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DETERMINANTS OF HUNGARIAN SUB-REGIONS' TERRITORIAL CAPITAL

1. THEORETICAL BACKGROUND AND THE APPLIED MODEL

The concept of territorial capital belongs to the endogenous or/and new regional growth theory that collects, categorises and quantifies with spatial econometric methods those tangible and intangible, endogenous and exogenous assets that characterise regional economic development and growth. The introduction of the concept of territorial capital was necessary because it has been proved that intangible goods play a major role (in the long term), besides tangible assets, in regional development and growth (Rota, 2010; Camagni, 2011; Camagni *et al.*, 2011; Stimson *et al.*, 2011; Veneri, 2011; Camagni-Capello, 2013; Capello, 2013).

Close connection exists between territorial capital and regional economic development. In the measurement of territorial capital such territorial capacities were considered that are not, or are only partially, exploited by the region. Ranking the regions on the basis of their territorial capital (ex-ante approach) and regional GDP (ex-post approach) shows the difference between these two approaches. It occurs because territorial capital shows not only the achieved development but also the level that is potentially available (Jóna, 2013). The value of the realized resources of a region is not equal with the regional performance; the two values can be equal only if the region exploits all its territorial capacities. This is expressed by the following formula:

$$TC_{r,t} = UA_{r,t} + RSD_{r,t},$$ (1)

where *TC* is the territorial capital, *UA* is the value of the unexploited assets, *RSD* is the realized stage of development, *r* is the region and *t* is the time. It is logical

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that if $UA = 0$, the region maximally exploits and mobilizes its territorial capital. The value of UA (after normalization of data) is between 0 and 1, so the higher its value, the higher the unexploited regional capacity is and *vice versa*.

The goal of this study is to present the territorial capital of Hungarian sub-regions (LAU1 level) and to measure its annual change between 2004 and 2010. It tries to find out by which factors and how much the changes of territorial capital are determined at macro-regional level and in sub-regions at different development levels. Basically, the concept of territorial capital is not discussed here (for details see Capello *et al*., 2009; Camagni *et al*., 2011; Caragliu and Nijkamp, 2011; Perucca, 2013) but is applied following the earlier research practice (Camagni and Capello, 2013).

In this sense, the indicators of nine territorial potentials are collected and classified in seven kinds of capitals (economic capital, social capital, relational capital, infrastructural capital, institutional capital, human capital, cultural capital). Fundamentally, territorial capital embraces these seven capitals. Territorial capital exists as dependent variable and the above mentioned seven capitals are explanatory variables in the applied model.

1.1. The Model of Territorial Capital

As already indicated, this model includes seven explanatory variables. Economic capital shows the economic performance of the region, Camagni calls these rivalry and tangible goods. A lot of scholars used similar indices in the case of measurement of economic capital (Capello *et al*., 2009; Brasili, 2010; Veneri, 2011; Brasili *et al*., 2012). Furthermore, infrastructural capital contains the aptness and size of the elements of infrastructure – the same indicators were used in studies by Capello *et al*., 2009; Brasili, 2010; Russo *et al*., 2010; Brasili *et al*., 2012; Russo and Servillo, 2012.

Institutional capital represents public institutions and their services. It is typical that cultural institutions appear here (one exception is the post office). In this model a close theoretical and empirical correlation emerges between the institutional and the cultural capital. Caragliu and Nijkamp (2008) also applied a similar indicator system. The human capital basically expresses two aspects of the local society: on the one hand, the health condition of the population, and, on the other hand, the region's knowledge level. The health status determines the regional welfare as well; if the population is healthy, the economic output and performance may increase, the social transfers decrease etc. The health condition is operationalized with the traditionally accepted indicators (e.g. infant mortality), and the knowledge level is measured by the number of students and teachers participating in the tertiary education and the number of people enrolled in the libraries (Kunzmann, 2007; Caragliu-Nijkamp, 2008; Camagni *et.al*., 2011; Brasili *et.al*., 2012; Russo and Servillo, 2012).

Social capital shows the level of social integration. It has two dimensions: (1) employment and (2) local social inequalities. The first one is measured – among others – by the employment rate of the sub-regions and the second one embraces i.a. the Hoover-index. Together they demonstrate well the level of social integration. In addition, homelessness causes social disintegration (it does not mean that homeless people are harmful for the society, but the phenomena itself can lead to disintegration of local society). It is typical that the homeless provider institution system functions in cities and metropolises (of course there are some exceptions), but public kitchens (kitchens for the poor) are concerned with groups living in social exclusion in small villages or towns. In general, local trust relations can be measured by observation of popular action and economic crimes (Russo *et al.*, 2010; Veneri, 2011; Brasili *et al.*, 2012).

Relational capital firstly includes the communicational devices. The relational nets can come into being formally and informally. The first one usually occurs in civilian organizations, the latter evolves in formal and informal clubs (club-goods). In Hungary they are relatively new. In the third sector the relational capital can be piled up, which can be converted to economic processes, thus becoming the driving force of regional growth. Clubs for the old belong to this category (here special club-goods are formed) because in the aging societies local welfare is determined by the quality of interaction of old people (Camagni *et al.*, 2011). Ultimately, cultural capital includes a number of different cultural institutions and their capacity (Caragliu-Nijkamp, 2008; Brasili *et al.*, 2012). The details are shown in the table 1.

Table 1. Variables and sub-indices constructing the territorial capital

Aggregated index	Sub-index/ dimension	Variables
Territorial capital	Economic capital	1. Stock of private capital 2. Yearly private investments 3. Regional GDP 4. Output per 1 firm
	Infrastructural capital	1. Footpath and pavement per 1 km^2 2. Cycle path per 1 km^2 3. Length of national road per 1 km^2 4. Length of gas pipe per 1 km^2 5. Drinking water system for public utility per 1km^2 6. Length of sewer per 1 km^2 7. Size of reservation per 1 km^2 8. Size of total green area

Table 1. (cont.)

Territorial capital	Institutional capital	1. Number of libraries per 1,000 people 2. Number of institutions for public culture per 1,000 people 3. Number of museums per 1,000 people 4. Number of theatres per 1,000 people 5. Number of cinema seats per 1,000 people 6. Number of post offices per 1,000 people 7. Number of art communities per 1,000 people
	Human capital	1. Number of infant mortality per 1,000 live-births 2. Number of General Practitioners per 1,000 people 3. Number of chemist's per 1,000 people 4. Number of people enrolled in libraries per 1,000 people 5. Number of students taking part in tertiary education per 1,000 people 6. Number of teachers working in tertiary education per 1,000 people
	Social capital	1. Number of the registered unemployed per 1,000 people in active age 2. Daily average number of people in the communal kitchen 3. Number of people paying taxes per 1,000 people 4. Number of crimes with prosecution per 1,000 people 5. Number of economic crimes per 1 company 6. Domestic migration difference 7. Hoover-index
	Relational capital	1. Number of Internet users per 1,000 people 2. Number of mobile phone subscriptions per 1,000 people 3. Number of non-profit organizations per 1,000 people 4. Number of clubs for old people and the number of members in them per 1,000 old people
	Cultural capital	1. Number of members of art communities per 1,000 people 2. Number of theatre-goers per 1,000 people 3. Numbers of participants in cultural events per 1,000 people 4. Number of museum visitors per 1,000 people 5. Number of people going to permanent theatres per 1,000 people 6. Number of cinema visits per 1,000 residents 7. Number of monuments per 1,000 people

Source: author's calculation.

2. METHOD

In this stud territorial capital is analyzed between 2004 and 2010 at sub-regional level (LAU-1 or NUTS-4 level). Hungary had 174 sub-regions in this period. The figures are obtained from the National Territorial Development and Land Information System. After that R-type a priori principal component analysis was

applied (further principal component analysis) to reduce the multicollinearity between the variables and to minimize the number of variables to the extent that can be accepted statistically (Caragliu and Nijkamp, 2008; Casi and Resmini, 2012; Capello and Fratesi, 2013).

Finally, only those variables were left in the model whose KMO and MSA values were over 0.5 every year. In addition, the total variance summarized for 7 years for the 7 factors was 83.37%, which exceeded the minimum expected 60% variance rate. The value of primary autocorrelation stayed in the acceptable domain in all 7 years, which is important in the case of longitudinal research, operationalising it with the Durbin-Watson test (its lowest value was 1.673 and the highest value was 2.366). Simply put, it means that our data move together, which can be seen their 'synod'. For further details see table 2.

Table 2. Main data of principal component analysis

Year	Number of principal components	Measure of Sampling Adequacy (MSA-test)	Kaiser-Meyer-Olkin (KMO-test)	Durbin-Watson-test	Redundancy[*]
2004	7	0.68	0.711	1.985	0.514
2005	7	0.71	0.763	2.249	0.532
2006	7	0.67	0.757	2.198	0.494
2007	7	0.78	0.801	1.995	0.501
2008	7	0.79	0.812	2.366	0.551
2009	7	0.77	0.809	2.341	0.519
2010	7	0.81	0.825	1.913	0.533

N = 174; sig.: p < 0.05; $^{*} Red = \dfrac{\sum_{i=1}^{m} \sum_{\substack{j=1 \\ j \neq i}}^{m} r_{i,j}^{2}}{m(m-1)}$.

Source: author's calculation.

Eventually the database consists of 47 indicators, organized into seven sub-indices (types of capital). The average of these seven types of capital eventuates the territorial capital. The matrix consisting of 52,374 [43 (indicators) X 174 (sub-regions) X 7 (years)] cells came into existence.

After normalization the set of indicators was weighted because the different sub-indices determine the territorial capital with different weight (Arbia, 2006). Subsequently the figures were corrected with the method of penalty for bottleneck.

This is a relatively new method, it has not been applied in territorial capital analysis yet. With this it is achievable that a high value of one of the sub-indices will not compensate totally the value of a lower value sub-index. (Ács *et al.*, 2011; Szerb and Ács, 2011). Using the penalty for bottleneck method the normalized value of territorial capital can be corrected and specified.

The practical use of the method is simple. First of all the normalized variables are needed to rank in order of size (Rappai and Szerb, 2011):

$$0 \leq X_1 \leq X_2 \leq ... \leq X_k \leq 1. \tag{2}$$

After this from a certain variable we deduct the value of the smallest variable belonging to it, then 1 is added to a given value, and by applying the logarithmic function we receive a value which is ready to be corrected, in other words:

$$\sum_{i=1}^{k} x_i^{'} = kx_1 + \sum_{i=1}^{k} \ln(1 + x_i - x_1), \tag{3}$$

where x_1 stands for the correcting factor, x stands for the sub-index that needs to be corrected, and 'min' stands for the variable with the lowest value. Finally, the value of the corrected sub-index can be obtained if we deduct the value of the correcting factor from each normalized value, so: $x_i^x = x_i - kx_i$. . The following example will help to understand it better: if the value of a normalized variable is 0.6, the smallest value of the variables is 0.4, the difference between the two is 0.2. According to the above formula, the natural logarithm of $1 + 0.2$ is 0.1. This way the corrected value applying the methods will be 0.58 (0.4 + 0.18) instead of 0.6.

The penalty function is right if the corrected value is equal or less than the one without correction (it is logical as $0 \leq x_1 \leq x_i \leq 1$ so $x_i^x = x_i - x_1 \leq 1$). In the model this condition was realized, in other words (Rappai and Szerb, 2011):

$$kx_1 + \sum_{i=1}^{k} f(x_i - x_1) \leq \sum_{i=1}^{k} x_i,$$

$$x_1 + \frac{1}{k}\sum_{i=1}^{k} f(x_i - x_1) < \frac{1}{k}\sum_{i=1}^{k} x_i. \tag{4}$$

The steps in the measurement of territorial capital:

1. After the a priori principal component analysis the normalized figures are corrected with the method of penalty for bottleneck.

2. Applying arithmetic average[1] the territorial capital of a sub- region can be calculated using the formula:

$$tc_{r,t} = \frac{HC_{r,t} + InfC_{r,t} + InsC_{r,t} + SC_{r,t} + CC_{r,t} + EC_{r,t} + RC_{r,t}}{N_{kc}},$$

where *tc* is the territorial capital of the sub-region, *HC* is the human capital, *InfC* is the infrastructural capital, *InsC* is the institutional capital, *SC* is the social capital, *CC* is the cultural capital, *EC* is the economic capital, *RC* is the relational capital, *Nkc* is the number of the kind of capital, *r* is the region and *t* is time.

3. Finally, the arithmetic average of the territorial capital of the 174 sub-regions is aggregated, and national territorial capital can be calculated, in other words:

$$TC_{n,t} = \sum_{i=1}^{N} \overline{tc}_{r,t},$$

where TC means the national territorial capital and n is the nation.

4. It is calculated for all 7 years.

Eventually, the territorial capital is defined by 43 normalized, weighted and corrected synthetic indicators at national and sub-regional level.

3. RESULTS

3.1. The Trend of Territorial Capital

Between 2004 and 2010 the average growth of national territorial capital was 9.66% (using geometric mean), which means that average growth per year was 1.38%. Territorial capital was increasing harmoniously between 2004 and 2008, the annual growth was 0.53%. It means a relatively steady growing path (Kornai, 1972). In the first two years of the economic crisis (2009–2010) the annual growth of territorial capital at national level was 0.89%, which meant a 0.36 percentage point growth compared to the previous period.[2] The territorial capital growth of the Hungarian sub-regions did not stop during the first two years of the economic, it even increased in considerably. It becomes clear from

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[1] It could be calculated: $G = \sqrt[n]{a_1 \cdot a_2 \cdot a_3 \cdot \ldots \cdot a_n}$.

[2] The economic crisis arrived in Hungary later but it was more intensive. The crisis was actually perceivable from January 2009 (see László, 2013).
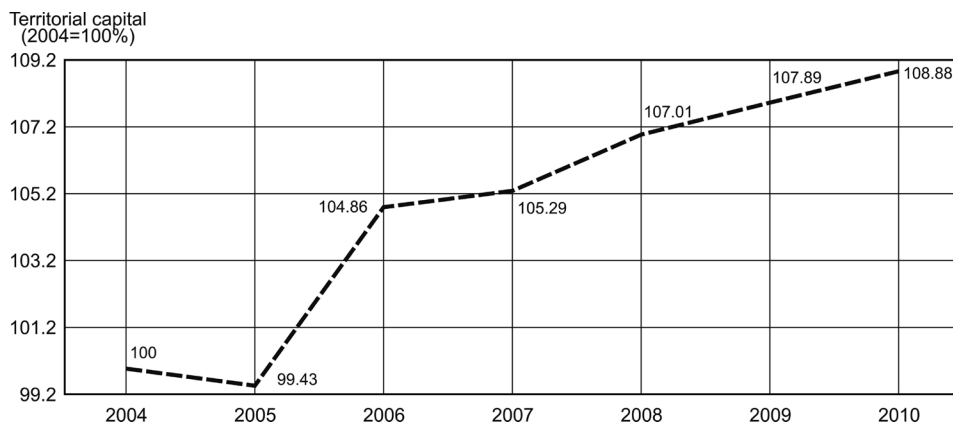
Fig. 1. The change of the territorial capital at a national level between 2004 and 2010
Source: author's calculation

figure 1 that the highest territorial capital accumulation was from 2005 to 2006, then the growth tendency began to slow down. It is clearly visible that the effect of the economic crisis could as well be realized statistically in 2009, which was followed by a correction.

3.2. Convergence versus Divergence

Henceforward, at this moment the important question is whether the sub-regions with lower territorial capital could accumulate their territorial capital in a faster way than the sub-regions with higher territorial capital; whether the convergence of territorial capital can be traceable in this period.

The measurement of territorial convergence actually depends on how many sub-regions are compared. The annual growth average of 20 sub-regions with the highest territorial capital during 7 years measured with a geometric mean was 4.83%, while 20 sub-regions with the lowest territorial capital decreased by 4.75%. Comparing the annual average growth of the two periods (5 years before the crisis and two years during the crisis), similar results could be obtained. Before the crisis the annual average of the growth of the 20 sub-regions with the highest territorial capital was 5.73%. During the two years of the crisis it decreased to 5.16%. The extent of the decrease was insignificant. In the 20 sub-regions with the lowest territorial capital in 5 years before the crisis the average decrease was 4.51%, from 2009 to 2010 it became 4.26%. Simply put, there was no convergence between the 20 sub-regions with the lowest and the highest territorial capital in Hungary between 2004 and 2010 (see figure 2).
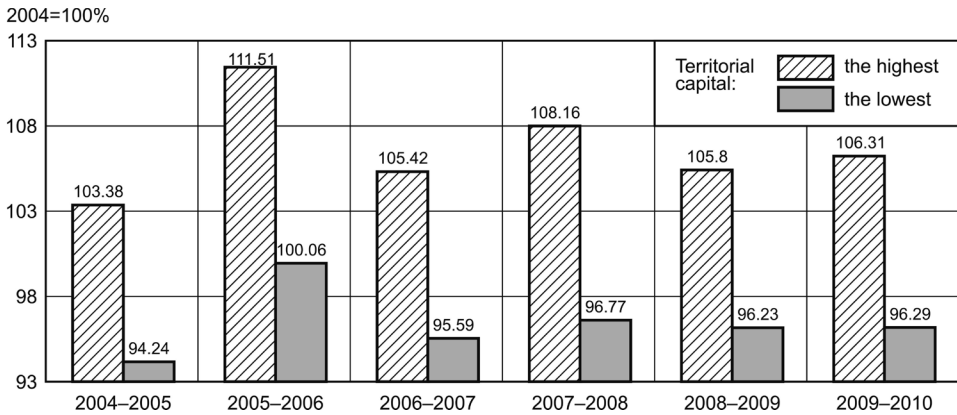
2004=100%

Fig. 2. The rate of growth of the 20 sub-regions with the lowest and the highest
territorial capital between 2004 and 2010
Source: author's calculation

However, comparing the rate of territorial accumulation of the 40 sub-regions with the lowest and the highest territorial capital, a totally different result can be obtained. 40 sub-regions with the lowest territorial capital increased annually by 0.24% on average, while 40 sub-regions with the highest territorial capital decreased by 2.26% annually. The convergence in this context can be traceable but it could evolve if the state of the most developed sub-regions worsened relatively, and the ones being in the worst state improved minimally (see figure 3). In this comparison the territorial convergence can be measured statistically because the 40 sub-regions with highest territorial capital were marginalized.
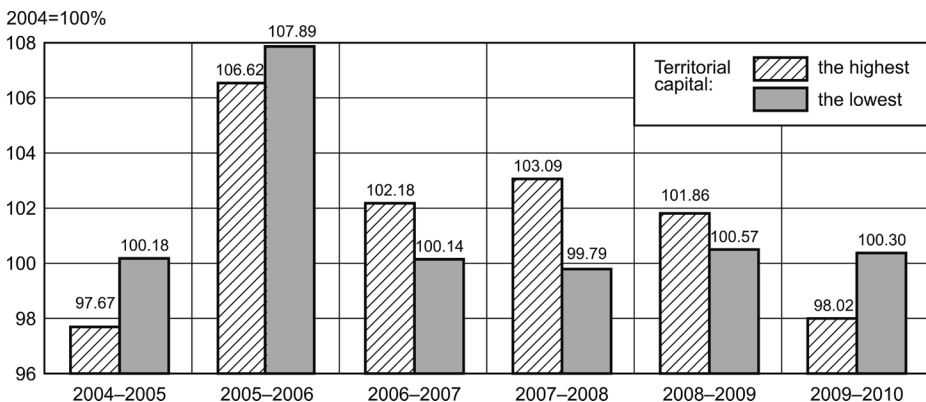
2004=100%

Fig. 3. The rate of growth of the 40 sub-regions with the lowest and the highest
territorial capital between 2004 and 2010
Source: author's calculation

3.3. Factors Determining Territorial Capital

This section examines which capital types were determining the territorial capital and to what extent between 2004 and 2010 at national and sub-regional level. To find the answer, first of all it has to be analyzed whether there is correlation between the dependent variable (territorial capital) and the independent variables (seven capital types). According to the results, each capital type was in an average positive relation with the territorial capital, except the social capital, whose correlation was weak.[3] The correlation is accepted at 5% significance level every year. The value of the correlation coefficient does not exceed 0.7, so no sub-index (capital type) had to be eliminated from the analysis. After this the multiple linear regression analysis is applied to what extent the seven capital types determined the territorial capital at the national level year after year. The explaining power of the independent variables (capital types) is measured by the standardized regression coefficient; it is also called beta value. The beta values including the partial effect of the explanatory variables show the extent of the explanatory power of dependent variables effect on the independent variables (Ajmani, 2009). The significance level of t-test and F-test was acceptable (p < 0.05) every year. According to table 3, the accumulation of territorial capital was determined the most by relational, economic, an institutional capital at national level between 2004–2007, while between 2008 and 2010 a collective dominance of relational and economic capital could be observed. Furthermore, in 2008 the effect of economic capital became slightly stronger than of relational capital, then in 2009 the cultural and the institutional capital changed their positions. At sub-regional level the structures of territorial capital changed significantly during the economic crisis. However, at the national level the system of territorial capital can be considered as constant: the accumulation of territorial capital was determined significantly by relational, economic and cultural capital. In other words, at national level the accumulation of territorial capital can be sustainable if the interaction between local economic units (including small and medium sized enterprises and their links) strengthens and becomes steady by exploiting their cooperative advantages (Menezes *et al*., 2013). The strengthening of the collaborative advantages based on the relational proximity contributed to the growth of territorial capital (Capello, 2012).

The national territorial capital can be contributed by those economic actors that are in active, constant relation with each other and the members of the society; to preserve this relation they use tools and means of information technology, and their acts are embedded in the local cultural and civil institutional systems. If these three capabilities are present at the same time and can be mobilized, the harmonious regional growth and development can start (Kornai, 1972).

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[3] This weak relation (r = 0,38) was measurable only in 2 years (2009 and 2010). Before this it was in a positive relation with territorial capital.

Table 3. Annual changes in capital types determining territorial capital on the basis of beta value

Capital types	Year						
	2004	2005	2006	2007	2008	2009	2010
Relational capital	0.275	0.274	0.301	0.291	0.275	0.278	0.301
Economic capital	0.26	0.262	0.262	0.268	0.276	0.273	0.277
Institutional capital	0.255	0.24	0.242	0.207	0.206	0.207	0.215
Cultural capital	0.209	0.201	0.19	0.188	0.195	0.225	0.204
Human capital	0.189	0.184	0.177	0.182	0.189	0.182	0.181
Social capital	0.169	0.169	0.167	0.166	0.167	0.166	0.169
Infrastructural capital	0.146	0.128	0.123	0.142	0.139	0.141	0.121

Source: author's calculation.

The link between relational and economic capital means that the chance for growth of the region can be improved by coordination, cooperation and gathering of clusters of economic units embedded regionally. Note that relational capital clearly shows that intangible assets also determine the conditions of regional growth – the performance of a region increases if its relational capital is high. Increase in economic and relational capital contributes to the same extent to the success of local entrepreneurs, which is proved by the structure of territorial capital in Hungary.

3.4. The Structure of Territorial Capital in Sub-Regions

This section analyses the structure of territorial capital in respect of the sub-regions. It is measured in the following way:

1. Comparison of the data between 2004 and 2010 shows which sub-region could reach the highest territorial capital concentration, and which had the largest loss.

2. On this basis a ranking has been made; at the beginning are the sub-regions with the highest territorial capital, and the sub-regions with the lowest territorial capital are at the end of the ranking.

3. Sub-regions are divided into five groups on the basis of territorial capital.[4]

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[4] During the classification the starting point was average annual growth, which was 1.38% per year. In other words those sub-regions were the ones with average growth which reached a growth of 9.6% from 2004 to 2010 (1.38 x 7). Those sub-regions had significant growth which developed twice as fast as the average (9.6 – 19.2% = –9,6). Those sub-regions had decrease which shrank twice as fast as the average. Medium categories were determined on this basis.

4. Finally, multiple standardized linear regression analysis is used to understand which capital type contributes to what extent to the change in territorial capital in the five categories (Perucca, 2013).

In the analyzed period, the Rétság, Balatonföldvár, Balatonalmádi, Szob, Ercsi, and Érd sub-regions had the highest territorial capital loss. It might be surprising that all of these are sub-regions with the highest GDP. The Budaörs, Baja, Vásárosnamény, Lengyeltót, Csurgó, Szentgothárd and Edelény sub-regions accumulated the most territorial capital. The listed sub-regions (except Budaörs) can be considered as underdeveloped. The summarizing results can be seen in figure 4.
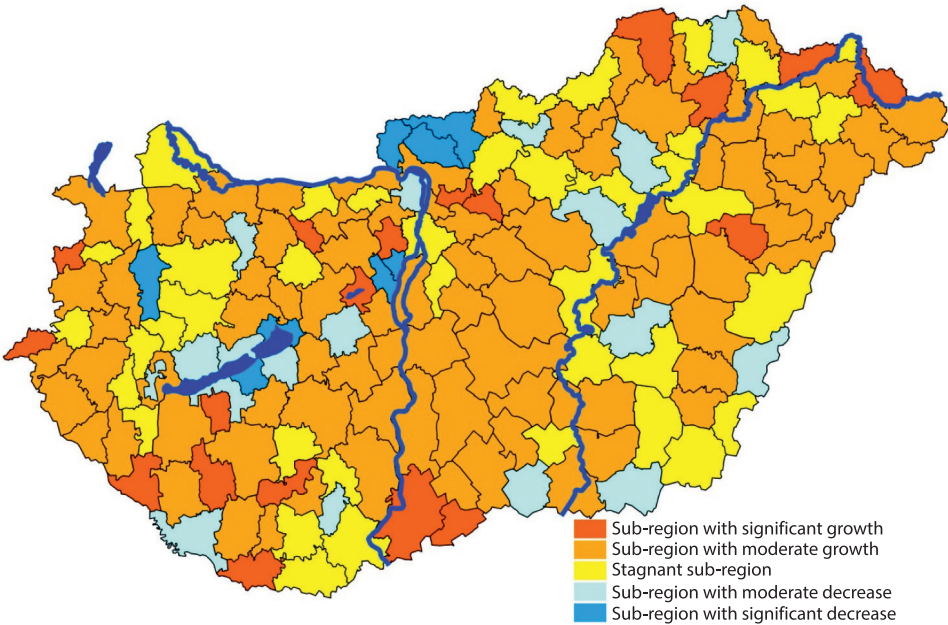
Fig. 4. Change in territorial capital between 2004 and 2010 per sub-regions
Source: author's calculation

There was *significant territorial capital growth* in 19 sub-regions (see figure 5). It is important that 14 of these have low territorial capital and only 5 of these sub-regions have high territorial capital; the sub-regions with relatively low territorial capital managed to preserve their territorial capital against the crisis. The question is how they were able to do it. It can be seen from figure 5 that the structure of the territorial capital of these sub-regions basically differs from the national average. It is typical that the most determining is the economic, cultural and relational capital; in other words, territorial capital is accumulated in those

sub-regions even during the crisis where the background conditions of cultural economy exist and prevail (Colombo *et al*., 2011). Cultural economy means that cultural institutions and the cultural industrial sector of the region are actively utilized, socioeconomic interactions thicken and these are embedded in regional economic processes, which finally define regional development (Bain-McLean, 2013; Donald *et al*., 2013).
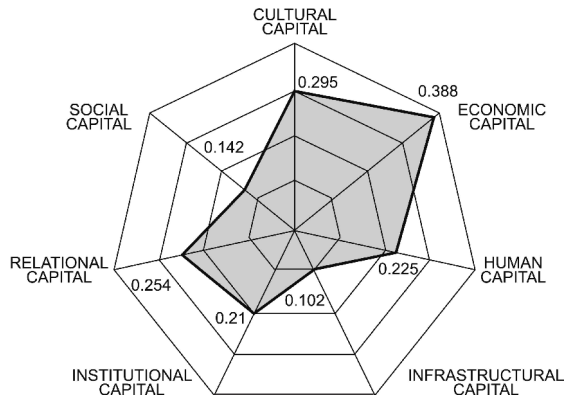

Fig. 5. The territorial capital structure of the sub-regions
with significant growth (beta-value)
Source: author's calculation

The partial effect of human capital is relatively large; the partial effect of institutional capital is smaller than the national average, that is to say the territorial capital structure of the sub-regions will be so stable with the revaluation of knowledge and the network proximity becoming closer that it could grow even during the crisis (Faludi, 2014). According to the results, it is true without exception for the sub-regions showing an outstandingly high territorial capital growth that they relieved their club goods in the structures of the *cultural economy*, and adapted the channels of the institutional system of formal and informal knowledge to market demands (Servillo *et al*., 2012). Simply put, those sub-regions could increase territorial capital which could improve and integrate their relation system, cultural pattern and knowledge base into regional economic processes (Fuchs and Klingemann, 2011). Of course, it does not mean that these sub-regions exploited these possibilities maximally but it is true that the above mentioned conditions existed in this period.

The territorial capital structure of *the sub-regions with moderate growth* (including 85 sub-regions) changed slightly compared to the national average (figure 6). The difference between these two is that human capital has a stronger

influence on territorial capital than cultural capital. This result of the sub-regions can also be explained by the fact that they mobilized more effectively the advantages of socio-cultural proximity (Camagni, 2004; Stimson, 2014). The coordinating costs could decrease because the face-to-face relations and keeping in touch, and cooperation of local economic actors – despite sometimes opposing interests – resulted in increased trust, and the synergic effect could strengthen among the entrepreneurs (Desai *et al.*, 2011; Capello, 2012).
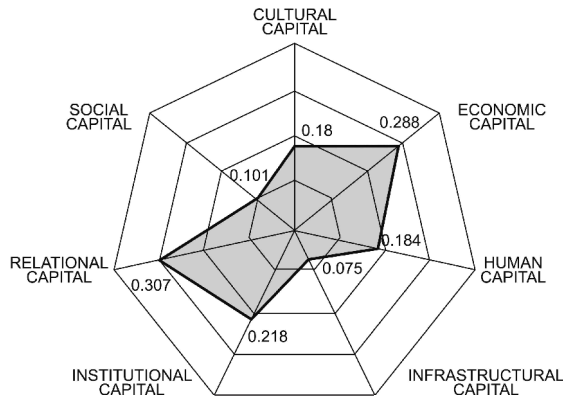

Fig. 6. The territorial capital structure of the sub-regions
with moderate growth (beta-value)
Source: author's calculation

The *stagnant sub-regions* do not follow any pattern on the basis of their geographical location. 42 sub-regions are in this group. It is typical for them that the effect of social capital is much stronger than the national average, while the economic, institutional and human capital were able to change the territorial capital to a much lesser extent. It means that in these sub-regions local social inequalities are relatively smaller; the institutions supplying cultural services and the knowledge capital are present to a smaller degree (see figure 7). It is interesting that in these sub-regions the improvement of social relation systems contributed to territorial capital accumulation only very slightly. In the territorial capital structure (see figure 8) of the sub-regions with moderate decrease (there were altogether 19 such regions) the effect of the institutional capital stands out significantly against the other capital types, while the influence of the economic and relational capital is de-emphasized and the human capital also loses some of its determining power. If institutional capital gets stronger in the way that during this period the socioeconomic criteria changed slightly, it causes a slight decrease in the territorial capital of the sub-region.
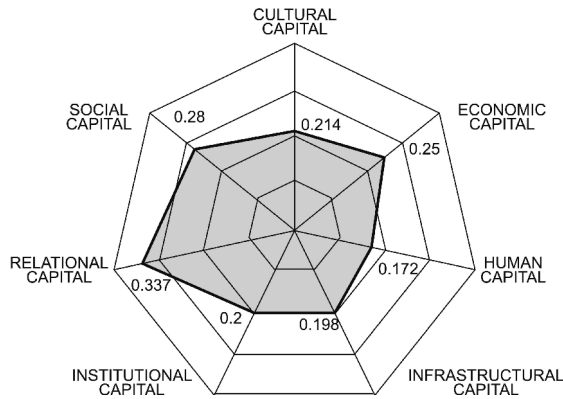
Fig. 7. The territorial capital structure
of the stagnant sub-regions (beta-value)
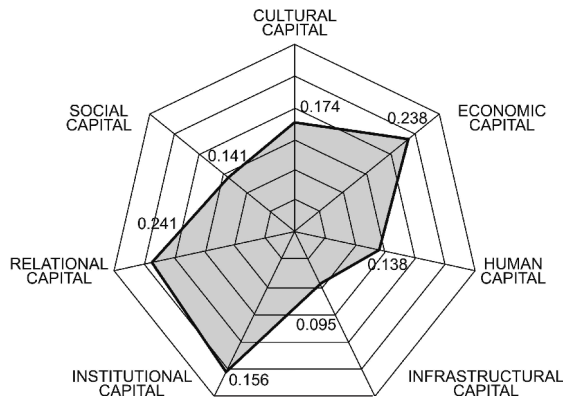Source: author's calculation

Fig. 8. The territorial capital structure of the sub-regions
with a moderate decrease (beta-value)
Source: author's calculation

The sub-regions with significant decrease (including 9 regions) were typically the sub-regions in Nógrád, Somogy, northern sub-regions of Pest County, western regions of Vas County, and north-eastern and southern sub-regions of Balaton belong. It is remarkable that none of the sub-regions in Tiszántúl can be found here. Institutional capital causes significant changes in the territorial capital structure in sub-regions with significant decrease. It does not mean that institutional capital sets back growth, only that the so powerful partial effect of institutional capital and this territorial capital structure set back the territorial capital accumulation
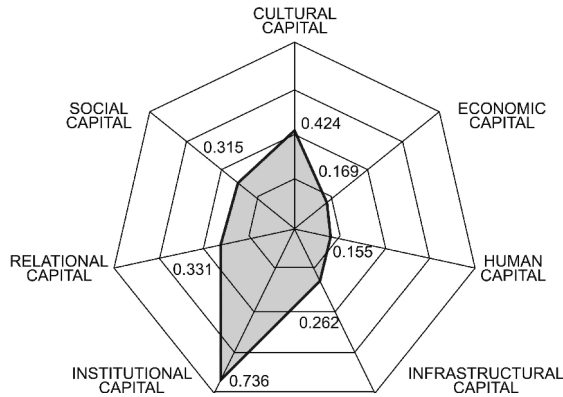
Fig. 9. The territorial capital structure of the sub-regions
with a significant decrease (beta-value)
Source: author's calculation

(Rodríguez and Pose, 2013; Capello and Perucca, 2014). The effacement of the relational capital refers to the shattered business relation among local enterprises (Bathelt and Gluckler, 2011) (see figure 9). A further characteristic of this territorial capital structure is that the explaining power of economic and human capital is much worse than the national one. These factors caused that the sub-regions lost almost 10% of their territorial capital during the analyzed seven years.

4. CONCLUSIONS

The differentiation of the territorial capital structure in the sub-regions showed that socioeconomic proximity determines significantly the territorial capital accumulation. The lack of synergy among enterprises and low education level of local society causes decrease of territorial capital. Opposite to this, the advantages coming from socio-cultural proximity resulted in a more stable, slower but balanced territorial capital accumulation. Despite the crisis, those sub-regions were able to improve their territorial capital to a significant extent where the key factors of the cultural economy appeared. The condition of balanced accumulation of territorial capital is connecting the economic capital and socioeconomic proximity. The sub-regions which exploited the background of the cultural economy were able to improve their territorial capital at a higher rate than the average. Territorial capital accumulation of Hungarian sub-regions is successful if coordination becomes more frequent among the economic actors of the region and they exploit the capacities of the network structure.

The presence of territorial capital does not automatically start regional growth. It first has to be recognized and exploited, and after this regional growth and development can start.

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