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Research Article

# NIFTY PERFORMANCE VIS-À-VIS SECTORAL INDICES: A STUDY THROUGH MODERN PORTFOLIO MANAGEMENT LENS

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**Abstract**

*For every investor who wishes to make an investment in the stock market, contemporary investment management is considered as the guiding theory. The performance of the Indian stock market is expressed in the national stock exchange, which is represented by the NIFTY index and different industry indices. This article contrasts the Nifty's performance to those of its indexes in the context of portfolio management. Using their respective Compounded Annual Growth Rates (CAGR), this article aims to evaluate the relative performance of the NIFTY and its sectoral indices. In order to examine and reach logical conclusions, statistical tools have also been employed.*

*Keywords: NSE, Nifty, Nifty indices CAGR, Performance, financial services, Oil & gas, IT, Automobile, and FMCG.*

## Introduction

One of the top ten stock exchanges in Asia, the National Stock Exchange (NSE) is the largest in India in terms of the number of stocks traded. The NIFTY index, which is built using equities from an array of sectors and industries around the country, acts as a representation of the stock exchange. Other indexes that reflect the different industrial sectors, such as banking, IT, fast-moving consumer goods, oil and gas, and so on are also included. In an effort to fully understand portfolio management theory, that discusses investment concentration against diversification, this article examines the success of NIFTY and contrasts it with other sectoral indices. The indices' compound annual growth provides benchmark for assessing performance.

## Review of literature

In order to have a better understanding about portfolio management, stock market performance, and index performance, the following literatures has been studied and presented:

- **(Dr. J. Francis Mary, 2021)** Observed the performance of various companies forming the NIFTY Financial Services index and empirically proved that this index gave constant returns with a reduced risk volume in contrast to NIFTY during their research period.

- **(Pavan Kumar, 2022)** Noted that the returns of large-cap IT firms was consistent with the index, in contrast the mid-cap companies. Overall, the performance of NIFTY IT was significantly similar to NIFTY performance.
- **(B. Hari Prasad Rao, 2024)** Compared the performance of various NIFTY indices with NIFTY for ten years. They empirically pointed out that sectoral indices outperformed NIFTY in six out of ten years between 2014 and 2024.
- **(Kumarajay, 2025)** Studied the performance of the NIFTY 50 index post-pandemic, and stated that the index's return was considerably higher than in the pre-pandemic period and continued to maintain its pace.
- **(Rao, 2025)** Stated the NIFTY bank index and observed that the private sector banks in the index outperformed the public sector banks in major parameters of assessment.

## Objectives of the study

- To study the compounded annual growth rate (CAGR) recorded by NIFTY and its indices during the observation period.
- To compare the compounded annual growth rate (CAGR) recorded by NIFTY with the annual growth rate (CAGR) recorded by sectoral indices in NSE using appropriate statistical tools.

## Hypothesis of the study

- **(H0)** There is no significant difference between the CAGR of NIFTY and the CAGR of NIFTY indices.
- **(H1)** There is a significant difference between the CAGR of NIFTY and the CAGR of NIFTY indices.

## Methodology of the study

a. **Sources of data:** The study considers the Index points of the NIFTY and NIFTY indices extracted from the website of the National Stock Exchange.
b. **Period of the study:** The study has considered a period of 5 years from 2022 to 2026, and the year 2021 is considered the base year for calculating the CAGR of the indices.
c. **Plan of analysis:** The closing point of NIFTY and its indices on 1st April of every year is taken as the point for calculation. Additionally, the arithmetic mean, standard deviation, and covariance have been employed to measure these attributes. P values were determined using a two-tailed T-Test to compare the performance of NIFTY with the other indices. Wherein a P value below 0.2 points to a significant difference between the

performance of the indices, a P value between 0.2 and 0.5 shows low significance among the performance of the indices, and a P value of higher than 0.5 shows no significant difference in the performance of the indices.

d. **Limitations of the study:** The study has considered the performance of only five years. Additionally, the suggestions are based on the P values from the T-test.

## Profile of the Indices

- **NIFTY (NIFTY 50):** Also called the NIFTY 50, is the main index of the National Stock exchange located in Mumbai. It consists of fifty companies from various industries like financial services, oil & gas, IT, automobiles, FMCG, telecom, metal, pharma etc. The Index was launched in 1996, and the base year for the index is 1995.
- **NIFTY FIN SERVICE (FIN NIFTY):** It is an exclusive financial services index consisting of Banks, NBFCs, and related financial services companies. The Index includes HDFC, ICICI SBI, BAJAJ Finance, BSE etc. The Index was launched in 2011, and the base year for the index is 2004.
- **NIFTY OIL & GAS INDEX:** This index consists of the companies involved in mining, importing, refining, and distributing petroleum and allied products. The index contains a total of 15 companies, including Reliance industries, ONGC, BPCL IOC, etc. The Index was launched in 2020, and the base year for the index is 2005.
- **NIFTY IT:** India is one of the major exporters of IT and ITES services in the world. Therefore, a separate index has been created to represent these companies. It has a total of 10 stocks covering major IT companies like Infosys, TCS, HCL, Tech Mahindra, etc. The Index was introduced in the year 1998 with a base year of 1996.
- **NIFTY AUTO:** This index is a collection of major automobile companies of India involved in manufacturing automobiles and allied auto-parts. The index consists of 15 major automobile companies like Mahindra & Mahindra, Maruti Suzuki, Bajaj-Auto, etc. The index was formed 2011 and its base year is 2011.
- **NIFTY FMCG:** It is an index formed to represent the companies involved in manufacturing and selling fast-moving consumer goods in India. The index consists of 15 companies, including ITC, HUL, Nestle India, and TATA consumer products limited, etc. It was launched in the year 1999 with the base year of 1996.

## Results, Analysis and findings

**NIFTY:**

| Year | Nifty | CAGR | Mean CAGR | SD | CV |
|---|---|---|---|---|---|
| 2021 | 14867.4 | NA | | | |
| 2022 | 17670.5 | 18.85 | | | |
| 2023 | 17398.1 | 8.18 | | | |
| 2024 | 22462 | 14.75 | | | |
| 2025 | 23165.7 | 11.73 | | | |
| 2026 | 22679.4 | 8.81 | 12.46 | 4.42 | 0.35 |

(Source: NIFTY points extracted from NSE website), (Table compiled by author)

The table indicates that the NIFTY experienced a downfall in the year 2023, but its recovery from 2021 to 2022 was phenomenal. Nifty has given the highest CAGR of 18.85% with a risk level of 4.42 during the research period.

**Conclusion:** NIFTY has given a mean CAGR of 12.46 over a 5-year period

**NIFTY financial services**

| Year | Nifty Financial Services | CAGR | Mean CAGR | SD | CV |
|---|---|---|---|---|---|
| 2021 | 15909.25 | NA | | | |
| 2022 | 18277.2 | 14.88 | | | |
| 2023 | 18164.75 | 6.85 | | | |
| 2024 | 21198.4 | 10.04 | | | |
| 2025 | 24529.4 | 11.43 | | | |
| 2026 | 23981.8 | 8.55 | 10.35 | 3.05 | 0.29 |

(Source: NIFTY points extracted from NSE website), (Table compiled by author)

Nifty financial services has the given highest returns of 14.88% and a fluctuation level of 3.05% during the observation period.

**Conclusion:** NIFTY financial services recorded a mean return of 10.35% over 5 years.

**NIFTY versus NIFTY financial services**

| CAGR | 2022 | 2023 | 2024 | 2025 | 2026 | Mean | SD | CV | T-test | P Value | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nifty | 18.85 | 8.18 | 14.75 | 11.73 | 8.81 | 12.46 | 4.42 | 0.35 | | | |
| Financial services | 14.88 | 6.85 | 10.04 | 11.43 | 8.55 | 10.35 | 3.05 | 0.29 | 0.09 | 0.74 | No Sig. |

(Table compiled by author), (Significance of P value at 0.05)

An inquiry into the table points that Nifty has given higher returns than Nifty Financial services, but a comparison of both indices does not show a high difference in the returns given by them

**Conclusion:** Null hypothesis accepted.

**NIFTY Oil & Gas**

| Year | Nifty Oil & gas | CAGR | Mean CAGR | SD | CV |
|---|---|---|---|---|---|
| 2021 | 6283.58 | NA | | | |
| 2022 | 8150.05 | 29.70 | | | |
| 2023 | 7117.45 | 6.43 | | | |
| 2024 | 11500.30 | 22.32 | | | |
| 2025 | 10558.15 | 13.85 | | | |
| 2026 | 10929.05 | 11.71 | 16.80 | 9.21 | 0.55 |

(Source: NIFTY points extracted from NSE website), (Table compiled by author)

The Nifty oil and gas index recorded the highest CAGR of above 20% for two years during the study period with an associated deviation of 9.21.

**Conclusion:** The mean CAGR of Nifty oil and gas is 16.80% for 5 years

**NIFTY versus NIFTY Oil & Gas:**

| CAGR | 2022 | 2023 | 2024 | 2025 | 2026 | Mean | SD | CV | T-test | P Value | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nifty | 18.85 | 8.18 | 14.75 | 11.73 | 8.81 | 12.46 | 4.42 | 0.35 | | | |
| Nifty Oil & Gas | 29.70 | 6.43 | 22.32 | 13.85 | 11.71 | 16.80 | 9.21 | 0.55 | 0.12 | 0.91 | No Sig |

(Table compiled by author), (Significance of P value at 0.05)

The Nifty oil and gas has given higher returns when compared to Nifty. But due to the stability of returns given by Nifty, there is no noteworthy difference in returns given by both indices.

**Conclusion:** Null hypothesis accepted.

**NIFTY IT**

| Year | Nifty IT | CAGR | Mean CAGR | SD | CV |
|---|---|---|---|---|---|
| 2021 | 25980.40 | NA | | | |
| 2022 | 36343.40 | 39.89 | | | |
| 2023 | 28633.00 | 4.98 | | | |
| 2024 | 35042.80 | 10.49 | | | |
| 2025 | 35980.65 | 8.48 | | | |
| 2026 | 35980.15 | 6.73 | 14.11 | 14.55 | 1.03 |

(Source: NIFTY points extracted from NSE website), (Table compiled by author)

Nifty IT has given the highest CAGR of 39.89% in all categories but also faced a high deviation level of 14.55.

**Conclusion:** Nifty IT has recorded a mean CAGR of 14.11% during the period of study.

**NIFTY versus NIFTY IT**

| CAGR | 2022 | 2023 | 2024 | 2025 | 2026 | Mean | SD | CV | T-test | P Value | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nifty | 18.85 | 8.18 | 14.75 | 11.73 | 8.81 | 12.46 | 4.42 | 0.35 | | | |
| Nifty IT | 39.89 | 4.98 | 10.49 | 8.48 | 6.73 | 14.11 | 14.55 | 1.03 | 0.75 | 0.49 | Low Sig. |

(Table compiled by author), (Significance of P value at 0.05)

On a comparison between NIFTY and NIFTY IT, there is a low significant difference between the performances, which is due to the high deviation level of IT CAGR.

**Conclusion:** Null hypothesis rejected.

**NIFTY Auto**

| Year | Nifty Auto | CAGR | Mean CAGR | SD | CV |
|---|---|---|---|---|---|
| 2021 | 10022.60 | NA | | | |
| 2022 | 10676.85 | 6.53 | | | |
| 2023 | 12425.85 | 11.35 | | | |
| 2024 | 21385.25 | 28.74 | | | |
| 2025 | 21235.25 | 20.65 | | | |
| 2026 | 24238.85 | 19.32 | 17.32 | 8.63 | 0.50 |

(Source: NIFTY points extracted from NSE website), (Table compiled by author)

The highest CAGR given by Nifty Auto was 28.74%, and it faced a deviation level of 8.63 during the five years.

**Conclusion:** The mean CAGR of Nifty Auto is 17.32%

**NIFTY versus NIFTY Auto**

| CAGR | 2022 | 2023 | 2024 | 2025 | 2026 | Mean | SD | CV | T-test | P Value | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nifty | 18.85 | 8.18 | 14.75 | 11.73 | 8.81 | 12.46 | 4.42 | 0.35 | | | |
| Nifty Auto | 6.53 | 11.35 | 28.74 | 20.65 | 19.32 | 17.32 | 8.63 | 0.50 | 0.35 | 0.74 | No Sig. |

(Table compiled by author), (Significance of P value at 0.05)

On a comparison of NIFTY and NIFTY Auto, it is observed that even though the Auto segment has given higher returns, as a result of higher SD, its returns do not have a noticeable difference with Nifty.

**Conclusion:** Null hypothesis accepted.

**NIFTY FMCG**

| Year | Nifty FMCG | CAGR | Mean CAGR | SD | CV |
|---|---|---|---|---|---|
| 2021 | 34874.55 | NA | | | |
| 2022 | 37191.75 | 6.64 | | | |
| 2023 | 45738.45 | 14.52 | | | |
| 2024 | 53889.15 | 15.61 | | | |
| 2025 | 53101.75 | 11.08 | | | |
| 2026 | 46135.95 | 5.76 | 10.72 | 4.47 | 0.42 |

(Source: NIFTY points extracted from NSE website), (Table compiled by author)

NIFTY FMCG has given a highest return of 15.61 and experienced a fluctuation of 4.47 during the research period.

**Conclusion:** The mean returns of Nifty FMCG is 10.72.

**NIFTY versus NIFTY FMCG**

| CAGR | 2022 | 2023 | 2024 | 2025 | 2026 | Mean | SD | CV | T-test | P Value | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nifty | 18.85 | 8.18 | 14.75 | 11.73 | 8.81 | 12.46 | 4.42 | 0.35 | | | |
| Nifty FMCG | 6.64 | 14.52 | 15.60 | 11.08 | 5.76 | 10.72 | 4.47 | 0.42 | 0.60 | 0.58 | No Sig. |

(Table compiled by author), (Significance of P value at 0.05)

NIFTY FMCG has lower returns than NIFTY, but due to lower SD, it has no observed difference in returns with NIFTY.

**Conclusion:** Null hypothesis accepted

## Observations & suggestions

- Investors interested in safe returns can invest in bank NIFTY, which has the lowest SD, but the returns are lowest in the group.
- Oil and gas being an essential service, has a tendency to give better returns in India but is subject to variations; hence, risk-taking investors can seek an opportunity here.
- India is the highest exporter of IT services; therefore, a high return and high risk proposition is noted here.
- The automobile sector also has a high-risk, high-return nature, offering better returns as it is subject to seasonal fluctuations.
- FMCG sector is the most stable sector, as the products sold are essentials, and the sales are subject to minor fluctuations only.
- An investor desirous of high risk, high return can opt for IT, oil & gas sectors, and auto segments.
- Investors expecting stable and constant returns can choose financial services and FMCG sectors.

## Conclusion

It is a commonly tried and tested investment rule that risk and return are inversely related, so in order to receive stable returns, a mixture of investment in different sectors is always suggested. This shall always assure a minimum return with the lowest possible risk. Additionally, investors have to design a portfolio suitable to their risk appetite in order to make a desirable return.

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