THE ASSESSMENT OF BALTIC STOCK MARKET FROM PERSPECTIVE OF TOTAL SHAREHOLDER RETURN RATIO

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Abstract. Lithuanian stock market still lacks of attention from big investments despite its merger with Latvian and Estonian stock markets. Now all three markets are part of NASDAQ stock exchange group and making new steps to be more attractive. And the main attraction for investors is growing value of their portfolios. The main article's purpose is estimation of change in value of Baltic and Nordic stock markets in past 10 years from 2012 till 2022 by using Total Shareholder Return calculations. The results show positive growth of portfolios in all observed countries per last 10 years with much better results in Nordic market. Such growth was assured by cash flows received from dividends and stock prices on ex-dividend day of 2022. One-year Total Shareholder Return ratio showed negative impact of the war in Ukraine started on February 2022. For the weak efficiency in Baltic stock market, negative effect was smaller than in Nordic stock market. The article presents estimations on these negative and positive effects.

Keywords: stock market, NASDAQ OMX Baltic, NASDAQ OMX Nordic, Total Shareholder Return

INTRODUCTION

Mostly, the Lithuanian stock market is analyzed together with Latvian and Estonian stock markets as a part of joint Baltic stock market. Main reason of this is that all three Baltic countries belong to NASDAQ OMX Baltic market. The joint market was introduced in order to increase the trading volumes and market liquidity. Together the stock markets of three Baltic countries reflected in OMX Baltic Benchmark GI index. Separately, Lithuania stock market belongs to OMX Vilnius index, Latvia to OMX Riga and Estonia to OMX Tallinn. Worth to mention, due occupation of Soviet Union, Baltic countries didn't develop stock markets and now they are in chasing position compared to more developed stock markets. Also, Baltic stock market has some specific problems. D. Klimasauskiene and V. Moscinskiene (1998) indentified that Lithuanian stock market shows weak form of efficiency. It was confirmed after 4 years by V. Kvedaras and O. Basdevant (2002) in investigation of all three Baltic stock markets. Lithuania and Estonia had weak form of efficiency. Meanwhile, Latvia had strong inefficiency in their stock market. But later, K. Kiete and G. Uloza (2005) found first sights of efficiency in Lithuania stock market after they measured daily trade data from 2001 till 2004. Meanwhile, Latvian stock market suggested a semi strong inefficiency. Authors have noticed that both countries markets reacted inefficiently on announcements of earnings, i.e. this phenomena was recognized as overreaction. In one of latest studies V. Alekneviciene et al. (2018) concluded that Estonian stock market was the most efficient and Latvian – the least efficient. The reason of this is low liquidity. V. Deltuvaite (2015) confirmed it with her study. Author concluded that global integration in Baltic stock market is very low. Latvian stock market is more isolated at the global level than Lithuania and Estonia.

On the one hand, low liquidity shows small interest from worldwide investors. On the other hand, worldwide events affect Baltic stock market. R. Rudzkis and R. Valkaviciene (2014) revealed that global stock exchange indicators have a significant impact on Baltic stock market. EUR/USD exchange rate, money supply, the price of gold and oil influence the price of companies in Baltic countries. D. Pilinkus (2010), P. Dubinskas and S. Stunguriene (2010) researched correlations between Baltic stock and macroeconomic indexes: GDP; inflation rate; unemployment rate; state debt; export and import. Relationship between these indexes and Baltic market index is very high in long time period. A. Pilvere-Javorsa et al. (2018) confirmed the shrinking of analyzed market. They estimated the number of companies listed on Baltic stock market during period of 2008 – 2018. Only Estonia showed positive increase. Lithuania and Latvia showed a significant decrease. The positive thing, in terms of market capitalization, Lithuanian and Estonian companies showed substantial growth. While Latvia stock market's capitalization shrunk at twice. Estonian stock market, as a best in Baltic, was recognized in V. Vaišvilas et al. (2017) work where authors adapted MULTIMOORA method to collect best companies from Baltic stock market in 2016. Estonian companies were dominant on this list, while Lithuania was right behind and Latvia – the last.

Few recent research found some similarities between stock markets of Baltic countries and Scandinavian countries. A. Struckas (2020) says that stock markets of these countries have similar cycles of fluctuations in period from 2000 till 2020. Behavioral aspects were disclosed in paper of J. Grikietytė-Čebatavičienė (2016) where author has noticed sights of crowd effect behavior in both Baltic and Scandinavian stock markets. By cultural aspects the closest to Baltics is Finland. K. Harkmann (2020) identified long-run

equilibrium relationship between Baltic and Swedish markets. Author's research discovered that the Baltic States are exposed to shocks from Sweden and the shifts in the Swedish market will bring ajustement in the Baltic stock market also. But Scandinavian and Baltic stock markets have very big difference: Baltic states started theirs operations only after the fall of Soviet Union. Meanwhile, Copenhagen Securities Exchange (Denmark) started its trading in year 1808 and Stockholm Securities Exchange (Sweden) in year 1863. We could find scientific researches which observes data from 1920. S. Pynnonen and J. Knyf (1998) did the analysis of Finnish and Swedish markets in time lap from 1920 till 1994. This article discovered that there is no evident long-term common behavior present in the stock indexes of the Helsinki Stock Exchange and Stockholm Stock Exchange.

The goal of this paper is estimation of value of Baltic stock market together with comparison with Scandinavian stocks. The objects to reach this goal are:

1. To determine and compare Total Shareholder Return of Baltic stock market.
2. To detect an impact of global shocks on Total Shareholder Return of Baltic stock market.

METHODS OF RESEARCH

As paper's goal is estimate the value of Baltic and Scandinavian stock markets, here was used Total Shareholder Return (TSR) formula. M. Čupič and M. Todorovic (2011), J. Lafont et al. (2020) describe the classical formula of TSR:

$$TSR = \frac{P\,final - P\,initial}{P\,initial} + \frac{DIV}{P\,initial} \tag{1}$$

Where, TSR – Total Shareholder Return;
P final – final stock price;
P initial – initial stock price;
DIV – dividend.

The article assumes that the period under observation lasts from 2012 till 2022 and lasts 10 years. Usually, TSR is being used to calculate each company separately. To get the data of all market instead of one company, four models of TSR were calculated. The basis of first two ratios were the share as the subject of investment and our calculations, i.e. one share of each company were added in to observed portfolio. Later in this article these ratios are marked as SR (Share Ratio). The basis of next two TSR ratios were the idea of invested 1 euro in each company. Later in this article these ratios marked as VR (Value Ratio). This point of view could show us more realistic picture on the observed markets. So, this article observes short-term and long term TSR from point of view of Share Ratio. And short-term and long term TSR from point of view of Value Ratio.

The data of final stock price (P final) contains stock prices of each company on its ex-dividend day in 2022. In case, company has decided to do not pay dividends, the final stock price contains prices of each company on its annual announcement day in 2022. All price data were obtained from NASDAQ OMX Baltic and NASDAQ OMX Nordic official websites.

The data of initial stock price (P initial) contains stock prices of each company on its ex-dividend day in 2021 for one-year TSR calculations and its ex-dividend day in 2012 for ten-years TSR calculations. All price data were obtained from NASDAQ OMX Baltic and NASDAQ OMX Nordic official websites.

The data about dividends (DIV) contains paid dividends to shareholder through observed time period and were taken from official annual announcements of analyzed companies.

The companies which got into our observation list are the biggest ones in Lithuania (13 companies), Latvia (3), Estonia (17), Finland (33), Sweden (126), Iceland (4) and Denmark (39). The biggest Baltic companies were taken from Main List of NASDAQ OMX Baltic market. The biggest Scandinavian companies were taken fromLarge Cap List of NASDAQ OMX Nordic market. Worth to mention, Large Cap List companies have share value over 1 billion euro. Meanwhile, Main List companies have share value over 4 million euro only. Even this regulation could show us big difference between these markets.

THE RESULTS

Firstly, COVID-19 impact on financial markets should be mentioned. Early study of N. Sansa (2020) found significant positive relationship between COVID-19 confirmed cases and US, China financial markets. In case of Lithuania stock market, OMX Vilnius index fell more than 20% in first weeks of COVID-19 crisis.

Secondly, the war started by Russia in February of 2022 negatively affected stock prices in all European finance markets. Thus, estimated TSR ratio under pressure of these last two crises.

This paper uses two leveraged ratios never used before, for reaching the main aim. Both ratios represent the Total Shareholder Return (TSR) of portfolios made from group of stocks. First ratio is Share Ratio (SR) which includes 1 unit of share of each companies listed NASDAQ OMX Baltic and Nordic markets. So, company which share's market price is bigger has the bigger impact on this ratio. However, SR ratio does not reflect real value of such portfolio perfectly, because of difference in share's worth of each company in the market. Second ratio is Value Ratio (VR) and it is more balanced. For example, each of 13 Lithuanian companies has 1/13 part in this ratio and each of Sweden 126 companies has 1/126 part in this ratio. In other words, VR shows how 1€ invested in stock market could change its value during some period. SR and VR ratios during the period from 2021 till 2022 presented in Figure 1.
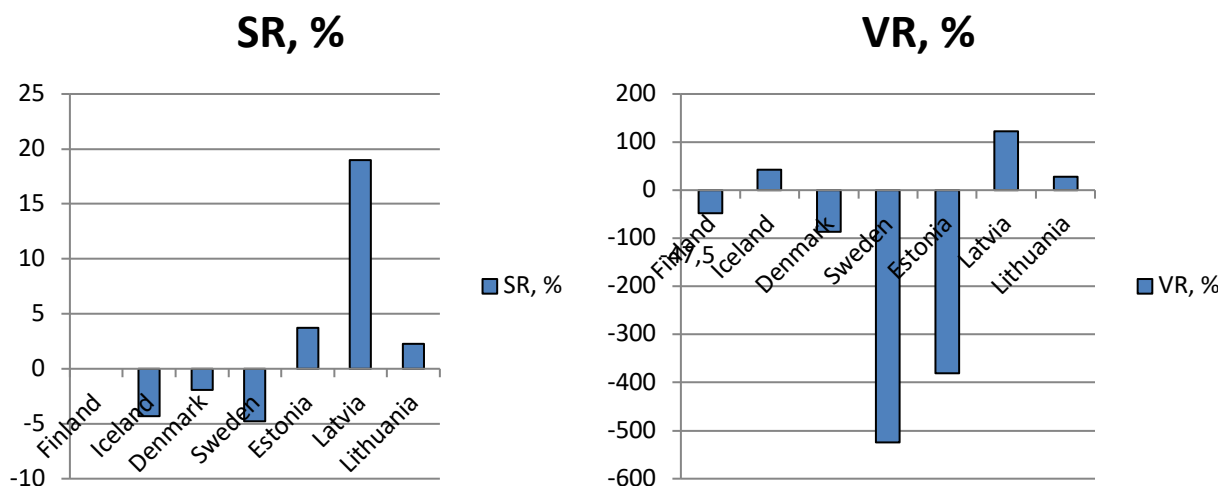

Figure 1. **TSR during the period from 2021 till 2022**

Firstly, we could notice the signs of inefficiency of Baltic states stock market in Figure 1. This one-year TSR was estimated after invasion in Ukraine and we can see that return for shareholder in Finland, Iceland, Denmark and Sweden was negative. Meanwhile, results in Lithuania and Latvia were positive except Estonia which had positive result in Share Ratio (SR) and negative in Value Ratio (VR). Secondly, we could notice the difference between two ratios. The Share Ratio (SR) made from portfolio of share from allcompanies suggests that damage for shareholder was not so big. There Sweden has most negative ratio of -4.75% and Latvia - most positive 19.06%. However, Latvia has only 3 companies which are listed in Main List and it should be assessed critically. As mentioned before, the Value Ratio (VR) is more balanced and reflects realistic view onto Baltic and Nordic stock markets because of equal amount invested in every share. We can see significant losses for shareholders who invested in Sweden (-524%), Estonia (-381%), Denmark (-87%) and Finland (-47.5%) during the last year. In the case of Sweden, we could assume that lost Russian market negatively affected Swedish giants as Volvo, Ikea and etc. In the case of positive returns in Latvia (122.45%) and Iceland (42.21%) we should keep in mind that these countries were represented only 3 and 4 biggest companies accordingly.

One-year TSR ratio (Figure 1) let us estimate sudden trend on stock markets affected by global shocks. However, individual or institutional investors are orientated to long-term investment much more. Even, above mentioned researches took the time horizon with 10 and more years. Therefore, ten-year TSR ratio (Figure 2) opens more realistic view on Baltic and Nordic stock markets. Figure 2 specifies TSR ratio from 2012 ex-dividend day as initial price till 2022 ex-dividend day as final stock price. The observed period contains eight years of global rising trend and two years with global crises. There are researches, such as N. Sansa (2020) and C. Bartkus (2020), which confirmed negative impact of COVID-19 crisis on financial markets. For example, in 2020 more than a half (8 from 14) of Lithuanian companies decided to do not pay dividends which are the part of TSR formula. In the same way, the negative effect of Ukraine war crisis is visible in Figure 1.
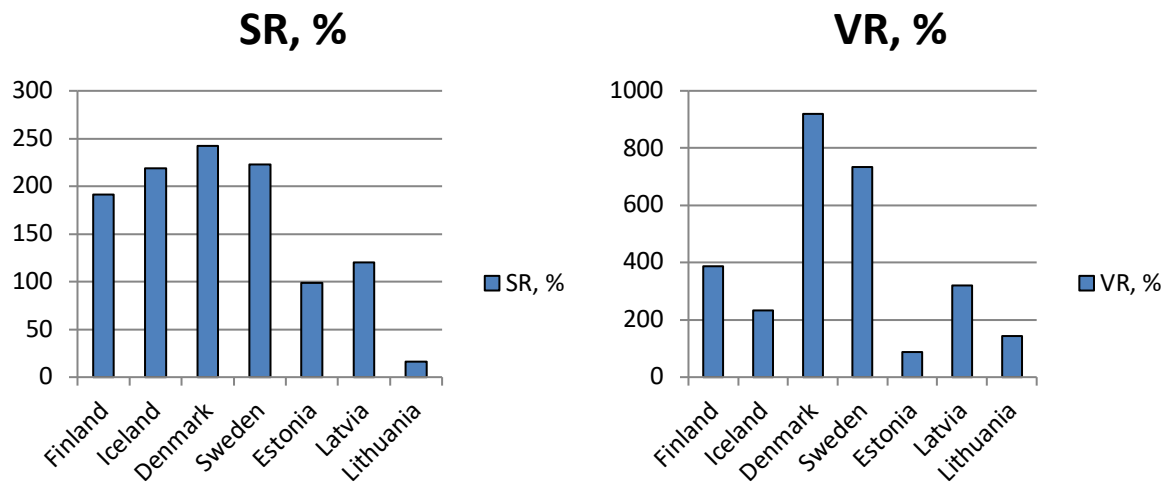
SR, %

VR, %

Figure 2. **TSR during the period from 2012 till 2022**

In analysis of Figure 2, we can see big difference between return for shareholders who have Scandinavian and Baltic companies in their portfolio. In case we ignore Latvia with only 3 representatives in Main List of Baltic market, the highest ten-years SR was reached in Estonia where investors have earned 99%. Meanwhile, the worst Scandinavian results was assessed in Finland (191%) and it was almost twice better than Estonia. From the more realistic VR point of view, the difference is even more visible. Return of investments in Lithuania and Estonia was 144% and 88.5% accordingly. At the same period, it was up to 400% in Finland, 734% in Sweden and 920% in Denmark (6 times better than Lithuania).

In future, such data from Baltic and Nordic stock markets should be compared with other European or Global stock markets. The introduction part of this article has revealed the leadership of Estonia in Baltic states stock market. So, needs to know, how did Estonian companies gain its value better than other Baltic countries. Also, investigated countries have smaller companies which could be researched. NASDAQ BALTIC has Secondary List; NASDAQ NORDIC has Mid Cap and Small Cap lists represented by companies with smaller capitalization.

CONCLUSIONS

1.   The investing in Baltic and Nordic stock markets can protect wealth for investors from inflation and even ensure the growth of capital value in long-time period. Despite long-term ratios of return are positive in absolutely all observed countries, Scandinavian market TSR ratios are several times better than Baltic. The leader is Denmark with companies which gained 920% of TSR during period 2012-2022. In the same period Estonian companies gained 88.5% of TSR and it was the worst result.

2.   Short-term TSR ratios revealed negative impact of shock in the securities markets, which started after Russia's invasion in Ukraine. This shock in Baltic market was several times lower than in Nordic due to weak efficiency noticed in earlier research. The biggest negative reaction has happened in Sweden. One-year TSR ratio has showed that investors loses were more than -500% in this country. Meanwhile, Lithuania had small gain of 28%.

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