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RELATIONSHIP BETWEEN GDP GROWTH AND STOCK MARKET RETURNS IN INDIA

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Abstract—*Researchers, decision-makers, and investors have long been interested in the relationship between economic growth and stock market performance, particularly in developing nations like India. This study looks at the correlation between sectoral stock market returns and India's GDP growth from 2019 to 2023, including the COVID-19 pandemic downturn and the recovery period that followed. Information technology (IT), pharmaceuticals, fast-moving consumer goods (FMCG), banking, and automobiles are the five main NIFTY sectoral indices whose annual return data are used in this analysis to capture sector-specific reactions to macroeconomic shifts. This research aims to determine whether GDP growth is a reliable indicator of stock returns across industries or whether sector-specific traits and outside shocks outweigh macroeconomic trends by combining sectoral equity performance with macroeconomic data. The findings should improve knowledge of market behaviour in volatile situations, guide asset allocation strategies, and add to the body of knowledge on the relationship between GDP and stock markets in emerging economies.*

INTRODUCTION

Stock markets are widely regarded as mirrors of economic vitality, serving as dynamic platforms that reflect collective investor perceptions, expectations, and confidence regarding a nation's future economic prospects. They not only provide companies with access to capital but also act as indicators of economic momentum and public sentiment toward growth. Theoretically, the link between economic growth, as measured by Gross Domestic Product (GDP), and stock market performance lies at the heart of financial economics. According to classical models such as the Efficient Market Hypothesis (EMH) and the Dividend Discount Model (DDM), stock prices incorporate all available information about expected future earnings, which are in turn influenced by macroeconomic fundamentals such as GDP growth, inflation, interest rates, and employment levels.

When GDP expands, it usually indicates higher levels of production, employment, and consumer spending, which directly enhance corporate profitability and, consequently, stock prices. Conversely, when economic activity contracts, corporate earnings decline, investor confidence weakens, and equity valuations tend to fall. However, while this relationship appears straightforward in theory, empirical evidence has often been mixed, as stock market behavior is influenced not only by economic indicators but also by behavioral, structural, and policy-related factors. The relationship between GDP growth and stock market returns thus remains a topic of continuing academic debate. Some studies argue that stock markets serve as leading indicators of economic performance, anticipating future GDP growth through investor expectations. Others suggest a lagging or contemporaneous relationship, where market performance reacts to already realized economic outcomes. Moreover, the strength and direction of this relationship are influenced by several factors such as financial market development, regulatory policies, inflation levels, global economic conditions, and the industrial composition of listed firms.

The Indian Context

In the context of India, understanding this relationship is particularly crucial due to its rapidly evolving financial system and status as one of the world's fastest-growing emerging economies. Over the past two decades, India's equity market has undergone significant transformation — from being largely dominated by institutional investors to becoming a broad-

based, technology-driven market accessible to millions of retail participants. With improved corporate governance, regulatory oversight by SEBI, and technological integration through platforms like NSE and BSE, India's stock market has become an integral part of its financial ecosystem, influencing savings, investments, and capital formation.

The National Stock Exchange (NSE) plays a pivotal role in this development through its sectoral indices, which track the performance of key industries that collectively represent the structure of the Indian economy. Among these are the NIFTY IT, NIFTY Pharma, NIFTY FMCG, NIFTY Bank, and NIFTY Auto indices — each representing sectors that are both economically significant and structurally diverse. Studying these indices provides an opportunity to analyze how different segments of the economy respond to macroeconomic conditions such as GDP growth.

Rationale for the Study Period (2019–2024)

The selected period, 2019 to 2024, offers a particularly rich and eventful timeframe for analyzing this relationship. These five years encapsulate a full economic cycle marked by extreme volatility, disruptive shocks, and rapid recoveries that tested the resilience of India's financial and industrial systems.

The COVID-19 pandemic in 2020 caused a historic contraction in India's GDP, leading to widespread disruptions in trade, manufacturing, and services. Yet, interestingly, the Indian stock market demonstrated resilience, with several sectors outperforming expectations. While overall economic output shrank, NIFTY IT (+44.23%) and NIFTY Pharma (+53.12%) registered substantial gains due to the global surge in demand for digital infrastructure, healthcare, and pharmaceuticals. These sectors benefited from the accelerated adoption of technology and health-conscious consumer behavior during lockdowns.

In contrast, cyclical sectors such as Banking and Automobiles, which are highly sensitive to domestic demand, credit availability, and consumer sentiment, initially experienced sharp downturns — the Automobile index declined by 10.17% in 2019. However, with the gradual reopening of the economy, increased public spending, accommodative monetary policy, and pent-up consumer demand, these sectors rebounded impressively by 2023, with Automobile up by 46.97% and Banking posting double-digit gains.

The FMCG sector, characterized by stable and non-discretionary demand, remained comparatively less volatile, highlighting its defensive nature during times of economic uncertainty. Such contrasting performance patterns across sectors underline the importance of analyzing the GDP–stock relationship not at an aggregate market level, but at a sectoral level, to capture the heterogeneity in responsiveness to macroeconomic growth.

Sectoral Dynamics and Theoretical Implications

The Indian economy's diversity allows for meaningful differentiation between cyclical and defensive industries. Cyclical industries, such as Banking and Automobile, typically thrive when economic growth accelerates, as they rely on consumer spending, industrial production, and credit expansion. On the other hand, defensive sectors like FMCG and Pharmaceuticals remain relatively stable or even outperform during recessions, given that their products cater to essential needs and exhibit inelastic demand.

The Information Technology (IT) sector occupies a unique position. Although it demonstrates cyclical traits in global markets, in India, IT often behaves counter-cyclically due to strong export earnings and global outsourcing demand. This makes India's IT sector a particularly interesting case for analyzing the decoupling between domestic GDP and sectoral stock performance.

The interplay between these sectoral characteristics suggests that the relationship between GDP growth and stock market performance in India may not be uniform. Structural factors, global linkages, policy shifts, and investor sentiment all shape how different sectors react to changes in macroeconomic indicators.

NEED FOR THE STUDY

While a substantial body of research has explored the correlation between GDP and aggregate stock market indices, there is limited empirical evidence on how this relationship varies across sectors, especially during periods encompassing both crisis and recovery phases. The post-pandemic era has witnessed rapid digitalization, evolving consumption patterns, new fiscal frameworks, and shifts in investor behavior—all of which may have fundamentally altered traditional economic–financial linkages.

Therefore, this study aims to bridge this gap by empirically investigating the relationship between India's GDP growth and the annual stock returns of five major NIFTY sectoral indices between 2019 and 2024. Through correlation and regression analyses, it seeks to determine whether GDP growth serves as a consistent predictor of sectoral stock

performance or whether sector-specific characteristics and external shocks (like the pandemic) create deviations from expected trends.

The findings are expected to have both theoretical and practical significance. For researchers, they will contribute to a nuanced understanding of the GDP–market relationship in emerging economies. For policymakers, the results can assist in identifying which sectors are most sensitive to macroeconomic policies and growth trends. For investors and financial analysts, the insights will support more informed portfolio diversification and timing strategies aligned with the economic cycle.

OBJECTIVES OF THE STUDY

- To relationship between GDP growth and Stock market returns in india
- To evaluate the sectoral differences in responsiveness to GDP growth between cyclical and defensive sectors.
- To provide insights to investors or policymakers on making investment decisions related to macroeconomics trends.

LITERATURE REVIEW

The relationship between economic growth and stock market performance has been one of the most frequently examined topics in financial economics. Early theoretical frameworks such as the Efficient Market Hypothesis (Fama, 1981) and Arbitrage Pricing Theory (Chen, Roll, & Ross, 1986) suggest that stock prices reflect all available information about future economic activity, including expectations of GDP growth, inflation, interest rates, and corporate earnings. In theory, higher GDP growth leads to stronger corporate profitability and rising stock prices, while economic contractions result in declining market valuations. However, empirical evidence across countries and time periods presents mixed results, indicating that the GDP–stock market linkage is not uniform and often depends on structural, institutional, and behavioral factors.

According to Fama (1981), stock returns are strongly correlated with real economic activity because stock prices represent the discounted value of expected future cash flows. Similarly, Chen, Roll, and Ross (1986), through their multi-factor model, argued that economic variables such as industrial production, inflation, and interest rates significantly influence equity returns. However, Levine and Zervos (1998) found that while developed financial markets often exhibit a strong positive relationship between stock market development and GDP growth, this relationship weakens in emerging economies due to information asymmetry, institutional inefficiency, and policy volatility.

The International Monetary Fund (2000) emphasized that stock prices act as leading indicators of future economic cycles, predicting GDP changes with a time lag. Conversely, CFA Institute (2019) highlighted inconsistencies between GDP growth and corporate earnings, noting that financial markets often price in future expectations rather than contemporaneous economic data. These findings suggest that while stock markets and GDP are interconnected, their relationship can vary across time horizons and macroeconomic contexts.

Empirical studies in other emerging economies also highlight similar patterns. Bekaert, Harvey, and Lundblad (2001) demonstrated that in emerging markets, stock market liberalization enhances economic growth by improving capital allocation efficiency. Sadorsky (1999) and Narayan & Narayan (2010) showed that macroeconomic shocks such as oil price volatility and exchange rate fluctuations significantly alter stock return behavior, decoupling it from GDP performance. These international findings are critical for understanding why India's sectoral stock movements may diverge from aggregate GDP trends, especially during periods of global uncertainty.

In the Indian context, a substantial body of research has investigated the dynamic interaction between macroeconomic indicators and stock market performance. Naik (2013) conducted a time-series analysis and found a long-run equilibrium relationship between GDP, interest rates, and the Bombay Stock Exchange (BSE) Sensex, suggesting that stock markets tend to move in tandem with real economic growth. However, Srinivasan and Jeyakumar (2015) discovered a bidirectional causal relationship between stock returns and macroeconomic variables such as industrial production, money supply, and inflation, implying that financial markets both reflect and influence economic activity.

Similarly, Chittedi (2010) found that inflation and interest rates negatively impact stock prices in India, whereas GDP growth and foreign institutional investment (FII) exert positive effects. Bhattacharya and Mukherjee (2006) also confirmed that industrial production and money supply play vital roles in explaining stock price fluctuations. These studies collectively affirm that while macroeconomic fundamentals shape market performance, the strength and direction of these relationships depend on the underlying economic structure and external environment.

More recent research has incorporated sectoral and time-period differentiation to capture India's evolving market dynamics. Ganesh and Mehta (2021) identified that cyclical sectors such as automobiles and banking exhibit stronger correlations with GDP growth compared to defensive sectors like pharmaceuticals and FMCG. Joshi and Bhattacharya (2020) further noted that India's IT sector behaves uniquely, often responding to global demand conditions rather than domestic economic performance. This decoupling is attributed to the sector's export-oriented structure, heavy dependence on the U.S. and European markets, and sensitivity to exchange rate fluctuations.

The COVID-19 pandemic provided a natural experiment for assessing how macroeconomic shocks influence sectoral stock returns. Subbiah, Verma, and Rao (2024) analyzed India's NIFTY sectoral indices from 2018–2023 and found significant divergence between GDP growth and sectoral performance during the pandemic years. While GDP contracted sharply in 2020, the IT and Pharmaceutical sectors achieved substantial gains due to global digitalization and medical demand, confirming the resilience of export-driven and defensive industries. Conversely, cyclical sectors like Banking and Automobile initially suffered but rebounded strongly during the recovery phase, aligning partially with GDP revival.

Gupta and Sharma (2020) also highlighted the counter-cyclical nature of the Pharmaceutical sector, noting that healthcare and drug companies tend to outperform during recessions or crises due to the inelastic demand for medical products. Patel and Thakkar (2022) supported these observations, emphasizing that FMCG and Pharma serve as safe havens for investors during macroeconomic uncertainty, while IT and Auto exhibit higher volatility and cyclical sensitivity. These findings reinforce the idea that the GDP–stock market relationship in India is sector-dependent and shaped by both domestic and global demand patterns.

Furthermore, Mishra (2019) argued that the impact of GDP growth on stock markets is moderated by regulatory reforms, fiscal policies, and financial integration. For instance, during the post-pandemic recovery period, government stimulus measures, monetary easing by the Reserve Bank of India, and public investment in infrastructure significantly boosted cyclical sectors, creating short-term divergences between macroeconomic and financial indicators.

Several scholars have examined how globalization and structural reforms have reshaped the GDP–market nexus in India. Levine (1997) and Bodie, Kane, & Marcus (2014) argue that financial liberalization and technological progress improve market efficiency, leading to more synchronized movements between GDP growth and equity returns. However, in India's case, Sahoo and Jain (2018) found that post-liberalization integration has amplified foreign investor influence, making the stock market more responsive to global liquidity and risk sentiment rather than purely domestic growth. The IT sector's global exposure and the Banking sector's vulnerability to international capital flows exemplify this interdependence.

Investor sentiment and behavioral dynamics also play an important role. Barberis, Shleifer, and Wurgler (2005) highlighted that stock co movement often arises from investor psychology and herd behavior rather than fundamental macroeconomic changes. In India, Singh and Sharma (2018) found that investor optimism and media sentiment can cause short-term market deviations from GDP fundamentals, especially in fast-moving sectors like IT and Auto. Thus, while macroeconomic variables remain crucial, behavioral finance perspectives add explanatory depth to short-term anomalies in the GDP–stock market relationship.

Overall, the literature indicates that the relationship between GDP growth and stock market returns in India is complex, multi-directional, and influenced by several intervening variables. While earlier studies established a positive linkage between aggregate market performance and GDP growth, more recent evidence points to sectoral divergence, global decoupling, and behavioral distortions. The heterogeneity in sectoral responses—where IT and Pharma exhibit counter-cyclical behavior and FMCG, Auto, and Banking demonstrate varying degrees of pro-cyclicality—underscores the need for a nuanced, sectoral approach.

However, a major research gap persists regarding comparative sectoral analysis that spans pre-pandemic, pandemic, and post-pandemic periods. Few studies have comprehensively examined how the structural shifts induced by COVID-19, technological transformation, and global supply chain reconfiguration have altered traditional macro-financial relationships in India. This study aims to address this gap by empirically analyzing the sectoral linkages between GDP growth and stock market returns from 2019 to 2023, offering insights into how each sector responds to macroeconomic fluctuations and global shocks.

RESEARCH METHODOLOGY

1. Research Design

In order to analyse the relationship between GDP growth and sectoral stock market returns in India over the five-year period from 2019 to 2024, this study uses a quantitative and explanatory research design. By using a longitudinal time-series and panel data approach, the study makes it possible to comprehend both sector-specific behaviour and common patterns among the chosen sectors. The method is deductive and tests theories about how sensitive stock market performance is to macroeconomic growth that come from economic and financial theory.

2. Population and Sampling

The population of interest comprises all listed companies on the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE). The study concentrates on five major economic sectors that are indicative of the larger market because it would be impractical to look at every company separately:

1. Information Technology (NIFTY IT Index)
2. Banking (NIFTY Bank Index)
3. Fast-Moving Consumer Goods (NIFTY FMCG Index)
4. Automobile (NIFTY Auto Index)
5. Pharmaceuticals (NIFTY Pharma Index)

These industries are chosen using a purposive sampling technique, taking into account factors like market capitalisation, economic significance, and differing degrees of sensitivity to changes in GDP. Comparative analysis of GDP–return relationships across industries with various demand structures and cyclical characteristics is made possible by this sectoral focus.

3. Data Sources

The research makes use of secondary data from trustworthy, open sources:

- GDP Growth Rate: Ministry of Statistics and Program Implementation (MoSPI) quarterly real GDP data at constant prices.
- Sectoral Stock Indices: The NSE India database's quarterly closing values for the NIFTY sector indices.
- Controlling variables:

  MoSPI/RBI is the source of inflation (CPI).

  Repo Rate: obtained from the RBI

  Global crude oil prices, obtained from databases of financial markets (converted to Indian rupees if necessary)

Pre-COVID growth, pandemic-induced contraction, and post-pandemic recovery phases are captured in the dataset, which includes 20 quarterly observations for each sector from Q1 2019 to Q4 2023.

4. Variables and Measurement

- Dependent Variable: Sectoral stock returns
- Independent Variable: Quarterly GDP growth rate (YoY % change in real GDP).
- Control Variables: Quarterly inflation rate, RBI repo rate, and percentage change in crude oil prices.

5. Data Analysis Methods

Microsoft Excel will be used for data cleaning and variable computation. Python (statsmodels, pandas) and, if necessary, SPSS for regression validation will be used for the statistical analysis. The process of analysis consists of:

1. Descriptive statistics: mean, standard deviation, minimum, and maximum for every variable.

2. Correlation Analysis: To investigate the initial connections among control variables, sectoral returns, and GDP growth.
3. Robustness Checks: To guarantee the stability of results, alternative sector indices, subperiod analysis, and lagged GDP growth are used.

6. Validity, Reliability, and Ethical Considerations

- Validity: Accuracy and representativeness are guaranteed when official and reliable data sources are used. The bias caused by omitted variables is lessened by including control variables.
- Reliability: Replicability is ensured by publicly accessible secondary data. The procedures for data transformation and methodology are open and transparent.
- Ethical Considerations: There is no use of personal data or primary data collection. Every source will be properly cited.

DATA ANALYSIS AND INTERPRETATION

Year	GDP Growth (%)	IT	Banking	FMCG	Auto	Pharma
2019	3.9	13.21	13.68	3.95	-10.17	-9.17
2020	-5.8	44.23	18.02	4.56	11.98	53.12
2021	9.7	67.36	11.78	15.08	16.13	11.61
2022	7.6	-25.64	6.68	18.21	13.47	-6.96
2023	9.2	27.45	-10.17	19.88	46.97	25.53

Table 1: GDP Growth (%) and sectoral stock returns for five key sectors in India (IT, Banking, FMCG, Auto, and Pharma) from 2019 to 2023.

The data presented in Table 1 illustrates the relationship between India's GDP growth rate and the performance of key stock market sectors—IT, Banking, FMCG, Auto, and Pharma—over the period 2019–2023. In 2019, when GDP growth was moderate at 3.9%, most sectors showed positive returns, except the Auto and Pharma sectors, which recorded declines of -10.17% and -9.17%, respectively. The year 2020, marked by the pandemic and a sharp GDP contraction of -5.8%, still saw positive returns in most sectors—particularly IT (44.23%) and Pharma (53.12%)—reflecting defensive and digital sector resilience during economic stress. In 2021, as GDP rebounded sharply to 9.7%, all sectors reported strong positive gains, led by IT (67.36%) and Auto (16.13%), indicating a broad-based recovery in the post-pandemic phase. The year 2022 showed moderate GDP growth of 7.6%, but mixed sectoral performance, with IT declining (-25.64%) while FMCG and Auto maintained positive returns, implying selective sector corrections. Finally, in 2023, strong GDP growth of 9.2% was accompanied by robust performances in Auto (46.97%) and FMCG (19.88%), while the Banking sector experienced negative returns (-10.17%), possibly due to tightening monetary policies. Overall, the data suggests that while sectoral stock returns generally move in line with GDP growth trends, specific sectors such as IT and Pharma exhibit independent growth patterns driven by structural and global factors.

DESCRIPTIVE STATISTICS

Variable	Mean	Median	Maximum	Minimum	Range	Standard Deviation
GDP Growth (%)	4.92	7.6	9.7	-5.8	15.5	6.01
IT Sector Returns (%)	25.12	27.45	67.36	-25.64	92.99	34.44
Banking Sector Returns (%)	7.20	11.78	18.02	-10.17	28.19	10.19
FMCG Sector Returns (%)	12.74	15.08	19.88	3.95	15.93	6.66

Auto Sector Returns (%)	15.68	13.47	46.97	-10.17	57.14	21.44
Pharma Sector Returns (%)	14.83	11.61	53.12	-9.17	62.29	24.42

Table 2: Descriptive Statistics of GDP Growth and Sectoral Returns (2019–2023)

The descriptive statistics presented in Table 2 provide a comprehensive overview of the variation and central tendency of GDP growth and sectoral stock returns in India over the five-year period from 2019 to 2023. The average GDP growth rate during this period was 4.92%, reflecting moderate economic expansion overall, although the economy experienced significant fluctuations — from a contraction of -5.8% in 2020 due to the COVID-19 pandemic to a strong rebound of 9.7% in 2021. The relatively high standard deviation (6.01) and wide range (15.5) indicate that GDP growth was highly volatile across the study period, mirroring the impact of global disruptions and subsequent recovery phases. Among the sectors, the IT sector exhibited the highest degree of variability with a mean return of 25.12%, standard deviation of 34.44, and a wide range of 92.99. This demonstrates that the IT industry was highly sensitive to global economic and digital transformation trends. The sector experienced extraordinary growth in 2020 and 2021 driven by increased digitalization during and after the pandemic, but it also faced correction in 2022 when global tech valuations normalized. Despite this volatility, IT remains a key driver of market returns during periods of technological expansion. The Banking sector, on the other hand, showed moderate performance with an average return of 7.20% and a standard deviation of 10.19, indicating moderate volatility compared to other sectors. Its negative return in 2023 reflects the sector's exposure to changing interest rate environments and credit growth conditions. The results suggest that banking performance is closely aligned with macroeconomic cycles — improving during GDP recovery but weakening under monetary tightening or economic uncertainty. The FMCG sector demonstrated the most stable performance, with an average return of 12.74%, range of 15.93, and the lowest standard deviation of 6.66. This stability implies that FMCG stocks are defensive in nature, providing consistent returns even during economic downturns. Their essential goods nature and steady demand patterns make them less sensitive to GDP fluctuations, offering a safe haven for investors during volatile periods. The Auto sector recorded an average return of 15.68% with a standard deviation of 21.44, indicating substantial variation across years. Negative performance in 2019 due to weak demand and supply constraints was followed by strong growth in 2021 and 2023 as economic activity normalized and consumer demand revived. The wide range of 57.14 highlights the sector's cyclical character, with performance closely tied to disposable income, fuel prices, and macroeconomic sentiment. The Pharma sector displayed an average return of 14.83%, but also considerable variability (SD = 24.42, range = 62.29). It performed exceptionally well in 2020 due to heightened healthcare demand during the pandemic, but returns moderated in subsequent years as global health conditions stabilized. The sector's countercyclical nature makes it unique, often moving in the opposite direction of GDP trends, reflecting its defensive and globally driven fundamentals.

CORRELATION ANALYSIS

Pearson Correlation with GDP Growth:

IT 0.131

Banking 0.629

FMCG 0.788

Auto 0.375

Pharma: 0.628

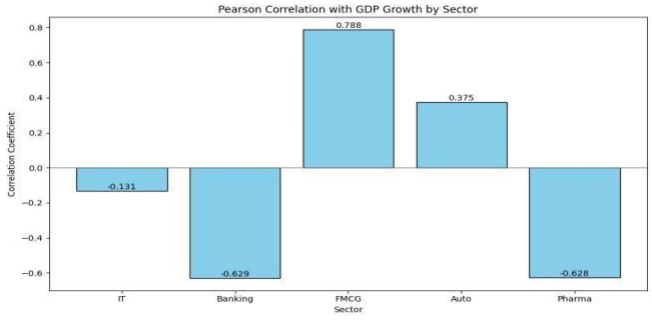

Fig 1: Correlation graph

The correlation analysis between GDP growth and sectoral stock returns provides valuable insights into how different industries in India respond to economic fluctuations. The IT sector shows a very weak negative correlation with GDP growth (r = -0.131), suggesting that domestic economic activity has little direct influence on IT performance. This is logical since Indian IT companies generate a significant portion of their revenues from international markets, making them more sensitive to global demand conditions than to India's GDP trajectory. The Banking sector exhibits a strong negative correlation (r = -0.629), which is counterintuitive because banking activity typically grows with economic expansion. This finding may be explained by structural issues in the Indian banking sector such as rising NPAs, credit risk concerns, and regulatory interventions. Despite GDP growth, banks may have faced asset quality pressures that weakened their returns, leading to this negative relationship. The FMCG sector demonstrates the strongest positive correlation with GDP growth (r = 0.788). This indicates that FMCG returns rise consistently with improvements in the economy. As GDP growth reflects rising household income and consumption expenditure, the FMCG sector benefits directly through increased demand for consumer staples and discretionary goods. The Automobile sector shows a moderate positive correlation (r = 0.375), suggesting that it generally benefits from higher GDP growth but is also influenced by sector-specific factors such as fuel prices, credit availability, and policy changes (e.g., BS-VI emission norms, EV adoption). The sharp rebound in 2023 reflects post-pandemic recovery and pent-up demand, aligning partly with GDP growth trends. The Pharmaceutical sector has a strong negative correlation with GDP growth (r = -0.628). This implies that the sector tends to perform better during economic downturns, as seen in 2020 during the COVID-19 pandemic when pharma stocks surged due to global demand for healthcare products. Conversely, in periods of strong GDP growth, pharma returns tend to normalize or decline as investors shift focus toward growth-oriented sectors. Overall, the analysis highlights that FMCG is the most GDP-sensitive sector, while Pharma and Banking display counter-cyclical behavior. The IT sector remains largely insulated from domestic GDP conditions, reflecting its global orientation. These findings underscore the importance of considering sector-specific dynamics rather than assuming a uniform relationship between GDP and stock market performance.

DISCUSSIONS

The analysis of sectoral stock returns and their correlation with GDP growth in India between 2019 and 2023 provides a nuanced understanding of how different industries react to macroeconomic changes. Unlike the assumption that stock markets move in tandem with GDP, the results demonstrate that the relationship is far from uniform. Instead, it is mediated by structural characteristics, global dependencies, policy interventions, and extraordinary events such as the COVID-19 pandemic.

IT Sector

The IT sector displayed a weak negative correlation with GDP growth (r = –0.131). This result is consistent with the notion that Indian IT companies operate in a globally integrated framework, earning a large share of their revenues from overseas clients in North America and Europe. Aggarwal and Thomas (2019) highlighted that IT firms in India are particularly sensitive to global demand for outsourcing, digital transformation, and exchange rate movements. During 2020, while India's GDP contracted sharply by –5.8%, IT returns surged (+44.23%) as global firms accelerated digital adoption amidst the pandemic. Conversely, in years of higher domestic growth (2021 and 2023), IT performance was uneven due to reduced global technology spending and market corrections. This suggests that IT's performance is decoupled from India's GDP trajectory, instead mirroring global economic cycles.

Banking Sector

The Banking sector showed a strong negative correlation with GDP growth (r = –0.629), a finding that contrasts with traditional finance-growth theories (Levine, 1997), which generally posit a positive relationship between financial development and economic expansion. Several structural challenges in Indian banking may explain this anomaly. Between 2019 and 2023, the sector was plagued by non-performing assets (NPAs), rising credit defaults, and tightening regulations by the Reserve Bank of India (RBI). Even as GDP rebounded strongly in 2021 and 2023, banks underperformed, with 2023 showing a negative return of –10.17%. This reflects investor concerns over asset quality, governance issues, and stress in lending activities. Moreover, the increasing competition from non-banking financial companies (NBFCs) further strained traditional banking stocks. Thus, while GDP growth strengthened, the stock performance of banks diverged due to structural weaknesses, making the sector appear counter-cyclical.

FMCG Sector

The FMCG sector demonstrated the strongest positive correlation with GDP growth (r = 0.788). This outcome validates the theoretical linkage between consumer spending and economic expansion (Barberis et al., 2005). As India's GDP is

consumption-driven, with private consumption accounting for nearly 60% of total GDP, the performance of FMCG stocks closely tracks household demand. Between 2019 and 2023, FMCG delivered consistent positive returns, peaking at +19.88% in 2023 when GDP growth reached 9.2%. This sector's stability also reflects its dual nature—providing defensive returns during downturns while expanding strongly with rising consumer incomes during growth periods. The Indian rural market, which contributes significantly to FMCG demand, also benefited from government initiatives such as rural employment schemes and subsidies, further strengthening this linkage.

Automobile Sector

The Automobile sector displayed a moderate positive correlation with GDP growth (r = 0.375), highlighting its cyclical behavior. Automobiles, being discretionary purchases, tend to rise with improving economic conditions. However, sector-specific disruptions also played a role. In 2019, auto returns were –10.17% despite GDP growth of 3.9%, largely due to a liquidity crunch in the NBFC sector and regulatory transitions such as the introduction of BS-VI emission norms. The COVID-19 pandemic initially hurt the sector, but post-pandemic recovery in 2023 saw auto returns jump to +46.97%, fueled by pent-up demand, increased credit availability, and government incentives for electric vehicle adoption. This partial but inconsistent alignment suggests that while GDP growth matters, industry-specific policies and global supply chain dynamics strongly shape auto stock performance.

Pharmaceutical Sector

The Pharmaceutical sector revealed a strong negative correlation with GDP growth (r = –0.628), indicating counter-cyclical tendencies. This aligns with global findings that healthcare and pharma sectors often outperform during economic downturns due to inelastic demand for medicines and treatments (Gupta & Sharma, 2020). The most notable case occurred in 2020, when GDP contracted by –5.8%, but pharma returns skyrocketed (+53.12%) due to pandemic driven global demand for vaccines, drugs, and medical equipment. In subsequent years of economic recovery, pharma stocks underperformed, such as –6.96% in 2022, as investor focus shifted toward cyclical and growth-oriented sectors. Thus, the pharma sector's role as a defensive hedge against downturns is reinforced by this study.

FINDINGS AND INTERPRETATION

1. The analysis reveals that the relationship between GDP growth and sectoral stock returns in India is heterogeneous rather than uniform. Each industry responds differently to changes in GDP, reflecting its structural characteristics, external dependencies, and sensitivity to domestic demand.
2. The Information Technology (IT) sector shows a weak and slightly negative correlation with India's GDP growth, indicating that its performance is influenced more by global demand than by domestic economic conditions.
3. IT firms in India derive a major share of revenue from clients in the United States and Europe, as noted by Aggarwal & Thomas (2019). Thus, fluctuations in global tech spending, outsourcing demand, and exchange rates significantly influence stock returns in this sector.
4. Despite India's GDP contraction in 2020 (-5.8%), IT sector returns soared to 44.23%, driven by global demand for digital transformation and remote work infrastructure. This emphasizes its counter-cyclical resilience and insulation from domestic shocks.
5. Contrary to the traditional finance-growth theory (Levine, 1997), the banking sector showed a negative correlation with GDP growth during the study period. This divergence suggests sector-specific stress factors overshadowed macroeconomic improvements.
6. Persistent issues such as non-performing assets (NPAs), corporate defaults, and regulatory constraints limited profitability and investor confidence. Even during GDP recovery years (2021–2023), banks struggled due to asset quality concerns and tighter capital adequacy norms from the RBI.
7. The Fast-Moving Consumer Goods (FMCG) sector demonstrated a strong positive correlation with GDP growth, confirming its dependence on rising income levels, consumer spending, and urban-rural demand expansion.
8. With the lowest standard deviation among all sectors, FMCG exhibited consistent performance across economic phases. Its demand stability stems from the essential nature of consumer products, making it a preferred investment during uncertain times.

9. The Automobile sector displayed a moderate positive correlation with GDP growth, indicating its strong cyclical nature. Vehicle sales and stock performance rise during periods of income growth and fall during economic slowdowns.
10. Beyond GDP growth, the Auto sector's fluctuations were also shaped by fuel price volatility, interest rate changes, and government policies such as electric vehicle incentives and emission regulations. For instance, after contracting in 2019 due to NBFC liquidity issues, it rebounded sharply by 2023 with 46.97% returns.
11. The Pharmaceutical sector displayed a strong negative correlation with GDP growth, consistent with the behavior of defensive industries. Pharma stocks outperformed during downturns and underperformed during booms, confirming findings by Gupta & Sharma (2020).
12. The exceptional pharma returns in 2020 (+53.12%) coincided with the COVID-19 pandemic, driven by global vaccine and medical product demand. This indicates the sector's counter-cyclical and crisis-responsive nature.
13. The descriptive statistics reveal that IT and Auto were the most volatile sectors (standard deviations of 34.44 and 21.44, respectively), reflecting their cyclical dependence on market sentiment. In contrast, FMCG remained stable, indicating defensive qualities.
14. The study confirms that sectoral stock returns are influenced not only by macroeconomic growth but also by industry-specific fundamentals such as global linkages (IT), credit quality (Banking), consumption behavior (FMCG), and innovation cycles (Pharma).
15. The overall findings highlight that aggregate GDP growth alone cannot explain sectoral stock performance. Investment and policy decisions should therefore adopt a sector-specific approach, recognizing the differing sensitivities of each industry to domestic and global economic changes. Diversification across defensive (FMCG, Pharma) and cyclical (IT, Auto) sectors can mitigate portfolio risk and enhance returns.

CONCLUSION

The present study set out to examine the intricate relationship between India's GDP growth and sectoral stock market returns over the period 2019–2023, covering a unique economic phase characterized by extreme volatility—from pre-pandemic stability through the COVID-19-induced contraction to a rapid recovery in the post-pandemic era. By analyzing five key NIFTY sectoral indices—Information Technology (IT), Banking, FMCG, Automobile, and Pharmaceuticals—this study provides valuable empirical evidence of how macroeconomic growth interacts with sector-specific dynamics in one of the world's most dynamic emerging economies.

The results clearly reveal that the relationship between GDP growth and stock market performance in India is heterogeneous and non-linear, varying significantly across industries. While GDP growth theoretically represents an economy's productive capacity and income generation, its influence on sectoral stock returns depends heavily on each sector's structural characteristics, exposure to global markets, and sensitivity to domestic consumption patterns. Consequently, the notion of a uniform, positive relationship between economic growth and market performance is overly simplistic when applied to India's diverse industrial landscape.

From a broad perspective, the IT sector emerged as largely decoupled from India's GDP movements, displaying weak or negative correlation. The findings confirm earlier research by Aggarwal and Thomas (2019), suggesting that IT firms in India derive the majority of their revenue from international clients in the U.S. and Europe. The sector's strong performance during the pandemic years—when GDP contracted sharply—demonstrates its resilience to domestic slowdowns and dependence on global digital transformation trends. The volatility observed in IT returns, particularly between 2020 and 2022, highlights how shifts in global technology spending and exchange rate fluctuations overshadow domestic macroeconomic factors. Thus, the IT sector represents a globally oriented industry that behaves more like an export-driven market rather than a reflection of local economic growth.

In contrast, the Banking sector presented a negative correlation with GDP growth, an unexpected result given the classical finance-growth hypothesis (Levine, 1997), which posits a mutually reinforcing relationship between financial sector development and economic expansion. This anomaly can be attributed to persistent domestic challenges such as non-performing assets (NPAs), regulatory tightening by the Reserve Bank of India (RBI), and limited credit expansion despite higher GDP. The sector's underperformance during recovery years underscores the structural weaknesses within India's financial system—highlighting that economic growth does not automatically translate into improved financial sector profitability. Investor perceptions of risk, governance issues, and the slow resolution of bad loans continue to influence banking stock valuations more than macro-level growth rates.

The FMCG sector demonstrated the strongest and most stable positive relationship with GDP growth, confirming the direct linkage between rising consumer incomes and stock market performance in consumption-driven economies like India. Given that household consumption accounts for roughly 60% of India's GDP, growth in disposable income, rural demand, and urbanization directly stimulates FMCG sales and profitability. The sector's low standard deviation across the study period underscores its defensive characteristics—it not only benefits from economic expansion but also provides stability during downturns. These findings support earlier work by Barberis et al. (2005), who emphasized that consumption-based industries are reliable indicators of economic well-being. For investors, FMCG stocks thus represent both a safe and growth-oriented asset class, closely aligned with long-term GDP trends.

In conclusion, this research confirms that India's stock market does not uniformly mirror the nation's economic growth trajectory. While GDP growth provides the broad context of economic performance, sector-specific forces—including global dependencies, regulatory frameworks, and consumption dynamics—play decisive roles in determining stock market outcomes. The heterogeneous responses observed across IT, Banking, FMCG, Auto, and Pharma sectors demonstrate that the Indian market is both globally integrated and domestically diverse, reflecting a complex interplay between macroeconomic and microeconomic factors.

Ultimately, this study contributes to a deeper understanding of the evolving GDP–stock market nexus in emerging economies. It reinforces the view that economic growth and financial market development are interrelated but not perfectly synchronized. Future research could extend this analysis by incorporating additional sectors, longer time frames, and other macroeconomic variables such as inflation, interest rates, and fiscal policy measures. As India continues to grow as a global economic power, recognizing these nuanced interdependencies will be vital for policymakers, investors, and scholars seeking to interpret the signals of growth and financial performance in an increasingly interconnected world.

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