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COMPARATIVE ANALYSIS OF THE STOCK MARKET FOR TRADING GOODS OF COMPANIES IN DIFFERENT SECTORS AS A FACTOR IN THE DEVELOPMENT OF RETAIL AND PRODUCT PROMOTION

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ABSTRACT:

Retail occupies special attention in the process of formation and development of economic relationships between various business entities. For these purposes, it is advisable to study the dynamics of shares of individual trading companies in the context of various sectors of the economy. Based on this, the work examines the initial data for such companies, and also analyzes their mutual dynamics. The work presents a variety of graphs and diagrams that allow you to understand the progress of the study and evaluate the results obtained.

Key words: Retail, Quotes, Shares, Analysis, Comparison, Dynamics, Stock market, Product promotion, Economic sectors

INTRODUCTION

Trade in goods is one of the processes of development of economic relations between various business entities and consumers. This process is the stage when the produced product finds its consumer [1], [2].

During this process, there is also a movement of financial resources in the form of individual payments and taxes. This fills and ensures the continuity of the movement of the corresponding financial flows of a number of economic agents [3]-[6]. The retail process is also the basis for the functioning of various trading platforms. This, in turn, ensures employment and the development of relevant related processes. This determines the relevance of this work, its scientific and practical significance.

One of the directions for analyzing the development of retail and product promotion may be the study of stock market data [7]-[9]. Such a market is characterized by the presence of various securities, which allow one to assess the supply/demand ratio and understand the dynamics and characteristics of individual areas of trade. For these purposes, we can consider both the dynamics of individual stock indices and the dynamics of share prices of individual business entities.

Studying quotes for stock indices or shares allows you to consider their dynamics over time and evaluate possible fluctuations. Knowledge of this volatility contributes to the understanding of those processes that are characteristic of markets for certain goods. To carry out such a study, one should use both classical methods and approaches [10]-[20], and those that allow a non-standard approach to the process of studying data, obtaining additional information, and considering new directions in their study [21]-[31].

Here, mutual analysis of various data is also important. This allows you to evaluate the influence of such data on each other.

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Thus, the main goal of this work is to conduct a comparative analysis of the stock market for trading goods of companies in different sectors. This also involves conducting a literature review on the research topic. Also an important component in revealing the objectives of the study is the mutual analysis of data, which allows us to evaluate additional conditions in the development of retail and product promotion.

Related work

Retail as a factor in product promotion occupies a special place in the research of various authors. Here you can see both theoretical and practical work. At the same time, in our study, an important element of analysis is the connection with the stock market.

E. K. Kelley and P. C. Tetlock analyze the relationship between retail and stock prices [32]. This analysis is carried out on the basis of short retail sales. The authors show that retail short selling predicts negative stock returns. However, the predictive power of retail short selling remains for one year and is not replaced by institutional short selling [32]. The authors also note that retail short sellers have an understanding of the retail investor community and small firm fundamentals [32]. This is important in promoting products.

K. K. Ullrich and S. Transchel consider the discrepancy between supply and demand in terms of the efficiency of the stock market [33]. At the same time, attention is turning to retail trade. The authors also note that volatility of inventory performance relative to volatility of demand is a predictor of future stock returns. For the purposes of such analysis, the three-factor model of Fama and French is used, which is supplemented by the momentum factor [33]. It is also noted that market inefficiency results from the inability of investors to incorporate all the information contained in stocks into stock valuations.

S. Nuridah, R. M. Sitohang, A. S. Sofura and E. Sagitarius study the relationship between the impact of return on sales and growth on stock price [34]. For this analysis, a purposive sampling method is used. The work examines data for the period 2019-2021. The analytical method used is multiple linear regression, hypothesis testing using t-test to test partial regression coefficients and F-test to test simultaneous coefficients [34]. The results show that the variable return on equity partly does not have a significant impact on stock prices. However, sales growth partially has a positive and significant impact on stock prices. At the same time, variable return on equity and sales growth simultaneously have a positive and significant impact on stock prices [34]. This study is important for understanding the retail and promotion process.

I. G. Putri and H. Rahyuda study the impact of capital structure and sales growth on firm value [35]. Such an analysis is carried out using the return on assets indicator on the value of the company, using a direct and indirect indicator of book value, using the return on assets indicator as an indicator of return on assets [35]. The analysis used reports from 51 consumer goods companies for the period 2013-2018. The results show a relationship between company stock prices and sales growth.

B. Bustani, K. Kurniaty and R. Widyanti study the impact of company earnings per share based on data from the Indonesian stock exchange [36]. The paper examines the subsector of food and beverage companies in the period 2014-2018. The study sample consisted of 12 companies out of 26 food and beverage companies that met the researchers' criteria [36]. Statistical equation modeling was used for analysis. The study results confirmed the significant impact of earnings per share.

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The diversity of such analysis shows its importance in relation to the topic of research. In this case, various methods and approaches for research can be used.

Dynamics of stock quotes for individual companies

This section examines price dynamics for shares of individual companies. which are listed on the US stock market. In Fig. 1 shows the dynamics of quotes for shares of companies selling consumer goods Kimberly-Clark Corporation (KMB) and General Mills Inc (GIS).

a) KMB   b) GIS
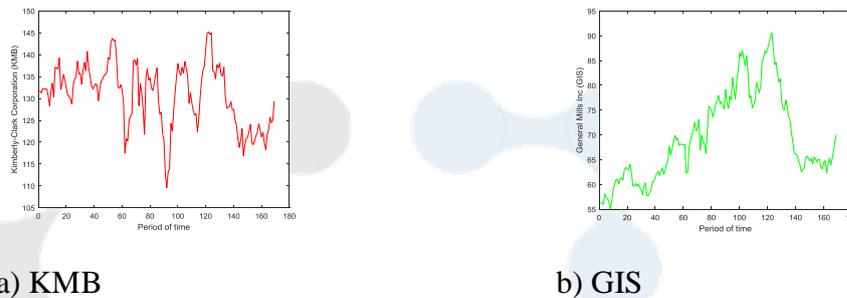
Figure 1: Stock quotes for Kimberly-Clark Corporation and General Mills Inc

In Fig. 2 shows the dynamics of quotes for shares of companies selling computer equipment NetApp Inc and Dell Technologies Inc.

a) NTAP   b) DELL
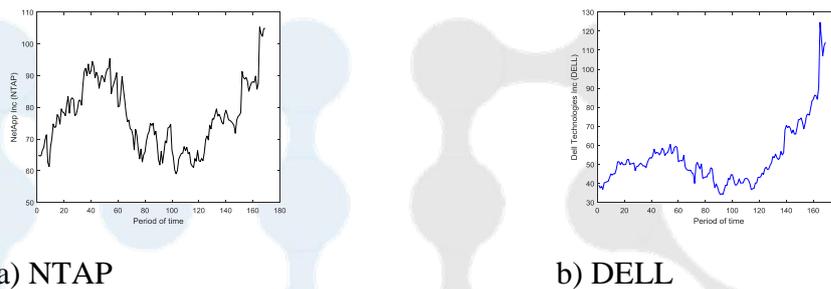
Figure 2: Stock quotes for NetApp Inc and Dell Technologies Inc

For the data in Fig. 1, it is worth noting the diverse dynamics of stock quotes of the relevant companies. The share price of Kimberly-Clark Corporation (KMB) is constantly changing: it goes up and down. This occurs throughout the entire studied interval. At the same time, the dynamics of such changes have been decreasing recently.

At the same time, the dynamics of General Mills Inc (GIS) shares initially increases sharply, but in the last period of the studied interval it also rapidly decreases. Such changes should accordingly be considered as reflecting the dynamics of sales of such goods and their promotion on the market. In the first case, we note the instability of sales, and in the second, the influence of an external factor that caused a decrease in stock prices.

Data Fig. 2 are more consistent than the data in Fig. 1. But at the same time, we see that the share price of NetApp Inc shows a more significant increase in the first third of the period under study than the share price of Dell Technologies Inc. What is the same for these quotes is that in the last third of the period under study the price increases sharply. A manifestation of this growth is most likely an increase in sales of computer equipment.

In Fig. 3 shows the dynamics of stock quotes for companies that retail clothing Dillards Inc and Burlington Stores Inc.

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a) DDS   b) BURL

Figure 3: Stock quotes for Dillards Inc and Burlington Stores Inc

In Fig. 3 also shows varied price dynamics for the shares of Dillards Inc and Burlington Stores Inc. Dillards Inc stock quotes are characterized by general growth over the time interval under study.

At the same time, we may see some decline or increase in prices for Dillards Inc. shares. In general, it should be noted that sales for this group of products have increased. This should be taken into account when planning the promotion of such goods, entering the securities market, and forming investment strategies.

Burlington Stores Inc sells branded clothing. This affects the dynamics of the respective shares. One can observe a period of significant decline in demand for branded clothing and, as a consequence, a decrease in stock prices for this company. It should also be noted that there was a period of instability in demand and fluctuations in stock prices. All this is important for taking into account the strategy for promoting goods, the retail process, and entering the stock market.

Thus, we can see the influence of supply/demand on the dynamics of stock quotes of companies associated with the sale of various goods. At the same time, supply/demand is influenced by a number of external factors.

Comparative assessment of the mutual dynamics of the studied data

This section analyzes the mutual dynamics of the data under study. The purpose of such a study is to determine the periods of mutual influence of stock quotes. This will allow you to understand the dynamics of the corresponding segment of the securities market, which is important for developing investment strategies and determining the time to enter the market. In turn, this can be used to optimize the retail process and develop a product promotion strategy.

For the purposes of this study, wavelet ideology is used. Among its methods, wavelet coherence estimation stands out. If we have two series of data ($f(t)$ and $g(t)$), each of which reflects the dynamics of an indicator over time t, then we can determine the value of wavelet coherence between the following series of data using the following formula [37]-[39]:

$$Q^2(a,b) = \frac{\left| \Lambda(\, a^{-1} W_{f(t)g(t)}(\,a,b\,))\right|^2}{\Lambda(\, a^{-1} \left| W_{f(t)}(\,a,b\,)\right|^2)\Lambda(\, a^{-1}\left| W_{g(t)}(\,a,b\,)\right|^2)},$$

where:

$W(\,a,b\,)$ − values of transverse wavelet spectra,

a,b − the scale and center of time localization that determine the scale of the wavelet transform,

$f(t)$, $g(t)$ − series of data that we study,

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Λ − smoothing operator,

$Q^2(a,b)$ − square of the wavelet coherence coefficient. $0 \le Q^2(a,b) \le 1$. If these values tend to zero, then we have a weak correlation. Otherwise we have a strong correlation [40], [41].

In Fig. 4 shows wavelet coherence estimates for the data in Fig. 1 and Fig. 2.
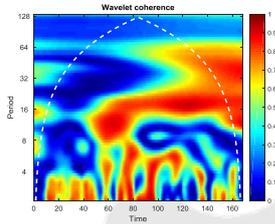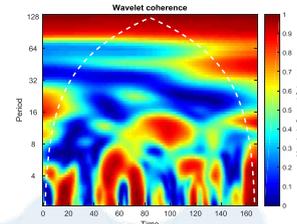
a) for the data Fig. 1   b) for the data Fig. 2

Figure 4: Wavelet coherence estimates for the data Fig. 1 and Fig. 2

Data Fig. 4 indicate the presence of fragmentary estimates in the relationship between the dynamics of stock quotes for the Kimberly-Clark Corporation/General Mills Inc pair and the NetApp Inc/Dell Technologies Inc pair. In the first case, there is a denser fragmentation of such estimates. However, in the second case, although the fragmentation is not as dense, the assessments are mutual over longer intervals. It is also worth noting the depth of such relationships. This allows you to predict the promotion of goods taking into account the activities of potential competitors.

In Fig. 5 shows wavelet coherence estimates for the data in Fig. 3.
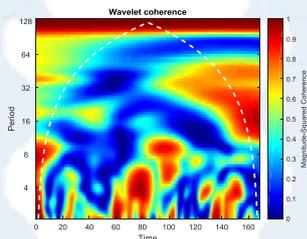
Figure 5: Wavelet coherence estimates for the data Fig. 3

Here it is also worth noting the fragmented relationship in the dynamics of stock prices of Dillards Inc and Burlington Stores Inc. Moreover, such fragmentation is observed in the middle of the period under study and at the end of such a period. Overall, this suggests little correlation between the stock price movements of Dillards Inc and Burlington Stores Inc. This is explained by the fact that these companies trade different types of goods.

In general, the presented estimates allow us to speak about the possibility of forecasting in the promotion of relevant products on the market, based on the dynamics of company stock prices.

CONCLUSION

In this paper, attention is paid to a comparative analysis of the stock market for trading goods of companies in different sectors of the economy. Such analysis is proposed to be used for the purposes of retail development and product promotion. To clarify individual aspects of the analysis, a critical analysis of the relevant literature sources was carried out.

Based on the wavelet methodology, the relationship between stock quotes of different companies belonging to the same group that trades the same goods is shown. For these purposes, wavelet coherence estimates are used.

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The results obtained should be used to predict the development of the retail market and product promotion, substantiate investment strategies and the timing of entry into the securities market.

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