The Role of Assets Tangibility, Firm Size, and Macroeconomic Factors on Stock Returnin Nepalese Hydropower Companies

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Abstract

The purpose of this study was to evaluate the influence of the inflation rate, foreign exchange rate, firm size, gross domestic product, and assets tangibility on stock returns in the hydropower sector.For the 2016/17-2022/23 period, secondary data from five listed Nepalese hydropower companies (Butwal Power Company Limited, Api Power Company Limited, Chilime Hydropower Company Limited, Arun Valley Hydropower Development Company Limited, and Barun Hydropower Company Limited) were analyzed using a descriptive and causal-comparative research design. The study employed correlation analysis, multiple regression analysis, and the mean to investigate the relationships and effects of these variables on stock returns. The findings show that the asset's tangibility and firm size do not significantly affect stock returns.As a result, the inflation rate and foreign exchange rate have significant impacts on returns on stocks, with inflation having an adverse effect and the foreign exchange rate having a positive impact. These results show the influence of macroeconomic factors in determining stock performance. Companies should incorporate these economic indicators into their strategic planning to more effectively determine financial risks and improve stock performance, while policymakers should focus on stabilizing inflation and managing currency fluctuations to improve market conditions.

Keywords: Assets Tangibility, Firm Size, Macroeconomic Factors, Stock Return, Nepalese Hydropower Companies

JEL Classification Codes: E02, E31, E43, E44, H32, L25

Introduction

It was believed ten years ago that the Himalayas would be unpassable for this kind of energy exchange (Shrestha et al., 2018). In Nepal's hilly and mountainous regions, micro-hydropower has become the predominant technology (Butchers et al., 2021). According to Poudel et al. (2021), local mini-grid initiatives that maintain a stable power supply and demand can sustain positive, self-reinforcing economic cycles within their communities. Numerous advantages come with hydropower projects (Adhikari, 2006). In the findings of Schulz and Saklani (2021),

Nepal's energy industry, the private sector has become a significant player. Independent power producers (IPPs) have various important functions under the Independent Power Producers' body, Nepal (IPPAN), a private sector professional body composed of some of Nepal's greatest independent hydropower developers. For example, they carry out research and development and advocate, at various levels, the encouragement of hydropower investment in Nepal by educating politicians, bureaucrats, and the general public.On behalf of domestic and international companies, numerous hydropower producers in Nepal have strongly argued for new laws, rules, and regulations; they also continue to actively participate in the formulation and discussion of new energy and infrastructure policies. Private sector funding has also played a major part in Nepal's rapid transition to increased energy production. Consequently, many national policymakers and international organizations view hydro energy as a catalyst for the nation's socioeconomic development as it can give everyone access to power and promote economic activity and growth (Sing et al., 2020).

Even with much importance on hydropower development worldwide, private sector perspectives have received little attention (Murton & Lord, 2020; Sintov&Schuitema, 2018; Yu, 2003). In the Nepalese stock market context, investors consider the fragile political scenario and insider trading substantial obstacles (Dahal, 2021; Vaidya, 2021). The absence of innovative financial market technology and practices, as well as awareness and instructional programs, has positioned Nepal's stock market as a new industry (Karki et al., 2023; Prasad & Kadariya, 2022). Access to financing limits prospective savers, but even with current resources,investments aren't the most effective or fruitful. The remaining industries are hotels, hydropower, manufacturing, and others. Investments must be channeled toward more manufacturing and services to optimize the marginal product of capital (Aryal, 2022; Rai et al., 2023).

As economies grow, self-financed capital investments are replaced by bank loan financing, and then stock markets appear as another way to get money from outside the economy (Ghimire et al., 2023). The financial market comprises two fundamental elements: money and capital markets (Joshi et al., 2023). So, economists are now debating how to study the link between how the financial market changes and how the economy is doing. In this situation, the theory and actual links between the growth of financial markets and the gross domestic product (GDP) are still unclear. To detect the problems faced by the security market, there is a need to consider the importance of studying the matter regarding the return in the hydro business. Therefore,this study focuses on the development, issues, and future prospects of the hydropower industry in the Nepalese stock market.Thus, this study's objective was to analyze the impact of assets tangibility, firm size, gross domestic product, inflation rate, and foreign exchange rate on the hydro business's stock return.

Literature Review

Stock returns are often thought to be heavily influenced by the size of a company. According to the size effect idea, smaller organizations create higher returns than more significant firms for various reasons, including stronger growth chances, less analyst attention, and greater information asymmetry (Gurung et al., 2023; Karki et al., 2023; Kim & Burnie, 2002). The liquidity impact argument, on the other hand, implies that larger enterprises may supply more liquidity, resulting in lower returns (Amihud& Mendelson, 1991). Understanding the connection between the size of a company and its stock returns is essential for both the diversification of investment portfolios and the creation of investment strategies. According to Banerjee et al. (2021), GDP is a commonly used macroeconomic statistic that estimates the total value of goods and services generated inside a nation within a specific period. According to economic theory, GDP growth influences stock returns. The inflation rate is when an economy's overall price of goods and facilities rises (Wollie, 2018). The influence of inflation on stock returns is a hotly debated topic. Dornbusch (1982) defined the exchange rate as the value of one currency in terms of another. In the instance of Nepal, where the Hydro Power Companies are being addressed, the influence of the exchange rate on stock returns may be significant due to the country's reliance on imports and exports. Exchange rate variations can impact company competitiveness, export revenues, and the cost of imported raw commodities. Consequently, shifts in the currency exchange rate value may either directly or indirectly affect the performance of stock prices. The popular finance theory known as the Capital Asset Pricing Model (CAPM) explains the relationship between

expected return and risk.According to the CAPM, the risk-free rate, the beta of the stock (a measure of the stock's systematic risk), and the market risk premium all contribute to the definition of the expected return on an investment in the stock market. This study may utilize the CAPM to examine the association between company-specific characteristics (such as asset tangibility and firm size) and stock returns (Fama & French, 2004). CAPM is a variation of the efficient market hypothesis encompassing such effective allocation. It forecasts the risk of an asset. However, suppose the factors under consideration (e.g., GDP, IR) give the market new or unexpected information. In that case, stock returns may be affected briefly until the data is wholly absorbed into pricing (Malkiel, 2003). Modigliani and Miller (1963) paved the way for modern corporate finance theory. In the context of exchange rates (ER), this theory indicates that disparities in inflation rates across nations might impact exchange rate movements (Hatemi-J, 2009). As a result, inflation differentials between Nepal and its trade partners may impact currency rates and, as a result, stock returns.

Shrestha and Subedi (2014) found that inflation and broad money growth increase the stock market, but interest rates decrease. Mouna and Anis (2017) said that during a crisis, stock market returns, interest rates, and exchange rates all have a significant (good and bad) effect. The three types of risk have mostly been found to play a role in the business world. Abbass et al. (2019) found a positive relationship between the age of a company and its stock returns. On the other hand, the firm's size had no significant effect on stock returns. There was a strong link between the stability ratio and the profits on stocks. The regression model results showed a negative relationship between the solvency ratio and stock returns and between interest rate and stock price.

It has also been found that interest rates have a statistically significant effect on how well stocks do. Also, the results showed a strong link between economic growth and stock gain. Companies with much debt are less productive, while those with less debt are more productive. Naseer et al. (2021) found that business tangibility, munificence, gross domestic product, inflation, and have a negative link with financial success, but size, growth, dynamism, the Herfindahl-Hirschman index, the exchange rate, and oil prices have a positive association. Raza et al. (2021) found that in Pakistan's textile sector, both micro dynamics (EPS, BVS, and LNFS) and macro dynamics (GDP) are strongly and positively linked to company share prices. However, it has been decided that micro dynamics (DPS) and broad dynamics (INF) are unimportant. Suhaibu and Abdul-Malik (2021) found that debt policy statistically affects firm value when there are market imperfections (tax effects). Still, the result is transmitted through either ROA or ROE. They also found that the macroeconomic environment is important in the relationship between debt rules and firm value, as GDP growth and inflation affect both strong performance measures (ROA and ROE). Karn et al. (2023) said that EPSs that are too high are bad for GDP.

Assets Tangibility

Daniel and Titman (2006) discovered that the future return of a stock is not correlated with the firm's past accounting-based performance. However, it is strongly negatively correlated with the "intangible" return. The book-to-market ratio effectively proxies for the intangible return, and a composite equity issuance measure, which is also related to intangible returns, independently forecasts the expected return. Docherty et al. (2010) found that equity returns reflect asset tangibility. The explanatory power of the Fama and French three-factor model is improved by the inclusion of a tangibility factor, which supports the theory that firms' investment in tangible assets is influenced by investment irreversibility and is associated with covariant risk.

Docherty et al. (2011) found that asset tangibility is significantly correlated with the cross-section of equity returns, particularly in the materials industry, which is distinguished by irreversible, firm-specific assets. They also discovered that this relationship remains consistent even after accounting for firm characteristics that are associated with returns, despite the fact that it is primarily driven by microcap stocks. Li et al. (2014) found that the intangible-asset-augmented q-theory framework results in lower stock returns when R&D intensity is increased. The model also significantly better captures the value premium and the relationship between R&D intensity and stock returns than the conventional q-theory. The model's improved performance is attributed to the intangible assets' adjustment costs and investment-specific technological change. The theory that CEOs with higher inside debt holdings prioritize asset tangibility and liquidation value to align their incentives with those

of creditors is supported by Lu-Andrews and Yu-Thompson (2015) pointed that CEO inside debt has a positive impact on the firm's asset tangibility, liquidation value, and tangible asset investment. These effects persist in both contemporaneous and subsequent years.

İltaş and Demirgüneş (2020) revealed that asset tangibility has a substantial and positive impact on the financial performance of Turkish manufacturing firms until a structural break, at which point it has a negative impact on financial performance. These effects are consistent over the long term. Adu-Ameyaw et al. (2022) and Dahal et al. (2020) observed that cash flow has a significant positive impact on investments in intangible assets and a negative impact on investments in tangible assets. However, these effects are more pronounced in private firms than in public firms. The sensitivity of investment in intangible assets to cash flow is higher for young and large private firms but lower for small and old ones. Vengesai (2023) found that financial leverage in African-listed firms is negatively correlated with both tangible and intangible investments. This suggests that these firms, particularly those that prioritize high growth, tend to maintain lower leverage in order to avoid the agency costs associated with debt and underinvestment. Consequently, this analysis reveals a strategic preference for lower debt in financing decisions.

Duong et al. (2023) revealedthat an increase in the intensity of intangible assets (INTANG) positively affects stock returns; for every 1% rise in INTANG, returns increase by 0.922%. In contrast, stock returns dropped by 0.506% with a 1% rise in financial constraints.Their findings emphasize the significance of promoting intellectual property and copyright regulations to foster the development of intangible assets, notably for small and medium-sized enterprises. El Mokaded et al. (2024) observed a positive correlation between profitability and independent variables, such as liquidity, growth opportunities, asset tangibility, and firm size. Oganda et al. (2023) revealed that financial performance is substantially influenced by asset tangibility, with economic growth and earnings volatility moderating this relationship. The subsequent hypothesis has been proposed on the basis of these observations:

H1: There is a significant relationship between asset tangibility and stock return in Nepalese hydropower companies.

Firm Size (FS)

Astakhov et al. (2019) discovered that the size premium in stock returns, which represents the difference in yearly returns between the smallest and biggest enterprises, is about 1.72%, with a significant reduction in the amount of publication bias over time. Perez-Quiros and Timmermann (2000) found that small enterprises have larger risk asymmetry throughout economic cycles than big firms, resulting in increased sensitivity of their stock returns to credit market circumstances during recessions. Mazviona and Nyangara (2014) show thatcompanies registered on the Zimbabwe Stock Exchange between June 2009 and July 2013, business size had a positive but statistically insignificant influence on stock returns.Their analysis, which used market capitalization-based portfolios, found that bigger businesses on the ZSE had greater risk-adjusted returns than smaller ones, which contradicts conventional empirical results. Astakhov et al. (2017) found that the size premium was higher in previous research and that publication bias has reduced with time.

Leledakis et al. (2004) demonstrated that the size effect, in which smaller businesses produce greater stock returns, does not reflect a general link between company size and projected returns. Hou and Van Dijk (2019) show that negative profitability shocks for small businesses and positive shocks for large enterprises are to blame for the elimination of the size effect in stock returns after the early 1980s.After accounting for the price impact of these profitability shocks, they discover a strong size effect in the cross-section of predicted returns, emphasizing the importance of in-sample cash-flow shocks in explaining return predictability. Adawiyah and Setiyawati (2019) revealed that the Current Ratio has a negative and small effect on stock returns, but Return on Equity and Firm Size has a positive and large impact. According to Chakkravarthy et al. (2024), ROA has a favorable influence on both firm value and the dividend payout ratio, whereas the latter has a negative impact on firm value. They demonstrate that both company size and institutional holdings strongly moderate the ROA-firm value link, providing fresh insights into moderated mediation models in finance.

Bhattacharjee and De (2024) found that tiny businesses suffer more positive abnormal returns and more negative abnormal returns than big and mid-sized enterprises, depending on news emotions. Their findings show that, although price responses are stable across company sizes, volume reactions differ depending on the kind and mood of the news. Tobibah and Firmansyah (2023) found that firm size (FZ), returns on assets, and company size all had a substantial effect on business performance. Zhang et al. (2024) found that equities with minimal exposure to anomalous temperatures outperform those with high exposure by more than 0.70% each month, risk-adjusted. This impact continues even after accounting for other price considerations. The paper relates this premium to investor behavior, changes in global warming views, and the effect of temperature on the revenues of climate-unfriendly businesses. Permatasari et al. (2024) showed that company size influences firm performance. Using this empirical evidence, the research made the following statement:

H2: There is a significant relationship between firm size and stock return in Nepalese hydropower companies.

Gross Domestic Product
Chen (2005) found that changes in the business cycle, as measured by industrial output, can be foreseen and connected to stock returns, but changes in GDP are unpredictable and unrelated to stock returns. Reddy (2010) found that in India, lowering interest and inflation rates leads to higher stock prices, whilst raising Real GDP has a favorable influence on stock market returns. KassedAbdo et al. (2021) withdrew their study, examining the impact of economic factors such as worker remittances, bank deposits, GDP, and inflation on the Amman Financial Market stock returns between 2005 and 2018. According to Villa-Loaiza et al. (2023), the El Niño Southern Oscillation significantly impacts the relationship between electricity prices and the stock market in Colombia. During strong El Niño phases, energy prices lead the stock market and exhibit strong long-term coherence with stock market indices.

Ullah et al. (2024) observed that hydroelectric power generation has a positive impact on both economic growth and financial development in the world's top ten hydroelectric power-generating countries, with bidirectional causality among all three factors, emphasizing the importance of promoting hydropower and deepening financial markets for long-term growth. Zeren and Hizarci (2024) found that there is no overall cointegration or causality between hydropower energy consumption, financial development, foreign direct investment, and economic growth in newly industrialized countries from 1979 to 2020, implying that the neutrality hypothesis is valid, though individual countries may have different causal relationships.

Saadaoui, Dogan, and Omri (2024) noted that in Turkey, hydroelectric power generation and foreign direct investment reduce carbon emissions while income and financial development increase them, with bidirectional causality between hydroelectricity and CO_2 emissions at high frequencies and one-way causality from hydroelectricity to CO_2 at medium and low frequencies. Jibril et al. (2024) showed that in Nigeria, both GDP and inflation had considerable positive impacts on stock returns, with GDP having an exceptionally high influence. Patatoukas (2024) discovered that stock returns had no significant univariate connection with GDP growth prediction surprises, implying that offsetting cash flow and discount rate news or noise in GDP estimates might explain this gap. Kulhánek (2024) revealed a long-run co-integration link between stock prices and macroeconomic indicators, including GDP and money supply, in Central and Eastern European nations, using VAR and VEC models using data from 1995 to 2012. Based on these findings, the following theory was proposed:

H3: There is a strong correlation between gross domestic product and stock return in Nepalese hydropower companies.

Inflation Rate
Chandrarin et al. (2022) showed that the price of coal and palm oil has a significant impact on the Indonesian currency rate, particularly in times of severe market conditions. It also indicates strong connections with inflation at high quantiles.According to Zhao (2020), The returns on clean energy stocks are positively impacted by oil

supply and aggregate demand shocks, but negatively by policy uncertainty and demand shocks that are particular to the oil industry. Salisu and Vo (2021) found that stock returns respond differently to exchange rates depending on the interest rate environment. Low interest rates show a long-term positive relationship and high interest rates show a short-term negative relationship after controlling for macroeconomic factors such as inflation and global oil prices. Eldomiaty et al. (2020) realized that inflation rates have a negative relationship with stock prices, whereas real interest rates have a positive relationship, and that both inflation and real interest rates cause significant changes in stock prices, indicating cointegration and a significant speed of adjustment to long-run equilibrium. According to Iqmal and Putra (2021), inflation and interest rates have a negative and substantial effect on stock returns, but exchange rates have a positive and large influence. Additionally, stock returns have a favorable and considerable impact on business values. Cieslak and Pflueger (2023) analyzed the empirical data and economic channels on how inflation is priced in financial markets, putting forward the argument that inflation risk premiums and asset pricing are affected differently by "bad" inflation, which is caused by cost-push shocks, and "good" inflation, which is connected to demand shocks. Chiang (2023) found that real stock returns are adversely connected with inflation, as well as equity market volatility and changes in monetary policy uncertainty, all of which are positively correlated with inflation. According to Setiawan (2020), although GDP and inflation contribute to the growth in stock market value, inflation's influence is minimal, interest rates and exchange rates have a negative impact on stock market performance, with interest rates having the most effect. Sergi et al. (2021) discovered that rises in the Barro Misery Index (BMI) and COVID-19 instances reduce stock returns and increase market volatility, varying across established and developing economies. Based on these findings, the following assumption was proposed:

H4: There is a significant relationship between the inflation rate and the stock return of Nepalese hydropower companies.

Foreign Exchange Rate

Zhang et al. (2022) found that crude oil price volatility considerably predicts exchange rate variations, with the impact being particularly strong in nations where crude oil is a key export. Jiang et al. (2021) discovered that the demand for safe assets abroad has an important impact on the dollar exchange rate, highlighting the significance of global financial stability for determining exchange rate dynamics. Tian and Ma (2010) that after implementing a flexible exchange rate system, there was a favorable correlation between the exchange rate and the performance of the Chinese stock market, which was influenced by both increases in the money supply and hot money inflows. Khan (2019) discovered that exchange rates negatively and considerably impacted stock returns on the Shenzhen Stock Exchange, with comparable negative effects identified for inflation and interest rates.

According to Ratih and Candradewi (2020), exchange rates have a negative and large influence on stock returns, but inflation, GDP, return on assets, and debt-to-equity ratio have little negative or positive effects. Amarkhil, Hussain, and Ayoubi's (2021) study demonstrated a positive correlation between stock prices and exchange rates in Pakistan, demonstrating their mutual dependence. Jihadi et al. (2023) discovered that exchange rates have a negative influence on stock returns both directly and via interest rates,but through inflation rates have a negligible impact on stock returns, with the interest rate acting as a partial mediator.Sadorsky (2000) showed that exchange rates, crude oil prices, and interest rates all have a major influence on Canadian oil and gas stock returns, with rises in oil prices or the market factor increasing returns and higher exchange rates or term premiums lowering them. The research created the following hypothesis statements:

H5: There is a significant relationship between foreign exchange rates and the stock return of Nepalese hydropower companies.

After reviewing the literature, assets tangibility, company size, GDP, inflation, and foreign exchange rate and their hypothesized effects on stock returns. The framework clarifies the processes and aids in examining how these

variables affect financial performance by mapping these linkages. This structured technique thoroughly analyzes variables' impacts and reveals how economic and firm-specific factors affect stock returns, as presented in Figure 1.
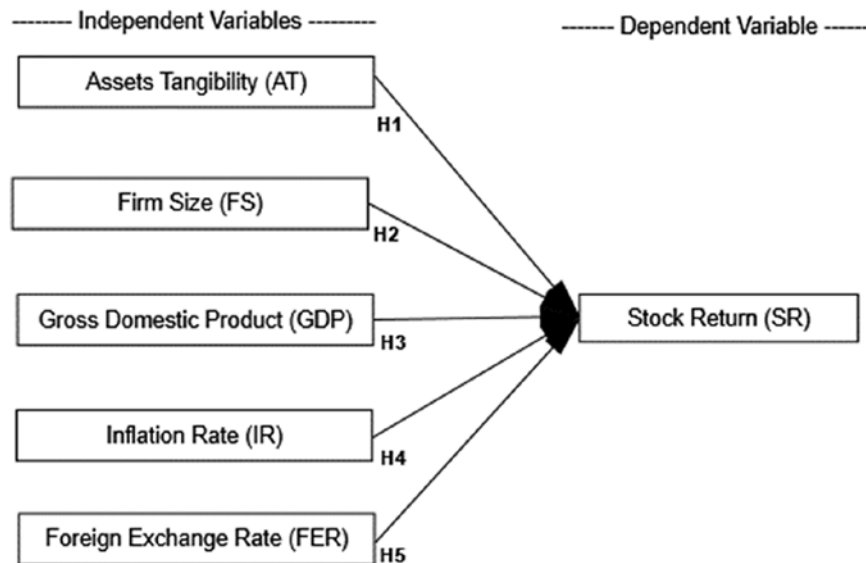

Figure 1 Conceptual Framework

Methodology

Descriptive and causal-comparative research designs were used in this study. Non-probability (convenience) sampling approach was used to select the sample. Secondary data has been used in this study. The study's population comprised all listed hydropower companies in the Nepal Stock Exchange. For the study, took five Nepalese hydropower companies (i.e., Butwal Power Company Limited, Api Power Company Limited, Chilime Hydropower Company Limited, Arun Valley Hydropower Development Company Limited, and Barun Hydropower Company Limited) as samples. The study used the recent 7years (2016/17-2022/23) listed companies with data availability. Mean was used to identify the status of assets tangibility, foreign exchange rate, firm size, gross domestic product, influence rate, and return in stock. Correlations analysis was used to analyze the relationship between assets' tangibility, exchange rate, firm size, gross domestic product, influence rate, and return on stock. Multiple regression analysis was used to examine the impact of assets tangibility, exchange rate, firm size, gross domestic product, and influence rate on return in stock.

The required regression equation (model) of this study was:
Stock Return $(Y) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$
Where,
X_1 = Assets Tangibility (AT),
X_2 = Firm Size (FS),
X_3 = Gross Domestic Product (GDP),
X_4 = Inflation Rate (IR),
X_5 = Foreign Exchange Rate (FER),
E = Error Term.

Results

In this section, the study used a correlation test to determine the relationship of variables with stock performance. Descriptive statistics were used for further studies of the data's features, central patterns, and variability. The study also used multiple regression analysis to show the influence of variable variations on stock returns.

Descriptive Statistics

This section summarizes the mean and standard deviation for various variables influencing stock returns, showing significant variability in assets tangibility, firm size, macroeconomic factors, and stock returns.

Table 1

Mean and Standard Deviation of Variables

Variables	N	Mean	Std. Deviation
AT	35	0.39	0.97
firm size	35	0.14	9.71
GDP	35	3077.14	5348.53
Inflation rate	35	3.60	7.74
Exchange Rate	35	104.86	130.33
Stock Return	35	-0.48	5.40

Table 1 shows the mean and standard deviation for many variables influencing stock returns in hydropower businesses. Asset tangibility has a mean of 0.39 and high variability (0.97), showing varying degrees of tangible assets among organizations. Firm size has a low mean of 0.14 and a relatively high standard deviation (9.71), indicating significant variances across firm sizes. Gross Domestic Product has a mean of 3077.14 but a considerable standard deviation (5348.53), indicating substantial macroeconomic variance. The inflation rate averages 3.60 with a wide range (7.74), influencing economic circumstances. The exchange rate has a mean of 104.86 and a large standard deviation (130.33), indicating significant changes in currency prices. Stock returns have an average of -0.48 and a significant standard deviation (5.40), indicating a broad range of performance outcomes. The large variety of these factors demonstrates the wide range of conditions that influence stock returns in the industry.

Correlation

This section examines the associations between stock return and numerous economic and firm-specific factors to understand their influence on financial performance better.

Table 2

Association Between AT, FS, GDP, IR, FER and SR

	AT	FS	GDP	IR	FER
Stock Return	-.125	-.325	.134	-.361*	.149

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2 shows the relationships between stock return and the following independent variables: asset tangibility, company size, GDP, inflation rate, and foreign exchange rate. The research shows a slight negative correlation (−0.125) between asset tangibility and stock performance, indicating minor influence. Firm size has a moderate negative connection (-0.325), suggesting that larger enterprises may suffer poorer stock returns. The GDP has a very modest positive correlation (0.134), indicating little influence on stock returns. Inflation has a substantial negative correlation (−0.361) with stock returns, suggesting that more inflation leads to poorer returns. The tiny positive correlation (0.149) between the foreign exchange rate and stock returns suggests that it has minimal effect on returns on stocks. While other factors have smaller effects, collectively inflation has a slight and statistically significant impact on stock returns.

Multiple Regression Analysis (MRA)

The influence of business size, foreign exchange rate, gross domestic product, inflation rate, and asset tangibility on stock returns (SR) is explained by MRA. MRAalso estimates the mathematical relationship amongAT, FS,

GDP, IR, and FER on SR. Regressing asset tangibility, firm size, gross domestic product, inflation rate, foreign exchange rate on stock return, the estimated model is:

$SR = \beta_0 + \beta_1 AT + \beta_2 FS + \beta_3 GDP + \beta_4 IR + \beta_5 FER + e$
$\hat{Y} = -13.522 - 1.121 AT - .186 FS - 0.001 GDP - 1.091 IR + .213 FER$

Table 3

Impact of AT, FS, GDP, IR, FER on SR

Model Summary		ANOVA			Coefficients (β)	t	sig.
Model	R square	F	Sig.	Constant	-13.522	-2.848	.008
1	0.663	11.400	0.000	AT	-1.121	-.904	.373
				FS	-.186	-2.397	.023
				GDP	-.001	-1.144	.262
				IR	-1.091	-6.728	.000
				FER	.213	3.573	.001

Table 3 shows how assets tangibility, firm size, GDP, inflation rate, and foreign exchange rate (FER) affect stock return (SR). The model summary suggests that these factors account for roughly 76% of the variation in stock returns, with a significant overall model fit (F = 11.689; p = 0.000). Among the coefficients, the constant term is significant (β = -13.522; p = 0.008). Asset tangibility has a coefficient of -1.121 and a p-value of 0.373, showing a negative but minor influence on stock returns. With a p-value of 0.023 and a coefficient of -0.186, firm size shows a significant but negative effect. The coefficient for the gross domestic product is -0.001, and the p-value is 0.262, suggesting a negative but not statistically significant affect. The inflation rate has a statistically significant (p = 0.000) coefficient of -1.091, indicating a significant negative impact on stock returns. With a positive relationship of 0.213 and statistical significance (p = 0.001), the foreign exchange rate is positively correlated with stock returns. The significant p-values for GDP, inflation rate, and foreign exchange rate support hypotheses about their effects on stock returns, whereas the insignificant p-values for asset tangibility and firm size indicate that these variables have no significant impact on stock returns, thus rejecting the related hypotheses.

Discussion

Daniel and Titman (2006) discovered a strong correlation between stock returns and intangible returns, as opposed to past accounting performance. They also emphasized the significance of asset tangibility in return forecasting. In support of this, Docherty et al. (2010) showed that adding a tangibility factor enhances the explanatory power of the French and Fama three-factor model. Our results, which demonstrate a strong correlation between asset tangibility and stock returns in Nepalese hydropower companies, support this theory. Further evidence that tangible assets affect returns comes from Docherty et al. (2011) and Li et al. (2014), especially in sectors with high investment irreversibility and sizable intangible asset investments. This consistency shows that asset tangibility strongly affects stock returns in various situations. The relationship may, however, differ depending on contextual factors like economic conditions or firm-specific characteristics, as evidenced by the contrasting findings of İltaş and Demirgüneş (2020), who found a negative impact of asset tangibility on financial performance post-structural break and Adu-Ameyaw et al. (2022), who found cash flow negatively impacting tangible asset investments. Our research adds to this conversation by emphasizing that although asset tangibility is significant, other elements like firm size and macroeconomic variables may have a moderating effect.

The impact of size on stock returns has been the subject of intense discussion.Research by Astakhov et al. (2019) and Perez-Quiros and Timmermann (2000) demonstrated that higher risk asymmetry and stock return volatility are frequently observed in smaller firms. However, studies by Hou and Van Dijk (2019) and Mazviona and Nyangara (2014) show conflicting findings; some indicate insignificant size effects or variations over time. We find a significant correlation between stock returns and firm size, which aligns with the findings of Astakhov et

al. (2017), who discovered a more significant size premium in the past. This implies that firm size significantly influences stock returns in Nepalese hydropower companies, even though the size effect may become less pronounced in some situations. Firm size effects can be complex and context-dependent, as evidenced by the findings of Bhattacharjee and De (2024) regarding abnormal returns based on firm size and news sentiment and Zhang et al. (2024) highlighting temperature-related performance differences. Our research highlights the significance of considering firm size when analyzing stock returns. Still, it also highlights the need for a more thorough investigation of how firm size interacts with other variables in various sectoral and economic contexts. There is disagreement over the extent to which GDP affects stock returns. Chen (2005) and Patatoukas (2024) report little direct correlation, while Reddy (2010) and Jibril et al. (2024) report GDP has a positive effect on stock returns. Our results are consistent with studies that highlight the beneficial relationship between economic growth and stock market performance, and they support the hypothesis that GDP significantly impacts stock returns in Nepalese hydropower companies. This consistency supports the hypothesis that the stock market dynamics are significantly shaped by economic growth. The lack of a clear correlation in some research (KassedAbdo et al., 2021, for example)emphasizes how crucial it is to consider additional economic and sector-specific factors when assessing GDP's influence on stock returns. In the context of Nepalese hydropower firms, our research confirms that GDP is a significant determinant of stock returns, adding to our understanding and indicating that sector-specific dynamics may improve the generalizability of these findings.

Inflation's impact on stock returns is complicated;research by Eldomiaty et al. (2020) and Iqmal and Putra (2021) indicate negative correlations, whereas studies by Zhao (2020) and Cieslak and Pflueger (2023) discuss mixed effects as a function of inflation type. The hypothesis that the inflation rate has a significant impact on stock returns is supported by our research, and the negative association we saw is in agreement with numerous other findings in the literature. This suggests that, especially in situations where inflation rates substantially impact economic stability, inflation continues to be a major determinant of stock market performance. The need for sector-specific analyses is highlighted by the disparate effects of inflation reported in various studies. According to our research,the negative impact of inflation on stock returns in Nepal's hydropower sector is consistent with broader economic patterns observed by other scholars. Research on how foreign exchange rates affect stock returns has produced varying conclusions. While Khan (2019) and Jihadi et al. (2023) reported negative effects, Zhang et al. (2022) and Amarkhil et al. (2021) found positive correlations. The hypothesis that foreign exchange rates have a significant impact on stock returns is also supported by our study, as the results show a notable relationship. This consistency emphasizes how crucial it is to consider exchange rate fluctuations when analyzing stock returns, especially when looking at emerging markets. The diverse effects of foreign exchange rates observed in various studies indicate the critical role contextual factors like trade dependencies and currency stability play. Our study adds to this by showing that foreign exchange rates significantly affect stock returns in Nepalese hydropower companies, indicating that these variables are essential to comprehending the dynamics of the stock market in particular industries. The impact of factors such as foreign exchange rates, GDP, asset tangibility, inflation rate, and firm size on stock returns in Nepalese hydropower companies is noteworthy. Nevertheless, divergent findings from various studies indicate that sector-specific and economic context considerations are necessary to thoroughly comprehend these relationships. Further studies could benefit from delving deeper into these elements and examining the ways in which macroeconomic conditions and sector-specific dynamics interact to affect stock market performance.

Conclusion

The effect of asset tangibility, business size, GDP, inflation, and foreign exchange rate on stock returns in Nepalese hydropower enterprises was studied in this study.The data show that the gross domestic product and inflation rate considerably impact stock returns. Specifically, a rise in GDP is linked to lower stock returns, but a greater inflation rate dramatically affects market returns. This shows that economic stability is essential for financial performance. The foreign exchange rate positively and greatly impacts stock returns, implying that currency swings can boost stock performance. However, asset tangibility and business size do not significantly affect stock returns, indicating that these criteria are less essential in predicting stock performance in this industry. The study

shows the impact of macroeconomic issues, particularly inflation and foreign exchange rates, on stock returns. Hydropower firms should monitor these economic factors to properly manage their stock performance and match their strategy with the current economic climate.

Implication

This study highlights the importance of policymakers and businesses involved in the Nepalese hydropower industry keeping a close eye on macroeconomic indicators including inflation rates and foreign exchange fluctuation. To establish a more predictable economic climate, policymakers should consider enacting policies to control currency volatility and stabilize inflation. This can improve stock performance and investor confidence. Instead, to effectively handle market uncertainty, businesses should include these economic elements in their financial forecasts and strategic planning. They will be able to maximize financial results, better match their operations to the state of the economy, and increase their overall resilience to economic changes.

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