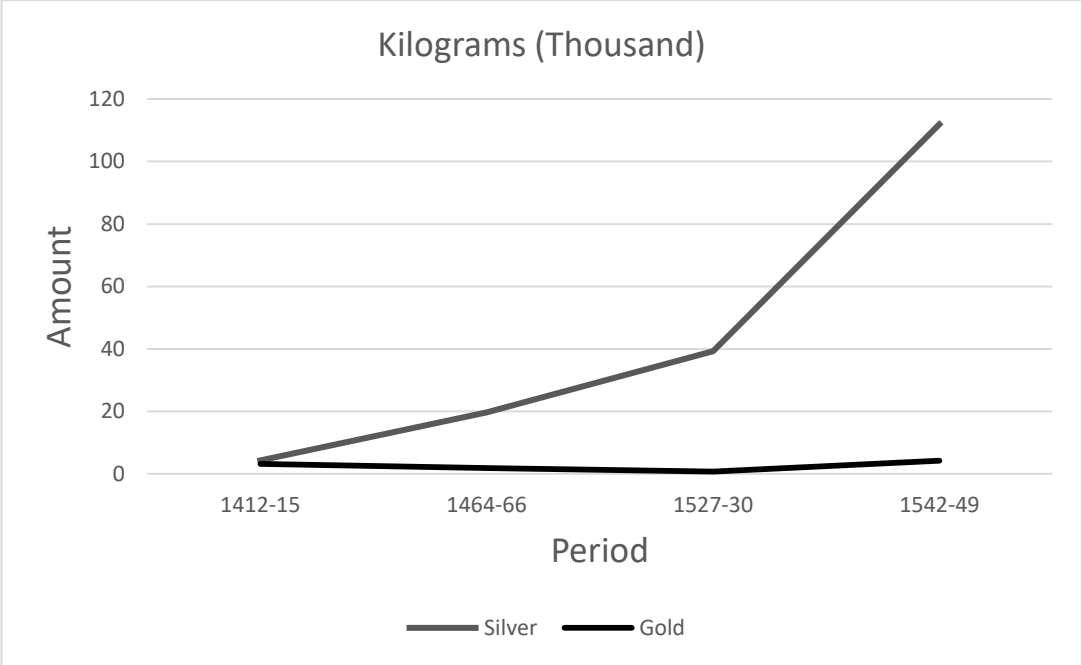
In addition to Paris, the rate of inflation in London and Amsterdam seems relatively high according to the graph after the late sixteenth century. However, price level did not increase as sharp as it rose in Valencia and Paris. This is probably sourcing from the lag as a result of the distance because if the case is Istanbul, a flatter and a smoother diagram can be observed. Moreover, Istanbul was the city that the African gold was flowing to via Egypt. Consequently, the Ottoman economy was not depended on the American gold during the sixteenth century. All in all, a general rise in both cities is a fact after the overseas expansion of the Europeans. Moreover, price indexes in both cities are constructed by considering the agricultural consumption goods excessively while analyzing the period this study is working on in this part. This situation is a result of the age the data belongs. One cannot be able to talk about the industrial production during the stated era. To illustrate, price records in Istanbul were mostly compiled by taking the kitchen expenditures of the Topkapı Palace into account. For this reason, the rate of compound in the good bundle during the sixteenth century was on the behalf of agricultural products while collecting the data on prices.

Since one of the main purposes of this work is to discuss the reasons of the inflation of pre-industrial Europe, it is convenient to make a brief introduction to other usual causes of the Price Revolution. Thus, one of the strongest factors of the Price Revolution can be said as the debasement process that was undertaken by the state officials in order to compensate the budget deficits. Since the content of the European specie was

constituted mostly by the silver, gold and copper, debasement of these currencies was made by decreasing the precious metal degree of the coins. More copper but less silver i.e.. Therefore, states were able to mint more coins with the same, or lesser, resources. Debasements were taken into action in France, England and in the Ottoman Empire during the sixteenth century. From 1542 to 1551, silver or gold was debased ten times, and the pound sterling lost 83 percent of its silver content in England (Rolnick, Velde, & Weber, 1996: 2). Same debasements in the domestic currency were made several times during the same period in France. In addition to the fiscal concerns, debasements were made reciprocally in European region in order to adjust the exchange rates. To illustrate, after the 1584-86 adjustments in the Ottoman Empire, gold-silver ratios were converged to Europe's rates (Sahillioğlu, 1978: 15). This process was either conducted by adjusting the rate of silver of the coins in circulation, or by minting new specie in that ratio. Since the prices could not respond to the debasement process, this adjustment was providing extra income during the lag.

At the same time, these adjustments have reflected to the minting processes. In England, the volume of the money supply has risen towards the mid-sixteenth century. It can be observed from the Graph 2.2 that the amount of silver and gold that were produced as the raw material of the domestic coin was soared up. Moreover, a sharper increase in the amount of silver seems significant. The reason for that trend is that the silver was used in the minting activities more than the gold. However, this graph does not shows the silver/copper ratio of one coin in transaction. It was already stated that this ratio was declined. The amounts which are emphasized in the graph are the general quantity of precious metals that were put into minting process. This was the result – also the reason – of the general increase in the price levels. On the other hand, it is not concluded that the exact cause of the minting was the Price Inflation. The speed of inflation was greater than the frequency of the debasement. Indeed, the determinants of the inflation is tried to be emphasized in thesis.

Graph 2.2 Amounts of Minting in England, as Silver and Gold (1412-1549)



Source: Challis, 1993: 688-698

Another reason for the period of debasements would be the demand for the specie in Europe. After the Black Plague of the late fourteenth century, European states have lost approximately forty percent of their populations. It took around two centuries for the level of the European population to reach its before-plague years. Completion of the population's recovery process coincides with the years of the great inflation of Europe. As well as the population, population based density was increasing especially in the cities. As it is emphasized before, this situation has constituted a rationale to higher volumes of trade. The need for the coins was risen. It thus appears that the price revolution occurred, not because a surfeit of specie entered the money supply and drove prices up, but in spite of a general shortage of specie in coin, or at least a seeming inability of silver coin supplies to grow as rapidly as the transactions demand for currency (Goldstone, 1984: 1141).

Through the migration, better services and infrastructure, people have preferred to move the cities. However, rather than the reasons of the density of the population,

emphasizing on the increase in the population as a fact is more appropriate for the direction of this study. Therefore, a connection between the price levels and the frequency of the economic transaction in terms of money can be provided. Consequently, a stronger basis can be constructed for a better understanding. For this reason, Table 2.1 – indexed by Kriedte – is a strong indicator for understanding the demographic distribution and the schedule of the European population during the years of inflation and aftermath.

Table 2.1 Population Change in Europe, 1500-1800

	1500		1600		1700		1800	
	abs.	Index	abs.	Index	abs.	Index	abs.	Index
Northern Europe	1.6	100	2.6	163	3.1	194	5.0	313
NWestern Europe	6.3	100	9.7	154	12.7	202	21.2	337
Western Europe	17.0	100	17.9	105	20.8	122	27.9	164
Southern Europe	16.4	100	21.7	132	21.7	132	31.3	191
Central Europe	18.5	100	24.0	130	24.5	132	33.5	181
Total	59.8	100	75.9	127	82.8	138	118.9	199
Eastern Europe	12	100	15	125	20	137	36	300
SEastern Europe	9.1	100	11.2	123	12.2	134	20.8	229
Total	21.1	100	26.2	124	32.2	153	56.8	269
European total	80.9	100	102.1	126	115.0	142	175.7	217

Source: Kiredte, 1983: 3

According to Table 2.1 regional distribution of the European population between the years 1500 and 1800 is given. It is important to note that Britain and Netherlands were included in the region of Northwestern Europe whereas France was referred by Western Europe. Lastly, Spain and Portugal are included in the Southern part of the Europe.

Kriedte's calculations are crucial with respect to their regional features. Although the demographic movements were nearly in the same direction in Europe, the levels of change have given different responses to the alteration of the social environment. Average amount of the population between the years 1450 and 1500 was indexed as 100 in both regions as it is seen in the graph. These indexes differentiates during the sixteenth century. In Northwestern Europe, the index has increased by fifty percent from the late fifteenth century to the early seventeenth century and has doubled two centuries after its beginning. The second largest increase in the population among the regions observed in this study is seen in the Spanish and Portuguese data. A thirty-percent-increase can be observed until the end of the seventeenth century. Also, developments in the ports have supported this rise in the southern part of the Europe. Last but not least, a significant increase in the population of France, and the Western Europe is observed in the table. However, this rise is quite smaller than the amounts that were recorded in the stated regions above. In sum, a twenty-percent-increase in the sixteenth century, and a forty-percent-increase in the seventeenth century could be extracted from the data that indicates the whole population of the Europe in the table. Stepping beyond the limit of prudence, for in this instance it is a bad counsellor, let us say that the population of the Mediterranean may by and large have doubled between 1500 and 1600 (Braudel, 1972: 402). Meanwhile, variables that belong to the eighteenth century will be evaluated in the further analysis. The main concern of this work is to make connections between the sharp rises in population and in prices at this stage.

A historical debate on the reasons of the price revolution has been proceeding since the contemporary literature has evolved. The effect of the demographic fluctuations to the behavior of the price levels is a significant part in the analysis. This realm can be counted as one of the most important parts of the quantity theory of money which will be explained later in this chapter. The frequency of a coin's usage in an economy has an accelerating effect in the general price levels according to that theory. Thus, the responsibility of thesis is to examine how big the effect of the demographic movements was on the prices. For that reason, a reliable data on population that belongs to the period of the Price Revolution is given. However, the effects of the prices on the profits of the pre-industrial manufacturing houses, firms and the factories will be evaluated before this explanation. Also, the relationship between the price levels and wages will

be explained to construct a base to the industrialization process. Consequently, Earl J. Hamilton's view will be appealed in most of the points during this analysis. To conclude, the prices of the different types of goods will be the key element in that kind of an explanation.

2.2 THE STRUCTURE OF SECTORAL PRICES

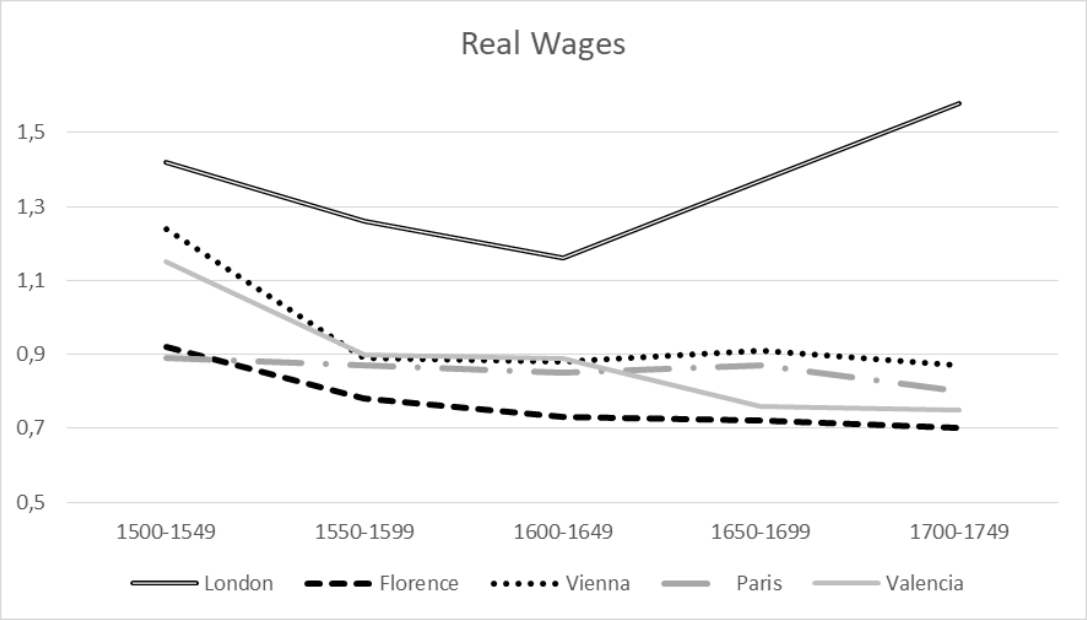
The disability of prices to perform rising behavior before the period of sixteenth century, and even their being in the decreasing trend, did not allow the merchants, craftsmen and artisans to make profitable sales. Meanwhile, the weakness of the private property ownership system, states' hegemony on the primitive markets and the absence of the notion of the accumulation did not allow them to make profit even if they have made profitable sales. At the same time, decreasing rate of population within the epidemics during the end of the fourteenth century has caused the wages to stay above the general price levels. Although increases have occurred in the price levels, the potential profits were deteriorated by the higher increases in the wages. Before the 1500s, sudden rises in the price levels are anticipated by scholars but the data which was constructed to analyze that period did not strongly support the case. Hence, the annual commodity price series available for the Middle Ages fail to reveal highly injurious short-term fluctuations of prices that inevitably resulted from the policies that provided long-term stability (Hamilton, 1952: 330).

The milestone of this period was the invasion of the Southern America by the Spanish. After the inflow, a constant and a sharp increase in the price levels can be observed. The other possible reasons for the great inflation were stated in the previous sections. However, the monetary side of the case is emphasized in this part. Because the notion of the "profit inflation" was first created by Earl. J. Hamilton and his explanations on the Price Revolution were mostly based on the monetary transactions. He matches the specie flow with the rising prices in his works. At the same time, Hamilton makes connections between the wages and prices. According to his point, profitable sales by the craftsmen were started to be made after the period that wages lagged behind the prices contrary to the late medieval times. By the end of the seventeenth century wages

were only 150 per cent above the 1500 level, while prices remained about 250 per cent above it (Hamilton, 1929: 352). All in all, wages were constituting the excess of the production costs in such a labor-intensive market. Therefore, the main concern of this part can be found in the roots of these statements. Although Hamilton considers the foundation of the nation states, the protestant ethics and improvements in the scientific methods as the strong sources of the industrialization of the Europe, he puts the Price Revolution at the first place. According to his point of view, wage lag was the main reason of the capital accumulation process which then would paved the way for improvement of the capitalism.

The notion of profit inflation explains the general structure of the period in question. Downward trend in the real wages during the sixteenth century have had undeniable effects on the earnings of the capital owners at the first glance. However, the length and the magnitude of this effect is open to debate. Thus, the data that belongs to the various cities of Europe with respect to consumer price indexes and wages should be taken into consideration while explaining the determinants of this period. For this reason, Graph 2.3 is constructed. The rate of welfare is shown in the graph for evaluating the results of the inflation. This ratio is calculated by dividing the nominal wages (grams of silver wages) of the building laborers in different European cities by the consumer price indexes. In order to make a proper comparison, industrialization potential of the states was considered while analyzing the cities. Valencia, Paris, Vienna, Florence and London were chosen as the samples. In this graph, the most important comparison should be made between Valencia and London because these were cities of the states where the great inflation was born and where the industry was improved. Then, a connection will be made between the profit inflation and industrialization.

Graph 2.3 Real Wages in European Cities, Building Laborers (1500-1749)



Source: Allen, 2001: 428

To begin with the data of London, where the industrial revolution would be experienced, the highest conditions in terms of real wages can be seen. From the beginning of the sixteenth century a decreasing fashion is observed in the welfare rate. However, this decline is not surprising with a population that was doubled in a century. Although unusually increasing prices is one of the most important – maybe the strongest – reasons for that situation, it would be misleading to skip other variables at this point. When the line comes to the period that coincides with the end of the 1500s, the data ends up with the deepest point among its trend. The beginning of the seventeenth century is the peak for the prices as it is shown in the Graph 2.1 before. On the other hand, a sharper decline in the welfare ratio of Valencia is deduced from the path of its data. Prices in Spain have risen more than England especially after the expeditions of Cortes and Pizarro. However, a stability is seen after the middle of the sixteenth century whereas real wages have continued to decline in England. This divergence should be pointed out since it supports the claim of Hamilton on the case of profit inflation. There

were several reasons for that result but Spain's leading role in the period of precious metal inflow is a crucial point that should be strongly emphasized. However, it is known that Spain has executed a series of debasements which has caused the prices to soar in this age. According to an empirical analysis that was made by Pamuk, Karaman and Elgin (2015), the sources of debasements in Western and Southern parts of the Europe are far different from each other. Their test concludes that Eastern European countries have appealed debasements for fiscal reasons. On the other hand, these results also suggest that monetary causes became more important in explaining debasements in Western Europe but not in Eastern Europe during the early modern era (Pamuk, 2014: 25). This data set rejects Hamilton's view up to some point. As well as Valencia, there are obvious losses in the path of Vienna with respect to the living standards of ordinary workers. At the same time, this was true for the other cities that are referenced in the graph.

Eventually, the information which is given so far can be reached to a conclusion. A general decline is observed in both Western and Southern European cities. These regions were chosen because the road to industrialism is passing through these countries. This part's responsibility is to question whether the profit inflation has caused the European states to accumulate capital and improve their technological capacity. Hamilton has related the industrial improvement of the European states – especially Britain – to the decreasing rate of real wages in an inflationist era. However, a general decreasing trend of real wages in Valencia, Vienna, Florence and Paris is realized from the data that is given above. All in all, real wage – living standard– in London seems like it entered in an ascending mood after the mid-seventeenth century. Naturally, it is expected that the capital accumulation to reach its highest value in Valencia. Also, the same is valid for Vienna. However, the result was different from the expected. Britain has taken the leading role in the industrialization process despite her increasing rates of welfare conditions during the seventeenth century. It is important to consider the other important variables. To illustrate, the relationship between the nobility and the royals in England was a strong case that should be pointed out. At the same time, the order of the production, measurement units, organization, transportation web, geographical conditions and infrastructure should be taken into account while analyzing a country's

historical evolution according to this work. Therefore, these variables will be explained in the following chapters.

Another important case would be the rate of inflation in the good bundles. Since the case is industrialization, the price of industrial goods takes an important place with respect to the notion of profit inflation.

Graph 2.4 Commodity Prices, 1490-1649

Source: Goldstone, 1984: 1123

In the Graph 2.4, the paths of different types of goods are illustrated. Numbers were indexed as 100 with respect to the year 1490. Increases after this year can be related to the calculated index. In this graph, a continuous rise can be observed both in the paths of two different goods until 1530s. At the same time, these movements were less than thirty percent for the wheat, and ten percent for the industrial goods in the first forty years. However, the resolution of price series through the mid-sixteenth century is significant. As well as the inflation level, the gap between the lines of the given good

bundles started to increase. Prices were increasing on behalf of farmers, or landowners. At the end of the period, price of agricultural goods has doubled the price of industrial products. Therefore, it can be simply concluded that the general rise in the prices has given a hand to agricultural producers rather than to industrial fields to accumulate capital. Even if the wage lags were the case, this picture shows different consequences about the industrial improvements.

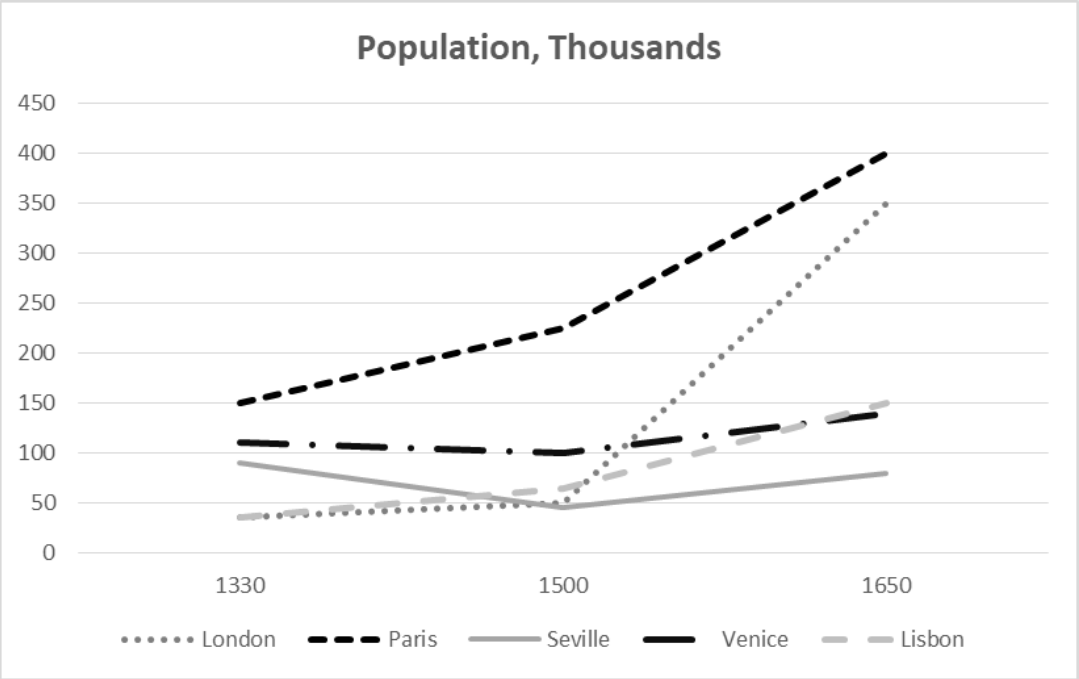
2.3 PRICE REVOLUTION: A MONETARIST PHENOMENON OR NOT?

According to traditional explanations on the reasons of the price revolution, general rises after the second quarter of the sixteenth century were mostly stemming from the bullion flow. The influx of treasure continued at an ever-increasing rate until the close of the sixteenth century…it flowed into Italy, Holland, France, England, and Portugal. In England, France, and Italy—the countries for which we have data—prices rose moderately in the first half of the sixteenth century…and very rapidly in the second half of the century (Hamilton, 1952: 331). First insight on the issue seems close to this statement as it was pointed out in the previous part. Therefore, economists were tended to relate this inflation to the increasing money supply.

The quantity theory of money creates a mathematical base to such an analysis. This theory asserts that, the multiplication of the level of money supply (M) and the velocity (V) of money – a variable which shows how much a coin, or a banknote, is used in economic transactions in a given time period – should be equal to the quantity of output (Y) that was produced in an economy times the general price level (P) of that bundle. To rewrite the equation as M.V=P.Y, a simpler form can be obtained. All in all, the monetary explanation of the Price Revolution assumes the velocity of money (V) and the output level (Y) as constants. Consequently, fluctuations in M directly affects P, the price level. Early demonstrations of the monetary hypothesis, usually in the form of the classical specie-flow mechanism tied to the basic quantity theory of money, rely on the close synchronization of European price levels—which clearly exists (Fischer, 2009: 902). Thus, specie flow during the sixteenth century was accepted as the primary source

of the increasing rate of money supply in Europe and the general price levels as well. However, there were several different causes such as growth rate of the population, distribution of the agricultural lands etc.[1] At the same time, features of the constant elements of quantity theory is in question. Increasing population and participation rate of the society into to economic environment weakening the previously accepted role of the velocity of money. Last but not least, the place of the imported bullions in the amount of domestic money supply should be diagnosed in order to prove that increment in *M* was sourcing from these flows.

Graph 2.5 Amount of Population in European Cities, 1330-1650



Source: Bairoch, Batou, & Pierre, 1988: 283-297

The Price Revolution is included in a period around a hundred years by the economic historians. Therefore, the velocity of money must be reevaluated in the equation. In the Graph 2.5, amounts of the population in some European cities between the years 1330

[1] For a detailed discussion on this issue, see Üşür, 2002.

and 1650 are given. After the data set is constructed, a general decline – or stability – can be seen in the population levels until the beginning of sixteenth century. To continue with the tendency after 1500s, a general rise – somewhere sevenfold – can be seen in the numbers. The population of London increased from fifty thousand in 1500s to three hundred fifty thousand in 1650. As well as the population of London, number of people that were residing in Paris has doubled – from two hundred thousand to four hundred thousand – between the early sixteenth and seventeenth centuries. Also, two-fold and three-fold increases can be observed from the amounts of Seville and Lisbon respectively. All in all, a forty percent rise is seen in the population of Venice during the given time period. However, this amount is the lowest ratio compared to other European cities.

Meanwhile, a similar table was introduced in the previous parts but this kind of a graph is a better visionary tool to understand the magnitude of the population growth. On the other hand, this graph shows the amount of population in cities whereas the previous table indicates the regional densities. Consequently, this kind of an analysis can be made by taking the velocity explanations as the base. Population of cities in this step is crucial because rather than the general rise in the population levels, the participation rate of the population into the economic activity – monetary transactions – will be more helpful while determining the effect of the velocity to the price levels. Therefore, population levels of metropoles here provide us a more reliable source. At the same time, type of the economic activity that was held by the people in a city is another significant descriptor of the velocity analysis. Since the case is the number of the transactions that a coin is in use, the volume of the trade becomes another issue. If population growth occurs without a change in trade patterns, as via unlinked or simple linked networks, Y grows at least as rapidly as V and prices cannot increase except by increases in the money supply (Goldstone, 1984: 1148). The ratio of V/Y shows the relationship between these two variables and the prices. Population growth in city centers via migration to obtain better health conditions and stronger security services has augmented the number of the economic transactions. Therefore, velocity increased

faster than the output level during the sixteenth and seventeenth – only in the first half – centuries. Eventually, this process led the price level to rise.[2]

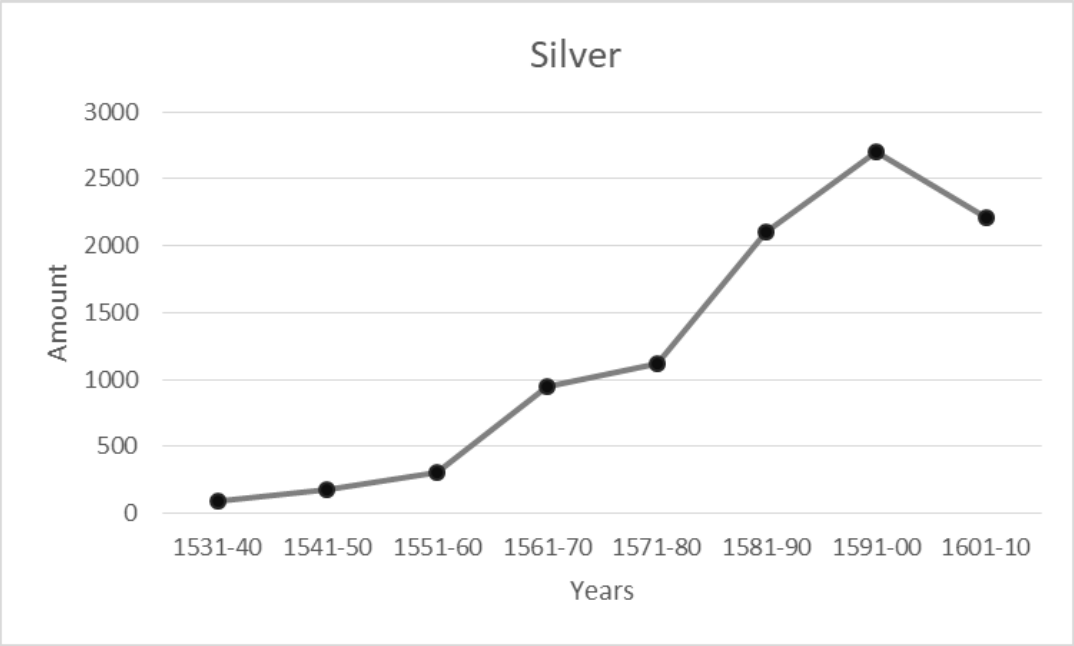
It is evident that the seventeenth century was not the age of the industrialization. However, small manufactures were producing for the market. At the same time, agricultural products have been sold in order to make profit. Although these were explained in the very beginning of this study, it is convenient to repeat for putting emphasis on the issue. Therefore, it will be more explanatory to embrace the case of inflation in terms of the quantity theory of money.

To continue from the side of the money supply in the quantity equation, it has been asserted that the great inflow of specie resulted in an increase in the domestic money supply so that the price levels have increased. Recalling the equation M.V = P.Y that, upward movements in M directly affects P by stimulating the money demand in an environment that the velocity and the output level considered as constants. Even if the V and Y accepted as constant, it is expected that the majority of the metals-exported must enter the monetary transactions to create an abundancy in an economy. However, it should not be underestimated that these imports were mostly conducted by the state initiatives. Also, the extent of treasury which belongs to the Royals was seen as the primary source of the power in pre-industrial world. Therefore, it would not be surprising that a significant part of the imported species were held by the states instead of injecting to the market. At the same time, the usage of the gold and silver was frequent in the manufacture of luxury goods. Lastly, exportation of the precious metals despite the strict prohibitions implemented by the states has prevent the metals to be in part of the domestic money supply. Thus the influx of bullion into England's money supply could not account for more than one-fifth, and probably accounts for significantly less, of the percentage rise in PY, and MV, during the first 100 years of the English price revolution (Goldstone, 1984:1155). Same was valid for the Spain. On the other hand, European markets were still in need of transaction currency in the early sixteenth century. This statement can be deduced from the productivity levels of the

[2] At the same time, the case of money demand is important to understand the inflation. Since the monetization of economies is in question in the thesis, it is convenient to take a look at the Cambridge Equation - $M^D.(1/k)=P.Y$ - which puts the money demand into the center instead of money supply. In this equation, the portion of cash that is used in the transactions is written instead of the notion of the velocity.

silver mines during the same period. It has long been known that the silver mines of central Europe reached their zenith of prosperity in the sixteenth century after a period of rapid growth (Nef, 1941: 585). Therefore, lack of metals that were used in the minting process was a problem which encourage states to search for new ores and to increase their production. Consequently, this absence led them to debase the specie in order to compensate the gap between the need and the availability of the coins. All in all, it was showed before in this study that the reason for the debasements in Western Europe was monetary rather than being fiscal. Eventually, the monetary reasons for these processes can be found in the population based analysis as it is attempted above. Debasements were one of the strongest causes of the inflation in Europe.

Graph 2.6 Total Imports of Silver in Tons, Decennial Total[3]



Source: Hamilton, 1929: 42

[3] In the original work of Earl J. Hamilton, total amounts were given in grams. In this table, fractions were ignored while tranforming the exact numbers into tons. See the original work; Chapter II "Imports of American Gold and Silver".

For creating a better understanding on the issue of debasements, the amounts of silver imported could be examined. In the Graph 2.6, the quantity of silver that were imported from the Americas is shown as decennial totals. In the peak of the trend it is observed that, approximately 2.700 tons of silver were carried to mainland in a decade whereas it is estimated that the total production of Balkan mines as a whole – one of the most productive mines in Europe – was around 26 tons per year in the beginning of the sixteenth century. Surprisingly, the increasing volume of debasements in Europe coincides with this period. As Goldstone asserts, this kind of a flow, which was about ten times higher than the total of one of the most productive mining regions in Europe, is expected to increase the money supply in the same speed even if the velocity is counted as constant.[4] However, the value of the coin in circulation and the rise in the price level was staying behind the quantity of the specie flow.

To conclude, the reasons and different aspects of the Price Revolution were emphasized in this part. Main concern of this part was to analyze the determinants of the great inflation that was experienced in the sixteenth and early seventeenth centuries. Therefore, potential variables that have the possibility of affecting the price levels were embraced. Since the case was included in a period more than a hundred years, it would be futile to explain the inflation with just an only variable. While a long-term scenario is taken into consideration, the vulnerability of that case is increasing. In other words, the protection of the topic becomes harder. To illustrate, the case of Price Revolution was tended to be reasoned to precious metal inflow. However, this was not a 5 year-case as it is stated above. During the evolution of this process, many other determinants have entered into equation just like the population, monetary regulations, trade volume etc. Therefore, all these elements were tried to be emphasized in this part of the study.

The period of Price Revolution is tried to be analyzed from different points of view in this chapter. The explained reasons for the great inflation of Europe is important to understand the pre-industrial environment in this continent. The efforts that were made on the analysis of inflation during the preparation stage of this thesis shows that the effects of the Price Revolution was somewhere exaggerated. Not only the price levels,

[4] J. A. Goldstone does not make a comparison between the production of the silver mines and the total amount of silver imports. The information is given to support the idea with respect to the data set that were pointed out by Ş. Pamuk.

but also the variables that have affected the price levels constitutes a wide place in the explanation of industrial transformation like population, terms of trade, the role of rents, wage differentials and so on. For that reason, the effects of prices to the manufactured and agricultural goods will be analyzed in the following chapter. At the same time, the structure of economic activity in the Western part of the Europe will be investigated. The situation of the agricultural lands were started to be paid attention after the increases in the population around 1600s. The debate was on the reflections of the agricultural and industrial – manufacture – production. A wide analysis will be made on that issue in the next part.

CHAPTER 3

THE CONSEQUENCES OF THE AGE OF PRICE REVOLUTION

3.1 THE EFFECTS OF THE INFLATION TO THE CONSUMPTION PATTERNS AND TRADE

It has been given the data up to here that confirms the general increase in the prices during the age of geographical discoveries. The importance of this trend was rather the uniqueness of the process. Economies had never experienced such an inflation until the beginning of the 1500s. Meanwhile, temporary increases had been faced during the middle ages but these were not sustainable enough to be sticky. Also, the rising population during the sixteenth century supported the prices as it was shown in the previous chapter. However, it is pretty assertive to interpret the inflation as the main source of the declining real wages. In order to reach such a conclusion, it must be proved that the goods that affected the inflation is still an account of consumption pattern. To illustrate, if the wheat has stayed subject to the households' budget after a respectable amount of increase, it can be concluded that the real wage of the workers has decreased. However, the case of substitute goods should be taken into account in this step.

Table 3.1 Ramping Rate of Consumption Goods, 1500-1650[5]

Product	Rate of Increase	Product	Rate of Increase
Wheat	6,5 X	Butter	4 X
Oats	**7 X**	**Egg**	**4 X**
Malt	8 X	Pigeons	3 X
Straw	**8 X**	**Hen**	**4 X**
Peas	5 X	Herring*	2 X

Source: Nef, 1937: 166

[5] Herrings were mentioned as the goods which have a lower ramping rate than the rate of wage increase by Nef. However, he did not give value. Value in the table is estimated with respect to the wage data – a-three-fold increase – that was given again by John U. Nef.

In the Table 3.1 proportional increase in prices of a bundle of household goods is given. According to the numbers that were calculated by Nef, the highest ratio is observed in the price of grain products. Wheat, malt and oats are included in these goods. On the other hand, rate of increase in the animal products seems lower as compared with the agricultural consumption goods. Also, rise of animal products' prices may have been stemmed from the increase in the prices of grain. However, it is hard to determine the exact cause by considering the available data. On the other hand, there wouldn't have been an exact cause. Because of the fact that, differentiated ratios led households to change their consumption patterns instead of purchasing for the more expensive one. To give an example, the price of firewood increased more than agricultural products in the early seventeenth century in England. As a response, producers who were using furnaces to make production have altered their technics. In brewing, coal, which was cheap, was widely substituted for wood fuel during the reigns of Elizabeth and her two successors, so that by 1637 only one of the five brew houses in Westminster had a log-burning furnace. (Nef, 1966: 213-214) The comparative prices were far different from the contemporary economies. Today's measure of value in terms of nutrition is protein rich foods whereas these goods have been preferred for their cheaper price in the late sixteenth century. As the price of bread apparently increased more than that of other foods, it is possible that the poor replaced bread, cakes and porridge to some extent by other kinds of nourishment, such as herrings, beef, mutton, eggs, cheese and small beer, which, unlike bread, could be had for much less money in Shakespeare's time than today (Judges, 1919: 384).

Eventually, different trends on price increases have encouraged people to adapt their habits. They have searched for alternatives to stay alive without making sacrifice. Although their standard of living was deteriorated by the increasing prices, they were able to find new ways to continue their routines. Here, the most significant case is the question of consumption habits. To find a convenient solution to this problem, price discrepancy – which is the main issue of this part – will be continued to analyze. Also, changes in the population level will be reconsidered to investigate the terms of trade among the agricultural and industrial realms.

In case of capital accumulation, consumption preferences which were explained in the previous paragraphs could misguide the topic. It is certain that the consumption of agricultural goods could not be utterly ceased. This substitution process was only a response to inflation and was not sustainable. All in all, aim of this remainder was to notice that real wage calculations should be based on different bundles of goods. At the same time, agricultural products were inputs for the husbandry. Therefore, it is futile to expect the sector to disappear. The mentioned response has helped the workers to prevent their real wages to decline more and more. This is important because the exaggerated effects of the Price Revolution on the industrialization of the European economies could be redefined by this way. Although the effort of this study is not to deny the consequences of the inflation, investigations on this issue points out the different variables. Hence, movements on the consumption patterns can be counted as a reliable indicator in explaining the welfare rates.

Also, deterioration of the welfare of the citizens was noticed by the state officials in the late sixteenth century. When the Tudor dynasty was on the throne in England, Queen Elizabeth has enacted certain laws for managing the poverty by the help of her ministers. To express an interesting point, the consumption of fish was encouraged by these laws. William Cecil, chief minister to Queen Elizabeth for nearly forty years, introduced a Bill to enjoin the eating of fish on certain days in order to restore the fish trade, which is known as “Cecil’s Fast” (Brewer, 1870). Eventually, prices of the consumption goods and wages have converged towards the middle of the seventeenth century. Also, the source of the poverty was searched in the population density and the growth of the cities during the Elizabethan age in England. Throughout Europe, too densely populated for its resources and no longer riding a wave of economic growth, even in Turkey, the trend was towards the pauperization of considerable masses of people in desperate need of daily bread (Braudel, 1972: 743). Consequently, terms of trade between the agricultural and industrial sectors will help us to analyze the capital accumulation in the following parts. The explanation of the growth of the capitalism seems as it can be found in this diversification.

Last but not the least, the relationship between the trade and the inflation would be an interesting point concerning the issue. The Mercantilist era was described in the first

chapter of this thesis before. The reason for this explanation was that these two topics could not be separated in this kind of analysis. However, they were neither the reason nor the result of each other. To summarize, Price Revolution was a fact during the age of discoveries which carried the economic structure to the Mercantilist era. Therefore, these two should be taken into consideration as continuous and interconnected cases while reading this study. On the other hand, the main topic of this work is not the age of Mercantilism. Contrarily, this era is just a fruitful tool to understand the effects of the significant increases on the price levels to the general environment. All in all, the aim of such kind of an introduction is to explain the altering trade activities. It is likely that there will be more than one reason – other reasons are as strong as the well-known primary reason – of the development of industrial capital. The early periods of Mercantilism – Bullionism – was trying to achieve the accumulation of the precious metals by imposing protective tariffs and trade restrictions which was explained before. Naturally, this process encouraged the monopolies and evolution of a beneficiary class. This structural transformation has pushed the prices up which has come as no surprise and worsened the conditions of artisans and craftsmen who had no privilege that was provided by the state. This step is crucial for the main idea of this thesis. Both increasing prices, altering balances of power and changing nature of the economic environment were transforming the continent. This structure were initially reasoned by the money demand of the European economies, resolution of the feudal relationships and increasing volume of the trade. Whereas the effects of the Price Revolution helped the privileged mass to maintain their places, circumstances led the economies to evolve on the behalf of these classes.

Eventually, it is understood that the effects of the inflation is not the only and the strongest reason for the economic transformation. Although it is one of the strongest determinants of the industrialization, the case is more than it is seen. This topic will be deciphered in the following part by considering the different variables.

3.2 FORMATION OF THE INDUSTRIAL CAPITAL

This part of the study is examining the effects of the price revolution to the economic transformation in general. For that reason, real wages of the workers were questioned in terms of increasing prices. The case of substitute goods was also mentioned to measure the real effects of the inflation in the realm of welfare levels. To clear the issue, the result that this study is trying to reach is not to underestimate the place of inflation – nearly about 500 % – in European economies. Contrarily, the place of the Price Revolution has been identified since the very beginning of the thesis. Although it was explained here that the Price Revolution has somewhere exaggerated effects, it obvious that it has deteriorated the conditions of the majority whereas its reasons were investigated during the previous paragraphs. The populations of the cities like London, Paris, Madrid and Venice have doubled – partly tripled – after the sixteenth century. Compared to the previous century, a more dependent society was created within the worsened circumstances. This fact was the beginning of the capital accumulation because the possession of the land was transformed. Price movements were just the initial part of this hand-over.

The validity of the traditional explanation on the industrialization with respect to Price Revolution was questioned before and the weakness of the theory was also mentioned. It is time to support the weak parts of Hamiltonian analysis. Worsening conditions of the labors, artisans and craftsmen were not only sourcing by the increasing prices, but also by the monopolistic applications of the states, pressure of the guilds and the political movements of the nobility. Guilds have played an important role in the capital accumulation process at this point. The most pervasive view, according to which craft guilds were primarily rent-seeking institutions, takes their regulations at face value and assumes that they acted as monopolists in political markets (Epstein, 1998: 686). With contemporary words, middle-class was impoverished by the stronger, privileged class after the sixteenth century mostly during the Queen Elizabeth's reign. While the source of accumulation is analyzed, the roots of it must be traced back. The essence of this primary accumulation is accordingly seen to consist, not simply in the transfer of property from an old class to a new class, even if this involved a concentration of property into fewer hands, but the transfer of property from small owners to the

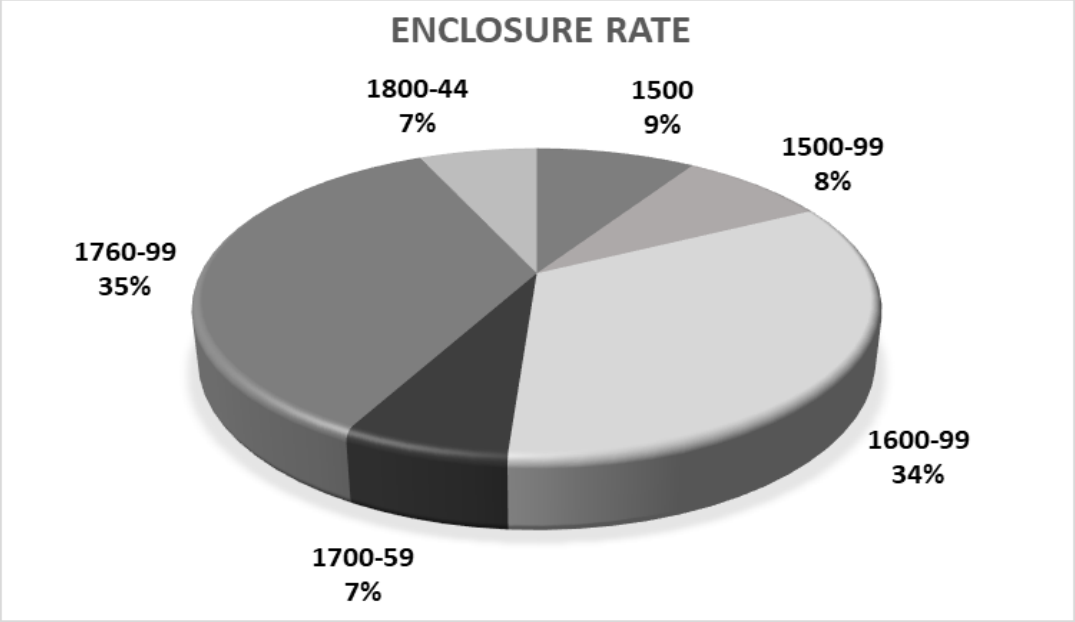
ascendant bourgeoisie and the consequent pauperization of the former (Dobb, 1946: 185). Consequently, roots of the industrialization – thereafter the evolution of the capitalism – can be found in these economic transformations. Price Revolution is no doubt a meaningful determinant in the frame of this process. However, this phenomenon is limited to explain the whole period.

To turn back to the initial discussion, abandonment of pastoral areas within the growth of the trade and dissolution of the feudal ties pushed the feudal lords – former lords – in the worse conditions. As a result, they have lost their former dominancy over the lands through the end of the fifteenth century. Peasants were choosing to live in the cities for the so-called better conditions they have gotten in return. Population was in an increasing trend in the beginnings of the sixteenth century but even this tendency was not strong enough to compensate the need for labor in the rural areas. The conditions of rural areas were vicious. Since there were lesser population in the neighborhood, circumstances in the country side were far different from a century before. Moreover, limited population in the rural areas has led the lands to be used as commons and as private property by the peasants. In England, state regulations have aimed to prevent this idleness in case of land usage after the late fifteenth century which is called the Enclosure Movements today. However, the excess supply of the lands – also the limited demand for the lands – lowered the price of the soil. On the other hand, the lack of agricultural worker forced the wages to go up which have made the agricultural production less profitable during this period. Land was plentiful, rents were low, and capital equipment was available in excess of their requirements and it is noticeable that up to 1520 few tenants complained of engrossing or enclosing in the area of England covered by the Acts (Blanchard, 1970:438). However, the conditions has been changed by the economic and demographic factors after the middle of the sixteenth century. Population growth, enactments of the state and the expansion of the economy have both affected the wages, rents and prices towards the seventeenth century. Rents of pasture in the north continued to rise but at a very slow rate; in the predominantly arable areas of England vacant holdings were now taken up by tenants, and rents and entry fines on new lettings rose as the population seems to have grown (Blanchard, 1970: 439). This period has evolved parallel to precious metal inflow and the Price Revolution. However, it is proper to consider this intersection as the outcome of the age rather than trying to

match these two facts as the reasons or results of each other. Therefore, the conditions of the general economy have been tried to discourse here.

To continue with the Enclosure Movements in England, it is possible to see the effects of the state regulations – Act of Parliament – to the share of the agricultural lands in the Graph 3.1 by considering the data of Leicestershire[6]. Meanwhile, it is important to note that whole enclosures were not made officially. Some of them was made via private agreements as well. New formation of lands have consisted of three groups. These were the landlord – different from the feudal landlord for sure – capitalist farmers and agricultural workers.

Graph 3.1 Percentage of Enclosure in Leicestershire, 1500-1844



Source: Tate, 1978:153-159

[6] Leicestershire is taken as the sample because this county was one of the important agricultural towns in England during the stated times. The application of the Enclosures may differ in some regions. Data was compiled by Wordie with respect to the work of Tate and Turner.

Here the relationship between the Enclosure Movements and the general economic pattern is summarized as a reciprocal movement of the developments of the age. The enclosure movement was revived again only towards the end of the sixteenth century, in association with rising prices, a growing population, and the spread of convertible husbandry (Wordie, 1983: 492). Also according to the graph, the amount of the enclosure acts – or enforcements – has significantly risen after the beginnings of the seventeenth century. Upward trend in the general prices, especially in the prices of the agricultural goods as it was shown before, stimulated the privileged class to use common lands as their property to take place in the agricultural production by the help of the Parliament. Increasing profits in agriculture, decreasing supply of lands and prices have pushed the rents up. It should be remembered that rents rose very rapidly after enclosure-from 300 to 400 per cent (Chambers, 1940: 123). On the other hand, the consequences of the increasing rents can be found again in the prices. Rents were, and still, one of the cost accounts of the agricultural products. Therefore, expenditures on the rents were compensated by the selling prices which has soared up the prices in return. Consequently, the road for the capital accumulation in agriculture was opened. Lands were now controlling by a relatively lower numbers of certain people – landlords – within the enclosure. Agricultural workers were working for the salary that have been paid by the capitalist farmers on the lands where once upon a time the workers have possessed. Hence, the transformation of the lands has increased the production. Landowners knew that enclosed farms yielded much higher rents than did open field ones, and while they recognized the relevance to the increased rent of more profitable farming, usually they saw enclosure not so much as an advance in agricultural techniques than as a highly profitable investment in financial assets (Chambers & Mingway, 1966: 84). This was the pattern that was feeding the capitalism in the seventeenth century.

Putting emphasis on the Enclosure Movements and the role of the lands does not mean that this study has completed the discussions on the Mercantilism. The source of the value was still foreign trade. However, the Enclosure Movement should be thought as a reflection of the protectionist state implementations and its regulations as well because impositions of the land structure have accelerated the amount of the enclosures towards the end of the sixteenth century. Moreover, the ratios that were shown on the previous

graph tell us that England increased her monopolistic applications not only in the field of trade, but also in the realm of agriculture. Although the method she has followed on the lands was different from the regulations that were imposed on the overseas trade, both of them have relied on privileges that were provided to a beneficiary class. The question that should be asked here is whether the capital was transferred to industrial sector. To find a proper answer to this question, technological improvements and changing industrial – manufactural – production methods in the same era will be explained in the future analysis.

A long dispute has been made on the transitions between the sectors with respect to their fields among the economic historians for decades. The problem of the creation of capital occupies an outstanding place in this sequence. Hence, roots of the industrialization are necessary to be sought at this stage. The beginnings of this period was generally attributed to increasing prices, enriching European treasuries, declining real wages and rising urbanization. However, this study has been stressing the different aspects of the era by referencing the contemporary literature. Consequently, the early stages of the industrialization process is taken into account.

The notion of proto-industrialization was used by Mendels in order to define the period before the industrialization. According to Mendels' view, the era of proto-industrialization emerged as a response to the continuity problem in the realm of agricultural employment. Since the rural productivity mainly depends on the climatic circumstances, the problem of seasonal unemployment was faced by the agricultural workers. Meanwhile, the majority of the European population were still engaged in rural works even though the urbanization was increasing. On the other hand, seasonal shifts has generated the problem of underemployment. This resulted in the remarkable paradox that even areas with high population density and various other symptoms of population pressure experienced the annual dilemma of the summer crisis—the shortage of harvest labor (Mendels, 1972: 242). Consequently, industrial technology was emphasized to regulate the disorganized work patterns in rural areas. This form of industrialization could not be thought without rural economy. The central feature of proto-industrialization was the growth within that region of rural industry involving peasant participation in handicraft production for the market (Coleman, 1983: 436).

Therefore, the process of capital accumulation in the realm of industry did not occur abruptly. Also, tightening the range as the sectoral accumulation would be a reductionist method. The relationship between rural development and industrial revolution is important as it is seen from the links.

To continue with the long-run consequences of the Enclosure Movements, even though effects are not clear among the economic historians, Mendels attributes a significant role to that period. Workers became increasingly dependent on employers who controlled raw material supplies and markets and who often owned the tools and equipment. This dependence was hastened by increasing landlessness (Hudson, 1990: 2). Rural manufacture evolved with its own unique stages. Therefore, social conjuncture should be carefully read instead of just putting a single economic phenomenon into the center. A landless working class has caused a radical change in the economic relations after the middle of the seventeenth century. At the same time, increasing population accelerated the level of labor supply which gave landowners and merchants an incentive to keep the wages constant, even to decrease. On the other hand, proto-industrialization had created an accumulation of capital in the hands of merchant entrepreneurs, making possible the adoption of machine industry with its relatively higher capital costs (Mendels, 1972: 244). Since the targeted market place was abroad in this form, mercantilist exercises have experienced an efficient period. Thus, Mendels considers this structure as the phase of capital accumulation which then would carry the economic relations to the age of industrial revolution. According to this view, the key for capital accumulation is the economic environment, demographic shifts rather than just prices. Consequently, it is a compatible explanation with the direction of this thesis. However, this is not the strict cause for the industrialization. The development of proto-industry required not only a certain loosening of feudal ties, but it also advanced their disintegration. (Kriedte, Medick, & Schlumbohm, 1983). It can be said that, proto-industrialization is a transition between the traditional feudal structures of the middle age and the nineteenth century's industrial patterns. All in all, the place of the urban manufactures, putting-out economy and guilds in the production process must not be underestimated. For that reason, it should not be failed to notice that the intention of this part is to focus on the role of the rural side of the economy. Hence a better perception can be created on the background of the capital accumulation.

Another important aspect of the explanations made on the proto-industrial production is the effects of this kind of a structure to the population growth. It is known that after the early seventeenth century a significant increase was observed both in the urban and agrarian population. Whereas the urban population was also fed by the migration from the rural areas toward the end of the sixteenth century, the population rise in the agrarian regions triggered by the manufactural expansion after the middle of the seventeenth century which has provided better foodstuffs to the neighborhood.

In addition to the population analysis, price inflation was the necessary element of the case of industrialization. As it was deducted from the previous chapters, the inflation – reasons of the fact were explained as well – has caused the real wages of the workers to decline and provided capital owners – in post-medieval sense – more profitable sales for a while. However, industrialization needs more of it. Although the price inflation helped the manufacturers and landowners to accumulate wealth, this process was not sustainable. Countries need more than a few privileged wealthy tradesmen to build an industrialized, prosperous environment. Therefore, long-term developments like urbanization, merchant activities, the role of the guilds, regulations on the agriculture, the evolution of the rural industries, etc. have been tried to analyze deeply in this section. Finally, a stronger base has been constructed to explain the industrialization of European economies and to reach consistent conclusions related with the Price Revolution.

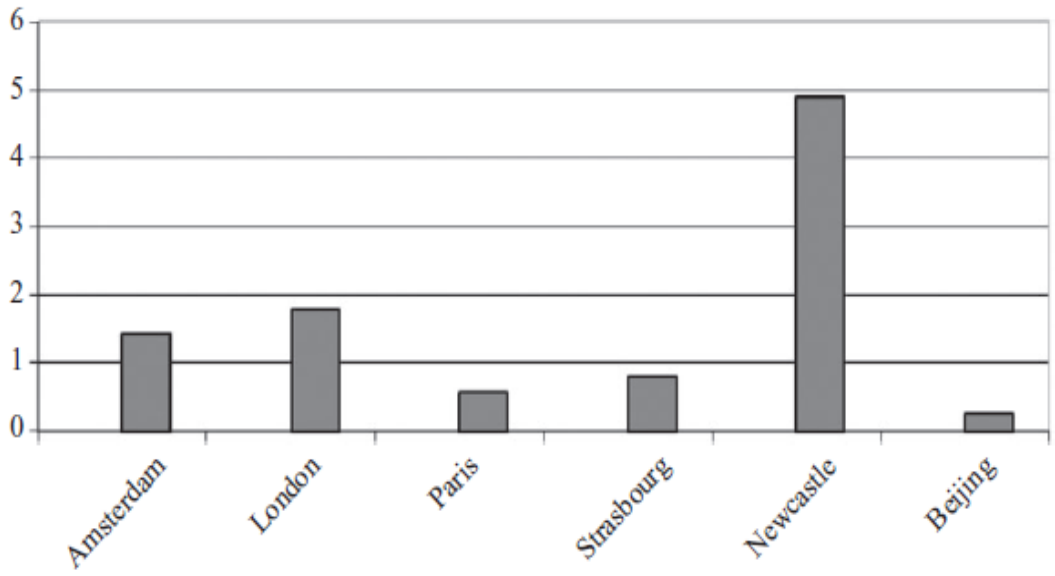
3.3 THE EMERGENCE OF THE INDUSTRIAL REVOLUTION: THE EFFECT OF WAGES AND ENERGY PRICES

First of all, the intention of this study is not to be a part of the debates that have been made on the definition of the industrial revolution. Shortly, it is not aimed to decide whether the mentioned period was a revolution or not. However, it is explicit that the industrial boom did not occur in one night. A period of two hundred years has been investigated up to here. Eventually, some results – which have stronger explanatory powers – have revealed. Nevertheless, this period will be named as Industrial Revolution to be compatible with the literature and to prevent possible misunderstandings on meaning. In the meantime, the early eighteenth and nineteenth centuries are referred by the age of industrial revolution. These were the ages that

England and France were struggling to announce the priority in the seas both for the security concerns and trade issues. Even though the English supremacy would be accepted during the following decades, competition among these two countries on military, economic and social developments has continued.

Sources of the Industrial Revolution has been searched among the cultural, climatic and constitutional differences among the European countries by economists, historians and economic historians. There is a tendency towards relating the economic prosperity to the geographical conditions. This is a common attitude even among the scholars. However, fundamental economic variables should take primary place in explaining the real side of the economy.

Graph 3.2 Wage Rate/Price of Energy

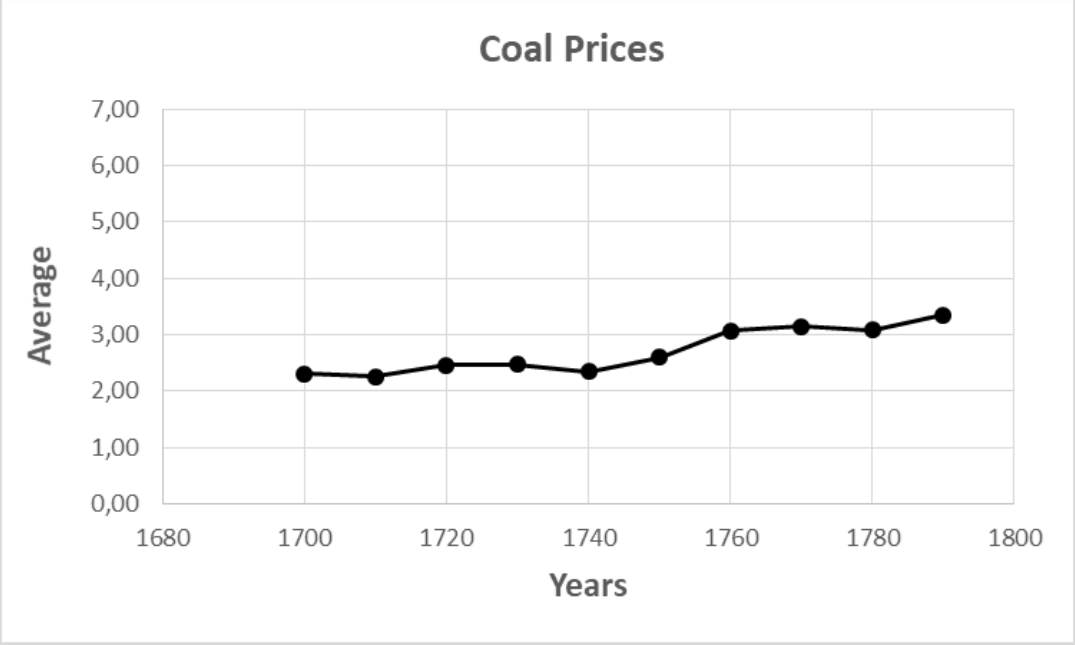


Source: Allen, 2011: 361

Graph 3.2 shows the wage rates relative to the price of energy as grams of silver in various cities in eighteenth century. Coal, charcoal and firewood are meant by energy in this figure. However, an important question arises after taking the first look to the graph. It seen that the highest ratios can be observed from the columns of London and

Newcastle. On the other hand, it cannot be extracted that whether these ratios are the results of wage rates or energy prices by just considering the ratios of this figure. One would expect that if w/p[7] ratio is high, this is because the wages are high, or prices are low, or both. In this case, last option reflects the truth. Recall the Graph 2.3 from this study, it is seen that real wages in England were in a rising fashion after the middle of the seventeenth century until the end of the eighteenth century. Although the Graph gives information about real wages of building laborers, it is a useful reference to make predictions about the general wage level of the economy when the transitivity of the labor market is paid attention. Also, it should be taken into consideration that general price level in Europe was higher than the period of Price Revolution.[8] Therefore, it can be concluded that one of the reasons of high w/p was again high nominal wages of English labor market with compared to France and other industrializing countries.

Graph 3.3 Pithead Coal Prices in the Northeast, 1700-1790 (Shilling/Tons)



Source: Clark & Jacks, 2007: 44-45

[7] This ratio was constructed by the nominal wage of the laborers and the general price level of the coal, charcoal and firewood per BTUs (British Termal Units). This calculation should not be confused with the real wage ratio.

[8] See Graph 2.1

On the other hand, impact of energy price in England is increasing the ratio because of the abundance of the fossil fuel. As well as the abundance of the mines, low extraction costs as a result of the depth of the stratum contributed the usage of the fossil fuels in production process and the price of coal has stayed nearly the same for a century despite the increasing demand during the era of Industrial Revolution. Accordingly, Graph 3.3 obviously shows this fact. It can be observed that there was approximately thirty-percent inflation in the energy prices in a hundred-year period. This ratio is a drop in the ocean with compared to nearly five hundred-percent increase in the commodity prices during the age of Price Revolution. However, the aim of this connection is not to attribute the industrialization to the gap between the input and output prices. This example is only given to make comparison between the inflation rates to measure the impact of the input prices. To do so, the nature of industrial revolution can be separated from the geographical advantages, so-called cultural supremacy, manner of the societies etc. Hence, an explanation based on the economic notions can be done with respect to the capital accumulation in advance. It is easier to understand why the industrial revolution happened in eighteenth-century Britain if we compare wage rates and energy prices in the leading economies of the day. In these comparisons, Britain stands out as a high-wage, cheap-energy economy (Allen, 2011: 359). In this respect, it should not be forgotten that industrial environment was the result of a two-hundred-years of preparation and capital accumulation process that was explained in the previous parts as well.

To continue with the other industrial regions, France fills a significant place in the realm of public developments. Jean-Baptiste Colbert, who was the Minister of Finances of France, set a series of regulations concerning the economic and administrative fields to provide standardization for keeping pace with the industrial – a primitive form of industrial production for sure – production type which then would be named as Colbertism. The heart of fiscal policy (and the heart of Colbertism generally) is the effort to increase royal revenues in-directly, through economic improvements (Wolfe, 1966: 476). As well as the effort was to maintain fiscal side of the economy, France’s financial policy aimed to increase the profits of the producers and merchants by the

control of the state. This purpose was exercised in accordance with the Mercantilist policies of the age.

On the other hand, Colbertism was not an invention, or a gift. Although the regulations was implemented by Jean-Baptiste Colbert, need for such developments was reflection of the state structure. Social evolution of these improvements can be seen as the result of the competition among the European countries on capital accumulation and trade. To continue with the industrialization period of France, sectoral distribution was denser than the British economy in the late seventeenth century. According to Graph 2.5, population in Paris was obviously higher than London around seventeenth century which can be considered as an indicator of the manufacture and trade based economic environment. At the same time, technologic improvements in France were too frequent to underestimate. We see that in the first half of the eighteenth century there were more patents granted in France than England, despite a legal situation making it likely that patent statistics understate French relative to English inventiveness (Crafts, 1977: 439). Consequently, perception on the absence of the technological curiosity, ignorance of the state, culture, and geographical advantage – these two countries were neighbors as they are now – etc. can be eliminated from this dispute again. So, what was missing in the industrialization path of France? The answer lies probably behind the previous debate which was turning around wages and prices.

Real wage structure and energy prices must be reexamined for making such an analysis like it was made on England in this chapter before. To evaluate the Graph 2.3 in this respect, it is seen that real wages in Paris were lower than London average despite the higher prices of London approximately during the same period according to Graph 2.1. One can expect that higher prices should lead lower real wages as economic historians have expected before and their analysis has ended up with the notion of profit inflation. However, the essence of the topic relies on different perspectives. High prices and high real wages here can be explained by high nominal wages. Eventually, high nominal wages can be explained by low input costs. According to Graph 3.2, Paris stays stands apart with its outstanding rate of real wage/energy price despite its lower nominal wage levels. Therefore, it can be concluded that energy prices in France have prevented this

state to enter in a competitive production struggle with England towards the end of the eighteenth century.

Finally, the effects – the magnitude in other words – of the Price Revolution was tried to be emphasized, analyzed and explained in this part. In addition to the consequences of the price inflation reflected to the economies, real variables were tried to be pointed out in this section. The appearance of capitalism required a far more complex mechanism than the simple influence of American bullion on European prices. History does not start with Christopher Columbus (Vilar, 1956: 31). After a period of sectoral capital accumulation, alteration of the economic activities, production methods and socio-cultural patterns have taken their latest shape. Therefore, the last step of the industrialization was associated with contemporary variables like real wages, energy prices and sectoral diversities. Consequently, it is believed in this work that a more realistic – concrete – template has been constructed. To get rid of tautology, final evaluations are left for the last chapter of this study.

3.4 THE EFFECT OF THE PRICE REVOLUTION TO THE EUROPEAN SOCIAL TRANSFORMATION

An investigation effort on the historical transformations becomes harder when the objective case has more than one significant consequence. In this story, main issue – the Price Revolution – includes more than one reason and has several important results. In other words, core topic of this thesis is subject to unique milestones. The answers to the questions of whether these significant transformations were related with the inflation, the magnitude of price surge on the purchasing power, etc. were given as far as the collected data enabled us to make a consistent analysis in the second and third parts. On the other hand, the determinants of the Price Revolution were examined with respect to metal inflow, mining activities, state policies and population growth. As it is remembered, the last of the listed reasons has carried the issue to the monetization of economies through trade. Although the synonym of the monetization is not trade, the process was mainly conducted by improving trade relations as it was focused at the beginning of this study. Therefore, this realm has opened field for this thesis to combine dissolution of feudalist ties, urbanization and enclosure movements. All in all, as the

title of this section points out that the role of the Price Revolution in the European history can be summarized with respect to the analysis that has been made up to here.

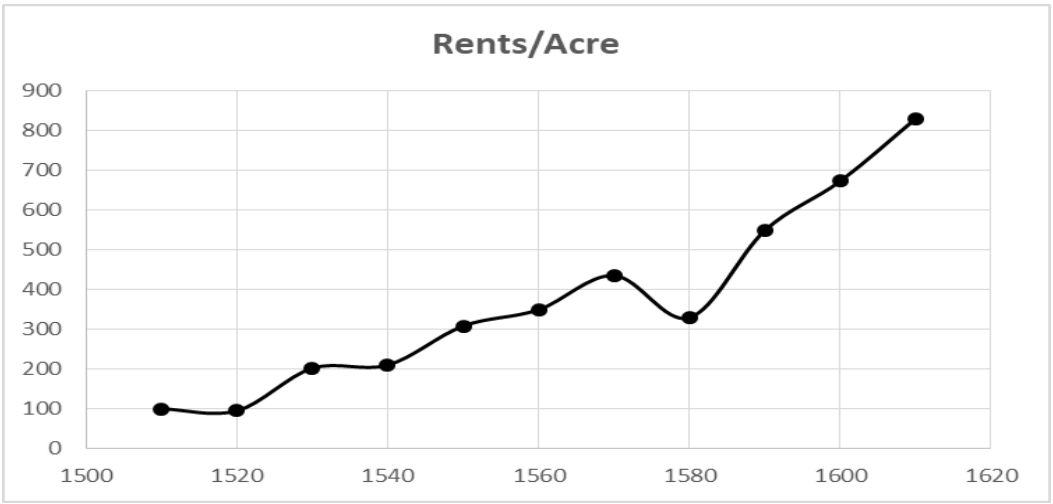
First of all, the relationship between velocity of money and the prices which was explained under the previous titles paved the way for making an analysis that put the demand into center. Even though the conclusion of this study does not support the explanatory power of the quantity theory of money on the inflation in the long run, it provides some clues about the demand as an economic variable. Velocity as an unstable element and its year by year growth gives us a reason to correlate the demand with the price inflation apart from the other explanations that were emphasized before. Although the sixteenth and seventeenth centuries are still immature periods to talk about the law of supply and demand, it –the demand as a variable– will be a strong tool to explain the transformation of economies by considering the social features in the future analysis of this part. If the demand has the power in the economy as a price-determining factor, this will lead an economist to consider the social relations with respect to both classes and individuals. Therefore, it is worth to touch societal changes especially in England in this section.

It can be recalled from the beginnings of the third chapter of this thesis that the farmers was forced to abandon their own lands during the Enclosure Movements from 16th to 18th Centuries. This exercise may be evaluated as it has fully worsened the conditions of the rural class with respect to circumstances. They have started to move newly developing cities which had infrastructure problems, left their neighborhoods and lives behind. On the other hand, aristocrats, capitalist landlords and a privileged class have gained the right to harvest their lands by hiring the people who had possessed them before. However, mentioned harvest process mostly made by renting these lands to the farmers by the landlords. It is important to note here that this rental process depended on monetary relationships different from feudalism. Thus, the main case of this study –inflation– takes the role here. The effect of Price Revolution in the industrialization is explained in the previous parts and concluded that it has an exaggerated effect on transformation of economies especially when the purchasing power of people, alternative consumption goods and discrepancies between the prices of industrial and agricultural goods is taken into account. However, it seems like the inflation of

sixteenth century had a meaningful effect on the transformation of classes with respect to prices and level of rents.

Conversion of the nature of rent from labor services to commodity or monetary rents was one of the milestones in the dissolution of manorial economy (Üşür, 1990: 167). Monetization of the economies was pressuring the power of manorial lords. Instead of labor service, they started to demand their rents as money towards the end of the fifteenth century. However, traditional rental contracts were not able to follow the inflation. Rents have stayed strictly stable for a quite long period that it could only be spoken of customary rent levels that had been existed for a long time (Hill, 1983: 27). This stability was sourcing from the absence of the market economy. Inflation was not a fact, or a natural phenomenon until the 16th century even though the price increase had showed itself before. However, significant rises occurred during this period which have diminished the real value of stable rents. Consequently, this case explicitly effected the income distribution as well as the classes. Long term rental agreements – utterly based on abstract compromises – have caused the living standards of landed aristocracy to be worsened. Their real income – welfare – was demolished as a result of increasing prices in a hundred-year period after the sixteenth century (Lamond, 1929: 40-41). Although it was an observable fact until the middle of the sixteenth century, steep rises can be followed as well after this date in order to reach a confidential end.

Graph 3.4 Rents per Acre, Herbert Estates 1500-1600

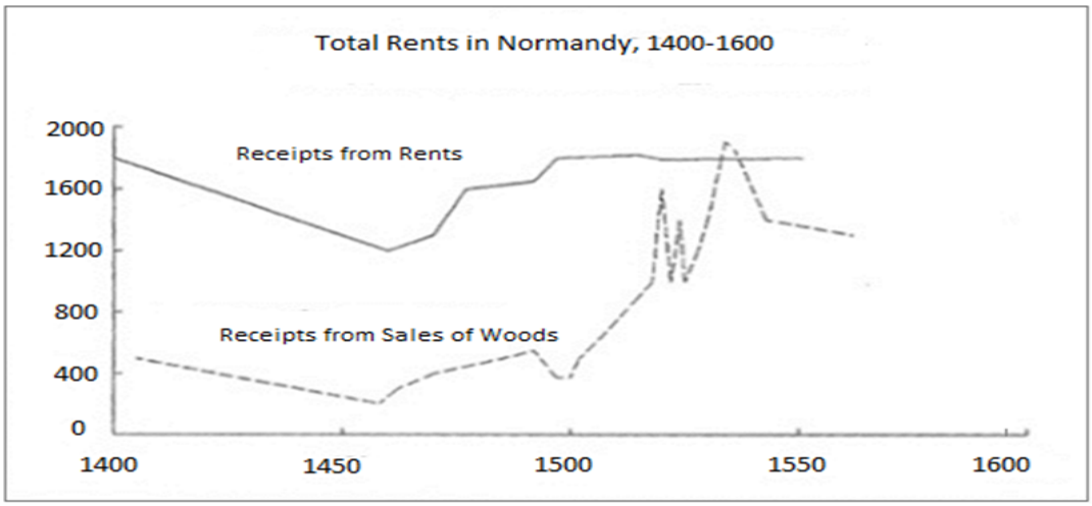


Source: Kerridge, 1953: 216-217

Graph 3.4 tells us that the stability of rent levels could not be attributed to the whole century. It is shown in the first forty years of the period that there were not steep increases. Also, there were even declines. The trend line of this era is flatter than the latter part. After 1640, a steeper increase is seen but this fashion was in accordance with the inflation trend. Therefore, only in the first period of the century – also during the end of the fifteenth century – the standards of the landlords might have been worsened. After this period the gap was closed and normalization period among prices and rents was maintained. However, decline of the manorial economy has started while the Enclosure Movements were transforming the land structure and social order as well. The importance of inflation is realized with respect to these transformations. It was no doubt a triggering fact as it can be concluded from the detections above.

As the inflationist era both experienced by the western states of Europe, investigating the rents in France will be helpful to making comparisons among them. It is already given the price data that inflation was a concurrent fact – if the small time gaps are ignored – between both countries in Europe. At the same time, economic activity and social developments were nearly consistent with each other. Therefore, interpreting only the data of a single country may lead questions regarding this trend. For this reason, level of the rents in France towards the middle of the sixteenth century is given in the Graph 3.5.

Graph 3.5 Total Rent in Livres, France 1400-1600



Source: Fischer D. H., 1996: 52

The trends of the receipts from sales of woods and rents are both given in the graph. This situation makes it possible to compare a price line with rent fashion of the age. This graph's focus is not based on a specific commodity's price level for sure. However, convergence period of these two series contains some specific answers to the relationship between rents and prices. First of all, the level of rents in France enters in a stable fashion towards the end of the fifteenth century as the data collected from English lands and keeps consistent with the trend until the end of the sixteenth century. On the other hand, receipts from sales of woods steeply increases after the beginning of the sixteenth century and makes peak around 1540s. The time which the magnitude of inflation was started to be felt in other European countries as well. At the same time, this is the date that English land rents start following this increase which can be extracted from the previous graph. Consequently, it can be said that the inflation has worsened the conditions of land owners until the middle of the sixteenth century in both England and France by considering the data of these two figures. After this point, the situation of land owners stabilized as it was stated before. Although the rents and prices helps their conditions to be stabilized, this real income deterioration has once left these classes worse-off. Together with the enclosures, social and economic transformations have begun. If there was a significant transformation that exists in the history of European agriculture, this was the big enclosure movement that was happened around the England approximately from the early fifteenth century to the first period of nineteenth century, which paved the way the individualism to develop in agriculture and mainly caused the removal of mutual responsibilities (Bloch, 1967: 49). Individualism is the key word in this sentence because the actual purpose of the study is to emphasize the capitalism's evolution. The transformation of economies which were supported by enclosures would cause the dominant class to change in the future. All in all, this process would trigger the economic transformation Europe. The importance of the prices – the inflation – shows itself as an indicator and a reflection of the social and economic transformation here. However, it is not tried to be said that the only single cause is the period of Price Revolution. The role, place and weight of this case has been focused from the beginning of this work. Price Revolution was widely explained in the previous chapters because this study has started with claim that the inflation was the

most important reason of the industrial revolution. Therefore, an answer was tried to be given to this claim in the last two chapters. Finally, a more meaningful analysis – according to structure of this thesis – has been made under this title. To eliminate the confusions, the aim of this part was not to repeat the transformation process. Contrarily, the aim of this part was to explain the main conclusions of this study after making a technical investigation on the notion of the Price Revolution. At the same time, roots of the market economy was tried to be pointed out by referencing demand based price fluctuations at the beginning of the section.

CONCLUSION

A dominant idea must have been formed up to this section about the weight of the Price Revolution in the historical context. Therefore, some of the crucial points are going to be hammered home instead of regenerating a conclusion.

This thesis have created to reevaluate the claim that the Price Revolution was the beginning of the industrial profits. In addition, this idea was put forward to explain the relationship between real wages and industrialization. On the other hand, reasons of the inflation – the Price Revolution – were reduced to silver flow in general until the end of the 20th Century research.

First of all, the transformation period, which would be turned back towards the end of the study, was scrutinized to construct a general view on the social ties. Monetization process of simple local trade relations were analyzed. Consequently, population growth and demographic changes were emphasized in the second chapter. Graphical analysis with respect to fluctuations let us make evaluations on the periodic effects. This approach has taken the case to the quantity theory of money. The impossibility of the theory's feasibility while making a historical analysis was offered by referencing contemporary studies. Secondly, the trend line of the real wages with respect to different sectors around the age of price revolution was investigated to decipher the notion of industrial profit. As a result, a continuous correlation could not be detected between the real wages and profits. On the top of that, significant increases in the real wages observed at the beginning of capitalist organization in England. However, this conclusion should not be perceived as a denial of the worsened conditions of working class during the golden ages of mass production. It is important to point out that only the causes and beginnings are tried to be analyzed in this study. At the same time, there is no doubt that these cases have effects on the transformation of production methods but the intention of this work is to emphasize that each of these facts are not strong enough to be defined as the main causes of the change. To recall the case of the industrial profits, excess profits can be only obtained by an abnormal increase in the prices of industrial goods whereas nominal wages stay constant. However, this kind of a profit could be followed in the agricultural field instead of industry according to the

price range that was given in the second chapter. This data set suggests that there was a steeper rise in the prices of agricultural goods which may prevent industrial surplus accumulation with compared to agriculture. Therefore, it was showed once again that inflation should have analyzed sector by sector to get rid of misdirection. It is obvious that there is an opportunity that industrial sector was not affected by the prices. However, this is not one of the conclusions of this work. It is tried to be emphasized that sectoral divergence may be misleading while analyzing the consequences of an inflationist period. This is one of the undesired results of generalization because in order to reach a general conclusion about inflation, the good bundle in case must comprehend various types of commodities. Eventually, a more consistent analysis was made with respect to stated scholars and contemporary studies in this case.

To continue with the topics that were handled in the third chapter, the effects of the price revolution in the welfare measurement can be traced by the help of various indicators. One of the most important of these indicators was the distribution of consumption habits among the nutrition goods. A table of inflation rate with respect to some sort of consumption goods was given for analyzing the possible alternative commodities, substitute goods in other words. It was observed from the table that increasing levels were not the same for all nutrition goods during the price revolution. Hence, a possibility have risen that the welfare diminishing effect of inflation might not as strong as it had been anticipated. In addition to the price discrepancy between the sectors, it was seen that differences in between the similar kinds of good's prices should be taken into account for measuring the real effects of the inflation when the case is purchasing power via real wages. All in all, the case of proto-industrialization was mentioned in order to explain the formation of industrial capital with respect to accumulation of agricultural capital. Therefore, the period of enclosure movements was handled. At the same time, these explanations was preparing the roots of the final chapter. Last but not the least, the impact of the energy prices as an input was scrutinized to evaluate the evolution of the industry in Western Europe. Coal was chosen as the energy input during this investigation. The rate of wages with respect to energy prices was used as the main data in the end of the third chapter. Since the costs are the conducting factor of production process, a different account was used in addition to labor costs. Purpose of this intention was to show that the development of industry

have not been depended on just one kind of cost. Thus, constructing an explanation that is based only on the real wages should be avoided in this respect. As a result, the regions with highest wage/coal price ratios matched with the places that have highest industrial production according to the data collected from the referenced sources. Hence, a different motivation was added to the case of industrial revolution in this study.

Finally, the social dimension was taken into consideration as it had been introduced in the beginning of the study. Economic developments had better be traced back by social transformations because any kind of progress initially starts at people's minds. People decides how to live, how to work, how to feed and struggle for it. For this reason, the effects of price revolution were tried be found out in this process. Actually, this was not a kind of racket effect. Improvement of trade relations, increasing population, increasing demand, debasements and supply of precious metals have both stimulated the prices. On the other hand, increasing prices encouraged the development of trade, monetization of rural economies and dissolution of feudal structure. Consequently, first examples of profit based production, private property ownership by enclosures and industrial production were revealed. It is important to note that, this period have carried the English and French people to the revolution in seventeenth and eighteenth century respectively. To summarize it briefly, this interpretation is that the English Revolution of 1640-60 was a great social movement like the French Revolution of 1789. An old feudal order which was protected by the state power was violently overthrown, power passed into the hands of a new class, so that the freer development of capitalism was made possible. All in all, this process has significantly begun with the increasing gap between the prices and rents as it was explained in the very beginning of this chapter. After the limited weight of inflation in the industrialization of European economies was explained, the significance of this phenomenon in the social change should be paid attention. It is for sure that there was not such an event in the history that has occurred by a single cause. To conclude, it is important to point out the strongest reasons like this rent deterioration in order to analyze a fact.

To speak of the story of this thesis, a blur period – still most of the economic historians today doubtfully deal with the case – of the field of economic history was initiated to be researched. The reason for this effort was to reorganize the claims and scrutinize the case as far as possible. Since the notion of Price Revolution is asserted to the geographical discoveries, also to the specie flow, the period in question has strong ties with the transformation of European economic and social structure. Therefore, an investigation priority was given to this realm.

The answer that has been tried to be given to the questions of that age in this thesis is not a bundle of strict conclusions. As it could be noticed that, this study is a filter to the de facto arguments that were generated during the research history. However, this thesis has never aimed to underestimate the valuable works of important researchers, fellows, scientist and authors. Science is progressive and every decade there may be changes in data, analysis and methods. Therefore, main intention was to touch the common, and partially inconsistent, beliefs in order to prevent misunderstandings about the capitalist development regarding inflation. Consequently, a variety of data sets was used to explain – in order to support or to reject – the effect of the inflation to the industrialization period. On the other hand, instead of econometric research, data sets was interpreted and compared with each other to reach a consistent conclusion while working on the case. Movements were analyzed on the graphs with respect to the mentioned data sets as well.

After a wide-ranging research was made on the issue, it was concluded that price revolution was the result of many different variables such as increasing population – the concept of velocity – state's fiscal precautions, demand – as a result of the increasing population, development of trade relations and weakening feudal ties–, and specie flow. It was shown that, it is futile to explain the notion of inflation by only money supply, population or increasing market relations in the historical context. The effects of both variables is mentioned. Consequently, it was reached that changes in that variables were consistent with the price data. Hence, every element that was given above has a stimulating effect on the inflation. On the other hand, the limited effect of inflation in the industrialization period was stated. The relationship between the energy prices as an account of costs, enclosure movements – as a primitive form of private property

ownership – and the industrialization was analyzed. Eventually, these concepts' accelerating role in the industrialization was emphasized. Finally, it was offered that the source of all these transformations should be searched in the transformation of society. The reason for this transformation was initially given as the increasing prices and constant rents until 1540s. Which was the wider explanation of the case that was focused in the first chapter. This transformation was handled in in the last part of this study because it was thought that a wider analysis based on the society's economic transformation can be made after eliminating technical suspects on the effects of the inflation. The collapse of the feudalism, changing role of classes, and the stated economic developments paved the way for capitalism to develop. In conclusion, a photograph which includes all possible economic and social indicators was taken in this thesis.

Last but not the least, this study can be improved by more reliable data and econometric analysis in the future. Since it is hard to get yearly data regarding the sixteenth and seventeenth centuries, it becomes a complex situation when the case comes to make tests. There may be weaknesses in this study for sure. However, these deficiencies should be evaluated by considering the period of the main subject. It hardly need to be said that there are no short cuts in the study of early modern agrarian history and that much more detailed work is needed for the formation of necessarily complex final conclusions. (Kerridge, 1953: 226)

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