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ENTREPRENEURIAL SECTOR DYNAMICS IN EMERGING TERRITORIAL SYSTEMS: THE CASE STUDY OF BAIJA MARE CITY, ROMANIA

This study aims to analyze structural changes in the entrepreneurial profile in a heavily industrialized territorial system in relation to its support area. The development of relationships between the cities and their surrounding areas (be it metropolitan region, a city influence area or a city region) led to the creation of informal clusters, where economic ventures based on the needs of the polarizing core are concentrated, conceptualized as an emerging territorial systems. The study also aims to identify the way in which economic ventures are grouped and regrouped inside emerging territorial systems, and what are the causes of such structural changes. The underlying hypothesis of the study is that the territorial subsystem of the influence area is closely connected with its coordinating core, Baia Mare in this case, but also that the two subsystems act differently. The research is focused mainly on the economic structure and was conducted over the ten-year time span, from 2001 to 2010. The evolution was analyzed for each NACE code (Nomenclature of Economic Activities) taking into account such variables as the number of companies, the number of employees, turnover and profit made.

Keywords: territorial management; relocation; entrepreneurship.

JEL code: R11, R12, R15.

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ДИНАМІКА РОЗВИТКУ ПІДПРИЄМНИЦТВА

У ТЕРИТОРІАЛЬНИХ СИСТЕМАХ, ЩО ЗАРОДЖУЮТЬСЯ: ЗА ДАНИМИ МІСТА БАЙЯ МАРЕ, РУМУНІЯ

У статті проаналізовано структурні зміни підприємництва як сектору підтримки розвитку важкої промисловості територіальної одиниці. Розвиток відносин між великим містом та оточуючим його простором призводить до формування неформальних кластерів, в яких концентруються підприємства, що обслуговують потреби міста-ядра. Показано, яким чином економічні одиниці групуються та перегруповуються всередині таких територіальних одиниць, а також причини таких структурних змін. Зона впливу міста як підсистема знаходиться у тісному взаємозв'язку з містом-ядром (у даному випадку – Байя Марє), однак функціонують дані підсистеми по-різному. Для аналізу обрано часовий проміжок з 2001 по 2010 роки. Проаналізовано динаміку таких показників економічного розвитку як кількість компаній, кількість працевлаштованих, оборот підприємств та їх прибуток.

Ключові слова: управління територіальною одиницею; передислокація; підприємництво.

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ДИНАМИКА РАЗВИТИЯ ПРЕДПРИНИМАТЕЛЬСТВА
В ЗАРОЖДАЮЩИХСЯ ТЕРРИТОРИАЛЬНЫХ СИСТЕМАХ:
ПО ДАННЫМ ГОРОДА БАЙЯ МАРЕ, РУМУНИЯ

В статье проанализированы структурные изменения предпринимательства как сектора поддержки развития тяжёлой промышленности территориальной единицы. Развитие отношений между большим городом и окружающим его пространством

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приводит к формированию неформальных кластеров, в которых концентрируются предприятия, обслуживающие потребности города-ядра. Показано, каким образом экономические единицы группируются и перегруппировываются внутри таких территориальных единиц, а также причины таких структурных изменений. Зона влияния города как подсистема находится в тесной взаимосвязи с городом-ядром (в данном случае – Бая Маре), однако функционируют данные подсистемы по-разному. Для анализа был взят временной отрезок с 2001 по 2010 гг. Проанализирована динамика таких показателей экономического развития, как количество компаний, количество трудоустроенных, оборот предприятий и прибыль.

Ключевые слова: управление территориальной единицей; передислокация; предпринимательство.

1. Introduction

Economic reforms implemented in Romania led to a spectacular increase in the number of companies and fields of economic activities. A special category of cities is heavily industrialized cities, which used to benefit from a special status during the communist period, as a result of major investments directed at manufacturing. After 1990 those cities went through an economic decline, with economic imbalances generating many disturbances.

Since 2000 structural reforms implemented at the political level have brought about an improved evolution of the entrepreneurial sector in most urban systems in Romania. Old industrial centers were included within these trends, with their industrial profile changing permanently.

Most important structural changes occurred in big cities, where numerous economic ventures were relocated to the periphery, out of the cities where business development was expensive. New ventures, too, arose in rural areas close to big cities, and they rapidly developed but it took authorities a very long time to develop support for investors by developing the basic infrastructure (Peptenatu et al., 2012a).

In numerous specialized studies entrepreneurial behavior is considered as the result of the combined action of the following factors: the perceptions of local institutional environment, social networking effects and individual determinations (Ardagna, Lusardi, 2010). Additional factors are the perception of risk and culture, which are described in numerous studies as the determining factors in the decision to become an entrepreneur (Chiappori, Paiella, 2011; Guiso, Paiella, 2008; Tabellini, 2010; Krueger, Brazeal, 1994; Koellinger et al., 2007; Luthje, Franke, 2003; Segal et al., 2005).

Studies concerning the polycentric development of territorial systems emphasize the trend towards companies concentration in certain polarizing centers inside emerging territorial systems. Polycentric development starts from the idea that an urban systems may stand out in the system of settlements by means of its ability to function as a hub for information redistribution (after a certain transformation) indispensable to the development of polarized local systems. The development of entrepreneurial clusters has a decisive contribution to the development of polarizing capacity of the entire emerging system.

Polycentric development strategy enables the development of the entrepreneurial sector by means of specific advantages offered to economic development across the territory, geographical proximity being one of the basic tenets of polycentrism and the factor determining the propagation of innovation across the territory.

The importance of studying economic processes inside emerging territorial systems is defended by the need to identify territorial management systems able to provide the optimal functionality to the processes born as a result of natural interactions between a city and its surrounding space.

Functional restructuring in the areas of urban influence is accompanied by the pressure on the natural environment, that is why environment management models that would match the intensity of the "aggression" are needed too (Braghina et al., 2011, 2012).

2. Materials and methods

The research on the emergence and functionality of emerging systems was conducted in the Baia Mare territorial system, one of the most important urban systems of the North-Western Development Region (Figure 1). The analysis of the relations between the city of Baia Mare and its area of influence was conducted in the historical perspective, studying the zoning plans and territorial development strategies.

Measuring the relations between the city of Baia Mare and its area of influence was grounded on the statistical data on the number of companies, the number of employees, companies' turnover and profit, matched against the number of inhabitants, from 2001 to 2010. These indicators were analyzed in their evolution, at the level of each NACE code.

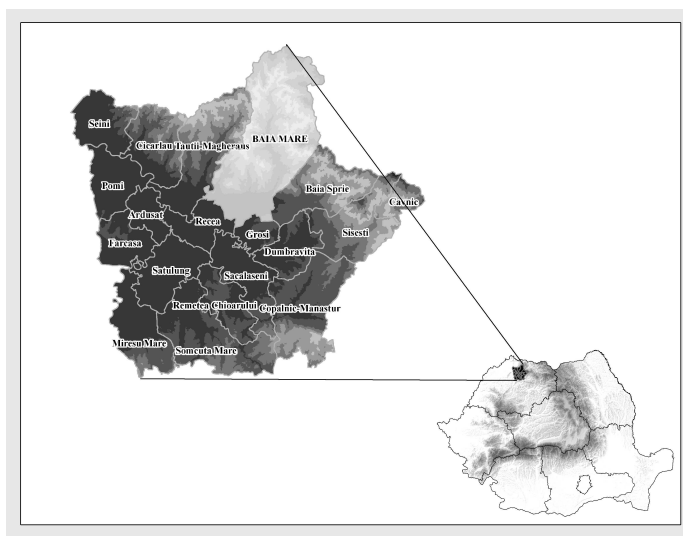


Figure 1. Baia Mare and its generated territorial system

The underlying presupposition of this study is that the area of influence is bound by strong economic ties with the coordinating or polarizing center, and that changes at the level of the polarizing center are felt across the influence area.

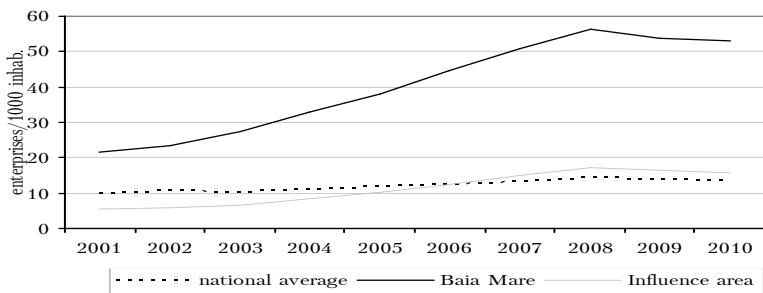
The area of influence is envisioned as a territorial system (the Baia Mare Territorial System) made up of two major territorial subsystems: the Baia Mare territorial subsystem (limited to the Baia Mare administrative-territorial unit) and the territorial subsystem of the area of influence, in turn made up of another 20 territorial components (administrative units).

The analysis is conducted within the paradigm of non-linearity (Kiel, 1991) and the theory of complexity (Urry, 2005; Manson, O'Sullivan, 2006; Thrift, 1999). Taking into consideration numerous components (territorial, economic, social, and cultural) and the manner of the trans-scalar interaction of these components, the assumption may be made that the territorial system of the area of influence (metropolitan region, city-region) and its components are complex adaptive systems (Ciliers, 2000; Martin, Sunley, 2003, 2006, 2007).

The study monitored the way certain administrative units tend to concentrate a higher number of economic ventures, standing out as the development poles. We have submitted two concepts, depending on the manner and the complexity of the structure, the concept of structuring axis (a course able, thanks to the favorable conditions offered, to win over investments, that would enable a functional regeneration of the land along the access routes between development poles) and the concept of development corridor (a course with a superior structure level).

3. Results and discussions

The analysis of the evolution of the number of companies emphasizes the stage in the evolution of the economy of the area analyzed, as well as the synchronization of the types of evolution with the evolution of the national system. In the area studied, the total number of companies rose permanently, in the case of both subsystems, during 2001–2010. By 2010, compared to 2001, the number of companies had risen 2.9 times in the influence area, as compared to 2.4 times in Baia Mare, meaning a higher growth rate for the companies in the area of influence. In the case of both subsystems, 2008 was the milestone year, because the number of companies in the city of Baia Mare dropped by 6% and the number of companies in the influence area dropped by 7% (Figure 2). The effects of the economic recession are also visible in the decline of the number of companies, but the indicator that best reflects the impact of the worldwide economic crisis is reflected in other economic indicators analyzed in the present study (turnover, profit earned, the number of employees).



Source: Borg Design

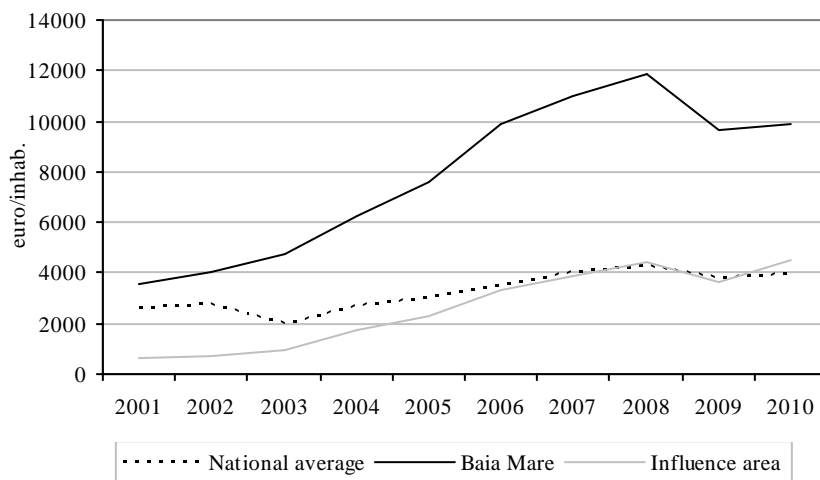
Figure 2. Evolution of the total number of companies

The absolute gap between the number of companies in the two subsystems rose from 2,478 companies by 2001 to 5,879 companies by 2010. However, this situation is not reflected in the relative gap between the number of companies in the two subsystems. While by 2001 the number of companies in the area of influence accounted for 15% of the total number of enterprises, the gap shrunk 2%, and by 2010 the number of companies in the influence area subsystem accounted for 17%.

In a manner similar to the evolution of the number of companies, the evolution of the turnover is continuous, in the case of both subsystems, up to 2008. This is not the case for the national average that registered a drop between 2002 and 2003. Companies based in Baia Mare managed to increase turnover 3.1 times, from 500 mln euros to 1.5 bln euros. In the same time span, the influence area subsystem registered a sevenfold turnover increase, from 63 mln to 450 mln euros.

During 2001–2010 the absolute gap in turnover between the two subsystems rose from 430 mln to 930 mln euro; however, the relative gap as compared to the total turnover posted by the entire territorial system of the Baia Mare influence area registered significant drops. While by 2001 Baia Mare accounted for more than 88% of the turnover of the entire system, by 2010 that ratio had dropped to 74%. Therefore, the companies in the influence area account for increasingly high ratios of the turnover in the total turnover of the entire system, against the backdrop of a higher turnover growth rate.

The evolutions of the turnover in the two subsystems were approximately parallel, in the sense that both subsystems registered a turnover increase until 2008. Starting in 2008 and up to 2009 the turnover of both subsystems registered a decline, and 2009–2010 saw the attempts to offset that decline. The city of Baia Mare could not achieve that goal, as its turnover only amounted to the 2006 level (Figure 3). The turnover value of the influence area dropped in a single year by 100 mln, which is 19% of the preceding year's value. However, what the city of Baia Mare could not do, the area of influence could.



Source: Borg Design

Figure 3. Evolution of turnover

The analysis of turnover/capita distribution highlights the concentration of high values (1,000 to 2,000 euro/inhabitant) inside the urban-rural interface of Baia Mare city, and the concentration of low figures in the communes of Coas and Somcuta Mare, a situation that endures, with very small fluctuations, throughout the time span analyzed, serving as an example of the lock-in in the status quo (Figure 4).

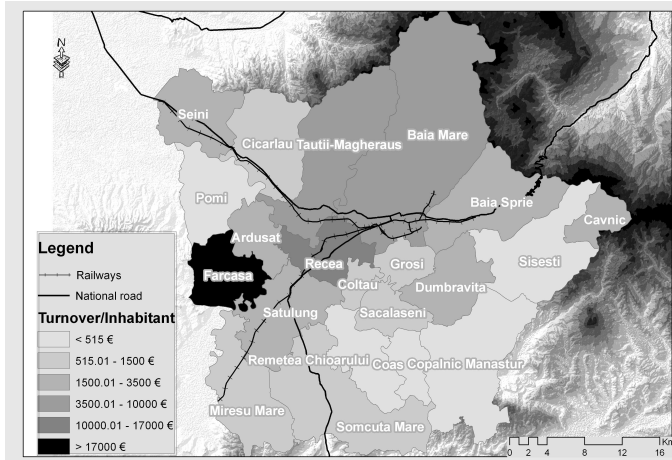


Figure 4. Territorial distribution of turnover/inhabitant (2010)

The first major changes happened in 2004 when the polarizing center, Baia Mare, was left far behind in terms of turnover/capita by the commune Farcasa, while Recea comes very close in terms of turnover/capita to the value of the polarizing center. The cluster shaping up around the city of Baia Mare consolidates by means of an ever-increasing complexity of economic activities.

The first signs of the strong division of the turnover/inhabitant inside the former cluster around Baia Mare revealed themselves after 2006. Two regions started to shape up, with Eastern region registering a significant increase of the respective indicator. The gap grew bigger in 2007 when the Eastern region continues its spectacular increase of the turnover/resident.

2008 was the year of the maximal disorder of informal territorial structures (territorial clusters more or less homogeneous by certain criteria). The turnover/capita values fluctuate so strongly that territorial clusters envisioned so far become impossible to define. Fragmentation is the dominant process. Alone, the territorial cluster of the least developed components retains its structure by means of continuity across the territory. This trend remained the same during the whole period analyzed.

From the viewpoint of the territorial distribution of the turnover/capita one may conclude that the changes occurred may be envisioned as adaptive processes typical to the theory of complexity and the paradigm of non-linearity. One may thus individualize both the apparition of the emergence and self-organization process and the manifestation of lock-in in the status-quo and path-dependency.

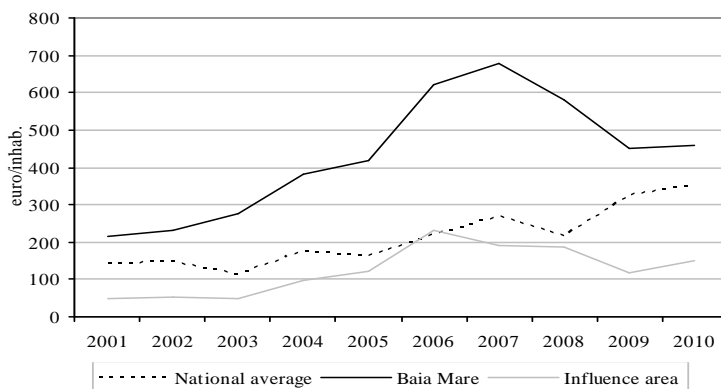
Emergence arises at the time when old territorial structures and relations are demolished and new ones arise (Kiel, 1991). When a leader is losing its position and is replaced by other territorial components it is a classical example of emergence. Self-organization arises at the time when old structures are demolished and nevertheless a new order and hierarchy emerges (Stam, 2010; Simmie, Martin, 2010; Prigogine, 1997), which carries on the dynamics of the system. The system did not dismantle at the moment when the turnover/capita of the system's coordinating center was outranked by the turnover/capita of other communes (territorial components of the system).

The lock-in best explains the system's inability to break away from very low turnover/capita growth rates. The cluster of territorial components with very low turnover/capita values is the sole constant territorial structure inside the system.

It was to be expected that, because of the path-dependence, other territorial structures (the cluster around Baia Mare and the buffer area's cluster) would also continue their existence. This failed to happen. Two territorial clusters were disorganized through fragmentation. The overdiversified development caused these territorial structures inside the system fall in a mosaic-like pattern.

The analysis of the profit during 2001–2010 indicates a significant increase, with the growth rates varying from one year to another. In 2007 the profit rose 3.1 times compared to 2001 in the Baia Mare subsystem, while in the influence area subsystem profit rose more than 4.7 times compared to 2006. Just like in the case of the turnover evolution, as far as profit is concerned one may notice a parallel evolution, but with certain differences from the previously mentioned variable.

By the end of 2010 the profit level dropped by more than 32% as compared to the peak registered in 2007 that is the case of Baia Mare city. In the case of the influence area, the profit drop, as compared to the highest value registered in 2006 stood at 35%. Timid attempts to recover may be noticed in 2010 (Figure 5).



Source: Borg Design

Figure 5. Evolution of the profit

The gap between the profit earned by the two subsystems, in absolute terms, rose from 25 mln euro in 2001 to more than 49 mln euro in 2010. However, in relative terms, comparing the profit earned by one subsystem to the overall profit of the system, this gap drops from 14% to 19% that is the area of influence earned 5% more profit in 2010 as compared to 2001 as a part of the total profit.

The analysis of territorial disparities induced by the fluctuation of profit per settlement and inhabitant highlights some of the most stable territorial structures. The indicator of profit matched against the number of inhabitants highlighted the very deep fracture between the Northern and Southern parts of the influence area. The imaginary line of demarcation passes through Farcasa-Recea-Baia Sprie. With few exceptions, and in a few years only, the communes of Satulung, Grosi and the town of Somcuta Mare managed to make it into the category of more than 100 euro profit/inhabitant (Figure 6).

It is obvious that there are significant gaps inside the Northern and the Southern clusters. However the differences inside the Southern cluster are much smaller, most of the times all territorial components are included in the category of less than 50 euro/inhabitant.

On the contrary, differences between the components that make up the Northern cluster rise as high as 1,000 euro/inhabitant. If one were to eliminate the profit/inhabitant earned in Farcasa, then the differences would drop to approximately 400 euro/resident. In other words, the Northern cluster is characterized by a much bigger fragmentation, and disparities inside the territorial cluster are very pronounced. Nevertheless, by 2010 one notices a return to the unity of 2001–2003 (smaller differences between territorial components inside the Northern cluster).

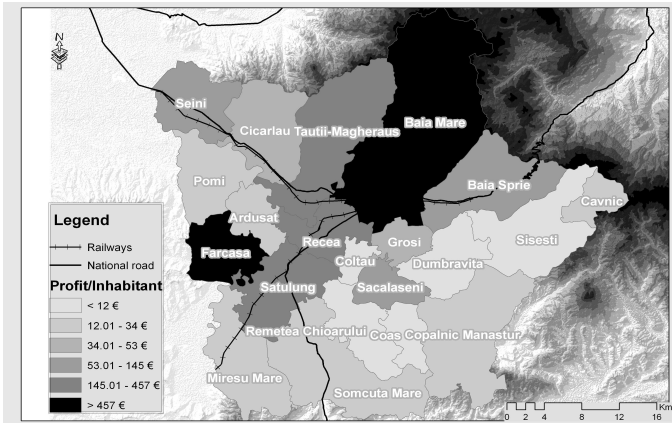


Figure 6. Territorial distribution of profit/inhabitant (2010)

The number of employees in the influence area subsystem rose 2.14 times in 2010 as compared to the reference year, 2001. The highest number of employees was registered, however, in 2008, when there were more than 11,400 employees working for the companies based in the influence area. In exchange, the number of the employees of the companies in the polarizing center had dropped by 6% in 2010 as compared to the number of employees in 2001; there had been an 8% increase during the 2001–2008 interval (Figure 7).

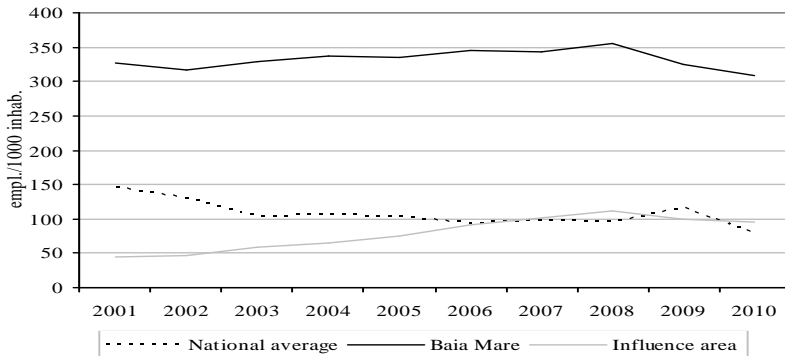


Figure 7. Evolution of the number of employees

The analysis of the number of employees per 1,000 inhabitants reveals important differences across the influence area. Territorial components in the Northern part of the influence area that exceed 100 employees/1,000 inhabitants are shrunken because of the decline of Baia Sprie town and the commune Grosi. In addition, a buffer zone emerges, discontinuous in space, consisting of territorial components with more than 50 employees/1,000 inhabitants (Baia Sprie, Grosi and Dumbravita, in the Central-Eastern part; and Satulung and Somcuta Mare in the Central-Southern part). This buffer zone separates the Western border area, consisting of the communes of Pomi, Ardușat and Miresul Mare, with up to 30 employees/1,000 inhabitants, from the South-Eastern part, consisting of Remetea Chioarului, Coas, Copalnic Manastur, Sisesti, with up to 20 employees/1,000 inhabitants (the communes of Coltau and Sacalaseeni are the exceptions from the territorial distribution presented above, with 33 and 37 employees/1,000 inhabitants, respectively) (Figure 8).

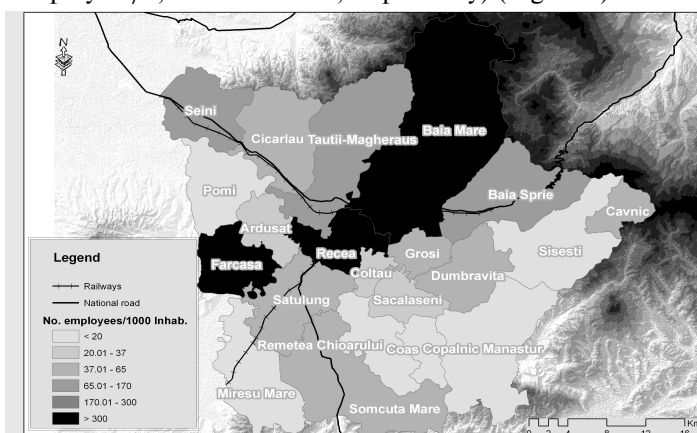


Figure 8. Territorial distribution of the employees/1000 inhabitants (2010)

These 4 economic indicators reveal that the influence area reacts, in most situations, in concert with the situation of the Baia Mare polarizing center. The dynamics of these 4 indicators have the parallel trajectory, with small differences and particular situations. The response times and the critical years seem to be similar in both subsystems, with 2008 standing out as the last year before all the indicators entered the phase of decline, a severe decline in some cases, for at least one year.

4. Conclusions

The results of this study indicate the varying effects across the territory of the national policies for the development of the entrepreneurial sector. The emerging territorial systems are vital spaces around the big crowded cities and the destination for the relocation of economic ventures in the search for competitive advantages.

Heavily fluctuating evolutions, sudden reversals, the progress or sudden and severe decline, big differences in the values in a single branch of the economy may indicate discontinuities that could betray non-linear dynamics and complexity, and thus highlight the way the territorial subsystem of the influence area acts or reacts to changes occurring inside the Baia Mare coordinating subsystem.

The comparative analysis of the two subsystems indicates that the area of influence did not succeed in acting as a support for the employees who were laid off from

jobs by the companies in the polarizing center. The area of influence not only failed to absorb part of the jobs cut in Baia Mare, and to limit the impact of the loss of 7,000 jobs in 2 years, moreover, it was unable to preserve its own jobs. As compared to 2008, by the end of 2010 16% of the jobs in the influence area subsystem had been lost. There is no general rule of correlation between the two territorial subsystems. Sometimes they act in symmetry, while in other cases they act in totally different ways.

To conclude, a more stable environment arises favoring the production of profit in the Baia Mare subsystem. Bigger fluctuations of the profit rates registered in the influence area hint at an instability of the economic environment in that subsystem. It is also worth pointing out the general decline trend in the profitability rate for both subsystems as well as the rise of the gross profit levels as compared to 2001, 3 times over in the case of the area of influence and 2.1 times over in the case of the Baia Mare subsystem.

The territorial distribution of the indicators analyzed determined huge differences inside the systems and they also revealed the conditions for the creation of internal structures that would fulfill the role of varying importance in the dynamics of the territorial system of the area of influence, at least from the economic point of view.

Studying the complex processes emerging inside territorial systems is particularly important, because detailed analyses are the foundation of territorial management systems able of bestowing the optimal territorial functionality on the processes that arise in the wake of natural interaction between the city and the surrounding area.

The concentration of population and economic ventures in a brief period of time brings about dysfunctions in the interaction between those components and the natural environment. The permanent functional reorganization and the increasing concentration of economic enterprises in emerging territorial systems has brought about the need for the creation of territorial management models that would optimize the complex interactions between the components of the emergent territorial system (Ianos et al., 2012a, 2012b; Peptenatu et al., 2011, 2012b).

The emerging territorial system is a discontinuous space of interactions, with a major structuring capacity, born as a consequence of economic dynamics of the polarizing center, which has a fundamental contribution to the evolution of the economy of the crowded urban spaces.

Optimizing the functioning of the emerging territorial system is closely linked to the creation of administrative structures of the type of metropolitan areas, which would act in concert so as to support the territorial processes inside the respective emerging space. The creation of metropolitan areas is the result of the individualization of the need for support space in developing urban settlements, which have stood out in national and regional networks of settlements due to their accelerated economic development. The new level of development is a major challenge for decision makers, forced to identify the territorial management systems capable of reaching major development goals in a new territorial context.

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