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# How Do Macroeconomic Indicators (E.G., GDP Growth, Unemployment Rates, Interest Rates) Influence Stock Market Returns And Volatility In Emerging Vs. Developed Markets?

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Macroeconomic indicators are essential tools for policymakers and financial experts, providing critical insights into the health of an economy and guiding future decisions. Key indicators like GDP growth, unemployment rates, and interest rates offer a broad picture of economic performance. GDP growth, for instance, serves as a general measure of economic health. When GDP increases, it typically signals that businesses are expanding, which in turn leads to higher employment, increased consumer spending, and overall economic prosperity. Unemployment rates provide insights into the labor market, indicating whether people are struggling financially, which can influence consumer behavior and spending patterns. Interest rates, on the other hand, affect both purchasing power and borrowing costs. Lower interest rates generally stimulate the economy by encouraging spending and investment, helping economists predict future economic trends.

The stock market plays a crucial role in this context as it allows companies to raise capital by selling equity in the form of shares. Understanding how macroeconomic factors influence stock market performance is vital for making informed investment decisions. For instance, investing heavily in an emerging market that is highly volatile may not be advisable due to the associated risks. Wealth managers and investment bankers continuously analyze economic conditions to identify the best investment opportunities, ensuring a balanced and strategic distribution of assets.

Just as countries are categorized into developed, developing, and underdeveloped economies, financial markets are classified into emerging and developed markets. Emerging markets are typically characterized by less sophisticated regulatory institutions and lower economic activity, while developed markets have well-established regulatory frameworks and robust economic activity. This distinction is crucial for investors, as it impacts the level of risk and potential returns in these markets.

## I. Impact Of Macroeconomic Indicators On Stock Markets

The following section evaluates the impact of some key macroeconomic factors on stock market returns and volatility in emerging and developed markets.

Source: Investopedia

## II. Gross Domestic Product (GDP)

GDP measures the final goods and services produced within a country over a specific period of time. It provides a basic measure of economic growth or contraction, making it a general gauge of economic health.

"Naturally, this measurement affects the stock market because a stock's price generally reflects expectations of a company's future profitability. When an economy is healthy and growing, businesses are likelier to report better earnings and growth, and vice versa" (Levitt, 2022).

"Stock markets and GDP usually move in tandem. Any divergence between the two is temporary, and in the long run, stock markets and GDP move in more or less the same directions and collectively represent the current state of the economy" (Marisha Bhatt, 2023).

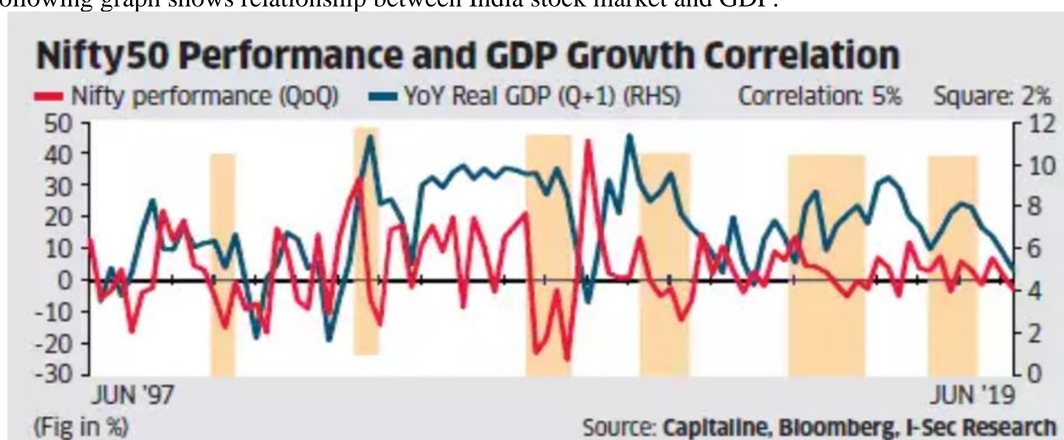
When developed markets show positive GDP growth,, it typically leads to higher stock market returns, signaling a healthy economy, increased corporate earnings, and consumer spending. Developed markets generally demonstrate lower volatility, as they are perceived as stable and predictable.

The following graph indicates the positive relation between GDP and stock market returns. The annual change in real US GDP and the S&P 500 show broadly the same trends over the last 20 years. When the economy crashed in 2008, the stock market also crashed. When the economy recovered from the global pandemic in 2021, the S&P 500 also showed recovery.

Sources: Finominal, Kenneth R. French Data Library, and St. Louis Fed

Positive GDP Growth usually also leads to higher returns, often more pronounced than in developed markets due to higher growth potential. However, emerging markets demonstrate higher volatility due to less economic and political stability, less mature financial systems, and higher susceptibility to external shocks.

The following graph shows relationship between India stock market and GDP:




In the graph, GDP and stock markets are usually moving in the same direction, but at some points, they are moving in opposite directions and show an inverse relation. In theory, stock price increases should exactly

match real GDP growth. But, according to ICICI Securities, corporate profits have been more volatile and tend to oscillate around GDP, as profit cycles are impacted much more by leverage effects than GDP figures.

"For example, in 2006, India's GDP was around 8% which in 2008 fell to 3%. During the same period, the Nifty 50 rallied from 3,000 to 5,500 levels and fell to 2,800 in 2008. Similarly, India's GDP rose from 3.80% in 2002 to 7.66% in 2007. During the same time frame, the Nifty 50 rallied from 2,000 in 2002 to 5,600 in 2007. But, you might also see a divergence in GDP vs Nifty 50. During the COVID-19 pandemic, India's GDP dipped to -6.60%, but during the same year, we saw the Nifty 50 rallying towards new highs" (Agrawal, 2022). So, if there are fluctuations in the GDP, it does not mean the stock markets will also work in synchronization with it. Multiple factors move the stock markets.

A recent study compared the characteristics of stock return volatility in E7 (Emerging 7) and G7 (Developed 7) markets in response to two major financial crises: the financial crisis of 2008 and the global pandemic surrounding COVID-19.

"By evaluating the impact of the financial crisis of 2008 on both of these markets, it has a greater impact on emerging markets than developed markets. At the same time, the recent pandemic has impacted developed markets more than emerging markets. The impact of different market crises is not similar, some events having a higher impact than other events. In this essence, it can be asserted that a country's economic strength does not always shield it from economic turmoil" (Tabash, 2024).

## III. Interest Rates

The interest rate is the cost of borrowing money. When a commercial bank, business,or individual part of an economy wants to borrow money, interest is charged on the principal amount. The central bank sets and changes these rates based on certain economic goals.

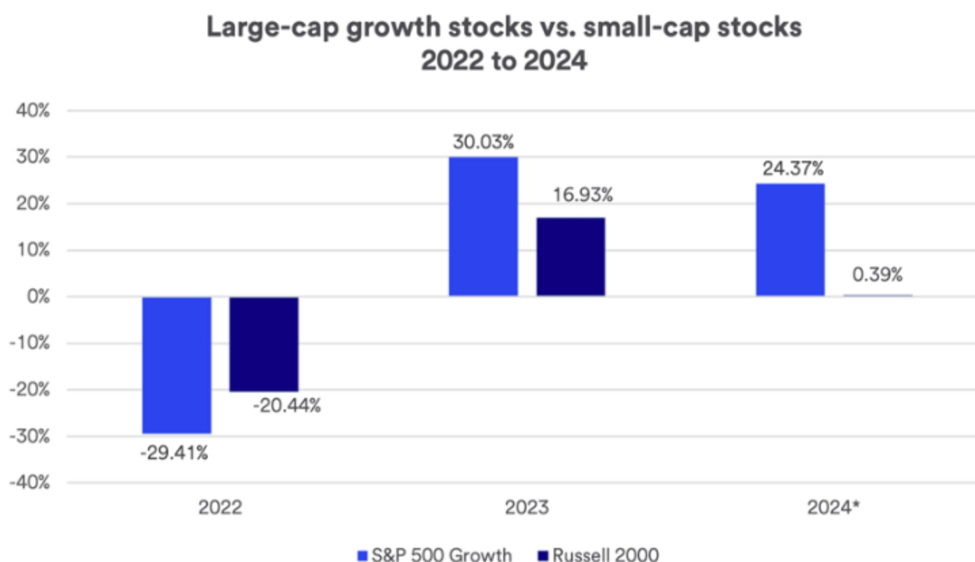
The theorized relationship between interest rates and the stock market is that the stock market usually falls as interest rates increase. The reason behind this is that businesses have a higher cost while borrowing money, which reduces their profits. Lower profits lead to lower stock valuations, which can cause their share price to tank. Individuals are now less confident with their money. The cost of borrowing is higher, so they are less likely to spend. If they spend less, then the stock market will crash.

Currently, however, the markets are not aligning with this logic - "Consumer spending and business capital expenditures remain strong, and that's a reason for bullishness about stocks in the near term," says Eric Freedman, chief investment officer for U.S. Bank Wealth Management.

"There's less interest rate pressure on stocks now because the Federal Reserve has held the line on interest rates," says Rob Haworth, senior investment strategy director at U.S. Bank Wealth Management. "The market adapted to current interest rates, and is prepared for the next direction in rates to be lower."

The S&P 500 fell when the Fed increased the short term federal funds target rate in 2022. They continued to do so well into 2023 however the rates have remained stable since then. This allowed the market to adapt to this rate and bounce back. The Fed indicated a rate cut in 2024 which would theoretically boost the markets however that has still not been realized.

"When interest rates first moved higher in 2022, it took its largest toll on stocks with already high valuations," says Haworth."In 2023, as interest rates appeared to be approaching peak levels for this cycle, the impact shifted," says Haworth. "Higher rates have a greater impact on companies that need to borrow money to finance expansion.""For many smaller companies, the cost of funding at higher interest rates is a bigger concern than it is for larger companies, which have more cash on hand and often issue longer-term debt,"




This chart demonstrates how large cap stocks, though underperforming small cap stocks in 2022, bounced back much stronger in 2023 and 2024 because of the fact that they have more cash in hand and can sustain under these high interest rates.

Findings in economic literature show that advanced economies' interest rates have had massive impacts on emerging markets however in the recent past, major emerging markets have been insulated from the extreme volatility of the global interest rates.

"Many emerging markets have spent years improving policy frameworks to mitigate external pressures. They have built additional currency reserves over the last two decades. Many countries have refined exchange-rate arrangements and moved towards exchange-rate flexibility. Significant foreign exchange swings have contributed to macroeconomic stability in many cases. The structure of public debt has also become more resilient, and both domestic savers and domestic investors have become more confident investing in local-currency assets, reducing reliance on foreign capital."_ During the pandemic, many emerging markets were able to implement monetary policies quicker than advanced economies and as a result gained them more credibility and stability. Foreign investors have also shown more faith in these markets recently by not selling their positions in the bond market after a rise in global interest rate volatility.

Interest rate differentials between emerging and advanced economies are narrowing, emerging markets are expected to cut interest rates faster than their advanced counterparts which could lead to investors moving money out of emerging markets and into advanced ones. Additionally, suppose the global rates remain unchanged and are not cut soon. In that case, investors may choose to sell off their holdings in riskier assets, which include equity and debt in the emerging markets, causing cash outflows from those markets.

Another huge problem that emerging markets are currently facing is that there is no external financing, with borrowing costs so high, they are essentially prohibited from getting foreign money through loans.

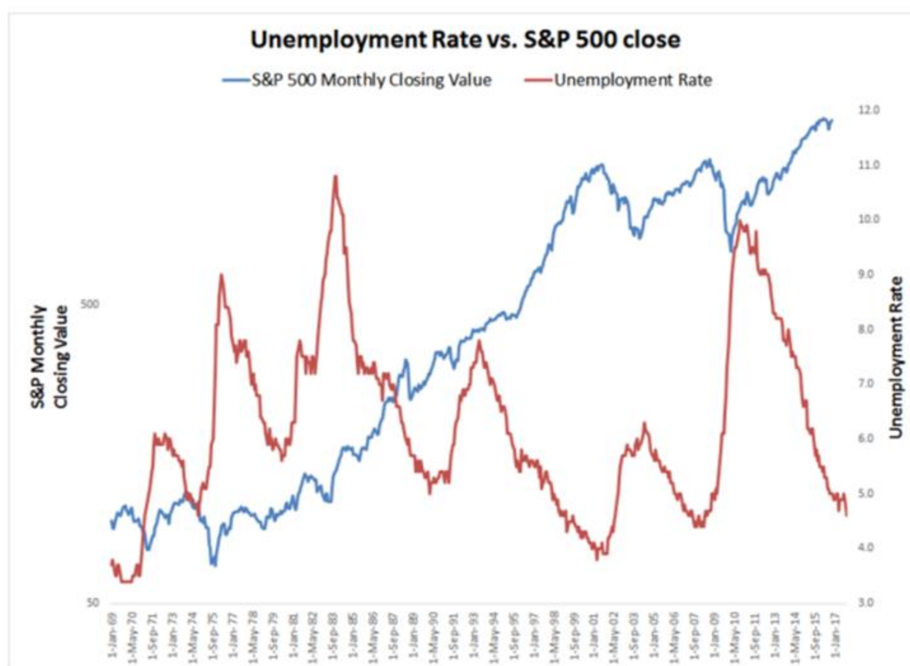
## IV. Unemployment Rates

"Like GDP, the unemployment rate reflects strength or weakness in the economy. Essentially, more people with jobs equates to higher retail sales, economic output, and corporate profits" (Levitt, 2023).

In Developed Markets, Low Unemployment Rates correlate with higher stock market returns as they reflect a strong labor market and consumer spending. The Volatility faced by these markets are Relatively low because of strong social safety nets and more predictable policy responses.

For Emerging Markets also, low unemployment rates correlate with higher returns but can lead to significant market reactions due to the higher impact of labor market changes on overall economic stability, increased spending capacity may lead to inflation, forcing central banks to increase interest rates, which may affect the stock markets negatively. They may also face higher Volatility as labor market data can be less reliable and economic structures more vulnerable to changes in employment.

The following graph shows S&P 500 monthly closing values from 1969 to 2017, plotted with the monthly unemployment rate.




Sources: Bureau of Labor Statistics and S&P Dow Jones Indices LLC

The stock market and the unemployment rate have an inverse relationship. "Historical data shows that the unemployment rate hits its highest point as the stock market bottoms. Conversely, as the stock market tops, the unemployment rate is hitting its lowest point. This relationship shows that anytime the unemployment rate falls below 5% there is a risk of a bear market occurring" (Longsworth, 2017).

## V. Consumer Price Index

The Consumer Price Index is a vital tool for tracking changes in the prices of products and services that people commonly purchase, as well as for calculating inflation. Increasing CPI numbers signal inflationary trends, which could drive up production costs for businesses and change consumer purchasing habits.

The CPI influences stock reactions by serving as a mirror reflecting inflationary pressures. The real worth of money can be diminished by inflation, which can also affect interest rates, business profits, and consumer behaviour, all of which can affect stock prices. Stock prices may be affected during periods of high inflation because companies struggle to remain profitable.

"Rising inflation—that is, higher prices—can hurt consumer spending, which makes up more than two-thirds of the GDP, and cause the Federal Reserve to raise interest rates to control price gains. Higher rates tend to cool economic activity and have squelched many stock rallies. Falling inflation and resulting interest rate cuts can have the opposite effect, igniting stock rallies" (Levitt, 2023).

In Developed Markets, moderate inflation is usually positive for stock markets, while high inflation can erode returns, as it affects profitability and also because high inflation pushes the central bank of the country to raise interest rates affecting investment in companies.

The following graph analyses data on the US stock market and its correlation with CPI inflation stretching across 53 years:

Source: Economic Times, 2022

"The S&P500 Index rose by an annualised 3.3 per cent over that period – a small rise but still a positive return against heavy odds. Post-1982, inflation remained mostly benign, leading to a 9.5 percent annualized return in US stocks. This is consistent with the low inflation – high equity valuation thesis" (Sarin, 2022).

Emerging Markets also show the same trends where moderate inflation is positive but high inflation can have a more dramatic impact due to weaker policy frameworks and greater susceptibility to hyperinflation. However, The relationship between Indian inflation and its stock market as traced along many years is a complex one which can be owed to the volatility of emerging markets. The following graph demonstrates this relationship between stock market and inflation in India:

Source: Economic Times, 2022

"There were periods (CY08-11) when inflation was accelerating and the Nifty index was falling (as expected), but during CY06 – 07, rising inflation was met with a rising Nifty.There were also instances when both inflation, as well as the Nifty index, were sliding. At minus 5 percent, the statistical correlation between inflation and the Nifty index movement is negligible" (Sarin, 2022).

Therefore, indications from the stock markets are that a low to moderate inflation is something not bad for the markets and this can be achieved through limited rise in prices of products which can easily be sustained by the markets. However, the Government has to be very careful that the rise in prices does not cause an inflation spiral but only at a controlled level which can be good for the markets so that it is able to build a positive image both amongst the domestic and international investing community.

## VI. Retail Sales

The total amount of money that customers spend at retail establishments—both online and offline—on goods and services is referred to as retail sales. Robust retail sales are typically interpreted as a sign of strength in the stock market. A robust retail sector can result in increased corporate earnings and a more robust stock market since it shows that people are spending money and the economy is doing well. Strong retail sales can also be a sign of high consumer confidence, which is good for the market.

Sluggish retail sales can cause a drop in the stock market. They are a sign of a faltering economy and non-spending consumers, which can result in reduced company profits and a weakened stock market. Furthermore, poor retail sales may be a sign of low consumer confidence, which could further depress the market.

Therefore, strong retail sales are favourable for the stock market, as investors purchase more retail stocks or simply invest more because of the probable rise in the GDP. Sluggish retail sales can have the opposite effect.

In Developed Markets, retail sales data is closely watched and can cause immediate reactions in stock markets. Investors use this data to gauge consumer confidence and economic trends. Consumers in developed markets have stable income and consumption patterns, making retail sales a reliable economic indicator.

In Emerging Markets, retail sales are as important, because they are an indicator of consumer demand. While retail sales are important, emerging markets may show more volatility due to other factors such as political instability, exchange rates, and global economic conditions. Retail sales growth can be more erratic but is a crucial part of long-term economic development. Consumers in emerging markets might show more variability in spending due to economic uncertainty, income disparities, and market conditions.

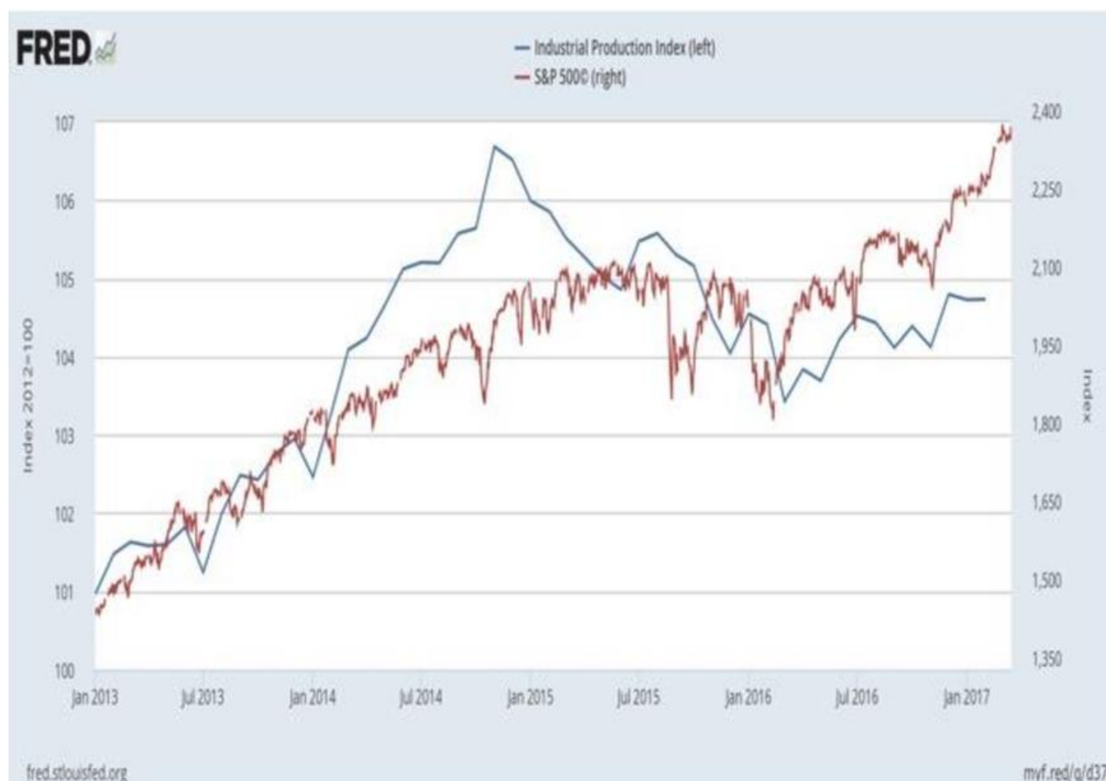
"Retail sales is an important indicator that signals either the contraction or expansion of an economy. An increase in retail sales signals a healthy economy that is expanding while a decrease in retail sales signals the opposite. An increase in retail sales usually moves stocks upward and is good for shareholders. As a leading macroeconomic indicator, healthy retail sales figures typically elicit positive movements in equity markets. Higher sales are good news for shareholders of retail companies because it means higher earnings" (Kenton, 2024).

## VII. Industrial Output

Industrial production is a critical reading for the underlying health of an economy. It is an economic indicator that measures real output for different facilities located in a country from the manufacturing, mining and utilities industries.

"This is an important index since it does not take into consideration the price added by the retail sector. The capacity utilization of the industries offers a good insight into the strength of demand in the economy. If an industry is generating industrial output below its capacity, then investors can interpret it as a sign of an impending downturn or a possibility of a fiscal stimulus for the said industry. The stock markets would respond accordingly. On the other hand, if an industry is generating output over its capacity, then it can be interpreted as a potential risk of price rises and asset bubbles causing the markets to fall" (Groww, 2023).

"Put more simply, if industrial production is rising, it implies healthy growth for the various companies that are producing this output. Conversely, if industrial production is falling, it suggests that the underlying companies producing this output may be struggling with deteriorating growth. As a result, the U.S. stock market, as measured by the S&P 500 Index, has shown a relatively high correlation to the industrial production index over time" (Parnell, 2017). The same is highlighted in the chart below:




Source: Gerring Capital Partners, St Louis FRED, 2017

Out of the three subcomponent indices of the Industrial Production Index, namely manufacturing, mining and utilities industries, the manufacturing component is the most highly correlated with the S&P 500 Index.

Stock markets in developed countries react to industrial output data with more stability compared to emerging markets, where the same data can cause significant volatility due to less mature financial systems and external dependencies. Global economic conditions and commodity price fluctuations can have a pronounced impact on the industrial output of emerging markets, contributing to increased volatility. For instance, a downturn in global demand or supply side shocks can sharply reduce industrial production, leading to market declines.

"While not as important as it once was, industrial production is still a key indicator for the health of the economy. Released by the Federal Reserve, the Industrial Production Index (IPI) provides a snapshot of the health of the nation's factories. The results can be volatile, so policymakers and investors look for confirmation of a downturn or upswing over multiple months" (Levitt, 2022).

## VIII. Conclusion

Economic indicators play a pivotal role in influencing stock prices. Positive economic indicators generally result in higher stock prices, whereas negative indicators can lead to a decline.

**Emerging markets, such as India, are more sensitive to macroeconomic fluctuations than** more developed markets. This increased sensitivity could potentially lead to greater volatility and offer opportunities for arbitrage.

While the Indian market demonstrates significant connections with inflation, money supply, and interest rates, developed markets may display distinct dynamics due to their more established financial systems and investor behaviors.

Generally, positive macroeconomic indicators like GDP growth, low unemployment, low interest rates lead to higher stock market returns in both developed and emerging markets. However, the magnitude of returns might be greater in emerging markets due to their higher growth potential. However, the impact of different macroeconomic indicators can be different for different countries as they are coupled with other factors too. "Accepting stereotypes may seem like the easier option, but it's worthwhile to look at alternative scenarios as well. India is speeding up while most global economies are slowing down. Despite high inflation, crude etc, equity markets have historically delivered the best returns" (Sarin, 2023).

In long-term relationships, it has been observed that WPI (inflation) and Money Supply (M3) demonstrate a positive correlation with stock returns. This suggests that increases in inflation and money supply tend to be associated with higher stock prices, possibly due to enhanced corporate earnings resulting from inflation and the availability of more liquid money due to the higher money supply - supported by statistics.

On the other hand, the T-bill rate exhibits a negative relationship with stock returns. This inverse correlation indicates that higher interest rates elevate borrowing costs, leading to reduced borrowing and decreased consumer and business confidence, ultimately resulting in reduced investment and stock prices - supported by statistics.

Regarding the exchange rate (USD/INR), although it shows a positive relationship with stock returns, the available statistics are insufficient to support this, suggesting that the impact of exchange rate fluctuations on stock prices may be more complex or influenced by other unaccounted factors.

Regarding the short run,the analysis demonstrates a bi-directional causality between the BSE Sensex and the exchange rate, suggesting that changes in the exchange rate can forecast stock returns and vice versa. Understanding this relationship is crucial for comprehending the impact of currency fluctuations on investor behavior and stock prices in the short term. Inflation and Money Supply both exhibit a positive short-term relationship with stock returns. This finding indicates that even in the short term, inflationary pressures and liquidity conditions (as indicated by money supply) significantly influence stock market performance. Despite demonstrating a significant long-term relationship, the T-bill rate's short-term impact on stock returns is deemed insignificant. This disparity underscores the importance of discerning between short-term market responses and long-term trends when assessing the effects of interest rates.

Emerging markets tend to exhibit higher volatility due to greater economic and political instability, less mature financial markets, and higher sensitivity to external shocks compared to developed markets. "The impact of different market crises is not similar, some events having a higher impact than other events. In this essence, it can be asserted that a country's economic strength does not always shield it from economic turmoil" (Tabash, 2024).

A country is not only affected by macroeconomic factors of its own economy but also by global trends and events. "Macroeconomic factors, although may or may not be related to a particular country, will impact its stock markets nevertheless due to the extreme globalization of economies. Hence, it is naive to overlook any global developments and to think it does not impact us" (Bhatt, 2023).

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