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THE RELATIONSHIP BETWEEN THE VALUE RELEVANCE OF ACCOUNTING INFORMATION AND STOCK RETURNS IN PAKISTAN: A CASE STUDY OF PRE AND POST IPO PERFORMANCE

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ABSTRACT

This study analyzes the impact of value relevance of accounting information on stock returns of firms in the case of initial public offerings in Pakistan using the data of 92 firms conducting initial public offerings (IPOs) registered on the Pakistan Stock Exchange from 2000 to 2022. The data of all the variables has been collected from the annual published reports of firms and the PSX data stream. The study found that the variables earnings-per-share, change in earnings-per-share and book value are positively and significantly related to stock returns of firms before initial public offerings (IPOs). However, the variables net income, change in net income, and dividend per share are positively but insignificantly related to the stock returns of firms before initial public offerings. The study also found that the variables earnings-per-share and change in earnings-per-share are positively and significantly related to the stock returns of firms during IPOs. In contrast, the variables book value net income, change in net income, and dividend per share are found to be insignificant factors of stock returns of firms during IPOs. Lastly, the results also show that earnings-per-share, change in earnings-per-share, and book value are positively and significantly related to the stock returns of firms after five years of initial public offerings while the variables net income, change in net income and dividend per share are found to be insignificant factors of stock returns of firms after five years of initial public offerings. Keeping in view the outcomes, it is concluded that accounting information variables play an imperative role in influencing the stock returns of firms conducting initial public offerings in Pakistan.

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INTRODUCTION

The value relevance of accounting information has been the subject of numerous studies, which are currently getting more extensive and varied. Value relevance, according to Beisland (2009), is the capacity of financial statement data to identify and condense corporate value. Elbakry et al. (2017) expressed the view that value relevance research looks into the relationship between an independent variable, the price of a security, and a dependent variable, a set of accounting basics. As a result, the correlation between financial statement info and capital market share prices or stock returns is used to determine value relevance. According to value relevance research, earnings per share is the accounting data that is most commonly utilized to assess the share price's important relationship (Bhatt and Sumangala, 2012). The Ohlson (1995) and Easton and Harris (1991) models are frequently employed in value-relevant research. Both models are complementary methods for examining value relevance, according to Barth et al. (2001). The price model decides what is represented in firm value, whereas the return model determines what is reflected in changes in firm value over a certain period. This is the economic distinction between the two models.

Chen et al. (2001) assert that the return model's scope is limited since it solely considers the earnings' value significance in explaining the annual return. Conversely, Ohlson's (1995) valuation framework broadens the scope by connecting a firm's market value to both book value and earnings. To address each model's shortcomings, Kothari and Zimmerman (1995)

recommend using pricing and return models in tandem. They argued that the market has already priced in stale components in the current results, which are utilized as a stand-in for expected future cash flow. This stale component causes a downward bias in slope coefficients and is irrelevant in interpreting current returns. On the other hand, independent variables are objective as current prices in the pricing model represent the cumulative effects of earnings information.

On the other hand, the performance of initial public offerings (IPOs) in various nations has been the subject of numerous studies. IPO performance is well-documented in mature markets like the United States and the United Kingdom. The fundamental tenet of business states that to engage in new projects, advance production, grow the business, or even merely launch it, all firms must raise and accumulate capital throughout their existence. Selling stocks to the general public is one of the finest ways for businesses to generate capital. To be traded on the public market and raise funds, the company's private equity will change to common stock at the time of the IPO. The widespread consensus is that an IPO is a phase in the life cycle of a company. It implies that businesses that develop to this point eventually go public. Nonetheless, a lot of sizable businesses choose not to participate in IPOs. According to Pagano et al. (1998), IPOs can be thought of as a decision made by businesses rather than a step. According to Tsangarakis (2004), a company's move from private to public equity is an important development for current shareholders and

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prospective investors, since the success of an initial public offering (IPO) is contingent on various factors, including the firm's ability to price itself at a level that accurately reflects its inherent value. Overpriced company shares could make it difficult for the company to sell securities to the general public.

Pakistan's stock market is typically volatile due to its susceptibility to unforeseen events and news. Influencing market activity is a rapid process. Nevertheless, the Pakistani stock market is resilient and rapidly recovering from disruptions (Ghufran et al., 2016). The research in Pakistan was conducted with limited scope and hence there is a dire need for extensive study to be conducted in the case of firms offering IPOs in Pakistan with respect to the relationship between VRAI and its impact on stock return. Previously research has been conducted in Pakistan only on banks, fuel and energy sectors, and KSE 30 (Asif et al., 2016; Perveen, 2019; Javed et al., 2023; Nawaz et al., 2023) but limited research was made on firms conducting IPOs in Pakistan. Hence this research covers all firms listed in the Pakistan Stock Exchange that conducting initial public offerings. The aim of this study is to analyze the influence of VRAI on the stock returns of firms conducting initial public offerings in Pakistan.

Literature Review

Market value relevance was first defined by researchers, Francis and Schipper (1999) which depicts the statistical linkage between financial statements information and stock prices or returns. Accounting-based measures effectively explain market prices in the context of the efficient market hypothesis, which holds that stock pricing reflects available financial knowledge (McLean and Zhao, 2014). In a similar vein, Vishnani and Shah (2008) assert that value relevance denotes the financial statements' ability to explain stock market metrics by their financial information. These definitions have one important thing in common; accounting information (AI) is considered value-relevant if it significantly relates to the security market value. At the empirical level, different studies analyzed the relationship between the relevance of accounting information and stock market volatility. Such as the study by Nawaz et al. (2023) explored the effect of VRAI on stock returns (SR) during market undervaluation and overvaluation in Pakistan. This study used data spanning 320 non-financial companies registered on the PSX between 2005 and 2022. The results indicated a significant correlation between the AI variables of EPS and earnings per share change and stock returns during periods of market overreaction and under-reaction. Additionally, it was determined that when non-financial enterprises underreact, variables of balance sheet items draw in more investors than the variables of income statement. Consequently, it was recommended that the non-financial companies submit their financial statements with sufficient accounting information within the allotted time. Similarly, Javed et al. (2023) showed that AI was valuable to Pakistani investors. It was discovered that the value relevance of accounting data has decreased as a consequence of new accounting regulations. Additionally, it was determined that investors in PSX differentiate accounting information based on the financial statements, reports of the Auditor, earnings, and size of the company. In addition, Djuniardi et al. (2022) examined the impacts of earnings per share and volume of trade on SR in manufacturing companies that were listed on the ISE from 2015 to 2018. The results indicated that trading volume significantly increased stock returns, and earnings per share did not significantly affect stock returns. The results also demonstrated that the effect of trading volume and earnings per share on stock returns is substantial. The study by Alswalmeh et al. (2021) examined the impact of twelve accounting and market variables on the SR. The study used the data of 63 firms from Amman Stock Exchange during the years 2008 through 2018. The study found that the total assets turnover had the largest significantly beneficial impact on stock return out of the twelve accounting and market factors. Price to book value, ROA, EPS, and stock turnover ratio all significantly boosted stock return. In addition, the stock return was unaffected by market capitalization, ROE, net profit margin, current ratio, and P/E ratio.

The results of the study by Wiranti et al. (2021) analyzed the different factors of stock returns in the case of the industry, taking business in the consumer goods that are registered on ISE from the year 2016 to 2019. The outcomes indicated that the size of the firm in terms of its business activities had no substantial impact on Stock return while net income had a significant impact on Stock return and the cash flow items had no impact on Stock return. On the other hand, Noravesh et al. (2019) examined how registered firms listed on the Tehran Stock Exchange changed in terms of the value and relevancy of accounting information between 2009 and 2015. The study's findings demonstrated how listed firms' perceptions of the VRAI substantially changed over time. Furthermore, the VRAI was positively and significantly impacted by variables like the percentage of state-owned shares, the ratio of long-term debt to assets, and tangible assets; in contrast, the value relevance of accounting information was negatively and inversely impacted by variables like the size of the company, growth, and one-year cumulative stock market return. Similarly, Hung et al., (2018) explored that accounting information has a significant effect on the stock share price of energy sector firms registered on the stock market of Vietnam using data from 2006 to 2016. The findings demonstrated a positive correlation between ROA, enterprise size, current ratio, accounts receivable turnover, and stock price.

Gunaratne and Anuradha (2017) examined the VRAI in impacting SR using Earning per share, Return on equity, and return on investment as proxies for AI. The analysis covered 113 businesses in the stock exchange of Colombo for 15 years, from the year 1999 to the year 2013, by taking data from 1696 listed companies. According to the study, EPS and ROI are important performance indicators, with EPS being the most effective indicator for explaining the notable fluctuations in Sri Lankan stock returns. The findings implied that EPS and ROI should be given more consideration by Colombo Stock Exchange market participants. In addition, the study by Angahar and Malizu (2015) analyzed the relationship between SR in the Nigerian stock market from 2007 to 2011 and earnings, as well as changes in earnings. According to the findings, there was a noteworthy correlation between NSE stock prices and AI. The analysis concluded that there was a substantial correlation between SR and earnings in the Nigerian stock market. Hai et al. (2015) explored the link between accounting data, financial statements and SR from 2010 to 2013. The study used the data of 108 listed companies on the Ho Chi Minh stock market in Vietnam. The findings indicated a favorable correlation between stock returns and both earnings levels and changes, albeit a weak and unstable one. Similarly, Akarim et al. (2012) observed the linkage between earnings and market performance of stock in the Turkish banking sector. Data for banks that are quoted on the Istanbul Stock Exchange were used in the study for the years 2000 through 2010. The findings of the panel cointegration test indicated that the long-term link between accounting earnings and stock returns was supported by at least two cointegrating vectors. The causality test was utilized in the analysis to examine the short-term association and its direction

after the long-term relationship's testing. Value relevance theory was confirmed by the Granger causality test results, which suggest a bidirectional association between accounting earnings and SR. In the case of Nigeria, Abiodun (2012) examined the VRAI using data from 1999 to 2009. The outcomes indicated that book values were not as important as earnings, which means that the information in income statements determines the corporate values of Nigerian companies more so than information in balance sheets which were also a good proxy for book values. Hussain & Hasan (2010) examined how accounting information affected stock prices. Data from 30 registered businesses on the KSE from January to December 2010 was used for this purpose. The findings showed that there was compelling evidence linking the release of financial information to changes in stock prices. Furthermore, the study demonstrated that investors received notable anomalous returns following the event day. Lastly, Imam and Malik (2007) investigated the connection between listed non-financing enterprises from the Dhaka Stock Exchange's ownership structure and firm performance. The findings showed that there was a monotonic association between foreign holdings and company performance as determined by the holding period returns of the firm and Tobin's Q. The study also demonstrated that companies with concentrated ownership pay out smaller dividends than companies with substantial institutional ownership, and vice versa. Keeping in view the discussion described above, the following hypotheses are developed:

H₁: Value Relevance of Accounting Information significantly affects Stock Returns of Firms before Initial Public Offerings

 H_2 : Value Relevance of Accounting Information has a significant relationship with Stock Returns of Firms during Initial Public Offerings

H₃: Value Relevance of Accounting Information is significantly related to Stock Returns of Firms after Five Years of Initial Public Offerings

Research Gap

The literature shows that different studies examined the relationship between VRAI and stock returns. VRAI is observed to be an imperative factor in influencing the stock returns of firms. However, in the case of Initial public offerings, limited studies were available in the literature that examine the relationship between VRAI and stock returns of IPO.

This study analyzes the impact of VRAI on the stock returns of firms that undergo initial public offerings in the Pakistan Stock Exchange. The performance of the firms before their IPO and post-IPO returns is also discussed in the study. The findings of this study may provide future implications for the stockholders of firms that undergo IPO and for those who trade these stocks such as dealers, brokers, and many others, in making their investment decisions about the stock selection.

METHODOLOGY

To analyze the impact of VRAI on stock returns the data of 92 firms undergoing initial public offerings (IPOs) listed on the Pakistan Stock Exchange from 2000 to 2022 is utilized in this study. The data of all the variables has been handmade and collected from the annual reports of firms which are regularly published and the PSX data stream. In this study, the influence of value relevance of accounting information on stock returns of firms conducting IPO is examined using the income statement and balance sheet variables of firms conducting initial public offerings. For this purpose, annual stock returns of firms are taken as dependent variables in a study. Similarly, EPS, change in EPS, NI, change in NI,

book value, and dividend per share (DPS) are taken as independent variables of the study. The study developed different stock returns and price-to-earnings ratio models on the studies of Barth et al. (2001), Easton and Harris (1991), Rasheed and Khalid (2024), and Nawaz et al. (2023). The following models are developed to analyze the VRAI and stock returns of firms conducting IPO:

$$SRij = \beta_0 + \beta_1 EPSij + \beta_2 CEPSij + \beta_3 BVij + \beta_4 NIij + \beta_5 CNIij + \beta_6 DPSij + \mu ij$$
(1)

DuringIPOs *
$$SRij = \beta_0 + \beta_1 EPSij + \beta_2 CEPSij + \beta_3 BVij + \beta_4 NIij + \beta_5 CNIij + \beta_6 DPSij + \mu ij$$
 (2)

Post. 5 Years. IPOs *
$$SRij = \beta_0 + \beta_1 EPSij + \beta_2 CEPSij + \beta_3 BVij + \beta_4 NIij + \beta_5 CNIij + \beta_6 DPSij + \mu ij$$
 (3)

Where SR is the stock returns of firms before IPOs, During IPO's*SR is the stock returns of firms before IPOs, Post.5.Years.IPO's*SR is the stock returns of firms after 5 years of IPOs, EPS represents earnings per share, CEPS indicates the change in earnings per share, BV indicates book value, NI shows net income, CNI indicates the change in net income, DPS indicates dividend per share and u_{ij} indicates the error term.

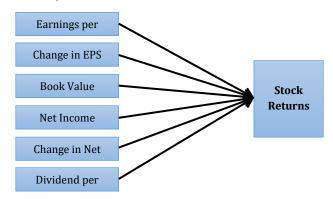


Figure 1. Conceptual Model (VRAI and Stock Returns).

RESULTS AND DISCUSSION Descriptive Analysis

Table 1 reports the descriptive analysis of statistical values of Mean, maximum value, minimum value, standard deviation and skewness. The mean, maximum, minimum values and SD of earnings per share are 7.858, 27.747, -5.948 and 2.195 respectively. The skewness and kurtosis values of EPS indicate the positively skewed and leptokurtic distribution respectively. The mean, maximum, and minimum values and SD of change in earnings per share are 10.982, 9.773, -6.494, and 5.645 respectively. The skewness and kurtosis values of CEPS indicate the positively skewed and leptokurtic distribution respectively. The mean, maximum, minimum values and SD of net income are 0.081, 22.968, -79.322 and 2.824 respectively. The skewness and kurtosis values of NI indicate the negatively skewed and leptokurtic distribution respectively. Likewise, descriptive estimates of other variables can be observed.

Correlation Analysis

Correlation analysis is used to observe the extent of linkage between variables. Table 2 shows that stock returns are positively correlated with, book value, net income and change in NI. Similarly, stock returns are negatively correlated with dividend per share, EPS and change in EPS.

Table 1. Descriptive statistics.

Variables	Mean	Max	Min	S.D.	Skew	Kurt	
EPS	7.858	27.747	-5.948	2.195	5.097	48.770	
CEPS	10.982	9.773	-6.494	5.645	11.758	166.732	
NI	0.081	22.968	-79.322	2.824	-20.405	560.903	
CNI	-3.631	20.125	-46.840	1.329	-35.198	12.939	
DPS	5.747	9.970	0.000	0.292	31.739	10.859	
BV	41.608	60.589	-34.201	3.722	2.563	127.683	
SR	0.144	1.000	0.000	0.351	2.027	5.107	
SR Post 5Y	0.348	1.000	0.000	0.476	0.639	1.408	
SR Pre IPO	0.856	1.000	0.000	0.351	-2.027	5.107	

Table 2. Descriptive statistics.

Correlation	SR	DPS	EPS	CEPS	BV	NI	CNI	
SR	1.000							
DPS	-0.373	1.000						
EPS	-0.267	0.220	1.000					
CEPS	-0.356	0.246	0.198	1.000				
BV	0.259	0.005	0.376	-0.370	1.000			
NI	0.232	-0.256	-0.218	0.205	0.218	1.000		
CNI	0.365	0.406	0.279	-0.198	0.245	-0.373	1.000	

Analysis of Value Relevance of Accounting Information on Stock Returns

The findings show the analysis of the value relevance of accounting information on stock returns of firms before, after and during initial public offerings (IPOs). The outcomes are reported in Table 3. Firstly, the results show that earnings-per-share is positively and significantly related to the stock returns of firms before initial public offerings (IPOs). The coefficient of Earning per Share depicts that as it increases by a unit the stock returns also result in to enhancement of 2.9768 units. Similarly, the findings find that change in earnings-per-share is positively and significantly related to stock returns. The coefficient of Change in EPS presents that as it increases by a unit the stock returns also result in enhanced by 0.9582 units. The results also depict that book value is positively and significantly related to stock returns. The coefficient of Book value represents that as it increases by a unit the stock returns also increase by 0.0378 units. The results also depict that net income, change in net income, and DPS are positively but insignificantly related to stock returns.

Secondly, considering the outcomes of firms' stock returns performance during IPO, the results show that earnings-per-share is positively and significantly related to the stock returns of firms when firms undergo initial public offerings (IPOs). The coefficient of Earning per share represents that as it increases by a unit the

stock returns also increase by 0.6850 units. Similarly, the results find that change in earnings-per-share is positively and significantly related to stock returns. The coefficient of CEPS finds that as it increases by a unit the stock returns also result in an increase of 0.9582 units. The results also show that book value is negatively and insignificantly related to stock returns. Similarly, the variables NI, CNI, and DPS show a positive but insignificant linkage with the stock returns of firms when firms have undergone initial public offerings (IPOs).

Lastly, considering the outcomes of stock returns of firms' post-IPO performance, the results show that earnings-per-share is positively and significantly related to the stock returns of firms after a lapse of five years of initial public offerings (IPOs). The coefficient of EPS represents that as it increases by a unit the stock returns also result in an increase of 0.2172 units. Similarly, the results depict that change in earnings-per-share is positively and significantly related to stock returns. The coefficient of CEPS finds that as it increases by a unit the stock returns also enhance by 1.2423 units. The results also represent that book value is positively and significantly related to stock returns. The coefficient of BV specifies that as it increases by a unit the stock returns also enhance by 3.4179 units. In contrast, the variables NI, CNI, and DPS show a negative but insignificant association with the stock returns of firms after a lapse of five years of initial public offerings (IPOs).

Table 3. Estimates of Value Relevance of Accounting Information on Stock Returns.

ļ	Method:	Unbalai	nced P	anel	Least So	uares

Sample: 1 1242

Cross-sections included: 92

Coefficients

Values in () are std. error

Dependent Variables					
Model-I	Model-I	Model-I			
SR	SR During IPOs	SR Post 5-Years IPOs			
66.8701***	-0.0130	-0.0358			
(3.1893)	(0.0676)	(0.0735)			
[20.9668]	[-0.1919]	[-0.4866]			
2.9768***	0.6850***	0.2172**			
(0.1514)	(0.1387)	(0.1049)			
	Model-I SR 66.8701*** (3.1893) [20.9668] 2.9768***	Model-I Model-I SR SR During IPOs 66.8701*** -0.0130 (3.1893) (0.0676) [20.9668] [-0.1919] 2.9768*** 0.6850***			

	[19.6583]	[4.9376]	[2.0708]
CEPS	0.9582***	1.4071***	1.2423***
	(0.1386)	(0.3109)	(0.1537)
	[6.9128]	[4.5257]	[8.0845]
BV	0.0378**	-0.0162	3.4179***
	(0.0192)	(0.0182)	(0.3529)
	[1.9745]	[-0.8899]	[9.6830]
NI	0.4861	0.0290	-0.0301
	(1.0171)	(0.9689)	(0.0220)
	[0.4779]	[0.0300]	[-1.3713]
CNI	0.0034	0.0006	-0.0601
	(0.0216)	(0.0206)	(1.0533)
	[0.1552]	[0.0271]	[-0.0570]
DPS	0.0161	0.0487	-0.0015
	(0.0107)	(0.1582)	(0.0224)
	[1.5055]	[0.3079]	[-0.0693]
R-squared	0.7516	0.4788	0.4492
Adjusted R-squared	0.7307	0.4351	0.3984
Log-likelihood	-7418.5950	-7358.4100	-6902.4860
F-statistic	36.0819***	10.9550***	8.8433***
Akaike info criterion	1.2102	12.0055	12.1748
Schwarz criterion	1.2503	12.4057	12.6049

Note: ***p-value<0.01, ** p-value<0.05.

Discussion

The findings of the results show that in the company performance before IPO, EPS, change in EPS, and book value significantly affect and are positively related to stock return but net income and change in net income are positively but affect insignificantly the stock return. Moreover, the results also find that when the firms undergo IPO, the chosen variable, EPS, Change un EOS and book value are positively and significantly affect the stock return. On the other hand, variables book value, net income, change in net income and DPS are insignificantly affected to stock return.

The outcomes also show that earnings-per-share, change in earnings-per-share and book value are positively and significantly related to the stock returns of firms after five years of initial public offerings. However, the variables net income, change in net income and dividend per share are found to be insignificant factors of stock returns of firms after five years of initial public offerings.

CONCLUSIONS POLICY IMPLICATIONS

These findings imply that firms' performance depends heavily on accounting information published in public accounting reports. Arguably, disclosure of accounting information lessens investor knowledge asymmetries (Amihud and Mendelson, 1986). According to Black (2000), an efficient stock market requires a timely financial accounting disclosure system for stock prices to reflect all publicly available information, incorporate private information, and be communicated to managers, and existing and potential investors (Uniamikogbo et al., 2018). These results also validate the notion of signaling theory. The signaling hypothesis states that a rise in earnings per share tells the market that the firm is performing well and will keep doing so. Investor interest in a stock will increase in direct proportion to its earnings per share value. Larger earnings per share, therefore, raise the demand for the stock and intensify the stock return (Javed et al., 2023; Rasheed and Khalid, 2024; Nawaz et al., 2023). Therefore, considering the outcomes, it is proposed that the accounting information variables earnings-per-share, changes in earningsper-share, and book value are vital in influencing the stock market returns of firms conducting initial public offerings. The study has different policy implications. First, the firms conducting IPOs should provide accurate accounting information data to the public. The data on balance and income sheet variables should be

complete and adequate to draw investors' intention to invest in PSX. Second, accounting information presented on financial statements directly influences stock prices. Therefore, investors should take this into account when deciding to invest in stocks.

Thirdly, the publication of financial statements, audit reports and other accounting information will not only build confidence and trust in investor decisions but also enhance the performance of the company as this information serves as a baseline to attract capital and investment for the company. If a firm regularly publishes its financial reports, it will definitely attract direct capital and investment for this company than other companies who do not disclose their financial statement. Lastly, the firms should enhance investor confidence in publishing their financial reports by avoiding manipulation as in the long run, manipulation does not work which may affect the company's performance.

The study analyzes the influence of VRAI on the stock returns of firms during IPOs, pre-IPOs and post-IPOs. Comprehending the impact of accounting data on stock returns can offer valuable perspectives into the actions and choices made by investors. Investors' confidence in financial statements and their significance in assessing investment opportunities are indicated if they mostly rely on accounting data.

The investors may be concerned regarding the earnings of the firms which are reported that should reflect the true picture of operations of the firms or it may depict whether firms have indulged in manipulation in their reports or their activities. Stockholders and investors always look for those variables which effect affect company performance and these variables do not show the real picture, then they search other areas and take some other action. The results of the findings depict that Pakistani investors and stockholders search for those variables that are directly involved in the performance of the company and they make their investment decisions accordingly regarding stock selection.

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