COMPARATIVE ANALYSIS OF POST-RECESSION STOCK MARKET PERFORMANCE IN THE BALTIc STATES

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Abstract

Stock market is alternative place to bank lending for company’s finance and contributor to economic development. Baltic States is market, which traditionally is perceived as one, however it is comprised of 3 separate stock markets. Research aim was to conduct comparative analysis of stock market development performance post-recession in the Baltic States. In order to perform analysis, number of listed companies, their market capitalization and structure in Baltic States were analyzed and also compared to main economic indicators structure in 2008-2018 6 months. The main research methods are: analysis, synthesis, the logical construction method, the induction and deduction methods, as well as time series analysis. Authors have determined main stock market performance indicators and compared stock market indicators structure with Baltic region’s economic structure. Research results indicates that number of listed companies had increased only in Estonia, also market capitalization there had experienced their value to more than double in analyzed period. In Lithuania number of companies had declined, while market capitalization the growth was slower when compared to in Estonia, while more linear. In turn, stock market capitalization and number of listed companies in Latvia were declining in 2008-2018 6 months. Overall number of listed companies in Baltic States was decreasing, while their market capitalization is increasing, but still is only 60% of value it was in pre-recession year 2007. In Estonia and in Lithuania average listed companies are larger in size, when compared to in Latvia. Size of average listed companies on stock market in Estonia and in Lithuania more than doubled in size, while in Latvia it showed insignificant growth. Stock market indicators’ structure had insignificant deviations from the main economic indicator structure in 2008, while in 6 months 2018 dynamics in Latvia stock market parameters had dropped in the structure among all 3 Baltic States. Overall, in Latvia stock market is lagging behind, when compared to one in Estonia and in Lithuania in analyzed period, thus all 3 Baltic States has had asymmetrical recovery and development speed post-recession.

Keywords: stock market, market capitalization, listed company, development, Baltic States.

JEL Codes: G32, O16.

Introduction

Capital is needed for development of companies and economy. There are several types of capital: financial capital, manufacturing capital and human capital, what is created and accumulated by humans, as well as nature capital, they all are used in economic processes to contribute to higher prosperity through producing goods and services (Lenerts, 2018). Financial capital in companies is diverse: it can be own resources, bank funding, state support (subsidies or grants), as well as funds of investor (risk capital, securities, private investments). Financial capital can be either earned or attracted from outside funding. Own financial capital depends on the sector where company operates, internal and external markets, production factors, human and nature capital. Bank loans as external financial source also can have various forms: loans (short-term and long-term), leasing, factoring etc. State support also is made up of several programmes and funds, including the European Union (EU) funding. Nevertheless, company can attract also investor capital for its development, and these funds varies based on respective investor investment strategy. Investment type depends on investor’s strategy, that is in turn influenced by the required return and risk level.

Access to finance is considered one of the main obstacles for successful financial market development. Access to finance was second-ranked most pressing problem faced by companies in the Euro Area and one of the main barriers limiting company’s innovation capacity. But “efficient financial markets that are sound and well-functioning play vital role in countries’ development” (Rupeika-Apoga, 2014). The World Economic Forum notes that “the global financial and monetary system is at a crossroads. A decade after the onset of the global financial crisis, the world economy is showing signs of recovery. Growth in 2017 was broad-based, accelerating in about 75% of all countries. Boosted by a recovery in investment, global trade growth has rebounded from its low point in 2001. The improved economic outlook, in an era of low interest rates, has boosted equity valuations and growth prospects for 2018 and 2019 are also robust”.

The stock market is an essential part of the financial market that helps to redistribute financial resources among different economic subjects efficiently. In a modern economy, there are not only companies and various funds among direct and indirect stock market players but also an increasing number of individual players, therefore a considerable attention is paid to evolution of this market (Rudzkišis and Valkavičienė, 2014). There is also a relationship between stock market and economy development according to Capital market working group of financeEstonia cluster2, that strong local stock market provides an alternative of financing to the bank lending, allowing companies to grow and pursue their projects, and in turn increasing employment and adding value to economy.

Why this topic is crucial? Several authors, including Caporale et al. (2004) mentions “Gurley and Shaw (1955) were the first to study the relationship between financial markets and real activity. (…) In a well-developed stock market share ownership provides individuals with a relatively liquid means of sharing risk when investing in promising projects”.

The increasing role of the capital market as the alternative to the traditional to Europe banking sector is strongly supported by the European Commission (EC). In 2015 the EC announced the Capital Market Union initiative and respective action plan as the reaction to the challenges faced by both banking sector and small and medium enterprise segment in Europe (Tocelovska, 2017). Rudzikis and Valkavičienė (2014) stress, that “the researches were targeted at finding out whether: a) the stock market stimulates the economic growth of the country; b) the economic growth of the country invokes the stock market activity; c) there exists a causal interrelationship between them”. Moreover, Zhai and Wang (2016) concludes that “regulators need to build a transparent and reliable information environment to allow accounting information to play an effective role to push listed firms to focus on their core business”. The stock market is a place that brings together companies offering investment opportunities – securities – and investors seeking opportunities to best allocate their capital (Brycz et al., 2017).

Main stock market sign is many listed companies and according to Financial Times lexicon listed company is “company whose shares are traded on an official stock market. It must adhere to the listing requirements of that exchange, which may include how many shares are listed and a minimum earnings level”.

Baltic States are Estonia, Latvia and Lithuania and usually economists talk about them as one universe, because “Baltic region is traditionally treated as similar and comparable when analyzed on the macroeconomic level” (Tocelovska, 2017). Authors have discovered that although countries are similar historically and located in same geo economical area, in scientific publications they are not compared and analysed as common market.

Main role in stock market in the Baltic States is played by Nasdaq Baltic, which is only exchange in the Baltic States and is comprised of several legal entities, i.e. Nasdaq Tallinn, AS, Nasdaq Riga, AS, AB Nasdaq Vilnius and 3 entities offering central depository services. Each of the legal entities of exchange is regulated under Financial Supervisory Authority (FSA) in particular country and majority of listing rules are same for all Baltic States, while local differences exist. Integration into Nasdaq Baltic, i.e. the creation of a common Baltic equities market with harmonized trading rules, integration of infrastructures and market practices, the unique trading system, joint trading lists, single membership, trading and settlement currency, as well as the change of the government’s fiscal policy and borrowing money have increased the demand for traded securities (Darškuvienė et al., 2014).

Authors agree that stock market in Baltic States is not broadly analyzed, as admits Lithuanian scientists Norvašienė and Stankevičienė (2014), “…moreover, the most of empirical studies have been carried out in developed stock markets due to better availability of information…”. Similar opinion shares also Žuka (2009) in Latvia, that “listed companies public information quality impacts investor trust and stock evaluation. Baltic equity market is shortage of publicly available information”. Most of Baltic States research on stock market besides Lithuanian scientists, has been done by Latvian researcher Lāce, having main focus recently on fundamental analysis (Bistrova and Lāce, 2010) and “Measuring Financial Reporting Quality: Baltic Public Companies” (Lāce et al., 2014), they focus mainly either on Latvia or on Central Eastern European region. In turn, Deltuvaitė (2015) points out that most of empirical studies focus on a very short period of time and the results of these empirical studies are mixed. Therefore, her performed research is focusing to assess the level of global integration of the Baltic stock markets. In the meanwhile, Liivamägi (2016) in Estonia pays attention to “investor education and trading activity on the stock market”, Šlepste (2012) in Latvia has determined that “Latvian stock market for many years has developed in a qualitative more than quantitative way, giving market participants a variety of convenient technology solutions, without any significant changes in the offer of securities on the market”.

Hypothesis was put forward that all 3 stock markets in Baltic States have recovered asymmetrically post 2008 recession. Research object - stock market in the Baltic States.

Therefore, following research aim was defined: To conduct comparative analysis of stock market development performance post-recession in the Baltic States.

In order to reach the research aim and to accept or deny hypothesis following tasks were set: 1) to analyze number of listed companies and its dynamics in the Baltic States; 2) to evaluate development of market capitalization in the Baltic States; 3) to compare stock market structure indicators with main economic variables structure in the Baltic States.

Research originality and novelty results from analyzing stock market as common economic unit in Baltic region, in order to assess weather their development trends are symetrically or differential in each country. The underlying presumption is: one country’s experience and development can be utilized to improve stock market performance in other countries in future. The findings of this research paper should be beneficial for politicians, companies and stock market organizers, as well as academic researchers.

Materials and methods

Analysis, synthesis, the logical construction method, the induction and deduction methods, as well as time series analysis which include two main elements: time value - T and the corresponding value indicators – Y were employed to execute the research tasks. Scientific literature review was used as well. In order to collect necessary

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information several public databases were used: 1) Nasdaq Baltic database. Database combines historical day-to-day market trading activity for each listed company, as well as market capitalization and the list of currently listed company shares and bonds; 2) World bank; 3) International Monetary Fund; 4) Eurostat databases.

It was chosen to compare all 3 Baltic States and 3 stock lists therein. According to Nasdaq “The Baltic Main List and Secondary List comprise the main market of the Nasdaq Baltic exchanges, which is regulated under EU directives and supervision by the national FSA. The listing requirements are based on European standards and EU directives and intended for companies that are well established. Regulatory demands are higher on the regulated market than on First North”.

The Baltic Main List has the strictest entry criterion and is regulated by EU and local laws. To be considered for listing there need to have at least: 1) three years of operations; 2) 4 mill.EUR in market capitalization; 3) 25% free float or in public hands at least 10 mill.EUR worth of shares; 4) prospectus approved by local FSA; 5) not mandatory, but common that several advisors for entry documentation preparation need to be higher, thus this is associated with higher expenses when compared to listing on Baltic Secondary List or First North Baltic Share List.

The Baltic Secondary List admission requirements are less strict than on the Baltic Main List, it accepts companies that do not meet quantitative admission requirements, such as 25% free float, 4 mill.EUR capitalization. First North Baltic Share List is known as Alternative Market run by Nasdaq exchanges. It does not have the legal status of an EU-regulated market.

On the First North Baltic Share List, there is no requirements on minimal period of operations, on market capitalization or free float. Simplified prospectus version or company description is required though. First North Baltic Share List also requires to have agreement with certified adviser, that is different when compared to the regulated market. Once traded, on the Baltic Main List there are following reporting disclosures which has to be met: 1) International Financial Reporting Standards (IFRS) financial accounting; 2) annual, semi-annual and quarterly financial reports; 3) information disclosure in both local language and English; 4) must report on compliance with the corporate governance code. Furthermore, First North Baltic Share List requires only financial accounting to IFRS or local standards, no quarterly reports are required and disclosure can be done in either local language or English, and no requirements to report on corporate governance code compliance.

In order to reach research aim, authors have determined main stock market performance indicators, such as: number of listed companies, market capitalization and size of average listed company. Authors estimate that these are the main globally recognizable and comparable stock market indicators. They form a common economical subsystem and according to scientist von Bertalanffy (1968), who wrote that “definition of systems as “sets of elements standing in interaction”, thus authors compared how stock market as a separate system interacts with main economic variables structure of the country (Gross Domestic Product (GDP), population and business structure).

This research about stock market main performance indicators in Baltic States was performed for time period 2008-2018 6 month, breaking down the analysis by the number of listed companies in each Baltic State, as well as their market capitalization. Market capitalization is shares outstanding multiplied by the last closing price of the stock, and when summed together it provides market capitalization either by listing place as country or list together by formula:

\[ Mc = Nsh \times \frac{Pi}{\text{last}} \]  

\text{where} \quad Nsh - \text{number of shares outstanding of the company}; \quad Pi/\text{last} - \text{last closing price of the period.}

Time frame was chosen deliberately from 2008, since that is the recession year. This is confirmed also by Bistrova and Lāce (2010), they reported that crisis period in Baltic Equity Market was October 2008 – February 2009. This mean that impact of recession in the stock market was felt already at the end of 2008. Authors’ calculations confirm that, as in stock market occurred significant drop in market capitalization of listed companies by the end of 2008 when comparing it to 2007 data. Listed company total value decreased from 13096 mill.EUR at the end of 2007 to 5178 mill.EUR at end of 2008, that is reducing overall stock market size by more than 60% in Baltic States. Stock market recession occurred together with recession of general economy. Baltic States economy recession period starting point was September 2008 as mentioned by Staehr (2013), he also notes that “in the first half of 2008, all three Baltic states found themselves in a vulnerable position with rapid credit growth, excessive capital inflows, large net foreign liabilities, property booms, and increasing wage and price inflation (...). Seasonally adjusted Gross Domestic Product (GDP) for Estonia fell 13.1% from the third quarter of 2008 to the first quarter of 2009 (...). The corresponding decline was 11.9% for Latvia and 13.9% for Lithuania”. According to the source the global recession unfolded, when also capital flows stopped to Baltic States.

Two levels of the series ratio (expressed in percentage), were used in order to describe dynamics of stock market in Baltic States. According to Balabka (2008) there are 2 formulas to use:

1) base growth rate - current value and the value received for the permanent base of comparison ratio:

\[ \Delta T b = \left( \frac{Yi}{Yo} \times 100 \right) - 100 \]  

\text{where} \quad Yi - \text{current (base) value}; \quad Yo - \text{permanent base of comparison value.}
2) chain growth rate - current and previous value ratio:

\[ \Delta Tch = ((Y_i / (Y_i - 1)) \times 100) - 100 \]  

(3)

where Yi – n-period.

Average market capitalization value and average hypothetical size of the listed company would be calculated and compared. Average market capitalization will be calculated based on the following formula, in order to characterize the typical value of indicators in the interval time series:

\[ Y_{avg} = \sum Y_i / n \]  

(4)

where Yi – market capitalization of listed companies in particular period, n – number of periods.

Average size of listed companies in particular period were calculated based on following formula:

\[ Y_{avg} = \sum M_{ci} / Nc \]  

(5)

where Mci – market capitalization of a listed company, Nc – number of listed companies.

Several economic indicators were selected in order to solve the tasks put forward in the research, that is, population, GDP and active registered companies in each Baltic State. To analyze their structure among Baltic States and compare their structure development to the stock market main component development.

Results

Dynamics of Stock Market Listed Companies by Number in the Baltic States

Well-developed stock market provides opportunity for alternative funding for the companies besides banks, as well as attracts more investors, in turn stimulating economy via increased employment and added value from the carried-out projects. According to the Rudzakis and Valkavičienė (2014) “the behavior of financial markets contains strong predictive power to country’s economic development: rising stock prices indicate positive expectations of investors and potential economic growth while falling stock indices point to deteriorating performance of individual company or the entire economy and weakening prospects. Changes on the stock market affect not only the domestic trade but are important factors in attracting foreign and institutional investors. Investors are interested in the stock market due to higher investment returns than in the money market”. Therefore, authors emphasize that it is important to analyze stock market listed companies and their capitalization, to determine what dynamics it has had from 2008 to 2018. Authors consider that positive stock market development trends means – that the more number of the companies, the more opportunities to attract investors and capital, and in turn diversity in the good quality of companies on the capital market are beneficial to overall economy. Also, it is necessary to determine by the dynamics of stock market listed companies, if there is a trend in one country different then in others or their growth trend is similar.

Table 1. Stock Market Listed Company Number in the Baltic States and its Analysis in 2008-2018 6 Months

(Data as of End of Period)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Years</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>ΔTb, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia, number of Co. *</td>
<td></td>
<td>18</td>
<td>16</td>
<td>15</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>18</td>
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<td>6</td>
</tr>
<tr>
<td>ΔTch, %</td>
<td>x</td>
<td>-11</td>
<td>-6</td>
<td>0</td>
<td>7</td>
<td>6</td>
<td>-6</td>
<td>0</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>x</td>
</tr>
<tr>
<td>Latvia, number of Co.</td>
<td></td>
<td>36</td>
<td>35</td>
<td>34</td>
<td>33</td>
<td>32</td>
<td>31</td>
<td>30</td>
<td>27</td>
<td>27</td>
<td>26</td>
<td>24</td>
<td>-33</td>
</tr>
<tr>
<td>ΔTch, %</td>
<td>x</td>
<td>-3</td>
<td>-3</td>
<td>-3</td>
<td>-3</td>
<td>-3</td>
<td>-3</td>
<td>-10</td>
<td>0</td>
<td>-4</td>
<td>-8</td>
<td>-x</td>
<td></td>
</tr>
<tr>
<td>Lithuania, number of Co.</td>
<td></td>
<td>41</td>
<td>41</td>
<td>40</td>
<td>36</td>
<td>33</td>
<td>32</td>
<td>33</td>
<td>32</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>-27</td>
</tr>
<tr>
<td>ΔTch, %</td>
<td>x</td>
<td>0</td>
<td>-2</td>
<td>-10</td>
<td>-8</td>
<td>-3</td>
<td>3</td>
<td>-3</td>
<td>-13</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>X</td>
</tr>
<tr>
<td>Total, number of Co.</td>
<td></td>
<td>95</td>
<td>92</td>
<td>89</td>
<td>84</td>
<td>81</td>
<td>80</td>
<td>79</td>
<td>75</td>
<td>72</td>
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<td>ΔTch, %</td>
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<td>-4</td>
<td>-1</td>
<td>-1</td>
<td>-5</td>
<td>-4</td>
<td>1</td>
<td>0</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

* companies

(Source: Authors’ calculations based on Nasdaq Baltic database)

Overall number of Baltic States listed companies on the stock market is significantly decreasing -23% in 2018 in comparison to 2008, with exception of Estonia, where was an increase of 6%. Number of listed companies in Estonia did see mainly a decrease during years 2008 until 2010 and 2014-2015, afterwards there follow a yearly increase of 6%. Especially large base drop in number of listed companies is observed in Latvia. Only 67% of number of companies was listed in 2018, when compared to situation in 2008. Moreover, the decrease is seen every year (with exception in 2016) during analyzed period. Similar pattern authors observe in Lithuania, because number of listed companies during the reviewed period has decreased by 27% and negative growth is observed almost every year (except 2014, 2017 and 2018, when there is a positive growth). Compiled data in Table 1 regarding number of listed companies are presented at the end of period in respected country, this, accounts also for companies entering and exiting, as well as merging. During 2009-
2018 period, there has been 23 new company listings, and delisting occurred for 42 listed companies. These numbers do not include companies, which were merged and remained listed or acquired by other listed company. This means stock market should become more concentrated of listed companies, rather than diversified. Average number of listed companies in Baltic States through the observed period was 81. When breaking down by countries – in Estonia – 17 (21%), in Latvia – 30 (37%), in Lithuania 34 (42%) companies.

Authors can join Žuka (2009) conclusions that “Baltic States stock market is in development stage. Number of listed companies on Stock Exchange is relatively small. Companies in Baltic States prefers bank loans, when compared to stock issuance, irrespective of higher interest costs”.

Each company have a choice of 3 lists on stock market in each country where to get listed, assuming the listing criteria of particular list is met. Total number of listed companies’ breakdown by the various lists in the Baltic States is compiled in Figure 1.

**Figure 1. Number of Listed Companies Breakdown by Stock Market List in Baltic States in 2008-2018 6 Months (as of the End of the Indicated Period)**
(Source: Authors’ calculations based on Nasdaq Baltic database)

Initial base year the structure of listed company by list was following: 42% of companies was listed on the Baltic Main List and remaining 58% on Baltic Secondary List, due to the fact that First North Baltic Share List saw its first listing only in 2011. Number of listed companies structure in 2018 was following, Baltic Main List saw an increase to 44% (+2%), while Baltic Secondary List saw a decrease to 49% (-9%), and First North Baltic Share List was 7%.

When looking at the various lists on the stock market, authors discovered that average number of listed companies during analyzed period on each list was – Baltic Main List: 35 companies or 43%, Baltic Secondary List: 44 or 54%, First North Baltic Share List: 2 or 3%. Information on structure of listed companies on stock market breakdown among lists and countries in 2008 compared to in 2018 is presented below in Figure 2.

**Figure 2. Structure of the Listed Companies by Country and by List on Stock Market in 2008 and 6 Months 2018 (as the End of the Period), %**
(Source: Authors’ calculations based on Nasdaq Baltic database)
Estonia has seen the most significant change in the structure of listed companies on stock market, in 2008 all listed companies were on the Baltic Main List, but in 2018 there were listed 79% of listed companies in Estonia, on Baltic Secondary List 16%, First North Baltic Share List – 5%.

Structure of listed companies in Latvia has not seen so dramatic shift among lists: in 2008 Baltic Main List had 14% of all listed companies in Latvia, 86% were on Baltic Secondary List, while in 2018 the breakdown was following: slight increase in share of companies listed on Baltic Main List, while absolute number dropped from 5 companies listed there in 2008, to 4 companies in 2018, the weight increase is due to the drop of overall listed companies in Latvia from 36 in 2008 and 24 in 2018. Baltic Secondary List had 75% share of listed companies listed there and remaining 8% of companies was listed on Baltic First North List in Latvia.

Similar pattern authors observed for listed companies on the stock market structure is in Lithuania in both 2008 and 2018. In 2008 41% of listed companies was listed on the Baltic Main list and 59% on the Baltic Secondary List. In 2018 majority of listed companies was still on the Baltic Secondary List 50%, Baltic Main List – 43% and 7% was listed on the First North Baltic List.

As analysis has shown that importance/weight of Baltic Main List as a listing place decreases (where are more strict rules) in Estonia but increases in Latvia and Lithuania. Also observed is variability among all three Baltic States in terms of number of listed companies on stock market and also by listing List, thus in order to gain more insight, the size of the company and overall market capitalization in each Country have to be analyzed.

**Market Capitalization in the Baltic States**

While number of listed companies is an important indicator for diversity of the stock market, authors emphasize that the size of the company and also overall stock market size in the country are even more important to investors and allows to determine stock market development trend. Size of the company is measured as capitalization: shares outstanding multiplied by the last closing price on the stock market of respective period. Capitalization is also known as market value of the company. Investors normally expect that over time company will grow, that is, its capitalization will increase.

**Table 2. Baltic Market Capitalization Breakdown by Country and its Analysis in 2008-2018 6 Months**

(Data as of End of Period)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Years</th>
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<th>2009</th>
<th>2010</th>
<th>2011</th>
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<th>△Tb,% 6m</th>
<th>△Tb,%</th>
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<tbody>
<tr>
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<td>1403</td>
<td>1850</td>
<td>1685</td>
<td>1241</td>
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<td>1877</td>
<td>1663</td>
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<td>x</td>
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<tr>
<td>Latvia, mill.EUR</td>
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<td>827</td>
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<td>△Tch, %</td>
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<td>31</td>
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<tr>
<td>Total, mill.EUR</td>
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<td>16</td>
<td>3</td>
<td>x</td>
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</table>

(Source: Authors’ calculations based on Nasdaq Baltic database)

According to authors experience, market capitalization in Baltic States can be split in 3 development periods: 1) Steady growth period from 2008 to 2010 then there was a drop to almost 2008 levels; 2) 2011-2014 – stabilization period with slight growth, (except 2011), was 4% on average during this period 3) rapid growth during 2015 – 2018, an increase of 34% compared to 2014. It can be concluded that market capitalization post-recession in 2009, experienced growth already, overall huge drop was seen again in 2011, when total capitalization dropped by 24% compared to 2010. In the meantime, Latvia and Estonia market capitalization of listed companies experienced slowdown, or negative growth already in 2010. Besides recession impact in 2008, also analysis shows that double dip or another recession type occurred in 2011. Additionally, 2 large companies exited stock market in Estonia – Eesti Telekom, with capitalization of 820 mill.EUR and Norma, with its capitalization of 51.5 mill.EUR at the end 2009, this explains 2010 drop in capitalization for Estonia, in 2011 no company exited stock market in Estonia, thus can be concluded that for Estonia stock market felt again in 2011 numbers.

Authors assume that one of the reason for the decrease of stock market capitalization in Latvia in 2010 can be attributable to the delisting of DNB Bank, which capitalization was 627 mill.EUR at the end of 2009. If that would not have happened then in Latvia would have been positive growth. In turn in 2011 Latvijas Krajbanka ceases to exist on the stock market, taking with it capitalization as of end of 2010 in amount of 66 mill.EUR, if that was not present, Latvia nevertheless would have seen drop in stock market capitalization in 2011.

The impact of global financial recession on Baltic States stock market also Norvaišienė and Stankevičienė (2014) discovered, concluding that ‘the financial crisis has resulted in significant decrease of transactions’ number in Estonian and Latvian markets in 2008. However, even larger decrease of the transactions number in the Baltic stock markets was observed in 2011 and 2012”. In turn Nikkinen et al. (2012) concluded that “the Baltic stock markets were apparently segmented before the crisis, they were highly integrated during the crisis”.  

42
Despite drop in number of listed companies in Baltic States (Table 1), their total value during 2008-2018 has increased, total capitalization value during years 2008-2018 increased by 52% or by 2714 mill.EUR, moreover in Estonia the companies’ value increase was 2.2 times, in Lithuania increased by 51%, but in Latvia capitalization of listed companies decreased by 22% or 261 mill.EUR. In the meantime, total capitalization has seen only drop in value in one year 2011 compared to 2010, the remaining years chain growth rate has been positive, with 3 peaks seen in 2009, 2015 and 2017.

Average market capitalization of stock market in the Baltic States during the observed period for Estonia was 1938 mill.EUR, Latvia – 1018 mill.EUR, Lithuania 3365 mill.EUR. Therefore, authors concluded that in Lithuania stock market has seen the steadiest development over the years, while in Estonia it has had the largest jump in market capitalization value, especially in first half of 2018, this in large according to authors can be attributable to the Tallinn Sadam becoming listed company in Estonia, adding market capitalization of more than 500 mill.EUR. In Latvia it has seen deterioration of the capitalization, while in observed whole period it was up and down around the middle number, more below rather than above.

Rupeika-Apoga (2014) concludes that “to forecast future prognosis of stock market development the authors compared Baltic countries with other EU-12 accession countries and old EU-15 countries. The situation in Estonian market had been the best, and before the crisis was even better than in EU-15, but unfortunately after the crisis the tendency remains negative, when EU-15 started to show an improvement. As for Lithuania, the Lithuanian position worsened more significantly than in other average EU-12 accession countries, but moderate improvements in recent years could be observed as a positive tendency. Availability of Latvian stock market so far was the most unstable, as a result more unattractive for potential issuers, but positive changes can be observed”.

Data on Baltic States market capitalization breakdown by their listing list on the stock market is presented in Figure 3.

![Figure 3. Market Capitalization Breakdown by Listing Place on Stock Market in 2008-2018 6 Months (as of the End of the Period), mill.EUR](image)

(Source: Authors’ calculations based on Nasdaq Baltic database)

Structure wise overall Baltic States stock market capitalization shows trend that market capitalization of Baltic Main List at the end of 2008 was 54%, compared to 76% in 2018 6 month, while Baltic Secondary List capitalization in 2008 was 46% compared to 23% in 2018 6 months. That means that Baltic Main List with its stronger criteria is becoming more and more attractive for financial stable and sizable companies. The reason authors conclude could be also attributed to the fact that despite higher criteria, this list draws more attention from investors, especially for perceived of being “higher quality” company or as states Nasdaq Baltic in their “Risk perception by investors” there it is a listed company with “controlled risks given high admission and information disclosure requirements for companies” compared to the First North Baltic Share List being as “higher risks given lower requirements for companies”. Additionally, since companies are obliged to report on their corporate governance code, as has found Li et al. (2016) that quality, which is based on sound governance practice is high quality stock and thus, they “believe that competent, experienced investors are likelier to select rather than forgo quality stocks”.

Largest value of the stock market listed companies is observed on the Baltic Main List, with smaller value on the Baltic Secondary List (which in some cases have larger number of companies there, especially true in regards to listed companies in Latvia and Lithuania), and basically very small capitalization is currently displayed in First North Baltic Share List, thus authors considers that it is crucial to look at the hypothetically average size of the company by value by country and by List.

Average market value of the listed companies in particular country, which also determines hypothetical average capitalization in the Baltic stock market in 2008-2018, is displayed in Figure 4. Average size of the listed company on the stock market in Estonia has grown from 78 mill.EUR in 2008 to 161 mill.EUR in 2018, or more than 2 times. There are two stages – stabilization period in 2009-2014 and rapid growth period from 2015 – 2018.
On contrary Latvia has seen the smallest average size listed company on the stock market during analyzed period, it was only 32 mill.EUR in 2008 and grew to 38 mill.EUR in 2018 first half, that is average size of the listed company in Latvia has shown only 16% growth when compared 2018 year to 2008. Average market capitalization of listed companies in Latvia in 2018 was 4.2 times less than one for companies in Estonia and 3.4 times less than for companies in Lithuania.

Size of average listed company in Lithuania exhibits most linear growth in 2008-2018 period. Average listed company grew from 64 mill.EUR in 2008 to 131 mill.EUR in 2018, that is base growth the same as for the average listed company in Estonia in 2018 compared to 2008, that is a growth of 106% or it doubled in size.

Overall, authors discovered that the largest average size of stock market listed company is in Estonia and in Lithuania in 2008, where average company in Estonia is leading by 14 mill.EUR in size difference, when compared to average listed company in Lithuania in same year. Similar pattern is also present in 2018, where in Estonia it is taking lead, exceeding average size listed company in Lithuania by already double what was in 2008 – 30 mill.EUR. Average size of listed company in Latvia is lagging significantly in both 2008 and 2018. When compared to listed company in Estonia in 2008, average size of listed company in Latvia was only 42% of the size of average listed company in Estonia, in 2018 the situation gap has increased, and average size of listed company in Latvia was only 24% of one listed in Estonia. The trend in average sizes of the listed company among Baltic States clearly exhibits that in both Estonia and Lithuania there have been similar growth pattern for the listed companies, while in Latvia they stagnated with insignificant growth.

Average size of the Baltic Main List compared to Baltic Secondary List listed company was in 2008 – 70 mill.EUR and 43 mill.EUR, while in 2018 6 months it was 189 mill.EUR for Baltic Main List, 30 mill.EUR for Baltic Secondary List, and 12 mill.EUR for First North Baltic Share List. The most significant growth of average size of listed company has taken place on the Baltic Main List, it has increased 2.7 times in 6 months 2018 compared to 2008. Overall trend is that on all 3 lists average company size is getting larger, that is overall average listed company among all 3 lists in 2008 was 54 mill.EUR, then in 2018 already 198 mill.EUR, representing 3.7 times increase when compared 2018 vs. 2008 average size of the listed company on the Stock Market.

As Figure 4 compiled information precisely depicts, in Estonia and in Lithuania listed companies on the stock market from the beginning of analyzed period has had larger in average size listed companies, in the meantime if in Estonia the size of average listed company drops in 2011, nevertheless similar as in Lithuania, it shows growth of 106% compared to base 2008 year, same as Lithuania, while Latvia shows only 16% increase. Average size in the analyzed period of the listed company profile was capitalization of 116 mill.EUR in Estonia, while in Lithuania 101 mill.EUR, in Latvia it is lagging behind with 34 mill.EUR capitalization.

Overall, authors identified that average size of the listed company on the stock market is increasing in size during analyzed period, that holds true if looking at average size of all listed companies on the stock market in Baltic States or breakdown of average size by any of 3 Lists. In turn, the total capitalization while increasing, has not yet reached the value what was in 2007 – 13096 mill.EUR, in 6 months 2018 it is only 60% when compared to 2007.

**GDP, Population, Stock Market and Businesses Structure in Baltic States**

Authors’ put forward hypothesis that GDP structure determines structure of enterprises, is correlated with population structure and thus should correspond to the main indicator structure for 3 Baltic States stock market structure indicators, such as number of listed companies and capitalization structure in those countries. Therefore, was collected statistical data for 3 main economic variables: GDP, population, and number of active companies and their structure was calculated for all 3 Baltic States. Similar calculations were performed on structure of number of listed companies and their capitalization. Results are compiled in Table 3 and compared against GDP in 2008 structure.
Authors’ general assumption is that based on the GDP, population and number of active companies’ structure among 3 Baltic States, remaining indicator structure should be somewhat similar. This holds true when determining the difference between GDP structure in 2017 and population structure, variance is max +/-2.1%, therefore it can be concluded that GDP and population structure for all 3 Baltic States does have similar pattern to be used for further analysis.

Table 3. Main Economical and Stock Market Indicators Structure in Baltic States (as of End of Period), %

<table>
<thead>
<tr>
<th>States</th>
<th>GDP 2008</th>
<th>GDP 2017</th>
<th>GDP 2018</th>
<th>Number of Active Co* 2015</th>
<th>Number of Companies 2008</th>
<th>Number of Companies 2018 6m</th>
<th>Capitalization Structure, %</th>
<th>Deviation from GDP 2008 structure, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>23.7</td>
<td>24.3</td>
<td>21.6</td>
<td>21.8</td>
<td>18.9</td>
<td>26.0</td>
<td>27.1</td>
<td>38.7</td>
</tr>
<tr>
<td>Latvia</td>
<td>30.7</td>
<td>29.4</td>
<td>31.9</td>
<td>29.1</td>
<td>37.9</td>
<td>32.9</td>
<td>22.5</td>
<td>11.5</td>
</tr>
<tr>
<td>Lithuania</td>
<td>45.6</td>
<td>46.3</td>
<td>46.5</td>
<td>49.1</td>
<td>43.2</td>
<td>41.1</td>
<td>50.4</td>
<td>49.9</td>
</tr>
<tr>
<td>Estonia</td>
<td>x</td>
<td>0.6</td>
<td>-2.1</td>
<td>-1.9</td>
<td>-4.8</td>
<td>2.3</td>
<td>3.4</td>
<td>14.9</td>
</tr>
<tr>
<td>Latvia</td>
<td>x</td>
<td>-1.3</td>
<td>1.2</td>
<td>-1.6</td>
<td>7.2</td>
<td>2.2</td>
<td>-8.2</td>
<td>-19.2</td>
</tr>
<tr>
<td>Lithuania</td>
<td>x</td>
<td>0.7</td>
<td>0.9</td>
<td>3.5</td>
<td>-2.4</td>
<td>-4.5</td>
<td>4.8</td>
<td>4.3</td>
</tr>
</tbody>
</table>

*excl. holding company operations. Co – companies.

(Source: Authors’ calculations based on Nasdaq Baltic, World bank, International Monetary Fund, Eurostat Database)

When comparing the number of companies’ structure and capitalization to GDP in 2008 structure, Latvia has the most positive deviation 7.2% more in the structure when compared to number of companies to GDP in 2008 structure, but the largest negative of minus 8.2% off the GDP in 2008 is capitalization structure. The significance of these numbers become more apparent when compared in dynamics how number of listed companies and their capitalization among Baltic States structure have changed in 10 years at 6 months 2018. Authors concludes that number of companies is somewhat representing the trend in the GDP in 2008 structure, while there is huge discrepancy of more almost 20% drop in capitalization structure for listed companies in Latvia, while listed companies in Estonia and in Lithuania showed positive structure improvements and absolute number improvements. If analyzing absolute structure value rather than deviation then Latvia dropped from 22.5% in capitalization structure to 11.5% in 6 month 2018 structure. That means that while especially stock market in Estonia exhibits rapid development trend, together with slower, but still development trend for Lithuania, Latvian stock market is lagging behind and deteriorating in the overall available investment value. Similarly concludes also Deltuvaitė (2015) “that the global integration of the Lithuanian and Estonian stock markets is higher comparing to Latvian stock market despite the low degree of international integration of the Baltic stock markets in general”.

Conclusions and Discussion

Based on the research, authors have defined following conclusions and discussions, as well as need for future study. First of all, post-recession in the terms of number of companies listed on stock market, Estonia is only place, which shows positive increase in terms of number of listed companies on the stock market in 2008-2018. Number of listed companies in Latvia and in Lithuania are showing a significant decrease, same for overall number of listed companies in the Baltic States, which has dropped significantly in analyzed period. In addition, in terms of number of companies listed in Latvia in this period is showing the biggest drop among all 3 Baltic States.

Secondly, in terms of market capitalization during reviewed period, both listed companies in Estonia and in Lithuania are showing substantial growth, in Estonia – more than double, while in Lithuania an increase 1.5 times. On the contrary in Latvia, listed companies are showing decrease in capitalization on the stock market when compared data for 2018 to 2008. Overall market capitalization is in 2018 6months only 60% when compared to pre-recession year 2007.

Thirdly, when estimating the trend in regards to economic and stock market indicator structure, for base year 2008, there is similar pattern among all 3 Baltic States and indicator, while in 2018, listed companies in Estonia and in Lithuania, especially in Estonia, are showing substantial jump in the market capitalization increase in structure, and in Latvia they are presenting significant loss of position of capitalization on the stock market, when compared to GDP in 2008 structure.

Overall hypothesis was confirmed, since in all 3 Baltic States shows different development patterns and trends among them in terms of listed companies and their capitalization on the stock market. Especially negative growth presented listed companies in Latvia data in 2008-2018, meaning their value and number and structure has deteriorating trend when compared to neighbors’ countries in Estonia and in Lithuania. Thus, further analysis needs to be performed to understand the reasons behind why in Latvia has downward development trend in listed companies’ data compared to other Baltic States and also what lessons listed companies and stock market in Latvia can from draw from listed companies in Estonia and in Lithuania.

Discussion, which authors consider based on the performed research needs further elaboration and study is; recession impact on GDP was felt in 2009, while it seems from the analyses that drop in stock market indicators had
2 decreases: a recession impact in 2008 and negative growth was seen also in 2011 data among all 3 Baltic States. Authors concludes that the reasons need to be analyzed more in-depth why in Estonia stock market is developing more rapidly compared to in Latvia. In research analyzed are main stock market and economic variables, however in future, following this research, authors suggest that more detailed analysis have to proceed, especially, evaluation of liquidity and trading volumes of stock market, as well as financial performance indicators of stock market listed companies in the Baltic States.

Research results can be beneficial for government policy makers, stock market organizers, stakeholders, supervision authorities, investors and companies to accelerate stock market development especially in Latvia, but also in Lithuania.

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The article has been reviewed. Received in August, 2018
Accepted in October, 2018

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