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Analyzing Stock Returns of Non-Life Insurance Firms: The Role of Investor Attention

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Abstract

This study analyses the impact of investor attention on the stock returns of non-life insurance firms in Bangladesh, utilizing company-specific and macroeconomic factors as control variables. This study employs 1,360 quarterly observations from 34 publicly traded non-life insurance companies spanning 2014 to 2023, using Feasible Generalized Least Squares and Panel Corrected Standard Errors models to tackle panel data challenges, including heteroscedasticity and cross-sectional dependence. The results indicate that investor attention, quantified through the Google Search Volume Index, substantially affects stock returns. This indicates that observing investor behaviour and public interest can improve investing strategies and market forecasts. Return on assets, net profit margin, and firm age exhibit favorable connections with stock returns, although firm size negatively affects them. Macroeconomic variables, including inflation and GDP growth, correlate negatively with stock returns, whereas the exchange rate demonstrates a favorable influence. This study enhances the literature by integrating investor behavior with fundamental and macroeconomic variables within the insurance industry of an emerging market, providing significant insights for investors and policymakers.

Keywords: *Investor Attention, Google Search Volume Index, Panel Data, Macroeconomic Variables, Insurance, Bangladesh.*
JEL Classification: G22, E44, C33

1. Introduction

Conventional finance theories often presume that investors can obtain relevant information and dedicate the necessary attention to analyzing and reacting to it (Hirshleifer, Lim, and Teoh, 2011). In accordance with the efficient market hypothesis theory, asset prices incorporate all essential market-related information, necessitating that investors consider all available data (Akarsu & Süer, 2022). In reality, investors cannot access all relevant information because of individuals' limited attention spans (Pashler & Johnston, 1998). The sheer

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volume of data in today's information age forces retail investors to concentrate on only a small subset of available information, making it challenging to track all market developments comprehensively (Barber, Odean & Zhu, 2008). This limited attention can significantly affect their trading activities, leading to potentially suboptimal decision-making and influencing stock returns by causing mispricing or delayed reactions to new information (Yang, Ma, Wang & Wang, 2021).

Investors prioritize returns when making investment decisions, assessing the potential gains against the associated risks to align with their investment goals and risk tolerance (Fama, 1990). Insurance is defined as the pooling of risks through insurers who compensate for losses, provide financial benefits, or offer related services (Linnerooth-Bayer, Surminski, Bouwer, Noy & Mechler, 2019). In Bangladesh, where natural disasters, political instability, and inflation pose significant challenges, the insurance industry is crucial to helping businesses reduce these risks (Mamun & Chowdhury, 2021). Insurance returns are vital for assessing the financial health and risk management capabilities of insurance companies, as investor focus significantly influences the dynamics of the stock market.

Retail investors often base their investment decisions on stocks that draw attention due to factors such as media coverage, social media trends, and market sentiment (Barber & Odean, 2008). A company's Google Search Volume (GSV) is a crucial indicator of investor attention, providing insights into the interests of uninformed investors (Bank, Larch & Peter, 2011). It can be a helpful indicator of how the stock market will behave, providing insights into how investor sentiment and attention can influence market outcomes (Aziz & Ansari, 2021). Bank et al. (2011) explore that Stocks that gain attention often see price increases due to heightened investor interest, while those that receive negative attention may suffer from reduced demand and declining prices. Smales (2021) notes that investor attention can create selling pressure, as investors may avoid stocks linked to controversy, scandals, or poor performance. Thus, investor attention becomes crucial in shaping investor behavior and influencing stock market outcomes.

This study primarily examines how investor attention impacts the stock returns of non-life insurance companies in Bangladesh. It investigates the detailed correlation between investor attention and stock returns, examining how market responses and investor sentiment influence this relationship. However, stock returns are not solely driven by investor attention. Various firm-specific characteristics and macroeconomic factors also significantly influence stock returns. To ensure a comprehensive analysis, the study incorporates a set of control variables, including both firm-level and macroeconomic indicators to better understand their combined impact on stock returns.

Existing literature, including research by Akarsu and Süer (2021), Swamy and Dharani (2019), Ekinci and Bulut (2021), Tan and Taş (2019), Tantaopas, Padungsaksawasdi and Treepongkaruna (2016), and Bank et al. (2011), has explored the effect of investor attention on returns of stock in various contexts. However, there is a significant gap in the research, particularly in Bangladesh, where studies have not yet been done on how investor attention affects stock returns, especially on non-life insurance companies. This study intends to bridge this gap by delivering a comprehensive examination of the impact of investor attention on stock returns within the Bangladeshi non-life insurance sector, providing insights into local market dynamics and investor behaviour.

The impact of investor attention on stock returns is inadequately understood for non-life insurance companies in Bangladesh, requiring a thorough investigation to deepen the level of knowledge, and thus the following questions are set to examine: (1) How can the investor's attention to the company, which is measured by Google Search Volume Index, contribute to the stock return? (2) How investor interest fluctuations may influence stock performance. (3) How can the firm-specific variables and macroeconomic factors influence the stock return of the non-life insurance companies?

This study makes significant contributions by addressing a key gap in current research. It offers a thorough examination of the ways investors' focus influences stock returns for non-life insurance companies. The study applied Google search volume as an indicator of investor attention, a method rarely used in Bangladeshi insurance companies. Additionally, it utilizes the PSEC dynamic regression

model to enhance the analysis of these effects. These findings provide essential insights for policymakers in Bangladesh, particularly within the life insurance industry. Analyzing how investor attention influences stock performance can aid investors and stakeholders in shaping more effective investment strategies and making better decisions.

The rest of the study consists of section two, which thoroughly explores the existing literature and hypotheses guiding the research; section three, which outlines materials and methods; section four, which relates the results and discusses the method; and the fifth chapter, which provides the conclusion.

2. Literature Review and Hypothesis Development

Classical asset-pricing models assume that asset prices reflect all relevant information instantaneously, assuming that investors can consistently devote adequate attention to each asset (Da, Engelberg & Gao, 2011). However, acknowledging the constraints on investor attention, Peng and Xiong (2006) and Hirshleifer and Teoh (2003) have created theoretical models to investigate how these limitations affect asset pricing. However, studies have shown that individual investors typically base their choices on their level of attention. Barber and Odean (2013) state that this limited attention impacts investment choices. Peng and Xiong (2006) demonstrate that capital market investors concentrate on comprehensive market information due to attention limits rather than details about specific companies.

Two prominent theories challenge the efficient market theory underlying typical asset pricing models by examining how investor attention impacts stock prices. Merton (1987) presents the investor recognition theory, suggesting that investors are inclined to acquire stocks with which they possess greater familiarity. Barber and Odean (2008) propose the price pressure theory, indicating that individual investors, restricted by time and resources, are inclined to purchase stocks that catch their interest. This focus-driven behavior results in higher returns and increased trading volumes for these stocks, while selling is easier since investors know about the stocks they own. Information visibility is essential for individual investors when making decisions (Nofsinger, 2001).

Investor attention, a psychological bias, significantly influences trading and asset pricing. Shleifer and Summers (1990) highlight that irrational investor sentiment can affect prices, as noise trading and limited arbitrage opportunities are prevalent. Previous research has assessed investor attention using various indirect indicators, including advertising, noteworthy events, and media coverage. Grullon, Kanatas, and Weston (2004) state that companies with bigger advertising budgets attract more investors and have improved liquidity of stocks. The advertising activity enhances immediate stock returns through enhancing investor awareness, but it results in lower future returns (Chemmanur & Yan, 2019). Hsu and Chen (2019) demonstrate that portfolios with high advertising expenditures achieve higher abnormal returns in low-volatility periods, but these returns become insignificant during high-volatility periods despite increased advertising efforts.

In recent years, researchers have utilized Internet search data to indicate attention to particular subjects directly. Recognizing the value of attention and actively managing it has become increasingly crucial in navigating the digital world (Yang et al., 2021). Google Trends utilizes data from Google Search and its affiliated sites to provide insights into internet search patterns and trends. Users can access a user-friendly interface in Google Trends, download data for further analysis, and view relative search volumes (RSV) adjusted to the maximum query share observed over time and define specific geographic areas and periods, comparing relative search volume across different terms or locations (Nuti, Wayda, Ranasinghe, Wang, Dreyer, Chen & Murugiah, 2014). They also point out that Google Trends only captures data from a subset of the population using Google Search.

The search volume index (SVI) for a specific phrase is its query share for a given region and period, whereas the query share for a certain term is the proportion of queries for that phrase compared to the total number of searches in a specific region and period (Cziraki, Mondria, & Wu, 2011). Data following Google Trends searches can be used for selecting portfolios and diversifying risk (Kristoufek, 2013). Google search trends have also been employed to measure investor sentiment. Google Insights measures the daily variations in the Google

Search Volume Index that are associated with liquidity across different dimensions, particularly for stocks with higher retail trading proportions (Fink & Johann, 2012). Google search data can enhance the ability to predict directional fluctuations in the S&P 500 index and potentially improve investment decision-making processes (Huang, Rojas, & Convery, 2020). In the Asia-Pacific region, the Google Search Volume Index (GSVI) indicates investors' attention, offering crucial insights into retail investor behavior and its influence on market variables (Tantaopas et al., 2016).

Swamy and Dharani (2019) find that the predictive potential of the Google Search Volume Index extends beyond forecasting the direction of capital market movements; it also offers insightful information into the magnitude of potential market changes. They suggest that the GSVI not only signals whether the market will move up or down but also gives an indication of how significant those movements might be. Investors' attention can impact both current stock prices and future returns in two primary ways. Firstly, events that attract attention can affect buying and selling behaviors in distinct manners. Secondly, increased awareness might amplify the variation in investors' beliefs about a stock's value. Vozlyublennaia (2014) demonstrates that investor attention, assessed by Google searches, influences the outcome of metrics for stocks, bonds, and commodities, though the effect usually lasts for a short period.

Investor attention performs a crucial role in determining stock returns. Especially in markets like Turkey, where behavioral factors are significant, indicating that small stocks are particularly affected by changes in attention, leading to notable price pressure effects. (Tan and Taş, 2019). Bank et al. (2011) discovered that investor attention has a favorable correlation with the German stock market's future return. Ekinci and Bulut (2021) investigate the Turkish capital market and show that stock returns are significantly related to the investor's attention. Vosen and Schmidt (2011), Cziraki et al. (2011), Nurazi and Usman (2015) and Yang et al. (2021) have found that investor attention is positively correlated with stock returns. Perlin, Caldeira, Santos, and Pontuschka (2017) observe that in developed countries, the volume of searches for stock market-related terms adversely correlates with stock returns. Chen (2017) reveals

that in 20 out of 67 countries, increased investor attention is associated with decreased stock returns. Meanwhile, Han, Li, and Yin (2018) find that investor attention has a notable impact on index returns, with negative attention proving to be a more accurate predictor than positive attention in both developed and developing countries. However, Ekinci and Bulut (2021) also opined that investor attention does not predict future stock returns.

Stock returns are also shaped by a range of firm-specific characteristics, such as return on assets, firm size, firm age, net profit margin, and debt-to-equity ratio, beyond investor attention. A company's declining return on assets over time signals negative information to investors, potentially decreasing stock trading activity and stock returns (Suciati, 2018). Generally, a higher return on assets is associated with increased share prices, which can boost stock returns. Both Aminah (2021) and Sorongan (2016) support the positive correlation between return on assets and stock returns. However, Suciati (2018) identified that return on assets has an insignificant relationship with stock returns. Similarly, a low net profit margin may indicate inefficiency, raising concerns about the company's profitability. While Sorongan (2016) and Nurazi and Usman (2015) revealed a positive influence of net profit margin on stock returns, Kusmayadi, Rahman, and Abdullah (2018) and Aminah (2021) reported no substantial effect.

Debt-to-equity ratio positively influences stock returns, as higher debt reliance can improve company performance when managed effectively (Jabbari & Fathi, 2014; Hertina & Saudi, 2019). Conversely, Elevated debt levels can negatively impact stock returns. Kusmayadi et al. (2018), and Nurazi and Usman (2015) found a negative effect on stock return. Larger firms are typically better positioned to secure loans due to their stronger industry presence and broader access to funding (Rochim & Ghoniyah, 2017), while smaller firms are often more adaptable. Sharif (2019) and Adawiyah & Setiyawati (2019) found a positive relationship between firm size and stock returns, whereas Barua (2020) and Suciati (2018) observed a negative relationship. Rochim & Ghoniyah (2017) found no significant impact on firm size. Additionally, older companies tend to generate higher stock returns (Matemilola et al., 2017), supporting the positive outlook. Akwe and Garba (2019) reported a substantial positive correlation

between company age and stock returns, indicating that maturity and scale can drive better market performance. On the other hand, Dawar (2014) observed that firm age negatively influenced stock returns.

In addition, macroeconomic variables like inflation rate, GDP growth rate, and exchange rate significantly influence stock returns. Abubakar (2016) identified that GDP growth rate exerts a favorable short-term influence on stock returns, as economic expansion supports business activity and market optimism. However, a negative long-term effect was found on return due to increased market volatility and speculative behavior. Similarly, Madsen, Dzhumashev, and Yao (2013) and Alam (2020) established a positive relationship between GDP growth and stock performance, highlighting GDP's role in shaping investor expectations and guiding investment strategies. Conversely, excessive inflation tends to reduce purchasing power and lead to higher interest rates which in turn negatively affect stock returns (Lee, Lee, & Wu, 2023). Inflation-induced interest rate hikes raise borrowing costs, discourage investment, and reduce market activity, ultimately lowering stock returns (Madadpour & Asgari, 2019; Rosalyn, 2018). Exchange rate movements also impact stock returns, stronger domestic currencies can attract foreign investment, boosting stock prices. Granger, Huangb and Yang (2000), Rosalyn (2018) and Tian and Ma (2010) observed a favorable correlation between exchange rates and stock returns. Whereas Kusumaningtyas, Widagdo, and Nurjannah (2021) reported a strong negative correlation between exchange rates and stock returns.

While numerous studies have investigated the association between investor attention and stock returns in various countries (Ying, Kong & Luo, 2015; Tan & Tas, 2018; Akarsu & Süer, 2022), there is a notable absence of research investigating this relationship in Bangladesh. Specifically, there is no existing research that examines whether investor attention influences stock returns within the Bangladeshi market. Specifically, the non-life insurance sector has been largely unexplored in this context. This gap highlights the need for a focused study to understand how investor attention might affect stock performance in Bangladesh. Consequently, this study aims to overcome this gap by investigating the effect of investor attention on the stock return of non-life insurance firms in

Bangladesh, while broadening the scope by incorporating both company-specific variables and macroeconomic variables as control factors. Based on the above discussion, the hypotheses on the association between investor attention and stock returns are formulated as follows:

H_0: Investor attention has no significant influence on stock returns.

H_1: Investor attention has a significant influence on stock returns.

3. Methods

3.1 Sample Selection and Data Source

This study evaluates the impacts of investor attention on the stock returns of non-life insurance firms listed on the Dhaka Stock Exchange (DSE), specifically focusing on 34 non-life insurance companies that have been listed since before 2014. This selection ensures a balanced dataset. Quarterly data is collected from January 2014 to December 2023, resulting in 1,360 observations. In this study, five firm-specific variables (e.g., return on assets, firm age, firm size, net profit margin, and debt to equity ratio and three macroeconomic variables (such as exchange rate, inflation, and GDP growth rate) are used as the control variables. Google search volume index data is collected from Google Trends[1] following Tantaopas et al. (2016) and Akarsu & Süer (2022). Data on firm-specific variables and stock price is collected from the Dhaka Stock Exchange (DSE)[2] and audited annual reports of the respective companies following Alam (2020), Akwe and Garba (2019) and Kusumaningtyas et al. (2021). GDP growth rate and inflation rate of Bangladesh are extracted from the World Bank database[3] following Hasan & Islam (2023), the exchange rate data is collected from the International Monetary Fund (IMF) database[4] following Kemoe, Mbohou, Mighri, Quayyum & Quayyum (2024).

[1] https://trends.google.com/trends/
[2] https://www.dse.com.bd/index.php
[3] https://data.worldbank.org/
[4] https://data.imf.org/en

3.2 Variable Description

The analysis employs stock returns as the dependent variable, with investor attention serving as the independent variable. The profit or loss that an investor makes on a stock investment within a particular period is called the stock return. From the collected data, logarithmic quarterly returns are computed from March 2014 to December 2023 following Hasan (2024) and Budhathoki, Bhattarai and Dahal (2024). Log return is computed to stabilize variance, ensure time additivity, and better approximate normality in financial return series (in agreement with Gregory, Matatko & Luther,1997). The following formula calculates the stock return (aligned with Barua, 2020; Hasan, Tawfiq, Hasan & Islam, 2024a).

$$Stock\ Return = LN\left(\frac{CSP_t}{CSP_{(t-1)}}\right) - - - \ - - - - - - - - - - - - - (1)$$

Where *LN* stands for natural logarithm, CSP_t refers to the closing stock price at the quarter end, and $CSP_{(t-1)}$ refers to the closing stock price at the beginning of the quarter.

Investor Attention

The Google search volume index (GSVI) derived from Google Trends is used as a direct proxy measure of investor attention following Da et al. (2011) and Swamy and Dharani (2019). This index quantifies the number of times the terms associated with the selected companies are searched by the investor (Tan & Tas, 2019). Google Trends can quantify and display investor interest towards certain topics and analyze the dynamics of the search interest over time (Da et al., 2011). The formula below measures investor attention-

$$Investor\ Attention = \frac{(SVI_{m1} + SVI_{m2} + SVI_{m3})}{3} - - - - - - - - - - - - - (2)$$

Control Variables

Five firm-specific variables, including return on assets, net profit margin, firm age, firm size, and debt-to-equity ratio are utilized as control variables to account for internal company characteristics that may affect stock returns, as per Tan & Tas (2019), Hertina & Saudi (2019), and Aminah (2021). Furthermore,

macroeconomic variables such as GDP growth rate, inflation rate, and exchange rate are also considered following Msomi (2023), Zinyoro and Aziakpono, (2024), Akwe and Garba (2019) and Hasan & Hasan (2024), to reflect the broader economic conditions. A concise overview of these variables is presented below.

Return on Assets

Return on assets is a key metric utilized by investors, analysts, and management to evaluate a firm's financial stability and performance in comparison to its asset base. This ratio indicates how successfully a corporation generates profits from its assets. A greater return on assets implies that the company uses its assets more efficiently to generate profits, whereas a lower return on assets may imply inefficiency or underperformance (Aminah, 2021). Following Sorongan (2016), return on assets is calculated as:

$$Return\ on\ Assets = \frac{Net\ Income}{Total\ Assets} - (3)$$

Debt-to-Equity Ratio

The debt-to-equity ratio measures solvency, which reveals a company's financial framework and its capacity to meet its debt responsibilities. Specifically, it evaluates the degree to which a company's financing is sourced from debt compared to equity. Based on Sharif (2019) and Kusmayadi et al. (2018), the calculations were done as follows:

$$Debt - to - Equity\ Ratio = \frac{Total\ Debt}{Total\ Shareholder's\ Equity} - - - - (4)$$

Net Profit Margin

A key financial indicator that evaluates a business's capacity to control expenses and turn a significant profit in relation to sales revenue is net profit margin. A larger net profit margin demonstrates a company's operational effectiveness and financial soundness, as it demonstrates the successful conversion of revenues into actual profit (Sorongan, 2016; Nurazi & Usman, 2015). Net profit margin calculated as:

$$Net\ Profit\ Margin\ = \frac{Net\ Income}{Revenue} - (5)$$

Firm Size

Total assets are used to measure firm size, which is a key variable in most asset pricing models. There is a need to understand that the efficiency of the firm size as a predictor of expected stock returns may differ from one period to another and from one market to another. Following Astakhov, Havranek and Novak (2019), the logarithmic value of the total assets is used to measure the firm size.

Firm Age

Firm age is defined as the number of months since a company's establishment (Akwe & Garba, 2019). It often reflects the firm's experience, stability, and market adaptability. Established firms typically benefit from enhanced operational stability and strategic knowledge, which can contribute to stronger profitability and financial performance (Matemilola et al., 2017). However, as firms mature, they may face growth limitations, potentially leading to lower returns compared to younger firms with higher growth prospects (Dawar, 2014).

GDP Growth Rate

GDP growth rate indicates the annual percentage change in a country's economic output. It reflects the overall economic condition in which businesses operate. Economic expansion typically boosts corporate earnings, improves investor sentiment, and reduces systematic risk (Alam, 2020). As firms tend to perform better in a stable economic climate, the GDP growth rate is often considered a relevant factor in explaining variations in stock returns (Abubakar, 2016).

Inflation Rate

Inflation is the persistent increase in general price levels over time, resulting in a reduction of money's purchasing power (Lee et al., 2023). As inflation rises, it increases operational costs for companies, lowering their profit margins and reducing stock returns (Madadpour & Asgari, 2019). Higher inflation creates an unfavorable environment for both businesses and investors. This often leads to reduced investment activity in the stock market.

Exchange Rate

The exchange rate represents the value of one currency relative to another (Hasan & Islam, 2023). A strong domestic currency may attract foreign investors seeking currency gains, driving stock prices higher (Tian & Ma, 2010). In contrast, currency depreciation can trigger capital outflows as foreign investors withdraw their funds, leading to reduced demand for stocks and lower stock returns (Kusumaningtyas et al., 2021).

3.3 Econometric Model of Data Analysis

The dataset comprises a panel structure, combining cross-sectional data from 34 non-life insurance companies with 40 quarterly observations from 2014 to 2023, resulting in a balanced panel of 1,360 firm-quarter observations. Several diagnostic tests are performed before panel data regression analysis, including the normality test using the Shapiro-Wilk test, the multicollinearity test using Variance Inflation Factor (VIF), and Wooldridge test for autocorrelation (Hasan, Islam, Tawfiq & Saha, 2025; Hasan, Tawfiq, Hasan & Islam, 2024b). Additionally, heteroscedasticity test using the Breusch-Pagan test and Pesaran's test is applied to evaluate cross-sectional independence within the panel data (Mercan, Kızılkaya & Okde, 2015). The data exhibited issues with normality, prompting the use of a two-step data normalization model to address these concerns following Templeton (2011). The panel regression equation is set for this study:

$$Stock\ Return = \beta_0 + \beta_1 IA_{i,t} + \beta_2 Controls_{i,t} + \varepsilon_{i,t} \quad ------(6)$$

Here, *IA* denotes investor attention. The control variables, denoted as $Controls_{it}$, capture the impacts of both firm-specific characteristics and macroeconomic conditions. The firm-specific variables include return on assets, debt-to-equity ratio, net profit margin, firm size, and firm age. The macroeconomic variables consist of GDP growth, inflation, and exchange rates. The subscript *i* refers to the cross-sectional unit (i.e., each insurance company), and *t* indicates the time period (i.e., each quarter from 2014 to 2023). β_0 is the intercept, while β_1 and β_2 are the coefficients measuring the influence of investor attention and control variables on stock returns, respectively. ε_{it} denotes the error

term, accounting for random disturbances or unobserved factors not captured in the model.

4. Results and Discussions

4.1 Descriptive Statistics

Table 1 displays the descriptive statistics of the variables utilized in this analysis, based on 1,360 quarterly observations from 34 non-life insurance companies in Bangladesh, spanning January 2014 to December 2023. The natural logarithm mean of selected companies' stock return is 0.55 percent, accompanied with a standard deviation of 0.2194, indicating moderate volatility. This conclusion aligns with Barua (2020), who documented a comparable range of stock return volatility for insurance firms in emerging markets. The average investor attention score of 29.58, accompanied by a substantial standard deviation of 22.40, indicates significant variability in search intensity over time. This finding aligns with Swamy and Dharani (2019) who observed that investor attention fluctuates as a market sentiment indicator and frequently displays significant variability at times of economic or company-specific announcements.

The average return on assets and net profit margin are 3.89 percent and 25.76 percent, respectively, indicating reasonable profitability despite considerable fluctuations. These results are in line with Sorongan (2016), who observed comparable levels of profitability across markets in Indonesia. The debt-to-equity ratio exhibits considerable variability (mean = 0.77), corroborating Sharif (2019) findings that capital structures among Bangladeshi enterprises are markedly uneven. The average age of the insurance company is around 298 months, whereas the average firm size, indicated by the natural logarithm of total assets, is around 20.96. Finally, the GDP growth rate, inflation rate, and exchange rate have mean values of 6.47 percent, 6.53 percent and 85.42, respectively.

Table 1: Descriptive Statistics

Variables	Observations	Mean	Std. dev.	Median	Min	Max
Stock Return	1360	0.0055	0.2194	0.0054	-0.6955	0.7066
Investor Attention	1360	29.5759	22.4023	29.7865	0.0000	102.00
Return on Assets	1360	0.0389	0.2602	0.0395	-0.7928	0.8704
Net Profit Margin	1360	0.2576	0.6982	0.1670	-0.4661	25.0490
Debt-Equity Ratio	1360	0.7659	1.3652	0.5955	0.0026	31.0432
Firm Age	1360	297.6211	80.5927	279.0000	158.0000	464.00
Firm Size	1360	20.9615	1.5516	20.9609	16.0160	25.9001
GDP Growth Rate	1360	6.4708	0.8871	6.4699	3.4500	7.8800
Inflation Rate	1360	6.5381	1.3994	6.5366	5.5100	9.8800
Exchange Rate	1360	85.4202	8.5820	85.4083	77.4000	110.2500

Note: The table displays the descriptive statistics for the variables studied, including the number of observations, mean, standard deviation, minimum, and maximum values. The data is derived from quarterly observations of 34 non-life insurance companies in Bangladesh from March 2014 to December 2023.

4.2 Pairwise Correlation

Table 2 demonstrates a statistically significant positive correlation between stock return and investor attention ($r = 0.0808$, $p < 0.05$), suggesting that higher investor attention is typically associated with greater stock returns, and vice-versa. This finding aligns with studies by Cziraki et al. (2011) and Yang et al. (2021), who also reported a positive relationship between investor attention and stock returns. Moreover, return on assets, firm age, and exchange rate exhibit a statistically significant positive correlation with stock return, suggesting that increased profitability, firm maturity, and advantageous exchange rate fluctuations may improve stock performance by elevating investor confidence, diminishing risk perceptions, and indicating enhanced financial stability (Aminah, 2021; Matemilola et al., 2017; Granger et al., 2000).

Conversely, firm size and inflation rate exhibit statistically significant negative correlations with stock return. Large corporations may encounter declining growth prospects (Suciati, 2018), as inflation escalates operational expenses and diminishes purchasing power, hence decreasing return and investor attractiveness (Lee et al., 2023). GDP growth rate also exhibits negligible correlations with stock returns, indicating a restricted direct impact on the return. The correlation coefficients among the independent variables are all below 0.6,

suggesting a no risk of multicollinearity (Hasan, 2024). The variance inflation factor (VIF) values are all far below the crucial threshold of 10, with a mean VIF of 1.43, further validating that multicollinearity is not an issue in the regression study.

Table 2: Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10	VIF
(1) Stock Return	1.0000										
(2) Investor Attention	0.0808**	1.0000									1.38
(3) Return on Assets	0.0168*	-0.1090***	1.0000								1.17
(4) Net Profit Margin	0.0030	-0.0805**	0.2997***	1.0000							1.19
(5) Debt-Euity Ratio	0.0097	0.1331***	-0.0712**	-0.0925**	1.0000						1.11
(6) Firm Age	0.0656*	0.2651***	-0.1084***	0.0292	-0.0726**	1.0000					1.77
(7) Firm Size	-0.0251*	0.4116***	-0.1099***	0.1713***	0.0569*	0.5031***	1.0000				1.62
(8) GDP Growth Rate	-0.0044	-0.0911**	-0.0090	-0.0268	-0.0746**	-0.0940**	-0.0780**	1.0000			1.32
(9) Inflation Rate	-0.0547*	0.2913***	0.0678*	0.0168	0.1257***	0.2044***	0.1607***	-0.4850***	1.0000		1.60
(10) Exchange Rate	0.0830**	0.3462***	-0.1447***	-0.0018	0.1882***	0.5183***	0.3037***	-0.2232***	0.4175***	1.0000	1.75
Mean VIF											1.43

Note: This table displays the Pairwise Correlation Matrix, highlighting the correlations between examined variables, and covers the period from March 2014 to December 2023, using quarterly data from 34 non-life insurance companies in Bangladesh.

4.3 Regression Analysis

Diagnostic assessments are performed before the regression analysis to select the appropriate panel data analysis model. The results of the diagnostic tests indicate no issues with normality, multicollinearity, or autocorrelation, while heteroscedasticity and cross-sectional dependence are detected. Due to the presence of heteroscedasticity and cross-sectional dependence issues, the Feasible Generalized Least Squares (FGLS) model is employed to address and refine the analysis, thereby yielding more robust and reliable estimates (Hoechle, 2007; Hasan et al., 2025).

Table-3 displays the Feasible Generalized Least Squares (FGLS) regression outcomes regarding the influence of public attention on the returns of stocks. The findings demonstrate that investor attention exhibits a statistically significant positive correlation with stock returns ($\beta = 0.0009$, $p < 0.001$), hence supporting hypothesis H_1, which posits that investor attention substantially influences stock returns. The positive correlation indicates that an increase in investor attentiveness correlates with an increase in stock returns. This association is due to the fact that increased attention elevates demand for the stock, thus driving up prices. These findings align with the price pressure hypothesis (Barber & Odean, 2008), which posits that investors are more inclined to purchase equities that attract their attention, leading to a temporary price inflation due to heightened buying pressure. This link is theoretically based on Merton's (1987) investor recognition hypothesis, which asserts that more investor knowledge results in higher valuations due to expanded investor participation. The results are further substantiated by previous empirical studies, which consistently indicate that when stocks attain visibility via media exposure, advertising, or search engine trends, they typically witness heightened investor interest, trading volume, and, ultimately, price appreciation (Da et al., 2011; Yang et al., 2021).

Table 3: Regression Result of Impact of Public Attention on Stock Return using Feasible Generalized Least Squares Method

Variables	Stock Return T-stat
Investor Attention	0.0009*** (18.66)
Return on Assets	0.0069* (2.52)
Net Profit Margin	0.0031*** (4.48)
Debt to Equity Ratio	0.0002 (0.37)
Firm Age	0.0001*** (11.72)
Firm Size	-0.0072*** (-11.35)
GDP Growth Rate	-0.0111*** (-6.94)
Inflation Rate	-0.0227*** (-25.63)
Exchange Rate	0.0024*** (12.57)
Chi^2	2526.25***
Constant	0.1080*** (4.87)
No. of Observation	1360

Statistically Significant * p<0.05, ** p<0.01, *** p<0.001.
Notes: The table represents the result of the FGLS model of panel data analysis using the quarterly data of 34 non-life insurance companies from March 2014 to December 2023. All variables are subjected to a two-step data transformation process to enhance the data's normality (Templeton, 2011), except firm size, which is transformed using natural logarithms.

In addition to investor attentiveness, other control variables (company characteristics and macroeconomic variables) significantly influence stock performance. Return on assets exhibits a positive correlation with stock returns ($\beta = 0.0069$, $p < 0.05$), suggesting that more profitable companies are likely to attain greater market valuations. This outcome aligns with Sorongan (2016), who contend that profitability is a crucial indicator of business quality, drawing increased investor attention and elevating stock return. Likewise, net profit margin demonstrates a substantial positive correlation with stock returns ($\beta = 0.0031$, $p < 0.001$), highlighting that companies with elevated margins are regarded as financially robust and more likely to achieve enduring returns. This

supports the findings of Nurazi and Usman (2015), who observed that more profitable firms tend to perform better in the stock market.

The age of a firm exhibits a statistically significant positive impact on stock returns ($\beta = 0.0001$, $p < 0.001$), indicating that older, more established enterprises often provide higher returns. This may result from their perceived stability, credibility, and established operational track record, which strengthens investor confidence. These findings align with Akwe and Garba (2019), highlighting the influence of firm maturity on investor perception and market performance. Conversely, firm size exhibits a statistically significant negative correlation with stock returns ($\beta = -0.0072$, $p < 0.001$), consistent with (Suciati, 2018). Large corporations frequently encounter diminished growth rates, heightened bureaucracy, and less agility, which may constrain their capacity to yield substantial returns.

Macroeconomic variables profoundly affect stock returns. The GDP growth rate exhibits a statistically significant inverse correlation with stock returns ($\beta = -0.0111$, $p < 0.001$), which is consistent with Oktavia and Handayani (2018) and Toni and Simorangkir (2022). This indicates that investors are likely to reallocate their attention to high-growth sectors during periods of economic prosperity, thereby diminishing demand for defensive equities such as non-life insurance. Inflation adversely impacts stock returns ($\beta = -0.0227$, $p < 0.001$), as escalating prices diminish purchasing power and elevate costs, in accordance with Rosalyn (2018). The exchange rate favorably affects returns ($\beta = 0.0024$, $p < 0.001$), corroborating the notion that advantageous currency fluctuations improve company competitiveness (Tian & Ma, 2010).

In summary, the findings highlight the substantial influence of investor attention on stock returns, together with profitability, firm age and size, and macroeconomic variables. Comprehending these processes provides essential information for investors and regulators to make informed decisions.

4.4 Robustness Analysis

Robustness of the regression outcomes derived from the FGLS model, the Panel Corrected Standard Errors (PCSE) model was utilized, following Adekoya

(2019) and Nkam, Akume and Sama (2020). The PCSE approach is appropriate for panel data exhibiting potential cross-sectional dependence and heteroscedasticity, providing trustworthy estimates in these circumstances (Nkam et al., 2020). The results from the PCSE model, as presented in Table 4, are mostly congruent with those of the FGLS model, hence affirming the stability of the findings. Despite the coefficient for net profit margin being positive yet statistically insignificant in the PCSE model, it remains directionally consistent with the FGLS outcome.

Table 4: Regression Result of Impact of Public Attention on Stock Return using Panel Corrected Standard Error (PCSE) Method

Variables	Stock Return T-stat
Investor Attention	0.0009*** (4.17)
Return on Assets	0.0100* (2.06)
Net Profit Margin	0.0039 (0.80)
Debt-Euity Ratio	0.0003 (0.65)
Firm Age	0.0001* (2.02)
Firm Size	-0.0064* (-2.07)
GDP Growth Rate	-0.0110* (-2.10)
Inflation Rate	-0.0229*** (-7.46)
Exchange Rate	0.0024*** (5.53)
Chi2	456.03***
R2	0.3371
Constant	0.0906* (2.02)
No. of Observation	1360

Statistically Significant * p<0.05, ** p<0.01, *** p<0.001.
Notes: The table represents the result of the FGLS model of panel data analysis using the quarterly data of 34 non-life insurance companies from March 2014 to December 2023. All variables are subjected to a two-step data transformation process to enhance the data's normality (Templeton, 2011), except firm size, which is transformed using natural logarithms.

5. Conclusions and Implications

This study examines the effects of investor attention on the stock returns of non-life insurance firms in Bangladesh. The analysis utilizes quarterly panel data from 2014 to 2023 for 34 publicly traded non-life insurance companies, employing Feasible Generalized Least Squares (FGLS) and Panel Corrected Standard Errors (PCSE) models to mitigate heteroscedasticity and cross-sectional dependence. The empirical findings demonstrate that investor attention, quantified via Google Search Volume Index, significantly positively affects stock returns suggesting that increased public interest can enhance stock price performance in the insurance sector. Among firm-specific variables, return on assets, net profit margin, and firm age demonstrate positive correlations with stock returns, whereas firm size presents a negative correlation. These findings imply that investors tend to favor more profitable, established firms with efficient operations, while showing less enthusiasm for larger firms, possibly due to perceived limitations in growth potential and flexibility. Macroeconomic factors such as inflation and GDP growth adversely affect stock returns, whereas advantageous exchange rate fluctuations improve corporate performance. The findings indicate that behavioural factors such as investor attention, alongside fundamental financial indicators and macroeconomic variables, collectively shape the stock returns of non-life insurance companies.

This study theoretically enhances the literature on behavioral finance by incorporating investor attention alongside conventional firm-level and macroeconomic factors within the relatively underexplored domain of non-life insurance companies in an emerging market. This study demonstrates the effectiveness of using FGLS and PCSE models to produce reliable estimates in the presence of common data anomalies in panel datasets. The findings offer significant insights for investors, portfolio managers, and analysts by emphasizing the necessity of monitoring public attention and essential financial metrics in assessing company performance. Policymakers and regulators could gain insights from these findings by incorporating behavioral factors such as market sentiment and attention trends into their regulatory frameworks.

This study concentrates exclusively on a certain sector within a specific country, and the application of the Google Search Volume Index may not encompass the entirety of investor opinion. The utilization of quarterly data may restrict the capacity to identify short-term market movements. Subsequent study may rectify these shortcomings by employing high-frequency data, implementing sentiment analysis from social media or news outlets, and broadening the investigation to encompass various sectors or worldwide comparisons. Such additions would offer a more sophisticated comprehension of the relationship between investor behavior and market performance.

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