

## **COMPETITIVENESS AND CLUSTERIZATION POTENTIAL OF UKRAINE'S REGIONAL ECONOMIES: METHODOLOGICAL ASPECT**

### **Factors of national and regional competitiveness**

With continuous progress in theoretical and empirical economic research, the methodology used by the World Economic Forum to assess national and regional competitiveness has inevitably evolved over time. The latest step in this evolution is the Global Competitiveness Index (GCI), which was first introduced in 2004. Since then, the GCI has been the World Economic Forum's main vehicle for assessing competitiveness. The GCI is designed to assess the potential of countries to grow over the medium to longer term, taking into account the present level of development, based on the understanding that competitiveness is "the set of institutions, policies and factors that determine the level of productivity of a country".

The GCI encapsulates the latest thinking on competitiveness and captures the complexity of the economic growth process by taking into account a weighted average of many different components, each of which reflects one aspect of the complex reality of competitiveness.

The components are grouped into 12 different factors of competitiveness described below [6]:

*1<sup>st</sup> factor: Institutions.* Institutions form the framework within which individuals, firms and governments interact to generate income and wealth in the economy, and therefore have a strong bearing on competitiveness and growth.

*2<sup>nd</sup> factor: Infrastructure.* High-quality infrastructure is critical to ensuring the efficient functioning of the economy. It is also an important factor determining the location of economic activity and the kinds of activities or sectors that can develop in an economy. Well-developed transport infrastructure reduces the effect of distance between regions, thereby truly integrating the domestic market and connecting it to other markets.

*3<sup>rd</sup> factor: Macroeconomic stability.* Although macroeconomic stability alone cannot increase the productivity of a nation, macroeconomic disarray seriously harms the economy. Firms cannot make informed decisions in the absence of price stability, the financial sector cannot function if the government runs huge deficits, and the public sector cannot provide services efficiently if it has to make large interest payments on its past debts.

*4<sup>th</sup> factor: Health and primary education.* A healthy and educated workforce is vital to a country's competitiveness and productivity. Poor health produces significant costs for business, as sick workers are often absent or less productive. Investment in the provision of health services is therefore critical for clear economic, as well as moral, considerations.

*5<sup>th</sup> factor: Higher education and training.* Good quality higher

education and training is crucial for economies that want to move up the value chain beyond simple production processes and products. To capture this concept, this factor measures secondary and tertiary enrollment rates as well as the quality of education.

*6<sup>th</sup> factor: Goods market efficiency.* Efficient goods markets allow countries to produce the right mix of products and services given supply and demand conditions, and ensure that these goods can be most effectively traded. Healthy market competition, both domestic and foreign, is important in driving market efficiency and thus business productivity.

*7<sup>th</sup> factor: Labor market efficiency.* The efficiency and flexibility of the labor market are critical for ensuring that workers are allocated, or easily re-allocated, to their most efficient use in the economy and provided with incentives to give their best effort in their jobs.

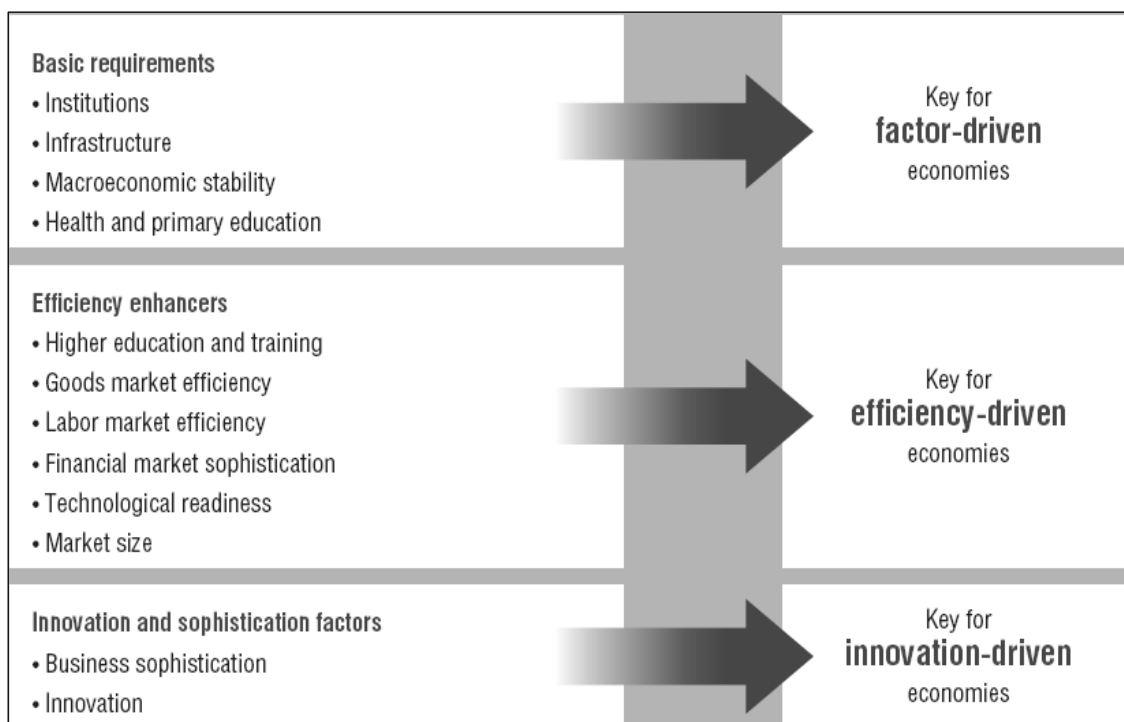
*8<sup>th</sup> factor: Financial market sophistication.* An efficient financial sector allocates the resources saved by a nation's citizens, or those invested from abroad, to its most productive uses. It channels resources to the entrepreneurial or investment projects with the highest expected rates of return, rather than to the politically connected, based on a thorough assessment of risks.

*9<sup>th</sup> factor: Technological readiness.* This factor measures the readiness of an economy to adopt and use – but not necessarily to develop – new technologies to enhance the productivity of its industries. In today's interconnected world, the ability to adopt and use new technologies has become an important competitive advantage of firms.

*10<sup>th</sup> factor: Market size.* The size of the market affects productivity because large markets allow firms to exploit economies of scale. Traditionally, the markets available to firms have been constrained by a nation's borders. In the era of globalization, international markets have become a substitute for domestic markets, especially for small countries.

*11<sup>th</sup> factor: Business sophistication.* Business sophistication concerns the quality of a country's overall business networks, as well as the sophistication of the operations and strategies of individual firms. This is conducive to higher efficiency in the production of goods and services, leading to increased productivity and enhancing a nation's competitiveness.

*12<sup>th</sup> factor: Innovation.* The last factor of competitiveness is technological innovation. In the long run, efficiency gains can be achieved and standards of living expanded only through technological innovation. Innovation is particularly important for more advanced economies. These tend to operate at the technology frontier, so that the possibilities of integrating and adapting exogenous technologies, as captured in the ninth factor of technological readiness, are limited. Firms in these countries must design and develop cutting-edge products and processes to maintain a competitive edge. This requires an environment that is conducive to innovative activity, supported by both the public and the private sectors.



**Figure 1.** Structured 12 factors of global and regional competitiveness

Source: GCI Ukraine 2009-2010 [6]

*Interrelationship of 12 factors:* Although the 12 factors of competitiveness are discussed separately, this should not obscure the fact that they are interdependent: they are related to each other and also tend to reinforce each other. For example, businesses will not innovate at a large scale (12<sup>th</sup> factor) if institutions (1<sup>st</sup> factor) that protect intellectual property rights are not in place or if the labor force is poorly educated and trained (5<sup>th</sup> factor). Although the actual construction of the Index will involve the aggregation of the twelve factors into a single index, measures are reported for each factor separately, thereby offering an analysis of the competitive strengths and weaknesses of countries. By highlighting and prioritizing areas for improvement and strengths to build upon, this analysis provides a basis for policy formulation.

### **Global and regional competitiveness of Ukraine's regions**

GCI methodology enables both regional and global comparisons. This comparative framework is possible because the GCI analyzes competitiveness on both the national level, and with minor modifications, the regional level.

In 2010 Ukrainian regions placed more densely in the GCI compared to the last year [6]. As in the previous years, Kyiv leads the group with 4.21 points. Placing 59<sup>th</sup> in the international ranking, the city stands close to Hungary and Panama. The Dnipropetrovsk oblast closely follows Kyiv with a score of 4.12. The Zakarpattya oblast and the Lviv oblast follow, placing in the 67<sup>th</sup> and the 69<sup>th</sup> positions globally, at the same level as Uruguay and Romania, while Crimea and Donetsk place in the 72<sup>nd</sup> and the 73<sup>rd</sup> positions, between Kazakhstan and Latvia. The Kharkiv oblast scored 4.04 points and occupies the 76<sup>th</sup> position (between Columbia and Egypt), placing last among this leading group of oblasts.

The second group of oblasts contains those with competitiveness indexes that are equal to or slightly lower than the average of the twenty oblasts (3.97). Poltava, Cherkasy and Khmelnytsky follow one another, having placed 87<sup>th</sup>, 88<sup>th</sup> and 89<sup>th</sup> in the GCI, respectively. Zaporizhzhya,

Odesa, Luhansk and Kherson also rank similarly, with scores ranging from 3.90 to 3.95. Kherson placed 100<sup>th</sup> in the GCI, on par with Libya and Argentina.

The six oblasts with the lowest scores comprise the third group; Volyn, Rivne and Ivan-Frankivsk all placed within the 102-104<sup>th</sup> positions in the GCI, next to Argentina and Honduras. Sumy, Zhytomyr and Vinnytsya scored lowest on the regional competitiveness index, with Vinnytsya placing 111<sup>th</sup> position globally between Senegal and Serbia. In the international index for 2010, the gap between high-ranking and low-ranking regions was 52 positions: an improvement from the 70 positions calculated the previous year. The highest and lowest scores of the regional competitiveness index differ from the average score by 6.0% and 5.0%, respectively. This is less visible than the difference calculated in the GRP per capita, which reaches 35-100% (not taking into account Kyiv). This is likely due to the underestimation of regional discrepancies, as the national figures for a number of indicators were used for calculating regional indexes.

### **Clusters as the accelerators of regional competitiveness**

Economic (regional, industrial) clusters are the most effective way to raise competitiveness of a region's economy [3,4,5,7]. In simplest terms, clusters are a geographic concentration of establishments, encompassing both large and small firms – of interrelated companies and the institutions that 'feed' them producing similar products and competing in similar markets comprising the competitive advantaged for the region.

An economic cluster may reflect:

1). *Comparative Advantage/Division of Labor*: industries that derive their stability from the comparative advantage of the region; i.e. firms share resources: a specialized labor pool; access to capital or technology resources; readily available suppliers and support services; or ease of transportation or communications.

2). *Agglomeration*: collections of industry in close physical proximity intended to capture external economies of scale through such efforts as strategic alliances, subsidiary acquisition; supply chain management, web-based procurement and other modern business practices.

3). *Growth Poles/Propulsive Firms or Industries*: the dominance of a single or a few firms, often termed "propulsive" industries indicated by broad territorial aggregations "heavily dependent upon" and intertwined because of purchase and sales of buyers and sellers. This encompasses companies at the initial portion of the value-added chain that supply the inputs – intermediate goods, services, and raw materials – that are used in the assembly of final goods and services.

4). *Input-Output Linkages*: interdependent firms including suppliers, service providers, and final product manufacturers; this is the buyer-supplier cluster: one industry produces another industry's key components. This also encompasses companies at earlier stages in the value-adding chain that supply the inputs – intermediate goods, services, and raw materials – that are used in the assembly of final goods and services.

5). *Path Dependent Industrial Districts*: the localization of industry, information, skilled employees, relationships, and infrastructure, currently with a large critical mass for circular and cumulative growth of the

particular field, that fortuitously located in the region as once nascent industry.

6). *Comparative Advantage/Shared Resources*: a geographic concentration of establishments, encompassing both large and small firms, producing similar products and competing in similar markets. This cluster of industries derives its stability from the comparative advantage of the region.

7). *Flexibly Specialized Industry*: groups of highly flexible and specialized firms, both small and large, that come together for the production of a unique good or service i.e. the flexibly specialized firm as exemplified by Silicon Valley.

8). *Italianate Districts*: a cluster structure, consisting of companies that produce the same or similar goods and services at a specific level in the value chain, existing because competitors unintentionally but frequently share information about product and process innovations and market opportunities.

These companies may, in fact, formally collaborate to develop such innovations in pre-competitive or strategic alliances.

When clusters are dynamic (meaning they are responsive to local and to global market opportunities) the entire regional economy becomes more dynamic and successful resulting in self-sustaining growth.

Many structural properties of clusters are mentioned in the definitions and descriptions in the cluster literature. These are presented as either constitutive or complementary and can also be used to characterize clusters. The identification of clusters across geographies however remains difficult. Structural properties of a cluster may include:

- Sophisticated local customers and downstream-industries
- Competitive related industries
- Suppliers of complementary goods and services
- Capable locally-based specialized suppliers of goods and services
- Accessible financial services
- Innovative core companies and original equipment manufacturer

(OEM)

- Locally-based competitors
- Sophisticated local labour market
- Involvement of the local education system
- Research and development and knowledge transfer infrastructure
- Trade and labour associations
- State actors and regional economic development
- Critical mass of organizations

Today a number of measures to identify and compare clusters exist [1,5,7]. However there is no universally applicable measure or cluster identification process available today and each measure and approach has its limitations.

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