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Impact of Macro and Micro Economic Variables on Volatility of Stock Prices: Empirical Evidence from Pakistan's Cement Industry

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Abstract: The stock market is the instrument employed for the efficient use and accessibility of funds. The study looks at the macro and micro factors that influence how volatile stock market prices might be. The CPI, which measures inflation, EPS, or earnings per share, GDP, or gross domestic product, and ROE, or return on asset, are the macro variables examined in this study. One considers the stock price to be a dependent variable. The Pakistan Stock Exchange's (PSX) list of cement sector businesses is taken. The entire cement industry sector was chosen, but the number of companies decreased from twenty-two to just fifteen. The remaining companies were eliminated since the data was not available. In the current analysis, ten years of data—from 2012 to 2020—are used. Panel regression models are utilized while keeping in mind the nature of the data; yet, standard deviation and data dispersion are used for volatility.

Key Words: Volatility, Inflation, Return on Equity

Introduction

In the modern world, a country's stock market provides a clear indication of its economic progress. Investors can make both long-term and short-term investments in the stock market. In addition, it serves as the location for share trading. The characteristics and pace of stock exchange trading have evolved as a result of advanced information technology. It offers plate form in an informed, efficient, and well-organized manner to all kinds of dealers worldwide. Since significant investments are made at stock exchanges, it does have an impact on the industrial sector.

Pakistan's stock exchange (PSX)

Pakistan ranks sixth in the world in terms of people and is the 44th largest economy in the world based on nominal GDP, with an annual

growth rate of roughly 4%. The Pakistan Stock Exchange is known as the Pakistan Stock Market. One of South Asia's oldest stock exchanges is PSX. On September 18, 1947, a few months following the subcontinental division of Indo-Pakistan, PSX was established. As of January 22, 2015, the market capitalization was Rs7,439.095 billion, or US\$73.1 billion. 36 sectors contain a total of 580 registered listed firms. KSE-100 Index serves as the stock market's benchmark and representation

Problem statement

Most studies have examined the effects of various factors on stock prices. Manaba and Salema (2018) used data from 2012 to 2016 to examine the effects of macroeconomic variables, T bills, exchange rates, money supply, and inflation in Tanzania, a developing nation. They found that

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the money supply was the only factor that had a positive impact on stock prices; all other variables had a negative impact on stock prices.

The majority of studies only look at how variables affect stock prices; instead of looking at how certain variables affect stock prices by causing them to rise or fall, it is important to look at the volatility of stock prices across all sectors. This is because not all industries react to changes in various variables in the same way.

Therefore, rather than monitoring changes in a small number of large companies or the stock market index as a whole, it is necessary to understand variance at the sectoral level. Second, since different sectors react differently to changes in macro and microeconomic variables, it would be more sensible and efficient to examine the effects of particular variables on a single sector as opposed to examining the effects of various variables on the stock market as a whole.

For developing nations like Pakistan, examining the effects of GDP, ROE, inflation, and earnings per share on stock price volatility is crucial because it can assist local and international investors in focusing on macroeconomic and microeconomic factors when making investment decisions.

It can also assist the nation's policymakers in developing a plan or strategy that best suits GDP, stock price volatility, earnings per share, inflation rates, and return on equity. In order to successfully handle increases in inflation rates, it is promoting a bullish trend in a way that will boost both local and international trade and foster a strong sense of confidence among all investors.

Research questions

1. Does the volatility of stock prices in PSX's cement industry get a major boost from inflation?
2. Is there a strong correlation between the earnings per share and stock price volatility in PSX's cement sector?

3. Do the GDP and stock price volatility in PSX's cement industry have a substantial impact on each other?
4. Does the volatility of stock prices in the cement sector of PSX have a substantial impact on return on equity?

Research Objectives

Objectives of the research under study are as under

1. To examine the effects of inflation and stock price fluctuations on PSX's cement industry.
2. Analyze the effects of volatility in stock price and earnings per share in PSX's cement industry.
3. To examine the relationship between GDP and stock price volatility in PSX's cement industry.
4. To examine the relationship between stock price volatility and Return on Equity in the PSX cement industry.

Literature Review

Harry M. Markowitz initially proposed the concept of risk management in [1952](#) when his well-known study, "Portfolio Selection," was published in the Journal of Finance.

The concept outlined in this publication is now known as contemporary portfolio theory. Modern portfolio theory states that risk and returns are the two most crucial considerations when choosing a portfolio. Risk comes in two flavours: systematic risk and unsystematic risk. Returns and risk are correlated. Diversification across industries can reduce unsystematic risk, whereas cross-country investing can minimize systematic risk.

Scholars began analyzing many facets of risk and risk management after Markowitz's portfolio theory opened up new pathways for study on risk management, risk assessment, and risk-return trading. (Herbert, Dec., [1968](#)) provided a thorough explanation of the advantages of risk management. Effective risk management, according to him, is a useful instrument for

operating in international capital markets. He suggested that one crucial method for diversification is international portfolio diversity. The benefit of international portfolio diversification differs from the "gain of trade" and productivity gains resulting from the movement of production elements between nations.

Market volatility essentially represents a market risk, thus managing volatility should be a key component of any successful investing plan. It is crucial to determine the causes and variables that influence volatility and risk before addressing them. We have therefore selected four variables that may have an effect on the stock prices of Pakistan's cement industry in order to investigate the elements that may have an impact on stock price volatility. This allows us to investigate significant factors contributing to volatility.

Inflation

While there are other macroeconomic variables, inflation is thought to be the most compelling since it has a negative impact on monetary mobility. GDP and CPI deflator calculations are part of the inflation calculation process; these are based on value lists. On the other hand, Pakistan uses the CPI to achieve greater expansion. Inflation lowers the value of money, which ultimately affects speculation. In order to protect themselves from inflation, investors buy stronger gold, bonds, silver, and goods in addition to coins and shares (Chakravarty et al., 2010).

Inflation is a key indicator of the financial system's economic health and has a wide range of effects on the nation's wealth and well-being. In essence, it displays how a basket's price has changed over time.

Utilizing the GARCH model and data spanning from 1986 to 2005, Saryal (2007) investigated the volatility of stock prices in developed markets in Canada and Turkey. After looking at how a number of factors affect stock market volatility, the author concluded that inflation has a statistically significant beneficial

influence on stock prices in the Turkish and Canadian stock markets. It suggests that both developed and developing countries' stock prices are significantly impacted by inflation.

As was mentioned in the introduction chapter, the majority of research conducted in Pakistan and other countries focuses on examining the influence of macroeconomic variables on stock prices. In a similar vein, Rashid et al. (2011) looked at and used the GARCH model to investigate the effect of CPI on stock prices in Pakistan.

They came to the conclusion that the CPI influences stock price volatility in a positive but statistically negligible way. In their paper's discussion section, they made the case that a high inflation rate could be the cause of the outcome because it makes people believe that there would be more inflation in the future, which increases volatility.

(Khan, 2014) looked into how macroeconomic factors affected Pakistan Stock Exchange (PSX) stock prices. The impact of macroeconomic variables on stock prices was analyzed by him using the OLS model and Pearson correlation. The results of his research indicate a somewhat favourable association between inflation and stock prices. Moreover, it was re-posted that the volatility of stock prices is greatly positively impacted by inflation.

Earnings per share.

Earnings per share is a crucial micro-level indication of a company's profitability since it shows the company's income per share of stock. It also constitutes the earning "e" component of the (price-earning) P/E valuation ratio and is regarded as a significant variable in the analysis of a company's stock value. The EPS is computed using the method (Net income - dividends on preferred stock) / average number of outstanding common shares equals earnings per share (EPS).

A financial statistic called earnings per share (EPS) is used to assess how much profit a shareholder has per share. The recommendations made by earnings per share (EPS) are classified

as financial ratio types in financial books. By classifying the Earnings per Share Profitability Ratio into two categories, Donald E. Kieso et al. (2011) claimed that the sole meaningful number or ratio used by the company to typically summarize the performance of its operational activities is net income.

The financial community, however, welcomes even more sophisticated, concise, and clear metrics as business indicators, such as earnings per share (EPS). The EPS displays the profit earned by each share. Therefore, companies only disclose earnings per share for common shares.

The study conducted by Talamatti and Pangemanan (2015) employed the Multiple Regression Modeling (MRM) approach to examine the correlation between Earnings per share (EPS) and Return on equity (ROE) with respect to stock price volatility. The findings indicated that the EPS variable significantly influences stock prices in real time.

Gross Domestic Product (GDP)

The total value of all commodities and services produced by all citizens and enterprises in the state, whether they are domestic or foreign-owned, is reflected in the GDP. If they live inside the state's borders, the state agencies include their output in the GDP.

There are two methods for calculating a nation's GDP, each of which has its own characteristics. That is nominal and real GDP.

Return on equity (ROE)

A company's profit is gauged by its return on equity (ROE), which shows how much of the capital given by its owners is used to produce profit.

One of the profitability ratios that aids in determining return is the return on equity (ROE). The amount that remains after taxes is deducted and returned to the investor as a percentage of their investment is included. A profitability measure called return on equity (ROE) can be used to evaluate a company's rate of return or

how well it generates revenue which is thought to be one of the benefits for capital investors. It is useful for calculating a shareholder's rate of return on their investments in the company (Kabajeh et al., 2012). By dividing profit by shareholders' equity, we can get ROE.

Return on Equity (ROE) can be calculated by dividing net income by shareholders' equity.

Volatility of Stock Prices A popular metric for assessing the health and progress of an economy is the stock market (Yahyazadehfar et al., 2012).

Furthermore, the stock market is somewhat relevant to any nation's economy. Entering the stock market is also one of the best ways for a company to raise money. Its depth market is also widely recognized as impressive, but without trading publicly through it. Companies go public to generate more money and experience capital growth by selling their shares on the public market.

The available non-monetary and financial data is the basis for stock cost. Additionally, evidence from many sources shows that the record of buyer value, oil cost, expansion rate, and interest rates all vary excessively (Chong et al., 2011). According to Rossagno et al. (2010), business sector value is the best metric for investors to choose between use now and use later.

The degree to which macroeconomic variables predict volatility, which affects the volatility of Bangladesh's stock prices, was examined by Chowdhury et al. (2006). For analysis, monthly data on the CPI, exchange rate, stock prices, and output were used. The GARCH model was employed in this study to investigate the possibility of negative causation between stock return and industrial production. Using the quadratic GARCH model, Aliyu (2012) examined the effects of systematic shocks on stock prices in order to analyze stock market returns. The study focused on a single nation, and the variables of interest were stock prices and CPI. The study focused on the Ghanaian and Nigerian markets and covered the years 1998 to 2010.

falkberg (2012) investigated the relationship between the volatility of macroeconomic factors and the returns of the S&P 500 Standard and Poor's Index. In addition to seasonal dummies, other variables included in the study were yield curve slope, implied volatility, default spread, industry production volatility, volatility of three-month Treasury bills, and volatility of the period between 1957 and 2011. The Granger causality test was used to obtain monthly data for the study. The investigation's findings indicate that there is no correlation between macroeconomic variables and stock market volatility.

Relationship between Inflation and Stock prices Volatility

A comparison between inflation and stock price volatility is crucial. Fama was the first to analyze how inflation might impact stock prices in an economy (1970). The efficient market hypothesis proposed by Fama helps us understand how the stock market behaves and how good it is at identifying key macroeconomic effects. Here, the term "efficiency" refers to the ability to explain the idea of the money market, taking into account all relevant knowledge of macroeconomic ideas pertaining to the market, and producing the necessary outcome given the given circumstances. In the investigation, Toda and Yamamoto (1995) used the non-causality test approach.

According to Bhattacharya (2012), the rate of inflation and stock prices are correlated in both directions, while the cost of stocks is determined by filing a mechanical formation. When investors noticed significant market inflation amid an economic downturn, they started selling their stocks, according to a 1981 study by Fama and Associates. High inflation and stock prices are likely to go hand in hand because of the increase in the number of stocks available on the market. Prices are a reflection of a company's potential for future earnings, and firms that anticipate an impending economic downturn tend to sell more shares in the market.

Conversely, a positive correlation can be seen between inflation and stock prices since unexpected inflation can raise share values.

Chakravarty (2006) took a somewhat different but no less important tack when he looked at how macroeconomic factors affected the volatility of stock and gold prices. He analyzed data from 1991 to 2005 to gain an understanding of how these two markets interacted. His findings demonstrate how macroeconomic factors impact stock prices and gold prices in the Indian economy.

Pal and Mittal (2011) examined the association between macroeconomic variables and Indian stock prices, utilizing the ADF and cointegration test to verify the relationship. According to their findings, the money market and inflation have a big impact on the stock market in the Indian economy. As a result, Indian policymakers need to monitor the money market and maintain control over inflation in order to minimize market volatility and effectively manage risk.

Parviaz et al. (2018) investigated how macroeconomic factors affected stock returns on the Pakistan Stock Exchange.

After employing extensive analytical tools, they came to the conclusion that while some macroeconomic indicators had a considerable impact on stock price, others did not. This suggests that the relative impact of variables varies depending on their relevance and importance.

Stock price Volatility and EPS.

According to William J. O'Neil (2003), changes in EPS are the only major factor in the process of selecting the top leading companies available today. The better, the greater the percentage gain in EPS. According to Brigham and Houston (2009), who optimize stock prices that companies require in order to operate effectively and affordably and generate high-quality goods and services at the lowest feasible cost

Moreover, Brigham and Houston (2009) stated that there is a strong association between stock

prices and earnings per share. A caller or financial analyst might compare which stock is more profitable by looking at the intensity of the earnings per share.

Stock prices and earnings per share (EPS) were found to be related by Umar and Musa (2013) using a basic regression model. They discover that the relationship between EPS and stock prices is negligible. The data indicates that there was no meaningful association between stock prices and EPS for the whole time. As a result, EPS was not a useful signal for predicting changes in stock prices.

Using the Multiple Regression Method, Talamati and Pangemanan (2015) examined the impact of return on equity (ROE) and earnings per share (EPS) on stock price and came to a conclusion. The stock price is directly influenced by return on equity and earnings per share, with earnings per share having a significant impact.

Given the higher income received, investors' expectations for the stock return are probably large or even positive. Furthermore, investors will be more likely to purchase stock in these companies if they can demonstrate how to raise demand for stocks on the stock exchange market. Given that there are still outstanding shares, it is certain that the stock prices would increase (Najim et al., 2018). However, the positive association between stock prices and EPS is not always supported by the data.

Stock Price variation and Gross domestic product

The goal of Al-Majali and Al-Assaf's (2014) study was to investigate how the GDP and other macro variables affected the stock prices on the Amman Stock Exchange. From 1992 to 2014, quarterly data was utilized to examine if a relationship existed or not using the Variance Decomposition Method, IRF Johansen Co-integration Test, and VECM. Their findings demonstrate that there is a long-term equilibrium in Jordan between the aggregate savings rate (ASE) and the GDP.

Similarly, Hassanzadeh and Kianvand (2012) used the vector correction model (VECM) to

analyze long-term relationships between macroeconomic indicators and the Tehran stock exchange and discovered a long-term, co-integrated relationship among these variables. A rise in the gross domestic product (GDP) is a sign of improved economic conditions and is beneficial to business profits and stock prices.

Diebold and Yilmaz (2008) looked into the relationship between macroeconomic factors and stock return volatility in developing Asian and African nations. They came to the conclusion that there is a positive correlation between macroeconomic variables and the volatility of stock returns. The volatility of the stock market has a negative correlation with GDP per capita. Money markets do not generate GDP growth; rather, the share trading system generates GDP growth. Khan (2014) also looked at the relationship between macroeconomic indicators and stock prices. He examined how stock prices respond to different macroeconomic factors using Auto Regressive Distributed Lag (ARDL) and Augmented Dickey-Fuller (ADF) using data from 1971 to 2012. The study's findings indicate that there is a relationship between macroeconomic variables, stock price volatility, and GDP in the short run, but that the relationship weakens over time. Khan (2018) provided much more thorough and detailed assistance for it as well. He stressed the necessity for a different kind of proxy application in order to gain a deeper understanding of the volatility of stock prices.

Return on asset and Stock Price volatility.

The profitability of the business in relation to the capital utilized by the shareholders is reflected in return on equity. High levels of profitability boost investor confidence, and as a result, more people attempt to invest, stabilizing share prices and reducing stock price volatility.

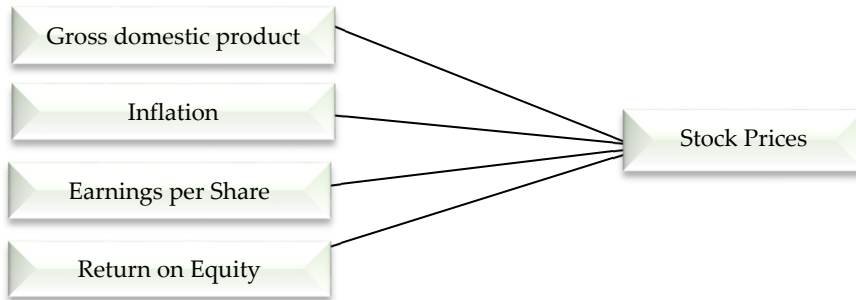
Hunjra et al. (2014) looked into the connection between stock price volatility and return on equity. The goal was to investigate whether or not ROE affected the volatility of stock prices. They came to the conclusion that there is a

negative and substantial association between ROE and stock price volatility after analyzing panel data.

Moreover, Anwaar (2016) investigated the connection between stock price volatility and

ROE. To investigate the link between two variables, she employed regression tests and carried out correlation analysis. She stated that there is a strong relationship between the volatility of stock prices and return on equity (ROE).

Theoretical Model



The conceptual framework mentioned above served as the basis for the preliminary hypothesis.

Hypothesis

- H1:** The volatility of stock prices is significantly influenced by inflation.
- H2:** Stock price volatility is significantly influenced by earnings per share.
- H3:** The volatility of stock prices is significantly influenced by the gross domestic product.
- H4:** Return on Equity (ROE) significantly influences the volatility of stock prices.

Research Methodology

Population of the study

The cement sector of the Pakistan Stock Exchange is selected as the population of the

Sample Size

Initially, a total of 22 companies in the selected sector were taken as a sample however the sample size was reduced to 15 listed companies as data on the remaining companies was incomplete and was mostly unavailable.

Data

The data is quantitative in nature and the time period is seven years from 2012 to 2018. The data

is retrieved from the website of the State Bank of Pakistan

Analysis

For statistical analysis, reviews software is used for regression analysis.

Statistical Model

The general equation for regression analysis is as follows (Chaudhry, 2009):

$$Y(SPV) = \alpha + \beta_{it}INF_{it} + \beta_{it}EPS_{it} + \beta_{it}ROE_{it} + \beta_{it}GDP_{it} + e_{it}$$

Dependent Variable = SPV= Stock price volatility

Independent Variables (IV) INF= Inflation EPS = Earnings per share GDP = Gross domestic product IV=ROE = Return on Equity

β_1 =slope of regression line based on exchange rate and stock volatility E= error term

Data Analysis and Discussion

Out of the 22 listed companies, data from 15 listed cement companies is analyzed. The companies that are chosen for analysis are

Attock, Bestway, Cheerat, Deewan, D.Gkhan, Fauji, Fecto, Flying, Gharibwal, Javedan, Kohat, Lucky, Maple, Pioneer, and Power Cement. The

data for these companies is analyzed over a seven-year period, from 2012 to 2018. The data analysis's specific findings are listed below

Descriptive analysis

Table 1

Descriptive Statistics

	SPV	EPS	GDP	INF	ROE
Mean	0.395622	10.59211	4.336067	6.350000	17.98622
Median	0.367500	7.985000	4.045000	6.100000	19.55000
Maximum	1.60000	42.34000	5.700000	10.00000	44.20000
Minimum	0.220000	-5.780000	3.680000	3.700000	-9.290000
Std. Dev.	0.172276	10.01763	0.692593	2.246908	10.71905
Kkewness	4.074454	1.100725	1.086956	0.342666	-0.246551
Kurtosis	27.83629	3.979264	2.766802	1.708271	2.946099

This table shows the observed variables' descriptive statistics. The mean value displays these variables' average trend. The average middle value of these variables is displayed by the median values. The dependent variable is the volatility of stock prices, while the independent variables are the gross domestic product, earnings per share, return on equity, and inflation. The standard deviation displays the value's difference from the mean.

Average stock price The standard deviation is .17, the minimum is .22, the maximum is 1.6,

and the SP is.39.The standard deviation is 10.1, the minimum is -5.78, the maximum is 42.34, and the mean of earnings per share, or EPS, is 10.6.ROE Return on Equity has a mean of 17.9, a standard deviation of 10.7, a minimum value of -9.29, and a maximum value of 44.20.GDP has a mean of 4.33, a standard deviation of .69, a minimum value of 3.68, and a maximum value of 5.70.Inflation I has a mean value of 6.35, a standard deviation of 2.2, a minimum value of 3.7, and a maximum value of 10. The whole set of observations for which information was gathered between 2012 and 2017 was listed.

Correlation

Table 2

Variables	SP	EPS	ROE	GDP	Inflation	
SP	Pearson Correlation	1	-.484**	-.435**	-.210*	.346**
	Sog. (2-tailed)		.000	.000	.047	.001
EPS	Pearson Correlation	-.484**	1	.495**	0189	-.238*
	Sig. (2-tailed)	.000		.000	.075	.024
ROE	Pearson Correlation	-.435**	.495**	1	-.023	-.147
	Sig. (2-tailed)	.000	.000		.826	.167
GDP	Pearson Correlation	-.210*	.189	-.023	1	-.524
	Sig. (2-tailed)	.047	.075	.826		.000
Inflation	Pearson Correlation	.346**	-.238*	-.147	-.524**	1
	Sig. (2-tailed)	.001	.024	.167	.000	

Above is the correlation matrix. This table displays the dependence of one variable on another, as well as the relationships between the various variables and the dependent variable. The table demonstrates the negative relationship between stock price volatility and return on equity (ROE), earnings per share (EPS), and GDP. In contrast, the volatility of stock prices is positively correlated with inflation. GDP, EPS, and ROE all exhibit negative relationships, meaning that increases in any one of these variables will cause decreases in the other variables. Conversely, positive relationships indicate that inflation will cause increases in the values of the other variables.

The greatest correlation between SPV and EPS, which is -.435 in the above matrix, indicates that when a company's EPS rises, stock price volatility falls. The weak correlation between the gross domestic product and stock price volatility is -.210.

Regression Analysis

The sensitivity of an individual is represented by the first regression coefficient beta, and t-statistics and Sig values are used to determine the degree of significance and significance of the findings.

$$Y(\text{SPV}) = \alpha + \beta_{it}\text{INF}_{it} + \beta_{it}\text{EPS}_{it} + \beta_{it}\text{ROE}_{it} + \beta_{it}\text{GDP}_{it} + e_{it}$$

Table 3

Dependent Variable: SPV

Variable	Coefficient	t-Statistic	Sig
EPS	-0.005092	-2.829494	0.0058
GDP	-0.012291	-0.468436	0.6407
INF	0.016238	2.003572	0.0483
ROE	-0.004158	-2.506869	0.0141
R-squared	0.339638	Mean dependent var	0.395722
Adjusted R-squared	0.308562	S.D. dependent var	0.172276
F-statistic	10.92933	Durbin-Watson stat	1.690327
Prob (F-Statistic)	0.000000		

The volatility of stock prices is the dependent variable in the panel regression results, which are shown in Table 3 above. The F-statistics, which represents the model's fitness at 10.92 and has a probability value of 0.000, shows that the model is fit even at the 99% confidence interval. The cement sector's stock market volatility has an R-squared value of 0.33, indicating that the four independent variables chosen account for 33.9% of the variation in the dependent variable.

The cement sector's stock price volatility is significantly impacted negatively by earnings per share, as seen by the data, where the significance value is 0.0058 and the t-statistics value is -2.829. The cement sector's stock price volatility is negatively impacted by GDP, although the effect

is statistically negligible, with a t value of -0.468 and a significance value of 0.640. The findings show that the volatility of stock prices in the PSX cement sector is positively and statistically significantly impacted by inflation. Moreover, the return on equity (ROE) has a statistically significant negative impact on the volatility of cement industry pricing, as indicated by the ROE's t-state value of -2.5 and significant value of 0.014.

Conclusion

Our study aims to investigate the effects of macro and microeconomic variables on the volatility of stock prices in the PSX cement industry. The

macroeconomic variables are inflation and GDP, while the microeconomic variables are earnings per share and return on equity. The outcomes are rational and quite convincing. The f-statistics value of the overall fit model is quite significant. The findings indicate that the volatility of the cement sector's stock price is significantly impacted negatively by profits per share. The GDP does not significantly positively affect the volatility of stock prices in Pakistan; Instead, the cement industry's stock price volatility is negatively impacted, albeit statistically insignificantly.

The findings also show that inflation has a positive and statistically significant impact on the volatility of stock prices in the PSX cement sector; moreover, the positive and significant impact of inflation suggests that as inflation rises, stock price volatility rises as well. Moreover, the volatility of cement prices has a negative and statistically significant effect on return on equity. Noting that the results make sense overall and are rational and compelling is key.

Future directions

We are offering the following research recommendations based on the study's dynamics. In order to get further insight into the problem of stock price volatility, more thorough research using more reliable methods and procedures should be attempted in subsequent studies. These strong techniques will allow us to gain a deeper comprehension.

Additionally, in order to uncover influences on stock price volatility, researchers need to include more macroeconomic and microeconomic variables in their future work, such as the exchange rate, consumer price index, dividend policy, return on asset, and business success.

In the same way, future scholars may examine various industrial sectors with sizable corporations, focusing on the entire stock exchange market in an effort to uncover more noteworthy findings that will be beneficial to them.

Recommendations

The study's findings and context led to the following significant recommendations.

First off, the correlation between price volatility in the cement sector and inflation is positive, indicating that a high level of inflation increases volatility, which in turn makes the market riskier. Therefore, the investor in such a case should exercise caution and request a large return in order to handle a high degree of risk. Putting money into a highly volatile market without receiving a substantial risk premium is not advantageous for investors.

Secondly, earnings decrease during stock market fluctuations because return on equity and earnings per share have a negative and substantial correlation with stock price volatility. Put differently, as earnings rise, there is a corresponding decrease in volatility and a tendency for prices to stabilize.

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