

Problems of Evaluation Impact of CCI: Constructing Indexes

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Abstract

Cultural and creative industries (CCI) are gaining more and more interest in academic and practical fields, but this sector lacks statistical data and adapted methodology for the impact analysis. One of the ways to evaluate complex activities in the sector is to construct composite indicators - indexes. Analysis of previous indexes revealed that these indexes have the tendency to mix input and output factors and they are too broad for the evaluations. The proposed index, formed for the European countries, focuses only on output elements. The index covers two pillars: quantity, as the productivity and estimation of creativity, and economy, as the commercial result of activity. The index was calculated as time series for the period 2000-2014. The index was used for the correlation analysis and comparison of cultural and creative industries and general economic cycles.

Keywords: cultural and creative industries, index of creativity, index of creative industries, econometric modelling

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1. Introduction

Cultural and creative¹ industries (CCI) are becoming more and more important part in contemporary economy structure. In this context, the sector is gaining more interest in

¹ In order to avoid common misunderstanding with terms related with cultural and creative industries and the economy of culture, economy of creative industries and creative economy, the term cultural and creative industries is used. In this article cultural and creative industries are understood as joint sector of cultural (heritage and art) and creative (media and functional creations) activities (UNESCO classification).

academic and practical fields. The proper evaluation of the creative activities phenomena and its impact on the socio-economic system should be analysed to form appropriate cultural policy and foster economic development. As the impact of the cultural and creative industries can be seen in many different dimensions, starting from standard economic indicators, such as GDP, and moving to society-related features as education and value formation, the evaluation of the sector should combine a deep understanding of the area and adaptation of existing evaluation methods and analytical tools.

The problems of cultural and creative industries assessment lie in the lack of the statistical data from statistics agencies or national cultural institutions and different concepts of the sector definitions. Existing methodologies for the industry evaluation are focusing on the economic or non-economic evaluation of the sector and it is difficult to measure the mix of both of them. As cultural and creative industries are sector of multi-component characteristics, the measurements of macro-level creativity also have to provide complex analytical tools. There is no single indicator that can describe a sector of cultural and creative industries, so the composite indicator that represents a set of individual indicators could be the solution to this issue. Researchers have created indexes for creative sectors, but these indexes have tendency to mix input and output factors and they are too broad for the evaluations.

The article proposes a new index of European cultural and creative industries (ECCI), shows its practical implications and discusses the possibilities for the index development.

2. Current practice of evaluating cultural and creative industries

Cultural and creative industries encompass two different types of values: economic and cultural (Throsby, 2001) and the separation of these two aspects of the sector leads to the problems of measuring and evaluation (Throsby, 2010). The complexity of the industry requires an assessment of direct and non-direct impact for the socio-economic system.

The direct impact of the cultural and creative sector is analysed in main reports of cultural economics (UNCTAD, 2008) (KEA European Affairs, 2006) (KEA European Affairs, 2015) (UNCTAD, 2010) (UNESCO, 2014), etc. This kind of analysis focuses on statistical indicators, mainly gross domestic product and employment created by cultural and creative industries. The mathematical, statistical or econometric analysis of the sector could give more detailed and valid information about the sector, but this kind of analysis faces statistical data

issues. The statistical data is insufficient; there are many difficulties of separating cultural and creative activities from general indicators. International classification systems do not allow to evaluate the impact of the cultural and creative industries to innovation, social capital and intangible economics (KEA European Affairs, 2015).

The indirect impact can be measured by using contingent valuation method (CVM) that can evaluate the aspects that cannot be seen in the market relationships (Bateman & Willis, 1999) (Noonan, 2003) (Hansen, 1997) (Sable & Kling, 2001). This method provides information for the decision makers on intangible values of the cultural sector and supports decisions for public funding of cultural activities. CVM methodology can provide evaluations of heritage places or cultural institutions (as museums, theatres or libraries), but it is difficult to adapt it for evaluations of whole cultural and creative industries sector. CMV is valuable for defining the cultural value, but it does not include economic characteristics (Throsby, 2008), so this model can be just supplementary part of cultural and creative industries analysis.

In order to systematically evaluate the importance of cultural and creative industries, creativity is often measured by indexes combining a variety of indicators. There are many indexes that are focusing on cultural and creative industries, creativity, creative city or creative economy: A Composite Index of the Creative Economy (Bowen, et al., 2006), The Creative Space Index (Correia & Costa, 2014), The Hong Kong Creativity Index (Hong Kong Special Administrative Region Government, 2004), The European Creativity Index (KEA European Affairs, 2009), The Global Creativity Index (Martin Prosperity Institute, 2011), The sub-index of creative outcome of the Global Innovation Index (INSEAD, 2014), Creativity Index in Slovak Republic (Petrikova, et al., 2015), The Creative City Index (The ARC Centre of Excellence for Creative Industries and Innovation, 2012), Index of Creative Industry (Kloudova & Chwaszcz, 2014), etc.

Many indexes involve the following factors: talent (human capital, the creative class, education), openness (sabotage, tolerance), technology and innovation. This grouping of factors reveals that all the indexes combine both the input and the output constituents. This index structure allows a complex assessment of creativity as one of the main components of cultural and creative industries, however, these indexes are too broad to be included in the analysis because they comprise not only the factor affecting creativity (macro-environment)

but also those impacting the output of creativity (number of creative works or their financial expression).

3. European Cultural and Creative Industries Index

As existing methodologies are not sufficient for evaluation of the cultural and creative industries, new method was established and tested for the EU countries. On the basis of the indexes discussed above and having assessed their strengths and weaknesses an original set of indicators was formed to solely evaluate the factors of creative output. It is hard to determine the quantitative and qualitative output of each individual artwork. To define the scale of the creative performance attained by the kind of the cultural and creative industry or the state is even more challenging. In order to assess the output of the creative performance more accurately, the focus is laid on two components of the creative output, i.e. quantitative expression of the creative works and the economic evaluation of creativity.

3.1 Methodology

The proposed index, formed for the European countries, is focusing only on output factors. The index covers two pillars: quantity, as the productivity and estimation of creativity, and economy, as the commercial result of activity. European Cultural and Creative Industries Index (ECCI) is formed of two equal parts: Quantity Sub-index (Q-SUB) and Economy Sub-index (E-SUB). Quantity part consists of indicators referring to the measures of museums, libraries, UNESCO heritage sites, literature, theatre performances, films, trademarks and industrial design. Also, the indicator of Wikipedia edits is added to express the non-professional creativity and digital creativity. Second Sub-index reveals purely economic information: intellectual rights taxes, export of creative goods and services, employment in the sector, value-added and the expenses of the consumers to the cultural production (as the equivalent of the income of the sector). There are 14 indicators in total, 9 for the Q-SUB and 5 for the E-SUB. The composition of the each sub-index is presented in Figure 1.



Figure 1. The composition of the Q-SUB and E-SUB

There are fewer indicators in the economic part of the index because for this part available indicators are more complex and with all the branches of cultural and creative industries taken into account. These indicators were selected based on the structure of the sector (Throsby, 2008) (UNCTAD, 2010), linkages between creative sector and economy (Potts, 2011) and the idea of including non-professional creativity (Holden, 2015). The set of included indicators was profoundly influenced by the available statistical data for the cultural and creative industries. Statistical data was gathered from international databases such Eurostat, WIPO and UNESCO, international associations such EGMA, OCLC, FEP and EAO or national statistic

offices and ministries of culture. European Cultural and Creative Industries Index (ECCI) was formed using standard index formation methodology (OECD, 2008). In order to compare results during the time, ECCI was calculated for each year during the time period of 2000-2014.

3.2 Results

The estimated values of ECCI allow comparison of cultural and creative industries among EU countries and provides an analytical tool for the ECCI development during 15 years in each country. As was mentioned before, ECCI is constructed of two parts: quantity of cultural and creative production and economic commercialisation of it. The quantity part is the strongest in small countries such as Estonia, Luxembourg, Slovakia, Czech Republic and Croatia. In these countries, the central part of the quantity sub-index is formed of heritage and literature. The lowest values of ECCI was calculated for Greece, France, Poland, Slovenia, Romania and Cyprus.

The economy sub-index has the highest values in Netherlands, Sweden, Denmark, Austria, lowest in Greece, Slovenia, Croatia, Bulgaria, Romania. The leading countries have a high evaluation in every component of the sub-index. The analysis of the economy sub-index offers conclusions about countries' ability to commercialise cultural and creative production.

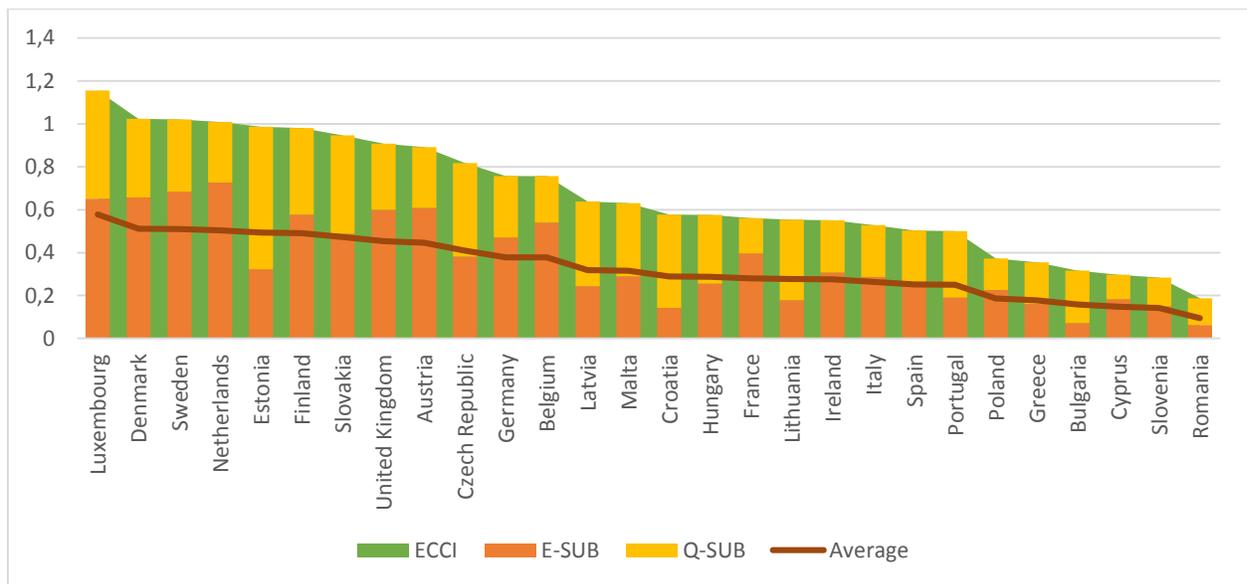


Figure 2. ECCI values, 2014.

Note: the calculated value of the ECCI should be in the interval from 0 to 2.

The analysis of index structure (Figure 2) shows the composition of the cultural and creative sector in each country. The line of the average (or half index) shows which component of the index has higher value and which is lowering total index. If countries have a high evaluation of the quantity, but lower of the commercialisation, it can lead to the conclusion that these countries are not capable of using all the potential of their creative assets. If countries have high values of economy and lower of the quantity, these countries have found the way to use all the possibilities of the lower amount of cultural and creative production.

3.3 Practical implications

Proposed index for cultural and creative industries not only sets rating of countries according to their creative outputs but also provides a methodological tool for further analysis. The ECCI has an advantage of time series formation that allows more possibilities for testing hypothesis on cultural and creative industries impact on the socio-economic system. For the primary verification of the index, correlation with principal economic indicator was tested and the analysis of cycles was performed.

The relationship between the ECCI and economic output was tested by analysing data of ECCI and primary economic indicator: Gross domestic product per capita (GDP). Figure 3 shows a correlation between ECCI and its sub-indexes with GDP and scatter graph analysis for each country for the last available year. ECCI is positively associated to GDP (with correlation coefficient 0,618 for the whole period) in analysed EU countries. Calculations for the correlation on sub-indexes reveals that Q-SUB has insignificant relation to the general economy and in this case it could be more appropriate to analyse links to social indicators. Also, it can verify earlier discussed statement, which from the purely economic point of view it is more important to reach high commercialisation results than produce many creative products. But despite the economic insignificance, the Q-SUB is essential for the expression of cultural value and should remain in the total index and presentation of the cultural and creative industries.

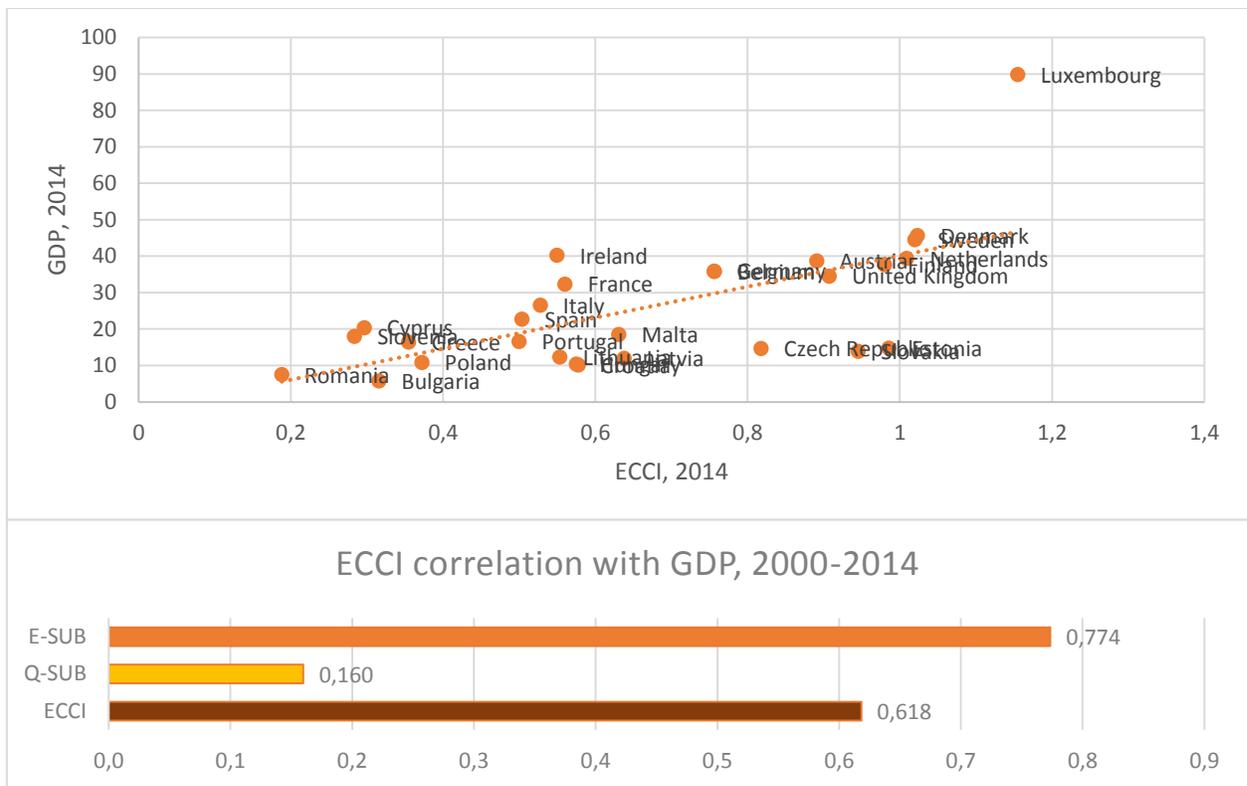


Figure 3. Relationship between ECCI and economic output

The scatter graph visual analysis shows that the results on ECCI and GDP are associated and the higher value of cultural and creative industries can be related with the higher result of the economy and vice versa. Countries that are above the line, as Ireland, France and Luxembourg (with significant outlier) are producing better economic results than expected for the existing ECCI. In comparison, countries below the line, as the Czech Republic, Slovakia and Estonia, have lower economic performance than expected and it might be because of lacking capabilities of using all the potential of the creative sector.

One of the advantages of the ECCI is the possibility to calculate it each year, perform time series analysis and analyse the dynamics and trends. For the time series analysis the aggregated cycles of ECCI, Q-SUB, E-SUB and GDP were calculated for EU countries (Figure 4). Analysis of the cycles can show the indicators that signalise the changes of related indicators in later periods. During the cyclical analysis of 2000-2014, the highest point of ECCI was reached one period earlier, and dynamics of this indicator might suggest forecasts for the general economic development. The analysis of ECCI and GDP cycles gives answers to the questions related to the resistance of cultural and creative industries to shocks in the

economy. During analysed period GDP cycle is more dynamic than ECCI and its components. The ECCI is quite stable and the stability is reached by the Q-SUB that does not change drastically during the time and depends slightly on the economic situation. Both factors, GDP and ECCI, are growing at the same time, but GDP has more rapid pace. During the recession the ECCI have lower peaks than GDP that means that cultural and creative industries are facing more sharp decrease during the economic crisis than general economy. On the recovery period, the E-SUB is recovering faster than the cycle of the economy. The evaluation of the cycles in the context of economic crisis can validate the idea that cultural and creative industries are very dependant of the financial situation. Cultural and creative industries can foster the growth during the rise of the economy but it does diminish the fall of the economy during the period of financial crisis.

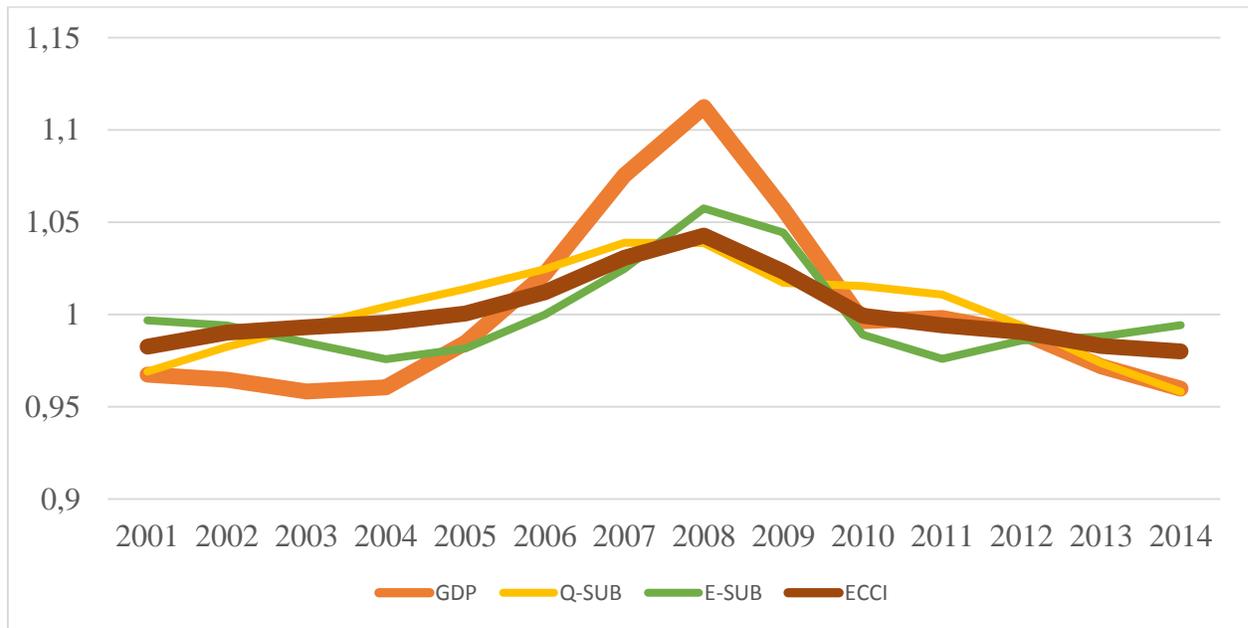


Figure 4. Aggregated cycles of GDP and ECCI for EU countries

The cycles, calculated of each country have their own dynamics, but in most cases there are similar tendencies: the cycles of ECCI are more dynamic, they have higher and lower peaks than the general economy. The Q-SUB is a less dynamic component and it shows that creativity and ability to produce creative content does not vary according to the economic factors, but the capacity to commercialise this production expressed by E-SUB and ECCI is very dependant on the economic conditions. To sum up, the cultural and creative industries

are growing faster than the general economy during the periods of the rise, earlier face the recession, decline faster but also have faster recovery pace after the crisis. The dynamics of the ECCI have the same tendencies and direction as the GDP; the difference is just in the amplitudes of the fluctuations.

4. Conclusions

The duality of the cultural and creative industries can be noticed not just in functioning of it, but also in the possibilities for the measurement of the sector. The separation of cultural and economic value, the ineffectiveness of the cultural sector and other features make a challenge for the evaluation of the sector and lead to the exploration of additional analytical methods.

The proposed method for sectors' evaluation is European Cultural and Creative Industries index (ECCI) that was formed with taking into account issues of statistical data availability and structure of cultural and creative industries activities. The ECCI differs from existing variety of indexes because index includes only output or result factors. Also, the index is formed as time series for the intertemporal comparison.

The practical implications of the index are not limited to ratings of the countries, but index could also be used for the impact of cultural and creative industries evaluations. The possible analytical tools such as correlation calculations and the analysis of cycles were tested on the relations to GDP.

The featured analysis could be performed for socio-economic development indicators (such as inequality, social conditions or education). Also, the index could be used for the more advanced econometric analysis (such as vector autoregressions).

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