Valuation multiples in the context of Bucharest Stock Exchange and local M&A market

pwc

Content

Foreword

Valuation and Economics department of PricewaterhouseCoopers Romania is pleased to present the second edition of the analysis of listed companies on the Regulated Market of Bucharest Stock Exchange and local M&A market.

- **The study presents the valuation multiples trend for 80 listed companies on BVB covering the period between 2007 and 2018, with a focus on the Consumer, Oil & Gas, Financial services, Healthcare, Industrial, Materials and Electricity sectors. We have also performed an analysis of valuation multiples trend in these sectors based on a selection of 117 closed transactions between 2007 and 2018 for which robust financial data were readily available.**

- **We envisage that the readers of the current report will gain insights on:**

  - **Overall equity market performance between 2007 and 2018 (BET, BET- TR performance against Risk Free Rate of Romanian government bonds);**

  - **The performance of valuation multiples on different sectors based on an analysis of the listed companies over the shifting phases of the economy;**

  - **The analysis of valuation multiples derived from local transactions.**

- **Each edition of this study creates more added value, as new data becomes available. Our analysis highlights the on-going-changes in the market and each sector. We are committed to update this study, on an annual basis, in order to give new insights designated to help you extract peak value within your risk profile.**

Valuation and Economics,

PwC Romania, Advisory - Deals

Executive summary

Macroeconomic outlook and Stock market performance

Takeaway

- Romanian's GDP growth during 2018 maintained a fast pace reaching 4.1%, however significantly lower compared to 2017 (7%). The main driver remained private consumption, which grew by 5.7% in Q4 2018 as compared to the same period of the previous year. The private consumption growth was boosted by expansionary fiscal policies and wage increases in public and private sectors.
- Romania had an equity market capitalization weight of 16% from GDP at the end of 2018, smaller than that of Hungary, Czech Republic and Bulgaria.
- The evolution of BET, BET–TR against CDS over 2007 - 2018 has shown that BSE is very sensitive to the country risk perception.
- In 2018, Romanian capital market recorded one of the highest dividend yields in the world, averaging 7%. BET-TR index has increased by over 4.3% in RON terms during 2018 but significantly lower as compared to the 19.1% increase achieved in 2017.
- A median excess return of up to 4.8% of the indices over the Risk free rate was estimated for the period 2012-2018, return that compensates investors for taking on the relatively higher risk of equity investment. However, following the Emergency Ordinance 114, the median excess return dropped significantly from the 6.1% recorded during 2012 – 2017.

Valuation multiples

Listed companies on BSE

- The analysis based on the listed companies on Bucharest Stock Exchange displays the evolution of the multiples across economic cycles and industries.
- The trend analysis performed at an aggregated level, over the last 12 years to 2018, revealed that financial multiples tend to decrease when the economy contracts. This finding confirms that financial multiples are a relatively good proxy for investors' expectations.
- The 2018 analysis performed on the selected 7 industries showed that Electricity sector recorded the highest median market capitalisation. The highest P/E was displayed by the Consumer sector, whereas the lowest P/E was estimated for the Oil & Gas sector.
- Following the market corrections in the last quarter of 2018, the valuation multiples of the companies listed on the Bucharest Stock Exchange have decreased significantly and are now at a five years low for the Financial services, Oil & Gas and Healthcare sectors. The Healthcare sector is at the highest P/E ratio observed in the last five years.
- During 2007 – 2018, the market capitalization for companies operating in Oil & Gas and Industrial sectors were least influenced by the economic cycles, whereas Healthcare, Consumer and Financial services sectors were the most affected. Over the same period of time, the smallest variance in the P/E of companies was displayed by the Healthcare and Oil & Gas. The results of such an analysis could be altered by the reduced level of liquidity of the Bucharest Stock Exchange.

M&A multiples

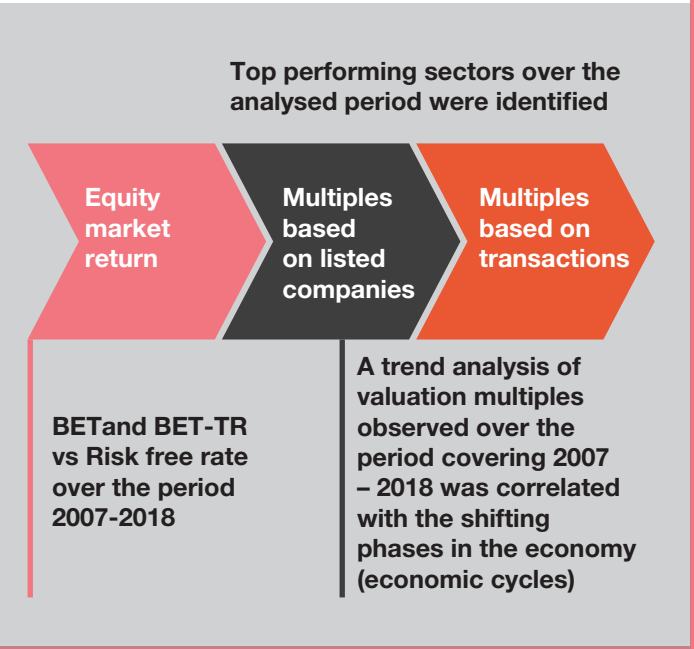
The analysis of the local M&A market was based on a selected sample of 117 transactions completed over the period 2007-2018 and for which disclosed information and robust financials were publicly available.

- The highest EBITDA multiple was recorded in 2008 (11.2x) while 2010 was the year with the lowest multiple (2.6x).
- The average EBITDA multiple recorded in 2018 (10.4x) is significantly above the average EBITDA multiple observed on the Bucharest Stock Exchange (6.6x).

Scope and methodology

The Romanian capital market performance is an indicator of the prosperity and stability of the economic context. The increasing investment appetite for the listed companies on Bucharest Stock Exchange (BSE) enabled the evolution of the most important index of BSE, Bucharest Exchange Trading index (BET) that exceeded the threshold of 9,006 points during 2018, level which has not been reached since 2008.

The purpose of the study is to provide a comprehensive analysis of the equity market, from a valuation perspective, over a 12 year period, covering the following:



Consumer

Industrial

Materials

Financial Services

Oil & gas

Electricity

Healthcare

Aggregated

Listed companies valuation multiples

- Following the initial company screening that resulted in 87 listed companies on the Regulated Market of BSE (84 local companies and 3 international), we have eliminated 4 companies which were suspended from trading, another 2 companies delisted during 2018 and Erste Group Bank AG (no ticker available on Bucharest Stock Exchange in S&P Platform, data available only for transactions on Vienna Stock Exchange – "WBAG:EBS"). As a result, our analysis is based on a sample of 80 companies.
- The selected sample is covering the following sectors according to S&P CapitalIQ industry classification: consumer, industrial, materials, financial services, oil & gas, electricity, healthcare.

Understanding the results

- All financial data used in the present study was sourced from S&P Capital IQ, Mergermarket, 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 timeframe selected for the present analysis included a 12-year period, from January 2007 to December 2018 and encompassed the performance of the selected sectors over the economic business cycles.
- The main conclusions of our study were drawn following the comparative analysis between the results of trading multiples paid for listed companies and those derived from private transactions.

M&A valuation multiples

- We have based our analysis on a selected sample of transactions closed in Romania for which meaningful financial information was available, sourced from S&P CapitalIQ, Mergermarket and/or from PwC internal data. To provide a similar analysis as the one for multiples based on publicly listed companies, the same sectors were considered.
- Following the initial screening that resulted in 636 transactions, we have restricted our sample to only 117 closed deals for which we had consistent and reliable information over 2007-2018. For 2018, we have included set of 68 transactions sourced from PwC's internal database and for which robust financial data was readily available.

Business cycles approach

The general methodology for the multiples analysis was based on business cycle approach, where we have identified the different shifting phases of the Romanian economy and assessed the performance of the selected seven sectors over the intermediate term.

Listed companies valuation multiples

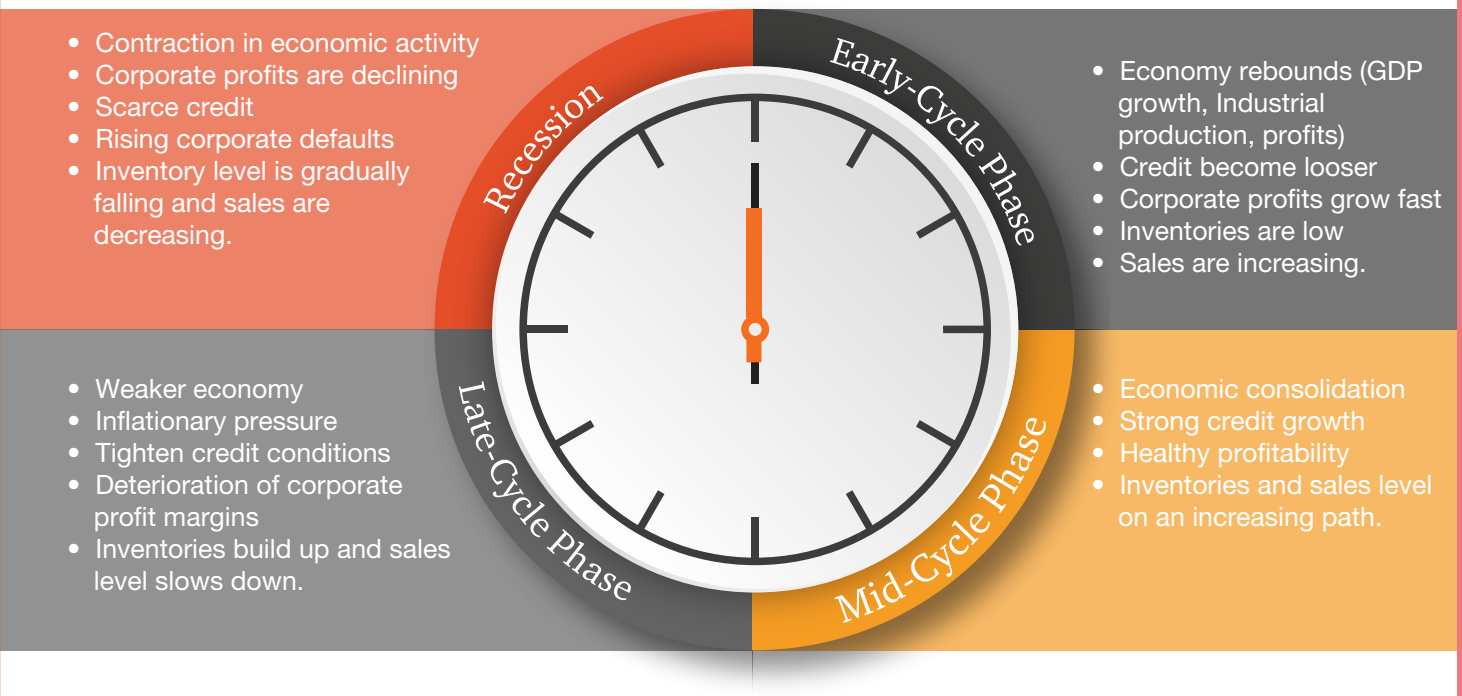
The analysis included the companies listed on the Regulated Market of BSE and the financial data covering the period 2007 – 2018.

M&A transactions valuation multiples

The study covered transactions that took place in the Romanian market between 2007 and 2018, for which financial information was available.

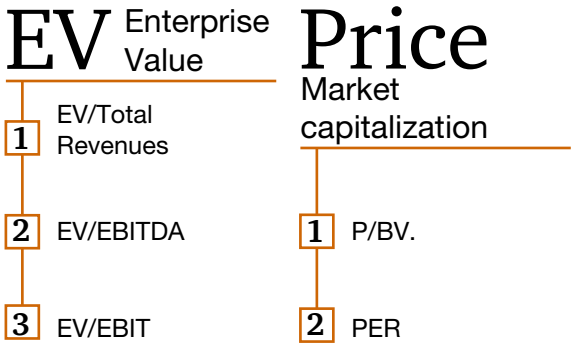
Business cycles approach

- The business cycle approach offers an indication of the outperformance/ underperformance of sectors at a given shift in phase of the economy. It is a useful tool for investors because it provides the context for advantages in sectors with prominent financial returns while adjusting risk exposure to underperforming sectors.



Multiples 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 to the company's market value (enterprise value or equity value, depending on the selected multiple).



- For the multiples analysis of the selected sample of listed companies, we have considered the following metrics:

  (a) Number of observations represents the number of listed companies that constituted the sample on which the multiples calculations is based. If the number of observations was insufficient, multiples estimations are not considered meaningful and are substituted by "n.a";

  (b) Quartiles – 1st, 2nd (median) and 3rd – a quartile is a statistical metric 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 date from the lowest to the highest values and taken the data point at ¼ of the sequence for the 1st quartile, at ½ for the 2nd quartile (median) and at ¾ for the 3rd quartile.

  c) 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 (because it is not influenced by outliers).

  (d) 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 information 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 amongst the median and the mean considers the dispersion test. Outliers, defined for the purpose of the present report as

multiples exceeding 50, were excluded from our analysis.

- A company can be valued by using different methods. In practice, business valuation is often a combination of different approaches. 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, this method multiplies the sales or profits of a business (or other financial indicator) by an industry-averaged multiplier in order to estimate the Market Value of the business.

- Current financial multiples include:

  - Historical multiples based on standardized financials for the last completed fiscal period: Last Twelve Months (LTM);

  - Forward multiples based on consensus estimates for the current fiscal period and next ones: Next Twelve Months (NTM), FY0, FY1.

- Current multiples based on per-share metrics (such as earnings per share or book value per share) are computed using the last closing price, while current multiples based on company-level metrics (such as net sales, EBIT or EBITDA) are computed using the Enterprise Value (EV).

- It must be stressed, however, that any conclusions that might be derived from use of 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 a "twin-security" i.e. a perfect comparable company with the same risk exposure as the valuation target. In essence, this means that companies with risk profiles that are different as compared to the valuation target are used to estimate its value;

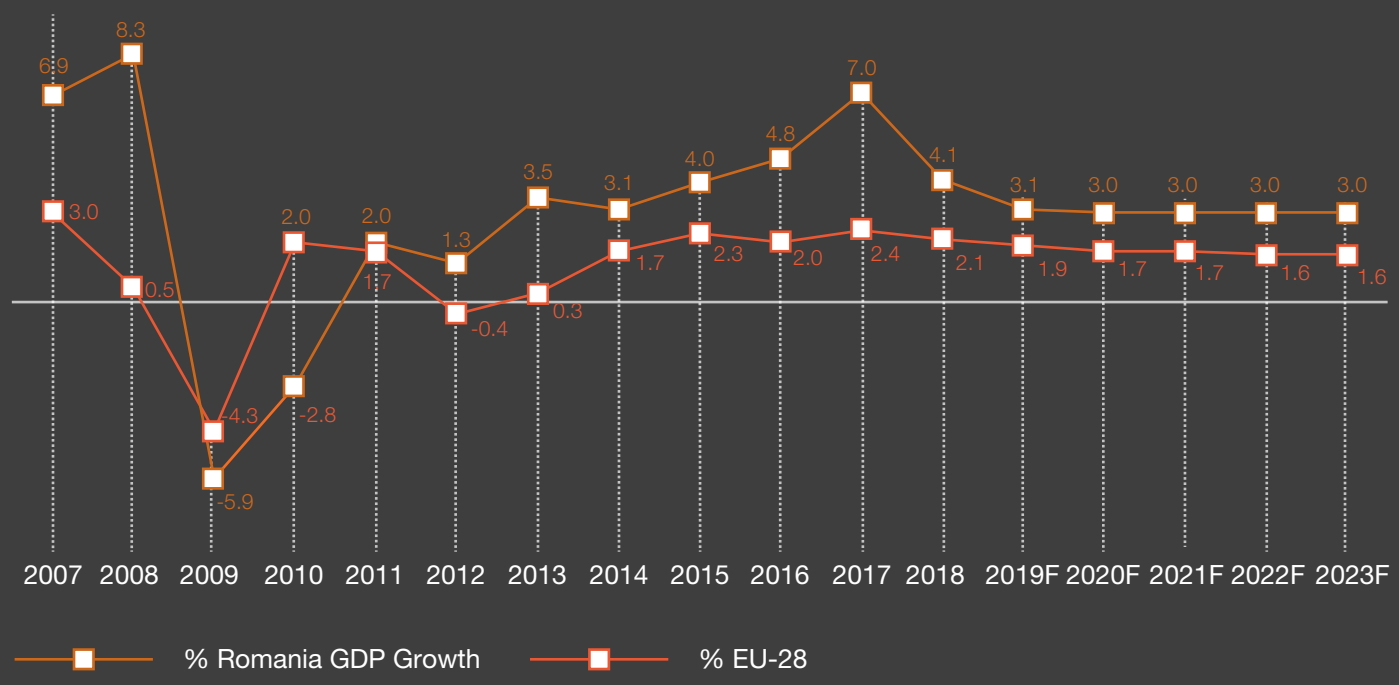
  - Usually, there are a number of strategic reasons for acquiring a particular company in a specific market: these considerations lead to prices that are out of line with typical values of most frequently used multiples such as price to sales ratio, price earnings ratio (P/E) and price/book value of equity ratio (P/BV).

Macroeconomic outlook

Romania is a large European market with an economy sized at EUR 197bn in GDP terms in 2018 and a population of 19.5m. The diversified and competitive industrial landscape, low unit labour costs, significant agricultural potential and low energy dependence can ensure a stable long term path of growth and development.

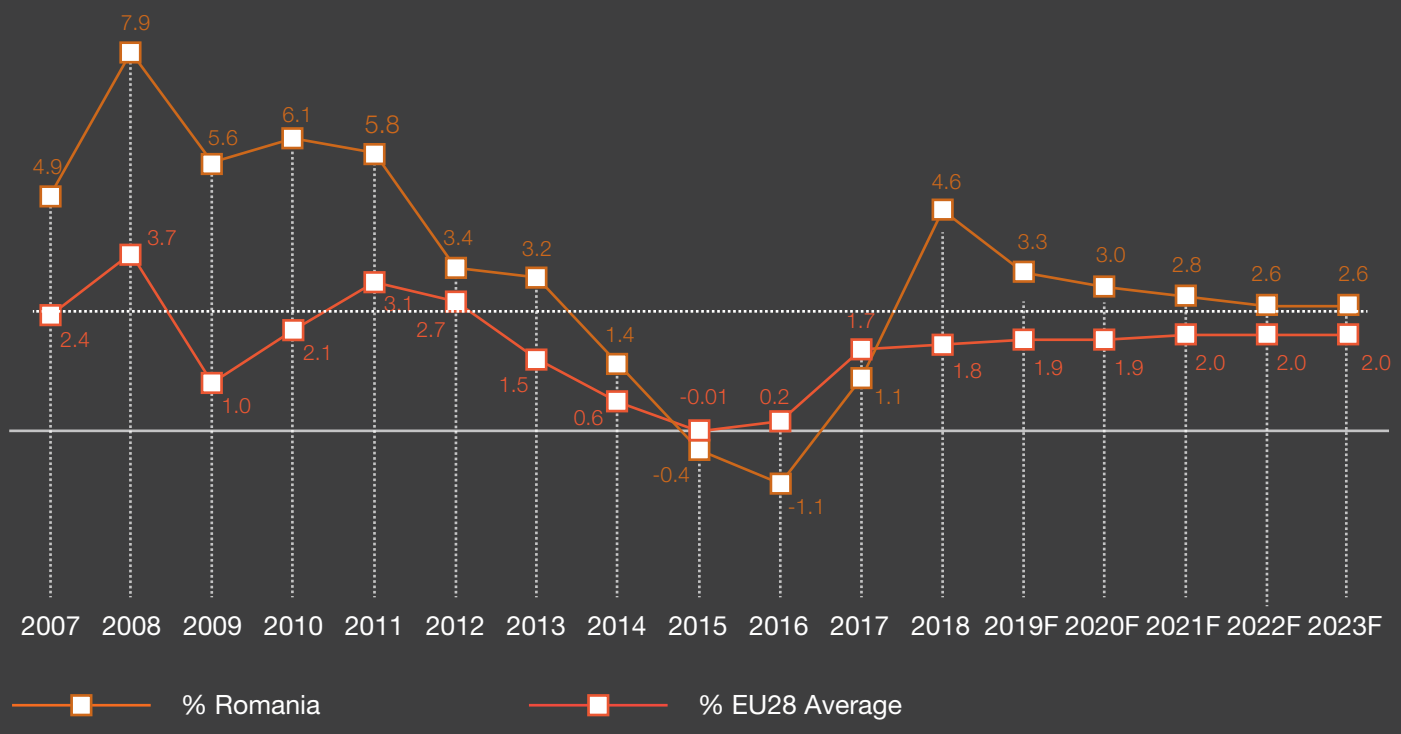
- Romania's GDP growth during 2018 maintained a fast pace with an estimated GDP growth rate of 4.1%, although significantly lower that the growth rate recorded in 2017 (7%) which market the highest GDP rate achieved in the last 9 years. The main driver was private consumption, which grew by 5.7% in the Q42018 as compared to the same period of the previous year. The private consumption growth was boosted by expansionary fiscal policies as well as public and private wage increases.
- According to the IMF, GDP growth is forecast to march on, albeit at a slightly lower pace of 3.1% and 3.0% in 2019 and 2020, respectively, as the tailwinds of fiscal relaxation and the higher wages lose their momentum and inflation will show a decrease from 4.6% level in 2018 to an estimated 3.3% in 2019.
- Romania has consistently achieved higher GDP growth rates than the EU28, which creates the premise for economic convergence. While, in terms of GDP per capita PPP, life standards in 2018 reached 60.7% compared to EU28, this figure is expected to reach 65.6% by 2023.
- On the other hand, investments fell, as percentage of GDP, from 24.8% in 2015 and 22.9% in 2016 to 22.6% of GDP in 2017 on the backdrop of lower absorption of EU funds. Based on INSSE data available as at December 2018, fixed capital formation dropped by 6.2% as compared to previous year, reaching to 21.2% of GDP.
- Private consumption remained in 2018 the main contributor to a slowing pace of growth. This, combined with increased inflationary pressures, ate away real disposable income. In the context of strong real GDP growth in 2017 (7%) and 2018 (4.1%), unemployment dropped to 4.2% in 2018, a historically low figure. Combined with (1) labour force shortages caused by emigration and (2) public and minimum wage increases, labour costs have experienced a 10.6% increase between 2017Q4 and 2018Q4, the highest growth observed in the EU28. At the same time, Romania had unit labour costs well below the EU28 average.

Real GDP growth rate - Romania vs. EU28



Source: Eurostat, World Economic Outlook – April 2019

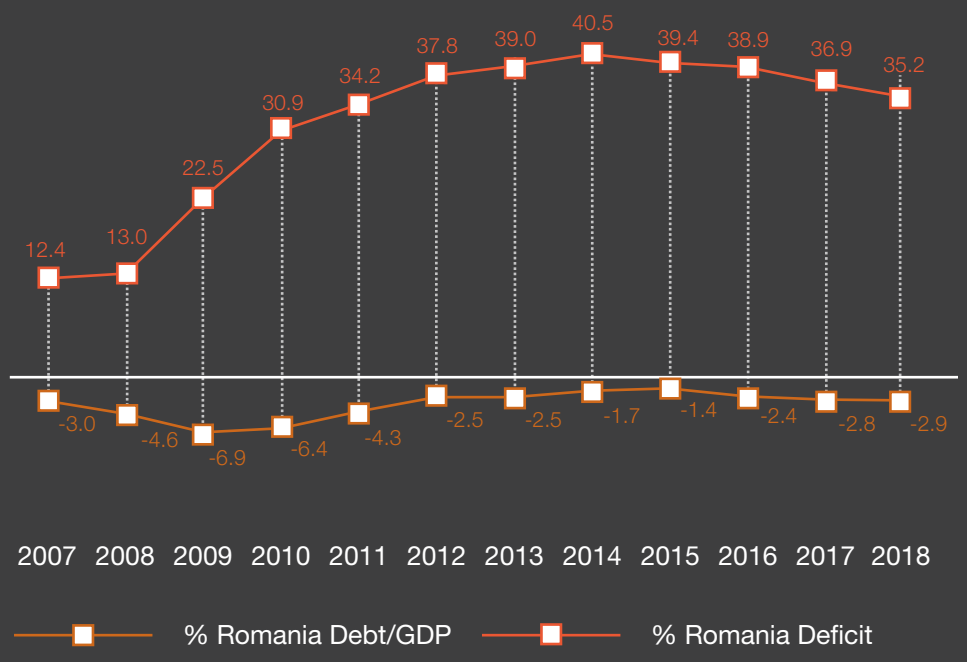
Inflation rate (annual average) - Romania vs. EU28



Source: Eurostat, IMF World Economic Outlook April 2019, NBR

- Exports reached 41.7% of GDP in 2018, increasing by 0.5% as compared to the same period in 2017. Imports, accounting for 44.9% of GDP in 2018, displayed 3% increase when compared to 2017, yet being larger than exports with the trade balance gap reaching 3.4% of GDP in 2018. As a result, net exports had a negative contribution to GDP growth.
- The budget deficit increased from 1.4% in 2015 to 2.8% in 2017 and has reached a level of 2.9% in 2018, still below the Maastricht Treaty limit of 3%. As experienced between 2015 and 2016 when gross capital formation dropped from 5.2% to 3.6% of GDP, the government limit in 2018 the deficit below 3% through capital expenditure cuts, which hurt long-term economic prospects. However, the budget is built on an optimistic GDP growth of 5.5%. Public debt has slightly decreased to around 35% of GDP since rapidly increasing from 13.0% of GDP in 2008 to 40.5% of GDP in 2014. The past increase was driven by high budget deficits observed during 2009-2011 in response to the economic contraction and the recent decrease is triggered on a more accelerated increase in GDP as compared to public debt.

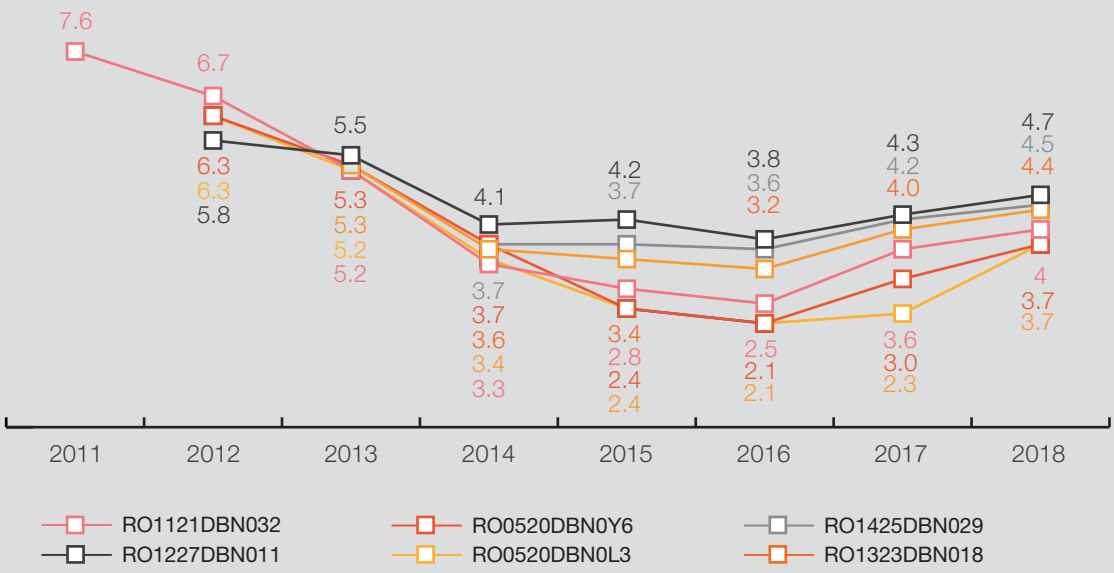
Romania's Debt/GDP and government deficit evolution



Source: World Economic Outlook, April 2019

- Since 2012, however, the public debt has been hovering around the 37%-40% of GDP range, below the Maastricht Treaty public debt limit of 60.0% of GDP and the average public debt of EU28 member states of 83.5%.
- The consumer price index accelerated in 2018 after the effects of successive VAT decreases vanished whereas global oil prices and wages have increased. In 2018, inflation reached 4.6%, the highest level in the EU28. National Bank of Romania (NBR) estimates that, if recent disruptive factors are excluded, inflation will come down within the inflation targeting level of 2.5% +/- 1p.p starting 2019.
- The risk free rate (Rfr) is the expected yield of a risk free asset, defined as an asset whose expected returns are known with certainty by investors. The common proxy used for RfR is the yield to maturity of liquid long-term Romanian Government Bond.
- The domestic government debt (including issuance, redemption, interest payments, etc.) is handled by the Ministry of Public Finance (MPF). NBR, acting as the agent of the Ministry of Public Finance (MPF), is in charge of the management of government securities, in both national and foreign currencies, on the domestic market.
- Based on the information sourced from S&P CapitalIQ platform, there are 29 sovereign bonds denominated in local currency, being issued starting 2005 and with maturities ranging from 1 year to 16 years.
- Based on the latest data published in 2018 by MFP in the report on Public Debt, the most tradable government bond denominated in local currency and with a 10-year to maturity (maturity date July 2027), is the bond with ISIN number RO1227DBN011 issued in July 2011. A summary of the evolution of the yields to maturity of the most traded bonds is presented by the opposite graph.

Risk Free Rate evolution for long term bonds denominated in RON (%)



Source: MFP, S&P CapitalIQ, PwC analysis

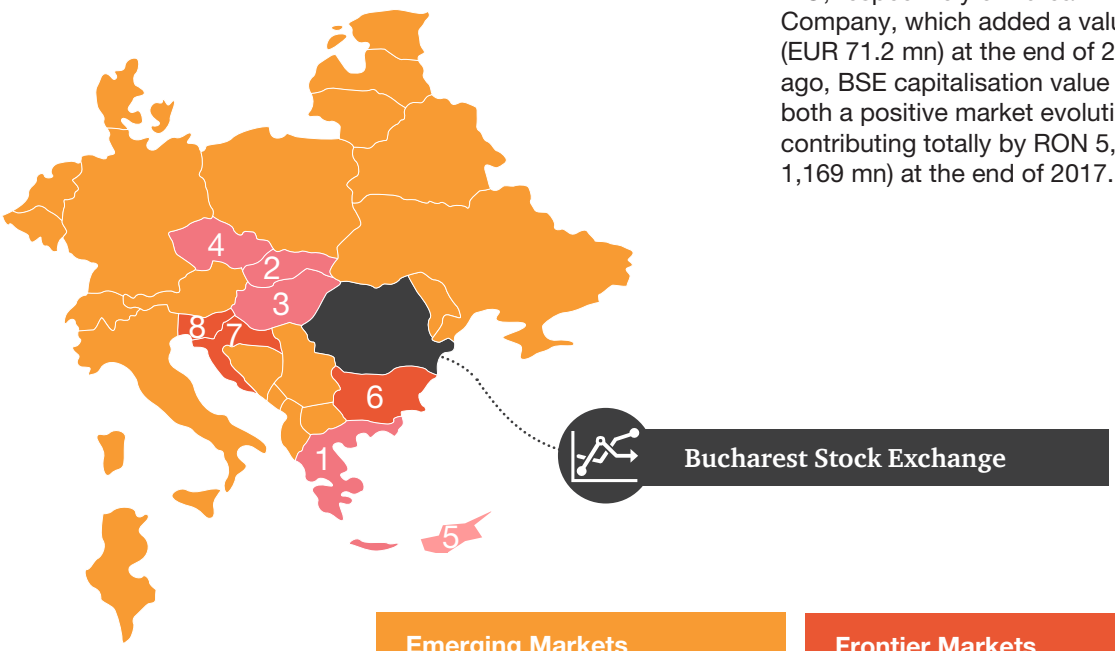
Bucharest Stock Exchange ("BSE") – at a glance

2018 updates

Romania has been added to the Watch List since September 2016 for a possible upgrade from "Frontier Market" to "Emerging Market" status. FTSE acknowledged BSE's strong efforts during 2018 related to new initial public offerings (IPOs) and changed the 'Not Met' criterion to 'Restricted', with liquidity being the single outstanding requirement for BSE to become emerging market.
E.O. 114 adopted in December 2018 introduces significant taxes /capital requirements for companies operating in energy, telecom and banking sectors which are best represented on BSE. In this respect, 10 out of the 15 constituents of BET Index belong to the three sectors mentioned. As a result, E.O. 114 had a devastating impact on the Romanian capital market for the companies (direct impact on their valuation) and risk premium (unpredictable local legislation increases uncertainties amongst investors).

Overview

- According to Morgan Stanley Capital International ("MSCI"), global capital markets are classified into developed, emerging and frontier markets based on criteria such as economic development, size, liquidity and market accessibility.
- For a more comprehensive analysis of BSE's regional position, we have looked at similar capital markets in terms of their volatility and the correlation between economic growth and value indexes. The capital markets included in our analysis were (a) emerging markets such as Greece, Slovakia, Hungary, Czech Republic and Cyprus and (b) frontier markets – Croatia, Slovenia and Bulgaria.
- Romania had an equity market capitalization weight of 16% from GDP at the end of 2018, smaller than that of Hungary, Czech Republic and Bulgaria. The sharp decrease of Romanian indices recorded at the end of last year triggered the decline of local regulated market by 13% compared to 2017. Also, there was only one IPO, respectively of Purcari Wineries Public Company, which added a value of RON 332 mn (EUR 71.2 mn) at the end of 2018. Two years ago, BSE capitalisation value was supported by both a positive market evolution and four IPOs, contributing totally by RON 5,447.4 mn (EUR 1,169 mn) at the end of 2017.



Emerging Markets

1. Athens Stock Exchange
2. Bratislava Stock Exchange
3. Budapest Stock Exchange
4. Prague Stock Exchange
5. Cyprus Stock Exchange

Frontier Markets

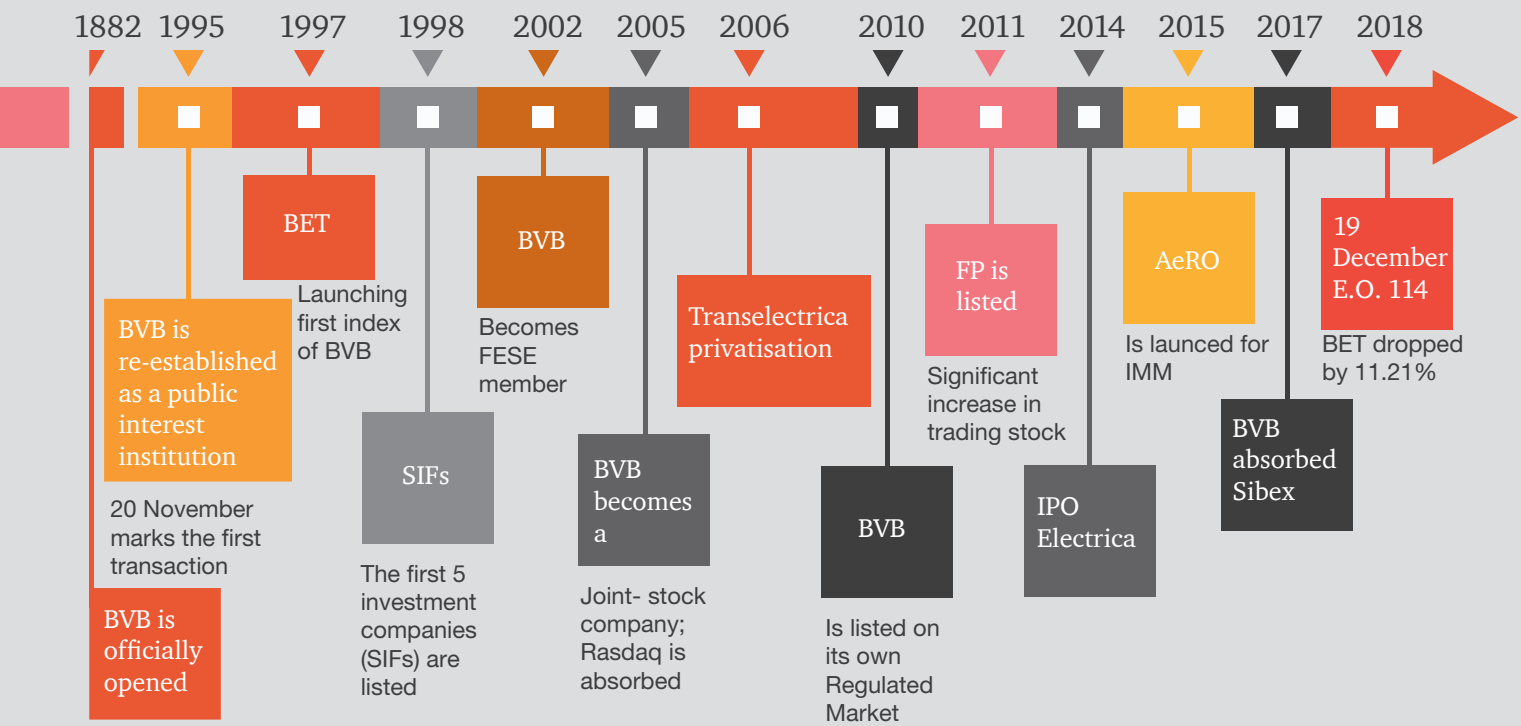
6. Bulgaria Stock Exchange
7. Zagreb Stock Exchange
8. Ljubljiana Stock Exchange

Country	Stock Exchange	GDP per capita (EUR)	Market Capitalization (% GDP)
Croatia	Zagreb Stock Exchange	12,800	35%
Greece	Athens Stock Exchange	17,200	29%
Bulgaria	Bulgarian Stock Exchange	7,800	24%
Czech Republic	Prague Stock Exchange	19,400	20%
Hungary	Budapest Stock Exchange	13,500	19%
Romania	Bucharest Stock Exchange	10,300	16%
Slovenia	Ljubljana Stock Exchange	22,200	14%
Cyprus	Cyprus Stock Exchange	23,800	9%
Slovakia	Bratislava Stock Exchange	16,600	5%

Source: World Economic Outlook, S&P Capital IQ, Official website for each Stock Exchange
Note: The market capitalization for Czech Republic (Prague Stock Exchange) does not include free market

- Bucharest Stock Exchange has a very long history that traces back to 1839 when commodities-trade exchanges were established. Due to some unstable social and political events, BSE was closed and re-established in June 1995 as a public non-profit institution, after almost 50 years of suspension following the establishment of the communist regime in Romania.

BSE Milestones



Source: BVB Official Website

- BSE operates two markets:
- (1) Regulated Market where financial instruments, debt instruments (corporate, municipality and government bonds issued by Romanian entities and international corporate bonds), UCITs (shares and fund units), structured products, tradable UCITS (ETFs) are traded; according to information published by BSE (IR Update), a total of 87 companies were registered on the regulated market at the end of 2018; (2) AeRO Market, designed for start-ups and SMEs, was launched in February 2015; this platform provides alternative trading system for trading foreign stocks listed on other markets; according to information published by BSE (IR Update), a total of 310 companies were operating on AeRO market at the end of 2018.

BSE Indices - overview

- BSE calculates and distributes in real time nine indices including: BET, BET-TR, BET-XT, BET-XT-TR, BET-FI, BET-NG, BET-Plus, BET-BK ROTX.
- BET, the first index developed by BSE in 1997, is a price weighted index by free-float capitalization[1] and reflects the overall trend of the shares issued by top 15 companies ranked by liquidity. Based on Bloomberg information, as of December 2018, BET constituent companies are: Property Fund (21.21%), Banca Transilvania (19.74%), OMV Petrom SA (16.63%), Romgaz SA (10.52%), BRD – Groupe Société Générale SA (10.40%), Transgaz SA (6.09%), Electrica SA (4.39%), Digi Communications N.V. (3.35%), Transelectrica (2.06%), Nuclearelectrica SA (1.61%), MedLife SA (1.16%), Conpet SA (0.88%), Sphera Franchise Group (0.75%), Purcari Wineries (0.65%) and Bucharest Stock Exchange SA (0.55%). Based on the trading report from December 2018, BSE has reported a market decline of 4.8% for BET in RON terms. The key trigger for this downward trend was the public information regarding additional taxation in banking, energy and telecom sectors, as well as changes in the Pillar II pension system which has been released on December 19th, 2018. In that specific day, BET dropped by 11.2%, wiping out the entire growth achieved during 2018.
- BET-TR is the first total return index launched by BSE in September 2014. This index tracks the price changes of its component shares and is adjusted to also reflect the dividends paid by constituent companies. As of December 2018, BET-TR includes the 15 most traded companies listed on BSE (the same constituents included in BET). According to the IR Update report published by BVB in February 2019, BET-TR has gained 4.3% in 2018, remaining positive in spite of the rumours regarding Emergency Ordinance 114 due to high dividends yields.

Liquidity analysis

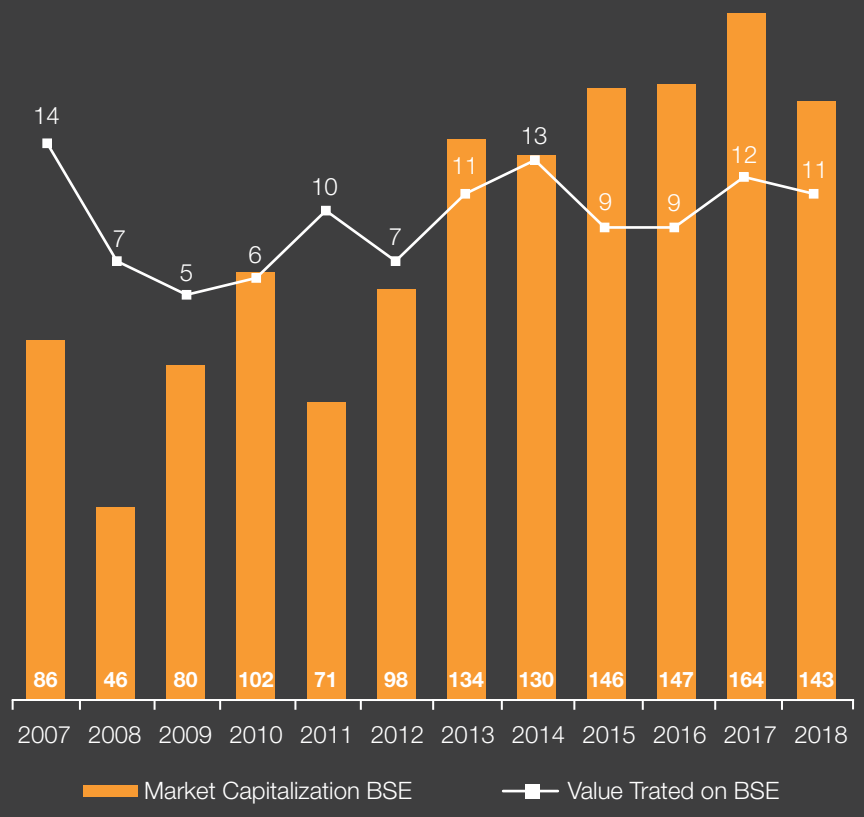
- The graph to the right displays the evolution of market capitalisation and value traded of all companies listed on regulated market over the period 2007 – 2018 based on data sourced from BVB. Based on publicly available data sourced from BSE official website, market capitalization has reached its maximum of RON 164bn. in 2017 on the back of strong efforts for IPOs and increasing investors' appetite. Furthermore, 2017 represented one of the most successful years for BSE, being ranked as 2nd capital market at CEE level by the number of successful IPOs. The weakest period for BSE was recorded in 2008 when, due to economic contraction, the level of market capitalization amounted to RON 46bn. (3.6 times lower when compared to peak level from 2017).
- According to the data from the trading reports published by BSE, the average daily trading value for equities went down by 3.7% in RON equivalent in 2018. Over a historical 12-years period to 2018, the lowest value traded was recorded in 2009 (RON 5bn.), following the financial crisis whilst the peak was achieved in year 2007 (RON 14bn.).
- Based on Bloomberg methodology for value traded, top five most traded shares on BSE's regulated market as at 31 December 2018 are: Banca Transilvania (BVB:TVL), BRD – Groupe Société Générale SA (BVB:BRD), Romgaz (BVB:SNG), OMV Petrom (BVB:SNP) and Fondul Proprietatea (BVB:FP).

Company	Ticker	Total Value Traded (RON)
Banca Transilvania S.A.	TLV	2,533,303,506
BRD - Groupe Societe Generale S.A.	BRD	1,265,385,486
S.N.G.N Romgaz S.A.	SNG	1,058,013,412
OMV Petrom S.A.	SNP	1,001,593,087
Fondul Proprietatea	FP	994,644,996

Source: Bloomberg, PwC Analysis

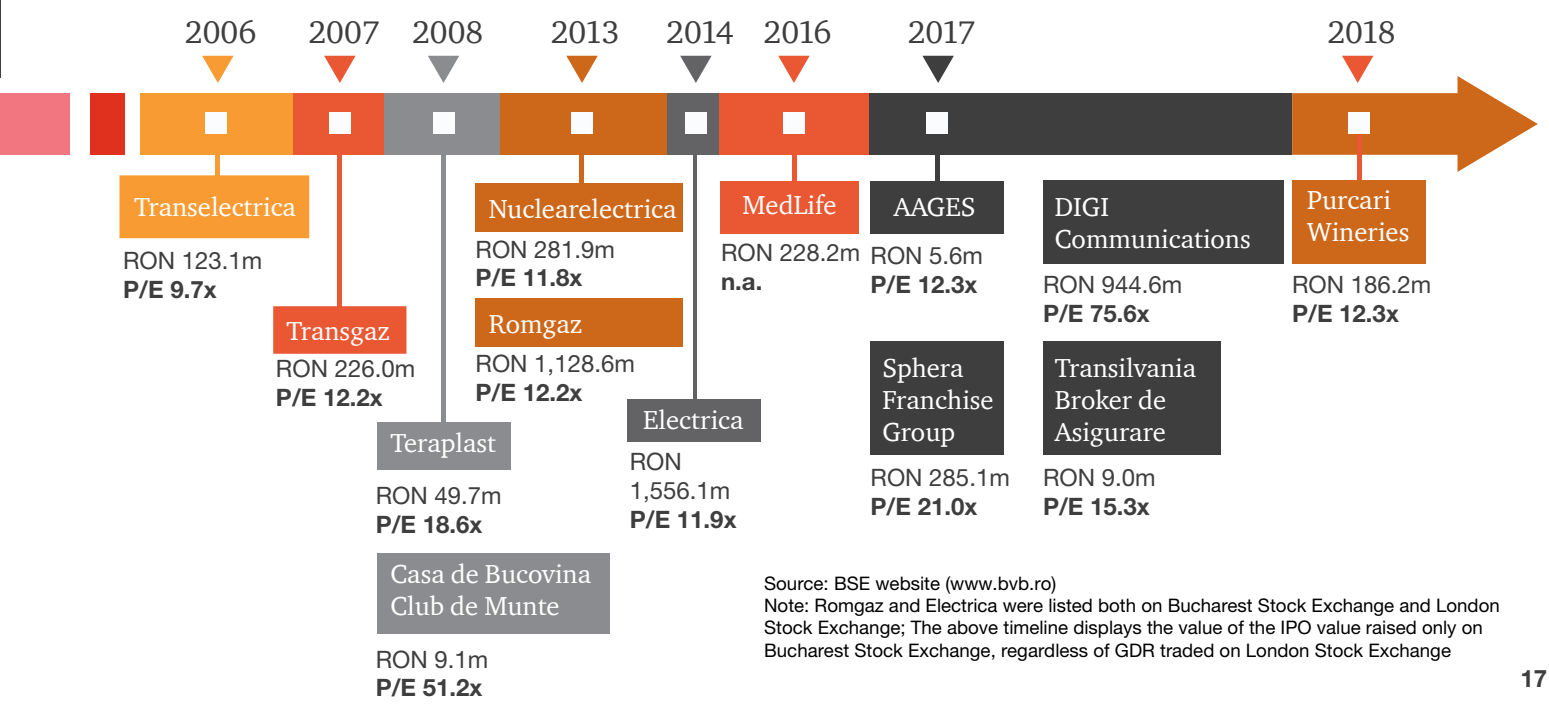
1. In free float market capitalization, the value of the company is calculated by excluding shares held by the promoters

Evolution of market capitalization vs. Total value traded, RON bn.



Overview of Romanian IPOs - a retrospective analysis

- The scarcity of IPOs in Romania might be explained by factors such as low appetite for transactions in the context of international uncertainties especially in the period of 2008-2012, the postponing of public listings for state-owned companies as well as lack of experience and knowledge about financing through primary capital markets. Mass privatization process from 1995-1996 was preferred for accelerating the privatization of state owned companies which helped, at that time, building the foundation of a local IPO culture. In the context of alternative equity providers (i.e. private equity and venture capital equity funds), some companies decided not to go public on BSE thus keeping the number of domestic IPOs at low levels. In recent years, BSE has been committed to holding financial seminars and campaigns for increasing awareness of trading on a capital market, pin point the advantages of being present on the equity market and substantiate on high returns levels on such investments. BSE's main goal, both on mid and long term, is to reach the liquidity criterion and be classified as Emerging market.
- The timeline presents all successfully IPOs of the present listed companies on BSE over the period 2006 – 2018 along with the value obtained and an estimated P/E ratio computed at the IPO price and net income of the group.



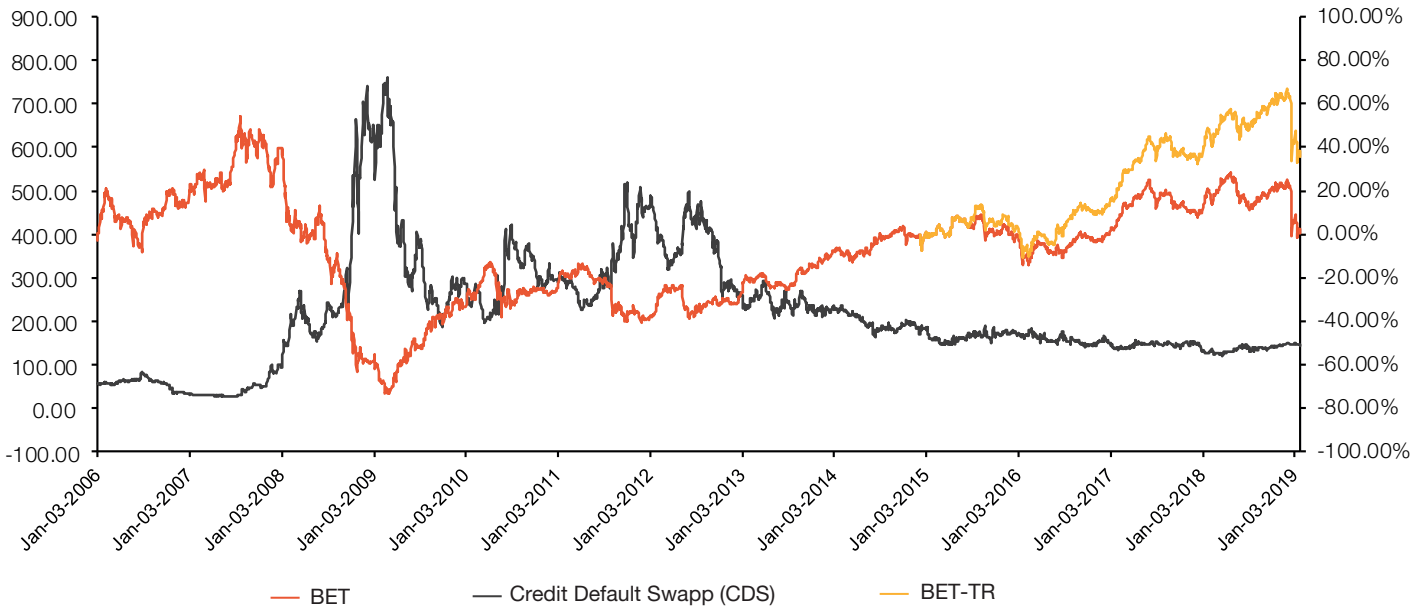
Source: BSE website (www.bvb.ro)
Note: Romgaz and Electrica were listed both on Bucharest Stock Exchange and London Stock Exchange; The above timeline displays the value of the IPO value raised only on Bucharest Stock Exchange, regardless of GDR traded on London Stock Exchange

Romanian Stock market performance

The sovereign CDS spread is expected to compensate investors for bearing the sovereign default risk that is driven by the local economic fundamentals. A country's stock market has long been viewed as the economic barometer.

- Stocks market return was analysed based on the performance of BET and BET-TR as compared to Risk Credit Default Swap (CDS). We have analysed the indices along with the CDS given the backward correlation between the evolution of BET and the cost of non-payment state debt (represented by CDS). The evolution of BET, BET–TR and CDS, as depicted by the graph below, shows that BSE indexes are sensitive to the country risk, which also influences foreign capital investments.
- In June 2007, when BET index come close to 10,000 points, the CDS for Romanian government bond reached a historical minimum levels of 60-70 basis points. Once the financial crisis started to take its toll, the CDS mid-price recorded historical highs reaching levels of over 800 points in February 2009 while the BET index reached multi-annual minimums, collapsing by over 70% to less than 2,000 points.
- Between 2010 and the end of 2011, BSE become accustomed to a level of CDS of 300 points and a normalized level for BET. However, the beginning of 2012 brought some tensions amid the worsening economic conditions of EU28 zone and Romania's CDS jumped to 460 points although the domestic economic situation did not indicate any danger to external financing mechanisms. Given the strong backward correlation with BET index, the market returns decreased at the levels registered in July 2008 and brought a further increase in the cost of financing perceived in the market. The context has improved in the fall of 2012, with CDS moving downwards but steadily to a level of 200 points. In April 2014, the CDS quotes went below 170 points, reaching a level of 150 points with BET level showing the increasing interest of investors in Romanian capital market. During 2015, the quotes slightly increased to 180, before returning to an average of 150 for the second part of the year. By the end of 2015 and beginning of 2016, the trend has seen an increase, with a CDS level reaching 170 in the reference period. Throughout 2016, as CDS remained at an average of 150 point, the BET index displayed increased negative margins, as compared to previous periods. During 2017 and 2018 there have seen a slight decrease in the CDS quota, averaging 140 throughout the period, although Romania is still seen as riskier than the rest of the countries from the region. By the end of 2018, BET index had a massive fall after the announcement of EO 114 which has been translated into the second biggest fall of the stock exchange since 2009, when Romania entered the recession.
- In order to ensure that its indices are better representing the stock market and are more relevant, BSE launched in September 2014 the BET-Total Return index (BET-TR). This index provides investors with more information

Stock performance BET, BET-TR vs. CDS



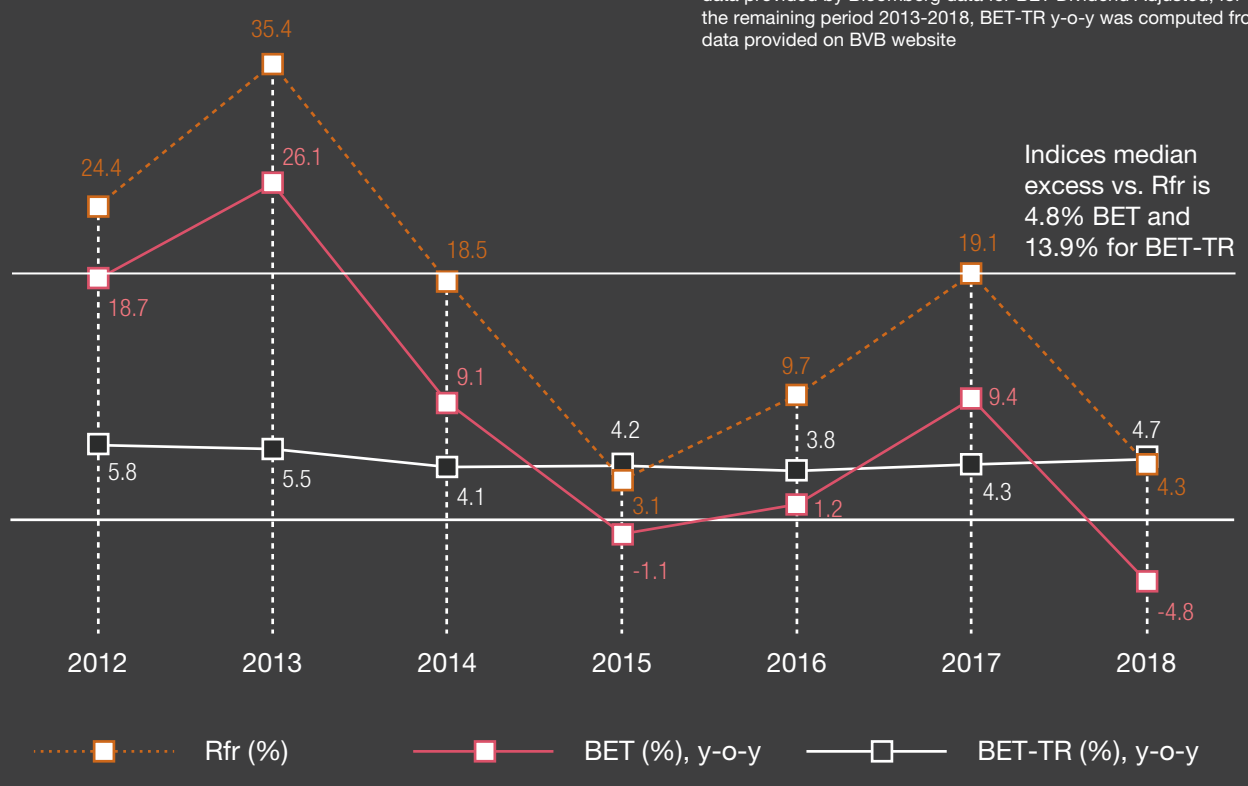
Source: S&P CapitalIQ

about the capital market, accounting not only for the capital gains, but the total return of its constituents. According to the latest IR Update published by BVB, the average dividend yield for BET constituents was approx. 8% in 2016 (highest yield in the world), 7.9% in 2017 and 7% in 2018.

- In the light of the above context, we have performed an in-depth analysis of the returns on capital invested in bonds market, focusing on the evolution of Risk free rate (Rfr) of long-term Romanian Governmental Bonds denominated in local currency. The graph presents the evolution of Rfr of the most traded Romanian bond RO1227DBN011, which slightly declined over 2012-2015 (negative CAGR of 10.2%) due investors' reduced interest in long-maturity government securities corroborated with their demand for rising interest rates.
- We have also analysed the performance of two most representative indices –namely BET and BET-TR against Rfr. The performance of the indices over the period 2012 - 2014 indicates a strong degree of confidence in the local equity market translated into potential recovery to levels prior to the crisis. After the reduced levels registered by the indices between 2015 – 2016, significant improvement was noticed during year 2017 mainly due to the successful IPOs concluded in 2017 and expanding BET composition with Digi Communications.
- However, in BSE's report from December 2018, BET index reported a market decline of 4.8%. The trigger for this downward trend was the public information regarding additional taxation in banking, energy and telecom sectors, as well as changes in the Pillar II pension system which was released on 19 December 2018 given the rumors on Emergency Ordinance 114. On 19 December 2018, BET dropped by 11.2%, wiping out in just one day the entire growth achieved during 2018. BET-TR (index adjusted for dividends) managed to stay positive in 2018, up to 4.3% even in the context of 19 December 2019 that affected significantly BET evolution.
- Based on the above analysis, we can assert that the median excess return of 4.8% for BET and 13.9% for BET–TR over Risk free rate between 2012 and 2018 represents a proxy for the excess return when investing in the stock market against government bond market. This excess return compensates 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 and changes over time as market risk fluctuates. As a rule, high-risk investments are compensated with a higher premium.
- The CDS dynamics for Romania have been closely linked to those of the region over the past 10 years. Risk premiums have increased considerably in the onset of the two waves of crises both in frontier and emerging markets. Over the last two years, there is a neutral trend of CDS in many of the countries under analysis, including in Romania, being at the minimum areas after the financial crisis in 2007. However, as of 2018, out of the countries analysed, Romania has the second highest risk, after Greece.

BET, BET-TR vs. Rfr

Source: www.bvb.ro
Note: Only for 2012, BET-TR y-o-y was computed starting from data provided by Bloomberg data for BET Dividend Adjusted; for the remaining period 2013-2018, BET-TR y-o-y was computed from data provided on BVB website



Listed companies valuation multiples

Total market capitalization of the 80 analyzed listed companies (for which financial information were readily available) dropped by 8.3% in 2018 as compared to previous year's analysis when it achieved one of the most significant growth rates (20.4%) since the financial crisis. Furthermore, BET-TR index (adj. for dividends) closed 2018 with a 4.3% increase compared to 2017.

As of 31 December 2018, top 3 leading sectors with a significant weight in total market capitalization were:

1. Oil & Gas (41.5%)
2. Financial services (34.9%)
3. Electricity (8.9%).

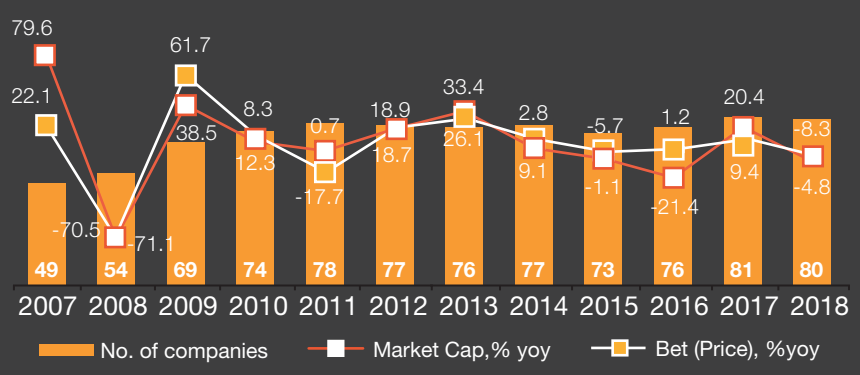
Market cap. and value traded (%) by sectors, 2018

Sector	No. of Companies	Market Cap. (RON m.)	% Total Values Traded
Oil & Gas	9	34,350	29.1%
Financial Services	12	28,874	55.8%
Electricity	5	7,353	9.1%
Consumer	17	4,375	3.4%
Materials	12	3,229	1.3%
Healthcare	4	2,783	0.8%
Industrial	21	1,778	0.6%
Total	**80**	**82,742**	**100%**

Key events

- There is a high concentration of listed issuers on BSE, with the top 5 listed companies accounting for 63% of the total market capitalization of the BSE regulated market at the end of 2018. At the top level, companies are active in the Oil &Gas, Financial and Electricity sectors. Therefore, the degree of representation of the economic sectors at the local exchange is low, in the absence of several industry leaders.
- BET is a relevant proxy of the entire stock exchange, this being confirmed by the fact that total market capitalization and BET index performance displays a strong correlation coefficient of 0.8.
- Based on 2018 available data, analyzed companies reached a market cap. amounting to RON 82.7bn., significantly below the highest level reached in 2007.
- Number of stock-listed companies has fluctuated over the analyzed period because of suspending procedures and/ or delisting of some companies included in the study, thus reaching a total of 80 listed equities being selected in the present study as at 2018.
- In 2018, an important IPO was completed on the Romanian market, with Purcari Wineries being listed on BSE, company which has been also also included in BET index composition.
- Over the analyzed period, the highest yearly return on BET was achieved in 2009 (61.9%), a bounce back from the 2008 drop of 70.5%.

Evolution of number of companies, market cap and BET performance over 2007-2018



Electricity

Top 5 by market cap.: Societatea Energetica Electrica S.A., S.N. Nuclearelectrica S.A., CNTEE Transelectrica S.A., Natura Quattuor Energia Holdings S.A. S.C. Amonil S.A.

Net profit margin: 3.5% to 11.0% (quartiles), with a median of 4.1%

P/E multiple ranges between 10.3x and 17.2x, with a median of 14.3x

Financial Services

Top 5 by market cap.: Banca Transailvania S.A., BRD - Groupe Société Générale S.A., Fondul Proprietatea S.A., SIF Moldova, SIF Oltenia

Net profit margin: 27.0% to 72.9% (quartiles), with a median of 47.1%

P/E multiple ranges between 7.0x and 12.6x, with a median of 7.7x

Oil & gas

Top 5 by market cap.: OMV Petrom S.A., S.N.G.N.Romgaz, S.N.T.G.N. Transgaz, Rompetrol Rafinare S.A., S.C. Conpet S.A.

Net profit margin: 8.1% to 26% (quartiles), with a median of 18.1%

P/E multiple ranges between 5.6x and 10.4x, with a median of 7.5x

Healthcare

Top 4 by market cap.: S.C. Zentiva S.A., Med Life S.A., Antibiotice S.A., Biofarm S.A.

Net profit margin: 7.4% to 31.3% (quartiles), with a median of 15.6%

P/E multiple ranges between 7.5x and 18.6x, with a median of 8.8x

Consumer

Top 5 by market cap.: Digi Communications, Sphera Franchise Group, Purcari Wineries, Compa S.A., Ropharma S.A.

Net profit margin: 1.7% to 7.8% (quartiles), with a median of 4.5%

P/E multiple ranges between 7.2x and 18.7x, with a median of 14.5x

Materials

Top 5 by market cap.: Alro S.A., TMK-Artrom S.A., Teraplast S.A., Vrancart S.A., SC Cemacon S.A.

Net profit margin: 2.7% to 8.1% (quartiles), with a median of 4.9%

P/E multiple ranges between 4.8x and 13.4x, with a median of 9.0x

Industrial

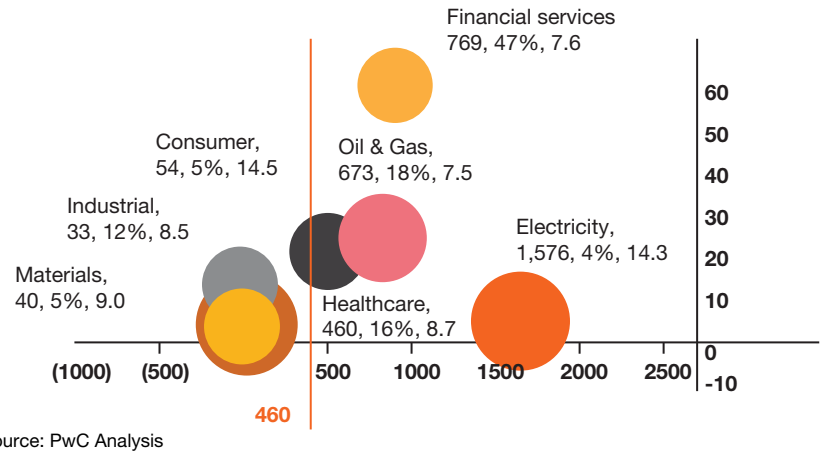
Top 5 by market cap.: S.C. Aerostar S.A., Impact Developer & Contractor SA., IAR S.A. SOCEP S.A., Electromagnetica S.A.

Net profit margin: 5.8% to 20.3% (quartiles), with a median of 11.8%

P/E multiple ranges between 5.3x and 13.0x, with a median of 8.5x

BSE's market cap. ranges between RON 47m and 721m (quartiles), with a median value of RON 460m.

Net profit margin on equity market ranges between 5% and 17% (quartiles), with a median value of 12%.

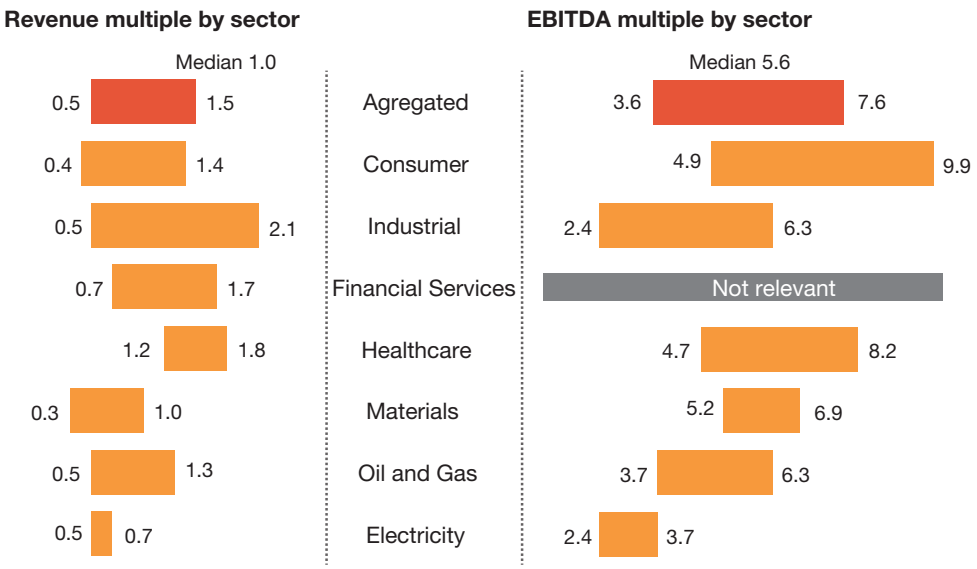


Source: PwC Analysis

Note: label information: Sector, Market Capitalization median RON m., Net profit margin, P/ E median

In 2018, Electricity sector recorded the highest market capitalization (median RON 1,576m). The highest P/E multiple was reported in the Consumer sector (14.5x) and the lowest in the Oil & Gas sector (7.5x)

Revenue and EBITDA multiple analysis in 2018



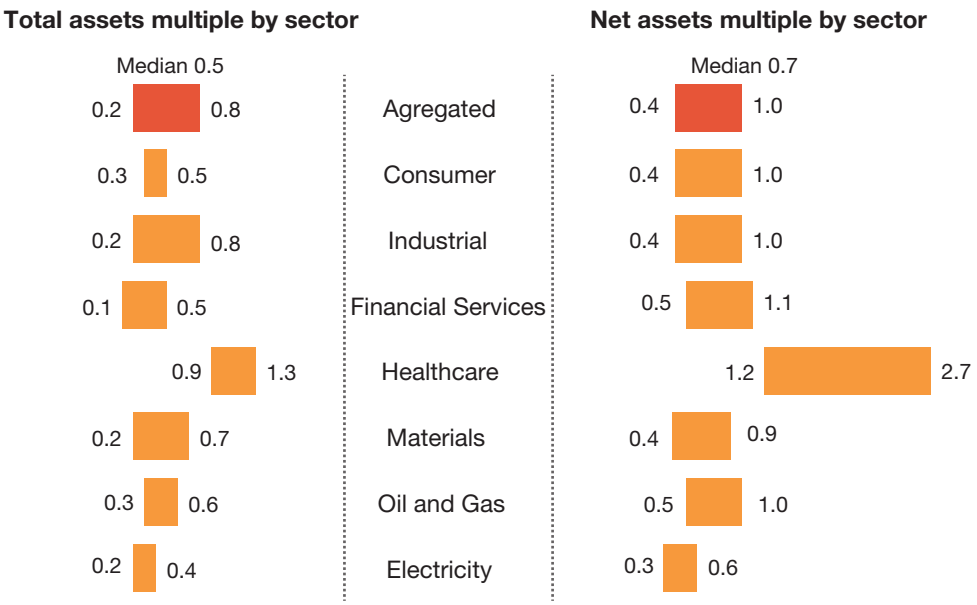
Revenue multiple

- The aggregated median for Revenue multiple is 1.0x
- Top performing sector is Healthcare, with a median multiple of 1.5x
- The lowest revenue multiple is recorded by Electricity sector, with a median of 0.5x
- 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 troubled or young and small companies, with a low or negative EBITDA figure
- However, it should be used with caution in cases where some product/services intermediaries could count revenue as either the commission charged or the products/services they intermediate

EBITDA multiple

- The aggregated median for EBITDA multiple is 5.6x
- Top performing sector is Consumer, with a median multiple of 7.4x
- The lowest EBITDA multiple is recorded by the Electricity sector, with a median of 3.1x
- This multiple is not meaningful for financial sector because it is difficult to isolate the financing requirements of a financial institution from its operational activities
- It can be selected to directly compare companies operating the same industry regardless of their debt level and it is not impacted by accounting choices with regards to amortization and depreciation
- Good proxy for cash, the drawback is that it cannot be used for company comparison across industries, given varying capital expenditure requirements

Total assets and Net assets multiple analysis in 2018



Total assets multiple

- The aggregated median for Total assets multiple is 0.5x
- Top performing sector is Healthcare industry, with a median multiple of 1.1x
- The lowest Total assets multiple is recorded in Electricity sector, with a median of 0.3x
- Relevant especially for capital intensive sectors
- Should be applied with caution in case of companies with high intangible assets, as presumably, they do not fully capture future growth opportunities.

Net assets multiple

- The aggregated median for Net assets multiple is 0.7x
- Top performing sector is Healthcare, with a median Net assets multiple of 1.9x
- The lowest Net assets multiple is recorded by the Electricity sector, with a median of 0.5x
- Relevant especially for financial services sector and real estate sector
- It can be utilized to compare companies operating within the same industry
- It should be used with caution in case of companies with significant level of intangible assets.

Key findings

- Oil & Gas and Healthcare sectors, generally perceived as sectors with more stable financial performance, display lower volatility (deviation from average) in their P/E ratio, whereas electricity sector display highest volatility in its P/E.
- Along with Financial Services and Oil & Gas, Healthcare P/E ratio is also at its minimum for the last 5 years. The stock prices of these companies have increased at a slower pace than their corporate profits and were significantly impacted by the EO 114.
- Financial multiples recorded highest levels in 2007, reflecting the general optimism in the market; for the purpose of the volatility analysis 2007 was not included.

P/E ratio - 2018

- The aggregate median in 2018 for P/E ratio is 9.0x.
- Consumer sector has the highest median P/E multiple of 14.5x.
- Oil & Gas sector has the lowest median P/E multiple of 7.5x.
- P/E results for banking and energy sectors are at the minimum of the last 5 years and were impacted by EO 114.
- Consumer sector in 2018 has P/E ratio at its maximum level of the last 5 years.
- Very popular metric amongst investors.
- One limitation of the P/E ratio is that earnings are subject to non-cash figures such as depreciation and amortization, which can vary depending on accounting choices.

Industry	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Volatility P/E ratio	Last 5 yr max	Last 5 yr min
Consumer	22.1	14.4	6.2	12.8	10.7	6.5	15.7	8.1	10.6	13.0	12.9	14.5	29%	14.5	8.1
Financial services	16.7	3.6	7.1	12.5	5.4	7.1	11.5	10.5	9.6	12.5	9.3	7.6	33%	12.5	7.6
Oil & Gas	15.8	6.0	10.3	8.6	8.7	6.9	10.3	9.3	8.8	9.5	11.7	7.5	18%	11.7	7.5
Healthcare	25.4	10.2	14.7	15.6	11.0	10.1	11.9	12.1	13.1	11.1	10.8	8.7	17%	13.1	8.7
Industrial	31.3	7.2	8.5	9.3	13.6	8.1	12.6	7.8	9.3	9.8	11.8	8.5	22%	11.8	7.8
Materials	27.5	6.4	11.8	14.0	6.8	10.2	13.1	7.3	5.7	10.7	9.8	9.0	29%	10.7	5.7
Electricity	46.6	9.1	2.7	25.0	9.3	19.4	5.6	13.0	11.4	12.5	15.9	14.3	49%	15.9	11.4
All sectors	**27.5**	**7.0**	**8.5**	**11.9**	**9.4**	**8.0**	**11.8**	**9.5**	**9.5**	**10.9**	**11.2**	**9.0**	**16%**	**11.2**	**9.0**
GDP growth	**6.9%**	**8.3%**	**-5.9%**	**-2.8%**	**2.0%**	**1.3%**	**3.6%**	**3.4%**	**3.9%**	**4.7%**	**7.0%**	**4.1%**	**152.0%**	**7.0%**	**3.4%**
Industrial production growth	**10.1%**	**1.9%**	**-5.0%**	**4.9%**	**7.9%**	**2.6%**	**7.4%**	**6.3%**	**3.0%**	**3.1%**	**7.9%**	**3.5%**	**94.1%**	**7.9%**	**3.0%**

Source: PwC Analysis

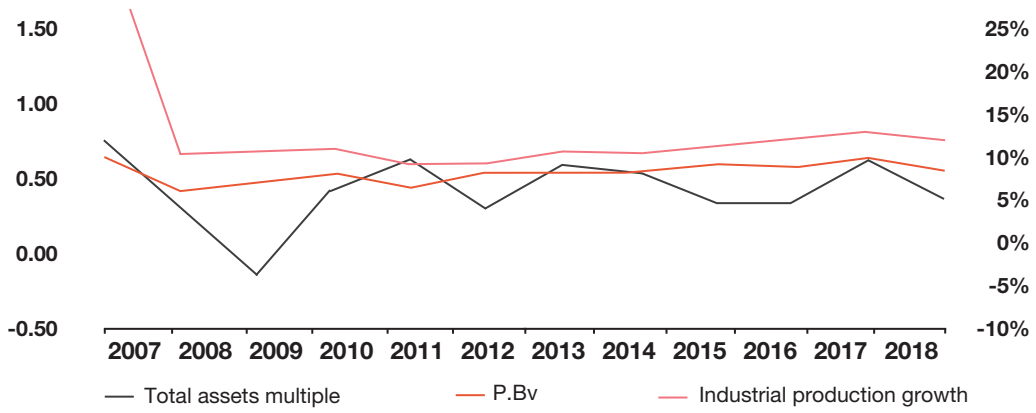
Our main finding from the trend analysis reveals that, in the past 12 years, financial multiples were a good proxy for investors' expectations, which tend to be optimistic during expansion (higher financial multiples) and pessimistic during recession (lower financial multiples).

- The correlation analysis is performed to examine the relationship amongst the industrial production growth and GDP growth rates and the selected variables during the period – EBITDA, Total assets, Net assets (Book value) and P/E multiples. A coefficient of 1 indicates a perfect positive correlation between variables, while nil value indicates no correlation between variables.
- The graph bellow illustrates the results of the correlation analysis. A positive, medium-intensity relationship can be observed between industrial output and EBITDA, Total assets, P/BV and P/E multiples. This result translates into the idea that financial multiples are influenced by economic cycle and they are positively associated with industrial production growth and Gross Domestic Product (GDP) growth (relative value of the companies tends to increase when the economy is doing well). Financial multiples are influenced more by the industrial production growth as opposed with GDP growth. For the correlation with GDP growth, the results of the analysis show a positive weak-intensity relationship with the Total assets, P/Book Value, EBITDA and P/E multiples.

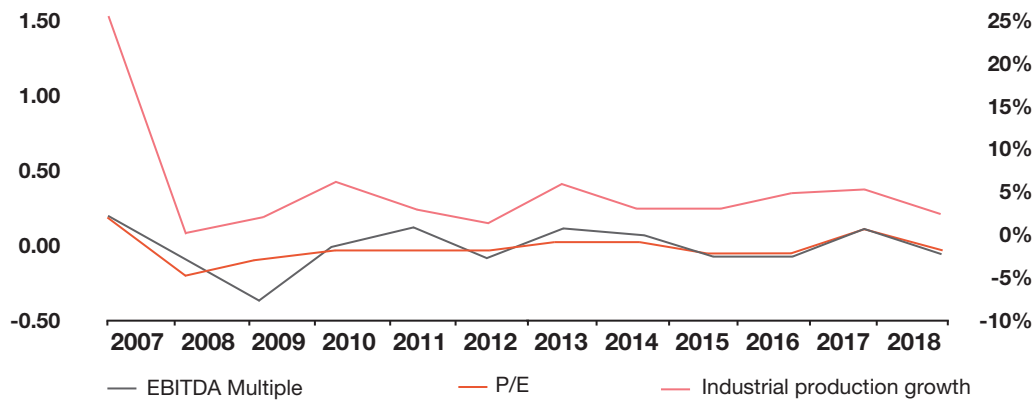
Correlation coefficient	Industrial production growth	GDP growth
EBITDA multiple	0.68	0.23
Total Assets multiple	0.47	0.34
P/Book Value multiple	0.44	0.33
P/E multiple	0.56	0.26

Source: PwC Analysis

Evolution of financial multiples (Total assets and P/Bv) and industrial production growth

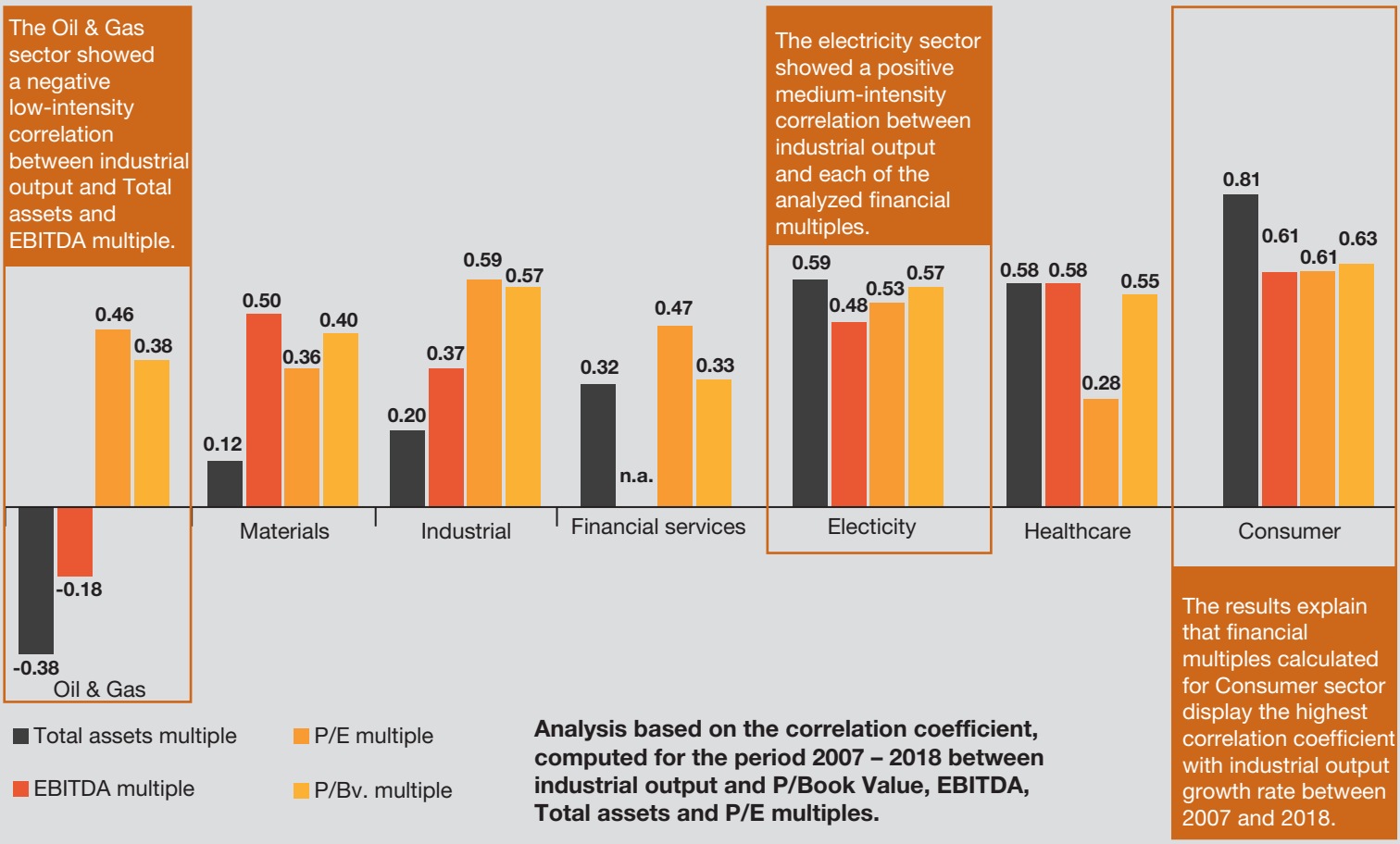


Evolution of financial multiples (EBITDA and P/E) and industrial production growth



At a sectorial level, the main finding of the trend analysis reveals that, in the past 12 years, financial multiples of different sectors are differently influenced by the economic cycle, still the intensity of the relationship is generally medium, with the exception of total assets multiple for the Consumer sector where a strong positive relationship was found.

Sectorial trend analysis over 2007-2018

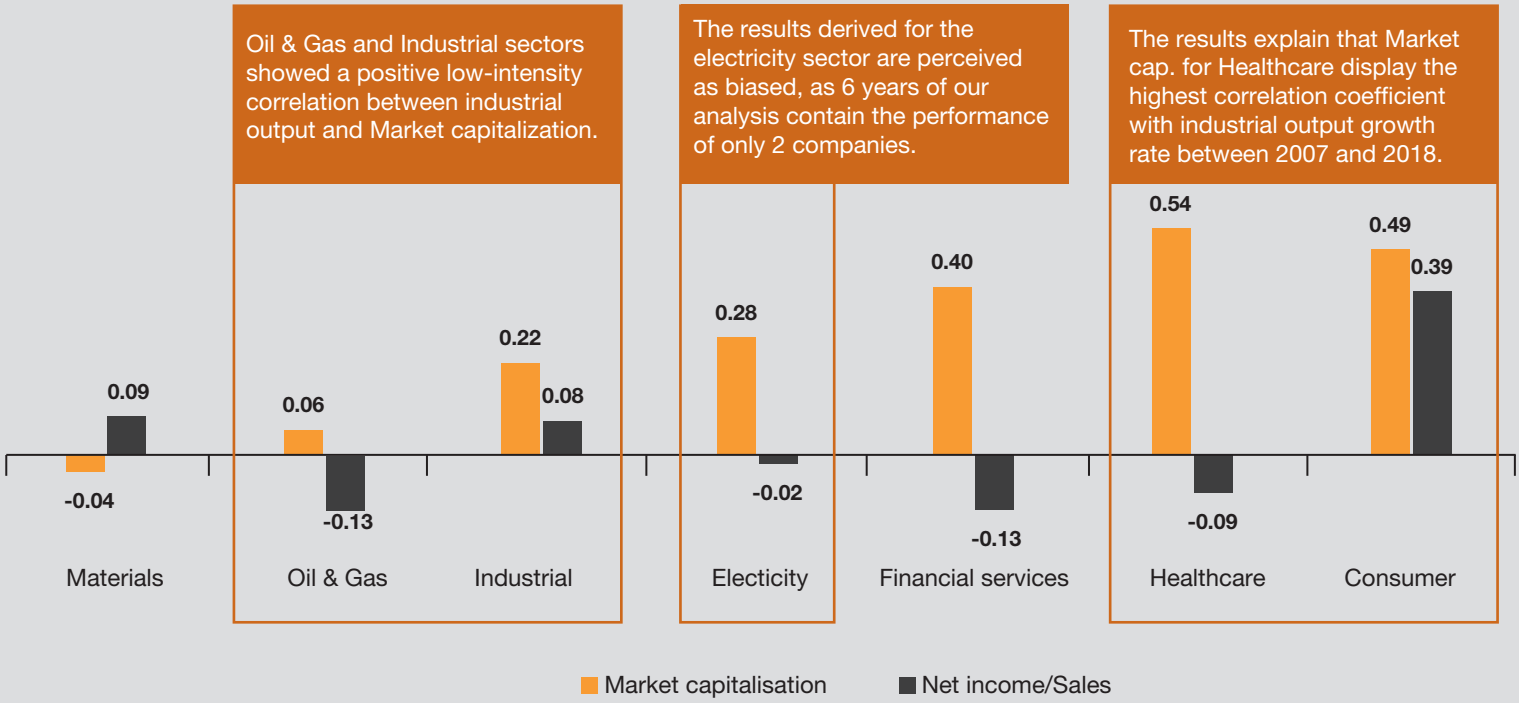


Analysis based on the correlation coefficient, computed for the period 2007 – 2018 between industrial output and P/Book Value, EBITDA, Total assets and P/E multiples.

The results explain that financial multiples calculated for Consumer sector display the highest correlation coefficient with industrial output growth rate between 2007 and 2018.

The market capitalization for companies operating in the Oil & Gas and Industrial sectors was least impacted by the economic cycles, whereas companies operating in the Healthcare and Consumer sectors were the most affected by adverse economic changes.

Sectorial trend analysis over 2007-2018 (correlation coefficient between industrial output, net profit margin and market capitalisation)



Analysis of P/E ratios across the 7 industries from the perspective of cyclical and defensive sectors: for the last twelve years, the Romanian sectors whose market capitalization was less influenced by the economic cycles were Oil & Gas and Industrial.

Cyclical stock

Performance has a stronger correlation to economic activity

- In recession, profits are falling and share price drops
- In expansion, the profits and share prices go up

Cyclical sectors & P/E ratios: Consumer (14.5x), Healthcare (8.7x), Financial services (7.6x)

- A cyclical equity is a stock that has a higher correlation with the economic activity. When the economy declines / expands, revenues and profits of a cyclical company tend to drop/increase and so its share price;
- Companies are more reluctant to invest in the middle of an economic turmoil and facing a declining activity.

Defensive Stock

Performance has a weaker correlation to economic activity

- Disregarding the economic cycle, revenues, profits, share prices and cash flows remain relatively stable

Defensive sectors & P/E ratios: Oil & gas (7.5x) and Industrial (8.5x)

- A defensive equity is a stock that has stable revenues and profits. It has a lower correlation with economic cycles and thus is less impacted by economic booms or busts.
- Defensive stocks tend to outperform cyclical stocks in hard times, but are not so popular during economic growth stages. Typically, defensive equities have lower beta compared to their cyclical counterparties.

As per the trend analysis performed for Romania, both the Materials (P/E of 9.0x) and Electricity (P/E of 14.3x) sector are borderline

Key highlights

In 2018, Electricity sector recorded the highest median market capitalisation

In 2018, Oil & Gas sector revealed the lowest P/E multiples

Highest P/E multiple in 2018 was recorded by Consumer sector

During 2007 – 2018, the lowest variance of P/E was noticed for companies operating in Oil & Gas and Healthcare sectors

Financial multiples tend to decrease when economy contracts

During 2007 – 2018, value of the companies operating in the Oil & Gas and Industrial were least impacted by economic cycles

During 2007 – 2018, value of the companies operating in the Financial services, Healthcare and Consumer sectors were mostly influenced by economic cycles

M&A valuation multiples

- Based on data sourced from Mergermarket, ISI Emerging Markets, S&P CapitalIQ and PwC internal database, a number of 636 transactions with disclosed information were analyzed between 2007 - 2018, with targets operating in the following sectors: industrial, consumer, healthcare, Information Technology & Communications ("IT&C"), materials, financial services etc. Furthermore, the screening was adjusted to only those transactions with (1) disclosed deal value and (2) robust financial information available, thus the present study is based on a set of 117 selected transactions including 27 deals (for which robust and relevant financial data were sourced from S&P Capital IQ), 22 deals closed in 2017 for which information was sourced from ISI Emerging Markets or by individual research, at each entity level and 68 deals closed during 2018 and sourced from PwC internal database.
- Outliers were excluded from the initial screening in order to avoid distortions in the sample extract. Based on the analysis over 2007 - 2016, the number of completed transactions with robust financial information reached a peak in 2014, with 9 deals being closed, while in the following years there was a decrease in the volume of deals. The number of closed transaction in 2014 surpassed the pre-crisis level, while in the period 2015-2016 the number of transactions fell back to the levels observed during 2009 – 2011. The M&A market showed signs of recovery over 2017 and 2018, as the number of closed transactions selected in our analysis reached 90 deals (22 deals in 2017 and 68 in 2018).

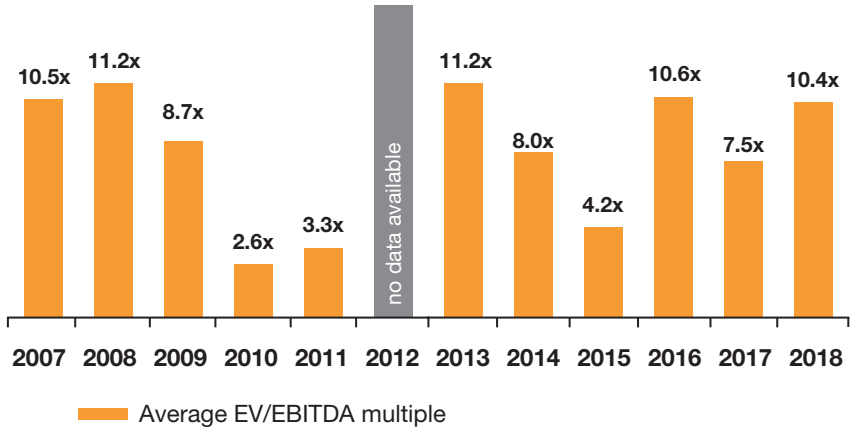
EBITDA multiple analysis

- The years with the highest average EBITDA multiple are 2008 and 2013 with 11.2x for both followed by 2016 with a multiple of 10.6x.
- The years with the lowest EBITDA multiples are 2010 with 2.6x and 2011 with 3.3x.
- Because there was no reliable information for transactions concluded in 2012, we have not included this year in our analysis.

General considerations about EBITDA multiple

- It is not meaningful for financial sector because it is difficult to isolate the financing requirements of a financial institution to its operational activities
- It can be utilized to directly compare corporations in the same industry regardless of their debt level and it is not impacted by accounting choices with regards to amortization and depreciation
- Good proxy for cash, the drawback is that it cannot be used for company comparison across industries, given varying capital expenditure requirements

Average EBITDA multiple



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