Impact of Firm's Value Relevance of Accounting Information on Stock Returns during Market over and under Reactions in Pakistan

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Abstract

Value relevance of accounting information (VRAI) is a fundamental characteristic of influencing stock returns. This study analyzes the impact of VRAI on stock returns during market under and overreaction in Pakistan. The data of 322 non-financial firms listed in PSX from 2005 to 2022 is used. To explain stock returns, we employ the annual stock returns and buying and holding returns model. The data on financial variables has been collected from annual reports published on the company's websites and PSX Data Stream. The outcomes show that the accounting information variables earnings per share and change in earnings per share are
positively related to the stock returns during market over and under reaction. Earnings per share, net income and book value are significantly related to the BHAR during market over and under reaction while earnings per share and book value are significantly related to the BHAR during market overreaction of non-financial firms. It is also concluded that balance sheet variables attract more investors to invest in the stock market during the underreaction of non-financial firms. Therefore, it is suggested that the non-financial firms must present adequate accounting information on their financial statements within the specified time frame.

**Keywords:** Firm’s Relevance Value, Accounting Information, Stock Returns, Stock Market under and Overreaction, Non-Financial Firms, Pakistan

1. Introduction

Stock markets are regarded as a key element of the global financial system in a capitalist economy. The stock market serves as a conduit, allowing people and institutions to contribute to the nation's wealth by engaging in secondary markets. Fair securities pricing is encouraged by well-regulated stock markets, which also lower transaction costs. It encourages economic activities and creates employment opportunities. Similarly, stock traders closely monitor any change in the stock index since it could impact their future profits or aid in portfolio evaluation. They also closely monitor the economy, paying particular attention to any unexpected developments that could influence their stock-buying, and selling decisions and stock returns (Haroon & Shah, 2013). The performance of stock returns exhibits information gathered from economics, management, accounting and marketing operations. The business's competitiveness, effectiveness, efficiency, and procedural, structural, and administrative aspects are printed here (Verboncu & Zalman, 2005). The information regarding stock
returns influences the market and accounting indicators of organizations. According to Alswalmeh & Dali (2019), many analysts and academics focused on the accounting and market variables influencing stock returns.

Factors that influence stock returns are helpful in investor's decision-making process to earn profits from the shares they purchase. The imperative factor that investors consider is the financial situation of the firms (Chasanah & Sucipto, 2019). Decision-makers need to use the financial statement to assess the company's performance, including operational effectiveness, profitability, solvency and liquidity (Ergun, 2012). Therefore, financial analysis is a crucial tool for deciphering the numbers in the financial accounts. It assesses how well-run the businesses are to provide a high return on investment, and it uses this return to accomplish investors' goals (Panagopoulos et al., 2017). The ability of financial data in financial statements can be used to determine the importance of accounting information (Vishnani & Shah, 2008). The significance of accounting information on stock investing decisions is known as the VRAI. Investors use the accounting data to value shares if they are valued. VARI, as defined by Sami & Zhou (2004), is the ability of information generated by accounting information to influence the price of stocks. Accounting data has value when prospective investors use it to evaluate companies and consider it to adjust share prices (Nayeri et al., 2012).

The relationship between accounting data, such as book value of equity, earnings per share, and return on investment can be used to evaluate the VRAI (Beisland, 2009). Consequently, a statistical relationship between financial data and prices or returns represents the value of accounting (Francis & Schipper, 1999). According to Beisland (2009), accounting figures must be connected to the existing firm value for financial information to be considered value-relevant. He says that accounting information cannot be considered
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value-relevant if there is no correlation between accounting information and the value of firms (Oyerinde, 2009). Therefore, this article analyzes the influence of VRAI on stock returns of non-financial firms during market under-reaction and over-reaction in Pakistan. The study's outcomes will offer important implications to investors by providing the importance of accounting information in influencing stock returns during market overreaction and underreaction. The study will also offer policy implications for non-financial firms to control the market's under and over-reaction by providing investors with accurate and timely accounting information. The study's remaining sections are arranged as follows: The literature review is illustrated in section 2, the data and methods are shown in section 3, the data analysis is presented in section 4, and conclusions and recommendations are provided in section 5.

2. Literature Review

2.1. Value Relevance

Liu & Liu (2007) explains value relevance as the capability of accounting figures to précis the information behind the prices of stock. As a result, a statistical link between financial data and prices or returns suggests value relevance (Barth et al., 2001). According to Beaver (1968), value relevance is the capacity of accounting data to explain a company's worth. Market value relevance is the statistical link that Francis & Schipper (1999) identified between financial information and prices or returns. Accounting-based metrics are a good way to explain market prices under the efficient market assumption, which holds that pricing reflects available information (McLean & Zhao, 2014).

2.2. Accounting Information

According to Francis & Schipper (1999), accounting information is information that investors use to determine share price and is
deemed relevant in terms of value. Hendricks (1976) proposed that the key objective of accounting information development is to ease decision-making. Financial reporting should be comprehensive, reliable, and relevant to be effective. Because of these qualitative constraints, the information cannot be skewed to support one viewpoint over the other. Therefore, accounting information should make it possible for decision-makers to predict future actions.

2.3. Stock Market Under- and Over-Reaction
DeBondt & Thaler (1985) contended that information in previous earnings or security prices causes the stock market to overreact at the expense of longer-term trends. Because of this, investors who purchase undervalued stocks and sell overvalued ones might make abnormal returns over a longer period. Akhigbe et al., (2002) proposed that investors underreact to new information because they cling to their preexisting opinions and knowledge, which delays the market's final absorption of the information and is reflected in stock price.

2.4. Empirical Literature
In the empirical literature, different studies examine the influence of VRAI on stock returns (SR), such as Stephen & Orowhuo (2023) investigated the influence of accounting information on the stock market reaction of pharmaceutical companies in Nigeria utilizing data from 2009 to 2014. Their study showed that accounting information has no appreciable impact on stock market reaction. The findings indicated insignificant association between accounting data and stock market reaction. In contrast, Javed et al., (2023) explored the VRAI in the case of non-financial firms in Pakistan. They found that accounting information is valuable to PSX investors and that financial statements fulfill their main purpose. The study also showed that the auditor type, earnings sign, and firm size were the factors investors in PSX use to differentiate accounting information.
Similarly, Sidik (2023) determined the influence of accounting profit, cash flow components, and return on assets on SR in case of consumer products businesses listed between 2007 and 2009 on the Indonesia Stock Exchange (ISE). The outcomes indicated that a combination of accounting profit, operating cash flow, funding cash flow, investment cash flow, and return on assets significantly affects SR. Investment cash flow, accounting profit, and funding cash flow adversely impact the SR. The variable return on assets positively impacts the stock returns. The study's result demonstrated that stock returns in the consumer products sector may be predicted using accounting profit, operational cash flow, financing cash flow, investment cash flow, and ROA.

Janjua et al., (2022) examined the VRAI produced by significant enterprises in Pakistan. Data from 170 non-financial organizations was gathered over 11 years (2006-2016). The accounting data, such as earnings and returns determined using the returns model, was regressed using panel data settings. Empirical findings demonstrated that profits were continuously valuable over time. Additionally, it demonstrated that Pakistani investors place greater weight on changes in earnings over a sample period than on actual earnings. Similarly, Djuniardi et al. (2022) analyzed the effects of EPS and trading volume on SR using data from 114 manufacturing businesses listed on the Indonesia Stock Exchange between 2015 and 2018. The results exhibited that trading volume significantly decreased the bid-ask spread, EPS decreased the bid-ask spread, and SR significantly decreased the bid-ask spread. Another study conducted by Faisal et al., (2022) in Pakistan to analyze the link between stock returns, price-to-earnings ratio, book-to-market ratio, and dividend yield ratio. Their study used the data of twelve oil and gas firms listed on the PSX from 2008 to 2017. The findings demonstrated that only the book-to-market ratio positively correlates, significantly affects SR, and may be utilized to forecast investors' future returns. The price-to-earnings ratio and dividend
yields have a favorable association with stock returns. The study implied that investors could employ and apply the book-to-market ratio-based investment criteria to increase returns on their capital and reduce risk.

The relationship between changes in stock prices and the disclosure of financial accounting data was analyzed by Rahman & Liu (2021). Data from 1,272 listed businesses' A-share markets in Shanghai and Shenzhen Stock Exchange were used in the investigation. The study revealed a favorable correlation between the price of stock reaction and the VRAI, profitability, liquidity, and operational efficiency. Other accounting variables, such as EPS, current, and debt-to-equity ratios, significantly impacted the market share price. A linear association was established between stock prices, EPS, and the current ratio. In the case of Bangladesh, Hossain (2021) analyzed the effects of accounting information on the share price using data from pharmaceutical businesses listed on the DSE between 2017 and 2019. The findings supported the statistically significant positive correlation between market value per share, net operating cash flow per share, and net asset value per share. The findings also supported the existence of a substantial inverse link between market value per share and EPS. This study suggested that current and prospective investors should use accounting information to make effective and efficient investment decisions. Wiranti et al., (2021) analyzed the impact of firm size, net profit, and cash flow on the stock returns using data from the consumer goods industry listed on the ISE between 2016 and 2019. The findings demonstrated that business size and cash flow had no discernible impact on SR, but net income considerably impacted stock returns.

Another study in the case of PSX was conducted by Rasool et al., (2021) to compare the value-added and traditional financial performance measures with the SR. The sample comprises 107 businesses with 856 nonfinancial sector observations listed between
2011 and 2018. Results showed that listed firms' value creation for shareholders has a greater influence on SR than accounting earnings. The findings also showed that traditional accounting metrics have no bearing on stock exchange returns in Pakistan, while economic value-added metrics consider changes in the stock prices of listed businesses. Similarly, Asry (2020) investigated the connection between Indonesian stock returns and accounting data. When analyzing stock returns, the study considered characteristics related to cash flow, size, and ROA. The findings indicated that the size and return on assets factors significantly affect stock returns, whereas the cash flow variable had insignificant impact on SR. Chasanah & Sucipto (2019) ascertained the influence of the liquidity ratio, profitability, and solvency to return stock. Data from 11 firms in the food and beverage subsectors listed on the ISE between 2013 and 2017 was used in this study. According to the findings, liquidity ratios negatively impacted stock returns but not profitability or solvency factors. The findings demonstrated that, in the lack of a capital structure, the liquidity and solvency ratios negatively impacted the profitability ratios. The outcomes also exhibited that when capital structure was considered an intervening variable, profitability, liquidity ratio and solvency partially did not affect stock returns.

In the literature, it has been observed that changes in accounting information ought to affect the share price if accounting data helps explain the price. Different studies examine the influence of VRAI on SR; however, no study, especially in the case of Pakistan, examines the influence of VRAI on stock returns of non-financial firms during market under and overreaction. Therefore, the study outcomes will contribute to the literature significantly and will be helpful for investors and non-financial firms to determine the importance of VRAI in influencing stock returns during market under and over-reaction. Keeping in view the literature review, it has been hypothesized that:
H1: Value relevance of accounting information significantly affects the stock return during overreaction

H2: Value relevance of accounting information significantly affects the stock return during under-reaction

3. Data and Methodology

This study collected the data of 322 non-financial firms listed in PSX from 2005 to 2022. The firms were selected based on data availability. The data were gathered from annual reports published on the company’s websites and PSX Data Stream. This study analyses annual stock returns and BHAR as a dependent variable. Similarly, different income statement and balance sheet variables are considered independent variables. Therefore, based on the studies Barth et al., (2001); Collins et al., (1997); Sloan (1996); Basu (1997); Easton & Harris (1991), different return, price-to-earnings ratio and BHAR models are developed in a study. To analyze the VRAI on stock returns during market under and overreaction, the following models are developed:

\[ \text{RET}_{\text{Underreaction},i,t} = \alpha_{i,t} + \beta_1 \text{EPS}_{i,t} + \beta_2 \text{Change in EPS}_{i,t} + \beta_3 \text{BV}_{i,t} + \beta_4 \text{Net income}_{i,t} + \beta_5 \text{Change in Net income}_{i,t} + \epsilon_{i,t} \]  

(1)

\[ \text{RET}_{\text{Overreaction},i,t} = \alpha_{i,t} + \beta_1 \text{EPS}_{i,t} + \beta_2 \text{Change in EPS}_{i,t} + \beta_3 \text{BV}_{i,t} + \beta_4 \text{Net income}_{i,t} + \beta_5 \text{Change in Net income}_{i,t} + \epsilon_{i,t} \]  

(2)

Where \( \alpha \) is constant, RET*under reaction and RET*overreaction refer to annual returns during market under and overreaction, net income and change in net income are the indicators of income statement while BV is the book value per share, EPS indicates
earning per share in an indicator of balance sheet during the period t and ε it is the error term.

To analyze the VRAI on BHAR stock returns during market under and overreaction, the following models are developed:

\[ BHAR_{\text{Underreaction}}_{i,t} = \alpha + \beta_1 EPS_{i,t} + \beta_2 \text{Change in EPS}_{i,t} + \beta_3 BV_{i,t} + \beta_4 \text{Net income}_{i,t} + \beta_5 \text{Change in Net income}_{i,t} + \epsilon_{i,t} \]  

(3)

\[ BHAR_{\text{Overreaction}}_{i,t} = \alpha + \beta_1 EPS_{i,t} + \beta_2 \text{Change in EPS}_{i,t} + \beta_3 BV_{i,t} + \beta_4 \text{Net income}_{i,t} + \beta_5 \text{Change in Net income}_{i,t} + \epsilon_{i,t} \]  

(4)

Where \( \alpha \) is constant, BHAR*under reaction and BHAR*overreaction refer to buy and hold returns during market under and overreaction, net income and change in net are the indicators of income statement while BV exhibits book value per share, and EPS exhibits indicates earning per share in an indicator of balance sheet during the period t and ε it is the error term. For data analysis, we have employed the panel least square method. Since this model does not consider time and individual dimensions, it is assumed that data behavior remains constant across time. The panel data model can be estimated using either the least squares technique or the Ordinary Least Square (OLS) approach.

4. Data Analysis

The descriptive statistics of variables is presented in Table. It is found that the mean of returns is 209.00, median value is 44.13, maximum value is 38473.50, minimum value is 0.99, SD is 1280.92, skewness value is 23.44 which indicates positively skewed distribution, kurtosis value is 6.69 which indicates leptokurtic. The mean of BHAR is 1.62, median value is 0.87, maximum value is 7.33, minimum value is -0.93, SD is 2.02, skewness value is 1.11
which indicates positively skewed distribution, kurtosis value is 3.21 which indicates leptokurtic distribution and Jarque-Bera test indicates the distribution is normally distributed. The mean of book value is 1.32, median value is 0.47, maximum value is 60.59, minimum value is -34.20, SD is 3.85, skewness value is 4.24 which indicates positively skewed distribution, kurtosis value is 6.80. Similarly, the descriptive statistics of other variables can be analyzed from a Table.

**Table 1: Descriptive Statistics**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Max</th>
<th>Min</th>
<th>S.D.</th>
<th>Skew</th>
<th>Kurt</th>
<th>J.B.</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Returns</td>
<td>209.00</td>
<td>44.1</td>
<td>38473.50</td>
<td>0.99</td>
<td>1280.92</td>
<td>23.44</td>
<td>6.69</td>
<td>572.07</td>
<td>0.00</td>
</tr>
<tr>
<td>BHAR</td>
<td>1.62</td>
<td>0.87</td>
<td>7.33</td>
<td>-0.93</td>
<td>2.02</td>
<td>1.11</td>
<td>3.21</td>
<td>751.07</td>
<td>0.00</td>
</tr>
<tr>
<td>BV</td>
<td>1.32</td>
<td>0.47</td>
<td>60.59</td>
<td>-34.2</td>
<td>3.85</td>
<td>4.24</td>
<td>6.80</td>
<td>649.15</td>
<td>0.00</td>
</tr>
<tr>
<td>EPS</td>
<td>9.72</td>
<td>3.49</td>
<td>610.77</td>
<td>-108.70</td>
<td>34.61</td>
<td>7.93</td>
<td>9.64</td>
<td>135.45</td>
<td>0.00</td>
</tr>
<tr>
<td>CEPS</td>
<td>8.45</td>
<td>2.51</td>
<td>609.77</td>
<td>-109.70</td>
<td>33.19</td>
<td>8.07</td>
<td>10.35</td>
<td>156.55</td>
<td>0.00</td>
</tr>
<tr>
<td>NI</td>
<td>3.48</td>
<td>3.70</td>
<td>11.35</td>
<td>-17.5</td>
<td>1.44</td>
<td>-3.16</td>
<td>3.32</td>
<td>434.81</td>
<td>0.00</td>
</tr>
<tr>
<td>Change in NI</td>
<td>1.25</td>
<td>0.06</td>
<td>2913.03</td>
<td>-10.1</td>
<td>48.76</td>
<td>58.88</td>
<td>3.51</td>
<td>386.90</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Source:** Author's Calculations

We have employed the panel OLS method to analyze the VRAI on stock returns during market over and under reaction. Firstly, considering the returns model of non-financial firms during market
underreaction (reported in Table 3), it is found that EPS is adversely but insignificantly linked to the SR during market underreaction. Similarly, change in EPS is adversely but insignificantly associated to the SR during market underreaction. The coefficient of CEPS indicates that as CEPS deviates by one percent, the stock returns during market under reaction also increase by 0.22 percent. The variable net income, change in net income and BV are insignificantly associated to the stock returns during market underreaction. The R\(^2\) value exhibits a 21.77 percent variation in stock returns due to the explanatory variables taken in a model. Similarly, the F-statistic value (2.7446) indicates the model is statistically significant at a 1 percent level.

Considering the BHAR model during the market underreaction of non-financial firms, it is originated that EPS is directly and significantly linked to the BHAR during market underreaction. The EPS’s coefficient showed that as EPS deviates by one percent, the BHAR also enhances by 18.83 percent. However, change in EPS is negatively and insignificantly related to the BHAR during market underreaction. The variable net income and change in income are negatively and insignificantly related to the BHAR during market underreaction. Lastly, book value is negatively and significantly related to BHAR during market underreaction. The coefficient of book value indicates that as BV deviates by one percent, the BHAR decreases by 0.24 percent. The R\(^2\) value exhibits a 47.23 percent variation in BHAR during market under reaction due to the explanatory variables taken in a model. Similarly, the F-statistic value (3.5505) indicates the model is statistically significant at a 1 percent level.
Table 2: Analysis of Impact of Firms' VRAI on Stock Returns during Market Underreaction of Non-Financial Firms

<table>
<thead>
<tr>
<th>Method:</th>
<th>Panel Least Squares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample:</td>
<td>1 5518</td>
</tr>
<tr>
<td>Cross-sections included:</td>
<td>329</td>
</tr>
</tbody>
</table>

Coefficients
Values in ( ) are std. error
Values in [ ] are t-statistic values

<table>
<thead>
<tr>
<th>Explanatory Variables</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Returns*Under Reaction</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>0.1388 (0.2559) [0.5424]</td>
</tr>
<tr>
<td><strong>EPS</strong></td>
<td>-0.0037 (0.0023) [-1.5872]</td>
</tr>
<tr>
<td><strong>CEPS</strong></td>
<td>-0.0113 (0.0022) [-5.0193]*</td>
</tr>
<tr>
<td><strong>Net income</strong></td>
<td>-0.0114 (0.0716) [-0.1589]</td>
</tr>
<tr>
<td><strong>Change NI</strong></td>
<td>0.0001 (0.0010) [0.1098]</td>
</tr>
<tr>
<td><strong>BV</strong></td>
<td>-0.0001 (0.0003) [-0.2841]</td>
</tr>
<tr>
<td><strong>R^2</strong></td>
<td>0.2177</td>
</tr>
<tr>
<td><strong>Adjusted R^2</strong></td>
<td>0.1384</td>
</tr>
<tr>
<td><strong>S.E. of regression</strong></td>
<td>2.8540</td>
</tr>
</tbody>
</table>
Now, considering the returns model of non-financial firms during market overreaction, it is found that EPS is directly and significantly associated to SR during market overreaction. The coefficient of EPS indicates that as EPS deviates by one percent, the stock returns increase by 0.73 percent. Similarly, change in EPS is directly and significantly linked to the SR during market overreaction. The coefficient of CEPS indicates that as CEPS deviates by one percent, the stock returns during market overreaction also increase by 1.15 percent. The variables net income, change in net income, and BV are negatively and insignificantly associated to the stock returns during market overreaction. The $R^2$ value exhibits a 34.31 percent variation in stock returns due to the explanatory variables taken in a model. Similarly, the F-statistic value (5.1531) indicates the model is statistically significant at a 1 percent level.

Lastly, considering the buy-and-hold abnormal returns (BHAR) model of non-financial firms during market overreaction, it is found that EPS is positively and significantly related to the BHAR during
market overreaction. The EPS’s coefficient value show that as EPS deviates by one percent, the BHAR also upsurges by 0.40 percent. However, CEPS is positively but insignificantly related to the BHAR during market overreaction. The variable net income is negative, while the change in net income is positively but insignificantly related to the BHAR during market overreaction. Lastly, book value is directly and significantly linked to BHAR during market overreaction. The coefficient of book value indicates that as BV deviates by one percent, the BHAR decreases by 0.11 percent. The R² value exhibits a 60.14 percent variation in BHAR during market overreaction due to the explanatory variables taken in a model. Similarly, the F-statistic value (5.8416) indicates the model is statistically significant at a 1 percent level.

Table 3: Analysis of Impact of Firms' VRAI on Stock Returns during Market over Reaction of Non-Financial Firms

<table>
<thead>
<tr>
<th>Explanatory Variables</th>
<th>Dependent Variables</th>
<th>Returns*Over Reaction</th>
<th>BHAR*Over Reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>-0.1549 (0.1082)</td>
<td>-0.0353 (0.1670)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[-1.4316]</td>
<td>[-0.2115]</td>
<td></td>
</tr>
<tr>
<td>EPS</td>
<td>0.0073 (0.0010)</td>
<td>0.0040 (0.0023)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[7.3788]*</td>
<td>[1.7261]**</td>
<td></td>
</tr>
<tr>
<td>CEPS</td>
<td>0.0115 (0.0009)</td>
<td>0.0005 (0.0016)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[12.1548]*</td>
<td>[0.3469]</td>
<td></td>
</tr>
<tr>
<td>Net income</td>
<td>-0.0094 (0.0303)</td>
<td>-0.0464 (0.0448)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[-0.3099]</td>
<td>[-1.0350]</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td><strong>Change NI</strong></td>
<td>-0.0001</td>
<td>0.0120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0004)</td>
<td>(0.0694)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[-0.3238]</td>
<td>[0.1729]</td>
<td></td>
</tr>
<tr>
<td><strong>BV</strong></td>
<td>-0.0001</td>
<td>0.0011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0001)</td>
<td>(0.0003)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[-0.9516]</td>
<td>[3.4657]*</td>
<td></td>
</tr>
<tr>
<td><strong>R²</strong></td>
<td>0.3431</td>
<td>0.6014</td>
<td></td>
</tr>
<tr>
<td><strong>Adjusted R²</strong></td>
<td>0.2765</td>
<td>0.4985</td>
<td></td>
</tr>
<tr>
<td><strong>S.E. of regression</strong></td>
<td>1.2067</td>
<td>0.3348</td>
<td></td>
</tr>
<tr>
<td><strong>Sum squared resid</strong></td>
<td>4783.0120</td>
<td>13.4526</td>
<td></td>
</tr>
<tr>
<td><strong>Log likelihood</strong></td>
<td>-5639.7590</td>
<td>-31.4006</td>
<td></td>
</tr>
<tr>
<td><strong>F-statistic</strong></td>
<td>5.1531*</td>
<td>5.8416*</td>
<td></td>
</tr>
<tr>
<td><strong>Mean dependent var</strong></td>
<td>-0.0377</td>
<td>0.0217</td>
<td></td>
</tr>
<tr>
<td><strong>S.D. dependent var</strong></td>
<td>1.4187</td>
<td>0.4728</td>
<td></td>
</tr>
<tr>
<td><strong>Akaike info criterion</strong></td>
<td>3.3013</td>
<td>0.8342</td>
<td></td>
</tr>
<tr>
<td><strong>Schwarz criterion</strong></td>
<td>3.8730</td>
<td>1.4708</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Author's Calculations

**Note:** *Level of Significance at 1%, ** Level of Significance at 5%, *** Level of Significance at 10%

5. Conclusions and Recommendations

This analysis investigates the influence of the VRAI on stock returns of non-financial firms during market overreaction and underreaction. To explain SR, we employ the annual stock returns and BHAR model. The financial variables data has been collected from annual reports published on the company's websites and PSX Data Stream. The study shows that the accounting information variables EPS and change in EPS are positively associated to the SR of non-financial firms during the market underreaction. Similarly,
EPS and net income are positively related to the BHAR, while the book value is negatively related to the BHAR during the market underreaction of non-financial firms. It suggests that accounting information variables, especially balance sheet variables, substantially influence stock returns during market underreaction. While considering the outcomes of stock returns during market overreaction, the results show that EPS and CEPS are directly and significantly related to the stock returns of non-financial firms during market overreaction. Similarly, EPS and BV are directly and significantly associated to the BHAR during market overreaction of non-financial firms. The outcomes suggest that accounting information assists in assessing the companies' performance and financial situation and, thus, stock returns. Additionally, it assesses how well-run the firms are to provide a high return on investment, and it uses this return to accomplish investors' goals (Panagopoulos et al., 2017). To help creditors, investors, and other stakeholders make educated investment decisions, businesses publish accounting and market data (Alswalmeh, et al., 2021). The demand for the company's shares rises in response to increased EPS, which raises the stock price and vice versa. As a result, as earnings per share grow, stock returns also climb in price. Growth in earnings per share provides an overview of the company compared to its operational outcomes. Information about earnings per share is the most fundamental and valuable information for investors since it can provide insight into the future prospects of corporate earnings (Tandelilin, 2017). These outcomes were also found by Alswalmeh, et al., (2021); Gharraibeh et al., (2022); Dimitropoulos et al., (2009). Similarly, one of the key accounting metrics in the financial income statement that highlights the performance of the business over a given period is net income. The stock's market price reflects the firm's value in the marketplace. If the stock price in the capital market reflects the risk, net income is a measure of that risk that will have risk relevance (Narsa, 2019). Keeping in view the outcomes,
the null hypothesis is accepted that the VRAI significantly affects the stock returns during market under and overreaction.

This study has several policy implications. First, non-financial firms must provide adequate accounting information on the financial statements. Complete and timely publication of financial statements, audit reports, and the board of directors' report will instill investor confidence in the openness of information disclosure and serve as a positive signal to draw in new capital. Because investors are highly interested in financial statements and significantly impact investment decisions at this time, enterprises must produce financial accounts on time. Second, for investors to continue finding non-financial firms' equities appealing, they must consistently enhance their financial performance, particularly regarding profitability. Thirdly, non-financial firms must establish appropriate policies for their operations to cultivate a positive brand image among stakeholders, hence augmenting the valuation. Lastly, the stock market overreaction and underreaction in Pakistan can be managed by giving common investors access to first-hand and reliable financial information as the SEC in the USA does, which offers the smallest details of even sensitive information about the firms on their inventory. They even post information about companies engaged in insider trading on their websites.
References


Chasanah, N., & Sucipto, A. (2019). Liquidity ratio, profitability, and solvency on stock returns with capital structure as an intervening...
variable (study on food and beverage sub sector listed in Indonesia Stock Exchange (Idx) period 2013-2017). *Ekspektra: Jurnal Bisnis dan Manajemen*, 3(1), 52-68.


