

## **AN OVERVIEW OF CENTRAL AND EASTERN EUROPEAN CAPITAL MARKETS – SIMILARITIES AND CONTRASTS BETWEEN POLAND, ROMANIA, CROATIA AND HUNGARY**

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### **Abstract**

*Central and Eastern European capital markets have undergone remarkable progress in recent decades, through a fairly common and sinuous path, following the fall of the communist regimes, accession to the European Union and implementation of reforms on communication and financial reporting, reorganization of markets in order to meet the free market's rigors, modernization in trading, as well as restrictions' reduction on foreign investments. The current paper aims to examine the most notable Central and Eastern European capital markets by contrasting their main defining coordinates, in an effort to delineate between their common and divergent features. In this regard, the paper considers stock exchanges from Romania, Poland, Croatia, and Hungary. Furthermore, the designed approach depicts a comparative comprehensive image of the activity and size of the analysed markets, identifying the regional leader.*

**Keywords:** *Central and Eastern Europe, Poland, Romania, Croatia, Hungary, Stock Exchange*

**JEL classification:** *G15, G19*

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### **1. Introduction**

Admittedly, capital market growth and its amplified efficiency constitute core components of macroeconomic stability, whilst generating economic progress. Undoubtedly, the most recent decades have unveiled notable favourable evolutions pertaining to Central and Eastern European capital markets. Certainly, this evolution is mostly credited to regional

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favourable economic developments, but national specifics and underlying particularities cast a visible contrast upon the similar historical path these states have followed.

Surely, considering the relevant economic and historical developments, Central and Eastern European capital markets are admitted to be both small and young. This statement gains even more validity when the comparison is made with stock exchanges from more developed western economies. Furthermore, among the top 15 ranked exchanges by traded share value we cannot identify any markets from Central and Eastern Europe. However, that is to be expected given the fact that only in the late '80 these post-communist states commenced the process of transitioning their national economies from a centralized towards a free market system.

According to official data, disseminated by the World Federation of Exchanges, the most representative Central and Eastern European capital markets are considered to be Russia, Turkey, Poland, Romania, Croatia, Hungary, Slovenia and Serbia.

## **2. Central and Eastern European capital markets – similarities and contrasts between Poland, Romania, Croatia, and Hungary**

The aim of the current section is to examine, in a regional contrasting manner, the general activity traits of a set of four Central and Eastern European capital markets. For this purpose, we devised a comparison with the five most notable stock exchanges from Central and Eastern European states, that are also members of the EU: Poland (Warsaw Stock Exchange, WSE), Romania (Bucharest Stock Exchange), Croatia (Zagreb Stock Exchange, ZSE) and Hungary (Budapest Stock Exchange). Initially, we intended to also include in the analysis the Bulgarian Stock Exchange and the Prague Stock Exchange, but we did not manage to retrieve the necessary data in English from reliable sources.

In brief, the research question that the paper intends to answer is: *given their common historical, economic and political coordinates, are Central and Eastern European capital markets comparable? Which would be the best performing from a regional standpoint?*

### **2.1. Methodological approach and analysed data**

Following the study subjects' selection, we proceeded to establish the study criteria set, basis for the substantiation of the subsequent comparative

analysis that will assist us in obtaining a comprehensive image upon the selected stock markets' size and general activity:

- a) capitalization of the domestic stock market;
- b) number of listed companies (domestic, foreign and total);
- c) average capitalization per company;
- d) total value of electronic transactions with shares;
- e) total value of bond transactions.

We must mention that the study mainly depicts the activity registered between 2015 and 2019. Furthermore, the necessary data was gathered from official statistics provided by the World Federation of Exchanges (WFE) and by the Federation of European Stock Exchanges (FESE). Moreover, the data was subject to the author's own processing, calculations and necessary conversions. At the same time, in order to obtain coherent comparisons, domestic monetary values were converted into USD equivalents as a common denominator.

## **2.2. Comparative analysis, findings and discussions**

Firstly, regarding the first analysed criterion, namely the domestic market capitalization, based on table 1 shown below we can observe that the highest values for the considered time spectrum are consistently recorded by the Warsaw Stock Exchange, a market that is more than seven times bigger than the Bucharest Stock Exchange. An atypical evolution is unveiled in fact that while the other markets recorded slight growths of market capitalization in 2016 relative to the previous year, of values between 0.67% (i.e. Poland) and 27.51% (i.e. Hungary), the Romanian market has recorded a decrease by 4.47%.

**Table 1: Domestic market capitalization (USD millions)**

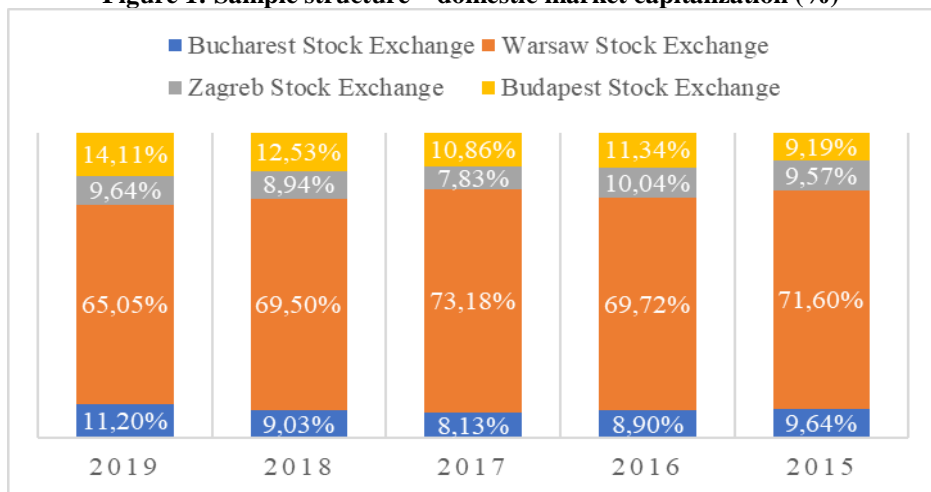
Stock Exchange	Domestic market capitalization (USD millions)				
	2019	2018	2017	2016	2015
<b>Bucharest Stock Exchange</b>	26.110,30	20.855,84	23.621,30	17.710,02	18.539,11
<b>Warsaw Stock Exchange</b>	151.618,86	160.461,24	212.692,30	138.691,08	137.769,58
<b>Zagreb Stock Exchange</b>	22.458,26	20.632,22	22.764,80	19.962,76	18.414,47

<b>Budapest Stock Exchange</b>	32.886,53	28.934,57	31.553,80	22.553,36	17.686,95
<b>Total</b>	233.073,96	230.883,87	290.632,20	198.917,22	192.410,11

Source: Author's projection

Accordingly, we note that the Polish Stock Exchange delineates itself as the largest in the region. It follows a favourable growth trend from 2015 through 2017, however, during 2018-2019 it switches to a decreasing trend, one that is expected to be maintained in 2020 as well. This evolution is imprinted over the total regional evolution, which is to be expected given the sample structure depicted by figure 2. At the same time, Zagreb Stock Exchange shows the smallest domestic market capitalization at a yearly average of 20.846,50 ml USD, being closely followed by Bucharest Stock Exchange with an average of 21.367,32 mil USD and Budapest Stock Exchange with 26.723,04 mil USD. All of these three stock markets prove to be of comparable dimensions.

**Figure 1: Sample structure – domestic market capitalization (%)**



Source: Author's projection

According to the above included figure 2, of the analysed sample the Polish market generates the vast majority of the region's

market capitalization, between 65.05% and 73.18%. Moreover, over the years the structure of the sample remains mostly constant.

Moving to the second study criterion, namely the number of listed companies, as described by the subsequent summary table 2, the Warsaw Stock Exchange is again the detached leader for the entirety of the analysed time spectrum (2015-2019). Furthermore, listing on average 10 times fewer entities than the Polish stock exchange, the Romanian one occupies the penultimate place, following the Croatian market, only managing to surpass the Hungarian stock exchange.

**Table 2: Number of listed companies 2017-2019**

Stock Exchange	Number of listed companies								
	2019			2018			2017		
	Total	Domestic	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign
<b>Bucharest Stock Exchange</b>	83	81	2	87	85	2	87	86	1
<b>Warsaw Stock Exchange</b>	824	798	26	851	823	28	890	861	29
<b>Zagreb Stock Exchange</b>	119	119	0	127	127	0	155	155	0
<b>Budapest Stock Exchange</b>	44	44	0	43	43	0	41	41	0
<b>Total</b>	1.070	1.042	28	1.108	1.078	30	1.173	1.143	30

Source: Author's projection

Primarily we note an unfavourable continuous decrease in the total number of listed companies in the region, located between 0.76% (2017 vs. 2016) to 5.54% (2018 vs. 2017) per year, namely between 9 delistings and 65, averaging a number of 38 delistings yearly.

**Table 3: Number of listed companies 2015-2016**

Stock Exchange	Number of listed companies					
	2016			2015		
	Total	Domestic	Foreign	Total	Domestic	Foreign

<b>Bucharest Stock Exchange</b>	86	84	2	84	82	2
<b>Warsaw Stock Exchange</b>	893	861	32	905	872	33
<b>Zagreb Stock Exchange</b>	160	160	0	186	186	0
<b>Budapest Stock Exchange</b>	43	43	0	45	45	0
<b>Total</b>	1.182	1.148	34	1.220	1.185	35

Source: Author's projection

In conjunction with the facts discussed for the first study criterion, a third criterion was explored: the average capitalization per company. Based on table 4, we can state that the highest average capitalization per company is noted on the Budapest Stock Exchanges, followed by the markets in Bucharest, Warsaw and Zagreb. This suggests the fact that on the identified smallest markets, on average, bigger companies choose to quote their shares on the capital market.

**Table 4: Average capitalization per listed company**

Stock Exchange	Average capitalization per listed company				
	2019	2018	2017	2016	2015
<b>Bucharest Stock Exchange</b>	314,58	239,72	271,51	205,93	220,70
<b>Warsaw Stock Exchange</b>	184,00	188,56	238,98	155,31	152,23
<b>Zagreb Stock Exchange</b>	188,72	162,46	146,87	124,77	99,00
<b>Budapest Stock Exchange</b>	747,42	672,90	769,60	524,50	393,04
<b>Sample average</b>	217,83	208,38	247,77	168,29	157,71

Source: Author's projection

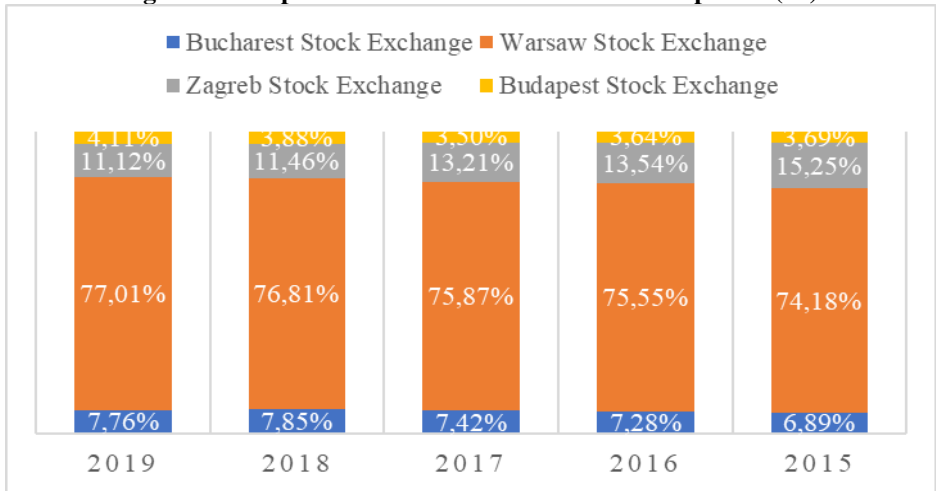
In our view, an interesting and defining explanatory aspect of this evolution, with multiple implications, derives from the companies' preferred manner of financing. While Polish companies prefer financing through equity instruments (shares), attracting additional funds through the capital market, by visible contrast Romanian, Croatian and Hungarian entities prefer financing through bank loans. A first explanation would be the lower cost of a loan compared to the higher return on investments expected by capital investors to reward their efforts and risk. Furthermore, in less developed economies shareholders

and entrepreneurs prove to be more reluctant in regards to conserving full control over their companies, expecting to retain all generated income.

At the same time, we note that confidence in the system promoted by the stock market and other capital market participants has not yet fully crystallized, a situation superimposed on their insufficient transparency, all endangering the development of the true potential of Central and Eastern European capital markets.

Moreover, analysing the subsequent figure 2, we conclude that the Polish stock exchange has a market capitalization up to nine times higher than its counterparts, due to the large number of traded companies.

**Figure 2: Sample structure – number of listed companies (%)**



Source: Author's projection

Regarding the value of share trading (electronic order book, EOB), summarized by table 5, in 2017 in Warsaw was concentrated the maximum level, 63,029.60 million USD, increasing by 30.26% compared to the previous year, which was down by 8.41% compared to 2015. At the opposite spectrum, the minimum value was registered by Zagreb Stock Exchange, a market that represented only 0.69% of total

transactions with shares and decreased by 21.64% in 2016 compared to the previous year, but recovered in 2017 with an increase of 22.56% relative to 2016.

**Table 5: Total value of share trading. Electronic order book (USD millions)**

<b>Year</b>	<b>2019</b>		
<b>Stock Exchange</b>	<b>Total</b>	<b>Domestic</b>	<b>Foreign</b>
<b>Bucharest Stock Exchange</b>	2.098,93	2.057,12	41,82
<b>Warsaw Stock Exchange</b>	50.257,57	49.768,94	488,63
<b>Zagreb Stock Exchange</b>	328,79	328,79	0,00
<b>Budapest Stock Exchange</b>	8.791,21	8.791,21	0,00
<b>Total</b>	61.476,51	60.946,06	530,45
<b>Year</b>	<b>2018</b>		
<b>Stock Exchange</b>	<b>Total</b>	<b>Domestic</b>	<b>Foreign</b>
<b>Bucharest Stock Exchange</b>	2.518,39	2.507,12	11,27
<b>Warsaw Stock Exchange</b>	56.900,85	56.719,97	180,89
<b>Zagreb Stock Exchange</b>	254,39	254,39	0,00
<b>Budapest Stock Exchange</b>	10.216,18	10.216,18	0,00
<b>Total</b>	69.889,81	69.697,65	180,89
<b>Year</b>	<b>2017</b>		
<b>Stock Exchange</b>	<b>Total</b>	<b>Domestic</b>	<b>Foreign</b>
<b>Bucharest Stock Exchange</b>	2.632,50	2.621,00	11,50
<b>Warsaw Stock Exchange</b>	63.029,60	62.831,80	197,80
<b>Zagreb Stock Exchange</b>	407,00	407,00	0,00
<b>Budapest Stock Exchange</b>	9.817,50	9.817,00	0,00
<b>Total</b>	75.886,60	75.676,80	209,30
<b>Year</b>	<b>2016</b>		
<b>Stock Exchange</b>	<b>Total</b>	<b>Domestic</b>	<b>Foreign</b>
<b>Bucharest Stock Exchange</b>	2.225,76	2.200,19	25,57
<b>Warsaw Stock Exchange</b>	48.388,95	48.081,52	307,43
<b>Zagreb Stock Exchange</b>	332,09	332,09	0,00
<b>Budapest Stock Exchange</b>	8.148,93	8.148,93	0,00
<b>Total</b>	59.095,73	58.762,73	333,00
<b>Year</b>	<b>2015</b>		
<b>Stock Exchange</b>	<b>Total</b>	<b>Domestic</b>	<b>Foreign</b>

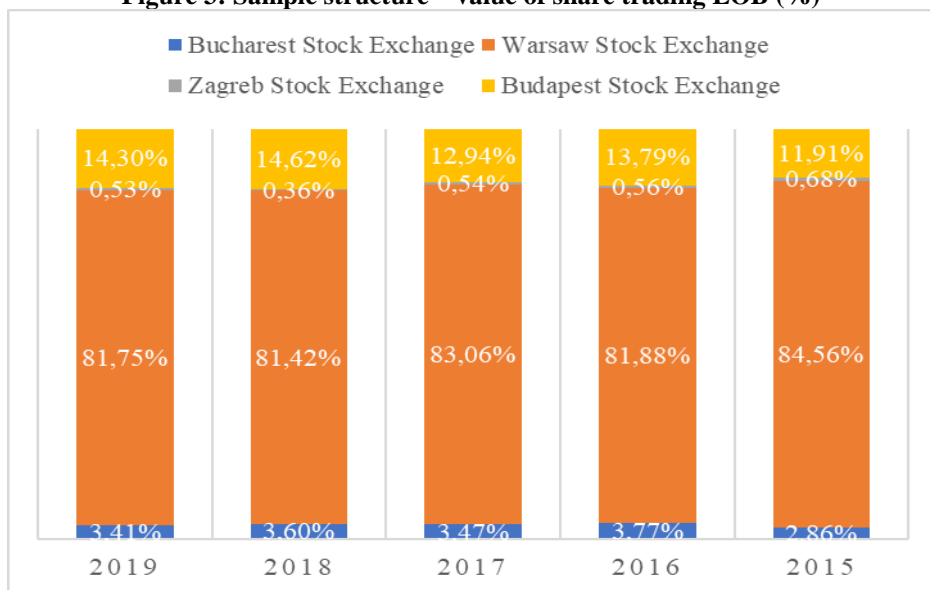


<b>Bucharest Stock Exchange</b>	1.785,59	1.761,17	24,42
<b>Warsaw Stock Exchange</b>	52.829,92	52.627,77	202,15
<b>Zagreb Stock Exchange</b>	423,78	423,78	0,00
<b>Budapest Stock Exchange</b>	7.440,53	7.440,53	0,00
<b>Total</b>	62.479,82	62.253,25	226,57

Source: Author's projection

As we can understand from table 5, analysing the value of electronically traded shares between 2015-2019, the Romanian stock exchange is placed penultimate, only before the Croatian Stock Exchange, with a share about four times lower than the Hungarian stock exchange and 23 times lower than the stock exchange Polish. We note that we do not identify any homogeneity in this criterion either, even if the historical, political and economic trajectories of the analysed stock exchanges manifest common evolutionary stages, but which differ in magnitude, effects and capitalized opportunities.

**Figure 3: Sample structure – value of share trading EOB (%)**



Source: Author's projection

On average, more than 82.54% of the region's share traded value was generated by the transactions on the Polish market, followed by the Hungarian market with 13.51%, Romanian one with 3.42% and the Croatian one with the remaining 0.54%.

Similar to the previously discussed criteria, the total value of bond transactions differs considerably between the selected stock exchanges. This is presented synthetically through table 6, prepared for the comparative analysis and which simultaneously distinguishes between the domestic public, domestic private and foreign sectors delineated on each national market. The leader remains in this criterion observed, in 2017, the Warsaw Stock Exchange, with a value of 796.10 million USD, which is 11.22 times higher than the recorded volume in Romania, 11.45 times higher than in Croatia and 419 times more than in Hungary. We note the fact that for 2018 and 2019, data for Romania was not disclosed.

**Table 6: Total value of bond trading (USD millions)**

Year	2019			
	Total	Private	Public	Foreign
Stock Exchange				
Warsaw Stock Exchange	221.984,38	13.354,56	201.656,61	6.973,21
Zagreb Stock Exchange	17.447,74	555,58	16.892,16	0,00
Budapest Stock Exchange	61.741,69	6.330,54	55.346,10	65,04
<b>Total</b>	<b>301.173,81</b>	<b>20.240,68</b>	<b>273.894,87</b>	<b>7.038,25</b>
Year	2018			
	Total	Private	Public	Foreign
Stock Exchange				
Warsaw Stock Exchange	207.148,72	18.286,72	184.877,47	3.984,54
Zagreb Stock Exchange	15.572,38	579,60	14.992,77	0,00
Budapest Stock Exchange	61.556,09	4.789,75	56.741,57	24,78
<b>Total</b>	<b>284.277,19</b>	<b>23.656,07</b>	<b>256.611,81</b>	<b>4.009,32</b>
Year	2017			
	Total	Private	Public	Foreign
Stock Exchange				
Bucharest Stock Exchange	70,9	2,4	68,5	0
Warsaw Stock Exchange	796,1	528	257,8	7,2
Zagreb Stock Exchange	69,5	2,8	66,7	0

<b>Budapest Stock Exchange</b>	1,9	1,7	0,2	0
<b>Total</b>	938,40	534,90	393,20	7,20
<b>Year</b>	<b>2016</b>			
<b>Stock Exchange</b>	<b>Total</b>	<b>Private</b>	<b>Public</b>	<b>Foreign</b>
<b>Bucharest Stock Exchange</b>	74,85	13,12	55,06	6,68
<b>Warsaw Stock Exchange</b>	809,8	539,53	259,24	11,03
<b>Zagreb Stock Exchange</b>	99,35	6,49	92,86	0
<b>Budapest Stock Exchange</b>	7,63	5,32	2,3	0
<b>Total</b>	991,63	564,46	409,46	17,71
<b>Year</b>	<b>2015</b>			
<b>Stock Exchange</b>	<b>Total</b>	<b>Private</b>	<b>Public</b>	<b>Foreign</b>
<b>Bucharest Stock Exchange</b>	121,51	25,75	94,68	1,09
<b>Warsaw Stock Exchange</b>	702,45	525,72	174,45	2,28
<b>Zagreb Stock Exchange</b>	442,62	14,31	428,31	0
<b>Budapest Stock Exchange</b>	0,74	0,74	0	0
<b>Total</b>	1.267,32	566,52	697,44	3,37

Source: Author's projection

Moreover, the foreign sector is completely absent in 2017 from the Bucharest, Zagreb and Budapest stock exchanges, being present only in Warsaw. In addition, the domestic private sector is more strongly represented in Poland, unlike the other national capital markets analysed.

### **3. Conclusions**

Summarising, we believe that Central and East European stock exchanges have been strongly influenced by political crises, liquidity risks and deficiencies in regulation, lack of participants' trust and inadequate financial and accounting regulation.

In brief, the capital markets of the region are classified as emerging markets, but until now they have failed to reach their full potential or a high level of development, due to a significant connection with the uncertainties pertaining to domestic political and economic instability and systemic dysfunctions. In our view, currently, Central and Eastern European countries do not fully benefit from the desired regional integration, despite moderate

cooperation, and harmonization of EU capital market regulation which could generate future opportunities for viable cooperation and integration initiatives.

The Polish capital market (Warsaw Stock Exchange) delineates itself as the most developed of the region, the other examined national markets remaining at comparable but underdeveloped levels (Romania, Hungary and Croatia). Furthermore, while Polish companies prefer financing through equity instruments (shares), attracting additional funds through capital market mechanisms, by visible contrast, Romanian, Croatian and Hungarian companies prefer financing through bank loans. A primary explanation would be the lower cost of a loan compared to the higher return on investments expected by capital investors to reward their risks and efforts. Furthermore, in less developed economies shareholders and entrepreneurs prove to be more reluctant in regards to sharing control over their companies, expecting to retain full control as well as complete generated profits.

At the same time, we note that confidence in capital markets' mechanisms and participants has not yet fully been crystallized, an undesirable reality overlapped on the markets' insufficient transparency which hinders the development of Central and Eastern European stock exchanges to their true potential.

#### **4. References**

- Anghelache, G., Panait, M. (2016) *Characteristics of the Romanian capital market*, Revista Română de Statistică, Supliment nr. 11 / 2016, pp. 79-89, [http://www.revistadestatistica.ro/supliment/wp-content/uploads/2016/12/rss\\_11\\_2016\\_A04\\_en.pdf](http://www.revistadestatistica.ro/supliment/wp-content/uploads/2016/12/rss_11_2016_A04_en.pdf);
- Boghean, C. (2014). *Features of the Capital Market's Evolution in Romania in the Context of the Turbulences Produced by the Financial Crisis*. The USV Annals of Economics and Public Administration, 14(2 (20)), pp. 58-65, ;
- Boțoc, C. (2015) *Evoluția piețelor de capital din Europa centrală și de est*, ASE publishing House, Bucharest, Romania, <http://excelenta.ase.ro/Media/Default/Page/botocclaudiu.pdf>;
- Stanciu, C.V. (2019). *New Developments in the Evolution of the Bucharest Stock Exchange*. Revista de Stiinte Politice, (63), pp. 82-95, [http://lfv.ucv.ro/revistadestiintepolitice/files/numarul63\\_2019/8.pdf](http://lfv.ucv.ro/revistadestiintepolitice/files/numarul63_2019/8.pdf);

- Stefan, I. O. (2015). *The Place of Bucharest Stock Exchange Amongst the Capital Markets from Central and Eastern Europe*. Annals of University of Craiova-Economic Sciences Series, 2(43), pp. 281-292, <http://feaa.ucv.ro/AUCSSE/0043v2-025.pdf>;
- \*\*\* <https://www.bvb.ro/>, Bucharest Stock Exchange, accessed July 2020;
- \*\*\* <https://www.bse.hu/>, Budapest Stock Exchange, accessed July 2020;
- \*\*\* <https://fese.eu/>, Federation of European Stock Exchanges, accessed July 2020;
- \*\*\* <https://www.gpw.pl/en-home>, Warsaw Stock Exchange, accessed July 2020;
- \*\*\* [www.world-exchanges.org](http://www.world-exchanges.org), World Federation of Exchanges, accessed July 2020;
- \*\*\* <https://zse.hr/default.aspx?id=122>, Zagreb Stock Exchange, accessed July 2020.