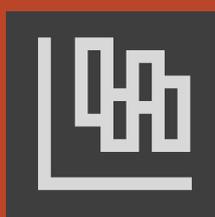


# Bucharest Stock Exchange Valuation Multiples



# Content

## Introduction

- 1. Foreword 4
- 2. Executive summary 5
- 3. Scope and methodology 8

## Chapters

- 1. Macroeconomic outlook 13
- 2. Bucharest Stock Exchange (BSE) - at a glance 17
- 3. BSE Milestones 20
- 4. BSE Indices 22
- 5. Romanian stock market performance 27
- 6. ESG factors - investment perspective 31
- 7. Listed companies valuation multiples 35



# Introduction

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1. Foreword

2. Executive summary

3. Scope and methodology

3

4

5

8



# Foreword

**The PwC Romania Valuation and Economics team is pleased to publish the fifth edition of its analysis regarding the companies primary listed on the Regulated Market of the Bucharest Stock Exchange**

- This study presents the valuation multiples trend in the last 15 years (2007-2021) following the analysis of **80 companies primary listed on the Bucharest Stock Exchange (BSE)**, with a focus on the Consumer, Oil & Gas, Financial Services, Healthcare, Industrial, Materials and Electricity sectors. The study does not include the analysis of Erste Group Bank AG that is primary listed on Vienna Stock Exchange and only secondary on BSE.
- According to the latest forecasts of the International Monetary Fund - World Economic Outlook (WEO) Database published in April 2022 - the global economy advanced by 6.1% in 2021 but its growth prospects for 2022 and 2023 weakened significantly amid the military conflict in Ukraine. After the pandemic context that shattered the overall economy in late 2019 and during 2020, the world is currently facing a humanitarian crisis generated by the Ukrainian war. The impact of the war is significant across all sectors in the economy as the energy and commodity prices are increasing, putting pressure on supply chains, inflation rate and, indirectly undermining the overall climate. The surge in oil and gas prices could be an incentive for postponing European plans to give up the use of coal as a source for electricity production. Moreover, rising nickel prices could adversely affect the supply of electric vehicles whereas the surge in food prices may affect biofuel production.
- In light of the challenges that Romania has faced during the sanitary crisis and given the current situation with a military conflict at its northern border, this study presents a thorough analysis of multiples evolution and of Bucharest Stock Exchange (BSE) response to a mix of events. Even though the context was still volatile, Romanian economy recovered in 2021, advancing by 5.9% in real GDP terms and BSE reached to new all time highs, with Bucharest Exchange Trading (BET) index surpassing the threshold of 13,000 points. A more in-depth analysis of how the local equity market absorbed the shock of COVID-19 pandemic and how various sectors responded is presented throughout this study.
- We envisage that the readers of this report will gain insights into:
  - overall equity market performance between 2007 – 2021, and in Quarter 1, 2022 (Q1 2022) – BET and Bucharest Exchange Total Return Index (BET-TR) performance against the return on the Romanian government bonds as a proxy for Risk-free assets;
  - the evolution of valuation multiples on different sectors based on an analysis of the listed companies.

Such studies increase in value as a result of recurrence and also based on the updates embedded in each new edition. We express our commitment to updating this study on an annual basis in order to provide higher value added for our readers.

Valuation and Economics

PwC Romania, Advisory - Deals

# Executive summary

## Macroeconomic outlook and Stock market performance



- The Romanian economy recovered in 2021, advancing by 5.9% in real GDP terms after a 3.7% contraction seen in 2020 due to the pandemic outbreak. The recovery is mainly attributable to (1) strong domestic demand (surge in final consumption, investments and net government expenditure) and (2) dynamics observed in services, retail trade, construction and the overall industry.
  - In Q1 2022, the economy performed well given the high inflationary pressures and a progressively tighter monetary policy applied by the National Bank of Romania. The regional instability triggered by Russia's invasion of Ukraine and the tighter monetary policy already adopted in Romania are expected to decelerate the economic growth to less than 3% in 2022.
  - Romania's market capitalisation to GDP ratio was 20.9% at the end of 2021, thus lagging behind other regional countries such as Croatia, Greece, Bulgaria and Czech Republic. The evolution of BET and BET-TR against CDS over the period 1 January 2007 – 31 March 2022 showed that the BSE is very sensitive to the country risk perception, with a negative correlation observed between the CDS and stock prices, e.g. when the credit risk rose, the equity prices fell.
  - The local equity market performance over the period 31 March 2021 – 31 March 2022 indicates that both the decline and the rebound took place very quickly:
    - Market capitalisation (both the regulated and MTS segment) grew by 20% in the one-year period from RON 190 billion in 31 March 2021 to RON 229 billion at 31 March 2022;
    - The BET index recorded a 14% increase, from 11,190 points on 31 March 2021 to 12,712 points on 31 March 2022 as a result of increasing number of investors, a greater international visibility of the local capital market and the inclusion of several Romanian listed companies in FTSE indices;
    - The BET-TR index (reflecting also dividends of BET index companies) climbed by 40% in December 2021 vs. previous year, triggered by a very good performance of the index constituents, the appreciation of shares' value (for some companies, the share value doubled) and the level of dividend distribution. Furthermore, the BET-TR index closed the trading session on 31 March 2022 at 22,950 points, only 5% below the record set on 14 January 2022 (24,212 points).
- BSE key events during 2021:**
- BSE benefited from a wave of momentum with ample liquidity and continuing government stimulus policies in 2021 and, as a result, three IPOs were concluded on the main market, i.e. Transport Trade Services, One United Properties and Aquila Part Prod Com, and the cumulative value raised through the IPOs exceeded RON 900 million;
  - The local capital market, including both the regulated and MTS segments, set a new record in terms of capitalisation, reaching RON 249 billion on 30 December 2021;
  - BSE flagship index, BET, reached 13,682 points on 14 January 2022, thus marking a new all-time high and ranking the local capital market as the first stock exchange in the region where the main index surpassed the level registered prior to the 2008 financial crisis;
  - In 2021, seven companies listed on BSE were included in FTSE Russell indices, namely: Banca Transilvania (TLV), Nuclearelectrica (SNN), OMV Petrom (SNP), TeraPlast (TRP) and One United Properties (ONE) in FTSE Global All-Cap indices, Bittnet Systems (BNET) and Transport Trade Services (TTS) in the FTSE Global Micro-Cap index, respectively;

## Valuation multiples – companies listed on the BSE

- BSE might be considered a resilient capital market given that only few investors reacted immediately to the military conflict in Ukraine started on 24 February 2022. For example, on that day, both BET and BET-TR indices fell by 4.1% vs. the day before, this contraction being the most significant daily fluctuation recorded by both indices during February 2022;
- BSE continued in 2021 to expand its ESG initiative aimed at providing high-level ESG insights for the listed companies by using Sustainability risk ratings; in February 2022 there were nine companies with a risk scoring assigned on five levels including: ESG risk score, ESG risk ranking score, exposure, management and momentum.

It is perhaps more important than ever to consider the long-term perspective. Thus, if we analyse the surplus return compensating investors for taking on the relatively higher risk of investing on the stock exchange as opposed to risk free assets, we note the following: over the period covering 1 January 2012 to 31 March 2022, the median excess return of BSE indices versus the Risk-free Rate was almost 5% for BET and 14% for BET-TR. In 2021, BET and BET-TR provided investors with around 30% excess return over the Risk-free rate.

This study focuses on the performance of the underlying seven industries from two perspectives: sector evolution in 2021 and in the years before against the overall economic context; and inclusion in either cyclical, defensive or sensitive sector category. The key conclusions of our study regarding sector performance in 2021 are:

- Both **Electricity** and **Healthcare** sectors recorded strong increases in average market capitalisations, with double-digit growth for two years in a row (e.g. 2020, 2021).
- Even though the **Electricity sector** is perceived as defensive, in 2021 the performance of the listed companies BSE (e.g. CNTEE Transelectrica S.A., Societatea Energetica Electrica S.A.) was impacted by the surge in energy costs affecting own technological consumption of the network operators. As a result, 2021 proved to be a challenging year for some of electricity players (Electrica, Transelectrica), but a lucrative year for electricity producers (Nuclearelectrica).
- The **Healthcare sector** includes Medlife, a company that doubled its market capitalisation in 2021 vs. previous year (+116%) and lead to robust growth of this sector. As such, the Healthcare sector proved to be defensive, maintaining consistent earnings and even benefiting from the pandemic context.
- **Materials**, often seen as a defensive sector, increased its average market capitalisation by 55% in 2021 vs. a 5% decrease in 2020, supported by the surge in materials prices and supply shortage. The top performers of this sector were Teraplast, Prodplast, Cemacom and Alumil Rom Industry, which more than doubled their market cap.
- **Consumer** sector evolution was mixed, with most companies operating in HoReCa but also Digi Communications and Purcari Wineries displaying strong positive financial results. On the other hand, Bittnet and Shera Franchise Group posted only a 2% growth of their market capitalisation in 2021. Given the companies included in this sector and the overall performance in 2020 and 2021, Consumer sector qualifies as sensitive (the sector has a moderate correlation with business cycles).
- The **Oil & Gas, Financial Services** and **Industrial** sectors were among the most affected by the COVID-19 pandemic in 2020. In 2021, the situation changed and the average market capitalisation of these sectors climbed by approx. 30% for the Oil & Gas and for the Financial services sectors and even more for the Industrial sector.
- **Oil and Gas sector:** in 2020, the shock in oil demand was hefty due to lockdowns and reduced consumption, but in 2021 the trend in oil & gas sector was rebalanced. Thus, while the average annual WTI crude oil price published by Statista decreased by 31% in 2020 to USD 39 / barrel (vs. 57 USD / barrel in 2019), in 2021 the price gained 74% and reached USD 68 / barrel. The cyclical behaviour of oil prices was also felt on the BSE, with the average market capitalisation of the Oil & Gas companies rebounding sharply by 31% in 2021, after the 20% contraction seen in 2020. Nevertheless, of the nine analysed companies, only five showed an increase of their market capitalisation.
- **Financial Services sector:** of the 12 companies traded on BSE and included in this analysis, four recorded a decrease or stagnation in market capitalisation in 2021 (e.g.. Patria Bank S.A, SIF Moldova, SIF Oltenia and Transilvania Investments Alliance S.A.). All the others (mainly banks and financial investment companies) posted mostly double digit growth as the economy showed signs of recovery, leading to a 28% overall increase of the average market capitalisation of this sector in 2021 as compared to a 6% decrease in the previous year. Our analysis indicates that the Financial Services sector remunerated its investors through appreciation of market capitalisation in all analysed years, except 2016, 2018 and 2020. We might therefore consider the sector to be cyclical, as it is generally affected by recessions and other economic shocks.
- **Industrial sector:** the evolution of this sector was mixed as it includes diverse companies, operating in various manufacturing segments, such as: equipment, auto parts, aviation and ground defence systems, abrasives, but also in real estate / construction, logistics and other services. While the market capitalisation of this sector in 2020 followed the economic downward trend (market cap. fell by 11% vs. 2019), in 2021 the average capitalization grew by 43% (excluding the market cap of the newly listed companies in 2021, i.e. Transport Trade Services, One United Properties and Aquila Part Prod Com). We might therefore consider this sector to be cyclical, as it is generally affected by any movements in the economy.

# Scope and methodology

Romanian capital market performance is an indicator of prosperity and economic outlook stability. The increasing investment appetite for the listed companies on the Romanian capital market has enabled growth in one of the most important BSE indices, namely Bucharest Exchange Trading (BET) index, which reflects the growth of the most liquid shares listed on the BSE.

On 14 January 2022, BET index closed the trading session at 13,682 points, reaching a new all-time high since 1997. However, by 31 March 2022, the BET index lost 7%, closing the trading session at 12,712 points. This decrease was not unexpected, considering the volatility observed in the local economy and the regional political instability triggered by the Russian war in Ukraine.

The new all-time high recorded at the beginning of 2022 along with the increase of number of investors were mainly triggered by the greater international visibility of the local capital market, the inclusion of seven Romanian listed companies in FTSE indices, growing interest in most liquid companies listed and new IPOs.

In April 2022, BSE launched the first ESG Reporting Guidelines for listed companies developed with the technical assistance of the European Bank for Reconstruction and Development.

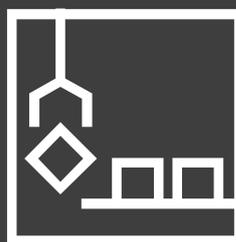
**The purpose of this study** is to provide a comprehensive analysis of **Romanian capital market** from a valuation perspective, over a 15-year period, with a focus on:



Consumer



Industrial



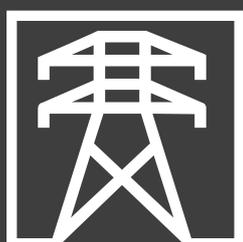
Materials



Financial Services



Oil & Gas



Electricity



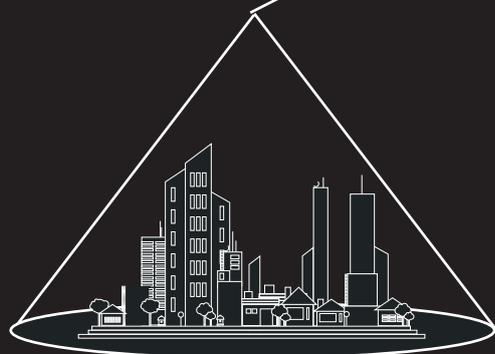
Healthcare



Aggregated

## Understanding the results

- All the financial data used in this study was sourced from the BSE official website, S&P Capital IQ platform, ISI Emerging Markets and Bloomberg. PwC has not verified, validated or audited the data and cannot therefore give any undertaking as to the accuracy of the study results. The time frame selected for the analysis included the 15-year period covering 2007 – 2021 and the first quarter 2022.



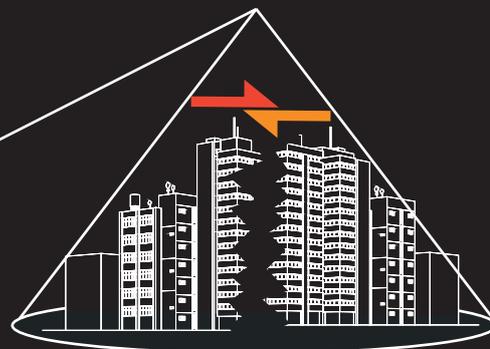
### Listed companies valuation multiples

Following an initial screening of the **82 companies listed** on the BSE Regulated Market (79 local companies and 3 international - i.e. Erste Group Bank AG, Digi Communications N.V., Purcari Wineries Public Company Ltd.), we performed the following adjustments:

- eliminated Erste Group Bank whose primary market is Vienna Stock Exchange, while BSE is its secondary market;
- eliminated UCM Resita as at 31 December 2021 it was already suspended for more than 10 years;

Thus, our analysis for the year 2021 focused on **80 companies** that operate in the following sectors: Consumer, Industrial, Materials, Financial, Oil & Gas, Electricity and Healthcare (according to S&P Capital IQ industry classification).

Compared to 2020, the pool of the 80 companies subject to our analysis in 2021 includes three new issuers, listed in 2021 (One United Properties, Transport Trade Services and Aquila Part Prod Com) and excludes four companies delisted during 2021 (Transilvania Constructii, Electroputere, Retrasib, Natura Quattuor Energia Holdings).

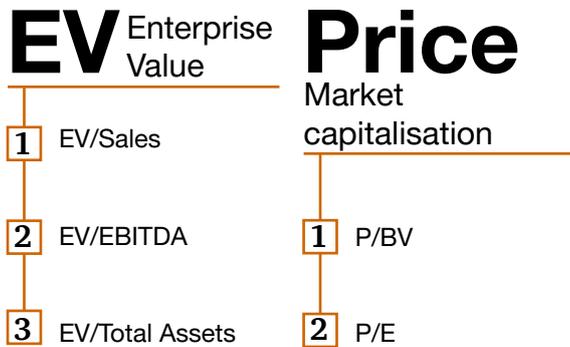


### Disclaimer

- The Content of this study is for informational purposes only, therefore you should not construe any such information as an investment, financial, or any other consulting advice. Nothing contained within the study constitutes a recommendation with respect to any investment in shares, bonds and other type of securities.

## Valuation based on market approach

- Market multiples are valuation metrics widely used to value businesses. Assuming that the selected peer companies have similar valuation multiples, appraisers may conclude that, by applying the industry multiple to a specific company's financial metrics, they can arrive at the company's market value (enterprise value or equity value, depending on the selected multiple).



- Various methods can be used to value a company. In practice, business valuation is often a combination of different approaches. The market approach (comparable listed companies and comparable transactions) is generally used in addition to other valuation approaches, mainly as a cross-check of the applied estimation procedures. Put simply, within the market approach, a company's sales or profits (or other financial indicator) are multiplied by an industry average/median multiplier as basis for estimating the Market Value of the business or the market value of the equity.

Current financial multiples include historical multiples based on standardized financials for the last completed fiscal period: Last Twelve Months (LTM). Current multiples based on per-share metrics (such as P/E or P/BV) are calculated using the last closing equity price, whereas current multiples based on company-level metrics (such as net sales, EBITDA or Total assets) are calculated using the Enterprise Value (EV).

- Within the listed companies' multiples analysis, we considered the following statistical measures:
  - Quartiles** – 1st, 2nd (median) and 3rd – are statistical metrics describing a division of observations into four defined intervals based on the values in the sample. Each quartile contains 25% of the total observations.
 

Quartiles have been determined by sorting the data from the lowest to the highest values and taking the data point at  $\frac{1}{4}$  of the sequence for the 1st quartile, at  $\frac{1}{2}$  for the 2nd quartile (median) and at  $\frac{3}{4}$  for the 3rd quartile.
  - Mean** is the sum of the values divided by the total number of the companies included in the data set. It is one of the most commonly-used measures of central tendency and it is the preferred multiples proxy when the distribution is set to be normal. Otherwise, **the median** is the preferred central tendency measure, as it is not influenced by outliers.
  - Coefficient of variation** equals the standard deviation divided by the mean and it is a measure of the dispersion of a data set from its own mean. The more spread out the data, the higher the deviation. When the deviation is too high, the mean multiple is not relevant.
- The multiples selection considers the robustness of the data available within the data set while focusing on the multiples that best represents the sector / subindustries. Given the exhaustive analysis of the seven sectors, the selection of the best indicator from the median and the mean considers the dispersion test. Outliers, defined for the purpose of this report as multiples exceeding 50, were excluded from our analysis.

- It must be stressed, however, that any conclusions derived from using such multiples could be misleading and would need to be thoroughly reviewed, primarily for the following reasons:
  - In reality, there is no such thing as 'twin-security', e.g. a perfect comparable company with the same risk exposure as the valuation target. In essence, that means that companies with risk profiles different from that of the valuation target are used to estimate its value;
  - There are usually a number of strategic reasons for acquiring a particular company in a specific market. Such considerations lead to prices that are not aligned with the typical values of the most frequently used multiples such as price-to-earnings ratio (P/E) and the price-to-book value of equity ratio (P/BV).

# Chapters

## Chapters

- |           |                                              |           |
|-----------|----------------------------------------------|-----------|
| <b>1.</b> | Macroeconomic outlook                        | <b>12</b> |
| <b>2.</b> | Bucharest Stock Exchange (BSE) - at a glance | <b>13</b> |
| <b>3.</b> | BSE Milestones                               | <b>17</b> |
| <b>4.</b> | BSE Indices                                  | <b>20</b> |
| <b>5.</b> | Romanian stock market performance            | <b>22</b> |
| <b>6.</b> | ESG factors - investment perspective         | <b>27</b> |
| <b>7.</b> | Listed companies valuation multiples         | <b>31</b> |
|           |                                              | <b>35</b> |

# Macroeconomic outlook

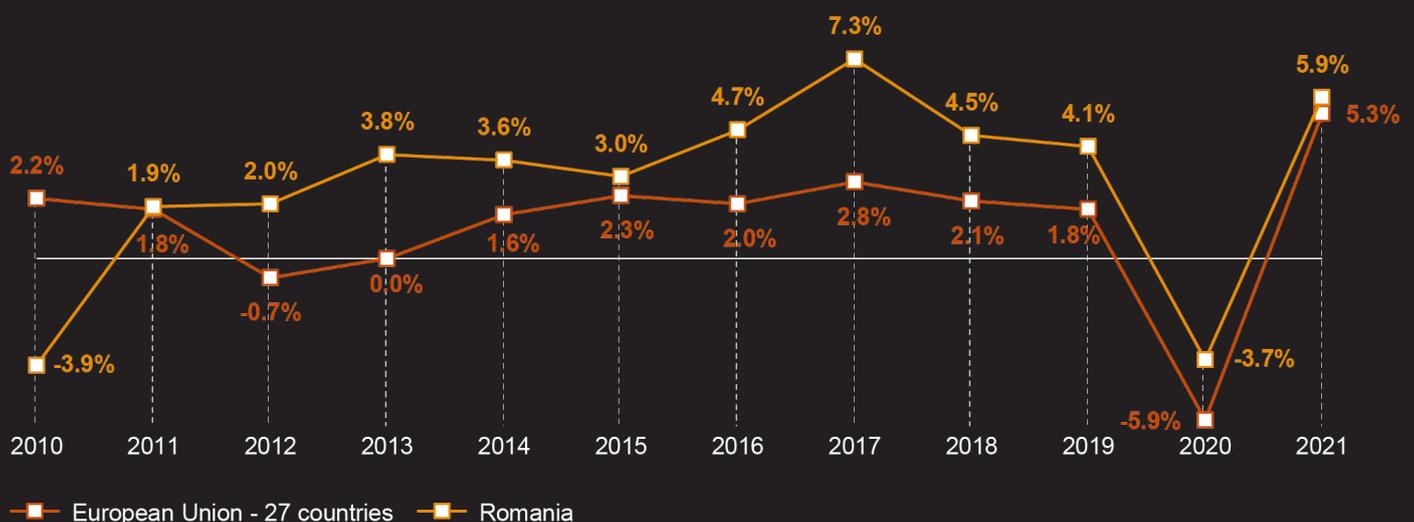
Romania is a relatively large European market with an economy measured at EUR 240.2 billion in GDP terms in 2021 and a population of 19.2 million people. The diversified and competitive industrial landscape, still low unit labour costs, significant agricultural potential and low energy dependence can ensure a stable long-term path of growth and development. Despite those favourable aspects, there have been disruptions on the global scene affecting the local economy.

The COVID-19 pandemic outbreak that started in Romania in February 2020 affected many sectors, especially those connected to recreational facilities (spa, sport activities, etc.), hotels and restaurants, real estate, transport and storage, professional, cultural and educational activities. The pandemic continued during 2021, with delta and omicron variants spreading simultaneously across the country. Although the fourth and the fifth waves were far more severe than the previous ones, the Romanian authorities took a more relaxed approach and in March 2022 Romania exited the state of alert and lifted all restrictions after almost two years since their enforcing.

Following the COVID-19 outbreak in 2020, the global landscape has been again shaken – the Russian invasion of Ukraine, taking place close to the northern Romanian border, changed the priorities of many nations and generated fear among people. The Ukrainian war has triggered a humanitarian, financial and political crisis across Europe since February 2022, with strong impact on the overall economy – high inflation rates, surge in food, fuel and energy prices, cyber attacks and economic hardships.

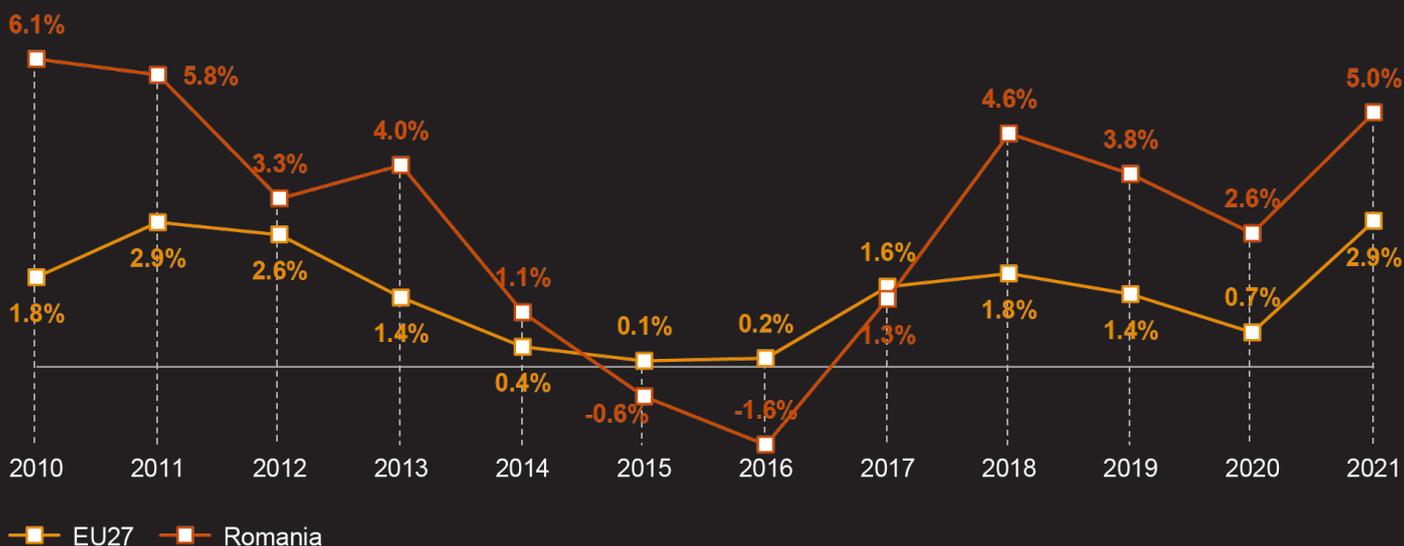
- The Romanian economy recovered in 2021, when it gained 5.9% in real GDP terms, slightly above the average European Union growth. The recovery is mainly attributable to (1) strong domestic demand (surge in final consumption, investments and net government expenditure) and (2) dynamics observed in services, retail trade, construction and the overall industry. According to the European Commission's estimate (European Economic Forecast, Spring 2022) Romania's real GDP is expected to grow by 2.6% in 2022 and 3.6% in 2023.
- Historically, Romania has consistently achieved higher GDP growth rates than the EU27, thus creating the potential for economic convergence. In terms of GDP per capita, living standards in 2021 were 69.2% of the EU27 average and are expected to reach 74.7% by 2027.
- The unemployment rate in Romania (as published by Eurostat based on a revised methodology) shows a slight decrease from 6.1% in 2020 to 5.6% in 2021, in the context of economic revival and loosened pandemic restrictions. Both in 2020 and 2021, Romania posted lower unemployment rates than the average rate in the European Union, but the gap reduced from approximately 2 percentage points during 2012 – 2019 to less than 1.5 percentage points in the last two years. The unit labour costs in Romania are still below the EU27 average, yet wages at the business economy level experienced a 6% increase in 2021 (ranking the 7th highest wage growth observed among the EU27 member states).

Real GDP Growth rate: Romania vs. EU (%)



Source: Eurostat

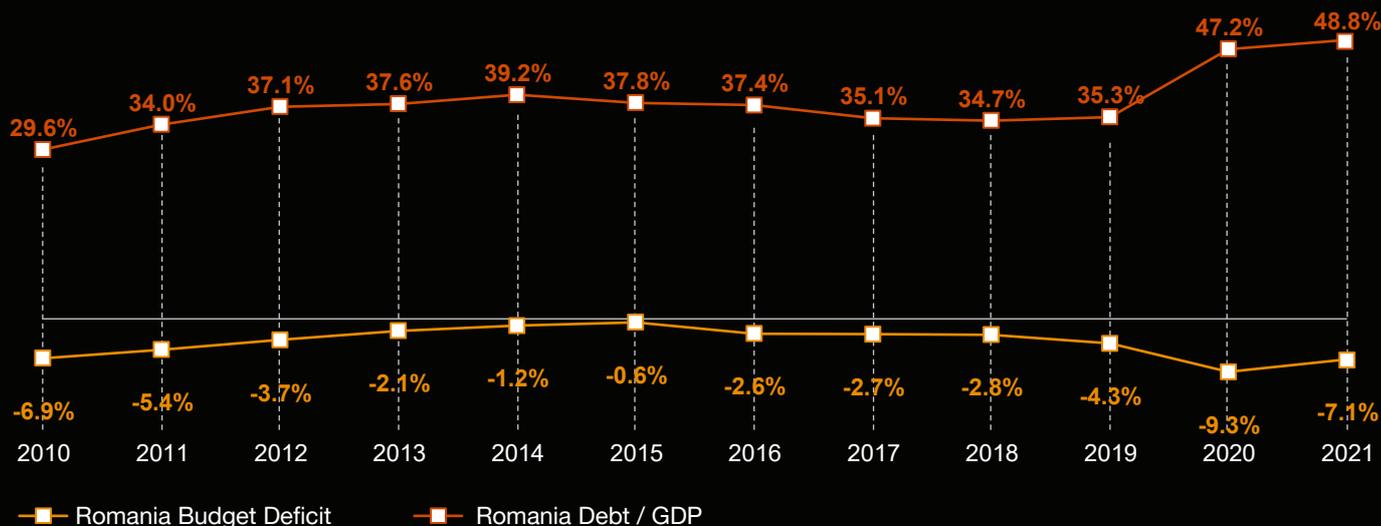
## Inflation Rate – Romania vs. EU27 (%)



Source: IMF World Economic Outlook – April 2022

- Investments** (gross fixed capital formation) as percentage of GDP grew slightly from 23.8% in 2020 to 24.1% of GDP in 2021 and are expected to grow even more in the following years, backed by European Union recovery funds. Over the period 2021 – 2027, Romania will benefit from European funds amounting to EUR 79.9 billion, including approx. EUR 30 billion from the EU Recovery Plan and approx. EUR 49.9 billion related to the EU's Multiannual Financial Framework.
- Private consumption**, the main driver of growth in the recent period, posted a 14% increase in 2021, after a 5% drop in the year before. In the last 10 years, private consumption expanded by almost 80%, four times above the European Union's average growth.
- In 2021, **exports** increased by 12.5% compared to the previous year and their share in GDP gained 3.6 percentage (to 40.8% of GDP). **Imports** grew even more, by 14.6%, and accounted for 46.5% of GDP in 2021. As a result, net exports had a negative contribution to GDP growth, resulting in a trade balance gap of 5.7% of GDP in 2021.
- According to the International Monetary Fund (IMF), **the average inflation rate** was 5% in 2021, thus marking a new high in the last 10 years (4.6% was reached before in 2018). Inflation rate in Romania was among the highest in the EU27 in 2021 and years before and is expected to average 9.3% in 2022 and, afterwards, to decrease to 4.0% in 2023. On a longer term, the inflation rate is set to reach 2.5%, in line with NBR target rate.
- The budgetary deficit** reached 7.1% of GDP in 2021 (vs. 9.3% in 2020), thus exceeding the Maastricht Treaty limit of 3.0% for the third year in a row. According to Eurostat, the general government consolidated gross debt recorded a 48.8% weight in GDP in 2021, still below the Maastricht Treaty public debt limit of 60.0%, while the EU27 average was 88.1%. In terms of absolute amount, the public consolidated gross debt in Romania almost tripled in the last 10 years, reaching EUR 116.6 billion in 2021.
- The risk-free rate (RfR) represents the return expected by an investor from investing in a risk-free asset. The common proxy used for RfR in Romania is the yield to maturity of a liquid long-term Romanian Government Bond. The domestic government debt (including issuance, redemption, interest payments, etc.) is handled by the Ministry of Finance (MF). The National Bank of Romania (NBR) acts as the MF's agent overseeing the management of government securities, in both national and foreign currencies, on the domestic market.

## Romania's Debt/ GDP and government budget deficit evolution (%)



Source: Eurostat

- Based on the latest information from NBR, at the beginning of June 2022, there were 24 outstanding government bonds denominated in local currency with (a) issuance date during the period 2012 – 2022 and (b) maturity dates ranging from 3 to 16 years.
- Based on December 2021 report published by the MF Public Debt Management Office, the most traded government bond, denominated in the local currency, is the bond with ISIN number ROGRXAE5BEO2 issued in April 2019, with an initial maturity of 3.3 years. The yield to maturity of that bond as at 31 December 2021 was 4.1% based on the data provided by the S&P Capital IQ platform. However, the analysis conducted over the period 2011 -2021, indicated that a seasoned bond issue (ISIN number RO1227DBN011, traded since 2012 and maturing in 2027) is one of the most traded bonds denominated in the local currency.
- Our analysis shows that the RfR, as approximated by the yields to maturity of such government bonds, has fluctuated in response to the local political and economic context. In the last three years it has been closely correlated with the inflation rate. Before 2018, government bonds provided investors with real returns, whereas during 2018 – 2021 those reduced to zero for instruments with shorter remaining maturities.

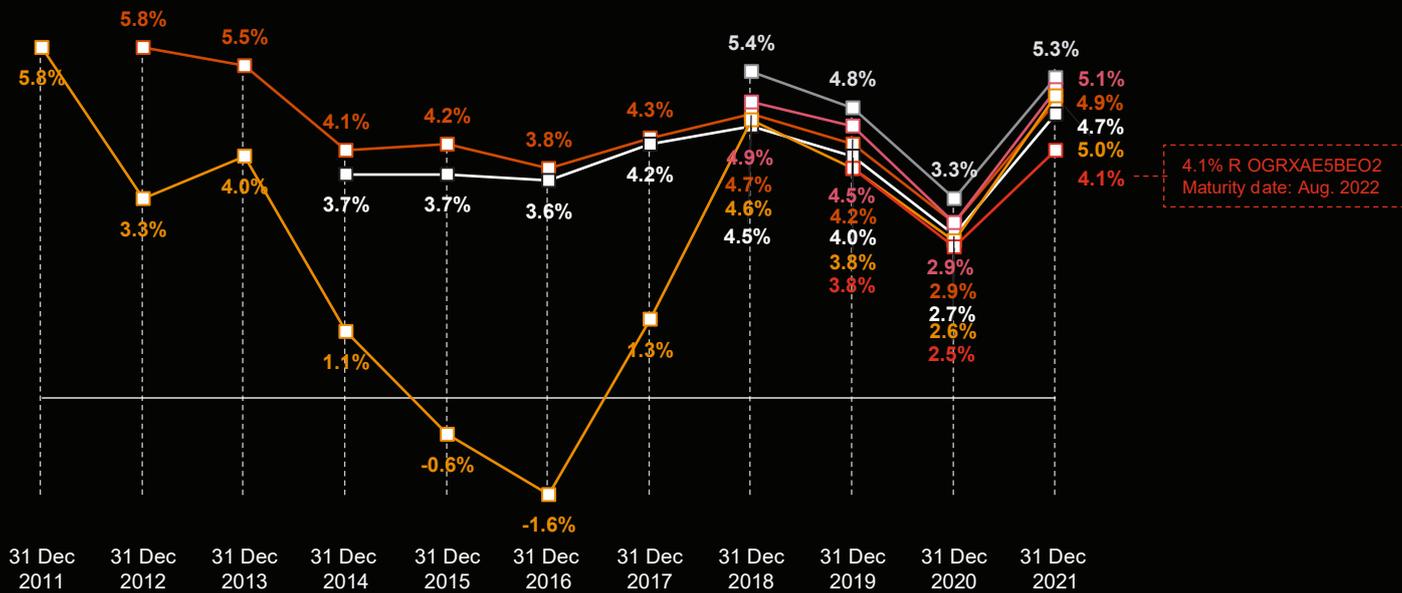
The monthly analysis of the selected bonds' returns indicates a gradual increase in RfR during 2021, in a high inflationary context. The overall growth of RfR during 31 Dec 2020 – 31 Dec 2021 was of approx. 2 percentage points, compared to a 6 percentage points expansion of the inflation rate. Further increases continued after end of 2021, as the context became even more complicated.

In 2022, the situation changed due to the military conflict in Ukraine that created a commodity shock with additional inflationary pressures. In response to this economic shock, the National Bank of Romania Board raised the monetary policy rate to 2.50% p.a. in March 2022 from 1.75% p.a. in December 2021 in order to maintain control over money market liquidity and keep the existing levels of minimum reserve requirement ratios.

Starting May 2021, inflation rate surpassed the RfR, leading to negative real term returns for investors. In Q4 2021, the growth of investors' return requirements accelerated, while average inflation rate reached 8%.



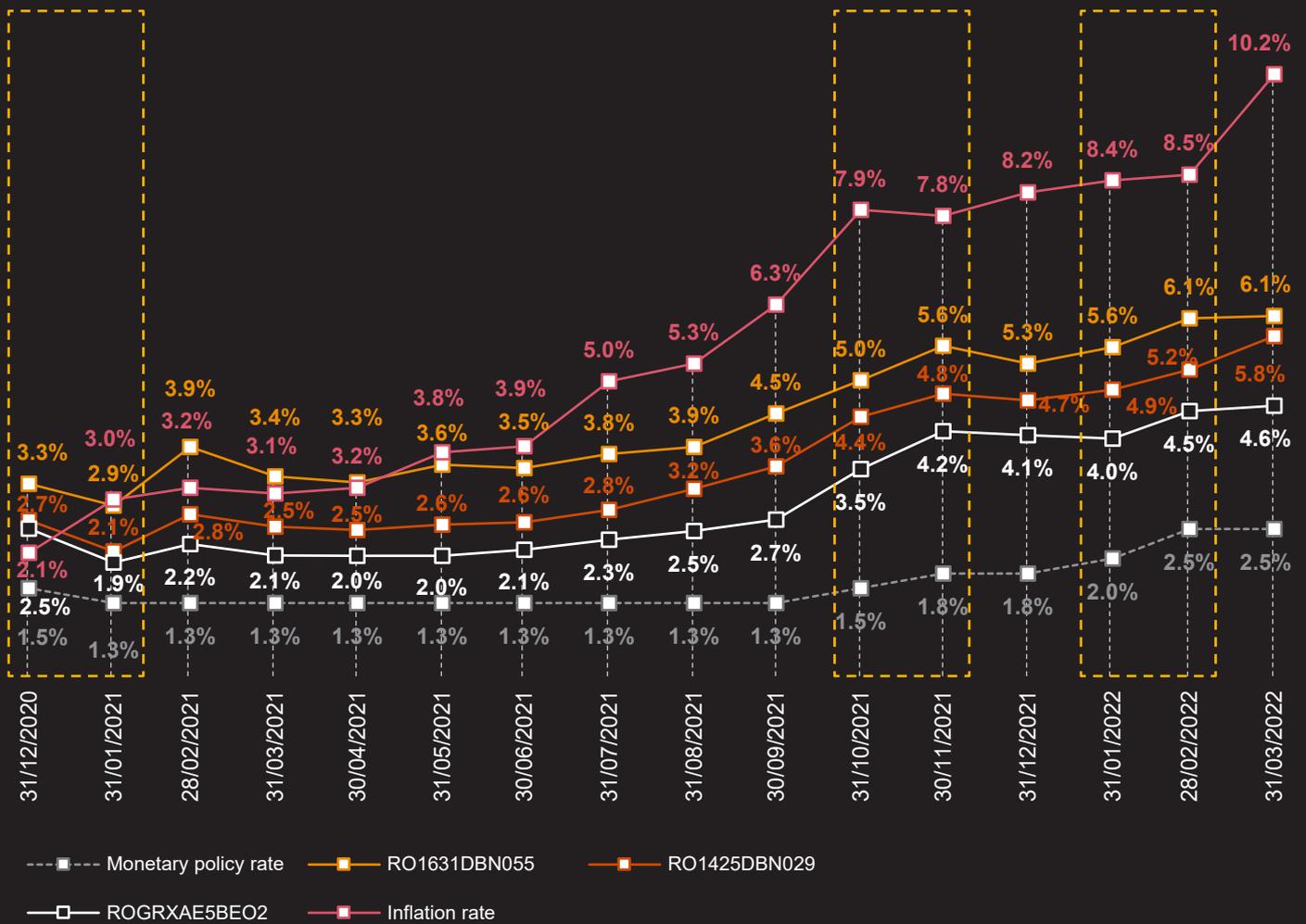
**Risk free rate evolution for selected bonds denominated in RON vs. inflation rate (%)**



<ul style="list-style-type: none"> <li>Inflation rate</li> </ul>	<ul style="list-style-type: none"> <li>RO1227DBN011 Maturity date: July 2027</li> </ul>	<ul style="list-style-type: none"> <li>RO1631DBN055 Maturity date: Sep. 2031</li> </ul>
<ul style="list-style-type: none"> <li>RO1425DBN029 Maturity date: Feb. 2025</li> </ul>	<ul style="list-style-type: none"> <li>ROVRZSEM43E4 Maturity date: Feb. 2029</li> </ul>	

Note: Risk free rate depicted in the graph was approximated by the yield to maturity at the end of each year and is a proxy for the bond' return if held until maturity  
 Source: S&P Capital IQ, PwC Analysis

## Monthly evolution of RfR, monetary policy rate and inflation rate (%)



Note: RfR (or yield to maturity) for each of the bonds included in the analysis was calculated in the last day of the month.  
Source: S&P Capital IQ, NBR, PwC Analysis

# Bucharest Stock Exchange (BSE) – at a glance

## Key events 2021 – Q1 2022

### 1. Legislative bill for simplifying taxation of individual investors

On 20 April 2022, the Chamber of Deputies adopted the legislative bill to simplify the taxation of investors' gains from the capital market. The bill provides for withholding tax on capital gains for individual investors to be retained at source, with two tax levels - namely 1% for holdings for more than one year and 3% for holdings of less than one year (the initial tax rate was 10%). The main objectives of this initiative are (a) to increase the attractiveness of BSE and (b) to encourage investors to invest in local companies listed on the BSE in order to increase their financing capacity. On 20 May 2022, the bill was approved by the Romanian President and is expected to enter into force on 1 January 2023.

### 2. BSE performance in times of uncertainty - COVID-19 pandemic and Ukraine war

- The local capital market (regulated and MTS segment) set a new record in terms of capitalisation in 2021 – despite the pandemic context, BSE reached RON 249 billion in market capitalization on 30 December 2021. In 2021, three new listings were concluded on the regulated segment, with IPO proceeds totalling RON 915 million. Investors also showed higher interest for the MTS segment which doubled its market capitalization in 2021 vs. 2020 up to RON 19.8 billion and 23 new listings took place over 2021-Q1 2022. Furthermore, the total number of listed companies on the main market reached 82 companies in 2021 (vs. 83 companies in 2020) whereas on the MTS there were 298 listed companies (vs. 288 listings one year ago).
- BSE flagship index – BET- reached 13,682 points on 14 January 2022, thus marking a new all-time high and ranking the local capital market as the first stock exchange in the region where the main index surpassed the level registered prior to the 2008 financial crisis. Furthermore, BET-TR index which reflects in addition the dividends granted, closed 2021 with a 40% increase in a very uncertain and volatile context generated by the pandemic. In spite of the Russian war progression, the BET-TR index closed the last trading session on 31 March 2022 at 22,950 points, i.e. 1% below the level recorded at 31 December 2021.
- At 31 December 2021, there were approx. 82,000 active investors on the BSE, i.e. 25% more than one year ago, based on Investors Compensation Fund Annual Report for 2021.
- Seven Romanian companies are currently included in FTSE Russell indices, of which five were added during 2021: Banca Transilvania (TLV), Nuclearelectrica (SNN), OMV Petrom (SNP), TeraPlast (TRP) and One United Properties (ONE) in FTSE Global All-Cap indices, Bittnet Systems (BNET) and Transport Trade Services (TTS) in the FTSE Global Micro-Cap index.
- Given that only few investors reacted immediately to the intensification of the military conflict in Ukraine that started on 24 February 2022, BSE can be considered a resilient capital market. For example, on 24 February 2022, both BET and BET-TR indices fell by 4.1% vs. day before, this contraction being the most significant daily fluctuation recorded by the two indices during February 2022.



### 3. Growing perspectives for bonds market

- During 2020 and 2021, the stock market saw some dynamics as a result of the listing of the Government Bonds programme Fidelis which has been considered a flagship program of the Romanian State. Given the significant success of the previous six offers (when approx. RON 9 billion were attracted), the Ministry of Finance carried out a new public offer for the sale of Fidelis government bonds BSE between March and April 2022.
- Green financing on the local capital market is becoming more attractive for local and international investors, but also for companies and authorities because of the potential that Romania has in this field. In May 2021, Raiffeisen Bank was the first bank listing its green bonds in Romania under the RBRO26 ticker on BSE, attracting over RON 400.6 million. In July 2021, Raiffeisen Bank listed a second green bonds issue and attracted more than RON 1.2 billion, this being the largest corporate bond issue in RON. In October 2021, BCR listed its first green bonds under the BCR28A ticker on Bucharest Stock Exchange's regulated market and the total bond worth was estimated at RON 500 million.

### 4. Overview

Based on an FTSE Russell review, equity markets are classified as: Developed, Advanced Emerging, Secondary Emerging or Frontier.

For a more comprehensive analysis of the BSE's regional position, we looked at similar capital

markets in terms of their volatility and the correlation between economic growth and indices value. The stock exchanges selected in our analysis are:

**(a) Advanced Emerging markets** – Greece, Hungary and Czech Republic

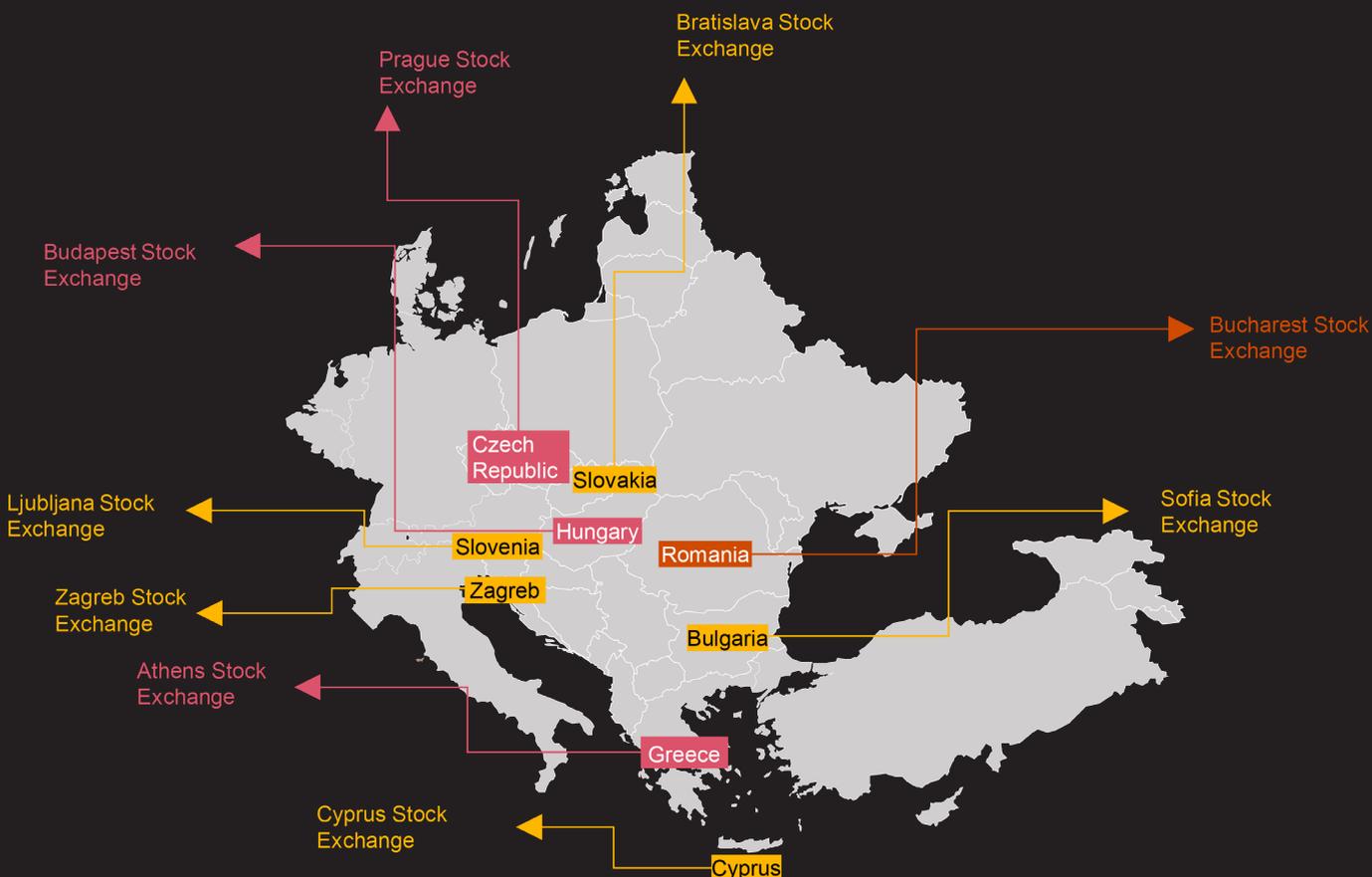
**(b) Frontier markets** – Bulgaria, Croatia, Slovakia, Slovenia and Cyprus. Bucharest Stock Exchange is included in Secondary Emerging market since September 2020.

Romania's equity market capitalisation to GDP ratio was 21% in 2021, yet lagging behind regional markets such as Czech Republic, Greece, Croatia and Bulgaria. The market capitalisation (including main segment and MTS) increased by approximately 50% in 2021 vs. 2020, reaching EUR 50 billion (equivalent of RON 249 billion) amid adverse market developments. For all the analysed exchanges, we considered the total market capitalisation both on the main and alternative stocks trading segments, although each stock exchange has a different structure.

With a significantly higher number of listed companies and an average market capitalisation of EUR 132 million, companies listed on BSE seem to be smaller as compared to those listed on other regional exchanges, except Slovakia and Cyprus.

Since the pandemic outbreak in 2020, the Romanian economic context was volatile, underpinning uncertainty among investors and across various sectors. However, in 2021 the local capital market recorded three new listings on the main segment, after a 2-year break. The MTS continued to be attractive to investors and small/ medium companies looking for finance via BSE - a total of 20 listings were successfully completed on MTS in 2021, with IT and agribusiness sectors as best represented.

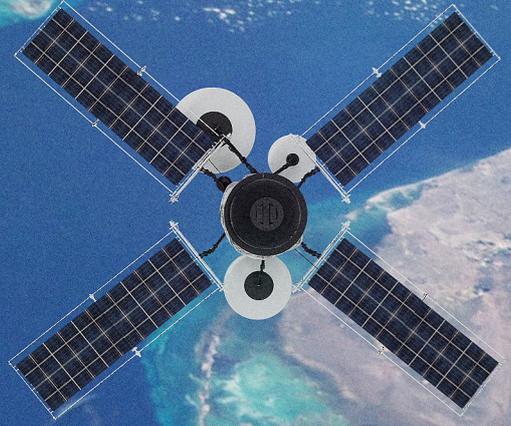
With those new listings, the MTS market capitalisation at the end of 2021 was double as compared to end of 2020 (EUR 4 billion at 31 Dec 2021 vs. 2 billion 31 Dec 2020).





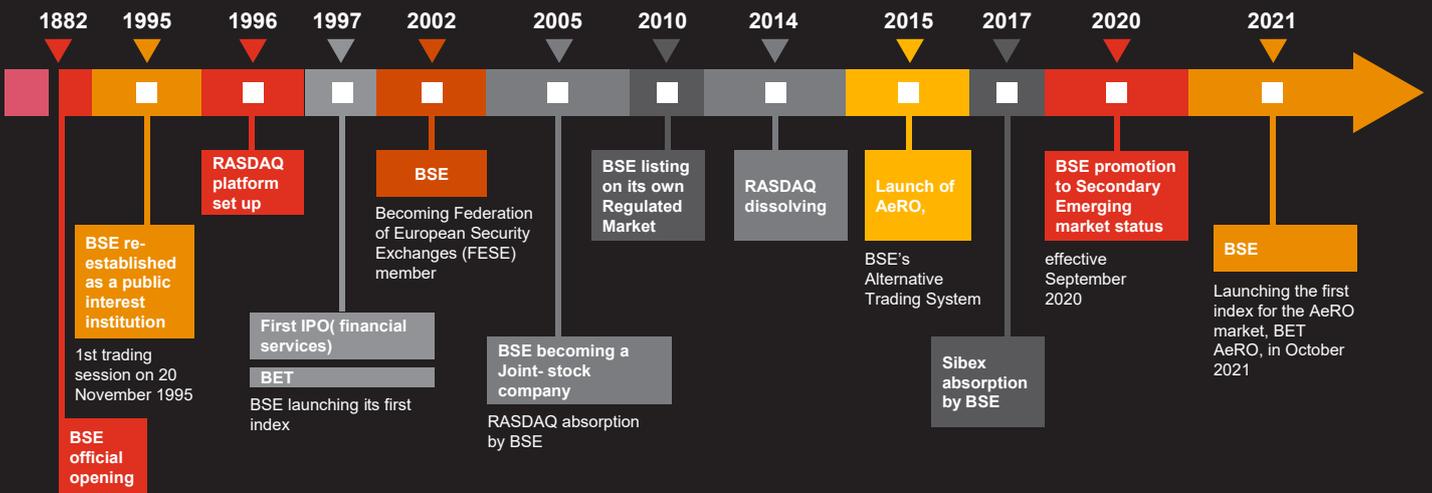
Country	Stock Exchange	GDP per capita (EUR), 2021	Market cap. % GDP, 2021	No. of companies traded on the market
Croatia	Zagreb Stock Exchange	14,740	32.4%	97
Greece	Athens Stock Exchange	17,140	36.0%	144
Bulgaria	Sofia Stock Exchange	9,850	23.2%	89
Czech Republic	CEESEG - Prague	22,320	21.4%	24
<b>Romania</b>	<b>Bucharest Stock Exchange</b>	<b>12,510</b>	<b>20.9%</b>	<b>380</b>
Slovenia	Ljubljana Stock Exchange	24,680	18.3%	24
Hungary	Budapest Stock Exchange	15,870	18.1%	53
Cyprus	Cyprus Stock Exchange	25,940	8.0%	57
Slovakia	Bratislava Stock Exchange	17,820	2.1%	37

Note: The market capitalisation for Prague Stock Exchange does not include free market. Market capitalisation for Prague and Bucharest stock exchanges includes also Erste Group, which is primary listed on a different stock exchange  
Source: Eurostat, S&P Capital IQ, Official website for each stock Exchange.



## BSE Milestones

Stock exchange activity in Romania traces back to 1839, when commodities exchanges were established. The Bucharest Stock Exchange was first opened on 1 December 1882, but it was seriously affected by social and political instability until it was suspended in 1948 under the communist regime. Almost 50 years later, it was re-established as a public not-for-profit institution in June 1995.



## BSE operates two markets:

**1. Regulated Market/ Main market**, where the following financial instruments were traded at 31 December 2021:

- Equities of 82 companies, of which three included in the International tier (Erste Group Bank AG, Purcari Wineries Public Company Limited and Digi Communications NV), 28 included in the Premium segment and 51 in the Standard segment. To be included in the Premium segment, the minimum free-float required is EUR 40 million.
- Debt instruments (corporate, municipal and government bonds issued by Romanian entities and international corporate bonds) - 65 bond issues were listed and traded on the BSE regulated market as at 31 December 2021, i.e. 24 government bonds, 28 municipal bonds and 13 corporate bonds.
- UCITs (shares and fund units), structured products, tradable UCITS (ETFs) - very few alternative products were listed on the BSE as at 31 December 2021: Patria-Tradeville ETF, STK Emergent, and BET-FI Index Invest.

**2. The MTS (also known as AeRO) segment**, launched in February 2015, following the closure of RASDAQ, with the purpose of accommodating the trading of early stage companies, such as start-ups and SMEs. RASDAQ was the unregulated segment of the BSE, launched in 1996, where Romanian entities resulting from the mass privatisation programme were listed. It was dissolved based on a parliament decision in October 2014. As a consequence of RASDAQ's closure, the companies listed on that segment had one year to

decide whether to migrate to the regulated market or to the MTS, or go private. The last trading day for the RASDAQ-listed companies was in October 2015. According to information published by BSE, a total of 298 companies were operating on the MTS segment as at the end of 2021.

BSE calculates and distributes **nine indices** in real-time, i.e. BET, BET-TR, BET AeRO (newly launched in 2021), BET-XT, BET-XT-TR, BET-BK, BET-FI, BET-NG and BET-Plus, and one index developed together with the Vienna Stock Exchange, i.e. ROTX.

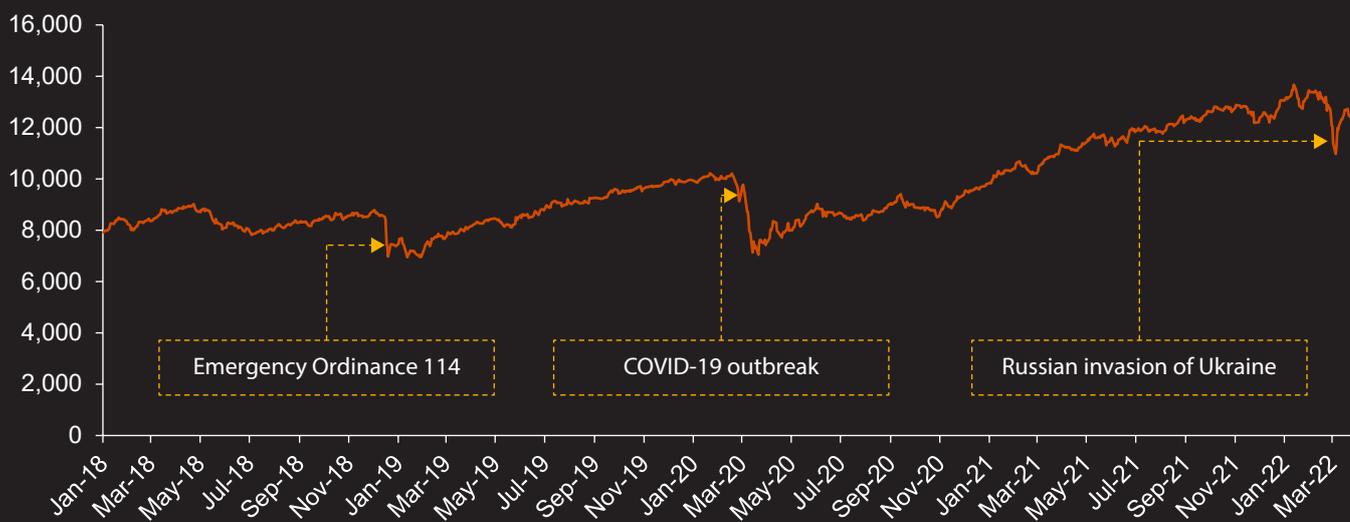
**BET**, the first index developed by BSE in 1997, represents the reference index for the local capital market, including Blue Chip Companies; the BET index reflects the performance of the top 20 most-traded companies listed on the BSE, with the most recent change being Aquila Part Prod Com's inclusion in the index as of 31 March 2022. Other changes in BET's composition were the addition of Transport Trade Services and One United Properties during 2021. The main selection criterion for constituents' inclusion in the BET index relates to the liquidity coefficient. BET index constituents are adjusted quarterly to update their weights as a result of corporate events (share capital increases, splits, consolidations, etc.), changes of the index composition following the inclusion / exclusion of a company, index constituents' shares market price evolution.

Symbol	BET Constituents	Weight in BET, 31 Dec 2021	Weight in BET, 31 March 2022
FP	Fondul Proprietatea	20.6%	21.0%
TLV	Banca Transilvania S.A.	19.9%	19.2%
SNP	Omv Petrom S.A.	15.7%	15.4%
BRD	BRD - Groupe Societe Generale S.A.	9.2%	9.4%
SNG	S.N.G.N. Romgaz S.A.	8.4%	8.9%
SNN	S.N. Nuclearelectrica S.A.	5.3%	5.1%
M	Medlife S.A.	3.5%	3.5%
DIGI	Digi Communications N.V.	3.0%	3.0%
EL	Societatea Energetica Electrica S.A.	2.6%	2.5%
TGN	S.N.T.G.N. Transgaz S.A.	2.6%	2.4%
TRP	Teraplast S.A.	2.4%	2.1%
ONE	One United Properties	1.9%	2.0%
TEL	C.N.T.E.E. Transelectrica	1.2%	1.1%
AQ	Aquila Part Prod COM	n/a	0.8%
WINE	Purcari Wineries Public Company Limited	0.9%	0.7%
ALR	Alro S.A.	0.7%	0.7%
TTS	TTS (Transport Trade Services)	0.9%	0.8%
COTE	Conpet S.A.	0.5%	0.5%
BVB	Bursa De Valori Bucuresti S.A.	0.4%	0.4%
SFG	Sphera Franchise Group	0.4%	0.5%

Source: BSE



### The evolution of the BET index in the period 2018 - Q1 2022



**BET-TR** is the first total return index launched by the BSE based on the BET structure. This index tracks price changes of component shares and is adjusted to reflect the dividends paid by its constituent companies. BET-TR includes the 20 most-traded companies listed on the BSE and has the same constituents as the BET.

In addition to BET and BET-TR, other indices are available. Those include: BET-XT and BET-XT-TR, which track the price changes of the 30 most-traded companies listed on the BSE's Regulated Market, including financial investment companies, and the corresponding total return; three sectorial indices (BET-FI for financial investment companies, BET-NG for energy and utilities, and BET-BK a benchmark index for asset managers and other institutional investors), BET-Plus that is a free float market capitalisation-weighted index of the Romanian companies excluding investment companies and ROTX, which is an index developed by BSE together with Vienna Stock Exchange for all "blue chip" shares traded on the regulated market.

In 2021, BSE launched a new index, namely **Bucharest Exchange Trading AeRO (BET-AeRO)** that reflects the price performance of companies listed on the AeRO market that meet the free-float, market capitalization and liquidity criteria. It was designed as a benchmark for AeRO listed companies. BET-AeRO is reviewed quarterly on March, June, September and December.

- As it can be observed on the graph, BET index quickly responded to the challenging mix of events that took place over 2018 - Q1 2022. The three main events identified as causing a sudden fall in the BET index are:
  - Emergency Ordinance 114 issuance at the end of December 2018, affecting the profitability of local companies, especially those operating energy, telecom and banking sectors - BET index saw a 15% decrease during the month of December 2018, triggered by the negative news about increased taxation;
  - COVID 19 outbreak, leading to restrictions and worldwide panic - BET index lost 26% during 1 February – 1 April 2020;
  - Russian invasion of Ukraine in February 2022, causing instability and fear - BET index dropped by 17% during the period 23 February - 7 March 2022.

## Liquidity analysis – BSE regulated market

During 2013 – 2021, the total market capitalisation on the regulated market (including domestic and international tiers) oscillated in the range RON 130 – 229 billion, while the value traded as percentage of market capitalisation stayed within the 5% – 10% range. Before that period, the capital market evolution and trading activity was less predictable, with higher fluctuations observed.

After reaching a record high of RON 247 billion on 17 January 2022, the BSE market capitalisation dropped by 29% to RON 175 billion by 7 March 2022. The strong decrease attributable to the war in Ukraine was partially recovered by the end of March 2022, thus reflecting market confidence and strong investors' appetite.

The number of companies listed on the regulated market (including Erste Group) changed slightly from 83 as at 31 December 2020 to 82 as at 31 December 2021 and 31 March 2022, following the delisting of Electroputere, Retrasib, Natura Quattuor Energia Holdings and Transilvania Constructii and the successful completion of three IPOs (Transport Trade Services, One United Properties and Aquila Part Prod Com). Of the 82 currently listed companies on BSE regulated segment, one company has been suspended for more than 10 years (UCM Resita) and one was suspended from trading due to insolvency during December 2021 (Societatea de Constructii Napoca). In 2021, Romcab, resumed trading after suspension cease in March.

BSE market capitalisation as at 31 March 2022 reached RON 215 billion, posting 20% year-on-year growth, whereas the average monthly traded value in Q1 2022 doubled as compared to the same period in 2021.

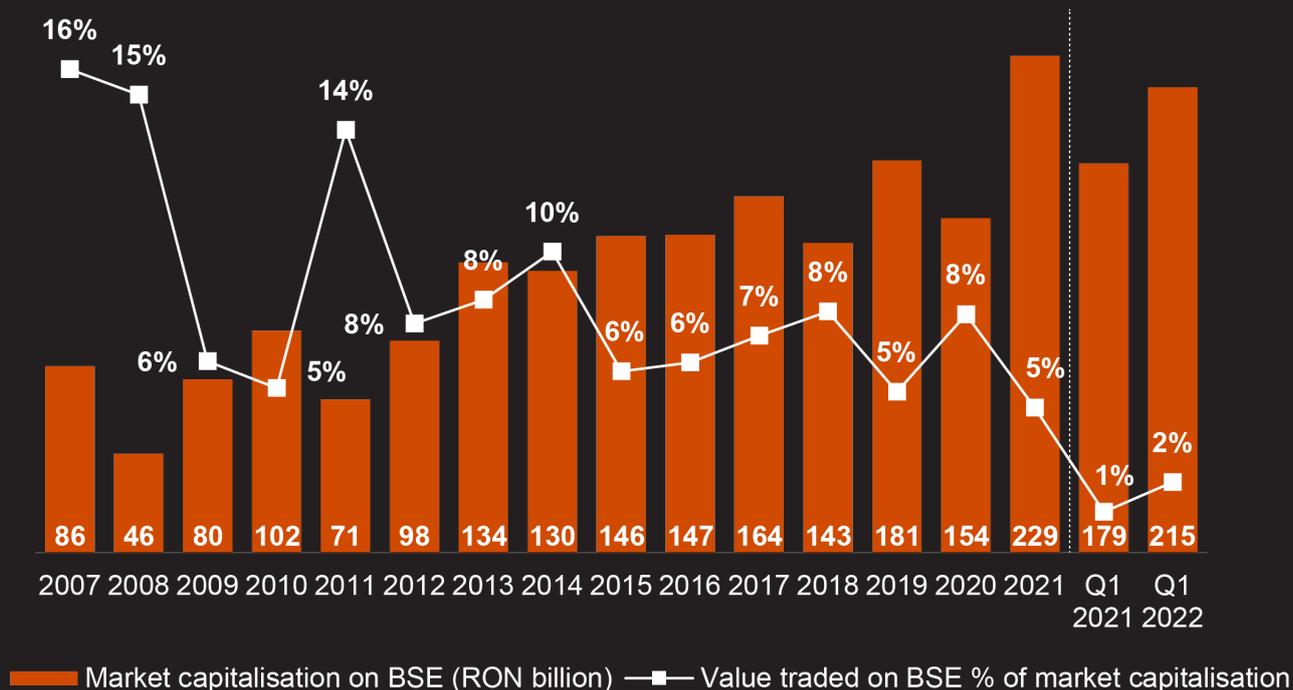
BSE's weakest performance in the last 15 years was recorded in 2008 during the financial crisis when market capitalisation almost halved. The RON 46 billion market capitalisation recorded at the end of 2008 represents only 20% of the market capitalisation recorded as at the end of 2021.

In the last couple of years, BSE consolidated its position and became more attractive to investors after the promotion to the Secondary Emerging market status. Thus, while BSE response to the financial crisis in 2008 was quite intense, with BET index losing 70% during January – December 2008, the reaction to the war affecting Romania's neighbour was moderate, with BET index decreasing and partially recovering by the end of March 2022 (BET index at 31 March was only 4% below the pre-war level).

The trading value on the BSE regulated market decreased by 10% in 2021 compared to the previous year (2021: RON 11.0 billion vs. 2020: RON 12.2 billion). In the last 15 years, the lowest traded value was recorded in 2009 (RON 5.1 billion), when investor confidence was strongly affected by large corrections from 2008, while the highest level had been reached in 2007 (RON 13.8 billion) before the financial crisis.

The top five most traded shares on the regulated market in 2021 include companies included in Financial services, Oil & gas and Materials sectors, i.e. Banca Transilvania (BVB: TLV), OMV Petrom (BVB: SNP), Fondul Proprietatea (BVB: FP), Teraplast (BVB:TRP) and Romgaz (BVB: SNG). In 2020, BRD ranked among the top 5 most traded companies, however Teraplast took its place in 2021 as a result of a strong growth of revenues (+55%) and net profit (+42%), corroborated with a 15% dividend yield.

Evolution of market capitalisation and traded value on BSE main segment, 2007 - Q1 2022 (end period)

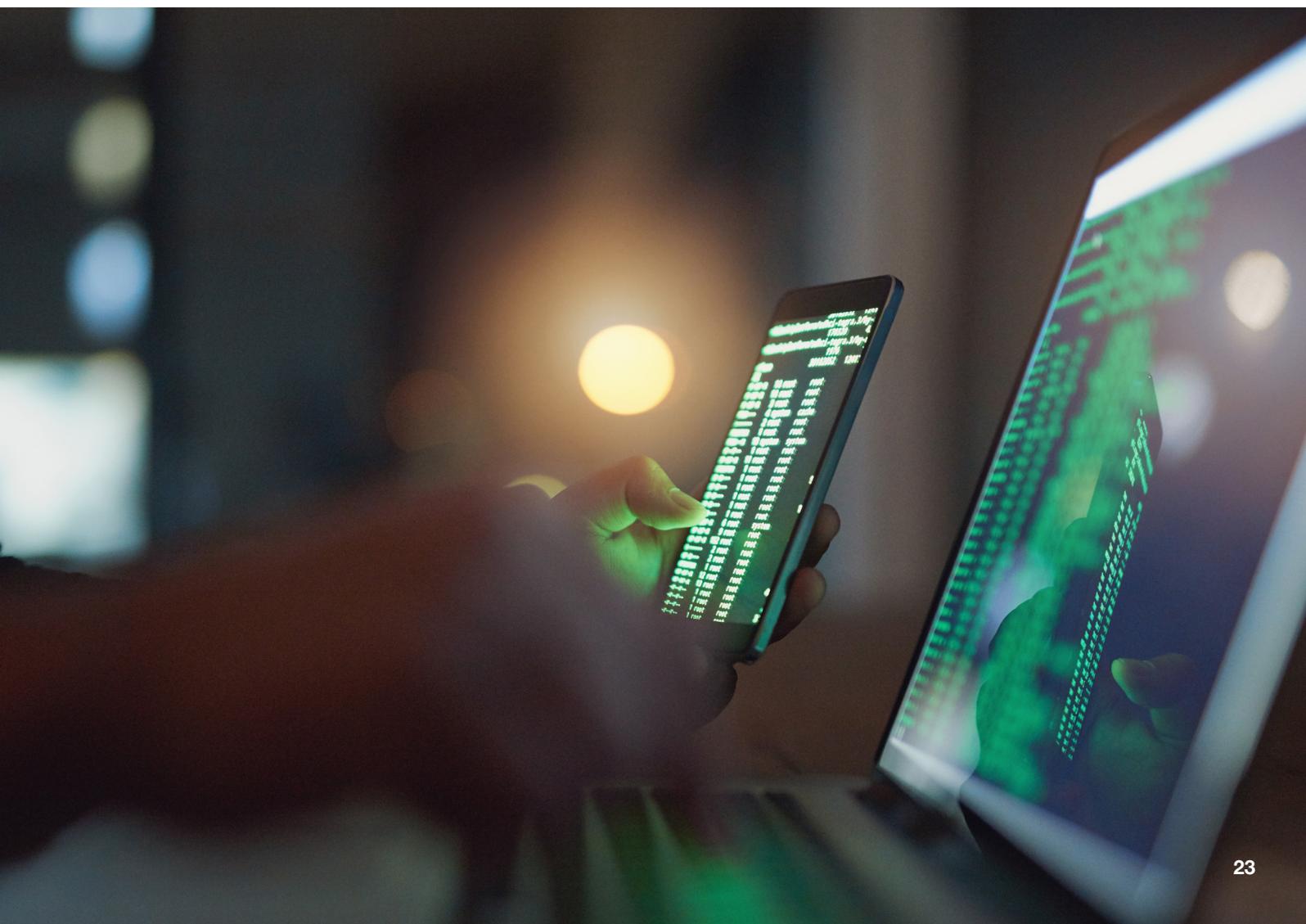


Company	Sector	Ticker	Traded value in 2021 (RON)
Banca Transilvania	Financial Services	BVB:TLV	1,945,455,270
OMV Petrom	Oil & Gas	BVB:SNP	1,173,129,930
Fondul Proprietatea	Financial Services	BVB:FP	901,424,040
Teraplast	Materials	BVB:TRP	713,291,020
SNGN Romagaz	Oil & Gas	BVB:SNG	582,357,040

Source: S&P Capital IQ, PwC Analysis

## Overview of Romanian IPOs – a retrospective analysis

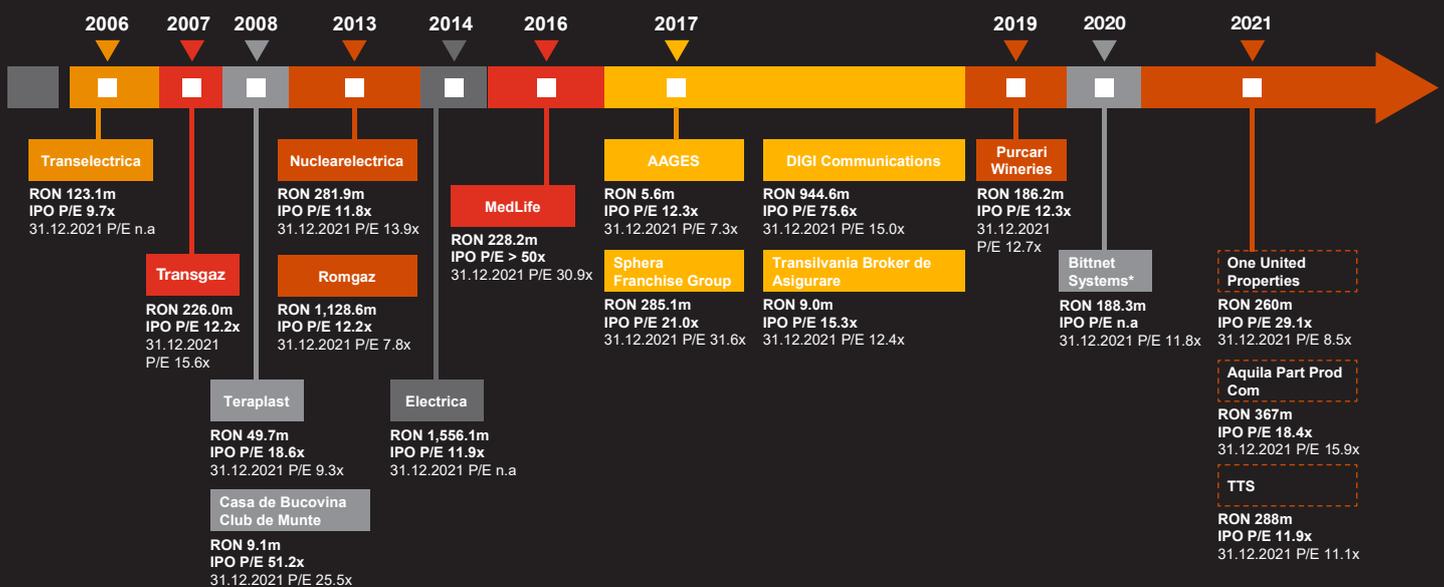
- The scarcity of IPOs in Romania might be explained by the low appetite for transactions in the context of global uncertainties, especially in the period 2008 – 2012, the postponing of public listings for state-owned companies and the lack of experience regarding raising financing via primary capital markets. The mass privatization process from 1995 – 1996 was preferred for accelerating the privatisation of state-owned companies and helping to build the foundation of local IPO culture. In the context of alternative equity providers (e.g. private equity and venture capital equity funds), some companies decided not to go public on the BSE, thus keeping the number of domestic IPOs at low levels. In recent years, the BSE has been committed to holding financial seminars and campaigns to increase awareness regarding trading on a capital market and the inherent advantages.
- The timeline presents all successful IPOs of companies listed on the regulated segment of the BSE during 2006 – 2021, along with the value obtained and an estimated P/E ratio calculated at the IPO price and as at 31 December 2021. After two years without any new IPOs, three new IPOs were concluded in 2021 on the BSE, i.e. Transport Trade Services, One United Properties and Aquila Part Prod.



# Overview of new listings on BSE



## Retrospective analysis of IPOs on the Regulated BSE market



Source: BSE website ([www.bvb.ro](http://www.bvb.ro))

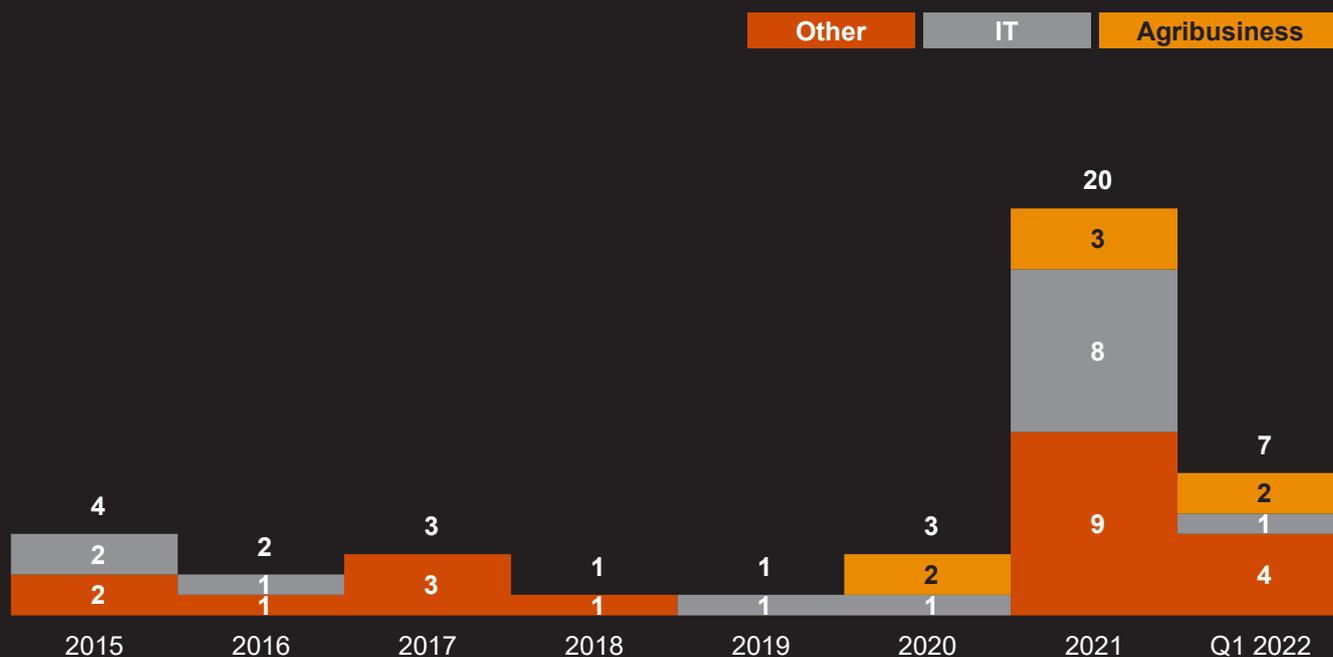
Romgaz and Electrica were both listed on the Bucharest Stock Exchange and the London Stock Exchange; The above timeline displays the IPO value raised only on the Bucharest Stock Exchange, regardless of global depository receipts traded on London Stock Exchange.

\* Bittnet Systems was initially listed on MTS and in June 2020 migrated on the BSE main segment.

## Retrospective analysis of new listings on MTS

- With only 16 IPOs concluded on the regulated segment during 2006 – 2021 (Bittnet Systems migrated in June 2020 from MTS to regulated segment), MTS proved more dynamic, given the 41 listings taking place since its launch in 2015. Almost half of those listings on MTS took place in 2021.

### Evolution of new listings on MTS



Source: BSE website ([www.bvb.ro](http://www.bvb.ro))

Of the 27 new listings during 2021 – Q1 2022, nine companies are active in IT sector and five in Agribusiness.

IT	Agribusiness	Materials	Industrial
Arobs Transilvania Software	DN Agrar Group	Raiko Transilvania	Adiss
Visual Fan	Agroserv Mariuta	Brikston Construction Solutions	Bonas Import Export
Arctic Stream	Grup Serban Holding	MAM Bricolaj	ABN Systems International
Softbinator Technologies	Agroland Agribusiness		
SafeTech Innovations	Agroland Business System		
Connections Consult			
GoCab Software			
2B Intelligent Soft			
Firebyte Games			

Financial Services - Investment funds	Consumer	Electricity - Green energy	Healthcare	Consulting Services
Holdingrock1	Vifrana	Simtel Team	Dr. Fischer Dental	Appraisal & Valuation
Star Residence Invest	Air Claim			

# Romanian stock market performance

## Stock market indices performance vs. Romania's Credit Default Swap (CDS)

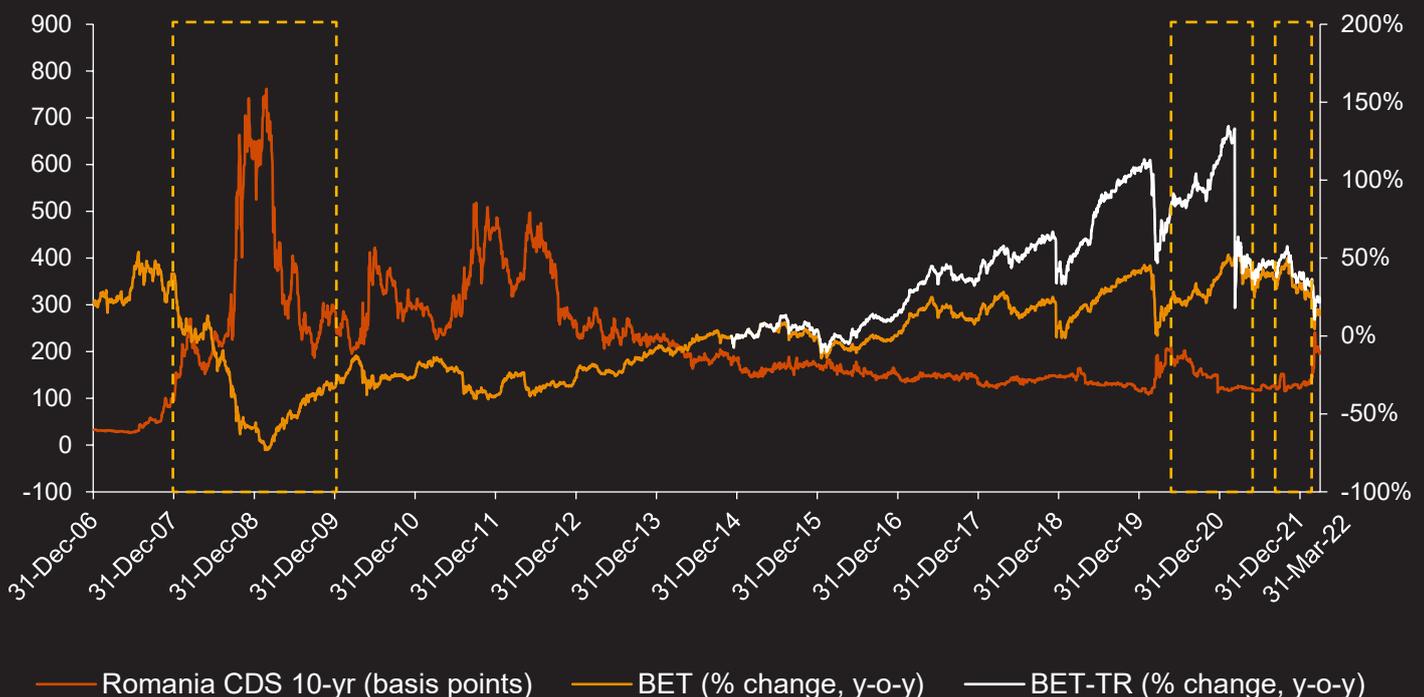
A country-specific CDS is an indicator for the default risk perception of sovereign debt instruments issuers, its evolution being driven by the changes in local economic fundamentals. A country's stock market has long been viewed as an economic barometer.

- Stock market returns were analysed based on the performance of the BET and BET-TR indices, compared with the Risk Credit Default Swap (CDS). The development of BET, BET-TR and CDS, as depicted in the graph, shows that the BSE indices are sensitive to the country risk, which also influences foreign capital investments.
- In July 2007, when the BET index reached a new high of 10,813.59 points, the CDS for Romanian government bonds reached a new low of 30 basis points. Once the financial crisis had started to take its toll, the CDS recorded a historic high of 762 points in February 2009, whereas the BET index reached a new low of 1,887.14 points following an 80% collapse from its 2007 high.

- Between 2010 and 2011, the CDS recorded an average level of 300 points and fewer fluctuations. The beginning of 2012 brought some tensions and, amid worsening economic conditions in the EU28 zone, Romania's CDS jumped to approximately 500 points. The context had improved by the end of 2012, with the CDS dropping by about half to approximately 260 points. In April 2014, the CDS was around 160 points, with BET index growth showing investors' increasing appetite for the Romanian capital market.
- From 2015 to 2019, CDS volatility was lower, thus presenting a downward trend. During 2018 and 2019, the CDS averaged 135 points, although Romania was considered riskier than other countries in the region. On 19 December 2018, the BET dropped by 11.2%, thus wiping out the entire growth achieved during 2018. The BET decrease in December 2018 was the second largest fall after 2009, when Romania entered recession, and was associated with rumours regarding additional taxation in banking, energy and telecom sectors, as well as changes in the Pillar II pension system, whereas the developments in 2020 were triggered by the pandemic and the BSE's promotion by FTSE Russell.

The data depicted in the graph indicates an inverse correlation between Romanian 10-year CDS and BET and BET-TR indices over a period with a challenging mix of events: (a) financial crisis in 2008 and (b) pandemic context in 2020 and (c) the military conflict in Ukraine in Q1 2022.

### Stock market performance vs. Romania's CDS evolution (%)

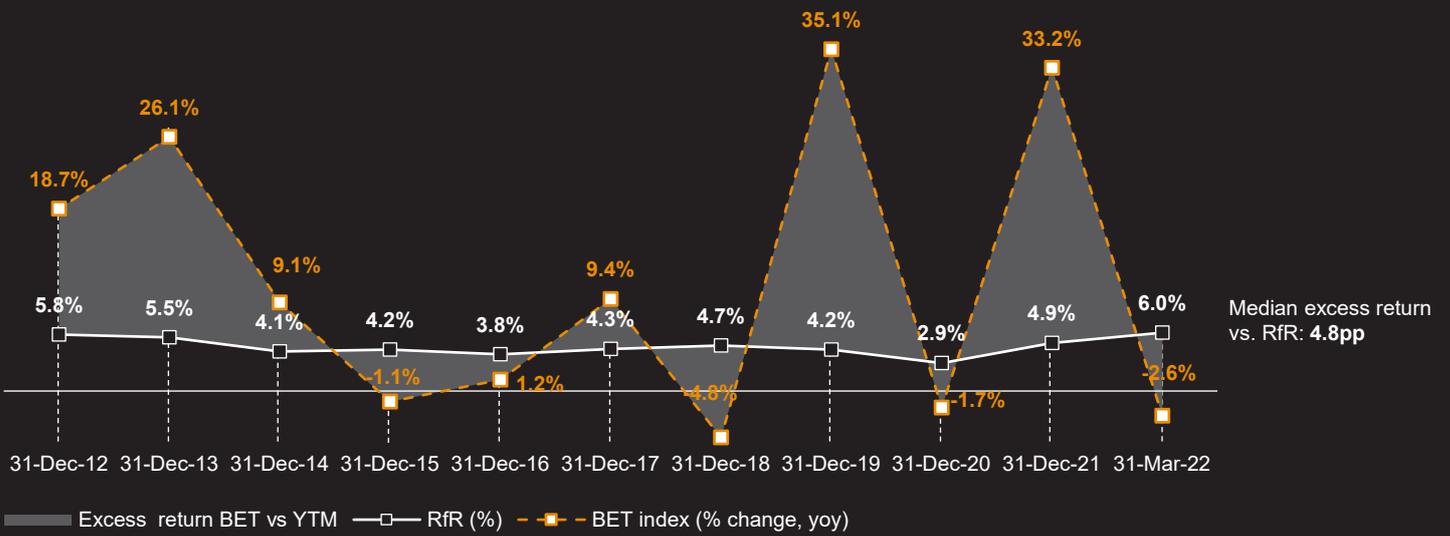




- In order to ensure that its indices are representative and relevant to the stock market, the BSE launched the BET-Total Return index (BET-TR) in September 2014. This index provides investors with more information about the capital market; accounting not only for capital gains but also for the total return of its constituents. According to publicly available data on the BSE, the average dividend yield for the BET index was approximately 4.5%, in 2021, compared to the 6.5% recorded in 2020.
- The performance of BET and BET-TR indices decreased significantly in February and March 2022, while the CDS (insurance against non-payment of Romania's debt) increased – thus, the indices and CDS evolution was opposite.
- Based on the information regarding the 10-year CDS, available on the S&P Capital IQ platform, the average insurance cost for Romania's debt was USD 12,389 (124 basis points) in 2021, but increased to USD 19,903 (199 basis points) at 31 March 2022 mostly following the Ukrainian invasion by Russia. In spite of the 60% increase attributable to the military conflict in Ukraine (average CDS in 2021 vs. end of Q1 2022 CDS), current level is still lagging behind the level recorded during the financial crisis in 2009, i.e. 700 basis points.
- In light of the above, we performed an analysis of the returns on capital invested in bonds market vs. equity market, focusing on the evolution of the Risk-free Rate (RfR), as approximated by the yields on long-term Romanian Government Bonds denominated in local currency and main BSE indices. The two graphs present the evolution of the yield to maturity of one of the most-traded Romanian bonds (i.e. RO1227DBN011) in comparison with the performance of the two most representative indices, e.g. BET and BET-TR, during the period 2012 – Q1 2022. After reaching a low at the end of 2020 (2.9%), the RfR doubled by the end of March 2022 (6.1%). With annual returns between -4.8% and 35% (BET), respectively 3% and 47% (BET-TR), the local equity market provided clearly superior returns as compared to RfR during 2012 – 2014, 2017, 2019 and 2021.
- This analysis covering more than ten years shows that the period median excess return over the Risk-free Rate was 4.8pp for the BET index and 13.9pp for the BET-TR index. These figures can be regarded as proxies for the return surplus associated with stock market investment vs. the investment in government bonds, thus compensating investors for taking on the relatively higher risk of equity investing. The size of the premium varies depending on the level of risk in a particular portfolio.
- The Romanian CDS dynamic has been closely linked to the CDS evolution in the region over the period 1 December 2007 – 31 March 2022. Risk premiums have increased considerably in 2008, after the onset of the financial crisis, both in countries with Frontier stock exchanges and in those with Emerging stock markets. In 2019 and 2020, the CDS of many analysed countries, including Romania, hovered at reduced levels compared to years before, but still above the levels recorded until 2007, before the financial crisis outbreak. After reaching a 10-year minimum in February 2020 (108 basis points), Romania's CDS (ten years term, mid-price) grew in the pandemic context up to a maximum of 208 basis points in May 2020, but decreased by the end of 2021 to 121 basis points. After the outbreak of the Ukrainian war, Romania's CDS ramped up to 241 basis points in March 2022.
- The analysis of CDS for a few countries in the region shows that as at 31 March 2022 Romania is perceived as riskier than Greece, Slovakia, Czech Republic, Bulgaria, Croatia, Cyprus, Slovenia and Hungary, less risky than Kazakhstan and equally risky as Serbia. This relative analysis underlines a worsening of Romania's risk perception as compared to Greece, Croatia and Serbia during 31 December 2020 – 31 March 2022.

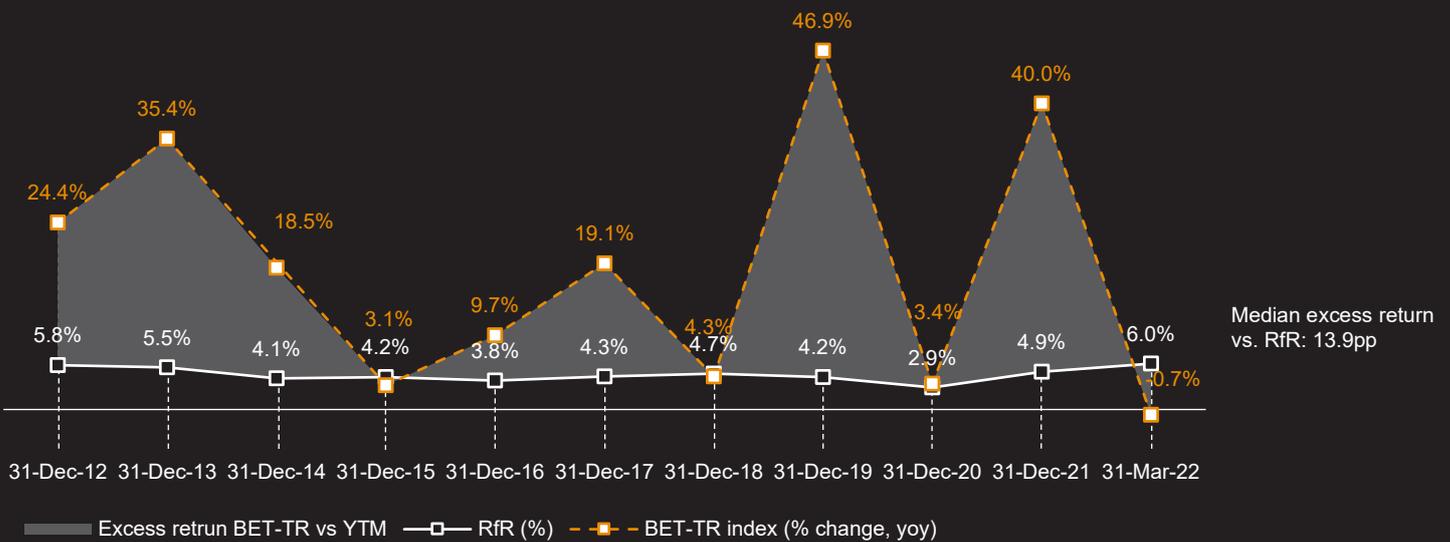


### Evolution of BET index vs. RfR (%)



Source: S&P Capital IQ, BSE, PwC analysis

### Evolution of BET-TR index vs. RfR (%)



Source: S&P Capital IQ, BSE, PwC analysis

# ESG factors – investment perspective

In the last couple of years, traditional investment approaches have shifted towards sustainable investments that incorporate Environmental, Social and Governance (ESG) factors. Although ESG has become a “buzzword” in finance and some investors have already decided to apply these non-financial metrics, the ESG factors are not mandatory metrics in financial reporting statements.

ESG factors have gained more importance in recent years for several reasons:

- They help in identifying and mitigating risks that a company may face and provide better indications compared to traditional financial metrics related to companies able to generate superior returns;
- They promote a sustainable business model as companies and investors look at society and the environment in a more responsible way;
- As economies are changing very fast, so too are business models – in this respect, investors and companies must shift their vision / strategy / objectives from short-term perspectives of risks and returns to sustainable, long-term sustainable business models that generate profitability.

ESG factors are incorporated within a wide range of investing approaches, each including a different set of financial indicators and social metrics. The traditional investment approach takes into account only the financial indicators intended to maximise shareholder profit or value. However, as a result of modern economic dynamics, new approaches have been considered by investors which are now more focused on ESG and societal investments – this type of investments provide returns that are linked to environmental or social benefits (including human and employee rights, gender equality, race, age, social background, etc.).

The inclusion of the ESG factors in valuing a company has evolved considerably over the past couple of years, with a Value Creation Ecosystem factoring in ESG drivers being developed as a result.

ESG investing is an approach that seeks to incorporate Environmental, Social and Governance factors into asset allocation and risk decisions with the intention of generating sustainable, long-term financial returns. There are several publicly available studies indicating a positive correlation between ESG factors and a company’s share price increase. A positive effect on a company’s share price can be achieved if that company gets a high score on ESG factors.



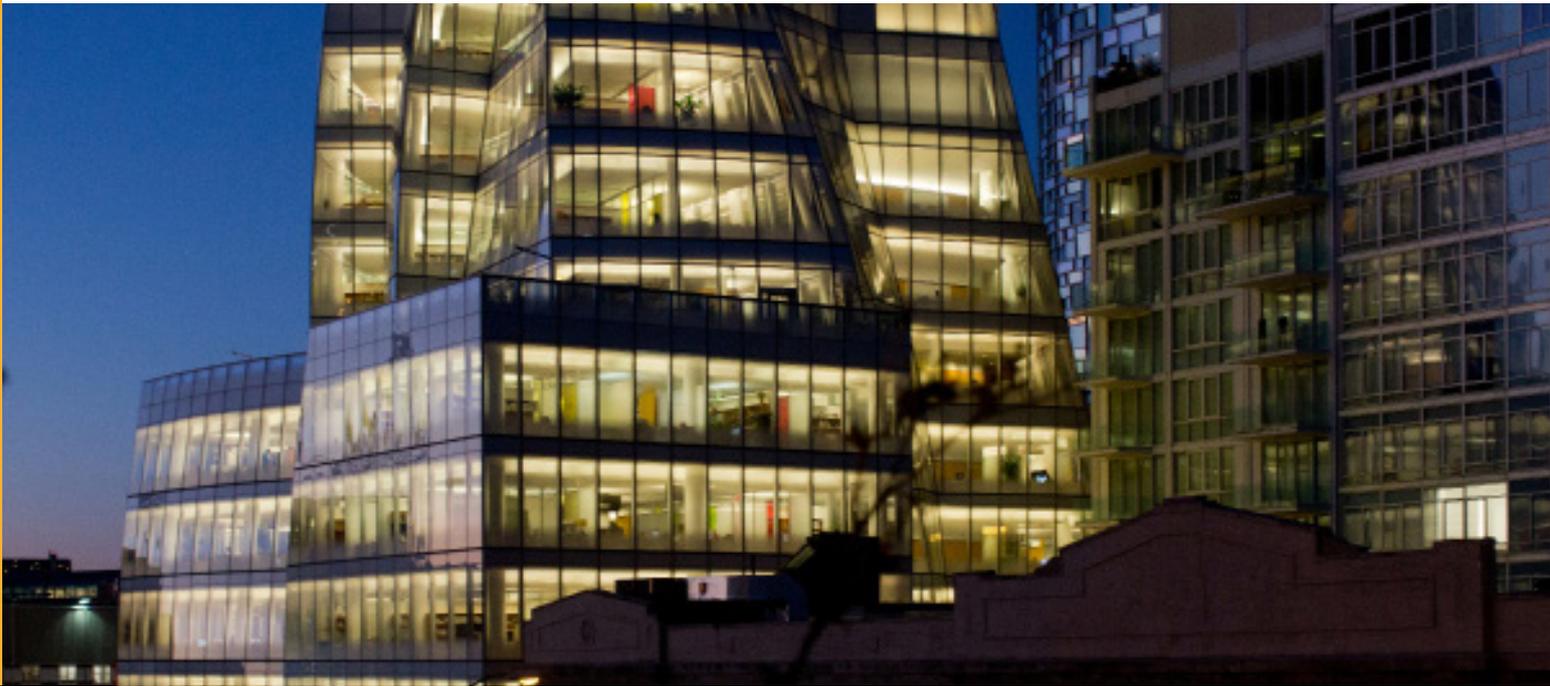
# Why integrate ESG in investment strategy?

## Macro level

- Mitigate risk
- Apply fiduciary duty
- Consider economic perspective
- Assess the impact and apply ethics
- Analyse client demand perspective
- Apply regulatory perspective

## Financial materiality

- Efficiency and productivity
- Reduced risk of fines and state intervention
- Reduced negative externalities
- Improved ability to benefit from sustainability megatrends



## Challenges to ESG investing

### • Insufficient resources

- Data availability - disclosure, limited understanding of ESG information
- Modelling - ESG factors have a long term financial impact and are difficult to quantify and to include in a financial model
- Valuation techniques - adjusting discount rate or cash flows for ESG risks
- Estimation of societal challenges, environmental issues and externalities is difficult and at a certain extent may rely only on professional judgement
- ESG valuation standards are under development (currently the IVSC has published a “Perspectives paper – ESG and Business Valuation”, “Perspectives paper – A Framework to assess ESG Value Creation” and “Perspectives paper –ESG and Real Estate valuation” ).

### • Timing

- ESG analysis is often qualitative in nature, requiring complex analysis and calibration between the methods used, input data, etc.

## ESG initiatives on BSE

Equity markets play a strategic role in the shift towards a more comprehensive ESG reporting framework. Well functioning equity markets enable economic growth via the mobilisation of financial resources and brings together those who need capital for growth with those wanting to invest. In order to have a financial market that is secure, transparent and equitable, regulators should encourage transparency and require listed companies to fulfil ESG requirements.

In the last seven years, the BSE has been committed to invest in sustainability and ESG initiatives in order to develop a framework for all listed companies and increase its visibility and attractiveness among local and international investors.

### BSE – key ESG milestones



- On **March 2015**, BSE became a partner exchange to the **United Nations Sustainable Stock Exchanges (SSE) initiative**, ranking the 19th member to join the initiative globally and the 4th EU exchange alongside Deutsche Borse, London Stock Exchange and Warsaw Stock Exchange.
- BSE made the first step towards ESG commitment on **15 September 2020** when it launched the **Environmental, Social and Governance focused initiative using Sustainalytics' flagship ESG Risk Ratings**. This initiative aims encouraging all listed companies to align their business models with ESG practices in order to increase their value for all stakeholders.
- In **February 2022**, BSE makes another important step towards an **ESG integrated approach in the sense that nine listed companies already published an ESG risk score** (information is available on BSE Research Hub platform). The data provided on the BSE Research Hub is centred on five ESG scoring levels based on Sustainalytics methodology, i.e.:

**ESG Risk Score** - measures the magnitude of a company's unmanaged risks.

Interpretation: a lower score corresponds to a smaller amount of unmanaged ESG risks.

**Exposure** - assesses the extent to which a company is exposed to different material ESG issues.

Interpretation: a higher score shows that the company has more exposure to material ESG issues.

**Momentum** - measures the evolution of the ESG Risk Score compared to the report issued for the previous period.

Interpretation: a negative momentum score shows an improvement of the ESG risk assessment

**ESG Risk Ranking Score** – presents the ranking of the company among other players in the same sub-industry

Interpretation: a higher ranking means better ESG performance compared to similar companies in the Sustainalytics-covered universe.

**Management** - management refers to how well a company is managing its relevant ESG issues (programmes, policies, etc)

Interpretation: a higher score shows a better performance in managing ESG risks.

## ESG factors – BSE initiatives

The below graph depicts the nine listed companies on BSE for which ESG scores are available.

- Based on the ESG rankings provided by Sustainalytics for the above companies, two of them rank in top 5% leading companies in their peer group, namely OMV Petrom S.A., Antibiotice S.A., and two of them in top 10%, namely Nuclearelectrica S.A. and BRD – Groupe Societe Generale S.A.. Moreover, the data presented in the above table indicates that all nine companies have improved their ESG scores compared to those from previous year given the negative Momentum (a negative score indicates an improvement of the ESG risk assessment). The top three companies with significant improvement in ESG risk assessment are Nuclearelectrica S.A, BRD – Groupe Societe Generale S.A. and Antibiotice S.A.
- In April 2022, BSE published its first ESG report guidelines for listed companies, developed with the technical assistance of the European Bank for Reconstruction and Development (EBRD). The report's main objectives include: (a) offering support to Romanian companies in addressing their ESG reporting challenges, (b) development of the Romanian capital market and (c) facilitation of an ongoing ESG dialogue.

	ESG Risk Score	ESG Risk Ranking Score	Exposure	Management	Momentum
BRD –G roupe SocieteG enerale S.A.	19.2	28/377	40.3	55.8	-17.1
BVB –B ursa de Valori Bucuresti S.A.	16.9	75/113	25	32.9	-1.1
Farmaceutica Remedias .A.	16.7	15/46	23	28.9	-1.6
Sphera Franchise Group S.A.	29.5	61/124	37	21.2	-0.6
AntibioticeS .A.	25.4	17/442	47.5	50.1	-15.4
Nuclearelectrica S.A.	19.4	18/295	49.8	65.6	-21.8
OMV Petrom S.A.	22.4	4/146	68.9	79.3	-11.9
SNTGN Transgaz S.A.	27.3	27/112	44.2	43.5	-11.7
Teraplast S.A.	22	31/131	37.4	44.2	-12.1

# Listed companies valuation multiples

Although the number of analysed companies was relatively stable compared to the previous year, the total market capitalisation as at 31 December 2021 grew by 40% as compared to the level achieved at the end of 2020. The BET index posted a 33% increase during 2021, benefitting from a more favourable context – e.g. reduced pandemic concerns / restrictions, greater international visibility of the local capital market following the inclusion of additional Romanian listed companies in FTSE indices.

## Key facts

- The analysis conducted on the BSE regulated segment indicated a high concentration of listed issuers, with the top five companies accounting for over 60% of the total market capitalisation as at 31 December 2021. The top five companies are active in the Oil & Gas (e.g. OMV Petrom, Romgaz), Financial Services (e.g. Banca Transilvania and Fondul Proprietatea) and Electricity (e.g. Nuclearelectrica) sectors. Those economic sectors' degree of representation on the local capital market is therefore low in the absence of several industry leaders.
- BSE flagship index, BET, is a barometer for the capital market performance, as confirmed by the strong correlation coefficient of 0.9 between total market capitalisation and the index performance over the last 15 years. As at 31 December 2021, the BET index surpassed the threshold of 13,000 points, posting a 33% increase compared to previous year.
- The number of analysed listed companies fluctuated over the period 2007 – 2021 as a result of the suspension and / or delisting of some of the companies included in the study but also new listings (IPOs). The current edition covers the analysis of 80 companies that are primarily listed on the BSE main segment (two listed companies were excluded from the analysis: Erste Group as its primary listing is on a different exchange - Vienna Stock Exchange, and UCM Reșita, because of its suspension from trading).
- The market capitalisation of the 80 companies analysed for 2021 was RON 142 billion, which marks the highest level recorded in the past 15 years (up by 28% vs. the good performance in 2019).

Top 3 sectors by market capitalisation (% of total market cap) as at 31 December 2021

- Oil & Gas (35%);
- Financial Services (33%);
- Electricity (14%).

Top 3 sectors by value traded (% of value traded) as at 31 December 2021

- Financial Services (42%);
- Oil & Gas (23%);
- Materials (9%).

## Market cap as at 31 December 2021 and value trade in 2021 - by sectors

Sector	No. of Companies	Market Cap. (RON m)	Total value traded (RON m)	Values Traded % of market cap.
Oil & Gas	9	49,169	2,055	4.2%
Financial	12	47,381	3,854	8.1%
Electricity	3	19,305	794	4.1%
Consumer	9	5,832	465	8.0%
Healthcare	6	6,278	407	6.5%
Materials	12	4,755	848	17.8%
Industrial	29	8,923	674	7.5%
<b>Total</b>	<b>80</b>	<b>141,642</b>	<b>9,097</b>	<b>6.4%</b>

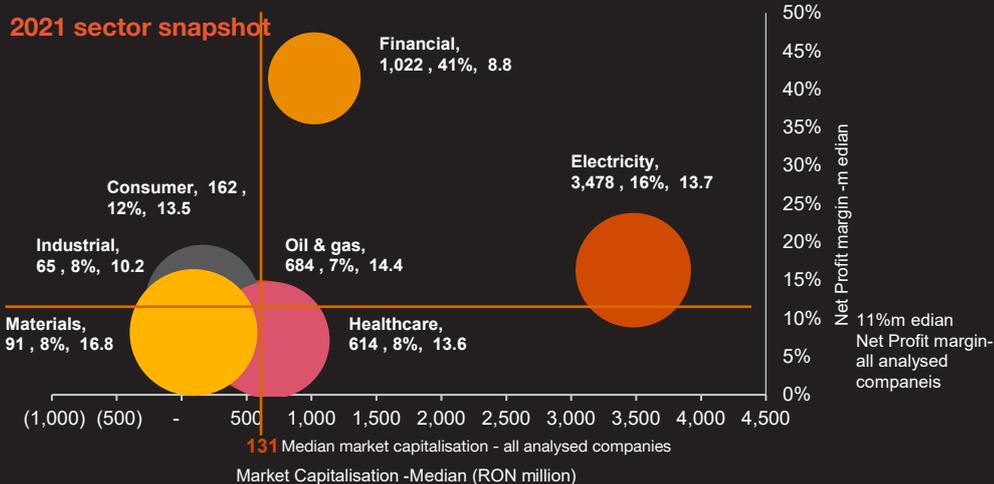
Source: S&P CapitalIQ, PwC analysis

## Number of analysed companies, market cap growth and BET performance over 2007-2021



Note: Market capitalisation as per BSE, for the period 2007 – 2015, and as per S&P Capital IQ for 2016 – 2021, respectively.

In 2021, the Oil & Gas sector recorded the highest market capitalisation (RON 49 billion), followed closely by the financial sector (RON 47 billion). The highest median market capitalisation (RON 3.5 billion) was recorded by the electricity sector, while the lowest by the Industrial sector (RON 65 million). The highest median P/E multiple was reported by the Materials sector (P/E of 17x) while lowest by the Financial sector (P/E of 9x).

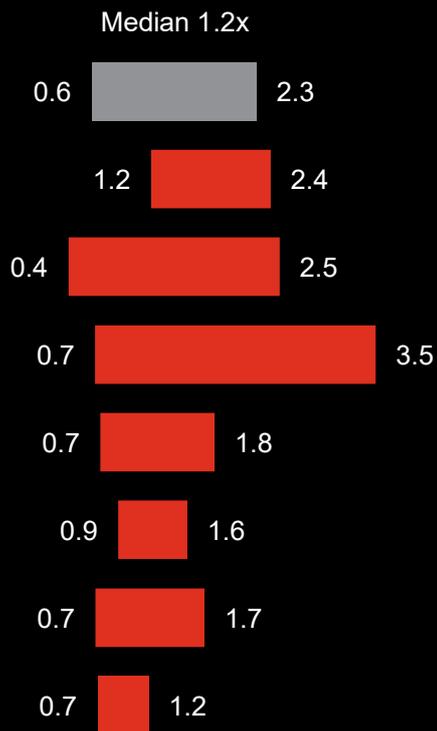


The BSE market capitalisation as at 31 December 2021 ranged from RON 0.7 million (Compania Energopetrol S.A.) to RON 28,265 million (OMV Petrom S.A.), with a median value of RON 131 million.

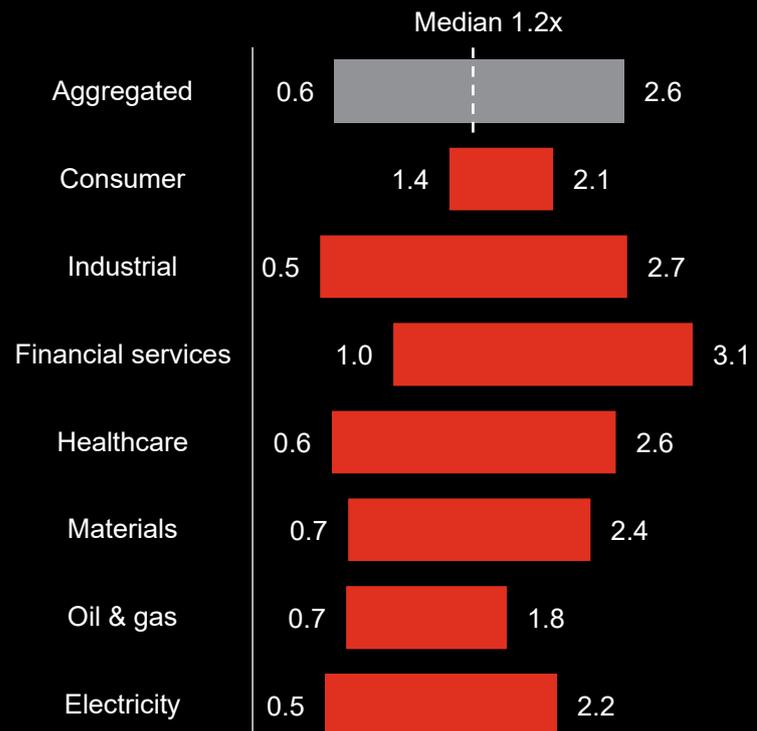
Net profit margin observed on the local capital market ranges from 4% (first quartile) to 30% (third quartile), with a median value of 11%.

Analysed sectors and number of companies	Top listed companies by market capitalisation as at 31.12.2021	Sector net profit margin and P/E multiple
 <b>Oil &amp; Gas</b> (9 companies)	<b>OMV Petrom S.A.</b> <b>SNGN Romgaz S.A.</b> <b>SNTGN Transgaz</b>	<b>Net profit margin: 3% – 12% (quartiles), median 7%</b> <b>P/E multiple: 11x – 17x (quartiles), median 14x</b>
 <b>Financial services</b> (12 companies)	<b>Banca Transilvania S.A.</b> <b>Fondul Proprietatea S.A.</b> <b>BRD - Groupe Société Générale S.A.</b>	<b>Net profit margin: 14% – 80% (quartiles), median 41%</b> <b>P/E multiple: 6x – 21x (quartiles), median 9x</b>
 <b>Healthcare</b> (6 companies)	<b>Medlife S.A.</b> <b>Zentiva S.A.</b> <b>Biofarm S.A.</b>	<b>Net profit margin: 3% – 14% (quartiles), median 8%</b> <b>P/E multiple: 11x – 15x (quartiles), median 14x</b>
 <b>Consumer</b> (9 companies)	<b>Digi Communications N.V.</b> <b>Purcari Wineries</b> <b>Sphera Franchise Group S.A.</b>	<b>Net profit margin: 6% – 19% (quartiles), median 12%</b> <b>P/E multiple: 12x – 26x (quartiles), median 14x</b>
 <b>Industrial</b> (29 companies)	<b>One United Properties S.A.</b> <b>Aerostar S.A.</b> <b>Aquila Part Prod Com S.A.</b> <b>Impact Developer &amp; Contractor S.A.</b>	<b>Net profit margin: 4% – 14% (quartiles), median 8%</b> <b>P/E multiple: 8x – 16x (quartiles), median 10x</b>
 <b>Materials</b> (12 companies)	<b>Teraplast S.A.</b> <b>Alro S.A.</b> <b>Cemacom S.A.</b>	<b>Net profit margin: 2% – 11% (quartiles), median 8%</b> <b>P/E multiple: 9x – 30x (quartiles), median 17x</b>
 <b>Electricity</b> (3 companies)	<b>S.N. Nuclearelectrica S.A.</b> <b>Societatea Energetica Electrica S.A.</b> <b>CNTEE Transelectrica S.A.</b>	<b>Net profit margin: 0% – 33%</b> <b>P/E multiple: median 14x</b>

## Revenue multiple by sector, 2020



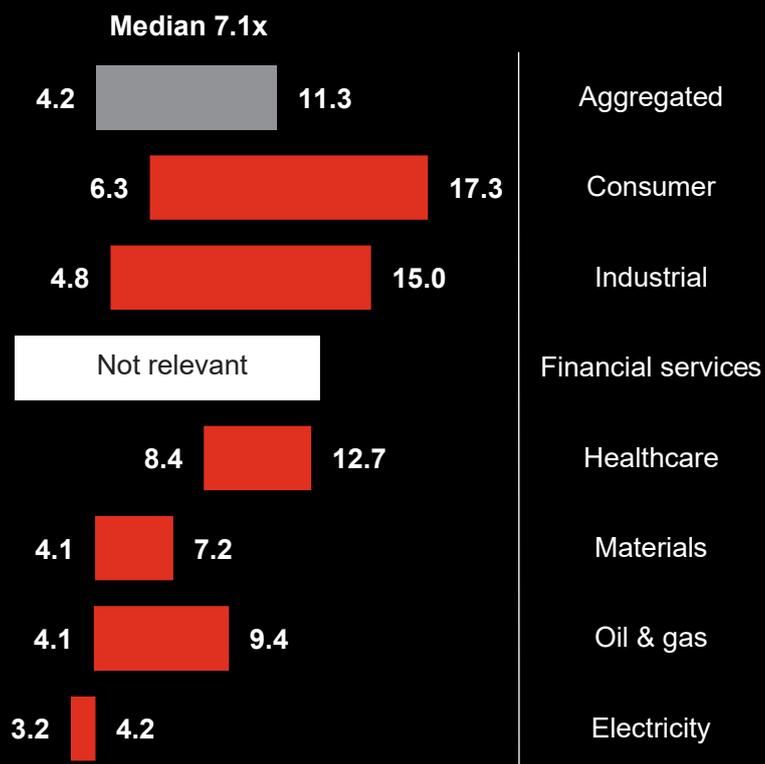
## Revenue multiple by sector, 2021



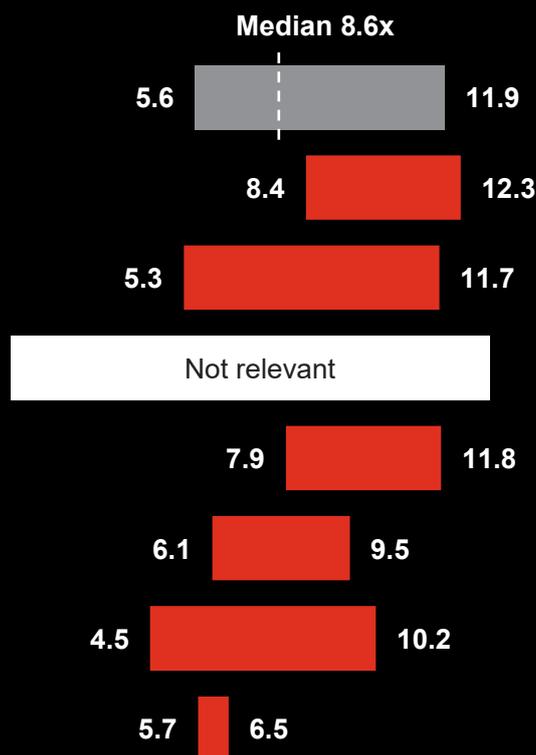
## Revenue multiple

- The aggregated median for Revenue multiple in 2021 is 1.2x, similar to the level observed in 2020
- Both in 2020 and 2021, the top-performing sector was Financial Services with a median multiple of 2.6x and respectively 3.1x
- In 2021, the lowest revenue multiple was recorded in Electricity sector, with a median of 0.6x
- The upper limit of Revenue multiple strongly increased for Healthcare, Materials and Electricity sectors
- Revenue multiple is a reliable metric as it is less volatile than P/E or EBITDA multiples and less susceptible to accounting manipulation; it is highly used by distressed, start-up and small companies with a low or negative EBITDA. Yet, it should be used with caution in cases where some products / services intermediaries could count revenue as either the commission charged or the value of products / services they intermediate.

## EBITDA multiple by sector, 2020



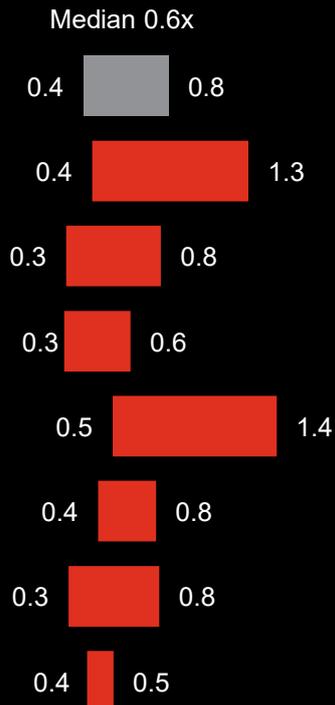
## EBITDA multiple by sector, 2021



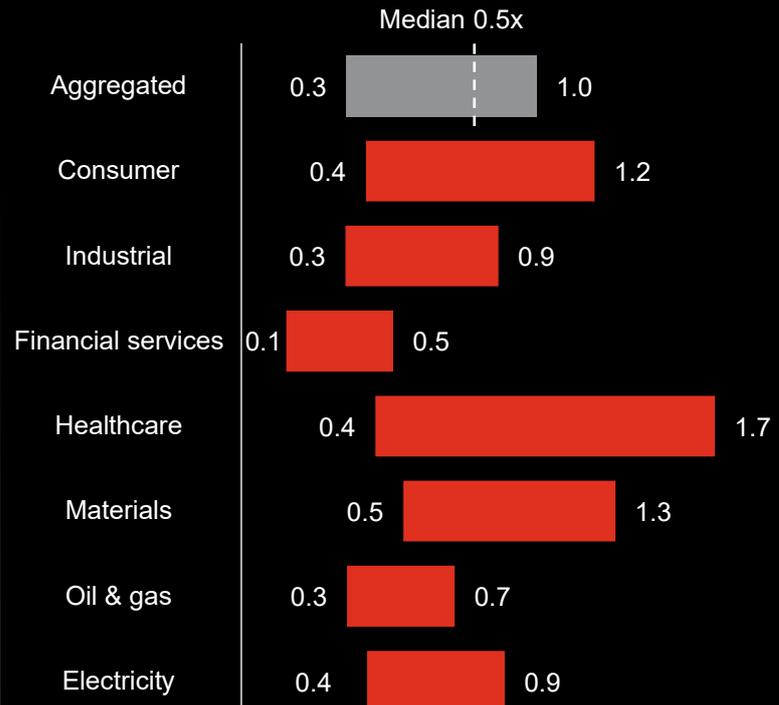
### EBITDA multiple

- In 2021 aggregated median for EBITDA multiple is 8.6x, surpassing the median recorded in 2020 of 7.1x
- In 2021, the top-performing sectors were Consumer and Healthcare, with median multiples of 9.2x, respectively 9.0x
- In 2021, the lowest EBITDA multiple was recorded in Oil & Gas, with a median of 5.7x whereas in 2020 the lowest multiple was recorded in Electricity sector (median multiple 3.2x)
- The upper limit of EBITDA multiple decreased for Consumer, Industrial, Healthcare, and grew for Materials and Oil & Gas sectors
- This multiple is not meaningful for the Financial Services sector as it is difficult to isolate the financing requirements of a financial institution from its wider operational activities
- It can be used to compare directly companies operating in the same industry, regardless of their debt level, and it is not affected by accounting choices regarding amortisation and depreciation
- EBITDA is a good proxy for cash, but its main drawback is that it cannot be used for comparisons across industries, given the variations in capital expenditure requirements

## Total assets multiple by sector, 2020



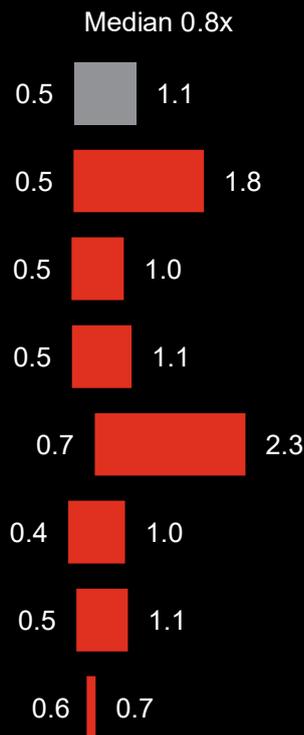
## Total assets multiple by sector, 2021



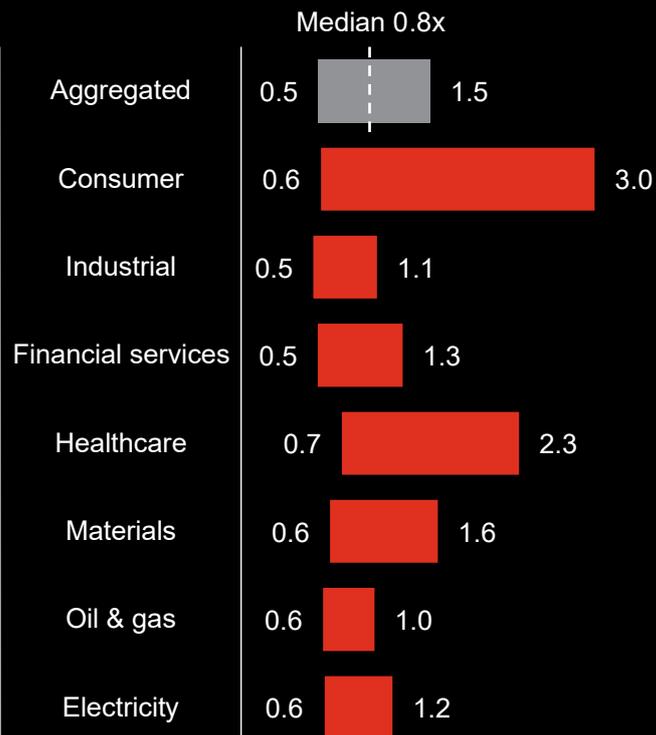
### Total assets multiple

- The aggregated median for Total assets multiple in 2021 is 0.5x, slightly below the level observed in 2020 (0.6x)
- In 2021, the top-performing sector was Healthcare, with a median multiple of 1.1x whereas in 2020 was the Consumer sector (median multiple 0.8x)
- Both in 2020 and 2021, the lowest multiple was recorded in the Financial Services sector, with a median of 0.4x and, respectively of 0.2x
- The upper limit of Total assets multiple increased for Healthcare, Materials and Electricity sectors and remained similar for the rest
- Total assets multiple is especially relevant for capital-intensive sectors, but should be applied with caution in the case of companies with significant intangible assets, as presumably they do not fully capture the future growth opportunities

## Net assets multiple by sector, 2020



## Net assets multiple by sector, 2021



## Net assets multiple (P/BV)

- The aggregated median for Net assets multiple in 2021 was 0.8x, similar to the level observed in 2020
- In 2021, the top-performer was the Consumer sector, with a median multiple of 2.2x, followed by Healthcare (median multiple of 1.4x), the same sectors top-performing also in 2020 (median multiple 1.1x)
- In 2021, the lowest Net assets multiple was recorded by the Electricity and Industrial sectors, with a median multiple of 0.7x
- The upper limit of Net assets multiple clearly grew for Consumer, Materials and Electricity sectors and remained similar for the rest
- Net assets multiple is especially relevant for the financial services and real estate sectors. This multiple can be used to compare companies operating within the same industry and should be used with caution for the companies with significant intangible assets.

Industry	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Volatility 2008 - 2021	Minimum 2017 - 2021	Maximum 2017-2021
Consumer	17.2	11.8	13.3	16.8	11.9	17.3	20.4	20.8	13.5	14.9	13.3	13.4	13.2	12.6	13.5	20%	12.6	13.5
Financial services	18.0	3.6	7.0	12.5	5.4	7.1	11.4	10.4	8.9	12.5	9.3	7.6	7.5	15.2	8.8	34%	7.5	15.2
Oil & Gas	16.4	8.1	10.3	8.8	6.8	6.1	10.3	9.3	8.8	9.5	11.7	7.5	10.0	15.4	14.4	27%	7.5	15.4
Healthcare	25.4	10.2	18.1	12.8	11.0	10.1	11.9	12.1	18.4	11.5	10.8	12.1	15.5	16.2	13.6	21%	10.8	16.2
Industrial	33.8	7.6	8.6	9.8	15.3	6.9	12.1	7.8	6.9	8.9	10.2	7.8	8.1	9.3	10.2	25%	7.8	10.2
Materials	24.1	5.8	34.5	16.5	9.6	11.4	8.4	7.3	5.7	10.7	9.8	9.0	8.9	9.7	16.8	63%	8.9	16.8
Electricity	38.4	9.1	2.7	25.0	9.3	19.4	5.6	13.3	11.6	12.5	15.9	14.3	12.9	11.0	13.7	43%	11.0	15.9
<b>All sectors</b>	<b>25.4</b>	<b>7.0</b>	<b>10.3</b>	<b>12.7</b>	<b>9.5</b>	<b>8.0</b>	<b>11.6</b>	<b>9.8</b>	<b>9.6</b>	<b>10.9</b>	<b>11.2</b>	<b>9.0</b>	<b>10.5</b>	<b>10.9</b>	<b>13.2</b>	<b>16.3%</b>	<b>9.0</b>	<b>13.2</b>
<b>GDP growth</b>	<b>7.2%</b>	<b>9.3%</b>	<b>-5.5%</b>	<b>-3.9%</b>	<b>1.9%</b>	<b>2.0%</b>	<b>3.8%</b>	<b>3.6%</b>	<b>3.0%</b>	<b>4.7%</b>	<b>7.3%</b>	<b>4.5%</b>	<b>4.1%</b>	<b>-3.7%</b>	<b>5.9%</b>	<b>162.3%</b>	<b>-3.7%</b>	<b>7.3%</b>
<b>Industrial production growth</b>	<b>10.1%</b>	<b>1.9%</b>	<b>-5.0%</b>	<b>4.9%</b>	<b>7.9%</b>	<b>2.6%</b>	<b>7.4%</b>	<b>6.3%</b>	<b>3.0%</b>	<b>3.1%</b>	<b>7.9%</b>	<b>3.5%</b>	<b>-2.3%</b>	<b>-9.2%</b>	<b>7.1%</b>	<b>184.1%</b>	<b>-9.2%</b>	<b>7.9%</b>

While the overall Romanian economy advanced by 5.9% in real GDP terms (rebounding from the 3.7% contraction seen in 2020), economic sectors evolved differently, some of them still affected by the COVID-19 pandemic and others benefitting from strengthening of demand. Our sectorial analysis indicates that four out of the seven sectors posted growth in P/E ratios, i.e. Consumer, Industrial, Materials, Electricity. Two of these sectors (Consumer and Materials) even hit a 5-year maximum P/E ratio. Sectors encountering decreases of the P/E ratio are those recording 5-year maximums in 2020, i.e. Healthcare, Financial services and Oil & Gas.

## Main conclusions

While the Consumer and Healthcare sectors showed a relatively stable P/E ratio in the last few years (lowest volatility / deviation from the average among the seven sectors), the Materials and Electricity sectors displayed the highest volatility of the P/E multiple. The surge in electricity and materials prices in 2021 are some of the factors influencing profits and the P/E multiple of the two sectors.

Financial multiples recorded their highest levels in 2007, reflecting the general optimism at the time; the volatility analysis of P/E multiples do not take into account the amounts computed for 2007.

## P/E ratio – 2021

- The aggregate P/E median of 13.2x in 2021 represents the maximum median level achieved after 2007
- The Materials sector recorded the highest median P/E multiple, i.e. 16.8x
- The Financial services sector showed the lowest median P/E multiple, i.e. 8.8x
- P/E is a very popular multiple among investors; one of its limitations is that earnings incorporate non-cash items and are thus affected by accounting choices such as depreciation and amortisation policy – comparability among companies is therefore limited.

# Key highlights



In 2021, all sectors except Consumer reached their highest average market capitalisation in the last 15 years.



The largest listed companies are from Oil & Gas, Financial services and Electricity sectors, while the smallest are from Industrial sector.



The lowest median cross-sectorial P/E ratio in 2021 was posted by the Financial sector (8.8x).



The most stable P/E ratio during 2008 – 2021 was noticed for the Consumer and Healthcare sectors.



The highest median cross-sectorial P/E ratio in 2021 but also the most volatile was recorded by the Materials sector (16.8x).

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