



RELIGIOUS ROOTS OF BOOK PRODUCTION AND HUMAN CAPITAL DURING (EARLY) MODERN AGE

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Abstract

The invention of printing press and the process of book production had an important impact on the entire human action, affecting almost every political, economic, social, religious and philosophical field.

For centuries, the book production was mostly conducted in relation with the Church. And this is just one argument that could explain the contribution of religion and religious movements on accumulation and spreading the culture, stimulating the human capital evolution and the economic growth.

The paper indicates the reasons why the level of book production can be considered an indicator of the human capital evolution. Several references to religion movements, printing and bookselling are also included at that point. The role of Reformation in the development of human capital and long-run economic growth is also emphasized.

In its final part, the article brings some valuable ideas about the positive relationship of book production, literacy, human capital, urbanization and economic growth in Western Europe on the eve of Industrial Revolution. In these terms, it is taken into account a thesis regarding an economic growth scenario for Romanian territories, derived from a case study on religious roots of Romanian book production during (early) Modern Age.

Keywords: book production, religion, education, literacy, economic growth

JEL classification: N13, N33, O11

1. INTRODUCTION

In the West, the printing press dated back to Johannes Gutenberg's invention of movable type in 1455 in Mainz, Germany. The movable type first appeared in China around

twelfth century and then in Japan and finally in Korea a half-century before it was invented in Europe.

Books are considered to be the oldest communication technology. Also, a very important commodity and a part of the information infrastructure of the human communities, the “hardware” where all ideas were stored. The production and accumulation of books are used as a proxy for the production and accumulation of ideas, an important variable in endogenous growth theory. (Buringh and van Zanden, 2009, p. 410)

Steinberg (1961) and Rudolf Hirsch (1967) considered that the whole culture of printing is an integral and complex part of the general history of civilization. Ernst Curtius (1963) asserted that an indirect effect of printing was based on the fact that the use of “artificial script” created a complex system of transmitting the knowledge accumulated by generations to present and future ones, permitting the accumulation of hardware information and data, the transfer from oral to written data.

Gilmore (1952) noted that “the effects of the invention of printing press created a revolutionary transformation in the spheres of intellectual life in the history of western civilization, because it has stimulated and increased the rates of education and spread of ideas through this channel. The effects of such radical transformation were felt later in every department of human action.” (Gilmore, 1952, p. 186)

During the Early Middle Age, the process of book production was driven mostly by monasteries. If we consider the Middle Age as a whole and coherent period, the interrelated variables we considered, universities, monasteries and urbanization rate, explain almost 60 percent of the variation of book production per capita. These variables are interrelated because the monastic movement influenced the appearance and development of universities, while all these institutions were playing an important role in the invention of the printing press. Between 1340 and 1500, almost fifty universities were established in European cities. Again, the role of universities in promoting the process of urbanization is undeniable. “The widespread adoption of printing, for example, strengthened the position of cities relative to the monasteries with respect to the production of books.” (Bairoch, 1988, p. 191)

During the later Middle Age, the development of urban education in the Western Europe rose. By the end of fifteenth century and beginning of the sixteenth one, educational and information processes were a counterfort of the urban economy. (Clark, 2009, p. 54-55) Expanded schooling led to a rising tide of educational skill. This mix of such elements has played a tremendous role in the future development of economies and societies.

Jan Luiten van Zanden (2009) questions himself whether the book production and consumption were determined by different cultural and religious factors, especially the Reformation. We may consider that this religious movement was an endogenous factor, the effect of different prior ingredients (for example, the effect of literacy which was based on the printing press and, further, on book production process).

Mokyr (2002) considered that Enlightenment was an ingredient for the interaction between different kinds of knowledge. We must stress that the Enlightenment was the last attempt for European countries to use religion as an important piece in society’s puzzle. The process of spreadable knowledge was inconsistent and many parts of Europe (especially, the Eastern Europe) were at the bottom of such perspective. In the 16th century, this idea was a fact.

Becker, Tamura and Murphy (1990), Lucas (2002) stressed that the Industrial Revolution was preceded by a profound and systemic switch from the existing structure in terms of high human capital formation. Hayek stressed that the rise of the standard of living is due at

least as much to an increase in knowledge as to accumulation of capital. Many scholars like Mokyr, McCloskey or Tunzelmann considered that the miraculous ingredient that developed the most the Northwestern Europe and then much of the rest of the world were not the accumulations from saving, but another basic inputs, let's call them ideas of different innovations. It was considered (McCloskey, 2010, p. 321) that the specific of the Industrial Revolution was the emergence of a new society of innovation that sustained different processes of technological progress and faster total factor productivity (TFP) growth.

The accumulation of knowledge is an important factor that may stimulate the process of economic growth. It is a general consensus that human capital is an important factor that (may) influence the long-run economic growth. In this direction, the invention of printing press and, further, the development of a "knowledge society" played a key-factor to growth, especially in the realm of transformations from the Industrial Revolution. All the improvements of human capital in terms of book production and literacy made Adam Smith to consider that what it is today best known as innovation is influenced mainly by two drivers: one of the common workmen and the second of men of speculation. It is undeniable that scientific knowledge, transmitted through the book production, was a basic element for the birth of Industrial Revolution.

2. THE RELIGIOUS ROLE IN PRINTING PRESS, LITERACY AND EDUCATION IN WESTERN EUROPE

One of the most important inventions in the 15th century was the printing press with its movable types. The effect of such innovation has no immediate consequences in terms of the number of employed workers, but the most important feature was the increasing of the productivity of the book trade and the mobility of different kinds of information. Before 1500, the spread of production, exchange and publishing centers in all major western countries recorded a very rapid trend. At the beginning of 16th century, in Europe had appeared more than 230 cities with permanent printing shops. Also, the entire stock of books that were in circulation exceeded 20 million of copies uniquely produced with this new invention. (Massa, 2006, p. 17-18) An effect of such process made the printing press to determine an entire revolution in terms of cost, production and exchange of propositional knowledge. While in the 1460s the prices of books were 50% to 80% cheaper than the manuscripts, during the 1470s these values were declining very fast. Finally, in 1485, the prices of books were even 85% to 90% cheaper (van Zanden, 2009, p. 186).

It is an important clue that countries which experienced higher level of human capital formation were already compatible with the Industrial Revolution process (1760 – 1830), a process which transformed the world economy. But the effect of such an invention has to be seen in a gradualist and evolutionary approach, especially in terms of economies of scale and literacy. There was no miracle. That is why the development of modern mass literacy was possible only after many decades, in an evolutionary transition and transformation. Jan Luiten van Zanden (2009) considers that the reduction of the bridge between propositional knowledge and prescriptive (superior) knowledge was based exclusively on the rise of literacy. Before the Industrial Revolution, in the hard core of Western Europe, in Great Britain, the Low Countries, northern France and Western Germany, there was a structuralist tendency for a high level of literacy which was ineluctable linked with the future economic growth. It becomes evident that the cause of the Industrial transformation of world economy has to

be found in many previous accumulations from the North Sea region that had started somewhere between the 1590s and 1620s. (van Zanden, 2009, p. 253-254)

An essential element that made possible this gradualist process of accumulation was the invention of printing press and, further, the book production. It is considered (van Zanden, 2009, p. 179) that Gutenberg's invention was an effect of a rapidly growing demand for books (and other printed matter), a well developed capital market with low interest rates, and high wages in combination with an abundant supply of skilled labour (and a low skill premium). These are important elements that foreshadow the Industrial Revolution.

The Reformation, as an anti-catholic religious movement, was definitely aided in great proportions and many aspects by the printing press' actions. "The Lutheran Reformation had spent its impetus by the middle of the sixteenth century; but Protestantism, and consequently the Protestant book trade, maintained its ascendancy over the intellectual life of Germany well into the beginning of the nineteenth century." (Steinberg, 1961, p. 194)

Hooykaas (1968) considered that the emergence of Protestantism was the main cause for the appearance of the householder's moral obligation behaviour in the sense that everybody should read the Bible. The Protestantism encouraged the believers to diffuse the God's teachings in their families through the process of Bible reading and book learning for masses. "The advent of printing was an important precondition for the Protestant Reformation taken as a whole; for without it one could not implement a "priesthood of all believers"...the new medium also acted as a precipitant. It provided "the stroke of magic" by which an obscure theologian in Wittenberg managed to shake Saint Peter's throne." (Eisenstein, 2005, p. 171) In contrast, the Catholic people's dialogue and religious education were realized only by intermediaries, that is why the relationship between printing and the catholic Renaissance didn't seem to work together naturally.

Luther described printing as God's highest and the most extreme act of grace, while the German historian, Johann Sleidan, noted that "as if to offer proof that God has chosen us to accomplish a special mission, there was invented in our land a marvellous new and subtle art, the art of printing. This opened German eyes even as it is now bringing enlightenment to other countries. Each man became eager for knowledge, not without feeling a sense of amazement at his former blindness." (Eisenstein, 1979, p. 305)

In those times, the Protestants considered that the printing press was a divine instrument which had many socio-economic effects: it emphasized the failure of the Catholic monopoly of education, it defeated definitely the superstition and ignorance and, together, all these transformations opened a new era for the whole Western Europe.

"The chance to serve God and help mankind, even while making money...was just as attractive...in Catholic realms as in Protestant ones. But official Church policies diverged significantly. Catholic enterprise was broken in a manner that encouraged Protestants to move into high gear. Thus the same censorship policies that discouraged Catholic Bible printers and curtailed their markets later closed up scientific publication outlets in Catholic lands. The same forces that encouraged expanding markets for vernacular Bibles also favored interchanges between readers and publishers of useful vernacular works." (Eisenstein, 1979, p. 660)

Through Bible-reading behaviour, the transformation of Protestant householders into a personal priest made it extremely simple to internalize the religious teachings and the specific ethic. Indeed, it seems to sound like Weber's vision according to "the Reformation meant not the elimination of the Church's control over everyday life, but rather the substitution of a new form of control for the previous one. It meant the repudiation of a control that was very

lax ... in favor of a regulation of the whole of conduct which, penetrating to all departments of private and public life, was infinitely burdensome and earnestly enforced.” (Weber, 1948, p. 36)

By the end of sixteenth century, the effects of printing were given by a tremendous progress of quality of clerical education and important opportunities for individuals with different social positions. “The ending of the Middle Ages, traditionally linked to the invention of the printing press, the Protestant Reformation (and the Great Discoveries), was therefore not a sudden exogenous development, but the logical culmination of trends set in motion in the preceding millennium.” (van Zanden, 2009, p. 91)

It is considered that the religious stimulus to educational expansion was significant. The printing press, “a capital intensive and skill intensive technology...which was labour saving and characterized by large economies of scale, large savings on costs per book with relatively large print runs” (van Zanden, 2009, p. 179), overwhelmingly spread the Protestant teachings and views. In the 16th century, in Prussia, the religious government promoted public policies in order to stimulate the level of literacy, “going back to the sixteenth century when protestant city government promulgated ordinances to foster education.” (Reis, 2005, p. 206)

After the invention of printing press, literacy was increasing especially in more urbanized European regions. Jan Luiten van Zanden (2009) considered that such an idea is fully demonstrated by the fact that numerous new religious denominations stressed the importance of individual reading, especially the Bible. The religious root of literacy is extremely important. Also, different causes are important elements that portray the nature of the early spread of literacy: “the complexity of cultural communications, the inter-relationships between oral and literate media ... the significance of population concentration and access to means of schooling...the roles of social stratification, inequality, and power, and the contributions of both personal motivation and institutional opportunities.” (Houston, 1983, p. 269)

Niall Ferguson considers that the total expenditure on education, the enrolment rate and the literacy rate were superior throughout the Protestant world. But also the Catholic realms recorded important improvements, for example “in France, the percentage of people able to write their own name - a pretty good indication of literacy - has increased from 29% in 1680 to 47% in 1780, although the same percentage of women (from 14% to 27%) remained quite low. In Paris, in 1789, the percentage of literate was around 90% in men and 80% among women. The competition between Protestant and Catholic institutions, and improving state involvement, increased urbanization and improved transport - all helped the Europeans to read better.” (Ferguson, 2011, p. 78) It is relevant the fact that the dynamic and active Protestant missionaries have played an important and visible role in those regions where they have acted in terms of these indicators of human development. Around the middle of sixteenth century, the percent of male participation in higher education was almost 50%. In the middle of seventeenth century this percent had increased to over 80%. The direct relation to literacy has meant increased categories of books according to new categories of readers.

3. THE BOOK PRODUCTION, A NEW INDICATOR FOR HUMAN CAPITAL EVOLUTION

According to Buringh and van Zanden (2010), the production of books can be used as a proxy for the production and accumulation of ideas, an element which can be seen as an important variable in endogenous growth theory. The Weberian paradigm based on rationality, modern science and systematic organization must be reconciled with a pre-appearance of the printing press. The book production process made possible the new capitalist spirit or the “Protestant *word ethic*” as it is called by Niall Ferguson.

The book production is a complex measure for economic development and an important variable for study the long-term economic transformation. Especially since the 15th century, the Western Europe was the leader in book production. Between 1600 and 1800, the leader in terms of book production per capita was the Netherlands, while Great Britain was the most important producer of books as a whole. A new comer that emerged was Sweden which, in the second half of the eighteenth century, exceeded Great Britain in terms of per capita book production. What is very interesting is the fact that all these countries were embracing the Protestant Reform successfully since the 16th century onwards.

In the late-medieval economy, the book production is direct linked with the increasing level of literacy and high incomes, especially measured by the level of real wages. During the so-named “Little Divergence”, a period from the beginning of the fifteenth century to 1800, the North Sea area recorded superior levels of book consumption per capita, in comparison with the rest of Europe, with positive effect on real wages and income growth.(van Zanden, 2009, p. 197)

Starting with the Reformation, the spread of printing throughout Europe, especially from south toward northern Protestantism, must be correlated with other variables and changes too. Some printing was in close relationship with the religious sphere. At the beginning of early modern era, the first export industry in Geneva was established by French religious refugees. The only tradable goods for export were the printed books, an activity which was both a religious and an economic enterprise. Around the middle of sixteenth century, the French refugees, seeking to break away from the monopoly of Papacy, were changing that business structure in Geneva. The number of booksellers and printers has increased by over 60 times during that period.

The education strongly consolidated the culture of the nobility and gentry. It created important and new aspirations in towns, while the literacy began to spread also towards marginal social strata, with important implications. Carlo Cipolla (1969) considered that at the end of the sixteenth century there “were more literate people than we generally believe”. He said (Cipolla, 1969, p. 60) it is generally ambiguous and wrong to say that in this period the illiteracy rate for the adult population was below 50% in the more advanced areas from Western Europe and above this percent in the less developed Europe. Other scholars, like Jan Luiten van Zanden (2009), consider that at the end of Middle Ages approximately 12.5% of the Western Europe’s population was literate, a percent much lower than previous research, but a real progress in terms of human capital formation in comparison with the beginning of Middle Age period.

4. THE RELIGIOUS ROOTS OF ROMANIAN BOOK PRODUCTION – A CASE STUDY DURING EARLY MODERN AGE

It is considered that 1678 is the starting temporal point in local history of continued and systematic book production. About 8% of Romanian people knew different languages, but in terms of book production the variable was statistically insignificant. Between 1678 and 1716, the religious books are the majority (almost 92%) in total production of books, while for the next six decades the trend is the same. Since the starting of Industrial Revolution, the books for leisure time started to represent a new beginning and a sign for emancipation of private masses. Between 1820 and 1830, the books for private and individual reading represented almost 40% in total book production (textbooks, law and history and natural science books). In the last phase of Industrial Revolution (the comparison is only for scientific purpose), the religious books declined significantly to only 43%.

During these 152 years, we must note that the demand for books was incomparably higher than the supply. According to Daniel Barbu (1996), we must stress that the potential demand for manuscripts exceeded almost 9 times the public supply of books (from religious and political institutions). In this respect, it is considered that the problem was due to religious books. Because the assiduous process of printing religious books to satisfy the Orthodox Church in full liturgical reform, also the strengthening of official control of Romanian culture, other required types of publications for different social domains was reduced almost to extinction.

The results of Romanian book production do not reflect the logical trends of a printing market, which is slow and subject to state monopoly of the royal power. The book production copied the outdated perspective of a centralized, etatist and extremely strong regulated economy. That is why the state publishers were overcome by the dynamic progress of ideas. A little progress was recorded at the end of 18th century, because the new strata of intellectuals imposed the will to construct their time freely, to choose the books with no influence of the State or its institutions. (Daniel Barbu, 1996, p. 76) From economic perspective, it should be emphasized that the Greek book production is dynamic, in close connection with consumer's demand for books, reflecting the market trend.

Table no. 1 Greek book production versus Romanian book production, 1700-1800

Greek book production	Religion (%)	Education (%)	Other (%)	Total number
1700-1719	75.5	8.9	15.6	90
1720-1739	86.2	3.4	10.4	116
1740-1759	72	9.4	18.6	268
1760-1779	67.9	9.6	22.5	504
1780-1800	46.8	16	37.2	541
Romanian book production	Religion (%)	Education (%)	Other (%)	Total number
1700-1719	94		6	50
1720-1739	93.4	2.2	4.4	46
1740-1759	95.8	3.5	0.7	142
1760-1779	94.4	4.4	1.4	138
1780-1800	67.7	15.5	16.9	219

Source: [Dimaras, 1969, 104-105]

In the first stage of feudalism, the Church conducted the spiritual life. In the 15th century, an important characteristic of those times was the centralization of feudal power. Because of the economic and social evolution of urban social classes, the use of Romanian as common language was a prerequisite for the appearance of printing, especially the religious one.

In the 16th century, the Slavonic-Romanian books, especially the religious ones, worth a fortune being extremely rare because of specific conditions. This rarity and higher demand of the growing number of religious institutions cause extremely high prices. During the 16th century, the Reform played an important role with consequences for Romanian printing. The Hussitism that appeared in our national space through the channel of University of Prague and different merchants determined the translation of many religious texts in Romanian language. These religious printings represented a necessity, imposed by the new economic and social climate and a need of the elimination of feudal monopoly of culture. (Tomescu, 1968, p. 43) Also, the Lutheran and Calvinist initiatives in printing religious texts to perform church services in Romanian language played a key-role in this direction. It is considered that the Calvinist propaganda has determined the Orthodox service to be conducted entirely in Romanian language. And more than one hundred years were to pass in order that a second edition of such religious text to be printed in our language. (Deletant, 1991, p. 123) It is worth mentioned that Transylvania was the core of effects determined by the Reformation on Romanian printing, while Wallachia and Moldova were tributary to printing in Slavonic language.

The 17th century was characterized by the ascendance of the urban culture, while the uneducated peasants maintained a strong oral tradition. The struggle between the feudal culture and the urban one in the printing field continued, because of the monopoly of central power and the censorship of the Church. But the urbanization rate was rising slowly and the effect was an increased demand for books from this "proto-middle-class". Although this emancipation of private and free urban readers and collectors was a reality, the printing press activity remained the monopoly of feudal classes, the official supply of books corresponding to Orthodox needs, while different requested manuscripts reflected a cultural preference of modern social classes. (Tomescu, 1968, p. 58)

The printing activity continued to be an ideological weapon for consolidating the authority of the lord and Church and also a fight against the Catholic propaganda, as a mean to strength the Orthodoxy. It has remained ever since a monopoly of the Church, being subsidized by the lord or the Church.

For 50 years, until 1635, the book production was interrupted. Between 1635 and 1656, the book production represented 43 books, 23 of the being published in Romanian language. Although the majority of books were religious, in the first half of 17th century was published the first book of law in Romanian! In the second half of 17th century after another 25 years of interruption, the printing was restarted by religious scholars, like Dosoftei. Between the end of 17th century and the beginning of the 18th one, 95 books were published in Walachia and only 19 in Moldavia and 16 in Transylvania. (Tomescu, 1968, p. 77)

The 18th century is characterized by a central plan for increasing education through the establishment of schools for priests and other officials of state institutions. The activity of schools was conducted under the auspices of the Church, especially in Moldavia and Walachia. In this respect, "a royal commandment from 1741-1743 requires the priests of the towns and villages to teach children to write, it is, of course, a rudimentary education, based on Romanian language." (Tomescu, 1968, p. 87)

In the same time, the increased rate of education through public funded channel was compatible with another interesting fact: between 1716 and 1780, the book production recorded a solid growth of more than 40%. The religious books continued to be predominant, more than 84% of total printed books, in the context of maintained Church monopoly. Also, the printing centers are established and funded near religious institutions like metropolitans and monasteries. (Tomescu, 1968, p. 93)

These centers were managed by private persons. The religious books were distributed by priests and merchants in a relative free way, less the secular books that were censored by the Church monopoly over the printing press process.

The role of Church in spreading the culture and stimulate human capital accumulation is indubitable. In this direction, the Metropolitan of Moldavia in the late 18th century had an initiative that requires all merchants to donate the local library of Iasi a book of those imported for sale, but if the price of a volume was too high, then the library contributed to half of the estimated price!

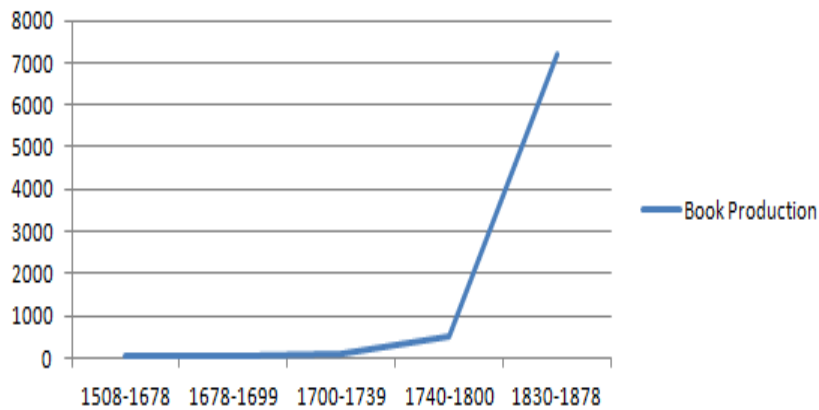
If in the period 1717-1750 the secular books represented about 15% of total book production, around 1830 it exceeds three quarters of the total! Transylvania recorded the biggest advance from this point of view, Wallachia and Moldavia had 9 times less scientific books! (Tomescu, 1968, p. 110) The development of such book category was due to emergence of cultural emancipation of the Transylvanian School which fought against the system of feudal and religious institutions.

In the 19th century, the first private printing houses were established, while the Church monopoly on printing has stopped, becoming more limited in total press activity. The effect was an increase in book production, as we see in the figure 2.

For more than 200 years, the process of book production recorded very modest progress; such a fact stresses an extremely low level of human capital formation and literacy, with no substantial growth capabilities for the future. Also, the low levels of book production are due to high prices for such commodity. The levels of urbanization emphasized extremely low percentages of literacy inside the society in which the majority of population lived in rural areas. In these terms, in the period near the Industrial Revolution, with a low level of human capital formation, it was impossible to start an industrialization process. Although all three Romanian territories obtained, at least in the 17th and 18th centuries, increased economic growth and demography levels, the state was unable to produce the infrastructure for sustainable development, due to different external pressures and high fiscal burdens for paying the debts. In terms of GDP per capita, the economic performance remained quasi-modest.

Jan Luiten van Zanden considers that the countries where the process of book production increased very fast that the level of real wages grew better over the centuries before the Industrial Revolution in comparison with the countries with low human capital formation. In this direction, the conclusion is that human capital formation had a strong and positive effect on economic growth before the Industrial Revolution. In this respect, there is no solid fundament to consider for a possible strong and durable level of economic development in Romanian territories.

Bairoch (1988, p. 189) emphasized the essential role of cities in the diffusion of knowledge which draws a civilization. Together with the nobility and the monasteries, the urban areas played a very important role in this process. While the book production represents an indicator of human capital, the urbanization rate is a proxy for welfare growth.



Source: [Authors' calculation]

Figure no. 1 The Romanian book production, 1508-1878

“Besides the population growth, the most important indicator of an increase of (social) income is the increasing rate of urbanization. It is an approximate measure of the relative size of the non-agricultural sector, but, reiterating the logic of our model, an indicator of productivity in agriculture: increasing urbanization rate can be interpreted as an increase in labor productivity and, in normal conditions, as the growth of income per capita of the peasants. An increased proportion of urban population means that a higher percentage of total production is spent on urban goods (i.e. all non-agricultural goods and services). Increased demand for urban goods is caused by growing income per capita: while increasing income per capita, a shrinking part is spent on necessities (i.e. food) and other part on urban goods.” (Gunnar Persson, 1988, p. 74-75)

Table no.2 Urbanization rate (% of urbanization criterion + 2,000 inhabitants)

	1500	1600	1700	1800
Transylvania	3.5	4	5.8	7.1
Moldavia	3	3.6	3.3	5.8
Walachia	4	5.3	5	5.7

Source: [Murgescu, 2010, p. 59]

According to Gunnar Persson, we may consider the fact that the more urban population is, the more money are spent on urban goods, for example the consumption of books. Above, it is shown that between 1500 and 1800, the urbanization rate in Transylvania, Moldavia and Walachia was modest, data very close to those regarding Russia. In comparison, Paul Bairoch (1988) considered that the average of European urbanization (except Russia) rose from 15.1% in 1500 to 17.5% in 1800! Since 1700, all three countries recorded superior levels of city growth; Transylvania experienced the highest rate of urbanization due to superior population density and important improvements in terms of legislation and agricultural productivity. The low levels of city growth in Romanian territories are specific for marginal, medieval and under-developed countries, with a lack of growth-enhancing institutions and dynamic trade, in comparison especially to modern Western Europe. (Murgescu, 2010, p. 59-64)

5. CONCLUSIONS

In Europe, during the early Middle Age, the process of book production was driven mostly by the Church. If we consider the Middle Age as a whole and coherent period, the interrelated variables we considered, universities, monasteries and urbanization rate, explain almost 60 percent of the variation of book production per capita. These variables are interrelated because the monastic movement influenced the appearance and development of universities, while all these institutions were playing an important role in the invention of the printing press. During the later Middle Age, the development of urban education rose. By the end of fifteenth century and beginning of the sixteenth one, educational and information processes were a counterfort of the urban economy. Expanded schooling led to a rising tide of educational skill. This mix of such elements has played a tremendous role in the future development of economies and societies. It is considered that Gutenberg's invention was the effect of a rapidly growing demand for books (and other printed matter), because of a well developed capital market with low interest rates and high wages, important variables in combination with an abundant supply of skilled labour. These are important elements that foreshadow the Industrial Revolution.

In Moldavia, Walachia and Transylvania the role of Church in spreading the culture and stimulate human capital accumulation is also indubitable. Although the book production was extremely low comparative to countries from Central and Western Europe, the role of Church is undeniable and stresses the fruitful cohabitation between the religious institutions and the process of literacy and education. In the 19th century, the Church monopoly on printing has stopped, many private printing houses were established. The effect was an exceptional increase in book production. But until then, for more than 200 years, the process of book production recorded very modest evolution that demonstrates an extremely low level of human capital formation and literacy, with no future growth forces for a dynamic economy. Also, the low levels of book production are due to high prices for such commodity. The levels of urbanization emphasized extremely low percentages of literacy inside the society in which the majority of population lived in rural areas.

In these terms, in the period near the Industrial Revolution, with a low level of human capital formation, it was impossible to start an industrialization process. Although all three Romanian territories obtained, at least in the 17th and 18th centuries, increased economic growth and demography levels, the state was unable to produce the infrastructure for sustainable development, due to different external pressures and high fiscal burdens for paying the debts. In terms of GDP per capita, the economic performance remained quasi-modest.

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