

Derivatives on

GLOBAL INDICES

Trade in global markets through NSE

SIMULTANEOUS TRADING



Presenting future contracts on S&P 500® and DJIA indices

S&P 500 and DJIA indices are two of the world's most followed indices and are considered as the barometers of U.S. market. These indices have displayed historic resilience in holistically capturing the movements of the U.S. market. NSE which has been a pioneer in the introduction of innovative and investor friendly products is introducing rupee denominated future contracts on S&P 500 and DJIA indices. This is the first time in the world that futures contracts on S&P 500 index are being introduced and listed on an exchange outside of their home country, USA.

Indices

S&P 500®

S&P 500 is a free-float capitalization-weighted index of 500 leading companies of the U.S. economy and is widely regarded as the best single gauge of the U.S. equities market. Although the S&P 500 focuses on the large cap segment of the market, with approximately 75% coverage of U.S. equities, it is still widely considered as an ideal proxy for the total market. S&P 500 is maintained by Standard & Poor's and was introduced in 1957.

DJIA


Dow Jones Industrial Average (DJIA) is a price weighted index first published in the 1896. DJIA Index includes 30 large and liquid blue chips stocks traded on U.S. exchanges. The Dow® represents roughly 28% of the float-adjusted market capitalization of the U.S. stock market. Being composed mainly of blue-chip stocks having a leadership position in the U.S. market the Dow® doesn't literally "represents" the entire U.S. market rather, it is a blue-chip index representing the leading companies in the industries driving the U.S. stock market. As a result, its performance is highly correlated with broad-based U.S. indices like S&P 500.

Background

Indian Investors are currently permitted to invest in foreign assets subject to the limits stipulated by the Reserve Bank of India. The transaction costs in respect of direct investment transactions could be higher and are subjected to foreign currency risks apart from the equity market risks. Futures on S&P 500 and DJIA currently being introduced by NSE shall enable investors desirous of taking exposures to U.S. market to do so, without taking any foreign currency risk as they are rupee denominated contracts. Besides, these contracts enable those invested in the U.S. markets to hedge their equity exposure. They also provide a mechanism to those investors who want to hedge their Indian portfolios from foreign event risk. They can also be used as a hedging tool by investors having a high exposure to stocks in sectors whose financial performance depends significantly on the prospect of the U.S. economy. Further, these contracts traded together provide new opportunities of using trading strategies like Gap trading and Simultaneous trading by taking advantage of good positive correlation between the indices.

About this Booklet

This booklet provides the contract specification and an overview of the opportunities and strategies for trading the spread between DJIA and S&P500 index futures.



Contract Specifications

	S&P 500 Index futures	DJIA Index futures
Ticker Symbol	S&P500	DJIA
Contract Size	250 units	25 units
Notional value	Contract size multiplied by the index level (For example : if the current index value is 1000 then the notional value would be $1000 \times 250 = \text{Rs. } 2,50,000$)	Contract size multiplied by the index level (For example: if the current index value is 10000 then the notional value would be $10000 \times 25 = \text{Rs. } 2,50,000$)
Tick Size	0.25	2.50
Trading Hours	As in equity derivative segment	
Expiry Date	3rd Friday of the respective contract month. In case third Friday is a holiday in USA or in India the contract shall expire on the preceding business day	
Contract months	Three serial monthly contracts and following three quarterly expiry contracts in the Mar-Jun-Sep-Dec cycle	
Daily Settlement Price	Last half hour's weighted average price	
Final Settlement Price	All open positions at close of last day of trading shall be settled to the Special Opening Quotation (SOQ) of the S&P 500 and DJIA Index on the date of expiry. (http://www.cmegroup.com/trading/equity-index/files/SOQ.pdf)	
Final Settlement Procedure	Final settlement will be Cash settled in INR based on final settlement price	
Final Settlement day	All open positions on expiry date shall be settled on the next working day of the expiry day (T+1)	
Position Limits	The Trading Member/Mutual Funds position limits as well as the disclosure requirement for clients is same as applicable in case of domestic stock index derivatives	



Simultaneous Trading Strategy

Simultaneous trading is the process of taking up long and short positions in two instruments at same time. The effect of same event can have different degrees of impact on two highly correlated instruments, which may cause temporary divergence in their relationship, this subsequently return back to higher degree of correlation and gives rise to 'Spread trading' opportunity. Whenever there is a divergence, the trader may initiate a simultaneous trade by buying one index future and selling the other index future in a specific ratio that may be referred to as 'Spread ratio'.

Correlation between S&P 500 and DJIA

S&P 500 and DJIA indices are two of the most followed indices and are considered as the barometers of U.S. markets. S&P 500 and DJIA are highly correlated indices as can be seen from the graph below



However there could be a temporary divergence in their value mainly due to following three main factors:

1. Different Sector Weights
2. Differences in the composition
3. Different methodologies of determination

Different Sector Weights

S&P and DJIA use different industry classification standards; S&P uses Global Industry Classification Standard (GICS®) whereas DJIA uses Industry Classification Benchmark which results in different sector weights in two indices. In case, a sector out-performs or underperforms the economy, the degree of impact on both indices may be different.

Differences in composition

The S&P 500 index contains 500 stocks, while the DJIA has only 30 stocks. All 30 of the stocks in the DJIA are currently present in the S&P 500. Any price fluctuation, corporate action, addition/deletion among rest of the stocks of S&P 500 index which are not represented in DJIA may have an immediate effect on the price of S&P 500 only .

Different methodologies of determination

The S&P 500 is a capitalization-weighted, float-adjusted index while the DJIA is a price-weighted index; any variation in the price of a stock which is common to both the indices has a greater impact on DJIA than on S&P 500. Also, the inclusion/exclusion of a constituent may change the sector weights and cause different impact.

Spread Ratio

For the purpose of simultaneous trading, the ratio of notional values of positions in S&P 500 and DJIA respectively can be used as a measure of spread, otherwise called the 'spread ratio'.

The trader may decide based on his own study of the correlation between the two indices, the 'expected ratio'. For example, the trader may decide that the optimal ratio is say 1.07. If the 'actual ratio' at any point of time is greater or lower than this, there shall be an opportunity for spread trading. The 'actual ratio' may be computed as under:

Presume that the value of S&P 500 futures is 1114.61 while that of the DJIA is 10409.46 on June 16, 2010.

For lot size of 250 the notional value of 1 S&P 500 futures contract is (1114.61×250) or 278652.50. For lot size of 25 the notional value of 1 DJIA futures contract is (10409.46×25) or 260236.50. If a trader decides to buy a contract of S&P 500 futures and sell one contract of DJIA futures then the spread ratio shall work out to $278652.50 / 260236.50$ or 1.07

Buying the spread

Buying the spread means buying the S&P 500 and selling the DJIA index. Consider a hypothetical situation wherein the trader believes that the current spread ratio is low, and that in coming days it would rise to bring spread ratio levels back to long term average levels, i.e. 'expected ratio'. The spread ratio can rise in any of the given ways; S&P 500 may increase while DJIA decreases, both S&P 500 and DJIA may increase wherein the former increases more than the latter or both S&P 500 and DJIA may decrease wherein S&P 500 decreases lesser than DJIA. By taking a spread position between the two contracts, the trader may benefit, irrespective of the any of the paths, as long as the relationship returns to the 'expected ratio'

Illustrative example

On Aug 13, 2009 a trader calculates that the spread ratio of S&P 500 to DJIA has gone down to 1.05. Consider a hypothetical situation wherein the trader feels that the ratio is less than the expected ratio of 1.07 and thus S&P 500 will rise more than DJIA in near future to bring the spread ratio back to the levels of the long term average level. To take advantage of this opportunity the trader buys a "1 x 1" spread of S&P 500 and DJIA futures contract

	Aug 13, 2009	Sep 29, 2009
S&P 500 futures	1012.73	1060.61
DJIA futures	9398.19	9742.20

On Sep 29, 2009 his view comes true and S&P 500 and DJIA spread increase to 1.07. If the trader books profits by closing his positions i.e. by selling one S&P future contract and buying one DJIA future contract he makes a profit of Rs. 3370 as illustrated below :

	Long S&P 500 Position (Lot Size 250)	Short DJIA Position (Lot Size 25)
Aug 13, 2009 (in Rs.)	253182.50	234954.80
Sep 29, 2009 (in Rs.)	265152.50	243555.00
P/L (in Rs.)	11970.00	-8600.25
Net P&L (in Rs.)	3369.75	

Selling the spread

Selling the spread means selling the S&P 500 and buying the DJIA index. Consider the hypothetical situation wherein the trader believes that the current spread gap between S&P 500 and DJIA future price is high in comparison to historical gap level and expects this spread gap to reduce to historical level. To take advantage of this view he may sell S&P 500-DJIA spread. As explained in the previous illustration the spread gap can reduce in any of the following ways: S&P 500 may decrease while DJIA increases, both S&P 500 and DJIA may increase wherein increase of DJIA is more than that of S&P 500 or both S&P 500 and DJIA may decrease wherein S&P 500 decreases more than DJIA.

Illustrative example

On Apr 14, 2010 a trader calculates that the spread ratio of S&P 500 to DJIA has widened to 1.09. Consider a hypothetical situation wherein the trader feels that the ratio is more than the average of 1.07 and may drop to the long term average level in future. To express his view the trader may sell a "1 x 1" spread of S&P 500 and DJIA futures contract

	Apr 14, 2010	May 07, 2010
S&P 500 futures	1210.65	1110.86
DJIA futures	11123.11	10380.43

On May 07, 2010 his view comes true and S&P 500 and DJIA spread reduce to 1.07. If the trader books profit by closing his positions i.e. by buying one lot of S&P futures and selling one lot of DJIA futures, he makes a profit of Rs. 6381 as seen from the table below :

	Short S&P 500 Position (Lot Size 250)	Long DJIA Position (Lot Size 25)
Apr 14, 2010 (in Rs.)	302662.50	278077.80
May 07, 2010 (in Rs.)	277715.00	259510.80
P/L (in Rs.)	24947.50	-18567.00
Net P&L (in Rs.)	6380.50	

Trading S&P 500 and DJIA futures at NSE

Members shall not need any change to their existing hardware, software or network and Investors may use their existing relationship with their trading members to trade these products. The derivative contracts on these two indices provide multiple advantages as outlined below:

- **Simplicity:** The contracts shall be traded during Indian time and under the domestic regulatory set up
- **No currency risk:** The contracts are rupee denominated. Hence there shall be no currency risk associated in trading them
- **Ease of Access:** The instruments would be introduced in the existing equity derivatives segment. The existing trading, clearing and risk management infrastructure could be used without any additional cost
- **Opportunities:** Futures contracts on these indices will enable Indian investors to participate in international financial markets and bringing diversification in their investment portfolios
- **Security:** Settlement Guarantee currently available in F&O segment shall be automatically extended to these products as well

About the National Stock Exchange

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