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# Impact of FIIS and DIIS investment on derivative trading in India: An appraisal of existing literature

**Dr. Manjinder Kaur and Jaspinder Singh**

## Abstract

Over the past three decades, the value of the derivatives market within the financial market has been extensively recognized. In India FIIs have been allowed to invest in all the listed securities traded in Indian Capital market initially in September 1992 through portfolio investments. From September 14, 1992 with suitable precincts and then bit by bit Indian Stock Markets have reached new heights and became more volatile making the researches work in this aspect of establishing the association between FIIs and Stock Market volatility. The present study focuses on review of selected studies to analyse FIIs and DIIs investment impact on derivatives market in India. This review of literature explained derivative trading and established the link between security prices both spot prices and derivative prices prevailing in stock market and FIIs trading strategies. 11 articles have been reviewed which represent contributions of new ideas and reinvestigation of prior studies about the FIIs and derivatives trading. In India, financial institutions have not been heavy users of exchange-traded derivatives so far but FIIs and DIIs have shown their presence in derivative market.

**Keywords:** Foreign Institutional Investors (FIIs), Domestic Institutional Investors (DIIs), derivatives

## Introduction

The development of the derivatives trading in security market has long been an interesting matter among researchers, policy makers, and financial agencies. Derivatives market arms the investors with effective apparatus that assists the sharing of price risks for commodities traded on the market and thereby helping producers manage the price volatility (Vo *et al.*, 2019). Financial derivatives market plays a pivotal role in the capital market development. An efficient financial derivatives market will provide investors with derivative instruments as tools in hedging the price volatility risk. Investing in derivatives requires less amount of capital than that needed for purchase of an underlying asset. Moreover, news and information is reflected more promptly in the prices of derivatives in comparison to that of the underlying asset prices which in turn helps the underlying assets market to have more valuable information for healthier decision making (Sittisawad & Sukcharoensin, 2018) <sup>[9]</sup>. The purpose of this paper to review the available literature to make the investors aware of the role of derivatives instruments and institutional investors like Foreign Institutional Investors' (FIIs) and Domestic Institutional Investors' (DIIs) in Indian.

Derivatives are financial instruments whose value is 'derived' from other underlying products or securities (Kumar, 2014) <sup>[6]</sup>. The contract of derivatives are entered between two or more parties and the value is fixed on an agreed underlying financial asset or securities (Bisht & Giri, 2013) <sup>[2]</sup>. Derivatives are risk managing tool that help in effective management of risk by various stakeholders. Derivatives give a chance to shift risk, from those who are risk averse to those who are risk takers (Loomba, 2012) <sup>[7]</sup>. Basic underlying securities include market indices, bonds, currencies, interest rates, commodities and stocks. Derivative products for instance stock futures, index options, index futures, and stock options have become important products of price discovery mechanism, diversification and risk management in stock markets all over the world in recent times (He & Shen, 2014) <sup>[5]</sup>. Since the introduction of derivative products in the Indian capital market in 2000 a wide range of instruments are now available to investors.

Section 2(ac) of Securities Contract Regulation Act (SCRA) 1956 defines Derivative as:

1. "A security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security;
2. "A contract which derives its value from the prices or index of prices of underlying securities".

### Underlying Assets in Derivatives Contract are

1. Metals like gold and silver
2. Commodities like grain (wheat), coffee beans, diff juice
3. Foreign exchange rates or currencies
4. Bonds of different types
5. Shares and share warrants of companies

### Various Participants in Derivatives Market comprise of the following parties

1. **Hedgers:** One who make use of derivatives markets to reduce or eradicate the risk related with price fluctuation of an asset. This class of participants in derivatives market is the most common.

2. **Speculators:** One who execute *futures* and *options* contracts to get additional leverage by means of betting on future movements in the price of an asset. They can increase both the potential gains and potential losses through derivatives use in a speculative venture.

3. **Arbitrageurs:** Their actions are guided by the desire to take advantage of a difference between prices of similar assets or contra assets in different markets.

Derivatives may be traded for various reasons. A derivative instrument assists a trader to hedge some future risk arising out of price volatility by taking positions in derivatives markets that counteract existing losses in the underlying assets (spot market prices) being traded.

### Discussion

The review of literature provides the background for the future study. In fact, the literature review is a backbone of any study which provides the information to researcher regarding the work done in particular field, the methodology used, objectives of the study, limitations of the study etc. Plethora of studies is available worldwide regarding the derivatives trading in different markets. Derivatives have been an intensifying and contentious feature of the financial markets since the late 1980s. They are used by a wide range of manufacturers and investors to manage risk. The major objective of this literature review article is to understand the concept and mechanism of Derivatives and Foreign institutional investors (FIIs). FIIs trading in derivatives contribute a major share in total trades in derivatives in India and this evidently indicates that FIIs hold a significant proportion in derivatives market in India (Bisht & Giri, 2013) [2]. Chakrabarti (2001) [3] examine the nature and causes of FII flows to India and observed that FII flows are extremely contemporaneous with returns of BSE Sensex and Nifty NSE index returns and the index returns explain significant variation in FII flows. It has been observed that the equity return has a significant and positive impact on the FIIs and stock returns and FIIs investment, that is, buy and sell strategies are strongly correlated in India. Most of the studies highlight that FII flows are 'more of an effect of market returns than their cause'.

Kumar (2014) [6] analysed the effects of FII inflows on the Indian stock market over the period 2010 to 2014 and reported bi-direction causality from FII flows to Sensex and vice versa, but trading behaviour of FIIs and DIIs in Indian stock market is different and opposite like FIIs has positive return while DIIs has negative (Arora, 2016) [1]. Thus, significant difference exists in the investment patterns and performance of DIIs and FIIs in India (Neupane *et al.*, 2016) [8]. FIIs also participate more heavily in various IPOs than DIIs but quality wise both are same except that FIIs reduce their holding more significantly than DIIs after IPOs (Neupane *et al.*, 2016) [8]. FIIs are strong forces driving the Indian Stock Market which is evident from top twenty-five crashes at BSE SENSEX as FIIs were the net sellers in all the leading market crashes (Loomba, 2012) [7]. Che (2018) [4] investigate how different types of investors affect stock return volatility and results show that foreign investors increase stock return volatility while Individual investors dampen stock return volatility, so foreign institutional investors have a weaker negative impact on return volatility than individual investors. Vo *et al.* (2019) investigated the dynamic relationship between the derivatives market and economic development in four larger economies (ICJU) and Sittisawad and Sukcharoensin (2018) [9] investigated the success factors of financial derivatives markets in Asia and results demonstrated that the price volatility of an underlying asset has positive impact on success of derivatives and The development of stock indices derivatives can enhance trading volumes which leads to success of financial derivatives market. Derivative market in China has significantly negative impact on economic growth in short term and vice versa in long run, but in India, Japan, US results revealed no long run impact on economic growth but positive in the short run so impact of derivatives market effect the economic growths differently in different countries. Stock market information plays vital role and more particularly the derivatives. He and Shen (2014) [5] scrutinised the impact of FIIs on the informational efficiency of stock prices in local market and results show that significant association between foreign investors & stock price efficiency while effect of domestic institutional investors is quite controlled. Foreign investors smooth the progress of the incorporation of global information into local stock prices in emerging market economies. Derivatives has strong relationship with their underlying index and guide the stock market. Stoll and Whaley (1990) [10] estimated the empirical relation between index futures returns and the return of the underlying index and found that return in futures and stock market appear to be contemporaneous so future market lead the stock market. The Foreign Institutional Investors (FIIs) have emerged as noteworthy players in the Indian stock market and their growing contribution further adds as an important feature to the development of Indian capital market (Loomba, 2012) [7].

**Table 1:** Derivatives Trajectory in India

Date	Progress
14 December 1995	NSE asked SEBI for permission to trade index futures.
18 November 1996	SEBI setup L.C. Gupta Committee to draft a policy framework for index futures.
11 May 1998	L.C. Gupta Committee submitted report.
7 July 1999	RBI gave permission for OTC forward rate agreements (FRAs) and interest rate swaps
24 May 2000	SIMEX chose Nifty for trading futures and options on an Indian index.
25 May 2000	SEBI gave permission to NSE and BSE to do index future trading.
9 June 2000	Trading of BSE Sensex futures commenced at BSE.
12 June 2000	Trading of NIFTY futures commenced at NSE.
31 August 2000	Trading of futures and options on Nifty to commenced at SIMEX.
June 2001	Trading of Equity Index Options at NSE
July 2001	Trading of Stock Options at NSE
November 9, 2002	Trading of Single Stock futures at BSE
June 2003	Trading of Interest Rate Futures at NSE
September 13, 2004	Weekly Options at BSE
January 1, 2008	Trading of Chhota (Mini) Sensex at BSE
January 1, 2008	Trading of Mini Index Futures & Options at NSE
August 29, 2008	Trading of Currency Futures at NSE
October 2, 2008	Trading of Currency Futures at BSE.

**Source:** Compiled from official websites of BSE and NSE.

#### Literature Review: Tabular Literature review of studies in Indian and International context

There are numerous studies done worldwide regarding the derivatives trading in different markets.

S. No.	Author(s)	Country	Objectives	Data / Source/Period	Variables	Analysis technique	Results	Conclusion
1	Vo <i>et al.</i> (2019)	Vietnam	To investigate the dynamic relationship between the derivatives market and economic development in four I economies	Secondary/ 1998Q1 to 2017Q4	DV&IV=Economic growth, volatility of real growth, CV=derivatives market, economic growth, interest rate and trade openness	VAR VECM DOLS FMOLS DFGLS	Interest rate (*) (+) Trade openness (*) (+) Economic growth (*) (+) Derivative market (*) (+/-)	Derivative market in China has significantly negative impact on economic growth in short term, but vice versa in long run. In India, Japan, US results reveal no long run impact on economic growth, but positive in the short run.
2	Sittisawa and Sukcharoe-nsin (2018) <sup>[9]</sup>	Thailand	To investigate the success factors of financial derivatives markets in Asia.	Secondary/da-tastream and Thomson Reuter Eikon /2007 to 2014	DV= trading volume of financial derivatives. IV= size of underlying asset, return volatility of asset, liquidity, contract size, Tick size and age of financial derivative	Pooled OLS Hausman test	size of underlying asset (*) (+), return volatility of asset (*) (+), liquidity (*) (+), contract size (*) (+), Tick size (*) (-) age of financial derivative (NS)	The development of stock indices derivatives can enhance trading volumes which leads to success of financial derivatives market. The price volatility of an underlying asset has positive impact on success of derivatives.
S. No.	Author(s)	Country	Objectives	Data / Source/Period	Variables	Analysis technique	Results	Conclusion
3	Che (2018) <sup>[4]</sup>	Norway	To investigate how different	Secondary/Oslo Stock	DV=Return volatility in i month.	Fama &	Individual investors (*) (-).	Foreign investors increase stock return

			types of investors affect stock return volatility.	exchange (OSE), Oslo Bors Information (BOI)/ December 1992 to September 2007	IV= Individual investors, financial investors, foreign investors. CV= Free float ratio.	MacBeth regression	financial investors (*)(-), foreign investors (*) (+)	volatility Individual investors dampen stock return volatility Financial institutional investors have a weaker negative impact on return volatility than individual investors.
4	Arora (2016)	India	To investigate the trading behaviour of FIIs & DIIs in the Indian stock market and its relation	Secondary/BSE SENSEX, SEBI/April 16, 2007 to December 31, 2013	DV= Equity flows, Future stock returns. IV= FIIs net investment, DIIs net investment.	VAR ADF Granger causality test OLS	FIIs net investment (*) (+/-), DIIs net investment (*) (-/+)	Results indicate that their investment strategies differ. The opposite investment behaviour of FIIs & DIIs. FIIs investment and stock return is positive where DIIs are negative in investment and stock return.
<b>S. No.</b>	<b>Author(s)</b>	<b>Country</b>	<b>Objectives</b>	<b>Data / Source/Period</b>	<b>Variables</b>	<b>Analysis technique</b>	<b>Results</b>	<b>Conclusion</b>
5	Neupane <i>et al.</i> (2016)	Australia	1 Determinant of DIIs & FIIs subscription at time of IPOs 2 examine the impact of the quality of IPOs 3 examine the flipping patterns of DIIs and FIIs.	Secondary/BSE, NSE/ January 2004 to December 2013.	DV= institutional investors subscription. IV= market capitalization, firm age, leverage, market return market volatility	Pooled OLS regression	Market capitalization (*) (+) Firm age (NS) Leverage (NS) market return (*) (+) market volatility (*) (-)	FIIs subscribe IPOs more heavily than DIIs. Both DIIs & FIIs have positive relation toward quality of IPOs. FIIs reduce their holding significantly more than DIIs.
6	Kumar (2014) <sup>[6]</sup>	India	To examines the impact of daily FIIs investment on the Indian market.	Secondary/NIFTY and SGX Nifty futures/ January 2010 to January 2014	DV= Net FIIs Inflow. IV= SGX Nifty futures, FII transactions in stock index futures	VAR ADF	SGX Nifty futures (*) FII transactions in stock index futures (*)	Nifty index futures are statistically influenced by FIIs investment. Nifty index movement trigger FII investment in index future market.
7	He and Shen (2014) <sup>[5]</sup>	Australia	To investigate the impact of FIIs on the informational efficiency of stock prices in local market.	Secondary/PACAP/1976 to 2008	DV= Foreign ownership. IV= Foreign investor, DIIs, market capitalization.	Pooled OLS regression	Foreign investor (*) (-) DIIs (*) (-) market capitalization (*) (-)	Results show significant association b/w foreign investors & stock price efficiency. Foreign investors facilitate the incorporation of global information into local stock prices in emerging market.
<b>S. No.</b>	<b>Author(s)</b>	<b>Country</b>	<b>Objectives</b>	<b>Data / Source/Period</b>	<b>Variables</b>	<b>Analysis technique</b>	<b>Results</b>	<b>Conclusion</b>
8	Bisht and Giri (2013) <sup>[2]</sup>	India	To study the impact of FIIs trades in Indian capital market (derivatives).	Secondary /BSE SENSEX AND CNX NIFTY/ January 2010 to April 2011	Buy turnover of FIIs in index future, sell turnover of FIIs in index future, net turnover SENSEX and nifty.	Karl Pearson's coefficient of correlation	(*)	FIIs were involved more in selling than buying of index future. FIIs trade in stock future are not much affected by SENSEX and nifty movement FIIs trade in derivatives has significant proportion in total derivatives trading in India.
9	Loomba (2012) <sup>[7]</sup>	India	To find a correlation between BSE SENSEX and FIIs. To understand the	Secondary/BSE SENSEX/January 01, 2001 to December 31, 2011	BSE SENSEX, FIIs Investments	Karl Pearson's coefficient of correlation	(*)	Statistically significant relation between BSE SENSEX percentage change and FIIs activity in Indian Capital Market. FIIs are strong forces driving the Indian

S. No.	Author(s)	Country	Objectives	Data / Source/Period	Variables	Analysis technique	Results	Conclusion
			movement of SENSEX in context to FIIs.					Stock market.
10	Chakrabarti (2001) <sup>[3]</sup>	USA	To study the relationship between FIIs flow and the stock market return in india. Impact of other factor in portfolio flows.	Secondary/RBI, SEBI, S&P 500, BSE/ May 1993 to December 1999	DV= Net monthly FII inflow. IV= return on BSE national index, return on S&P 500 index	correlation Jarque-bera test Granger causality test Regression OLS	Return on BSE national index (*) Return on S&P 500 index (*)	FII flows are correlated with contemporaneous returns in Indian market. No evidence of any informational disadvantage of FIIs in comparison with the domestic investors in India. Changes in country risk rating for India do not appear to affect the FII flows.
11	Stoll and Whaley (1990) <sup>[10]</sup>	USA	To estimate the empirical relation between index futures returns and the return of the underlying index.	Secondary/CME-S&P 500, COBT-MMI and Fitch-IBM. / July 23, 1984 to March 31, 1987 (1269-days)	DV= Stock return, IV= lag future return	ARMA (p, q) ARMA (2,3) MA (3) ARCH WLS	(*)(-)	S&P 500 and MMI futures returns lead stock index returns. S&P 500 and MMI futures also tend to lead actively traded stock like IBM. Return in futures and stock market appear to be contemporaneous so future market lead the stock market.

**Source:** Compiled from various research articles.

(\*): Significant relationship, (NS): Non-Significant relationship, (-): negative relationship, (+): positive relationship

ICJU: (INDIA, CHINA, JAPAN, US), VAR: Vector auto regression, VECM: vector error correction model, OLS: ordinary least squares, DOLS: dynamic ordinary least squares, FMOLS: fully modified least squares, DFGLS: Dickey-fuller generalized least squares, CME: Chicago mercantile exchange, COBT: Chicago Board of trade, Fitch: Francis Emory Fitch, Inc., MMI: Major Market Index, ARMA(p, q): Autoregressive–moving-average (where p is the order of the AR part and q is the order of the MA), MA: moving avg., ARCH: Auto Regressive Conditional Heteroscedasticity, WLS: weighted least squares regression, SGX: Singapore exchange, ADF: Augmented Dickey-Fuller, FIIs: foreign institutional investors, DIIs: domestic institutional investors, PACAP: Pacific-basin capital market research centre.

## Conclusion

This review of literature explained derivative trading and established the link between security prices both spot prices and derivative prices prevailing in stock market and FIIs trading strategies. 11 articles have been reviewed which represent contributions of new ideas and reinvestigation of prior studies about the FIIs and derivatives trading. In India, financial institutions have not been heavy users of exchange-traded derivatives so far but FIIs and DIIs have shown their presence in derivative market. Foreign investors must register as foreign institutional investors (FIIs) to trade in exchange-traded derivatives and are subject to position limits as laid down by Securities and Exchange Board of India (SEBI). FIIs have a small but rising contribution in the derivatives market. In terms of the growth of derivatives markets and the variety of derivative users, the Indian market has equalled or exceeded many other regional markets and the variety of derivatives instruments available for trading is also expanding. Among exchange-traded derivative markets in Asia, India was ranked second behind South Korea for the first quarter of 2005 (Arora, 2016) <sup>[1]</sup>. As it has been discussed that derivative market in China has negative impact on economic growth in short span and positive in long span because, unlike India, China has not fully implemented necessary reforms in its stock markets which is likely to hinder growth of its derivative markets. But recently, derivatives have emerged as important factor around the globe due to growing relevance and novelty of derivatives which in turn has revolutionised the background of financial industry across the globe and derivatives have earned a predominant place among all the financial products. As Indian derivatives market develops more, greater investor awareness will be essential. NSE has programmes to inform and educate traders, dealers, brokers and market personnel. Further, institutions will be required to deploy more resources to develop the business processes and technology necessary for derivatives trading.

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