• FINANSE I PRAWO FINANSOWE •
• JOURNAL OF FINANCE AND FINANCIAL LAW •

grudzień / december 2025 • vol. 4(48): 87–98
https://doi.org/10.18778/2391-6478.4.48.04

Rafał Jóźwicki https://orcid.org/0000-0002-4346-4046
University of Lodz, e-mail: rafal.jozwicki@eksoc.uni.lodz.pl

Paweł Trippner https://orcid.org/0000-0003-1060-517X
SAN University, e-mail: ptrippner@san.edu.pl

USE OF THE VOLUME PROFILE IN MAKING INVESTMENT DECISIONS ON THE STOCK MARKET

ABSTRACT

The purpose of the article. In order to effectively multiply money on the capital market, it is necessary to use effective analytical methods to select the right financial instruments for an investment portfolio. This article focuses on the issue of the possibility to use the so-called volume profile to make investment decisions, which in its essence differs from classic indicators using turnover. In the article, the authors hypothesize that the volume profile makes it possible to identify the turning points of a listed instrument and thus can be an effective means for making investment decisions. On the basis of the assumptions made and in the light of the calculations performed, the research hypothesis presented in the introduction of the paper was positively verified. This indicates that the volume profile can be an important decision-making tool for investors and can thus be usefully applied in investment decision-making.

Methodology. Overall, this study focuses on determining the reaction of the WIG20 index in relation to the volume profile of the session immediately preceding the day under analysis. The study used the WIG20 index from January to June 2024.

Results of the research. According to the conducted analyses and calculations, a noticeable reaction of the WIG20 index value to the POC of the preceding session took place in approximately 90% of cases, which clearly indicates that this level determined during a given trading session is of significant importance for the course of quotations in the following day's session.

Keywords: stock market, investment strategies, volume profile

JEL Class: E22, E44, G11, G31

Received: 07.10.2025. Accepted: 20.10.2025.

Funding information: Not applicable. **Conflicts of interests:** None. **Ethical considerations:** The Author assure of no violations of publication ethics and take full responsibility for the content of the publication.

Introduction

Investing money in the capital market is a process that requires analyses to answer key questions about the choice of a financial instrument and the direction and right moment to take a position. Investors use a variety of methods to obtain an attractive rate of return, such as technical, fundamental or portfolio analysis, but it is also important to bear in mind the important influence of psychological factors on the decision-making process. One of the techniques used in this respect, which is rooted in technical analysis, is the evaluation and appropriate interpretation of trading volume in relation to the instrument of interest to the investor. Traditional tools using trading volume relate it to time, i.e., they indicate the turnover that has been realized in a given period (e.g., during a single trading session, or in other intervals: hourly, minute and others).

Modern computing technology and the continuous improvement of existing tools have led to the development of the so-called volume profile. In contrast to the traditional approach, volume here refers to the price at which transactions were made and not to the period of execution. This concept of calculating turnover provides a completely different perspective on the trades executed, as it makes it possible to determine which price level is of greatest interest to investors and, consequently, to identify potential support and resistance levels as turning points in the market.

The aim of submitted article, in the light of previous considerations, is to assess the possibility of using a volume profile in the process of making investment decisions on the stock market. The hypothesis adopted in the paper is that the volume profile makes it possible to identify the turning points of a listed instrument and thus can be an effective tool in investment decision-making.

To date, there are few studies on the subject of this article. This creates a research gap, which the authors intend to fill by devoting their attention to an in-depth analysis of the volume profile and how it can be used in making investment decisions in the stock market.

The results of the analyses and investigations carried out may be used in the future in practice by stock market investors wishing to enrich their arsenal of tools used in making decisions on capital allocation in the market.

In pursuit of the objective of this study, an analysis of the literature on the subject was carried out to the required extent, as well as quantitative research based on actual stock market quotations. Based on these, the applicability of the volume profile in the construction of an investment strategy was assessed.

Using volume to make investment decisions – a literature review

The possibility of making money on the capital markets has led investors to try to understand the mechanism that causes prices to move. This has developed various methods that, according to participants in the stock market game, enable them to make accurate decisions regarding the involvement of capital in specific financial instruments. The most commonly used tools in this regard include fundamental, technical and portfolio analysis (Tarczyński, 2001). The effectiveness of these methods varies. Depending on the analysis period adopted, the time interval, or the current market situation, the results obtained can demonstrate both the usefulness and uselessness of these methods (Anghel, 2015).

One of the key indicators that technical analysis offers can include the value of trading, or so-called volume. It represents the activity of traders in a specific time frame. The traditional evaluation of trading volume refers to the calculation of its volume in an assumed time interval. If, for example, we are interested in the volume of transactions for a given financial instrument during a single trading session, the value of all transactions must be added up and the result is generally presented in the form of a so-called histogram, i.e., a vertical line plotted on a graph of the relevant stock (Murphy, 2019).

In order to take a closer look at trading volumes, different types of indicators based on volume and price are used to provide an in-depth analysis of the market. Some of the most commonly used include the following ones.

On Balance Volume (OBV) is a so-called trading momentum indicator. Its use comes down to assessing the pressure from buyers and sellers to trade. It is a cumulative indicator, meaning that if the price in a given time interval has increased, the corresponding volume is added to the value of the OBV total, and if the price has decreased, the value of trading from that interval is subtracted from the value of the OBV total (Schade, 2014). The indicator is represented as a line on the chart, which is used to identify trends or divergence. It is assumed that the indicator should precede the price movement of the analyzed stock (Gallegos-Erazo, 2022).

Another useful tool in this area is the Chaikin Money Flow, whose formula was developed by Marc Chaikin. The indicator has the character of an oscillator and its values range from -1 to +1. In addition, a zero base line is drawn on the chart. Its crossing by the indicator indicates an inflow or outflow of money from the market (Thomsett, 2010; Cohen, 2020).

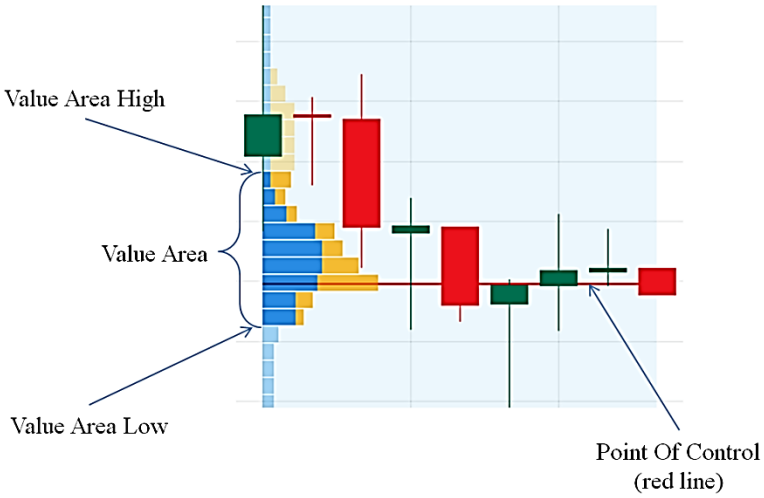
Another commonly used tool by investors to analyze turnover is the Money Flow Index, which also belongs to the group of oscillators. It measures the size of the money flow entering or leaving the market. It is generally used to assess the oversold and overbought levels of the market in a given time interval, facilitated by reference lines generally plotted at 20 and 80 points respectively (Phoung, 2021).

The next two indices, the Negative Volume Index and the Positive Volume Index, take into account price and turnover volume in the calculation. The difference between the two is that the former takes into account for its calculation only those periods with a lower turnover in a given interval than in the preceding period. The second indicator, on the other hand, only takes into account periods with a higher turnover than the preceding period. The use of these methods usually boils down to determining the moment of intersection of the values of the indicators with the average calculated on their basis, searching for divergence, or identifying trends formed in the graphs of the indicators (Kaufman, 2021; Peterson, 2003).

The indicators discussed so far, which are popular with investors, take into account the volume of trading in a given time interval. The so-called volume profile, which is the subject of analysis in this study, represents a completely different approach. Obviously, trading volumes refer to the price at which they were executed. It is for this reason that it is presented on the chart as a histogram, but plotted as a level. This means that the longer the line corresponding to a given price is, the more trading took place at that price. Figure 1 shows an example of a volume profile plotted on a candlestick chart, with the key elements labelled. The Value Area (VA) is the price area in which 70% of the trading took place and the Value Area High (VAH) and Value Area Low (VAL) points indicate the upper and lower price levels bounding the VA area respectively.

Figure 1

Example of volume profile



Source: Own compilation on the basis of stock market quotations of the WIG20 index using the online platform.bossa.pl/webtrader and (Chutka & Rebetak, 2021).

The red horizontal line marked as Point of Control (POC) is a very important level, as this is the price at which the highest number of trades in terms of volume were executed, in other words, the price at which the POC level was the highest volume traded in a given period. In this way, the trader can clearly see at which price levels there was interest in trading and, conversely, at which price levels market participants were not willing to execute their orders. Low-volume areas located above the VAH level and below the VAL level represent reversal areas, when the price is not accepted by a large number of traders and only a small percentage of trades are executed here. The market tends to reject these areas. The price either bounces back or quickly moves to another value area (Ante, 2020).

The use of the POC by investors very often comes down to treating this level as support and resistance. Needless to say this is not the only strategy in this respect, however, due to the subject matter of this paper, the authors will only focus on this aspect.

Both support and resistance are important levels, attracting the attention of traders, and turnover is noticeably higher at these points. Support is a level that stops prices from falling further, the price bounces off it and starts to rise. Resistance, on the other hand, is a level that blocks prices from further increases, and once the price reaches it, it changes direction and begins to fall. Knowing the potential locations of support and resistance can be expected to be local turning points in the market (Kahn, 2011).

Methodology and research

Overall, this study focuses on determining the reaction of the WIG20 index in relation to the volume profile of the session immediately preceding the day under analysis. The study used the WIG20 index from January to June 2024.

Details of the study methodology:

- a volume profile indicator was superimposed on the one-hour interval of the index for each trading session, as shown in Figure 1;

- it was analyzed how the values of the WIG20 index evolve during the study trading session in relation to the volume profile distribution of the previous day's session;
- on the basis of daily observations, seven general patterns were distinguished in the behavior of the index values in relation to the volume profile from the previous day's session.

Value out of the previous day's range – meaning that trading on a given day is entirely above the maximum value or below the minimum value of the preceding session.

Value within the previous day's range does not reach the POC – meaning that during a given trading session, the index values have not reached the POC of the preceding session.

Consolidation around the POC – meaning that the index value during the trading session tended to remain in an area close to the POC of the preceding session for a long time.

No reaction – value beats the POC area – meaning that the index value has beaten the POC level from the top or bottom without reacting with a consolidation or rebound typical of support and resistance levels.

Support/resistance rebound from the POC: up to 20 pts. – which means that the index value has moved less than 20 points away from the POC level, treating this level as local support or resistance.

Support/resistance rebound from POC: 20–40 pts. – which means that the value of the index, having reached the POC, moved away from it by a range between 20 and 40 points, treating this level as local support or resistance.

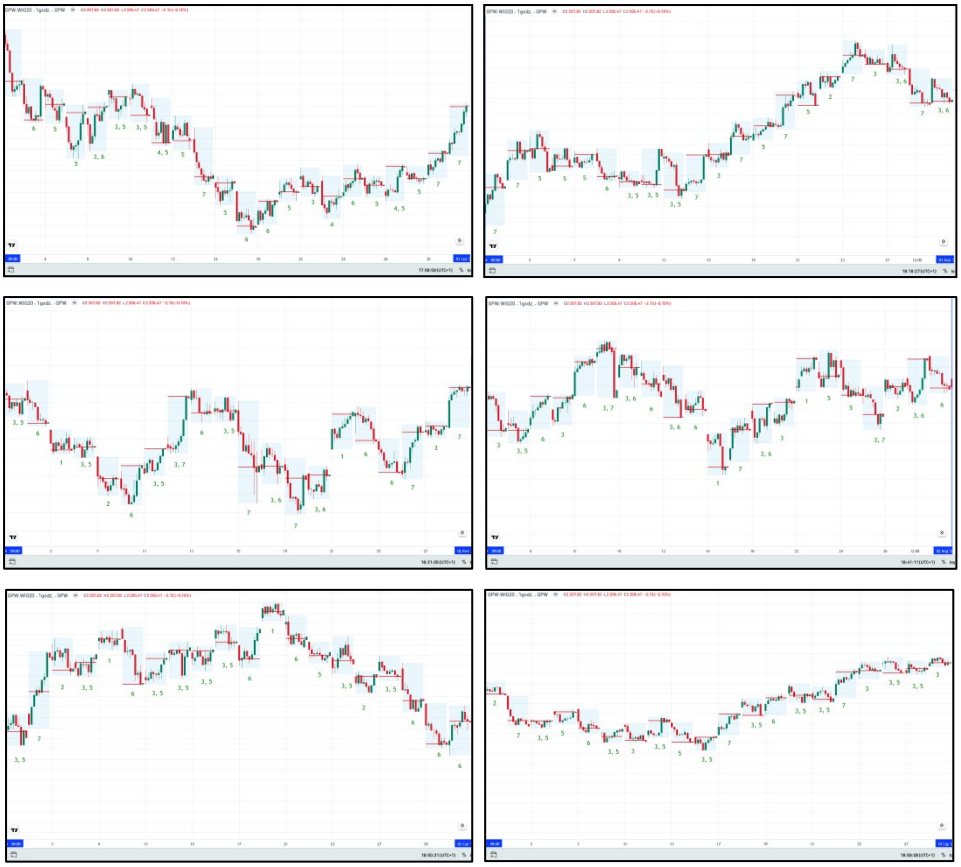
Support/resistance rebound from POC: + 40 pts. – which means that the value of the index has moved away from the POC level by more than 40 points, treating this level as local support or resistance.

In Figure 2, the numbers indicate the type of reaction of the WIG20 index value with respect to the volume profile from the preceding session. It is

worth noting that the behavior of the index in some sessions was subordinated to two patterns, e.g., consolidation and rebound by a specific number of points. Table 1 further summarizes the number of these reactions in subsequent months.

Figure 2

WIG20 index in the period January –June 2024 with the volume profile indicator in the one-hour interval



Source: Own compilation on the basis of stock market quotations of the WIG20 index using the online platform.bossa.pl/webtrader and (Chutka & Rebetak, 2021).

Table 1

Number of WIG20 value responses for the extracted schemes

WIG 20 reaction to the POC of the preceding session	I	II	III	IV	V	VI	Total
1. Value outside the range of the previous day	0	0	2	2	2	0	**6**
2. The value in the previous day's range does not reach the POC	0	1	1	1	2	1	**6**
3. Consolidation around the POC	4	7	7	10	8	12	**48**
4. No response – value overcomes POC area	3	0	0	0	0	0	**3**
5. Support/resistance rebound from POC: up to 20 points	11	8	4	3	9	11	**46**
6. Support/resistance rebound from POC: up to 20 points	5	3	7	9	6	2	**32**
7. Support/resistance rebound from POC: + 40 points	3	7	5	3	1	3	**22**
Number of reactions	**26**	**26**	**26**	**28**	**28**	**29**	**163**

Source: Own elaboration based on Figure 1.

Table 2

Share of WIG 20 value reactions for the identified schemes (%)

WIG 20 reaction to the POC of the preceding session	I	II	III	IV	V	VI	Total
1. Value outside the range of the previous day	0	0	8	7	7	0	**4**
2. The value in the previous day's range does not reach the POC	0	4	4	4	7	3	**4**
3. Consolidation around the POC	15	27	27	36	29	41	**29**
4. No response - value overcomes POC area	12	0	0	0	0	0	**2**
5. Support/resistance rebound from POC: up to 20 points.	42	31	15	11	32	38	**28**
6. Support/resistance rebound from POC: up to 20 points.	19	12	27	32	21	7	**20**
7. Support/resistance rebound from POC: + 40 points.	12	27	19	11	4	10	**13**
Number of reactions	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: Own elaboration based on Figure 1.

The figures presented in Tables 1 and 2, which are the result of the analysis, indicate that the volume profile, by determining the POC (point of control), facilitates the precise determination of support and resistance levels, which, in turn, enables the trader to set buy or sell orders at those points. A noticeable reaction of the index value during a given day to the POC determined for the preceding session took place in 61% of cases (see Table 2, sum of rows 5, 6, 7, column 'Total'). It is also worth noting that the consolidation around the POC point representing 29% of the observed value reactions (see Table 2, row 3, column 'Total') took place, except in a few cases only, always in conjunction with a rebound (reactions 5, 6, 7). This means that in approximately 90% of the cases, i.e., excluding reactions in the form of an opening outside the previous day's range or the failure to reach the previous day's POC (see Table 2, rows 1 and 2, column 'Total'), the value of the index under examination reaching the POC of the preceding session reacted noticeably in the form of a rebound from that level.

From a practical point of view, the results of the analysis carried out can be used by applying the POC from the preceding session to set buy or sell orders in the current session. If the opening is above the POC, this level can be considered as support. If the opening is below the POC, this level can act as resistance.

The analysis is based on the values of the WIG20 index and therefore refers to the portfolio of its constituent companies. In order to be able to apply the conclusions of the calculations to the actual stock exchange game, the volume profile must generally be calculated individually for each company.

Conclusions

In the article, the authors hypothesize that the volume profile makes it possible to determine the turning points of a listed instrument and thus can be an effective tool in making investment decisions. According to the conducted analyses and calculations, a noticeable reaction of the WIG20 index value to the POC of the preceding session took place in approximately 90% of cases, which clearly indicates that this

level determined during a given trading session is of significant importance for the course of quotations in the following day's session.

During the adopted research period, the hypothesis was positively verified and the use of the volume profile appears to be an effective tool that can be used by investors when deciding to invest capital in the stock market. However, it should be borne in mind that the volume profile should not be the only decision-making tool for the investor, but the signals from its observation should be confirmed by other analytical methods.

The results obtained will undoubtedly provide a reference point for further research on the volume profile taking into account, in particular, a different amount of historical data, a change in time interval, or the use of other financial instruments. All of these will help investors to better understand and use the volume profile to make investment decisions.

References

Anghel, G.D.I. (2015). Stock Market Efficiency and the MACD. *Evidence from Countries around the World. Procedia Economics and Finance*, 32.

Ante, L., (2020), Bitcoin transactions, information asymmetry and trading volume, *Quantitative finance and economics*, 4(3).

Chutka, J., & Rebetak, F. (2021). Analysis of trading volume and its use in prediction future price movements in the process of maximizing trading earnings. *In SHS Web of Conferences* (Vol. 92, p. 02010). EDP Sciences.

Cohen, G. (2020). Algorithmic setups for trading popular u.s. etfs. *Cogent Economics & Finance* 8(1).

Gallegos-Erazo, F. (2022). *Technical Indicator for a Better Intraday Understanding of Uptrends or Downtrends in the Financial Markets using Volume Transactions as a Trigger, ICAIW 2022: Workshops at the 5th International Conference on Applied Informatics 2022*. October 27–29. Arequipa: Peru.

Kahn, M.N. (2011). *Technical analysis: an introduction to stock chart analysis*. Warsaw: Wolters Kluwer Polska.

Kaufman, F.P.J. (2021). *Volume Breadth and CMT Curriculum Level II 2022*. Theory and Analysis, 9.

Murphy, J.J. (2019). *Technical Analysis of the Financial Markets: A Comprehensive Guide to Trading Methods and Applications*. New York: New York Institute of Finance.

Online.bossa.pl/webtrader.

Peterson, D.D. (2003). Positive Volume Index. *Technical Analysis of Stocks & Commodities*.

Puoung, L. (2021). Investor Sentiment by Money Flow Index and Stock Return. *International Journal of Financial Research* 12/4.

Schade, G.A. (2014). The repeating story of on balance volume. *Journal of Technical Analysis* 68.

Tarczyński, W. (2001). *Rynki kapitałowe – metody ilościowe*, vol. I. Warsaw: Placet.

Thomsett, M.C. (2010). *CMF-Chaikin Money Flow*: *Changes Anticipating Price Reversal*. FT-Press.