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DO DIVIDEND YIELDS EXPLAIN STOCK PRICE CHANGES? AN ANALYSIS OF BALTIC SEA MARKETS

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Abstract. Despite the integration of the Lithuanian, Latvian, and Estonian stock markets into the NASDAQ OMX Baltic exchange, the region continues to attract limited investment compared to its Nordic counterparts. This study tries to find - do dividend yields explain long-term stock price changes in the Baltic stock market. A dataset of 34 listed Baltic companies from Lithuania, Latvia, and Estonia was analyzed for the period 2016–2025, and the results were compared to 245 large-cap companies listed in Finland, Sweden, Denmark, and Iceland. Ten-year stock price change was correlated with ten-year dividend yield, profit change, and revenue change. The Baltic markets exhibit a statistically significant and semi-strong positive correlation between dividend yield and long-term stock price change, indicating that investors in this emerging region price dividends as a relevant component of expected return. Profit change also showed a positive correlation, while revenue change was weaker. Cross-market comparison confirms the robustness of the relationship: Denmark shows the strongest correlation ($r = 0.78$; $p < 10^{-10}$), Finland and Sweden moderate but significant correlations, and Iceland no statistically reliable relationship due to the small market. The results suggest that dividend yield functions as a meaningful driver of long-term price appreciation in the Baltic region and aligns more closely with Nordic investor behaviors than prior literature on emerging markets would imply. Findings contribute evidence that dividend policy may serve as a valuation signal in developing equity markets.

Keywords: stock market, NASDAQ OMX Baltic, NASDAQ OMX Nordic, Dividend Yield

INTRODUCTION

This article analyses the drivers of trends of stock prices in the Baltic stock market. Together, the results are compared to Scandinavian market which are close geographically but different historically. 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 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 mentioning, due to occupation of the Soviet Union, Baltic countries didn't develop their stock markets and now they are in a chasing position compared to more developed stock markets. Study of Pretorius (2024) confirmed low levels of integration with both developed and emerging global equity markets, but slightly higher integration with developed markets. Estonian market had less integration and Latvian, Lithuanian markets may on the way to higher integration. Few years before Aleknevičienė et al. (2018) concluded that Estonian stock market was the most efficient and Latvian – the least efficient. The reason for this is low liquidity. Deltuvaitė (2015) confirmed it with her study. The author concluded that global integration in the Baltic stock market is very low. Latvian stock market is more isolated at the global level than Lithuania and Estonia. The same results were confirmed by Stulga (2019), although his analyses were conducted on one Baltic market and one representative from global market at the same time. Gil-Alana et al. (2018) explore Baltic Stock Exchange for technical trading strategies. Authors concluded that markets show weak form efficiency, meaning technical trading strategies have limited advantages.

On the one hand, Rudzkis and Valkavičienė (2014) revealed that global stock exchange indicators have a significant impact on the Baltic stock market. EUR/USD exchange rate, money supply, the price of gold and oil influence the price of companies in Baltic countries. Pilinkus (2010), Dubinskas and Stunguriene (2010) researched correlations between Baltic stock and macroeconomic indexes: GDP; inflation rate; unemployment rate; state debt; export and import. The relationship between these indexes and the Baltic market index is very high in the longtime period. Few authors found common relationship between countries across Baltic Sea. For example, Stasiukonyte and Vasiliauskaite (2008) demonstrated that the Baltic and Scandinavian markets were integrated during their research period from 2001 till 2006. Study of Nikkinen (2012) found Baltic and Nordic (Finland, Sweden and Denmark) stock exchanges have moved towards a harmonization of procedures and common ownership. While the results of this study demonstrate that the Baltic stock markets were apparently segmented before the crisis, they were highly integrated during the crisis. Struckas (2020) says that stock markets of these countries have similar cycles of fluctuations in the period from 2000 till 2020. Behavioral aspects were disclosed in paper of 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. 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 adjustment in the Baltic stock market also. But Scandinavian and Baltic stock markets have very big differences: Baltic states started their 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.

The goal of this paper is estimation of level of correlation between dividends and stock prices in the Baltic Stock Exchange which could answer do Dividend Yield explain stock price changes in Baltic Stock Exchange market. Tripathi (2023), Sharif et al. (2015) found that companies which pay higher dividends tend to have higher stock prices. This suggests investors value certain income in shape dividends over uncertain future capital gains. Such tendency isn't typical for all markets. For example, Hussainey (2010) reported about negative or insignificant relationship between Dividend Yields and stock prices in the exchange market of UK.

The objectives to reach this goal are:

1. To find correlation level between stock prices and investing ratios in Baltic Stock Exchange.
2. To compare Baltic and Scandinavian stock markets.

METHODS OF RESEARCH

As the paper's goal is to check the hypothesis that Baltic stock market's shares prices have relationship with dividend payments, revenue and net income of listed companies here was used few ratios and formulas. The observation period was 10 years from 2016 till 2025. Dividend Yield (DY) formula was used from paper by Erasmus (2012) where the influence of Dividend Yield on Share Return was analyzed:

$$DY_t = \frac{1}{P_{t-1}} \sum_{T=t-12}^{t-1} DIV_T \quad (1)$$

Where, DY_t – Dividend Yield in month *t*.
DIV_T – the dividend paid in the month *t*.
P_{t-1} – share price in month *t-1*.

However, to complete the idea to observe 10 years period, DY formula was modified by this need:

$$DY(10y)_t = \frac{1}{P_{t-121}} \sum_{t-120}^{t} DIV \quad (2)$$

Where, $DY(10y)_t$ – 10 years Dividend Yield in month *t*.
DIV– the dividend paid.
P_{t-1} – share price in month *t-121*.

As dividends are connected to revenue and net income this research collected data about these results of each Baltic states company listed in main list. All data was transferred into trends as could be compared with trends of stock prices in the market during the same 10-year period.

The companies which got into our observation list are the biggest ones in Lithuania (12 companies), Latvia (4), Estonia (18) in total of 34 companies. Although, the main subject is Baltic stock market, here will be presented the comparison with similar data of companies from Finland (39), Sweden (156), Iceland (4) and Denmark (46). The biggest Baltic companies were taken from Main List of NASDAQ OMX Baltic market. The biggest Scandinavian companies were taken from Large Cap List of NASDAQ OMX Nordic market. Worth mentioning, Large Cap List companies have share values of over 1 billion euro. Meanwhile, Main List companies have a share value over 4 million euro only. Even this regulation could show us a big difference between these markets.

THE RESULTS

During the observed period from 2016 till 2025 few global crises affected financial markets. Firstly, COVID-19 impact on financial markets should be mentioned. Early study of 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. Israeli Iranian war in 2025 looked like could do negative impact on financial markets but still needs to be researched. Their previous conflict in 2024 caused down trend in the frontier and standalone markets together with Pan-American stock market (Pandey, 2024).

This paper discusses the impact of year-by-year companies' performance on stock prices in the Baltic countries. Table 1 represents Dividend Yield accumulated from 2016 till 2025 (DY). Another ratio is the change in earned profit or suffered losses during the same period. Usually, shareholders hope for a rising amount of profit earned which would suggest the hope for bigger dividends. Third ratio Revenue Change calculated from 10 years dynamic of revenue earned by Baltic Stock Exchange companies. Raising sums of revenue suggests bigger profits herewith bigger dividends. And the last one Dividend Yield Change shows trend of Dividend Yield throw analyzed period.

Table 1

Correlation between 10-year Stock Price Change (%) and other finance ratios of Baltic Stock Exchange companies

Ratio	Pearson correlation, r	p-value
DY, %	0.64	0.000044
Profit Change, %	0.47	0.0054
Revenue Change, %	0.35	0.0396
DY Change, %	0.15	0.3968

Table 1 shows that a statistically significant positive (semi-strong) correlation was found between Stock Price Change (%) and Dividend Yield ($r = 0.64$, $p < 0.001$). It suggests that buyers of Baltic stocks seek higher dividends and supports theories like the "bird in hand". A weaker, but still positive (semi-strong), correlation was found between Stock Price Change and Profit Change ($r = 0.47$, $p < 0.005$). We could try to follow investors' logic: investors who are looking for dividends also monitor trends in profit. However, profit does not mean dividend payouts, and it could be the reason for weaker correlation. The correlation between Stock Price Change and Revenue Change was positive but weak and suggests that costs should be monitored together with revenue, i.e. increasing revenue does not guarantee increasing profit and dividend payments. Few single cases could describe these correlations. "Merko Ehitus" paid 100% dividends for investors who bought their shares 10 years ago. The stock price of this company increased 3 times during the same period. Another one, "Vilkyskiu Pienine" increased its value 6 times together with 90% dividend payouts.

To assess the relationship between long-term stock performance and dividend yield, we examined the correlation between ten-year Stock Price Change (%) and ten-year Dividend Yield (%) across selected Northern European markets. The results from Baltic Stock Exchange were compared with results calculated in Stock Exchange in Finland, Iceland, Sweden and Denmark. Pearson correlation coefficients (r) and corresponding p-values were computed for each country and Baltic region (Table 2).

Table 2

Correlation between 10-year Stock Price Change (%) and 10-year Dividend Yield (%)

Country	Pearson correlation, r	p-value
Lithuania, Latvia, Estonia	0.64	0.000044
Finland	0.38	0.014113
Denmark	0.78	0.00000000001
Iceland	0.08	0.878
Sweden	0.37	0.00000022

A statistically significant positive correlation was observed in all markets except Iceland. Unfortunately, we can't trust the results from Iceland because of small amount (4) of listed large caps companies. The correlation was strongest in Denmark ($r = 0.78$, $p < 10^{-10}$), indicating a robust positive correlation between higher dividend yields and long-term stock price trends. We could see the similar results in the Baltic markets (Lithuania, Latvia, and Estonia) with semi-strong positive correlation ($r = 0.64$, $p < 0.001$), suggesting that dividend yield may serve as a meaningful indicator of long-term performance within these emerging markets.

In Finland and Sweden, the correlations were moderate but statistically significant ($r = 0.38$, $p = 0.014$ and $r = 0.37$, $p < 10^{-6}$, respectively), implying that dividend yields are positively related to long-term returns, though other factors likely play a role. Overall, the results indicate that higher dividend yields tend to be associated with greater ten-year stock price appreciation across most Nordic and Baltic markets, with varying strength of association.

In future, such data from Baltic and Nordic stock markets should be compared with other European or Global stock markets. Expanding the sample to include other European or global markets would allow for testing whether the observed relationships are region-specific or part of a broader structural trend. Such comparisons could help determine tax regimes or investor cultures affect dividend performance.

CONCLUSIONS

1. Stock prices and dividends are closely linked to each other. Dividends generally support higher and more stable stock prices in long period. Dividend yield is a statistically significant and economically meaningful driver of long-term stock price appreciation in the Baltic stock markets. Semi-strong correlation ($r = 0.64$) confirms that investors in Baltic stock market accept the strategy "bird in hand".
2. Cross-market comparison shows that this mechanism is not unique to the Baltics, but the strength of the relationship differs by region. Denmark exhibits the strongest correlation ($r = 0.78$), while Finland and Sweden show moderate significance and Iceland reveals no reliable relationship. This suggests that the Baltic markets, although younger, behave more similarly to Scandinavian markets than earlier literature has implied.

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