

TRADING ON A BASKET: The Future of Futures?

[Working Paper No. 4]

August 2009



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Markets are the driving force for economic growth, and they can ill-afford to stagnate at any time. Thus, since the earliest recorded transaction in history, markets have constantly evolved and generated new instruments of trade to circumvent difficulties or anomalies in the existing practices, or at least to make life easier for the trader. Futures trade, which was born out of a practical need many centuries ago, is one such innovation that has stood the test of time in spite of several hiccups on the way. Questions are still being asked about the role of futures in the upswing or downswing of the economy, but traders have embraced futures trade because, with minimum investment, they can minimize their risk and even maximize profits. But the introduction of stock index futures in the early 1980s and commodity index futures a few years later took futures trade to the next level, where a trader could take a position on the commodity or stock index itself, and not necessarily on individual stocks or commodities. But once again “Mr Doubt” raised his head, and the debate persists: Do we need index futures? Do index futures actually help the trader/investor? Does this new financial instrument help the stock/commodity market grow rapidly, or does it contribute to a market meltdown as suggested in the U.S soon after index futures were introduced? And finally, in the Indian context, is the derivative market deep and diverse enough to absorb index futures?

While it is true that there are fundamental differences between stock exchanges and commodity exchanges,¹ there seems to be close affinity—whether we like it or not—in the development of instruments of trade on either platform. As far as the derivative market is concerned, contracts have been traded for decades with an underlying asset—such as commodities, equities, bonds, and loans— or, more recently, with an index—such as stock and commodity indices. Regardless of the platform, trade in derivatives helps hedgers guard against the risks associated with a fluctuation in the value of the underlying asset or index, and speculators to multiply profits if the value of the underlying asset or index moves in a positive direction.

In the process of evolution and self-discovery of formal business mechanisms, trade in stocks seems to have been always one step ahead of trade in commodities. Often, a practice adopted by the stock exchanges spurs a demand for the same in commodity exchanges. The most outstanding example of this is trade in index futures.

What are Index Futures?

Krishnan² is a new trader entering the market, and he finds it bewildering to see the range of opportunities available. It is a problem of plenty, where focusing on the right stock or commodity is a momentous decision. He would like to take the best possible position and build a small portfolio, but at the same time he is wary of the volatile market. Risks are plenty. Where does he go?

¹ Madhoo Pavaskar, “Commodity Exchanges are not Stock Exchanges,” *Economic and Political Weekly*, ...

² Individual and company names mentioned in various illustrations in this article are entirely fictitious.

Let us usher in index futures to help Krishnan out. The basic dilemma that faces Krishnan is selection of stocks that are likely to declare good results, or commodities that give him the right signals a few months down the line. But even if his understanding of the company is correct (in case of investing in the stock market), his success or failure also depends on the movement of the index; this is because every buy position on a particular stock is a buy position on the stock index. A downward slide in the index will affect his position in the individual stock as well. In essence, results can go wrong in spite of a right assessment. But what if Krishnan could take a position on the index itself by trading in an index futures contract?

While it is not practical to hold positions in all individual stocks listed by an exchange, trading in stock index futures has already arrived globally as well as in India. A trade in index futures essentially means that the participant is taking a stance against the movement of the index. If the feeling is that the index will move upward, a buy position is logical, and vice versa.

In case of a commodity index futures trade, the commodity index represents the price movement of a basket of commodities, and the futures represents a contract on the expected value of that index at some future period.³

Stock and commodity index futures are well entrenched in many U.S., European, and Asian markets (*Table 1*). Stock index futures were introduced in February 1982 by the Kansas City Board of Trade, and within months the Chicago Mercantile Exchange started index futures based on the S&P 500 index. From then on, stock index futures have been fairly successful and have attracted investors as they present an opportunity to “buy into the components of the index.”⁴

Table 1. Stock indices on which index futures have been traded

US Index futures	European index futures	Asian Index futures
Dow Jones index futures of ECBOT	DAX index futures of Deutsche Boerse	Hang Seng index futures of the Hong Kong Exchanges and Clearing
Nasdaq index futures of ECBOT	CAC40 index futures of Euronext Paris	Nikkei 300 of Tokyo Stock Exchange
S&P 500 index futures of Globex	SMI index futures of Eurex Switzerland	Australian Stock Exchange 2000 index futures of Sydney Futures Exchange
Russell 2000 index futures of Globex	FTSE 100 index futures of LIFFE	
NYSE Composite Index	IBEX 35 of Bolsa de Madrid	

As far as commodity index futures are concerned, the two most accepted commodity indices represented in futures contracts are the Commodity Research Bureau (CRB) Futures Price Index and the S&P Goldman Sachs Commodity Index (GSCI).

³ Mark J. Powers, *Starting Out in Futures Trading*, McGraw-Hill, 2001, p. 43.

⁴ Anup Menon, “Stock Index Futures—A Snapshot,” www.thehindubusinessline.com

Index futures in India commenced in June 2000 at the NSE. The futures contracts are based on the S&P CNX Nifty index, which is a popular market benchmark with high hedging effectiveness and room for arbitrage. The next big, and perhaps logical, step for futures trading in India would be commodity index futures.

It is important for the trader to ascertain that he can derive the same basic advantages from an index futures contract as from any other successful futures contract:

- Risk minimization
- Profit maximization
- Lower transaction cost
- High liquidity
- High leverage

While it is true that there can be no perfect hedge—as the saying goes, “the only perfect hedge is in a Japanese garden”⁵— and “zero risk” is an idealistic situation, a well-computed index with the requisite weighting methodology can protect the trader against a volatile market. Although index computation is beyond the scope of this article, it would be relevant to encapsulate the various methods adopted by some leading global indices, both stock and commodity.

What is an Effective Index?

The primary purpose of an index is to provide an indicator of the way the market is headed, and a historical perspective of the returns on money invested over a period of time. Add to that the use of indices for futures trade, and the role becomes even more critical. To top it all, one needs to remember that an index is only a summary of hundreds of market movements and “representative” of those movements.

A popular method of constructing an index is a weighted index based on the price commanded by a share. In such a capitalization weighted schema, the more liquid shares get higher weights.⁶

The FTSE 100 index, which represents the top 100 companies and about 80% of the British stock market, is an arithmetic index on the basis of market capitalization weights, and can be mathematically represented as:

$$I_t = \frac{\sum_{i=1}^{100} C_i P_{it}}{\sum_{i=1}^{100} C_i P_{ib}}$$

⁵ Gene Rotberg, *Fortune*, March 7, 1994, p. 53.

⁶ Charles M.S. Sutcliffe, *Stock Index Futures*, Ashgate Publishing, 2006, p. 5. The criticism of a capitalization weighted index is that overpriced stocks get more weights; it is argued that more fundamental weights such as sales, book value, cash flow, and dividends paid are better indicators; cf. Robert D. Arnott, Jason C. Hsu, and Philip Moore, "Fundamental Indexation", *Financial Analysts Journal*, 61:2, March-April, 83-99, quoted in Sutcliffe, op. cit., p. 5.

where C_i is the number of shares issued by the i^{th} company, P_{ij} is the price of shares in the i^{th} company at time j , and A is an adjustment factor to ensure that the index is equal to 1000 at the base date, which is January 3, 1984.⁷

In India, stock index futures contracts traded at the NSE (*for contract specifications, see Appendix A*) are based on the popular benchmark S&P CNX Nifty Index, which covers more than 25 industry sectors. Like the FTSE 100, S&P CNX Nifty also uses a market capitalization weighted methodology, where the total market capitalization of the index component securities as of current date (MC_n) is divided by the total market capitalization of the same securities as of initial date (MC_1), and then multiplied by the index value as of initial date (I_1):

$$I_n = I_1 * MC_n / MC_1$$

where MC_n = Total index market capitalization as of the current date.

$$MC_n = \sum P_i * Q_i$$

where:

Q_i = Number of shares outstanding (of the i^{th} issue) as of the current date.

P_i = Security price of the i^{th} issue as of the current date

N = Total number of component securities used in the index calculation.⁸

Moving to commodity indices, space permits us only to summarize the methodologies of three prominent commodity indices that are open to futures trade: the Commodity Research Bureau (CRB) Futures Price Index, the S&P Goldman Sachs Commodity Index (GSCI), and the Dow Jones-UBS Commodity Index.

The CRB index (now Reuters/Jefferies CRB index) was developed in 1957, with a 28-commodity basket that included barley and flaxseed from the Winnipeg Exchange; cocoa, coffee, cotton, cottonseed oil, lead, potatoes, rubber, sugar, and zinc from New York exchanges; and corn, oats, onions, rye, soya bean meal, soya bean oil, and wheat from Chicago exchanges. This basket has now come down to 17, and the index is an equally weighted index (i.e., none of the commodities has any additional influence over the other). It is computed by arithmetically averaging each component commodity by using the prices for all of the designated contract months which expire on or before the end of the 6th calendar month from the current date.⁹ The Reuters/Jefferies CRB index is traded on the New York Board of Trade (NYBOT).

The S&P GSCI started trading in July 1992. Currently it is traded on the Chicago Mercantile Exchange. The weighting for the index is based on world production.¹⁰ In other words, it is based on the average

⁷ Sutcliffe, op. cit., p. 11.

⁸ S&P CNX Nifty: Index Methodology, Standard & Poor's, September 2006.

⁹ There are few exceptions to this condition; for details of the computation of the CRB Continuous Commodity Index, visit http://www.crbtrader.com/crbindex/futures_current.asp

¹⁰ Powers, op. cit., p. 44.

production of each constituent commodity in the index, over the last five years of available data.¹¹ The index thus serves as a good economic indicator because the weight assigned to each commodity (Table 2) is relative to the quantity of that commodity streaming through the economy.

Table 2. S&P GSCI components and dollar weights as on July 9, 2009

Energy	68.84	Industrial Metals	7.25	Precious Metals	3.32	Agriculture	15.35	Livestock	5.24
Crude Oil	37.92	Aluminium	2.30	Gold	2.99	Wheat	3.86	Live Cattle	3.04
Brent Crude Oil	13.35	Copper	3.13	Silver	0.33	Red Wheat	0.81	Feeder Cattle	0.61
RBOB Gas	4.83	Lead	0.46			Corn	3.47	Lean Hogs	1.59
Heating Oil	4.21	Nickel	0.75			Soybeans	2.64		
Gas Oil	4.51	Zinc	0.61			Cotton	1.15		
Natural Gas	4.02					Sugar	2.26		
						Coffee	0.77		
						Cocoa	0.39		

Source: www2.goldmansachs.com/gsci

The Dow Jones-UBS Commodity Index was first computed in 1998. The index is a summary of about 19 commodities that have the most liquid underlying futures contracts. Figure 1 shows the weighting schema followed by the Dow Jones-UBS Commodity Index (for contract specifications, see Appendix B).

Figure 1. Weighting in the Dow Jones-UBS Commodity Index



Source: *Eurex Commodity Index Futures factsheet, May 2009*

In India, the first commodity index was launched in 2004 by Refco Commodities, with 8 of the most liquid commodities in the futures market, primarily precious metals and agro products.¹² For precious

¹¹ http://en.wikipedia.org/wiki/Goldman_Sachs_Commodity_Index

¹² ENS Economic Bureau, <http://www.indianexpress.com/oldStory/55166/>

metal prices, the index fell back on the price directions at the Multi Commodity Exchange of India (MCX), and for agro-products on the movements at the National Commodity and Derivatives Exchange (NCDEX). The weighted aggregation of the index is in the following proportions:

- Gold 23.37% • Silver 18.63% • Wheat 20.11% • Guar 11.40% • Soya oil 10.39%
- Rape/Mustard Seed 7.64% • Chana 7.04% • Pepper 1.42%

The MCX Comdex was computed in June 2005 with the ten most traded commodities as its constituents. Commodity groups such as energy, metals, and agriculture have equal weights, but the index also takes into account the position of commodities in the physical market.¹³

How Do Index Futures Work?

As mentioned earlier, the basic attraction of index futures is that they are perceived as being safer than product-specific investments. This is particularly true in case of a volatile market. But there is the other side of the coin, where index futures are challenged by market analysts. Before looking at the advantages or perils of index futures, it is imperative to know how index futures work.

In Case of Stock Index Futures

Let me return to the hypothetical situation discussed on pages 1-2. NSE Index futures can help Krishnan mitigate risks in the stock market, particularly in a situation where his understanding about a particular security may be correct, but movement in the market (read “index”) can go in the opposite way and adversely affect his position. What if Krishnan has the option of trading in index futures as well?

He can put his best step forward by “countering” his position in an individual security (for example, in an eatery chain called Great Gulps) with an opposite position in the index futures; if Krishnan is going long in Great Gulps, he should take a short position in index futures, and his arithmetic must take into consideration the beta¹⁴ of security and the market lot in the futures contract. If Great Gulps has a beta of 1.2 and Krishnan has taken a long position of Rs 1,80,000 on the share, he should hedge his position in the S&P CNX Nifty to the tune of $1.2 \times 1,80,000 = \text{Rs } 2,16,000$. If the market lot is 200 and the Index is quoting at 1180 with the near-month contract trading at 1200, one market lot of the index futures is $200 \times 1200 = \text{Rs } 2,40,000$. For an effective hedge, Krishnan should be:

- Long on Great Gulps Rs 1,80,000
- Short on Nifty Rs 2,40,000

¹³ V. Shunmugum and D.G. Praveen, “The Index of Commodity Futures Investing,” *The Hindu Businessline*, 2007.

¹⁴ Beta of a stock is a measure of the sensitivity of the stock to movements in the index, generally the average impact of 1% move in the index on the stock. If the beta is not known, it is generally assumed to be 1; cf. “Investors Guide to Index Futures,” *The Hindu Businessline*, 2000; Kshama Fernandes, “Using Index Futures: A Case for Hedging,” <http://www.rediff.com/money/2000/jun/06der.htm>

10 days later, Nifty falls by 10% to 1062. If Krishnan were to unwind his position, he would suffer a loss of $1,80,000 \times 0.10 \times 1.2 = \text{Rs } 21,600$ on his long position, but he would gain Rs 27,600 from his short position on Nifty $[(1200-1062) \times 200]$, and thus come out with an overall profit of Rs 6000.¹⁵

In Case of Commodity Index Futures

Since commodity index futures are yet to arrive in India, let me pick up an illustration from NYBOT, where commodity index futures were introduced in 1986, based on the CRB futures price index. As in July 2005, NYBOT lists two index futures contracts: the Reuters/Jefferies CRB Index (RJ/CRB) and the Continuous Commodity Index (CCI). As discussed earlier (*see page 4*), the CRB is based on 17 commodities that are equally weighted. Summarized below is a sample index futures trade at NYBOT, where an investor takes a position on both CCI and RJ/CRB index futures:¹⁶

Scenario: A money manager receives a mandate to allocate \$50 million of his total pension portfolio to commodities.

Strategy: On September 3, the manager buys 359 November CCI contracts @ 278 (total contract value of \$49,901,000. The manager is aware that he has to maintain a margin money commitment during his open position.

Result: On November 1, the December CCI futures are trading @ 291.65. The manager squares his position by selling 359 December RJ/CRB futures @ 291.65, making a futures gain of \$2,450,175 ($13.65 \times \500×359 contracts).

Efficacy of Index Futures: Experiences, and Looking Ahead

In the preceding pages, I have used a couple of illustrations to show how index futures (commodity and stock) can help traders, particularly, new traders, to protect themselves against market fluctuations by trading on a basket of securities or commodities rather than individual stocks or commodities. But acceptance of index futures has been far from automatic. Soon after stock index futures were introduced in the U.S in the early 1980s, murmurs of protest were heard in the press about the flipside of index futures, and one got to read articles like “Index Futures Causing Turf Battle”¹⁷ and “Futures Shock.”¹⁸

The first article hinted at the influence of stock index futures on the price of stocks traded at the New York Stock Exchange (NYSE) and highlighted the controversy over the regulation of stock index futures. The Securities and Exchange Commission and the Commodity Futures Trading Commission (CFTC) were locked in a pitch battle over the authority to regulate stock index futures and the related issues such as the margin money, down payment, etc. The then administration, however, kept stock index futures with the CFTC.

¹⁵ The illustration is adapted from “A Note On Currency And Index Futures,” ICMR Case Study, located at <http://www.icmrindia.org/free%20resources/casestudies/A%20Note%20On%20Currency%20And%20Index%20Futures9.htm>

¹⁶ “Continuous Commodity Futures and Options,” NYBOT brochure, p. 7.

¹⁷ Nathaniel C. Nash, “Index Futures Causing Turf Battle,” *The New York Times*, February 4, 1988.

¹⁸ Stevan Waldman, “Futures Shock,” *Washington Monthly*, March 1987.

But apart from regulatory issues, index futures have been questioned for more fundamental operative issues. Take the issue of market volatility, for instance. In December 1986, NYSE Chairman John J. Phelan suggested that markets could experience a slide because of the combined effect of stock index futures and trading strategies. Critics of stock index futures argue that the combination of stock index futures and “computerized programme trading” have created a souped-up market and this lead to a situation where investors can “play the stock market.”¹⁹ In a typical worst-case scenario, it is argued that stock index futures can induce a sharp fall in the index, as it purportedly happened in January 2007 at the NYSE:

An adverse economic event sets off a worldwide panic, and sellers—with a bearish outlook on the stock market—indulge in hectic selling of stock index futures. A surfeit of sell orders pushes the index down, and in this scenario traders at computer terminals start selling stocks because futures contracts have fallen below the price of the equivalent actual stocks and they can secure a quick buck.

But regardless of the prophets of doom, stock index futures have worked well over the last two decades. In India, too, the Nifty futures have been fairly successful and they have been traded since 2000 on the Singapore bourse,²⁰ which incidentally also trades on the FTSE, MSCI, and Nikkei indices. The major factors²¹ working in favour of index futures are:

- *High liquidity.* The index futures market is far more liquid than that of shares in individual companies. In case of the FTSE 100 futures, the turnover in 2004 was 20,772,878 contracts valued at £1,000 billion, while a single trade of 4,966 FTSE 100 contracts (worth over £200 million) was conducted in 2000.²²
- *High leverage.* In case of the FTSE 100, for an initial margin of £1500, an investor can take a position on the index for roughly £50,000.²³
- *Less risky than investing in individual securities*
- *Known price and need to tracking one index rather than multiple stocks.* For an investment in a wide portfolio, it is quite likely that the transactions will be completed over a lengthy period at prices that the investor was not aware of in advance. On the other hand, if an index futures is bought, a position is taken on all component shares in the index through one single transaction.²⁴
- *Cash settlement.* This mitigates to a large extent the unpleasant scenarios such as bad deliveries, forged or fake certificates, etc.

¹⁹ Ibid.

²⁰ Sujoy Manna, “Nifty Futures Launched on Singapore Bourse,” *The Financial Express*, September 26, 2000, <http://www.financialexpress.com/old/fe/daily/20000926/fns26029.html>

²¹ <http://www.tradingpicks.com/nifty.htm>

²² T.J. Brailsford, H. Berkman, A. Frino, “Execution Costs for Stock Index Futures: Information Versus Liquidity Effects,” 2004, cited in Sutcliffe, op. cit., p. 46.

²³ Sutcliffe, op. cit.

²⁴ Ibid.

- *Less chances of the index being manipulated because there are multiple securities involved*

Index futures can also be an important instrument of trade in times of event-related fluctuations in the index, such as in the case of presentation of the Union Budget. Taking position in an index future at such junctures can enable the investor to respond rapidly to changing market conditions, without having to resort to panic selling of securities that he holds.²⁵

Globally, commodity index futures have been a successful experiment, with all the major indices that I have mentioned earlier recording high investment. There are about 6 to 7 commodity indices worldwide, viz., GSCI, Dow Jones, RJ/CRB, Rogers International, Deutsche Bank Liquid Commodity Index, and S&P Commodity Index. From among the traded index futures, the CCI and the RJ/CRB provide some of the strategic advantages that are provided by stock index futures, most importantly the flexibility to trade in a single exchange-traded instrument that provides access to a broad range of commodity markets.²⁶ Internationally, index products are often used to determine investment goals.²⁷

However, due to the basic difference between stocks and commodities, computation of an effective commodity index is far more difficult and cumbersome than building a stock index. While stock prices are available on a continuous basis, prices of commodities of a particular variety/standard are not readily available. While commodity exchanges have taken rapid strides within a relatively short period, there is an imbalance in the representation of agricultural products vis-à-vis manufactured items. These impediments notwithstanding, however, commodity indices need to be developed so as to capture the requisite weights for those commodities that constitute a major portion of the spot market, so that they get adequate representation in the index.²⁸

Another factor that determines a good, effective, or reliable commodity index is index maintenance. Any index needs to be constantly maintained and “serviced” so that it correlates well with the market scenario, and weights are scaled up or down, or constituent commodities are revised, dropped, or added in the index according to market realities. No wonder, the CRB has been successful because it has kept itself abreast of market conditions through ten revisions; originally it was heavily weighted toward agro-products, but gradually the weight has shifted significantly toward energy products, with a simultaneous scaling down from a 28-commodity basket to a 17-commodity basket.

The focus on the energy sector is also evident in the GSCI—a production weighted index—with crude oil being the single largest produced commodity in the world.²⁹

The MCX Comdex, on the other hand, has the most liquid commodities as its constituents. The weights as per the 2007 revision are 40% each for the metal and energy sub-indices, and 20% for the agro-sub-index.³⁰

²⁵ For a sample trade in such a scenario, see “Investors Guide to Index Futures,” *The Hindu Businessline*, 2000.

²⁶ NYBOT brochure, op. cit., p. 3.

²⁷ Ibid.

²⁸ For a theoretical discussion on a comdex computation in the Indian context, see Bhuvan Sethi, “Measuring Price Change: An Index Approach,” unpublished paper, TAER, 2009.

²⁹ Powers, op. cit, p. 44.

It is hoped that either the MCX Comdex, or any other index that is subsequently designed, will deliver the required parameters for effective index futures trading in India. Such an index will necessarily have to decide whether to designate weights according to the market value of the commodity, or according to production or consumption—the last is the most cumbersome, although closer to the ideal option. What is needed is an index that can be a good barometer of the price of the commodity complex. If such an index becomes a reality, and if regulatory restrictions are removed, it will serve the trader well by taking risk mitigation to an entirely new level. On the other hand, flinging open the trading gates to an ill-computed index can cause serious damage to the market sentiment. It is better to be wary and wait, rather than rush in and imitate stock index futures without considering problems that are specific—and unique—to the commodity market.

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³⁰ "MCX Revamps COMDEX," *PR Wire*, Mumbai, August 8, 2008, <http://www.indiaprwire.com/pressrelease/other/200708083991.htm>

Appendix A. NSE stock index futures contract specifications

Security descriptor

The security descriptor for the S&P CNX Nifty futures contracts is:

Market type : N

Instrument Type : FUTIDX

Underlying : Nifty

Expiry date : Date of contract expiry

Instrument type represents the instrument i.e. Futures on Index.

Underlying symbol denotes the underlying index which is S&P CNX Nifty

Expiry date identifies the date of expiry of the contract

Underlying Instrument

The underlying index is S&P CNX Nifty.

Trading cycle

S&P CNX Nifty futures contracts have a maximum of 3-month trading cycle - the near month (one), the next month (two) and the far month (three). A new contract is introduced on the trading day following the expiry of the near month contract. The new contract will be introduced for a three month duration. This way, at any point in time, there will be 3 contracts available for trading in the market i.e., one near month, one mid month and one far month duration respectively.

Expiry day

S&P CNX Nifty futures contracts expire on the last Thursday of the expiry month. If the last Thursday is a trading holiday, the contracts expire on the previous trading day.

Appendix B. Dow Jones-UBS Commodity Index, contract specifications

Contract	Product ID	Underlying	Currency	Vendor Code (Thomson Reuters)	Vendor Code (Bloomberg)
Dow Jones-UBS Commodity Futures	FCCO	Dow Jones-UBS Commodity Index SM	USD	<0#FCCO:>	FCOA index
Dow Jones-UBS Agriculture Futures	FCAG	Dow Jones-UBS Agriculture Subindex SM	USD	<0#FCAG:>	FCDA index
Dow Jones-UBS Energy Futures	FCEN	Dow Jones-UBS Energy Subindex SM	USD	<0#FCEN:>	FCEA index
Dow Jones-UBS Industrial Metals Futures	FCIN	Dow Jones-UBS Industrial Metals Subindex SM	USD	<0#FCIN:>	FCIA index
Contract Value		Contracts have a multiplier of USD 250.			
Underlying		The futures refer to the excess return versions of the respective Dow Jones-UBS Indexes SM .			
Settlement		Cash settlement, payable on the first exchange day following the Final Settlement Day.			
Price Quotation and Minimum Price Change		The Price Quotation is in USD with two decimal places. The Minimum Price Change is USD 0.05, equivalent to a value of USD 12.50 per contract.			
Contract Months		Up to 12 months: The four nearest successive quarterly months of the March, June, September and December cycle.			
Last Trading Day and Final Settlement Day		Last Trading Day is the exchange day preceding the Final Settlement Day on which trading is available at both Eurex and the U.S. exchanges. Final Settlement Day is the fourth Friday of each maturity month if this is an exchange day; otherwise the exchange day immediately preceding that day. Close of trading in the maturing futures on the Last Trading Day is at 18:00 CET.			
Daily Settlement Price		The Daily Settlement Price is defined by the closing price of the respective index at around 21:00 CET and fixed with three decimal places.			
Final Settlement Price		The Final Settlement Price is established by Eurex four exchange days preceding the Final Settlement Day, if on this day trading is available at both Eurex and the U.S. exchanges; otherwise the exchange day immediately preceding that day. The Final Settlement Price is based on the closing price of the respective index on that day, provided no futures represented in the index are suspended at that time.			
Trading Hours		09:00–18:00 CET (09:00–21:30 CET for OTC trades)			

Source: www.equitymaster.com