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THE FIRST INDUSTRIAL REVOLUTION AND GENERAL FEATURES OF THE WORLD ECONOMY BETWEEN THE 16TH CENTURY AND 1780

Study

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Abstract

The present study is the fruit of the research and represents a very small part of a serious and of reference work called Economic History, that stretches temporally, over a period, starting from the oldest times, until Romania's accession to the European Union. The main purpose, stated, is not to list facts in chronological order, but to bring to light, relevant aspects from which to draw pertinent conclusions to become a guideline on the aspects faced by human communities, in everyday life, about what can happen in a society, over time. The First Industrial Revolution, with its beginnings, is a great landmark in the fundamental becoming of the human society. The research methods used are mainly, the deductive (hypothetical-deductive) and the analogy, also, the objectivity and the goal I pursue is truth. In fact, in the present study, we have briefly debated, two complementary aspects, namely, the roots of the first industrial revolution, in its beginning stage and then, the general features of the global economy, as a result of the revolution.

INTRODUCTION

The First Industrial Revolution General features of the world economy between the sixteenth century and 1780 The roots of the first industrial revolution, date from the Middle Ages. The 11th, 12th and 13th centuries created a technology on which the industrial revolution of the eighteenth century was impetuously based. Discoveries of the Renaissance period played a limited role in the industrial expansion of England in the eighteenth and nineteenth centuries. In Europe, the Middle Ages developed the use of machinery in all fields, more than any other civilization. It is one of the decisive factors of the preeminence of the Western hemisphere over the rest of the world. Although antiquity knew the machines, they were used, but limited, utilizing the gear, especially to animate the toys and robots. Medieval society has replaced manual work, often forced, of the slaves, by machines.

RIVER ENERGY AND WATER MILLS

These machines were, not foreign, either to townsman or to the villager. One, like the other, had at their gate a "medieval plant" - a mill (of water, wind or tidal). The townsman could distinguish, from the height of the nearest bridge, through the canal or river, various types of hydraulic mills, some built on the shore, others fixed in full current or on the arcades of the bridge. In the village, the peasant saw himself, rising over the river, a dam capable to produce a drop of water, sufficient to drive the wheels of the local mill. These "factories" became in the Middle Ages, a contact and meeting place, especially wheat mills, where townspeople and villagers met when they came to grind grains. Those who gathered at the mill were numerous at the waiting queues long. The prostitutes circulated through the crowd, recruiting their clientele. In the 12th century, St. Bernard, scandalized by this aspect, threatened to close down the mills. If he had put his threat into practice, he could have hindered Europe's economic development. Somewhat, the decision would have been comparable with that of Arab Heads of State, which on 1973 raised the price of crude oil and imposed the embargo on its exports, to certain Western countries, which slowed the industrial expansion of the West (Sédillot, 1979) In the Middle Ages, hydraulic power had the importance of oil in the twentieth and twenty-first centuries. A 13th-century report about the role of hydraulic energy in the Cistercian abbey of Clairvaux proves the importance of mechanization as a primordial factor of the medieval economy. This report was a hymn to technology. It could have been applied to each of the 742 monasteries of

the Cistercian order and would have been valid for each of them since monasteries in remote lands, such as Portugal, Sweden, Scotland and the Czech Republic, were built according to the same plan and all had the same hydraulic system. The rare construction variants, it was claimed in the epoch that a blind monk could find his way in any of the constructions of his order. The discipline imposed by the Clairvaux regulation, the rigid program, and the impossibility of deviating from it, without to risk a penalty, evokes, to a certain extent, the working rules imposed by Henry Ford in the twentieth century on workers from rolling assemblies, from its automobile factories.

WATER THAT DOES EVERYTHING

At the abbey plants in Western Europe, production was adapted to local raw materials. Thus, in Provence, the mills were modified to be able to crush olives. When the ore was in the region, stampers 2 were built. If the grape harvest was bad, beer is produced, as the Clairvaux report signals, as many as four industrial operations needed hydraulic power: grinding grain, sifting the flour, stinging the figure and tanning the skins. It is very possible that the hydraulic force has been used to power the bells that heated the beer cans. Running water served as well for household and just as good, for industrial use. It runs through lead or wood pipes, to kitchens and gardens, for sprinkling or for sanitation of canals. Thanks to the work of Domesday Book, we have a detailed picture of the hydraulic power in England at the end of the 11th century. In 1086, Wilhelm the Conqueror's envoys visited about 34 counties that formed England today and numbered 9,250 occupied areas by 287,045 leaseholders. The number of inhabitants amounts to approximately 1,400,000. There were 5,624 mills and 3,463 castles, more than a third of the total had at least one mill, probably two. A large number of the mills mentioned by Domesday Book (www.britannica.com/topic/Domesday-Book) in full industrial revolution, still functioned in the 8th century; (some modernized, existed since the 19th century and functioned until the twentieth century). This insanity to build finds its explanation in financial reasons. After an important investment, the mounds brought excellent incomes and were very expensive to rent. A century later, in France, the citizens of Toulouse formed a joint stock company - La Société de Bazacle, the oldest enterprise in the world that operated on capitalist principles. It survived until the middle of the 20th century and was nationalized by "Electricité de France". The position of a medieval mound was an important investment and was protected from a legal point of view.

THE CAMSHAFT

Domesday Book mentions that in the county of Somerset, two mills were paying rent in quantities of iron. Instead of rotating motion, these mills had an alternate movement, mechanically reproducing the work of the blacksmith by using a camshaft that lifted and then dropped the baroque. Beginning with the tenth century, the cam allowed the mechanization of a whole series of industrial operations that were done, before, either by hand or by foot. In France, the first beer mill is mentioned in a reference document, for the period 987-996; a stamp is reported in Germany, between 1010 and 1028. It seems that in 1040, the hemp milling was made mechanically at Graisivaudan. The first example of "molendinum follonarium", dates back to 1086 and refers to a village in Lower Normandy (Gimpel, 1983).

The oldest document about a tannery is dated 1138 and refers to such an installation that existed, not far from Chelles, in Île-de-France. The sugar cane was mechanically crushed in 1176 in a Benedictine abbey in Normandy. The archives of Bauvais mention the existence of a cogwheel in 1195. Another document, in 1251, marks a mill for sapling mustard, in Saint-Sauveur-en-Rue, Forez, and in 1272 a twisted silk yarn machine would have worked, in Italy in Bologna.

For over a thousand years, the paper invented by the Chinese had been made by hand or by foot. Introduced in Europe, its manufacturing process has been mechanized. It is a remarkable proof of the European technical spirit, in the Middle Ages. Mentioned, between 1237 and 1273, the first paper mills, driven by hydraulic energy, were those from Xativa - near Valencia, Spain. I

In 1268, seven paper mills were operating at Fabiano in Italy. In France, the oldest plant of its kind, the paper mill in 1326 and the tradition continues today.

THE EUROPEAN TECHNICAL SPIRIT

In the textile industry, character processing, an important operation in the fabrication of fabrics, was revolutionized by mechanization. After she was out of the loom, the baize was put in a bowl of water and was beaten to thicken and thrown its fibers to become thick and soft. At first, the character was beaten with the feet, then progressively, proceeded with the wood (Gimpel, 1983). In a mechanical drapery, one man could replace up to 40 workers. Middle Ages can be considered the laboratory of the first major industrial revolution that created the foundation of consolidation and the development of the modern capitalist economy. At this historical stage, due to technical progress, social, ethical, moral consequences have also emerged. In the medieval

age, the strike and the capitalist competition were born. Wind energy has begun to be exploited effectively, and in the tidal energy, the choice of the positions of these mills was so judicious that the first twentieth-century power plant that used this kind of energy was built after the Second World War, near Saint-Malo, where there are still a number of medieval tides. Exploiting the riches of mines has created the steel industry with widespread applications in the war industry, agriculture, construction, and cast iron, replaced with steel, only during the industrial revolution. From the medieval cast iron, the Cistercian steel complexes appeared, and it explains the origins of the German metallurgical power. In the Middle Ages observations were made for the first time on physical geography through climatological research methods. The agriculture has become a science. The efficiency in this economic branch has been considerably increased by using the best horses and an improved cart. Sowing and harvesting were performed according to the three-field system or the triennial crop; model farms appeared, and wool, meat, and wine became products claimed by an emerging consumer society. It is the time when the diet was first watched, with major care to feed on the hungry and not to satisfy the thirsty. The environment has been taken into account as being devastated by deforestation and measures have been taken to reduce the pollution caused by coal mines, (Gimpel, 1983) which is seen as a disfavoring factor of demographic growth. General features of the global economy between the 16th century and 1780

WAY TO UN MODERN ECONOMY

Since the 15th century, the world economy, especially the European one, has seen some transformations that have proven to be the way to a modern economy. Such traits are characteristic of Western Europe. In Eastern Europe, the characteristics of the medieval economy have been prolonged until the 18th century.

MAIN FACTORS WITH IMPORTANT CONSEQUENCES FOR ECONOMY

Among the main factors with important consequences for the economy can be mentioned:

a. the geographic discoveries and colonial conquests that brought new agricultural products (potato, tobacco, corn) to the great maritime powers, important quantities of riches through increased silver production (in Mexico and Peru) contributed to an important development of trade on seas and oceans (Moghidovici, 1959). The major ports - Amsterdam, London, Bordeaux - have garnered big gains in transport prices, five or seven times higher than the value of the goods. At

the crossroads of large commercial maritime and terrestrial roads, the port of Anvers (Anwerpen) has been distinguished as a major international (Sută & Sută-Selejan, 1997) shopping center. All these constituted the first sources of capital accumulation, necessary for the subsequent development of the modern economy;

b. the monarchical state established in the main countries, guaranteed the security of goods and transport. At the same time, by charging taxes and making large amounts of loans, it helps entrepreneurs in setting up large businesses. Having a monopoly on foreign trade, the state was the one applying measures for a revenue-generating tariff regime and by mercantilist policy accumulates the riches that will underpin the modern development of the economy, in the idea that "only gold and silver produce abundance and satisfy the needs of the states. Only the abundance of money gives a state grandeur and power" as Jean-Baptiste Colbert wrote in Spain, where the influx of precious metals from the colonies, was obvious, export of gold and silver was banned. In France, the customs tariff, of 1664, prohibited the export of raw materials, for its own industry and prohibited or restricted the importation of manufacturing products, by giving French products of high quality and favoring export. England reserved, by the Navy Act of Cromwell, from 1651, the sea transport monopoly for its own fleet, preventing other countries from making gains from transport.

c. Renaissance and religious reform, two great cultural and scientific movements, promoted searches for progress. The humanism that characterized these movements has replaced the contemplative mentality of the Middle Ages through an active mentality that searched for everything that was advanced and contributed to the progress of the society.

CONCLUSIONS

The Industrial Revolution was a real jump that broke economic patterns and a relatively slow historical course, giving unprecedented momentum, to the development of all economic sectors. As a whole, the industrial revolution lasted a little more than a century, from the level of the 1780s to the end of the nineteenth century.

The Industrial Revolution was first carried out in England, and it could be considered to be the prelude to the industrial revolution and, above all, meant the complex process of passing production, from the manufacturing stage, to the state mechanized industry and of the large mechanized industries, ie at factory.

In fact, the transition from manual technique, to machinist engineering occurred, in other words, the replacing of the simple tools, with machine tools.

The technical transformations, at the end of the eighteenth century and the beginning of the nineteenth century, had such character and the industrial revolution term could be applied in a very precise sense.

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