THE ROLE OF COMPETITIVENESS ON THE SUSTAINABILITY OF THE NATIONAL REAL ECONOMY

Ph.D. Otilia MANTA
"Victor Slăvescu"Center of Financial and Monetary Research, Romania
E-mail: otilia.manta@rgic.ro

Abstract: *The sustainability of the real economy is interdependently influenced by the increase in the productivity and competitiveness of the economic sectors, as well as by the current challenges facing the economic environment not only at national level, but also globally, including: trust (lack of collaboration) between the market actors (firms, institutions, authorities), entrepreneurship (demographics, structure, business environment resilience), the dynamics of the economy, human resources and education (critical mass and quality of workforce), innovation (demand and supply research resources, critical mass of researchers and innovative firms), creativity (entrepreneurial culture, innovation community), resource efficiency and excellence (priority sectors and international competitiveness). Moreover, the influence of digital technologies (especially in the field of finance), i.e. their integration into the economic sectors, leads us to the hypothesis that they can also be introduced in the range of the current challenges, with impact on the competitiveness and the sustainability of the real economy. The objective of the paper is to integrate these challenges into a coherent, medium-term vision, support for the concrete proposals package for the sustainable development of the national economy, in line with the strategic and competitive priority areas based on the economic data resulting from the analysis of the balance sheets of economic agents at national level.*

Key words: *competitiveness, digital technologies, sustainability*
JEL Classification: *O32, P42 and Q01*

1. Introduction

The existence of a stable macroeconomic and financial framework is a prerequisite for creating an environment favorable to the assertion of the competitive potential of the business environment.

Table no.1. Macroeconomic indicators of budget construction

Indicators	2018	2019
GDP - million lei	949.600	1.022.500
Economic growth %	4,5	5,5
Average annual inflation%	4,63	2,8
Unemployed (total number of people at the end of the year)	288.900	287.000
Unemployment rate at the end of the year%	3,31	3,2
Gross average earning - lei	4.502	5.163
Net average earning - lei	2.685	3.085
Average number of employees - thousands of people	6.525	6.655

Source: Ministry of Public Finance (http://discutii.mfinante.ro/static/10/Mfp/ Prezentarebuget2019.pdf)

In 2019, the budget deficit is estimated at 2.55% of GDP according to the Ministry of Public Finance, while the ESA deficit is 2.57% of GDP, with the target of a budget deficit below 3% of GDP, according to the Maastricht Treaty, which could mean creating the appropriate framework for the development of the national economy. Moreover, in 2017 Romania ranks 5th among the EU Member States with the lowest level of indebtedness, with a public debt in GDP of 35.1%, significantly below the level recorded in the euro area (88.9% of GDP) and the European Union (83.2% of GDP).

The estimated level of government gross debt for the end of 2018 is 34.9% of GDP, and in the medium term (2019-2021) it will be below 40% of GDP, a level below the 60% ceiling set by the Maastricht Treaty, according to the Ministry of Public Finance. However, it should be noted that in order to create an environment favorable to the development of economic competitiveness, country risk is also based on other factors that we should take into account, especially in the current context in which some financial institutions have revised this risk, which limits some cases have access to, for example, companies for cheaper financing sources on international markets. For the year 2019, a government gross debt ratio of 35.3% is estimated.

In order to have an adequate picture of the current strategic framework in the real economy and on the basis of national sectoral analyzes, 10 sectors with a competitive potential were identified and correlated with the areas of intelligent specialization identified in the *National Strategy for Research, Development and Innovation 2014-2020* (Table 2). The rationale for selecting these sectors was based on three main reasons: the structural dynamics of the economy, which brought new sectors into competitive positions, the economy's dependence on employment and the added value of traditional sectors with competitive advantages, and the role rising innovation and technological development in integrating global value chains.

Table no.2. Economic sectors with competitive potential

Fields of Intelligent Specialization in the Strategy CDI 2014-2020 Economic sectors with competitive potential	**Bio economy**	**Information and communication technology, space and security**	**Energy, Environment and Climate Change**	**Eco-Nano-technologies and advanced materials**	**Health**
An important economic and employment-related role					
Tourism and ecotourism	✓		✓		✓
Textiles and leather goods				✓	
Wood and furniture				✓	
Creative industries			✓	✓	✓
Competitive dynamics					
Automotive industry and components		✓		✓	
Information and communication technology		✓			
Food and beverage processing	✓			✓	✓
Innovation, technological development and added value					
Health and pharmaceuticals	✓			✓	✓
Energy and environmental management	✓	✓	✓		
Bio-Economy (Agriculture, Forestry, Fisheries and Aquaculture), Biopharmaceuticals and Biotechnologies	✓		✓	✓	✓

Source: National Strategy for Competitiveness 2015-2020

In order to be able to refer directly to the sectors that are competitive in the real economy, we start from the analysis of the balance sheets at the level of the economic agents in Romania and in the paper the relevance element is given by the analysis of these data in the context of the challenges and the definition of the of strategic importance of the priority sectors for the Romanian economy.

2. Methodology of scientific research

In order to underpin the research methodology, the classical observation and examination instruments, research methods based on the basic principles of scientific research, namely: competence, objectivity, truth, methodical, demonstration, correlation, evaluation of results, utility and psychomoral. It will use procedures based on factual analysis, intensive documentation at the level of domestic and international literature, using the databases and the scientific material existing in the endowment of the libraries of specific institutes in Romania and internationally.

The *methodology of the research paper* will have as direct instruments the collection of data and information from the literature and from the existing practice in public and private institutions, but especially scientific articles published on specialized research networks (ResearchGate, Academia.edu, etc.), articles published in different journals, relevant books in the field of reference, legislation, analyses and studies, official documents of various tax bodies, tax documents and interactive database of the National Bank of Romania, other relevant sources identified at the libraries: CCFM, Academia Romanian, INCE, IEN, BNR, National Library, INS, etc. Moreover, in the methodology we will analyses the documents using the comparative, analytical, descriptive method, no participative and participatory observation, and the use of a set of informational sources, the collection of financial data in the established databases. Also, the paper will be based on annual reports, publications, consolidated statistical data provided by the National Bank of Romania, the European Central Bank (ECB), the International Settlement Bank (BRI), the European Commission, OECD, published annually, data to be processed in order to be able to provide a general and analytical picture of the most important changes taking place in the European Union as a whole, but also globally - considered representative for the understanding of the phenomena studied, and especially in Romania.

Information support for research will be provided by monographs, books, scientific papers, materials of scientific conferences, the balance sheets of SMEs in 2007-2017, as well as other materials, which are presented in scientific papers and publications on the official pages of national and international research institutes, international financial institutions (research centers), etc.

3. Research results

In order to be able to state which of the economic sectors at the national level are competitive or not, in our analysis we consider that the main element from which we leave are the real data reflected in the economic accounts of the economic units in each branch. Within the financial microeconomics department within the Center for Financial and Monetary Research - Victor Slavescu, an analysis is made on 57 financial indicators at the level of each economic agent. Thus, for the accuracy of the data it is found in nominal terms, the total assets in the real economy were 95.25% higher in 2017 compared to 2007. As one of the most synthetic indicators for determining the microeconomic activity potential, these results were due to a cumulative positive and negative influence on the structure of this indicator. Synthetically, over the period 2007-2017, the total assets of the real economy broken down by branches are presented in the following table.

Table no. 3. Dynamics of average total assets during 2007-2017 for the companies grouped by branches of the national economy

No crt.	Branches national economy	Dynamic (2007=100%)									
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	Agriculture, forestry and fishing	160,92	158,77	180,04	172,96	207,93	184,64	203,41	209,09	235,14	243,75
2	Extractive industry	117,98	116,14	133,47	138,48	153,38	160,89	171,96	46,85	170,04	174,62
3	Manufacturing industry	127,94	124,68	144,38	164,67	171,52	171,35	177,53	182,85	186,14	195,79
4	Production and supply of electricity and heat, gas, hot water and air conditioning	209,52	140,10	129,02	129,67	127,60	105,15	91,45	95,88	103,60	103,89
5	Water distribution, sanitation, waste management, decontamination activities	219,38	241,97	271,53	253,82	240,08	252,97	286,78	327,36	320,56	323,32
6	Construction	125,08	125,64	153,27	173,39	221,65	207,97	150,92	207,77	199,04	198,14
7	Wholesale and retail trade, repair of motor vehicles and motorcycles	139,92	125,96	143,23	157,14	162,07	160,14	162,91	174,63	180,16	196,35
8	Transport and storage	115,54	119,19	103,74	99,95	97,27	88,85	95,75	94,75	93,23	93,79
9	Hotels and restaurants	138,15	120,85	130,07	137,18	131,9	131,94	135,91	136,85	141,61	149,04
10	Information and telecommunication	49,90	47,27	53,87	59,61	168,72	50,56	54,90	54,53	160,94	166,92
11	Real estate transactions, rentals and services mainly provided to companies	172,22	210,24	277,22	210,99	159,65	158,3	200,83	155,82	161,46	164,32
12	Professional, scientific and technical activities	129,78	129,55	163,27	182,95	196,53	204,68	218,61	214,41	200,71	916,49
13	Administrative service activities and support service activities	74,55	5,53	6,31	26,93	11,36	19,54	19,64	19,72	15,02	13,42
14	Education	120,24	118,49	165,48	218,07	182,33	128,99	155,72	131,73	101,78	121,79
15	Health and social assistance	150,79	159,34	187,5	207,33	246,11	243,9	250,12	270,83	258,35	260,52
16	Performing, cultural and recreational activities	284,21	226,73	269,55	281,51	111,18	259,83	229,96	272,96	90,70	84,78
17	Other activities of the national economy	111,40	106,70	110,39	119,68	144,29	120,14	117,27	107,70	144,40	145,26
	Total	133,42	121,26	140,42	149,56	148,92	149,40	152,22	150,34	153,48	179,47

Source: calculated on the basis of data provided by the Ministry of Public Finance (the annual financial statements of the active trading companies in the real economy of Romania)

It should be noted that in the production and supply of electric and thermal energy, gas, hot water and air conditioning, commercial companies have, on average, the total assets with the highest value (more than 116.73 million lei) but with an obvious trend (in 2017, the average total asset value was 3.89% higher than in 2007).

Although in the fields of "Professional, scientific and technical activities" and "Water distribution, sanitation, waste management, decontamination activities" the average total assets level is well below the level of "Production and supply of electric and thermal energy, gas, hot water and air conditioning ", the highest growth rates were registered (the average total assets at 31 December 2017 was more than 9.16 times and 3.23 times higher than at the end of 2007).

Of course, an explanation of the presented situation is the technological processes for some branches of the real economy ("Production and supply of electric and thermal energy, gas, hot water and air conditioning") involving large unit investments, but also other exogenous factors that have influenced in the structure of average total assets (the market, the labor market, etc.).

From a territorial point of view, there is a known asymmetry regarding the territorial distribution of economic activity, on average, the companies in the development region Bucharest - Ilfov have the highest total assets, while in the South-West development region the levels are recorded smaller. The highest dynamics were recorded in the Bucharest-Ilfov and South development regions where, over the period 2007-2017, the

total assets increased by more than 75.20%, respectively by over 76.84%. During the same period, the North East region registered the lowest increases, respectively + 51.16%.

Cash availability may be one of the most important elements of microeconomic financial potential and reflects the level of concordance with the supply and sales market as well as the importance given to the total funding sources.[1] Significant increases in average availability were recorded between 2007 and 2017 (at the end of 2017, on average, cash availability was 95.20% higher than at 31 December 2007). Synthetically, over the period 2007-2017, the average availability for real-sector firms, broken down by branch, is shown in the table below.

Table no. 4. The dynamics of average money supply over the period 2007-2017 for the companies grouped by branches of the national economy

No. crt.	Branches national economy	Dynamic (2007=100%)									
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	Agriculture, forestry and fishing	105,78	110,68	143,97	169,37	184,20	190,40	233,41	242,41	313,75	362,98
2	Extractive industry	60,16	52,18	62,98	34,94	22,16	20,95	25,53	34,93	92,61	165,48
3	Manufacturing industry	121,04	117,45	143,58	151,10	153,90	158,46	172,98	211,05	209,30	207,60
4	Production and supply of electricity and heat, gas, hot water and air conditioning	367,03	203,81	156,32	122,69	130,48	122,05	128,13	161,43	193,97	191,39
5	Water distribution, sanitation, waste management, decontamination activities	373,03	522,26	542,04	468,43	379,70	404,46	470,02	449,17	548,85	601,67
6	Construction	91,91	90,75	112,60	126,88	116,46	123,98	143,64	211,27	169,69	173,37
7	Wholesale and retail trade, repair of motor vehicles and motorcycles	115,98	98,40	109,03	124,47	122,68	129,08	143,65	195,00	202,07	219,85
8	Transport and storage	104,01	89,21	89,05	94,86	82,83	85,99	120,18	148,22	162,55	167,65
9	Hotels and restaurants	111,01	86,81	81,17	92,29	73,92	96,91	113,36	149,96	153,95	197,32
10	Information and telecommunication	58,08	49,43	56,04	68,06	148,94	75,10	99,01	128,67	184,40	205,82
11	Real estate transactions, rentals and services mainly provided to companies	119,83	101,11	99,47	100,92	73,37	78,16	107,92	104,60	113,46	139,58
12	Professional, scientific and technical activities	119,50	111,20	128,49	137,55	138,84	149,60	191,54	194,60	169,21	186,43
13	Administrative service activities and support service activities	96,14	56,63	55,58	92,91	82,03	79,35	90,80	111,26	92,91	103,91
14	Education	103,95	94,99	141,24	130,55	114,45	132,74	147,83	179,12	158,65	171,97
15	Health and social assistance	121,86	128,73	135,11	150,75	174,35	182,68	199,08	302,95	221,48	269,22
16	Performing, cultural and recreational activities	192,86	167,73	205,63	200,85	147,23	193,06	177,47	252,39	149,67	136,36
17	Other activities of the national economy	106,29	95,29	106,07	122,86	181,49	134,32	150,25	172,01	244,62	267,11
Total		120,60	105,97	119,49	126,22	120,63	128,50	147,82	185,24	183,01	195,20

Source: calculated on the basis of data provided by the Ministry of Public Finance (the annual financial statements of the active trading companies in the real economy of Romania)

It should be noted that in the branch "Production and supply of electric and thermal energy, gas, hot water and air conditioning" the commercial companies, on average, have the

[1] On the balance sheet this item is reflected as inventory at the end of the period and used as a potential asset of the activity.

highest available funds (over 9,20 million at the end of 2017) and with significant growth rates (in 2017, average money availability was 91.39% higher than in 2007).

In the branch of "Other activities of the national economy", the companies have on average the lowest money availability (39.18 thousand MDL as at December 31, 2017) and "Water distribution, sanitation, waste management, decontamination activities "The highest growth rates are recorded (average cash availability as of 31 December 2017 was about 6.02 times higher than at the end of 2007).

The average level of cash availability varies greatly from one branch to the next because the technical endowment, the complexity of the technological processes, the supply and sales conditions as well as the financing policy are specific for each domain and economic agent.

In order to compete on a competitive basis, economic agents must resort to the implementation of technological innovations (which is also one of the greatest challenges today) and, in parallel, must attract well-trained workforce to face this new Industrial Revolution V (industry 5.0). Starting from Industry 4.0. with its component digitization of Rüßmann et al. (2015) "will increase productivity in the manufacturing industry, change the economy, increase industrial output and change the profile of the 32 workforce - ultimately changing the competitiveness of companies and regions" (Russmann, et al., 2015, p. 6). 33. Parviainen et al. (2017) considers that "digitization has been identified as one of the major trends changing society and businesses in the near future and in the long run the impact of digitization will be important, compared to the industrial revolution by several authors" (Parviainen et al., 2017, p. 64). E. Stolterman and AC Fors (2004), Parviainen et al. (2017) asserts that the term digitization refers to "the digitization action or process, the conversion of analogue data (images, video and text) into digital form," while digitizing refers to "can be understood as the changes that digital technology causes or influences in all aspects of human life" (Parviainen et al., 2017; Stolterman and Fors, 2004, p. 689). Furthermore, Kagermann (2015) mentions that digitization is "the continuous convergence of the real and virtual world and can be regarded as the main engine of innovation and change in all sectors of our economy". Brennen and Kreiss (2014) states that digitization refers to "adopting or increasing the use of digital technology or computers by an organization, industry, country, etc.". All of these concepts and theories determine us to re-evaluate the competitive sectors both through the analysis of data at the level reported by the companies, but especially through the adaptation and adoption by them of the new (digital) instruments with a direct impact on their business model. According to I-scoop.eu, digitization could be defined as "the transformation from analog to digital or digital of a physical element in order to digitize and automate processes or workflows" (Clerk, 2019).

4. Conclusions

The presentation of the ten strategic sectors included in the national competitiveness strategy as well as the analysis of the data mentioned in *Table no.3* lead us to the direct conclusion that all these strategically selected sectors are dynamic on an ascending trend, confirms that they have been well-selected in national priorities in terms of financial indicators. Therefore, the challenges should not be regarded as urgent needs to be addressed but must be evaluated, correlated and strategically improved to improve the strengths Romania has or can have in the current European context and in the context of globally. As mentioned in the paper, Industry 5.0. will contribute to the rethinking of the elements of sustainability of the national economy, which means that besides the economic, social and environmental element, there is the element "information" that will not only circulate both in real and virtual space, and it will influence us the competitiveness of the national economy as a whole.

In order to rebalance the functional, competitive relationship between the economy, nature and society, it is necessary to identify adequate tools and methods for implementing programs that provide for both financial and institutional measures. At SME level, financial instruments under the above strategy "must aim at increasing investment in equipment and know-how to reduce unit energy consumption, increase non-banking institutions, diversify financial instruments (e.g., the formation of the social bond market) or investments in the reconstruction of vulnerable areas in areas of economic activity (recreational services, cultural and creative industries, amusement parks and artistic theme centers), which predominantly occupy the young labor force. Institutionally, there is a need to implement a system for assessing and monitoring the effects of socio-economic development and coordinating measures to increase bio-capability, including to reduce the ecological footprint of Romania or to implement mobility schemes at the macro-regions level for the transfer of good practices, investment programs for soft cooperation and the development of research partnerships to improve the quality of life" (National Competitiveness Strategy 2015-2020).

Another element determined in increasing the competitiveness of economic agents is given by research and innovation. The level of RDI expenditures was only 0.48% of GDP (2011), of which private sector expenditures represent 0.17% of GDP (2011), placing Romania on the penultimate position of the European Innovation Union Scoreboard 201350. However, we can mention that in certain sectors of activity, such as IT, the elements of innovation and competitiveness are beginning to emerge. The fact that the private environment does not seem to be interested in research is a challenge at the moment, along with the lack of a critical mass of researchers. At the same time, the percentage of SMEs engaged in innovation activities is low, making it a priority for SMEs to be supported in the coming period to launch innovative products or services through venture capital funds, grants, collaborative projects, etc. Romania holds the last position for the categories "links and entrepreneurship" and "intellectual assets" and penultimate for the "quality of research systems". Some additional data explains this performance: Romania registered only two EPO patent applications per million inhabitants in 2010, compared to a European average of 109; the percentage of RDI employees in the active population is 0.5% compared to a European average of 1.5%; only 30%. According to the European Commission (2013), Innovation Union Scoreboard 2013 of the enterprises had innovation activities in the year 2010 compared to 52.9% at EU27 level, according to CIS (Community Innovation Survey) results, the percentage of technological innovators being the lowest among European countries, and so on.

In order to meet the identified challenges, the strategic steps undertaken by Romania aim at promoting innovation and improving the technological transfer through the development of a smart specialization component, based on the industrial sectors, services and regions identified as having a high innovative potential, in order to stimulate their capacity to attract SMEs in the supply chain, to innovate the technological processes and products and to penetrate new markets. In order to strengthen the competitiveness level of SMEs in the Romanian economy, we consider that in addition to national support resources for national strategic development, the economic agents also have additional resources available to the public proposed by the National Plan for RDI can be attracted through the main European financing program R & D & I for 2014-2020, Horizon 2020, whose core objective is to develop key European enabling technologies (KET), including photonics, microelectronics and Nano electronics, nanotechnologies, advanced materials , advanced manufacturing and processing systems, and biotechnology. In addition to the priority industrial areas, Horizon 2020 facilitates cooperation between businesses, higher education institutions and research centers through the so-called Knowledge and

Innovation Communities (KICs) developed within the European Institute of Innovation and Technology (EIT) or through partnership programs public-private open to top research areas. Investments in RDI also have as important sources the Structural and Cohesion Funds 2014-2020, which, unlike Horizon 2020, consider strengthening R & D capacity taking into account the particularities of the level of economic development. The actions covered here range from innovation business activity to supporting competitive business agglomerations to the promotion of business consulting services in R & D & I, including in the field of services, creative centers, cultural and creative industries, and social innovation. Complementary resources come from other European Initiatives such as the European Innovation Partnerships (e.g. the European Innovation Partnership on Active and Healthy Aging or Sustainable Agriculture and Productivity Aging) or the type of cross-border cooperation (e.g. Knowledge Based Alliances with Erasmus +).

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