A Study On Indian Financial Derivatives Market

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Abstract:

The value of financial derivatives comes from an underlying asset or benchmark. The Indian derivatives market has grown rapidly since 2000, offering a wide choice of derivative instruments to manage risk, speculate on price changes, and diversify portfolios. This essay discusses financial derivatives in the Indian derivatives market, covering their underlying assets, risk management applications, types of derivatives, market players, regulation, and economic impact. Indian derivatives market financial derivatives are thoroughly examined in this paper. The report evaluates the market, various derivatives instruments, and their impact on the Indian economy. Financial reports, scholarly journals, and government publications provide secondary data. Financial derivatives help market players hedge against price changes and reduce losses, according to the research. It examines derivative trading in equities, commodities, and currencies and market liquidity and depth. The report also analyses India's derivatives trading regulatory system for market integrity and transparency. Over the years, India has had great success with equity derivatives. The study examined the

derivative market over time and compared the NSE and BSE using percentage analysis, trend, and CAGR.

Keywords: Financial Derivatives, Indian Derivatives Market, Risk Management, Hedging, Market Liquidity, Regulatory Framework.

Introduction:

The Indian derivatives market has become an essential part of the country's overall financial system, and it plays a large part in risk management, the process of price discovery, and the diversification of portfolios. The value of an instrument known as a financial derivative is determined by its relationship to an underlying asset or benchmark, such as a stock index, a commodity price, a currency exchange rate, or an interest rate. Market players are granted the ability to control their exposure to a variety of market risks, hedge against price swings, and speculate on future price movements thanks to the existence of these instruments.

The requirement for effective risk management is one of the primary forces that has contributed to the expansion of financial derivatives in India. Participants in the market are able to hedge themselves against the risk of adverse price movements in the underlying asset by using derivatives. Businesses can reduce the risks associated with price variations in commodities, currency exchange rates, or interest rates by using derivatives to hedge their risk exposure. Because of their usefulness in risk management, derivatives have become an essential instrument for a wide range of businesses, including those in the industrial, agricultural, banking, and financial services sectors.

Retail investors and traders are also considered to be participants in the Indian derivatives market. Institutional investors, such as mutual funds, insurance firms, and foreign portfolio investors, are also included in this category of market participants. The market provides numerous opportunities for speculating on future events and making profits, which attracts a varied spectrum of participants with a variety of risk profiles and investing goals.

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grown rapidly since 2000, offering a wide choice of derivative instruments to manage risk, speculate on price changes, and diversify portfolios. This essay discusses financial derivatives in the Indian derivatives market, covering their underlying assets, risk management applications, types of derivatives, market players, regulation, and economic impact.

Indian financial derivatives are based on equities, commodities, currencies, interest rates, and indices. Financial derivatives are for risk management. Businesses, investors, and traders can hedge against asset price changes through derivatives.

Financial derivatives affect India's economy. They represent market expectations and knowledge, making asset price discovery efficient and transparent.

Evolution of the Indian Derivatives market:

The Indian derivatives market has evolved significantly over the years, transforming from a nascent and restricted market to one of the fastest-growing and vibrant segments of the Indian financial markets. Here is a brief overview of the evolution of the Indian derivatives market:

- Introduction of Index Futures (2000): The inception of the Indian derivatives market can be traced back to June 2000, when the National Stock Exchange (NSE) initiated the introduction of index futures contracts. The initial index futures contract was established with reference to the Nifty 50 index, enabling investors to engage in hedging and speculative activities related to the overall market fluctuations.
- Options Trading (2001): In June 2001, the National Stock Exchange (NSE) implemented the introduction of index options, thereby offering investors enhanced flexibility in risk management and position-taking strategies. At the first, exclusively European-style options were accessible; but, afterwards, Americanstyle options were also provided.
- Stock Futures (2001): Following the success of index futures, stock futures were introduced in November 2001. This allowed investors to trade and hedge individual stocks using derivatives.

- Single Stock Options (2002): In July 2002, NSE introduced single-stock options, expanding the derivatives market further and offering more choices to investors.
- Introduction of Commodity Derivatives (2003): The commodity derivatives market in India saw significant growth with the launch of commodity futures trading in November 2003. Initially, commodities like gold and silver were traded, and later, more commodities were added to the list.
- **Regulatory Changes and Reforms (2005-2008):** This period saw several regulatory changes and reforms aimed at improving transparency and risk management in the derivatives market. Margining systems were enhanced, and position limits were imposed to prevent excessive speculation.
- Currency Futures (2008): In August 2008, the Reserve Bank of India (RBI) allowed the trading of currency futures on recognized stock exchanges, leading to the growth of currency derivatives.
- Introduction of Interest Rate Futures (2010): In August 2010, NSE introduced interest rate futures, allowing market participants to hedge against interest rate risks.
- Market Expansion (2015 Onwards): The derivatives market continued to grow, with more products and participants entering the market. Regulatory changes and the introduction of new contracts, such as commodity options, further enhanced market depth.
- Integration with International Markets (2018): Indian stock exchanges began offering trading in international derivatives, allowing investors to access global markets.
- Regulatory Reforms (Ongoing): Regulatory bodies like SEBI (Securities and Exchange Board of India) continue to make changes and reforms to improve market integrity and investor protection. These include changes in margining systems, position limits, and risk management.
- COVID-19 Impact and Recovery (2020): The derivatives market, like all financial markets, was impacted by the COVID-19 pandemic in 2020.

However, it showed resilience and recovered swiftly as market participants adapted to the new normal.

 Sustained Growth (2021 Onwards): The Indian derivatives market is experiencing sustained growth, with increased retail participation, new product offerings, and a focus on technology-driven trading platforms.

Types of Derivatives:

Financial derivatives are based on an underlying asset or reference rate. They are used for risk management, price speculation, and portfolio management. The following major derivative categories exist:

• Forward Contracts: Two parties agree to acquire or sell an asset at a future date for a fixed price (forward price). The OTC trading of these customised contracts is typical.

• Futures Contracts: Standardised and exchanged on exchanges, similar to forward contracts. They require the buyer to buy and the seller to deliver the asset at a predetermined date and price. Futures contracts are liquid and utilised for hedging and speculating.

The holder of an options contract has the right but not the duty to buy or sell an underlying asset at a specific price (strike price) before a predetermined expiration date. Options are flexible and utilised for hedging and income production.

o Call Options: Allow holders to purchase the underlying asset.

o Put Options: Allow holders to sell the underlying asset.

• Swaps: Agreements between two parties to exchange cash flows or assets over a fixed period. Swaps most often involve:Interest rate swaps involve exchanging fixed and floating interest rates.Currency swaps involve exchanging one currency for another with the option to reverse it later. A commodity swap involves exchanging cash flows based on the price movement of a commodity.

• Options on Futures: Contracts with a futures asset as the underlying asset. They offer extra risk-management and speculating strategies to help traders enter futures markets safely.

• Credit Default Swaps (CDS): CDS are credit derivatives that insure against bond or loan default. CDS buyers pay periodic premiums to sellers and receive default compensation.

Equity derivatives are based on stocks or stock indices. Common equity derivatives are:

o Stock Index Futures: Contracts based on stock market indices like the S&P 500.

o Single Stock Futures: Contracts for specific equities.Stock options are contracts based on individual equities or stock indices.

Commodity derivatives are connected to the price of tangible commodities including oil, gold, agricultural products, and metals. Common commodity derivatives:

o Commodity Futures: Contracts based on commodity prices.

o Commodity Options: Contracts based on commodity prices.

• Interest rate derivatives manage interest rate risk by being related to interest rates. Common types:

- Interest rate futures are contracts based on interest rates.
- Interest Rate Options: Interest rate-related options contracts.

• Weather Derivatives: Protect against financial losses from weather conditions like temperature or precipitation changes.

• Property Derivatives: Allow investors to speculate or hedge against fluctuations in property values using derivatives tied to property prices or indices.

Due to the popularity of cryptocurrencies like Bitcoin, derivative products like Bitcoin futures and options have evolved to provide exposure to the market.

Derivatives offer many risk management and investment strategies. Investors and traders must understand and use their goods carefully because they are complex and risky. **Trading Mechanisms in Indian Derivatives Market:**

The Indian derivatives market operates using various trading mechanisms and platforms. These mechanisms are designed to facilitate the trading of derivative instruments such as futures and options contracts. The following are some of the key trading mechanisms in the Indian derivatives market:

- Electronic Trading Platforms: Electronic trading is the primary mode of trading in the Indian derivatives market. The two major stock exchanges in India, the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE), provide electronic trading platforms for derivatives trading. The trading systems are fully automated and offer high-speed execution of orders.
- Order Matching System: The Indian derivatives market employs an order matching system. Buyers and sellers place their orders electronically, specifying the price and quantity at which they are willing to trade. The exchange's trading system matches buy and sell orders based on price and time priority, leading to transparent and fair price discovery.
- **T+1 Settlement:** The Indian derivatives market typically follows a T+1 settlement cycle. This means that trades executed on a trading day are settled on the next trading day. Settlement involves the transfer of funds and securities between the trading members and clearing corporation.
- Market Orders and Limit Orders: Traders can place different types of orders in the derivatives market. Market orders are executed at the current market price, whereas limit orders are executed at a predetermined price or a more favourable price if available. These various order forms enable traders to exert control over the specific price at which their orders are executed.
- Price Bands and Circuit Filters: To prevent extreme price volatility, the Indian derivatives market employs price bands and circuit filters. These are predetermined price limits that restrict the trading of a security or contract within a specified range. If a security breaches these limits, trading is temporarily halted.
- **Continuous Trading:** The derivatives market in India generally operates through continuous trading sessions. The trading hours for equity derivatives are

typically from 9:00 AM to 3:30 PM on regular trading days. However, there may be special trading sessions for certain contracts or during extended market hours.

- Market Surveillance: Regulatory authorities, such as the Securities and Exchange Board of India (SEBI), closely monitor the derivatives market for any irregularities, market manipulation, or insider trading. Surveillance mechanisms are in place to maintain market integrity.
- Derivatives Expiry: Indian derivatives contracts, especially equity derivatives like futures and options on individual stocks and indices, have monthly and quarterly expiry dates. Expiry dates are predetermined and widely known, and trading strategies often revolve around these dates.
- Position Limits: Regulatory authorities impose position limits on traders to prevent excessive concentration of positions. These limits restrict the maximum number of contracts or shares a trader or entity can hold in a particular derivative.
- Risk Management: Clearing corporations play a crucial role in risk management. They ensure the financial integrity of the market by acting as intermediaries between buyers and sellers, guaranteeing settlement, and implementing margining and collateral requirements.

Objectives of the Study:

• To understand the development of the Indian derivatives industry.

• To assess the growth rate and trend of the Indian derivatives industry.

• To Compare the performance of BSE and NSE derivative markets.

Methodology:

A descriptive research design was employed for the investigation that was carried out. This means that the study provides a description of the current condition of affairs. For the past 17 years, secondary data has been gathered from the websites of BSE and NSE, as well as from other websites, books, journals, and other materials. An examination of the secondary data has been carried out,

first on a historical basis, and then on a quantitative one. The entirety of the data that was provided has been incorporated into the study, therefore there was no need to select a sample for it. In the course of the research, tools such as percentage analysis, trend analysis, and the Compound Annual Growth Rate (CAGR) were utilised.

Data Analysis:

In the qualitative analysis of the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE), the primary focus is on presenting a descriptive account of the benefits offered by each exchange, while only providing limited insights into the quantitative aspects of each exchange's operations. The quantitative research that was carried out for the purpose of this study was predicated on the assessment of the total number of contracts as well as the whole turnover of futures and options that were traded on the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE).

Beginning in 2012, BSE has been on an upward trajectory in terms of the overall number of contracts it has gained over the course of the previous 17 years. Prior to this period, there was a significant discrepancy between the amount of contracts obtained and the amount received throughout this period. In 2005, a total of 531 719 contracts were received by the organisation. There was a significant drop in the number of contracts obtained from 2006 to 2011, with only 5,623 contracts being received in 2011. Nevertheless, there was a dramatic surge in the number of contracts in 2012, and the total reached 32,222,825. This growing trend carried over into 2013, resulting in a considerable increase to a total of 262,440,691 contracts received. The number of contracts reached a total of 301,942,441 by the end of the year 2013, representing a substantial rise from the previous year.

The volume of transactions carried out on the Bombay Stock Exchange (BSE) has followed a generally positive trend throughout the course of the past 17 years, with a discernible rise being seen from the year 2012 onward. Before this time period, there was a noticeably less amount of business won by contractual agreements. According to the collected information, the value of the turnover in 2006 was 8.78, which is the lowest figure among the 17 years that have been taken into consideration. Since 2012, there has been a discernible rise in the amount of money that has been turned over, which has already reached a total of 808,475.99. After that, in 2014, the revenue reached its apex by reaching a total of 9,219,434.32 dollars.

BSE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
No of contra cts	531,719	203	1,781,22 0	7,453,3 71	496,50 2	9,028	5,623	32,222, 825	262,440 ,691	301,942, 441
		- 100%	87%	31%	-93%	-98%	-38%	57%	71%	15%
	2015	2016	2017	2018	2019	2020	2021			
	309176 043	420256 542	4247042 5202	690233 859	1052452 157	944517 559	634953 395			
	2%	36%	12%	47%	52%	-10%	-33%			

CAGR:0.51706

BSE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total										
turno. ver	16,112. 32	8.78	59,006. 62	242,30 8.41	11,774. 83	234.06	154.33	808,47 5.99	7,163,57 6.66	9,219,43 4.32
		-100%	67%	31%	-95%	-98%	-34%	52%	78%	29%
	2015	2016	2017	2018	2019	2020	2021			
	190854 346	276392 6.13	317164 7.94	443643 0.43	735227 4.40	668327 3.75	471840 8.05			
	19%	-98%	14%	40%	66	-9%	-29%			

CAGR: 0.39667

There was an upward trend in the number of contracts awarded to NSE up until the fiscal year 2011-2012, after which there was a reduction in the number of contracts awarded, followed by a later comeback in the number of contracts awarded. The total number of contracts that were documented for the year 2005 was 77,017,185. Following that, there was a constant increase trend in the number of contracts between the years 2006 and 2012, with the greatest number of contracts received in the year 2012 standing at 1,205,045,464. Despite this, the total number of contracts signed in 2013 was 1,131,467,418. This is a decline from the previous year. After this drop, there was another increase in contract numbers, which reached 1,284,406,775 altogether. In general, it is possible to see that the pattern has been characterised by variations ever since the 2011-2012 time period.

SL. NO.	Year	No. of contracts	Turnover		
			Rs in Crores		
1	2004-05	77,017,185.00	2,546,982.00		
2	2005-06	157,619,271.00	4,824,174.00		
3	2006-07	216,883,573.00	7,356,242.00		
4	2007-08	425,013,200.00	13,090,477.93		
5	2008-09	657,390,497.00	11,010,482.17		
6	2009-10	679,293,922.00	17,663,664.69		
7	2010-11	1,034,212,062.00	29,248,221.20		
8	2011-12	1,205,045,464.00	31,349,731.91		
9	2012-13	1,131,467,418.00	31,533,004.21		
10	2013-14	1,284,406,775.00	38,209,214.81		
11	2014-15	1837041131.00	55606453.39		
12	2015-16	2098610395.00	64825834.30		
13	2016-17	1399746129.00	94370301.61		

It is also plausible to interpret the data in such a way as to suggest that the total turnover of the National Stock Exchange (NSE) exhibited a rising trend between the years 2005 and 2008, with respective values of 2,546,982.00, 4,824,174.00, 7,356,242.00, and 13,090,477.93. Nonetheless, in 2009, there was an unexpected dip in revenue, and the total dropped to 11,010,482.17. After that, from 2010 to 2014, there was another increase in the amount of turnover. 2014 was the year that saw the most turnover throughout this time period, reaching a total of 38,209,214.81. The volume of trade that occurs on the

National Stock Exchange (NSE) follows a discernible pattern of cyclical ups and downs.

It has been determined that the compound annual growth rate (CAGR) for the total number of contracts is 37%. On the other hand, it is essential to keep in mind that the standard annual growth rate between the years 2005 and 2014 displayed a variety of erratic and unpredictable patterns. The growth rate skyrocketed to its highest point of 105% in the year 2006. On the other hand, the growth rate dropped significantly to 38% in the second year of 2007, which followed the previous year. There was a discernible rise in the average annual growth rate seen in the year 2008, reaching 96%. This increase was observed. In 2010, there was a significant drop in the average annual growth rate, with the percentage hitting a low point of 3%. This was the lowest point at which it had ever been. There was a huge increase to 52% in the year 2011, which was then immediately followed by a decrease to 17% in the subsequent year. The rate of negative growth in 2013 was -6%, and it was recorded for the year 2013. The annual growth rate had been recorded at an average of 14% in the year 2014. While there was a considerable gain in 2015 with a growth rate of 43% per annum, there was noted to be a significant level of instability in 2017.

Between the years 2005 and 2014, the total revenue increased at a pace equivalent to a compound annual growth rate (CAGR) of 35%. On the other hand, it is essential to keep in mind that the annual growth rate on average has displayed a pattern of fluctuations and abnormalities. In 2006, the average annual growth rate was recorded at 89%. This was a record-setting year. In 2007, there was a decline in the percentage, which resulted in a figure that was 52%. The value of the percentage reached a new high of 78% in the year 2008, indicating yet another year of rising numbers. The annual growth rate saw a substantial slowdown in 2009, equal to 16% less increase than the previous year. After a substantial increase in the year 2010, there has been noted an average yearly growth rate of over 60%. This growth rate has been seen. A significant drop was seen in the years 2012 and 2013, equal to 7% and 1%, respectively, in comparison to the previous year. In the year 2014, the percentage was noted as being 21%. In contrast,

there was growth in the year 2018, with an average yearly growth rate of 75% being exhibited by the phenomenon. As a direct result of this, there was a decrease in the year 2019 that was equal to 44%.

Findings:

Based to the findings of the study, the global derivatives market has been on an obvious growth trajectory throughout the course of the last 17 years. Both the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE) have been instrumental in India's derivative market's expansion and development over the past several decades, playing a crucial role in both of these processes. The Bombay Stock Exchange (BSE), which is the oldest and most established stock exchange in India, has seen shifts in both the number of contracts and the overall turnover over the course of the past 17 years. These shifts have occurred despite the fact that the BSE is India's largest stock market. When compared to the data obtained from the NSE, both the total turnover and the number of contracts have much lower levels. The compound annual growth rate (CAGR) for both the number of contracts and the turnover demonstrates a positive overall trend. This is the case regardless of whatever metric is being considered. However, the annual growth rate has shown erratic variations, with considerable gains in some years followed by dramatic drops in other years. These fluctuations have been typified by erratic fluctuations.

The National Stock Exchange (NSE) has been consistently successful in keeping its position as the top exchange in terms of trade volume throughout the course of the past 17 years and continues to be successful in doing so at the present time. The data presented above illustrates a trend that has persisted over the course of the past 17 years, and that pattern consists of high contract numbers and overall turnover. It is important to note that throughout the course of the past 17 years, the average annual growth rate has showed a pattern of fluctuation in both the number of contracts and turnover. This trend has been worth noticing. Although the overall compound annual growth rate (CAGR) has been judged to be excellent, the annual growth has showed an upward tendency in certain years and a decreasing trend in others, showing an inconsistent growth

trajectory. This is despite the fact that the CAGR has been considered to be productive.

Conclusion:

India has developed into a highly rich emerging nation, and its market for exchange-traded derivatives is thriving as a result of this. This statement highlights the important qualities of the modern improvements in India's securities markets, which include widespread market accessibility, anonymous electronic trading, and a predominant retail market. These are all aspects that are brought to light by this statement. The idea that the stock derivatives market has a substantial impact on the procedure of price discovery is gaining more and more traction among investors.

Both the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE) have been instrumental in fostering the growth of the derivatives market through their respective positions as exchanges. Nevertheless, there is room for enhancement in the general functionality of both exchanges. Because there is always an element of risk involved with trading derivatives, it is clear that a sizeable fraction of traders have a healthy amount of trepidation about participating in this type of trading. Nevertheless, it is essential to recognise that: Despite the fact that it is generally accepted that derivatives are associated with a high level of risk, a large number of people participate in derivative trading solely with the objective of generating huge returns for themselves. It would be a wonderful way to bring this whole thing to a close by including the following quotation: "The inherent nature of derivatives does not possess malevolent qualities." As long as trading, accounting, and financing of these instruments are carried out in an appropriate manner, comparable to how these activities are carried out with regard to other financial instruments, there is no inherent malevolence associated with these instruments.

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