Models of Competitiveness

Dusa, Silvia

Journal of Euro and Competitiveness, IAECD - International Association of Entrepreneurship, Competitiveness and Development

1 August 2014

Models of Competitiveness

Silvia Duşa [*], MA

Abstract : The current study presents the main models of competitiveness, developed by different organization or institutions, primarily those established by the World Economic Forum, International Institute for Management Development, European Commission and the Institute for Strategy and Competitiveness, founded by Michael at Harvard Business School. The concept of competitiveness and the whole philosophy and reasoning around this concept, started relatively recently, but developed very rapidly and currently is a topical preoccupation of all responsible governments.

Keywords: competitiveness, economic growth, euro, convergence

JEL: E42, E61, F36, F43, G15, O47

1. Preliminary considerations

There are numerous approaches of the concept of competitiveness, first to define it, as there are many attempts to reveal the practical mechanisms through which competitiveness is acting at national, regional and global levels and consequently to make proposals on how the governments should further act in the economy and in the society in order to increase their capacities to cope with the competitive pressures of the global market. And even if the debate about competitiveness is quite recent, some more than 30 years ago, it already has remarkable theorists, developed extensive and series models of how competitiveness can be achieved, measured and managed, invented reliable instruments of indexing states' performances in this particular field and more than expected, added a new dimension linked to the sustainable development.

The definition of competitiveness is still a controversial subject. First of all, competitiveness should be seen different from competition. The competition is the game where the actors come and trade their products and services, but competitiveness, namely the level of competitiveness, indicates the winners.

Some are conceiving competitiveness as a process resultant, others look at it as being the process itself, by which the performance of an economy is produced. To the extent these visions cannot be yet "weaved" by the same "loom" into an integrated unitary approach, each national entity will continue to choose its own road of competitiveness in the mesh of the world economy and determine its own engine producing welfare. No doubt, they will learn from the experience of other countries and will consider properly the results of the scientific rresearch in this particular field. And even these models of competitiveness serves as a driving force of harmonising the individual states' choices.

The international competitiveness is *vital for the sustainability of an economy* and this concept won importance especially from the perspective of the economic development and growth. It is often quoted the Brundtland Commission definition of sustainable development formulated in the run-up to the Rio 92' summit: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"[1].

As a result of these searches, there were developed not only policies aiming to promote competitiveness, by creating and strengthening a healthy and performimg business environment, but also there was established a series of indexes devised to measure competitiveness, also taking into consideration the sustainability aspects.

2. Institutions at Global Level

At the world level, the most prestigious institutions dealing with the problems of competitivenes under all its aspects and having proposed specific instruments to measure competitiveness are the following:

- The World Economic Forum (WEF), an international independent organisation located in Geneva, Switzerland, started in 1979 publishing a series of Competitiveness Reports about a wide range of problems at global level, focusing on economic growth and the factors determining it. Since 2004, WEF introduced the Global Competitiveness Index (GCI), which is based on twelve pillars and 115 indicators, presented yearly in the "Global Competitiveness Index" and from 2013 it added a new section on sustainable competitiveness of nations.

  The latest issue of the *Global Competitiveness Report for 2013-2014* assesses the competitiveness landscape of 148 economies, which at this time account for 99% of the world GDP. The Report series remains so far the most comprehensive assessment of national competitiveness worldwide and contributes to a better understanding of the key factors that determine economic growth. It helps explaining why some countries are more successful than others in raising income levels and so providing opportunities for their

[1] The Global Sustainable Competitiveness Index 2013, SolAbility Sustainability Advice, South Korea, page 7

respective populations and also offers policymakers and business leaders an important tool for formulating improved economic policies and institutional reforms.

- The International Institute for Management Development (IMD) is an international organization located in Lausanne, Switzerland. It started in 1989 to publish the World Competitiveness Yearbook (WCY), which is considered to be "the leading annual report on the competitiveness of nations". It benchmarks the performance of 60 countries based on 338 criteria measuring different facets of competitiveness.
- EU Council on Competitiveness (COMPET) is located at the level of the Council of European Union and works to enhance competitiveness and increase growth in the EU. It deals with 4 major policy areas: "internal market", "industry", "research and innovation" and "space". COMPET is a specialized body of the Council of the European Union (Consilium), that means a communautary body, and it is addressing only to the EU member-states in matters related to EU competitiveness. At the level of the European Commission there are also several general directorates implied in different aspects of the competitiveness dossier, the most important being the Directorate General for Enterprise and Industry.
- The Institute for Strategy and Competitiveness (ISC) is a nonprofit research and education organization founded by Michael Porter and based at Harvard Business School in Boston, Massachusetts. The Institute is dedicated mostly to studies in three broad areas: competition and its implications for company strategy; competitiveness of nations, regions, and cities; the relationship between competition and society. The activity of the Institute is developed on the theoretical background developed by professor Michael Porter, under two dimensions: understanding competitiveness and developing strategies for economic development.

Analyzing competitiveness from theoretical and practical perspectives, the institutions mentioned above developed in fact "models of competitiveness", that the countries could use in their own searches and we are going to present further, in the current and the next issues of the Journal. We shall start by presenting the World Economic Forum model of competitiveness, as it is at this time the most comprehensive, the most used for practical matters but also for theoretical approaches, serving as a source of inspiration for similar actions at national or regional level.

3. WEF Model of Competitiveness

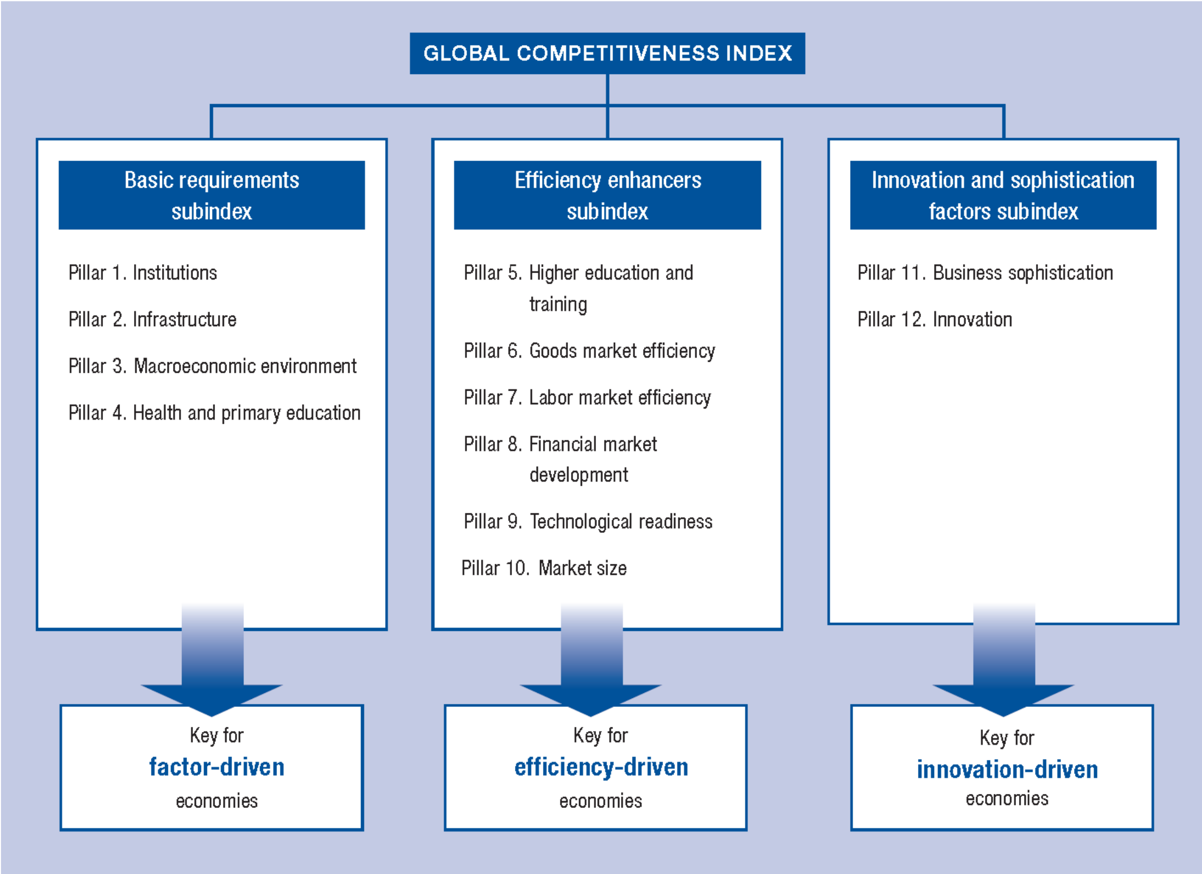
3.1 - The Standard Model

The Global Competitiveness Report provides not only the most comprehensive competitiveness ranking, based on the Global Competitiveness Index (GCI), but also it represents a well articulated model of how the competitiveness can be achieved, continuously increased and efficiently managed.

Since 2004, the Global Competitiveness Report ranks countries based on the Global Competitiveness Index, but before that, there were two separate indexes: at the macroeconomic level, ranks were based on Growth Development Index and at the microeconomic level, ranks were based on Michael Porter's Business Competitiveness Index. The Global Competitiveness Index integrated both the macroeconomic and the micro/business aspects of competitiveness into a single index.

Defining competitiveness as "the set of institutions, policies and factors that determine the level of productivity of a country", GCI scores are calculated by drawing together country-level data covering 12 categories – the pillars of competitiveness – that together make up a comprehensive picture of a country's competitiveness (see Figure 1).

Figure 1: The Global Competitiveness Index framework



Source: WEF Global Competitiveness Report 2013-2014

The 12 pillars are grouped in three *categories* or *subindexes*:

- *basic requirements* (institutions, infrastructure, macroeconomic environment, health and primary education),
- *efficiency enhancers* (higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness, market size) and
- *innovation and sophistication factors* (business sophistication and innovation).

Each of the three subindexes defines a stage of development: basic requirements define the *factor-driven economies*; efficiency enhancers indicate the *efficiency-driven economies,* while innovation and sophistication factors determine the *innovation-driven economies*.

The *basic requirements subindex* groups those pillars most critical for countries in the factor-driven stage. The *efficiency enhancers subindex* includes those pillars critical for countries in the efficiency-driven stage. And the *innovation and sophistication factors subindex* includes the pillars critical to countries in the innovation-driven stage.

The twelve pillars are not independent , " they tend to reinforce each other, and a weakness in one area often has a negative impact in others"[2].

Although the pillars are aggregated into a single index, measures are reported for the 12 pillars separately, as such details could provide a sense of the specific areas in which a particular country needs to act.

Further, the twelve pillars are divided into several indicators, each measuring a different aspect of competitiveness, summing a total of 115 indicators for the whole Global Competitiveness Index (GCI). Every particular country encompasses a particular combination of the twelve pillars and, of course, of the 115 indicators, not being two countries alike.

Although the pillars are aggregated into a single index, measures are reported also for the 12 pillars separately, because such details provide a sense of the specific areas in which a particular country needs to improve.

The pillars matter to a certain extent for all economies, but they will affect them in different ways, as they belong to different stages of development and they have different performances for each pillar and each indicator.

In the first stage, the economy is *factor-driven* and countries compete based on their factor endowments—primarily unskilled labor and natural resources. Their low productivity is reflected in low wages. Maintaining competitiveness at this stage of development hinges primarily on pillars 1 to 4.

As a country becomes more competitive, productivity will increase, wages will rise and that country will move into the *efficiency-driven* stage of development, when they must begin to develop more efficient production processes and increase product quality. At this point, competitiveness is increasingly driven by pillars 5 to 10.

Finally, as countries move into the *innovation-driven* stage, wages will have risen by so much that they are able to sustain higher wages and the associated standard of living only if their businesses are able to compete with new and unique products. At this stage, companies must compete by producing new and different goods using the most sophisticated production processes (pillar 11) and by innovating new ones (pillar 12).

The GCI takes the stages of development into account by attributing higher relative weights to those pillars that are more relevant for an economy given its particular stage of

[2] WEF Global Competitiveness Report 2013-2014, page 9

development. The weights attributed to each subindex in every stage of development are shown in Table nr.1 below.

The main criterion used to allocate countries into different stages of development is the level of GDP per capita at market exchange rates, as shown in Table nr. 1. For countries where prosperity is based highly on the extraction of resources, a second criterion is used, measured by the share of exports of mineral goods in total exports (goods and services).

Any countries falling in between two of the three stages are considered to be "in transition".

Table 1: Subindex weights and income thresholds for stages of development

	STAGES OF DEVELOPMENT				
	Stage 1: Factor-driven	Transition from stage 1 to stage 2	Stage 2: Efficiency-driven	Transition from stage 2 to stage 3	Stage 3: Innovation-driven
GDP per capita (US$) thresholds*	<2,000	2,000–2,999	3,000–8,999	9,000–17,000	>17,000
Weight for basic requirements subindex	60%	40–60%	40%	20–40%	20%
Weight for efficiency enhancers subindex	35%	35–50%	50%	50%	50%
Weight for innovation and sophistication factors	5%	5–10%	10%	10–30%	30%

Note: See individual country/economy profiles for the exact applied weights.
* For economies with a high dependency on mineral resources, GDP per capita is not the sole criterion for the determination of the stage of development. See text for details.

Source: WEF Global Competitiveness Report 2013-2014

Each indicator will be given a value from 0 to 7 and they will be successively aggregated based on the weights provided for in the Table nr.1 so that to obtain a unique score for each country that is taken into consideration in the final scoreboard.

The report provides the situation and measure of each pillar and subsequent indicators, pointing out the most problematic factors for doing business. Also, a dodecahedron graph is given to synthetically see how a certain country performs for each subindex (pillar), compared also with the average performance of the stage of development the respective country belongs. An example is given below, at the end of this section, for the case of Romania.

The way in which the Global Competitiveness Index is constructed sustains the definition given to competitiveness by the World Economic Forum, in the sense that it is a " set of institutions, policies and factors".

3.2. The Sustainability Adjusted Model

In 2013, the World Economic Forum decided to add a new dimension to its model of competitiveness, that means the dimension of sustainability, as political leaders increasingly recognize the importance of qualitative as well as quantitative aspects of growth, integrating such concepts as social and environmental sustainability into economic decision making.

More recently, in order to better place the debate about competitiveness in the societal and environmental context, the World Economic Forum has started exploring the complex relationship between competitiveness and sustainability as measured by its social and environmental dimension. Such an approach has become critical, as recent projections and studies pointed out that the rates of progress seen in the past may not be sustainable going forward. They revealed that pressures on the environment have become more palpable and concerns over the distribution of the benefits of economic progress within countries have grown.

This has led many to question whether the prevalent growth model is sustainable over time. The recent financial crisis a has given further support to the perception that economic growth is not translating into the desired results for society at large. Pressures on the natural environment resulting from economic activity have also grown over recent decades. "Despite some efforts to address these issues, the undesirable environmental consequences of human activity are leading to a less habitable world"[3].

Against this background, the World Economic Forum has engaged in a series of activities to expand the knowledge about sustainability and its relationship to competitiveness. More precisely, it explored deeper the relationships among competitiveness, environmental sustainability and social sustainability, arriving at "the overall definition of *sustainable competitiveness,* which is *the set of institutions, policies and factors that make a nation remain productive over the longer term while ensuring social and environmental sustainability"*[4].

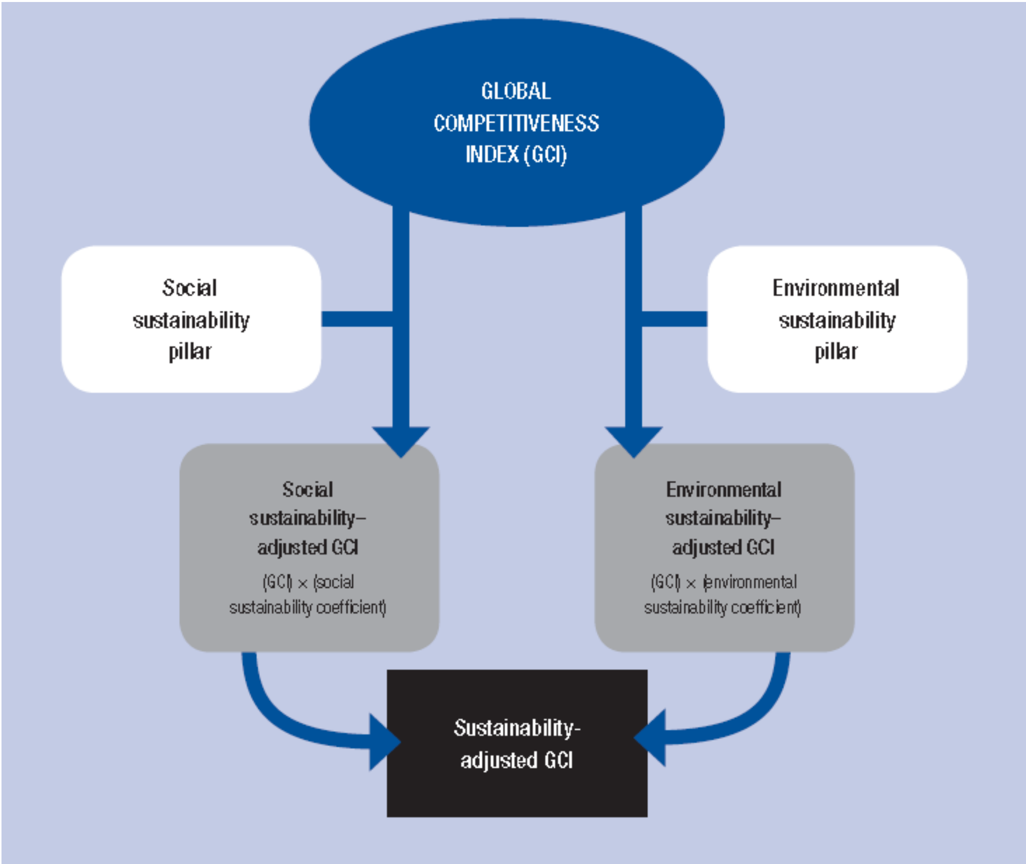
The Report underlines "another way of looking at the concept of sustainable competitiveness", which should mean that "it aims to gauge not only whether a country has the potential to grow over the medium and long term, but whether the national development process is producing the kind of society in which we want to live"[5].

Under such circumstances, the structure of the sustainability adjusted GCI is as follows (Figure nr.2)

---

[3] WEF Global Competitiveness Report 2013-2014, page 53
[4] WEF Global Competitiveness Report 2013-2014, page 55
[5] WEF Global Competitiveness Report 2013-2014, page 61

Figure nr.2 - The Sustainability-Adjusted GCI



Source: WEF Global Competitiveness Report 2013-2014

For both pillars - social sustainability and environmental sustainability - WEF identified a number of essential indicators, indicated in the Figures nr. 3 and 4 below.

Figure nr. 3 - Summary of indicators for environmental sustainability

Environmental policy

- Environmental regulations (stringency and enforcement)
- Number of ratified international environmental treaties
- Terrestrial biome protection

Use of renewable resources

- Agricultural water intensity
- Forest cover change
- Fish stocks' overexploitation

Degradation of the environment

- Level of particulate matter concentration
- CO_2 intensity
- Quality of the natural environment

Figure nr. 4 - Summary of indicators for social sustainability

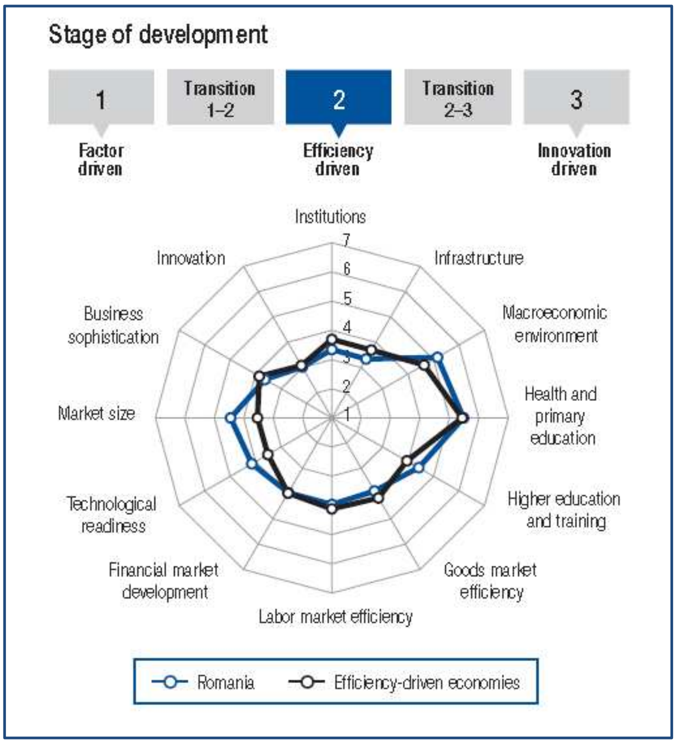
Access to basic necessities	Vulnerability to shocks	Social cohesion
• Access to sanitation	• Vulnerable employment	• Income Gini index
• Access to improved drinking water	• Extent of informal economy	• Social mobility
• Access to healthcare	• Social safety net protection	• Youth unemployment

Source: WEF Global Competitiveness Report 2013-2014

On the basis of these new two pillars and indicators, WEF is calculating the new values of the Global Competitiveness Index and establishes a new scoreboard, which indicates that several countries are maintaining their position, other are going up or down with at least 1 position, which could be interpreted that the mix of policies pursued by a country is in line with the sustainability requirements while other should make necessary *adjustments.*

<u>3.3. Romania in GCI Top</u>

Figure nr. 1 - Romania's stage of development



Source: WEF Global Competitiveness Report 2013-2014, page 324

From the Figure nr. 1 we could see that Romania is quite well performing as to the pillars market size, macroeconomic environment, technological readiness and higher education and training, but for the rest of pillars representing their majority, it is below the performance of the countries belonging to this stage of development (efficiency-driven economies).

In the global index, Romania occupies position 76 with a score of 4.3 and is placed in the second stage of development "efficiency-driven economies". In the sustainability-adjusted GCI, Romania maintains the same position in the global top.

3.4. - WEF Model of Competitiveness as Source of Inspiration

The fact that the Global Competitiveness Index is so comprehensive, in the sense that it encompasses the prevailing majority of the countries, ie 148 countries and that it measures 115 indicators, it was used from the beginning by the International Monetary Fund and the World Bank, but also by different national and international institutions, to analyze the performances and the problems that a particular country is facing.

Also, the European Union followed closely the GCI construction in establishing its own competitiveness index, this time not calculated for a certain member country, but at the level of regions (the regional competitiveness index - RCI). RCI was intended to measure the different dimensions of competitiveness at the regional level and the European Commission has developed it "inspired by the structure of the Global Competitiveness Index"[6]. The first RCI was published in 2010 and again in 2013, through a coordinated effort, by the European Commission’s Joint Research Centre and the Directorate-General for Regional Policy. The regional dimension is important because many of the factors of competitiveness are influenced or even determined by regional and city authorities. Also, there a trend toward more decentralization in Europe, which makes the role of cities and regions even more important.

The World Bank is using the Global Competitiveness Index in its own researches on export competitiveness, arguing that "a decomposition of the countries' export growth can inform about the role of structural and competitiveness factors as drivers of exports, but also on the questions of whether a particular country or country group has out- or under-performed competitors in selecting high-growth destination markets and sectors"[7].

Also, the World Bank, the European Bank for Reconstruction and Development and some regional banks are cooperating in the elaboration of similar global competitiveness

[6] WEF Global Competitiveness Report 2013-2014, page 25
[7] World Bank Export Competitiveness: Indicators and Methodologies

reports at regional level, for example for Africa, the Arab countries, the Asian countries, la Latin American countries as a token of the importance they give to the WEF Global Competitiveness Index.

References

Gignac, Clément - In search of sustainable competitiveness, The Globe and Mail, April 15, 2013

Lall, Sanjaya (2001) - "Competitiveness Indices and Developing Countries: An Economic Evaluation of the Global Competitiveness Report **",** *World Development, Volume 29, Issue 9, September 2001, Pages 1501-1525*

Michael Porter (Editor), Andrew Warner (Editor), Jeffrey D. Sachs (Editor) - Global Competitiveness Report Paperback, 2000

Schwab, Klaus; Sala-i-Martin, Xavier; World Economic Forum - "Global Competitiveness Report 2013-2014", World Economic Forum, 09/2013

The Global Sustainable Competitiveness Index 2013, SolAbility Sustainability Advice, South Korea