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A Comparative Study of Performance of Equity Derivative in NSE & BSE Capital Markets

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Abstract

This study compares the performance of equity derivatives on the National Stock Exchange (NSE) & the Bombay Stock Exchange (BSE) during a ten-year period spanning 2014-2015 to 2023-2024. The study's aim is to determine which exchange has the most market efficiency in the equities derivatives segment by studying important parameters such as contract volume and turnover. After thoroughly reviewing the literature, it was found that most studies on the Indian derivatives market focus only until 2023, with no research on recent trends. Comparative studies with international markets are also lacking. The findings from the study show that the NSE consistently outperformed the BSE in terms of contract volume and overall turnover, indicating the NSE's market dominance over the BSE. Meanwhile, statistical measures such as mean, standard deviation, and coefficient of variation were used in the study to show that the NSE performance is more consistent and less volatile than the BSE. A paired samples t-test was used to test the hypothesis, which revealed no significant difference in turnover performance between the two exchanges, resulting in the acceptance of the null hypothesis. This study relies on publicly available NSE and BSE data, which may have accuracy and completeness limitations. It focuses on quantitative analysis, excluding qualitative factors like investor sentiment and external influences such as economic and regulatory changes. The study provides useful insights for investors and policymakers, aiding in the expansion and competitiveness of Indian financial markets while also setting the framework for future derivatives research.

Keywords: *Equity Derivatives, Market Efficiency, Trading Volume, Liquidity, NSE v/s BSE*

1. Introduction

India's stock derivatives market has changed dramatically since its start and is now an essential part of the nation's financial system. Financial products known as derivatives, whose value is generated from an underlying asset like stocks, indices, or commodities, are essential for managing risk, determining prices, and improving liquidity in the financial markets. This study explores the growth, composition, and effects of the Indian equities derivatives market, emphasizing significant turning points, industry players, and the legal environment. As pillars of the Indian financial landscape, the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE) have a significant impact on the economic trajectory of the nation. As the most important stock exchanges, they perform a number of essential roles like Companies are able to gain access to finance through these exchanges, which serve as key intermediaries for capital formation. It is possible for businesses to raise capital from a large number of investors through the process known as initial public offerings (IPOs), which can be used to finance business expansion, research and development, and overall growth. In addition

to this, they make it easier for corporations to trade bonds and other financial instruments, which gives them access to alternate sources of long-term funding.
Investment Opportunities Both exchanges provide a wide variety of investment opportunities for individuals and institutions to choose from. When investors engage in equity trading, they gain access to a diverse selection of companies operating in a variety of industries. This gives them the opportunity to construct diversified portfolios and potentially create considerable returns. Furthermore, the derivatives market, which includes futures and options contracts on stocks, indices, and commodities, provides sophisticated instruments for the control of risk, the enhancement of investment returns, and the speculating of potential outcomes. In addition, both exchanges offer access to debt instruments, such as government bonds and corporate bonds, as a means of catering to a wide range of investor risk profiles and investment horizons. Economic Growth wise The National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE) play a crucial role in stimulating economic growth by facilitating the efficient deployment of capital. They are responsible for the mobilisation of savings from individuals and institutions, which are then directed towards productive investments that fuel economic expansion, job creation, and general economic development. The trading activity that occurs continuously on these exchanges contributes to the determination of the fair value of securities, which is a reflection of the underlying economic conditions and the performance of the company. In addition to ensuring that resources are allocated effectively, this technique for price discovery also helps to foster an economy that is more dynamic and adaptable.

In spite of the considerable contributions they have made, both exchanges continue to struggle with difficulties. Continuous innovation is required in order to maintain competitiveness and satisfy the ever-evolving requirements of investors in order to keep up with the rapid speed of technological improvement. Both of these exchanges are required to modify and improve their products in order to remain competitive in the face of growing competition from global companies and the presence of new trading platforms. In order to ensure the long-term viability of these essential institutions, it is essential to uphold the integrity of the market, safeguard investors, and comply with the ever-changing regulatory requirements, the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE) are vital foundations of the Indian financial system. There is no denying the fact that they play a significant role in promoting economic growth, supporting the production of capital, and providing a variety of investment options. These exchanges will play an increasingly important role in determining the financial landscape of the nation as the Indian economy continues to undergo transformation. Both the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE) have the potential to continue to act as engines of economic growth and prosperity for India's economy if they embrace innovation, adapt to changing market dynamics, and prioritise investor safety.

2. Rationale of Study

The National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE) are two of India's foremost stock exchanges, significantly influencing the nation's financial framework. They function as essential mechanisms for capital accumulation, investment, and economic development.

Principal Functions of NSE and BSE:

Both exchanges offer a venue for companies to generate cash via Initial Public Offerings (IPOs). Going public enables organisations to tap into a broader investor base, facilitating capital acquisition for expansion, research and development, and various growth efforts. The NSE and BSE enable the trading of corporate bonds and other debt instruments, offering a vital

channel for corporations to secure long-term debt funding. Investment Opportunities: Equity Trading: Both exchanges provide a wide array of equity securities, enabling investors to allocate capital to various enterprises across multiple sectors. This presents prospects for wealth generation and portfolio diversification. Derivatives Trading: The NSE and BSE are prominent entities in the derivatives market, providing a variety of products including futures and options contracts on equities, indices, and commodities. These instruments furnish investors with mechanisms for risk hedging, market speculation, and return enhancement. Both exchanges provide the trading of government bonds, corporate bonds, and various other debt securities, presenting investors with a spectrum of fixed-income investment alternatives. Economic Growth: Mobilising Savings: The NSE and BSE facilitate the mobilisation of savings from individuals and institutions by offering an investment platform, thereby directing these funds into productive investments that stimulate economic growth. The continuous trading on these platforms facilitates the determination of the fair value of securities, mirroring the underlying economic conditions and corporate performance. This price discovery method is essential for effective resource allocation. The NSE and BSE have significantly contributed to the advancement of Indian capital markets by fostering innovation, improving market efficiency, and bolstering investor trust.

- **Particular Contributions of NSE:**

NSE has been a forerunner in embracing cutting-edge technology, implementing computerised trading systems that have transformed the trading environment in India. This has led to expedited trade execution, enhanced transparency, and diminished transaction costs. The NSE has established itself as a prominent entity in the derivatives market, with its principal index, the Nifty 50, serving as a standard for Indian equities. NSE provides a vast array of products, encompassing derivatives, financial instruments, and mutual funds, thereby offering investors a comprehensive investing platform beyond stocks.

- **Distinct Contributions of BSE:**

As the oldest stock exchange in Asia, the BSE possesses a profound history and plays a crucial role in the development of Indian financial markets. The Bombay Stock Exchange (BSE) encompasses a broader array of listed companies, including numerous small and medium-sized organisations (SMEs), hence offering investors a comprehensive spectrum of investment choices. BSE has diligently facilitated the development of SMEs by offering a platform for capital acquisition and business expansion. Both exchanges encounter escalating rivalry from international entities and the rise of novel trading platforms. The swift advancement of technology requires ongoing innovation to maintain competitiveness and address the changing demands of investors. Regulatory Compliance: Compliance with regulatory mandates and the preservation of market integrity are essential for the enduring viability of both exchanges. Augmenting investor knowledge and education is crucial for fostering educated investing decisions and safeguarding investors against potential threats.

3. Review of Literature

Yadav & Majumdar (2023) have studied in detail the role of financial derivatives in Indian derivatives market covering the varied derivative instruments, regulations, impact on the economy risk management and several others. It has incorporated percentage analysis, trend and CAGR to compare NSE and BSE derivative market for 17-year long period from 2005-2021. The data for the same was collected from NSE and BSE websites, financial reports,

books, and journals. The paper empirically discusses the qualitative aspect in terms of benefits provided by the NSE and BSE market and the quantitative aspect including the total turnover and number of contracts of future and options at both the exchanges.
The study finds that BSE shows a lower turnover and number of contracts as well in comparison to NSE. Though CAGR shows a positive trend BSE market witnessed random fluctuations in terms of gains. It even notices that NSE market has high volume of turnover and contracts but this is also not free from random fluctuations. At the same time CAGR has shown an excellent positive trend in NSE market.

Vinitha & Sureshbabu (2022) discussed the growth and development in current derivative market for equity derivates traded at NSE for a 7-year period beginning 2015-2016 to 2022-2023.It also discusses the concept of derivatives their types scope and origin. The empirical data for the same has been obtained from the origin itself i.e. NSE and BSE websites and financial reports. The study finds that NSE has shown a huge jump in turnover and number of contracts. Stock futures show better performance than index futures at NSE whereas index options are better performing than stock options as observed by the researcher. NSE has emerged as the market with highest number of contracts in the world derivative market for three years in a row.

Dr. Ravinder Jit Singh (2022) studied the growth of derivative market at NSE is studied in detail for the period April 2001 to March 2017.Four types of derivatives traded at the exchange i.e. indexed futures and options and stock futures and options are taken for comparative analysis using descriptive statistics. The data has been sourced from the website of NSE market. Results show all the derivatives have shown a positive growth and the highest volume is recorded in the index futures.

Komal Bhardwaj (2022) compared the growth of Options and Futures by evaluating the number of contracts and volume of trade in all the product segments for the period 2000-2001 to 2022-2023.The study concludes that options are traded more than futures reason being low investment and lower transaction cost. It guides the investors to enhance their earnings from the market.

Upputuri et al. (2021) analysed the behaviour of Indian Derivative market with reference to BSE and NSE. A comparative analysis is performed between the two stock exchanges. It has incorporated percentage analysis, trend and CAGR to compare NSE and BSE derivative market for 17-year long period from 2005-2021. It finds that BSE has seen a huge jump in the number of contracts since the year 2012, while the number of contracts at NSE show greater fluctuations. Overall, a positive graph in derivative market is observed in last 17 years. Even being the oldest stock exchange of the country BSE witnesses lesser number of contracts when compared to NSE, which has emerged as the largest exchange e with respect to volume of trade. CAGR shows a positive trend for both the market but with susceptible fluctuations. The author suggests to study the Indian derivative market in comparison to foreign derivative markets and to study Indian capital market with new technological advancements.

Sirisha & Kalyan (2021) discussed the nature and rise of derivatives market in India, which has assisted speculative traders to move from unorganised to organised market. The paper aims to assess how the market volatility impacts futures, options, and swaps. The study concludes that derivatives reduce the risk at stock market in many ways as the investor can use margin of safety, Options investor can use call or put options and others. It also highlights that options are more profitable than futures and swaps lower the risk. It finds the derivatives to be a good mix of risk and return. It suggests the government to provide tax incentives on the derivatives. The researcher even suggests that helplines and grievances cells shall be made available to the investors.

Rajveer Kaur (2021) presented the latest developments in the derivatives market and also brings out the prospects and challenges of the equity derivatives market for the years 200-2001 till 2021-2022.The empirical data for the same was sourced from websites and journals. The opportunities identified include wider range of instruments for foreign investors, mutual funds and FIIs with the launch of new products as options on index, options on individuals and covered warrants. The index derivative has come up as less volatile and less manipulative instrument in comparison to individual stock prices. While a few identified challenges are political pressure limits the market. Low per capital income, lack of infrastructure and lag in legal process has resulted in low growth of the market globally. Moreover, confusing regulations and speculative tag has kept investor confidence low.

Narender & Bandyopadhyay (2020) demonstrated a comprehensive summary of studies for effect of derivatives on volatility and price discovery in stock exchanges 1997-2020.Mostly the studies have adopted daily prices of indices while some have also incorporated monthly data and high frequency data also. GARCH family models were mostly taken to compare spot market and derivatives market. The researcher points out that studies on long term data should be conducted to provide an in-depth understanding of the subject. Global financial crisis or Covid 19 pandemic period should be studied with international sample. In Indian scenario, market study in period of demonetisation or advent of GST is also unexplored. Very few studies have been found in Indian context.

Durga & Podile (2020) explained the trading in equity derivatives market in India with respect to NSE and BSE. The empirical study has collected the data from the handbook released by SEBI in the year 2018.The selected years for the analysis is from 2010-2018.Paired sample test and t test has been used as a tool to compare NSE and BSE markets over the time. The study concludes that introduction of several derivative instruments like futures and options have a positive influence on the investors. Interestingly, the paper finds that NSE and BSE differ in the pattern of trade each of them has a unique way in which they function. However, the equity trade in terms of volume is higher at NSE in comparison to BSE.

Koorse & Kavitha (2015) explored the derivative market for 10 years spanning 2004-2014 and presents a comparison between NSE and BSE markets. The tools adopted for the same include trend analysis, percentage method and CAGR. The descriptive study has gathered its data from the official websites of NSE and BSE, journals, and relevant articles. Finding put NSE as a clear leader in terms of turnover and number of contracts fetched over the chosen period, at the same time CAGR reveal the highs and lows over the 10-year period in the NSE market. CAGR for BSE market shows more fluctuations in terms of turnover and no. of contracts when compared to NSE. The study suggests to educate the traders that would help the markets to grow further.

Shruthi & Suresh (2013) presents a comparative study of exchange traded derivatives in India at NSE and BSE and between cash market and market volatility. Findings show NSE is clearly ahead of BSE in this regard, lead of 97% for turnover and 75% for number of contracts. In the chosen period, 2000-2001 to 2011-2012 derivatives trading has taken over the cash segment in respect of turnover and number of contracts traded. Findings show that NSE as the third largest market in the year 2012 among top thirty exchanges in the world in respect of number of contracts traded. At the same time Nifty Options hold a second rank. The researcher points out that stronger regulations and comprehensive rules to safeguard investors' money would boost the market and help them reach the top position globally.

4. Research Gap

After thoroughly reviewing every review of literature in the aforementioned assessment of the literature, the researcher found that the majority of studies referring to the Indian derivatives

market concentrate on the period up to 2023; hence, no research was conducted based on recently identified trends. Not even research that compare to international markets have been done. An in-depth analysis of global derivatives markets could yield important information about India's economic potential and competitiveness. There is still much to learn about the long-term impacts of significant economic events on the Indian derivatives market, including the Global Financial Crisis, COVID-19, demonetization, and the introduction of the GST. The effects of these occurrences require a thorough investigation. The majority of research ignores the behavioural factors and investor mood that affect derivatives trading in favour of quantitative measures. Furthermore, new financial products like cryptocurrency and environmental derivatives have not yet been fully examined in the Indian context. Closing these gaps may result in a more thorough comprehension of the developing derivatives market in India.

5. Research Problem

After carrying out a thorough literature review, the researcher identified the primary research question as how the performance of equity derivatives on the NSE compared to that of BSE in the period 2014-2015 to 2023-2024.The differences in trading volume and turnover of equity derivatives between the NSE and the BSE. Also the attempt is to find as to which exchange demonstrates greater market efficiency in the equity derivatives segments.

6. Scope and Significance of the Study

The study provides critical insights for all investors making trading decisions, by analysing the performance of equities derivatives on the NSE and BSE. The policymakers can use the insights to help shape the regulatory reforms that improve market competitiveness. The study contributes to the growth of Indian financial markets by identifying strengths that can promote competition and innovation. Further, sector-specific information enables institutional investors optimize their investment allocations. Finally, this study lays the framework for future research, as cross-country comparisons and investigations into developing technologies in derivative markets. The study focuses on the equity derivatives markets of the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE). It aims to provide a detailed examination of equity derivatives' performance on both exchanges over a ten-year period, from 2014-2015 to 2023-2024. The study will examine the number of contracts and turnover at NSE and BSE. The findings will assist educational institutions, academics, and regulatory agencies by identifying ways to improve the performance and efficiency of equity derivatives on both exchanges.

7. Objectives of the study

1. To compare the performance of Equity Derivatives on the NSE & BSE

2. To assess the impact of market efficiency on investor behaviour and decision-making using a comparative performance analysis of equity derivatives on the NSE and BSE

8. Research Methodology

Research Design: The study employed quantitative analysis to examine the performance of equities derivatives on the NSE and BSE over a ten-year period. The research type is descriptive, with analytical.

Test Applied: To test the hypothesis, the researcher used the mean and standard deviation, coefficient of variation and subsequently Paired Samples Test is performed.

Study period: The study encompasses ten-year tenure, which involves secondary data retrieved from the NSE and BSE websites from 2014 to 2024 and from previous research studies, Books, websites, and newspaper.

Study focus: Equity Derivatives segment and overall NSE & BSE trading volume, liquidity, and index.

- **Hypothesis of the study**

H_0- There is no significant difference in performance of Equity derivatives in terms of turnover of the NSE & BSE.

H_a - There is a significant difference in performance of Equity derivatives in terms of turnover of the NSE & BSE.

9. Data analysis & Testing of Hypothesis

9.1. Comparison of NSE vs BSE based on trade volume, liquidity, and index

Table 1: Comparison of NSE vs BSE

Year	Aspect	NSE	BSE
2014-2015	Volume of trading	Higher than BSE	Lower than NSE
	Liquidity	High	Lesser than NSE
	Name of index	Nifty	Sensex
2015-2016	Volume of trading	Higher than BSE	Lower than NSE
	Liquidity	High	Lesser than NSE
	Name of index	Nifty	Sensex
2016-2017	Volume of trading	Higher than BSE	Lower than NSE
	Liquidity	High	Lesser than NSE
	Name of index	Nifty	Sensex
2017-2018	Volume of trading	Higher than BSE	Lower than NSE
	Liquidity	High	Lesser than NSE
	Name of index	Nifty	Sensex
018-2019	Volume of trading	Higher than BSE	Lower than NSE
	Liquidity	High	Lesser than NSE
	Name of index	Nifty	Sensex
2019-2020	Volume of trading	Higher than BSE	Lower than NSE
	Liquidity	High	Lesser than NSE
	Name of index	Nifty	Sensex
2020-2021	Volume of trading	Higher than BSE	Lower than NSE
	Liquidity	High	Lesser than NSE
	Name of index	Nifty	Sensex
2021-2022	Volume of trading	Higher than BSE	Lower than NSE
	Liquidity	High	Lesser than NSE
	Name of index	Nifty	Sensex
2022-2023	Volume of trading	Higher than BSE	Lower than NSE
	Liquidity	High	Lesser than NSE
	Name of index	Nifty	Sensex
2023-2024	Volume of trading	Higher than BSE	Lower than NSE
	Liquidity	High	Lesser than NSE
	Name of index	Nifty	Sensex

Source: Researcher Compilation through www.bseindia.com & www.nseindia.com websites.

Interpretation: The comparison of the equity derivatives segments of the NSE and BSE from 2014-2015 to 2023-2024 emphasizes NSE's consistent dominance over the BSE in terms of trading volume, liquidity, and market index coverage. Throughout these years, the NSE has regularly reported a higher amount of trading than the BSE, proving its stronger market activity. This reflects a stronger investor preference for NSE when dealing in equities derivatives, most likely because to its better liquidity, which allows for quicker and more efficient trading. The liquidity of the NSE has regularly outperformed that of the BSE, reinforcing its position as the more attractive platform for traders. Higher liquidity means that assets may be purchased and sold more easily without causing substantial price changes, giving investors greater stability and trust. Furthermore, the leading market indexes for both exchanges—the NSE's Nifty and the BSE's Sensex—highlight divergent market dynamics. Nifty, which represents the NSE, comprises 50 of the most actively traded equities, encouraging even more involvement in the derivatives area. The data from 2014-2015 to 2023-2024 show that the NSE has maintained a substantial dominance over the BSE in the equities options market. Its improved trading volume and liquidity, together with the importance of the Nifty index, reinforce its position as India's preferred exchange for equity derivatives, resulting in increased market engagement and stability.

9.2. Comparison of Equity derivatives segment of NSE & BSE

Table 2: Comparison of NSE vs BSE (Equity derivatives segment)

Years	BSE		NSE	
	Number of contracts	Total turnover	Number of contracts	Total turnover
2023-2024	11,30,07,65,956	80,28,93,251.16	95,20,09,44,717	7,99,27,67,152.43
2022-2023	37,25,85,103	3,43,15,313.02	41,76,57,69,582	3,82,23,26,468.06
2021-2022	67,05,21,024	6,60,78,327.85	18,66,01,40,821	1,69,52,33,134.47
2020-2021	33,81,60,958	3,50,60,169.07	8,53,48,60,876	64,36,03,951.51
2019-2020	26,81,883	2,62,268.62	5,12,53,21,877	34,45,32,891.81
2018-2019	31,167	2,250.11	3,16,71,83,212	23,75,90,973.69
2017-2018	44,701	3,262.66	1,91,38,78,548	16,49,84,859.05
2016-2017	1,23,538	6,939.29	1,39,97,46,129	9,43,70,301.61
2015-2016	10,62,09,394	44,75,008.32	2,09,86,10,395	6,48,25,834.30
2014-2015	50,54,78,869	2,03,62,741.42	1,83,70,41,131	5,56,06,453.39
Mean		9,63,45,953.15		1,51,15,84,202.03
Standard Deviation		46,18,68,947.79		4,75,10,62,479.53
Co-Efficient of Variance		4.79		3.14

Source: www.bseindia.com and www.nseindia.com

Interpretation: "The tables above 10.2. present the number of equity derivatives contracts and total turnover in BSE and NSE, respectively. For comparative analysis, various statistical tools have been applied as outlined below:" The comparison between the equity derivatives segments of the NSE and BSE from 2014-2015 to 2023-2024 reveals several key points:

Number of Contracts: The NSE consistently outperforms the BSE in terms of the number of contracts traded each year. In 2023-2024, NSE recorded 95.2 billion contracts compared to

BSE's 11.3 billion. This trend holds true throughout the period, with the NSE always having a significantly higher volume.

Total Turnover: The NSE also leads in total turnover each year, indicating that the value of contracts traded is much higher on the NSE compared to the BSE. In 2023-2024, the NSE's turnover was ₹7,99,27,67,152.43 crores, while the BSE's turnover was ₹80,28,93,251.16 crores. This indicates that while BSE has grown over time, NSE remains dominant in both contract numbers and turnover.

Statistical Analysis: The mean turnover for the BSE is ₹9,63,45,953.15 crores, while for the NSE, it is much higher at ₹1,51,15,84,202.03 crores. The standard deviation, which measures the variability, is also higher for NSE, indicating more significant fluctuations in turnover over the years. The Coefficient of Variation (CV) is higher for the BSE at 4.79, compared to 3.14 for the NSE. A lower CV for NSE suggests more consistency in its performance over the years, while BSE has seen more volatility.

Key Finding: The NSE has maintained a significant lead over the BSE in both the number of contracts and total turnover in the equity derivatives segment. The higher consistency in NSE's performance, as indicated by the lower Coefficient of Variation, further solidifies its dominant position in the market.

9.3. Testing of Hypothesis

H_{01}- There is no significant difference in performance of Equity derivatives in terms of turnover of the NSE & BSE.

H_{11}- There is a significant difference in performance of Equity derivatives in terms of turnover of the NSE & BSE.

Table 3: T-table

t Table

cum. prob	$t_{.50}$	$t_{.75}$	$t_{.80}$	$t_{.85}$	$t_{.90}$	$t_{.95}$	$t_{.975}$	$t_{.99}$	$t_{.995}$	$t_{.999}$	$t_{.9995}$
one tail	0.50	0.25	0.20	0.15	0.10	0.05	0.025	0.01	0.005	0.001	0.0005
two-tails	1.00	0.50	0.40	0.30	0.20	0.10	0.05	0.02	0.01	0.002	0.001
df											
1	0.000	1.000	1.376	1.963	3.078	6.314	12.71	31.82	63.66	318.31	636.62
2	0.000	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925	22.327	31.599
3	0.000	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.000	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.000	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.000	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.000	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.000	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.000	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	0.000	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.000	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.000	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.000	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.000	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.000	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.000	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.000	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.000	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	0.000	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.000	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.000	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.000	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.000	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.000	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.000	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.000	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.000	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.000	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.000	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.000	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.385	3.646
40	0.000	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.307	3.551
50	0.000	0.679	0.849	1.047	1.299	1.676	2.009	2.403	2.678	3.261	3.496
60	0.000	0.679	0.848	1.045	1.296	1.671	2.000	2.390	2.660	3.232	3.460
80	0.000	0.678	0.846	1.043	1.292	1.664	1.990	2.374	2.639	3.195	3.416
100	0.000	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.174	3.390
1000	0.000	0.675	0.842	1.037	1.282	1.646	1.962	2.330	2.581	3.098	3.300
z	0.000	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.090	3.291
	0%	50%	60%	70%	80%	90%	95%	98%	99%	99.8%	99.9%

(Sources: www.ttable.org)

Table 4: Performance of equity derivatives relative to the NSE and BSE

Paired Samples Test									
		Paired Differences					t	df	Significance Two-Sided p
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	BSE_Turnover - NSE_Turnover	-1415238248.88	2339391457.23	739780534.36	-3088738083.58	258261585.82	-1.913	9	.088

Sources: SPSS Software

Interpretation: Researcher used a t-test to check the hypothesis. The results show that the significance value (2-tailed) is 0.088. Since this value is above 0.05, it means there's no significant difference in the turnover performance of equity derivatives between NSE and BSE. So, we reject the alternate hypothesis and accept the null hypothesis.

11. Limitations of the study

Data Constraints: The research is contingent upon publicly accessible information from the NSE and BSE websites. This data may have limits in accuracy and completeness. The analysis does not clearly account for the influence of external factors, including economic conditions, regulatory changes, and geopolitical events, on the performance of both exchanges. Qualitative Factors: The examination predominantly emphasises quantitative measurements. It does not explore qualitative issues such as investor attitude, market psychology, and the competitive advantages of each exchange. This study offers significant insights into the comparative performance of the NSE and BSE inside the equity derivatives market. Further research is essential to overcome the constraints and achieve a more thorough comprehension of the elements influencing market dynamics.

12. Suggestions

Implementing initiatives to attract more market participants and increasing trading activity in order to improve liquidity is one of the BSE's recommendations for improving liquidity.
a. Product Innovation: In order to entice investors and improve market competitiveness, it is highly recommended to introduce unique derivative items.
b. Enhancements to Technology: Make investments in cutting-edge technological infrastructure in order to enhance the speed, efficiency, and assurance of trade. Continue to develop and introduce new derivative products in order to meet the ever-changing requirements of investors, as stated by the National Stock Exchange (NSE).
c. Putting an emphasis on investor education: In order to boost investor involvement and risk management, it is important to raise investor knowledge and educate them about equity derivatives.
d. Compliance with Regulations: Ensure that regulatory rules are adhered to in a stringent manner in order to preserve the integrity of the market and protect investors.
e. Those in charge of policy: Creating a more level playing field for both exchanges in order to encourage healthy competition is an important step in the right direction.
Implementing rules that stimulate the growth and development of the Indian derivatives market is an important step in the process of market development.

f. Investor Protection: In order to protect the interests of investors, strengthen the procedures that are in place to protect investors.

13.Conclusion

The examination of equity futures trading on the NSE and BSE from 2014 to 2025 indicates a distinct pre-eminence of the NSE. It constantly surpasses the BSE regarding trading volume, liquidity, and the quantity of contracts exchanged. The NSE's Nifty index, consisting of 50 highly traded equities, increases its attractiveness to investors. Although the BSE has seen growth, the NSE retains a substantial advantage in both contract volume and overall turnover. Statistical investigation verifies the NSE's superior performance characterised by reduced volatility and enhanced consistency.

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