

ECONOMIC GROWTH – A QUANTITATIVE APPROACH

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Culture is a powerful tool to communicate values and to promote objectives of public interest that are broader than wealth creation. The economy of culture entails both cultural and creative sectors. It has to be noted that, along with the development of the information and communication technology (ICT) sector, the contribution of culture to the economy has gradually been acknowledged, in particular with the development of the cultural industries. One way of measuring the economy of culture focuses on the value added to the economy. Also, we present several statistical indicators that quantify the dimension of the cultural-creative field, and identify an econometrical multiple model that reveals the relationship between some of them. In the article it is applied the analysis of variance method in order to identify the existence of significant differences between geographical and between linguistic-cultural European regions, according to the values of some of the statistical indicators.

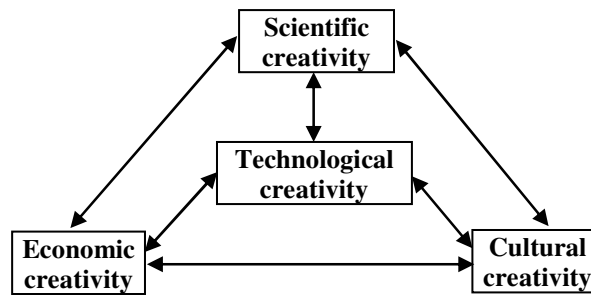
Keywords: *economy of culture, cultural-creative sector, value-added, cultural employment, cultural consumption expenditure, households' cultural expenditure, publishing turnover in manufacturing.*

Compared to other sectors of the economy, culture has an additional dimension – it not only creates wealth but it also contributes to social inclusion, better education, self-confidence and the pride of belonging to an historic community. The concept of „economy of culture” includes both cultural and creative sectors.

The “cultural sector” includes industrial and non-industrial sectors. Culture constitutes a final product of consumption, which is either non-reproducible and aimed at being consumed on the spot (a concert, an art fair, an exhibition) or aimed at mass reproduction, mass-dissemination and export (a book, a film, a sound recording). Cultural sectors include editing (books, newspapers, magazines, sound recording, etc.), film, video, radio, and television activities, performing arts, press, museums, archives, libraries, wholesale and retail of cultural goods, architectural activities.

The “creative sector” sees culture as a production process of other economic sectors and becomes a “creative” input in the production of non-cultural goods. Creativity, with its elements such as information, skills, and experiences - is an essential parameter in global competition and at local level.

In several studies “creativity” was defined as a cross-sector and multidisciplinary way, mixing elements of “artistic creativity”, “economic innovation” as well as “technological innovation”. The creativity may also be considered as a process of interactions and spill-over effects between different innovative processes, as shown by the figure bellow:



When analyzing the cultural and creative sector, several field and industries should be considered:

- *The arts field* referring to the visual arts (crafts, painting, sculpture, photography), performing arts (theatre, dance, circus) and heritage (museums, arts and antiques market, libraries, archaeological activities, archives);
- *The cultural industries* including film & video, radio & television broadcasting, video games, book & press publishing and music;
- *The creative sectors* including design (fashion design, interior design, graphic design), architecture and advertising.

Moreover, long-term structural changes give more importance to culture as a product of consumption. The demand for an ever greater number of diverse cultural products is indicative of post-modern consumer behavior: consumers seek to differentiate themselves by appropriating the signs and values that mark specific products. The increase in the level of education determines the increase of the demand for culture. Considering income availability, when basic needs are satisfied the richer the societies become, the more the need for the consumption immaterial products increases. Also, the increase in the availability of leisure time reinforces the demand for cultural activities. Creativity is a complex process of innovation, combining some or all of the following dimensions: ideas, skills, technology, management, production processes as well as culture. Therefore, the culture should not be analyzed as a source of final consumption (as in the case of films, books, music, cultural tourism, etc.) but as a source of intermediate consumption in the production process, most of the time the final products being functional (to the contrary of works of arts or to the output of cultural industries). When analyzing the cultural and creative sector, its territorial dimension has to be underlined, as main factor for the development of local economic competitiveness. However, in the context of the globalization, even though the creativity represents a response to some economic challenges of the global economy, it requires, at the same time, initiative and organization at a local level. As mentioned before, the creativity nurtures economic competitiveness and helps retaining skills and talent as well as corresponding jobs locally. The territorial dimension of creativity is reinforced by the nature of cultural products and works of art. At the core of a cultural product is its uniqueness, a combination of factors of production, tangible and intangible, that are very much dependent on the environment.

The cultural and creative industries (CCI) are characterized by several common features which are also specificities of this sector:

- The products are often short lived with a high risk ratio of failures over success;
- The products are marketed for local audiences with different languages but competing with international products;
- The market is highly volatile, depending on fashion, trends and consumption uncertainties. Some sectors are strongly “hit driven” (cinema and music for instances);
- The sector has an important social role as a major and attractive communication tool.

The process of measuring the economy of culture is affected by numerous constraints:

- At statistical levels, each national state developed its own system for collecting data. Most of the countries have an insufficient system to monitor the cultural sector, do not collect comprehensive data and given the different statistical systems, it results a lack of data

harmonization and comparability in this field. At European level, efforts have made to set up a common statistic system for the collection of data in this field, at EUROSTAT level.

- Some cultural organizations are often reluctant to participate in an exercise aimed at giving an economic value to the world of art and culture. For these organizations, art has no price and investment in art does not require economic justification. Moreover, the market may reject some artistic activities on the grounds that they are unprofitable – hence the need for public support to redress market inefficiencies in the world of art.
- Other trade organizations express reluctance in being considered as part of the cultural sector, preferring to be granted the status of industry. These organizations are analyzing the returns on investment, in the form of impact studies. Culture is traditionally seen by public authorities (whether local or national) as a cost issue and not as an investment justified to tax payers by a proper business plan. In terms of private finance, cultural and creative projects, often suffer from financial problems.

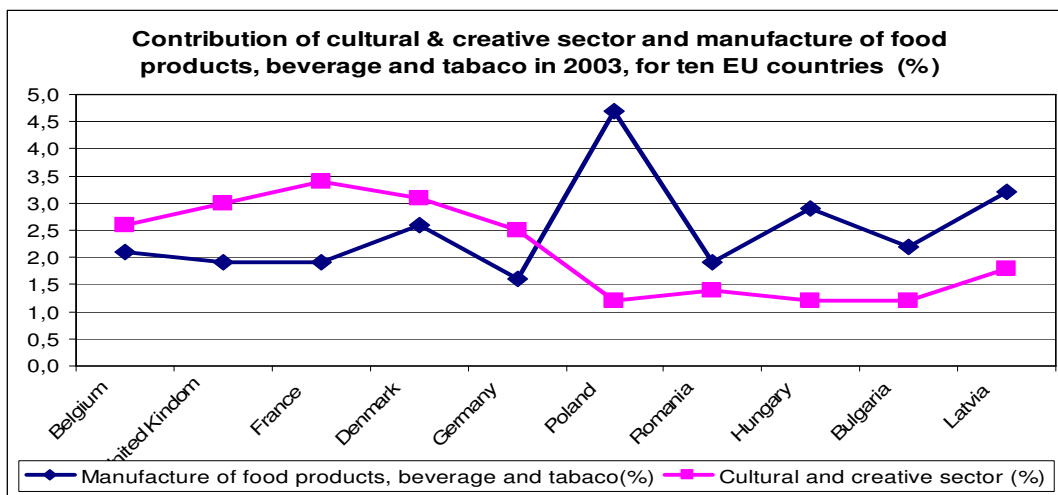
Measuring the economy of culture

a) Value-added approach

The process of measuring the economy of culture focused on the *value added to the economy* (i.e. the increase in wealth due to the cultural & creative sector). The methodology used provided with the turnover and value added to GDP, a comparison with other sectors of the economy and its contribution to economic growth.

The “value-added” approach is the increase in wealth resulting from the activities of the cultural & creative sector. The starting-point is the Gross Domestic Product (GDP) which measures the total annual output of goods and services produced by residents of a particular country in one year. It includes exports but excludes income from abroad. When this income is added to GDP, the result is Gross National Product (GNP). GNP and GDP measure the economy’s output. The gross output of an industry measures the industry’s value of sales in a particular year. However, gross output of an industry overestimates an industry’s contribution to national income because it also includes the value of inputs produced by other industries. Gross Value Added is therefore usually taken to represent the true contribution that an industry makes to the national economy. Gross Value Added is therefore usually taken to represent the true contribution that an industry makes to the national economy. This is the value of gross outputs minus the value of inputs from other industries. This added value of a particular industry is equivalent to the total staff costs plus profits before tax. In order to determine the contribution of the European cultural & creative sector to the European and national economies in 2003, by using an alternative methodology, a study was developed. The analysis of the contribution of the cultural and creative sector with the manufacture of food products, beverage and tobacco in 2003 for 10 EU countries shows that the average contribution of the cultural and creative sector of the new Member States is of 1.36 % compared to the average contribution of the cultural and creative sector of the old Member States of 2.92%. It has to be noted as well the reverse relation between the two categories of countries, referring to the contribution of the cultural and creative sector and the manufacture of food products, beverage and tobacco.

During the last years, households have been spending more and more on culture. Recent studies showed that there is a new tendency where culture can be considered as a potential of growth. In Europe, EUROSTAT surveys show that household spending on “culture & recreation” regularly increased over the last years. The shares of household expenditure on “cultural & recreational products” rose by 0.6% between 1995 and 2004. This growth has been more important in the Eastern countries such as the Baltic States, and on average weaker in the Western countries. This phenomenon can be explained by the fact that household expenditure on “culture & recreation” is already high in Western countries.



Source: EUROSTAT and AMADEUS

b) Econometric model

In order to analyze the relationship between the variables characterizing the cultural-creative field in some European countries, we found out a multiple regression model. Based on this model it is possible to predict, to forecast a dependent variable, by developing a mathematical equation which involves the values of two independent variables. We identify as output variable the cultural consumption expenditure (CCE), and as input variables: the GDP per inhabitant (GDP/inh) and the share of cultural employment in total employment (CE%). The revealed multiple linear regression model has the following form:

$$CCE = f(GDP/inh, CE\%)$$

To define the relationship between the 3 variables we need to know the value of the coefficients of the model – the population parameters. After applying the least squares method, we found the following model:

$$CCE = -269,372 + 0,0277 \cdot GDP / inh + 187,5577 \cdot CE \%$$

If the GDP/inh increases by 1 PPS/inhabitant, then the cultural consumption expenditure of a household will increase by 0,0277 PPS, if other factors influence remain unchanged. If the share of cultural employment in total employment increase by 1%, then the cultural consumption expenditure of a household increases by 187,5577 PPS, under the condition that all other factors remain constant, that their influence doesn't change. The standard error of the estimate is 215,1787. The coefficient of determination indicates that 71,7% of the variation in the cultural consumption expenditure is explained by the influence of the two independent variables, while 28,3% remains unexplained. By applying the analysis of variance, in order to test the utility of the model, we found out that the model is significant, for a maximum probability level of 99,99967% (Fisher's calculated value is equal to 25,354, a large value which leads us to the conclusion that most of the variation of the dependent variable is explained by the regression equation and that the model is useful). Also, except the intercept (which was tested un-significant) the other two parameters in the equation were proved significant: the parameter of GDP/inh is significant with a maximum probability level 99,99977%, while the parameter of the cultural employment is significant with the maximum confidence level of 97,92%.

Cultural employment

Cultural employment is defined as “the total of active workers having either a cultural profession, or working with an economic unit within the cultural sector”. In 2005 cultural employment, meaning both employment in cultural occupations in the whole economy and any employment in cultural economic activities, was estimated at **4.9 million people** in EU-27 and accounted for 2.4% of total employment. In EU-27 cultural employment as a proportion of total employment has remained unchanged since 2002, when the analysis was conducted for the first time using the specific statistical matrix crossing cultural

occupations and cultural sectors of the economy. This proportion ranges from 1.1% in Romania to 3.8% in the Netherlands.

The Task Force on Cultural Employment, reporting to the European Working Group on Cultural Statistics, emphasized one statistical source to use for cultural employment estimates: the EU Labor Force Survey. Use of this survey makes it possible to estimate cultural employment by crossing cultural activities classified by the NACE with cultural occupations classified by the ISCO.

is a quarterly household sample survey carried out in the Member States of the European Union, candidate countries and EFTA countries (except Liechtenstein).

Household cultural expenditure

Alongside the three main categories of household expenditure, namely on housing, food and transport, cultural spending comes under the heading of leisure and culture expenditure. In the individual EU countries, the share of cultural expenditure in household budgets at the end of the 1990s varied from 2.7% in Greece and Lithuania to 5.6% in Sweden and 5.8% in Denmark. Cultural expenditure reflects not only discrepancies in cultural practices, but also relative price differences. The effect of price differences can be limited by expressing mean household cultural expenditure in terms of “purchasing power standard” (PPS). The activities related to cultural expenditure were divided between printed matter (books, newspapers, periodicals and graphic arts goods: 31% of average household cultural spending in EU-15), picture, sound and computer use (24%), picture, sound and computer equipment (22%), attending cultural events (cinema, theatre, concerts, museums, galleries and others: 13%) and amateur activities (photography, music, etc.: 10%). Inter-country differences are partly associated with the level of computer equipment per household, theatre or cinema attendance and greater or lesser reading of books, newspapers and periodicals.

Data on households' expenditure can be analyzed taking into account the socio-economic situation of households. This information confirms the commonly held perception that cultural consumption is influenced by income. Nevertheless, it is interesting to see to which extent this impact can be observed in different countries. In some countries, cultural consumption grows steadily as income increases, while in others a big “jump” is observed for households with the highest income. The data presented are based on the 1999 EU Household Budget Surveys for the EU-15 Member States. Data for the new MS are taken from the national HBS conducted at the beginning of the 2000s. The **Household Budget Surveys (HBS)** in the European Union are sample surveys of private households carried out regularly under the responsibility of the National Statistical Institutes (NSIs) in European countries. Several waves of the survey have been conducted so far in 1988, 1994, 1999-2000 and 2005. Essentially, they provide information about household expenditures on goods and services, going into considerable detail in the categories used: information on income, possession of consumer durables and cars; basic information on housing and many demographic and socioeconomic parameters. Unlike other European statistical domains, the HBS is voluntary and no EU regulation exists.

c) Testing the existence of significant differences

Another objective of the article is to test the existence of a significant difference between the geographical European regions, according to some cultural-creative indicators values. So we applied the analysis of variance by grouping the data referring to the share of publishing turnover in manufacturing, on geographical European regions. The result of the Fisher's test show that there is a significant difference between the geographical European regions, according to the average share of publishing turnover in manufacturing (F test = 4,809), with a maximum probability level of 98,81%. The highest average share of publishing turnover in manufacturing was recorded in northern European countries (2,5%), followed by western countries (2,3%). Eastern European countries have the lowest average share of publishing turnover in manufacturing (1,06%). We used the same method to determine if there is a significant difference between the average cultural consumption expenditure, on linguistic-cultural European regions. The Fisher's test value (F=7,582) shows that this conclusion is guaranteed with up to 99,6% confidence level. Germanic countries spent in average 1273 PPS/household for cultural-consumption, in a year, followed by Latin-countries (765,5 PPS) and Slavic-countries (724,7 PPS).

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	1280874	2	640436,8	7,582106	0,004427	3,591531
Within Groups	1435937	17	84466,88			
Total	2716811	19				

Some experts consider that the European Commission is ignoring the economic potential of cultural issues, focusing too much on standard industry policies and not enough on creative industries. According to a report, cultural industries - like the music, film and game industries - and creative industries - like design and architecture - contributed an estimated 2.6 percent to the Gross Domestic Product (GDP) of the EU in 2003.

In the same year, culture was also of the main attractors of tourism - and the tourism sector represents an additional 5.5% of GDP. "Give creativity the same political profile as innovation. Raise the profile of the creativity sector," he told an audience of members of the European Parliament's culture committee on Tuesday (20 November). The culture and creativity sectors had a estimated turnover of € 654 billion in 2003, more than twice as much as the European car industry, and employed about six million people.

In addition, they outperform the rest of the economy, growing 12.3% faster than the overall economy between 1999 and 2003. But the creative sector only received 1.1 billion euro in funding from the EU, much less than the €56.6 billion spent by the EU on innovation, or the 308 billion made available for structural development.

The composition of the cultural industry – mostly small and medium-sized enterprises (SMEs) – and the lack of statistical data available about the industry make it difficult for policy makers to realize the true importance of the sector. To increase the economic gains from culture, it is recommended improving the financial capabilities of these SMEs and supporting entrepreneurs in developing new business models adapted to Internet. Statistical information on the creative sector should be gathered while cultural goods should be an integral part of trade agreement negotiations.

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