EU CLUSTERS - A COMPARISON BETWEEN NEW AND OLD MEMBER STATES

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Abstract

Striving to get economies of agglomeration and scale, to better use resources, to improve quality, innovation, skills and productivity and benefit of spill over effects, companies with similar or linked activities tend to cluster, creating new and complex structures which are beneficial for both the member companies and the region where they agglomerate. Clustering "comes naturally" and clusters are nothing but another stage in the evolution towards ever more efficient productive structures. This paper makes a comparative analysis of the economic clusters in the new and old European Union member countries - as they were identified and evaluated by the European Cluster Observatory – with a stress upon the comparison between the clusters in Romania, Germany and Great Britain.

Irrespective of their size, companies tend to become more efficient when they compete and more innovative when they cooperate. Essentially, this seems to justify the rise of some "new" economic structures, the clusters, which are defined as interconnected groups of companies and institutions, linked by commonalities and complementarities (Porter, M. 1990), which have the same field of activity and crowd in the same relatively limited geographic areas.

Cluster participants are formally independent entities which carry on similar activities or contribute to the production of similar goods or services. They improve their performance by taking advantage of the agglomeration and scale economies, the learning processes and the spill over effects generated by the proximity within a cluster. Keeping between them open channels for communication and commercial transactions, cluster members aim at turning into account the same opportunities by using the same specialized infrastructures, the same resources from the same markets and facing the same risks.

Clusters should not be understood as just agglomerations of firms and institutions, but rather similar to living bodies, in which the participants are parts linked by numberless formal and informal links, through which they interact continually, becoming more dependent to one another but, at the same time, more capable of functioning better. From this perspective, the network established between the companies in a cluster, their supporting institutions and their various

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services operators is considered one of the most important resource a company may have, in addition to its financial, technological, knowledge or human resources. The various and complex relationships within such a network make up the *social capital* of the company, which adds to its other types of capital (physical, financial, human), being extremely valuable for building and keeping the competitive edge.

Within a cluster, members both cooperate and compete, integrate similar activities and still maintain diversity, benefit from the advantages of large scale in terms of costs, economic power and access, and from the advantages of small scale in terms of flexibility, diversity and dynamism.

Although at first sight the clustering of similar companies might seem unfavourable because of the intense, even excessive competition it might generate, this is in fact beneficial both for the companies involved, for the regional economy and for the national economy as a whole.

Due to clusters, many European regions and countries developed competitive advantages in specialized activities, as for instance: in financial services (London), in petrochemicals (Anvers), in bio pharmaceuticals (the Swedish - Danish border), flowers (Holland), footwear (Italy), fashion (France, Italy), or education (Great Britain, France). Successful European clusters significantly increased their global presence, attracting employees, technology, investors, supplying global markets, interconnecting with other regional clusters in complementary fields and forming potent global value chains.

Empirically, clusters and regional specialization are associated with higher levels of innovation and prosperity. Studies carried out on regional economies in Europe, North America and some other countries show that 30% to 40% of the employed work in geographically concentrated, clustered industries (EU Commission, 2007). Regions where employment in strong clusters is higher, are, generally, more prosperous; and the more the regional workforce is employed in clusters specialized in different industries, the higher the regional prosperity would be.

According to the data offered by the European Cluster Observatory (ECO)[1] following its first quantitative analysis on European clusters, about 38% of the European employees work in clustered companies. In some areas, this weight reaches even more than 50%, while in others is only 25%. About one fifth of these employees (21%) work in regions which are more than twice as specialized in certain fields of activity as the average region.

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[1] **ECO** - The European Cluster Observatory aims at informing politicians, practitioners and researchers all over the world on the European clusters and the EU, national and regional policies regarding clusters. It is financed by the European Commission, DG Enterprise and Industry, and managed by the Centre for Strategies and Competitiveness, of the Stockholm School of Economics. It mostly uses the methodologies devised by M. Porter and his team from the Institute for Strategies and Competitiveness, the Harvard School of Economics.

ECO has identified over 2000 regional clusters in the 32 countries it looks at[1] and, according to its appraisal method, it granted each cluster one star for each of the following criteria:

1. **Dimension** (the absolute level of employment in a certain cluster) – a star was granted if the cluster ranked in the first tenth of the hierarchy established according to this criterion;

2. **Degree of specialization** within the region – a star was granted for the clusters reaching a degree of specialization of at least 2, that is if they had at least twice as many employees in the activity they specialize in, as compared to the average level of the other regions;

3. **Dominance** (how much the employed in the industry in which a region specializes account for, as compared to the total number of the employed in the region) – a star was granted if the cluster ranked in the first tenth of the hierarchy established according to this criterion. Therefore, in order to have their strength appraised, each cluster with a population of more than 1000 persons[2] could be given a maximum of three stars.

Starting from the ECO data, we isolate in Table 1 (UE27 countries, excluding the ex-communist ones) and Table 2 (The UE ex-communist countries) the 15 most powerful clusters in each economy by number of stars, field of activity, degree of specialization and the main geographic location. Also, for each country we identify the most powerful region by cumulated number of stars and by the weight of the employed in clusters with stars, as compared to the total number of the employed.

Table no. 1: The most important 15 clusters and their economic power in the EU27 countries, excluding the ex-communist ones

Country	CLUSTERS			REGIONS		
	Number of clusters	Cluster category / Field of activity (degree of specialization)	Geographic location	The most powerful by total number of stars	Total number of stars	The weight of the employed in clusters with stars
Austria	**15**			Vorarlberg	12	69,7%
3*	2	Transport (2,7) Tourism(5,4)	Viena Tirol			
2*	11					
1*	2					
Belgium	**15**			Vlaams Gewest	28	89,0%
3*	1	Finance	Brussels			

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[1] ECO currently identifies clusters in EU27, Island, Israel, Norway, Switzerland and Turkey.
[2] Clusters with less than 1000 persons were considered insignificant and excluded from the analysis.

		(3,7)			
2*	8				
1*	6				
Cyprus	7			Cyprus	8	68,6%
2*	1	Tourism(3,3)	Cyprus		
1*	6				
Denmark	**15**			Denmark	31	95,9%
2*	4	Transport (1,05) Food (1,07)	Denmark Denmark		
1*	11				
Finland	**15**			Etela	13	62,0%
3*	2	Wood (4,0) Communications (7,4)	Lansi; Pohjois		
2*	4				
1*	9				
France	**15**			Ile de France	30	96,1%
3*	5	Auto(5,4) Food (2,9)	Franche – Comte; Bretagne		
2*	10				
Germany	**15**			Sttutgart	31	82,7%
3*	15	Auto (10,7) Auto (6,6)	Brauns-chweig Sttutgart		
Grece	**15**			Attiki	15	63,8%
2*	9	Tobacco (7,3) Leather(6,0)	Voreia Elada;		
1*	6				
Ireland	**14**			Ireland	20	64,6%
2*	6	Medical (4,5) Fishing (3,9)	Ireland Ireland		
1*	8				
Italy	**15**			Lombardia	41	99,7%
3*	5	Footwear (20,6) Furniture (4,8)	Marche; Friuli-Venezia-Giulia		
2*	10				
Luxem-burg	**3**			Luxem-burg	4	58,7%
2*	1	Finance (3,2)	Luxem-burg		
1*	2				

Malta	**6**			Malta	8	57,7%
2*	2	Tourism(3,7) IT (3,0)	Malta Malta			
1*	4					
United Kingdom of Great Britain	**15**			Inner London	16	93,4%
3*	15	IT (3,7) Business services (3,4)	Berks/ Bucks/ Oxon; Inner London			
Netherlands	**15**			West Nederland	25	92%
3*	1	Entertainment (2,4)	Zuid-Nederland			
2*	14					
Portugal	**15**			Norte	23	70,9%
3*	8	Footwear (16,5) Garments (10,2)	Norte Norte			
2*	7					
Spain	**15**			Cataluna	36	97%
3*	7	Fishing (20,0); Construction materials (8,3%)	Galicia Valencia			
2*	8					
Sweden	**15**			Stockholm	13	67,6%
3*	3	Forest (4,4) Auto (3,7)	Norra Me-llansverige Vastsve-rige			
2*	8					
1*	4					

Source: Processed after ECO data; **Note:** For each country there were kept in the tabel only the first two cluster categories (fields), with the greatest number of stars and the highest specialization degree (put in brackets)

Table no. 2: The most important 15 clusters and their economic power in the EU ex-communist countries

Country	Number of clusters	Cluster category/ Field of activity (degree of specialization)	Geographic location	The most powerful by total number of stars	Total number of stars	The weight of the employed in clusters with stars
		CLUSTERS		REGIONS		
Bulgaria	**14**			Yuzhen tsentralen	18	64,5%
3*	4	Apparel (8,3) Apparel (6,4)	Severen tsentralen; Yuzhen tsentralen			
2*	10					
Czech Republic	**15**			Severovychod	19	60,4%
3*	5	Metals (5,0) Auto (4,0)	Moravsko-slezsko; Stredni Cechy			
2*	10					
Estonia	**9**			Eesti	12	56,9%
2*	3	Fishing (5,7) Oil/gas (4,9)	Eesti Eesti			
1*	6					
Latvia	**7**			Latvia	11	57,1%
3*	1	Education (2,5)	Latvia			
2*	2					
1*	4					
Lithuania	**11**			Lietuva	21	71,1%
3*	4	Apparel (4,6) Furniture (4,5)	Lietuva Lietuva			
2*	2					
1*	5					
Poland	**15**			Mazowieckie	20	72,0%
3*	10	Furniture (9,3) Apparel (6,7)	Warminsko-Mazurskie Lodskie			
2*	5					

Romania	**15**			Centru; Muntenia-Sud; Vest	27 26 22	71,3% 71,4% 62,5%
3*	15	Oil/Gas (20,6) Footwear (15,7) Communications (14,1)	Muntenia-Sud; Nord-Vest Vest			
Slovakia	**15**			Zapadne Slovensko	15	51,0%
3*	2	Communications (7,8) Metals (3,2)	Zapadne Slovensko Vychodne Slovensko			
2*	7					
1*	6					
Slovenia	**9**			Slovenija	16	47,1%
3*	1	Metals (2,6)	Slovenija			
2*	5					
1*	3					
Hungary	**15**			Kozep-Magyarorszag	14	52,6%
2*	13	Leather (10,3) Lighting (6,2)	Del-Dunantul Nyugat-Dunantul			
1*	2					

Source: Processed after ECO data; **Note:** For each country there were kept in the tabel only the first two cluster categories (fields), with the greatest number of stars and the highest specialization degree (put in brackets)

Considering the above data, our findings are the following:

1. Regarding the strength of clusters, expressed by the number of stars they got, we can notice that in the older EU member countries (Table no.1) only 11 out of 17 countries (64,5%) have three-stars clusters and only a few of them have such clusters in great number. *Germany and Great Britain are the only old EU member countries where all the 15 clusters are three-stars clusters.*

2. In the new EU member countries from the East (Table no.2), 8 out of 10 countries (80,0%) have three-stars clusters, but each of them have such clusters in a relatively small number (1 to 4 three-star clusters). *The only EU ex-communist country where all the 15 clusters are three-star clusters is Romania.*

3. Both in the West, in the older EU member countries, and in the East, in the newly EU-integrated countries, there are *powerful clusters in traditional industries -*

garments, textiles, footwear, metal or wood processing, food production. But, *in Western Europe, traditional industries are generally higher placed on the technological ladder compared to the corresponding Eastern ones,* having a higher content of intangibles (knowledge, creativity, innovation, brands, etc.) and, consequently, aiming more at luxury or niche consumption, as opposed to the Eastern industries which address mostly to mass consumption. Relocations of low value-added traditional activities from Western to Eastern countries contributed to the widening of this gap.

4.   As opposed to the Eastern new EU member countries, where three-stars clusters in services industries are very few (only Letonia and Poland have a three-stars cluster each, in education), *in the Western, older EU member countries, the services sector is much better represented. In fact, the services sector is much more present than the traditional industries, in the most powerful clusters of these countries.*

5.   *In all the 10 ex-communist countries recently integrated in the EU, the clusters which prevail are those specialized in traditional industries, developed in the proximity of labour pools* (garments, textiles, footwear, etc.) or *near deposits of natural resources* (metal processing, oil and gas, wood, etc.). These activities generally use relatively simple technologies and low-to-medium-skilled workforce, providing low value-added mass products. As their competitiveness is generally cost-based, some of these activities could survive and develop only due to the relatively lower cost of the workforce in these economies, which also motivated some of the relocations of traditional activities from the Western to the Central and Eastern EU countries.

6.   In some of the ex-communist countries admitted into the EU there also are *clusters in industries which use technologies of medium complexity*: *automotive* in the Czech Republic (2 three-stars clusters), Romania (1 three-stars cluster), Slovakia 1 two-stars cluster); *heavy machinery* in the Czech Republic (1 two-stars cluster), Slovenia (1 two-stars cluster); *lighting* in Slovakia (1 two-stars cluster) and Hungary (2 two-stars cluster). At the same time, there are clusters in the building sector, in many of the new member states. *High technology* is represented by the IT clusters (in Hungary, 3 two-star clusters), and by the clusters in the communications sector (in the Czech Republic 2 two-stars clusters, in Romania 1 three-stars cluster, in Slovakia 1 three-stars cluster).

7.   The services sector is less represented in the clusters in the ex-communist EU countries. Still, there are some powerful clusters in education, tourism and entertainment, transport and distribution.

8.   *In the entire new EU member countries group* (Table no.2), *the region which accumulated the greatest number of stars (27) is Central-Romania, where clusters are specialized in textile and apparel industries.* At the EU level, this region ranks the 12th. The second best ranked region among the EU ex-communist countries is also in Romania, the Muntenia-Sud region, with 26 stars cummulated by clusters in apparel, oil and gas, automotive, textiles and construction materials industries. Finally, the third region in this hierarchy is also a Romanian one, the Vest-Romania region, with 22 stars for its clusters in communications. Therefore, *according to the ECO appraisal procedure, the strongest clusters in the new EU member countries are located in Romania.*

9.   The only three EU countries in which the first 15 most powerful clusters are all three-stars clusters are Romania, Germany and United Kingdom.

10.   In their great majority, the 15 Romanian three-stars clusters are specialized in low technology activities, which use low-to- medium-skilled labour and deliver cost-competitive mass products. Besides these, there are only two other clusters: one in the automotive, using medium-to-high complexity technologies and skills, and one in communications, a high-technology industry.

11.   More than half of the 15 strongest German clusters are in the automotive, metal processing, mashinery and equipment industries, activities using medium-to-high complexity technologies and medium-to-high skilled labour for, the large-scale production of high quality, innovation-intensive, branded industrial goods. In addition, there are one IT cluster and four clusters in services, which point for the whole of Germany to a superior economic structure as compared to the Romanian one, with more developed services, but still relaying heavily on industrial activities.

12.   In the case of the United Kingdom of Great Britain, the listing of the 15 three-stars clusters reveals the overwhelming presence of the services activities. Except for only one cluster, ranking the 14th, in the automotive production (which theoretically is a medium-technology one, but in the UK is focused on high value-added, small-scale, luxury products) and another one in IT, ranking the 12th, all the other British clusters are in services, especially high value-added ones: business services (8 clusters, more than half the total number), education (3 clusters), financial services (1 cluster) and transport (1 cluster). Obviously, the British clusters highlight a very modern economic structure, in which the dominant part is played by the activities in the services field, with minimal material expenditures, using a highly skilled workforce and modern technologies to gather, process and exchange information in order to offer to consumers high quality, high value-added products. This structure is superior to the one revealed by the German clusters and so much the more to the one highlighted by the Romanian ones.

13.   The comparative critical examination of the strongest clusters in Romania, Germany and the United Kingdom highlight essential differences regarding the prevailing cluster categories in each economy. This reveals a different mix of activities which seems to place the three economies in three different moments in the history of industrial development. While in Romania, in the strongest economic agglomerations, the ones that prevail are the resource-intensive and low-to-medium skill-intensive activities specific to the industrial revolution and the beginings of industrialization, which use low-to-medium-complexity technologies to deliver cost-competitive products for mass consumption, in Germany the best ranked clusters are also predominantly active in the industrial field, but the respective industries are higher-placed on the technological ladder, use medium-to-high-skilled labour and deliver higher value-added, higher quality, branded products, rather than cost-competitive goods. As compared to these two countries, United Kingdom seems to be placed by its most powerful clusters on an even higher level of development,

where the predominant activities belong to the services sphere, especially to the high value-added ones, which need minimal material consumption, use the most modern technologies in informatics and telecommunications and very highly qualified personnel, focussing on skills, innovation and high quality, diversified, consumer-oriented products.

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