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Urban versus Rural. The Economic Performance of Romanian Counties

Bogdan-Nicolae PĂCURAR[1], Claudia Elena TUDORACHE[1]

[1] Babeş-Bolyai University, Faculty of Geography, Centre for Research on Settlements and Urbanism, Cluj-Napoca, ROMANIA

E-mail: pacurarbogdan@ymail.com, claudia.elena26@yahoo.com

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ABSTRACT

To reveal the connection between urbanisation, rurality and the economic performance of counties in Romania, we focused on several essential concepts found in the existing scientific literature, such as: urbanisation and economic growth, economic development, poverty reduction, productivity increase, the demography-productivity pair, innovation. Using cartographic and statistical methods and tools, we then compared and/or correlated the urbanisation level of each county (the percentage of people living in urban areas) with miscellaneous performance indicators such as: gross domestic product, net profit, turnover, total expenditures and employees in research and development activities, and average net salary. Our results suggest that urbanized counties in Romania register higher scores than the rural counties in case of each indicator, thus substantiating our thesis of a positive relationship between urbanization and economic growth. In short, Romania seems to fit perfectly in the universal trend of economically stronger urban regions and less powerful rural areas.

1. INTRODUCTION

Cities have a strong economic potency, they also have a powerful ability to innovate, and last but not least, they have an innate vitality found nowhere else. As of 2008, they also hold more that 50% of the world's population and generate between 50% and 80% of the gross domestic product of national economies. One of their greatest advocates, Edward Glaeser (2011), once refuted the great Mahatma Ghandi, when he wrote that India's future lies not in its villages, but in its cities, as there is a near-perfect correlation between urbanisation and prosperity. On average, as the share of a country's population that is urban rises by 10 percent, the country's output per capita increases by 30 percent. Per capita incomes are almost four times higher in those countries where a majority of people live in cities than in those countries where a majority of people live in rural areas. Glaeser was not alone when it came to this view. Renowned economists like Vernon Henderson or Paul Krugman stated that urbanization and economic growth go hand in hand, especially in developing countries. Furthermore, many believe that urban and metropolitan areas are the ones that will fix and even save the economy. Institutions such as The World Bank and the United Nations Human Settlements Programme see urbanization as not only inevitable, but as a powerful force for economic growth and poverty reduction, and that the economic future of countries is tightly connected to the city environment.

But what does that mean for rural areas? Does it imply that villages and rurality indicate stagnation and even economic regress, whereas cities are the answer for our growth? Are urban regions better off economically and socially than rural regions? We intended to see whether such a situation was cogent for the counties of Romania by comparing or correlating the degree of urbanization of each county with different

performance indicators, such as gross domestic product (GDP), net profit, turnover, expenditures and people employed in research and development (R&D), or average salary. As this scientific "story" unfolds, we will see if the premise with which we started holds under the scrutiny of data and whether cities lift the counties in which they are located.

2. THEORY AND METHODOLOGY

We cannot begin our analysis on cities and their economic impact, without acknowledging Jane Jacobs. Even though she was not an economist or urban planner by training, Jacobs understood the nature of American cities. She was the first to propose the notion that human progress and the growth of the economy were driven by cities, when, in 1969, she wrote *The Economy of Cities* [1]. She revisited and further expanded her theory 16 years later, in another take on urban economics, where she put forward the concept that cities are the main players in macroeconomics, not the nation states [2].

Her ideas were continued by Edward Ludwig Glaeser (2011), the American economist and Harvard University professor, who published *The Triumph of the City* in 2011, a well received and highly accessible book, which became a creed for urban optimism by basically demolishing every maleficent view on urban and metropolitan areas. Going step by step, it asserted that a larger percentage of people lived in cities than any other point in human history simply because cities work and mankind was an urban species, urbanization being its destiny. What made cities stand and prosper was that urban proximity had become more valuable, even though the cost of connecting across long distances has fallen, either through long-distance travel or telecommuting.

In short, concentration made cities the engines of innovation and growth (even development). Athens spawned an entire civilization, Rome spawned an empire, and Florence spawned the Renaissance, while the great cities of England spawned a revolution [3].

Edward Glaeser was not alone in this matter. According to Shabu (2010), cities have always offered opportunities for economies of scale and for labor specialization, which did not emerge in rural areas. His studies confirmed the positive connection between income per capita and level of urbanization. Moreover, there was a positive connection between productivity and the agglomeration of economic activities in the cities [4].

Prior to Glaeser, Mills and Becker (1986) regressed the percentage of a country's population in urban areas (the urban percent) on the percentage of the labor force in agriculture, gross national product (GNP) per capita, and other variables. As expected, they found a positive relationship between the percent urban and GNP per capita and a negative one between percent urban and the agricultural share [5], while Moomaw and Shatter (1996) collected data from 90 countries in order to link urbanization to economic development [6].

Henderson (2009) viewed urbanization and economic growth in developing countries as going hand in hand [7], a view also found in Fujita, Krugman and Venables (1999) [8]. Katz and Bradley (2013) believed that urban and metropolitan areas were the ones that will fix the economy [9]. Nollen (2014) defined cities as engines of growth [10], while institutions such as the United Nations Human Settlements Programme (UN-HABITAT) and the World Bank (2009) maintained that the economic future of countries was tightly connected to the urban environment and that urbanization was not only inevitable, but also a powerful force for economic growth and poverty reduction [11].

The well renowned urban studies theorist Richard Florida (2011) compared urban areas to living creatures, but unlike biological species, who have metabolisms that slow down as they become larger, cities, on the contrary, or at least the successful ones, develop a faster metabolism as they grow, which was called "super linear scaling". The larger the population, the bigger the innovation and wealth creation per capita are. Cities are our greatest creation, not due to their infrastructure and localization along trade routes, but because they allow people to combine/recombine their talents and ideas in new ways [12]. Pan (2012) similarly wrote that increases in urban population density, the foundation of every city, give residents greater opportunity for face-to-face interaction. People know that when a city's population grows, there is scaling, and the productivity increases [13].

Kotkin (2012) spoke of small and medium cities and how they were becoming the new engine of economic growth. For example, in the United States, between 2000 and 2010, areas with less than 1 million inhabitants represented over 60% of urban and economic growth [14]. In the words of Altman (2014), economic growth could be attained by: 1) labour force expansion, and 2) increase in worker output. The first way could be achieved through higher fertility rates, *longer life spans, and/or immigration*, while the second way, through *access to capital and technology*. With the exception of high fertility, a distinguishing feature of rural areas, all of the above are characteristics of cities and urbanized regions [15].

O'Neill (2013) joined the debate by pointing out that the rise of BRIC nations (Brazil, Russia, India, and China) demonstrated that economic growth is driven by two things: demography and productivity. Cities were where those two mighty forces converged. In Brazil and Russia, and even more so in China and India, rapidly urbanizing centres were powering national and regional growth [16].

Turok (2012) and Brar et al. (2014) brought further sanction to the urbanization-economic development/growth relationship, the former from South Africa, while the latter from India. Turok concluded that cities enjoyed relative economic success at the expense of rural areas, whose fragility is highly visible. This however led to wide spatial inequalities [17]. Brar et al. (2014) estimated that in 2025, India will have 69 metropolitan cities, which, together with their hinterlands, will account for 54 percent of the country's incremental gross domestic product from 2012 to 2025 and for 50 percent of its total income in the terminal year [18].

Fellow McKinsey Global Institute alumni, Dobbs et al. (2011), (2012) wrote that cities have long been the world's economic machines or *dynamos*, but today the speed and scale of their expansion are unparalleled. Through a combination of consumption and investment in physical capital, growing cities could inject up to 30 trillion US dollars a year into the world economy by 2025 [19], [20].

Politicians as well recognized the tremendous importance of cities. Howe (1905), member of the Ohio State Senate, wrote at the beginning of the 20th century: *The City has always been the centre of civilization. Science, invention, industry are also urban. The larger the city and the more minute the specialization ... the more easy the production of wealth* [21].

More recently, at a meeting in 2013, local leaders representing some of the most important cities in the United States, such as Karim Reed, mayor of Atlanta, Eric Garcetti, mayor of Los Angeles, Rahm Emanuel, mayor of Chicago, and Bill de Blasio, the chief official of New York City, claimed that cities, and especially large cities, were the future and where *the action is* (mainly economic activity).

It is clear that urban planners, economists, and politicians alike believe that many of the world's problems could be solved with cities, especially with well-functioning and healthy cities, is prevailing and that the role of urbanization and cities in economic growth and human development is paramount.

The link between urbanization and economic prosperity could be traced by looking at the degree of urbanization (that is the percentage of people living in cities) and economic performance indicators such as gross domestic product (GDP), net profit, turnover, expenditures in research and development, etc. Glaeser stated that there was a positive correlation between such indicators, meaning that as the degree of urbanization increased so do many performance indicators. This led us to our question: was there a positive relationship (correlation) between urbanization (or lack of rurality) and performance indicators like GDP per capita, turnover, net profit, total expenditures for research & development activities, in Romania? We chose the county level (NUTS 3 or Nomenclature des unités territoriales statistiques 3, which comprise all 41 counties and the Municipality of Bucharest) and we compared their urbanization percentage with their gross domestic product per capita, net profit, turnover, average net salary, expenditures, and employees in research and development, as we believed these are the best measures for the economic well-being of any region. Maps were devised, using ArcGIS 9.3 and ArcView 3.3. software, depicting the situation of each indicator for every county in Romania, and finally we ran a Pearson correlation (with the help of IBM SPSS 18) between the degree of urbanization and the most prominent performance indicator, that is GDP per capita.

For this, we employed data from the 2013 Statistical Yearbook, provided by the Cluj County Statistics Department, regarding county gross domestic product, population living in urban and rural areas, research and development expenditures and employees engaged in R&D [22]. We also used data delivered directly from the National Trade Register Office for turnover, average net salary and net profit.

3. RESULTS AND DISCUSSION

Our first map depicts the degree of urbanization (percentage of people living in urban areas – cities and towns), in 2011, for each county in Romania at that time. The areas with the highest urbanization are the capital city of Bucharest (100% to be more exact), followed by Hunedoara (76.57%), Braşov (73.21%), Constanţa (69.42%), Cluj (66%), Sibiu (66%), Brăila (64.90%), and Timiş (61.54%). The lowest levels of urbanization can be found in the counties of Dâmboviţa (30.59%), Giurgiu (31.18%), Bistriţa Năsăud (37.55%), Neamţ (37.56%), Vrancea (37.67%), Călăraşi (38.61%) (fig. 1).

The second map indicates the 2011 GDP per capita in Romania, with Bucharest, Cluj and Timiş in the top three, ensued by the counties of Iaşi, Constanţa, Braşov, Argeş, and Prahova. The bottom was comprised of Tulcea, Vaslui, Vrancea, Botoşani, Giurgiu, Bistriţa Năsăud, Covasna, Călăraşi, and Harghita (fig. 2).

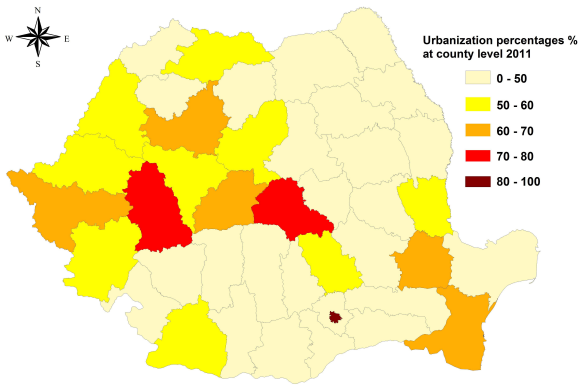

Fig. 1. Urbanization percentages in 2011, at county level.

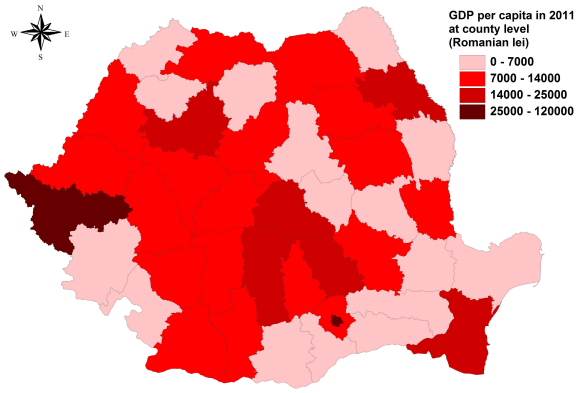

Fig. 2. Gross domestic product (GDP) per capita in 2011, at county level.

Expenditures in research and development followed a similar trend in 2011, the highest levels being found in Bucharest, Ilfov (which is the county surrounding the capital), Cluj, and Argeş. The lowest expenditures in this sector were found in Vrancea, Botoşani, Sălaj, and Caraş-Severin (fig. 3).

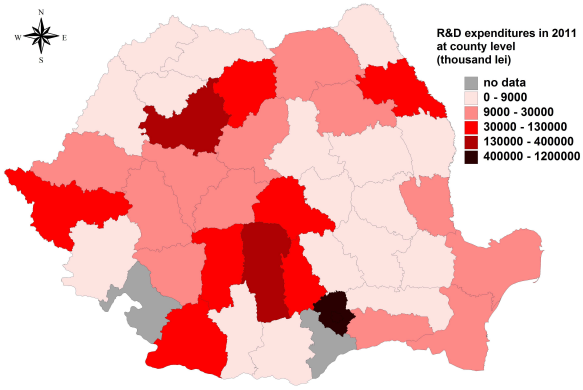

Fig. 3. Research & Development expenditures in 2011 (thousand lei), at county level.

Likewise, most people employed in research and development were registered in Bucharest, Ilfov, Timiş, Cluj, but also in Braşov, Iaşi, and Dolj. Most counties in Romania had few people working in R&D. Some examples were Vrancea, Neamţ, Bistriţa Năsăud, Caraş Severin, etc. (fig. 4).

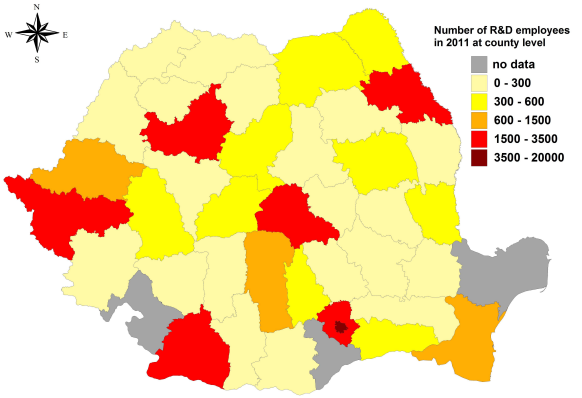

Fig. 4. Research & Development employees in 2011, at county level.

The counties with the largest turnover in 2012 were again those that were more urbanized, such as Bucharest, Ilfov, Timiş, Cluj, Braşov, Argeş, Prahova, and Constanţa. Lower turnover was found in more rural counties, such as Tulcea, Vrancea, Neamţ, Bistriţa Năsăud, Mehedinţi, Giurgiu (fig. 5).

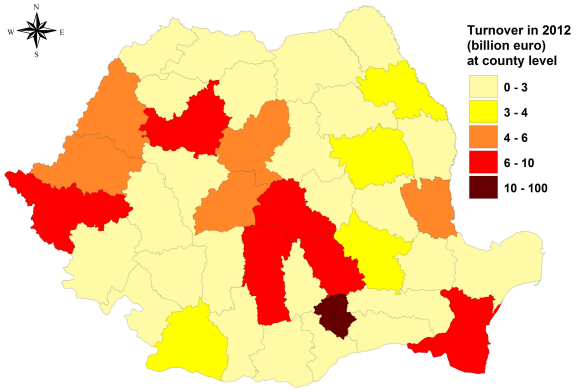

Fig. 5. Turnover in 2012 (billion euro), at county level *(*only companies, no banks or financial institutions).*

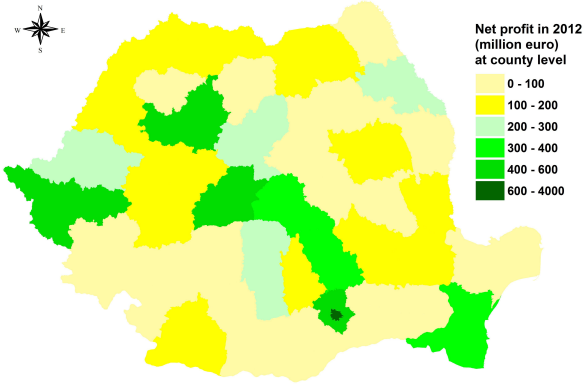

Fig. 6. Net profit in 2012 (million euro), at county level.

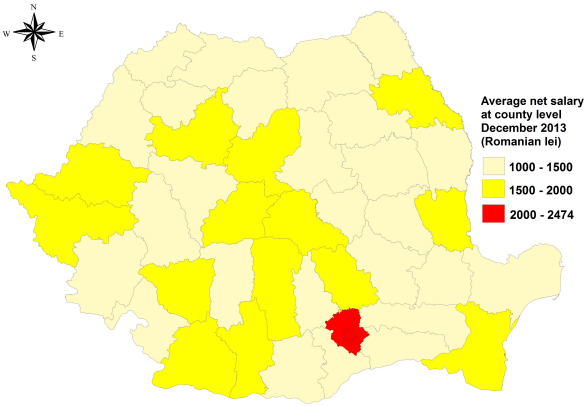

Fig. 7. Average net salary in December 2013, at county level (Romanian lei).

Bucharest, Timiş, Cluj, Ilfov, alongside Sibiu, Braşov, Prahova, and Constanţa, were once again the first counties when it came to net profit. Vrancea,

Tulcea, Covasna, Caraș Severin, Botoșani, Mehedinți were the counties with the lowest net profit. The map at Figure 6 presents the situation in 2012. The average net salary was significantly higher in urbanized counties, with peaks in Bucharest and Ilfov, followed by Cluj, Sibiu, Timiș, Argeș, etc. The lows were again found in rural counties, like Neamț, Harghita, Vaslui, Sălaj, Bistrița Năsăud, Mehedinți, etc. (fig. 7)

Ultimately, we wanted to compare the levels of urbanization for each county in Romania with their respective GDP. Therefore, a Pearson correlation was run to determine the relationship between county degree of urbanization and county gross domestic product. We found a strong, positive correlation between urbanization and GDP, which was statistically significant ($r = .679$, $n = 42$, $p < .0005$), as seen in Table 1.

Correlations

		Gradurb	PIB
Gradurb	Pearson Correlation	1	.679**
	Sig. (2-tailed)		.000
	N	42	42
PIB	Pearson Correlation	.679**	1
	Sig. (2-tailed)	.000	
	N	42	42

**. Correlation is significant at the 0.01 level (2-tailed).

Table 1. Pearson correlation between county urbanization and county GDP per capita.

4. CONCLUSION

In the case of Romanian counties, there is an obvious positive relationship (correlation) between their degree of urbanization and their economic success, as one can see in Bucharest, Brașov, Timiș, and Cluj. Thus, the greater the population living in urban areas, the better the economic situation of the region is.

The degree of rurality and economic performance, however, did not go hand in hand, as we have found a negative correlation, meaning the more people live in villages, the lower the economic indicators get. The most unfortunate examples of this phenomenon were the counties of Sălaj, Tulcea, Covasna, Harghita, Botoșani, Giurgiu, Vrancea, and Vaslui.

In conclusion, considering all of the above, we managed to bridge the initial hypothesis and the final results by employing effective cartographic as well as statistical methods and aids. Furthermore, we believe that we achieved our goal of proving the power and the crucial function of the urban, of the city, of the metropolitan area in the growth and development of Romania and especially of the regions that host them. We also demonstrated that the economy of Romania, like anywhere in the world, is spiky, concentrated, condensed in but a few regions that revolve around cities. In summary, the manner in which a city "raises" its surrounding region is strikingly similar regardless of continent or country.

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