SECURITIES AND EXCHANGE BOARD OF INDIA
SECONDARY MARKET DEPARTMENT
Mittal Court, B Wing, First Floor,
224, Nariman Point, Mumbai 400 021

SMDRP/DC/CIR- 7/01
June 20, 2001

To,
The Chief Executive Officer/ Managing Director
of Derivative Segment of NSE & BSE
and their Clearing House / Corporation.

Dear Sir,

Sub: Risk containment measures for Stock Option.

This is in continuation of SEBI Circular No. IES/DC/CIR-4/99 dated July 28, 1999 & Circular No. IES/DC/CIR-5/00 dated December 11, 2000 wherein SEBI had laid down the risk containment measures for Exchange traded Index Futures and Index Option Contracts.

SEBI has setup a ' Technical Group' headed by Prof. J.R Varma to prescribe risk containment measures for new derivative products. The group has recommended the introduction of Exchange traded Options on Stocks, which is also in conformity with the sequence of introduction of derivative products recommended by Dr. L.C Gupta Committee.

The 'Technical Group' has recommended the risk containment measure for Exchange traded Options on Stocks. While SEBI would not mandate any particular risk management product, the framework shall be consistent with the risk management guidelines mandated by the L. C. Gupta Committee. The Exchanges are free to decide whether they want to adopt any of the risk management models available globally or else may like to develop their own models for risk management.

The following are the risk containment measures to be adopted by the derivative exchange/segment and the Clearing House/Corporation for the trading and settlement of Option Contracts on Stocks:

1. The Stock Option Contracts to be traded on the derivative exchange/segments shall have prior approval of SEBI. The Contract should comply with the disclosure requirements, if any, laid down by SEBI.
2. The Exchanges shall introduce Premium Settled American Style Stock Options, which shall be settled in cash at exercise, for an initial period of six months, thereafter, the Stock Options, at exercise, shall be settled by delivery.
3. The Stock Option Contract shall have a minimum contract size of Rs. 2 lakhs at the time of its introduction in the market.
4. The Stock Option contract shall have a maximum maturity of 12 months and shall have a minimum of 3 strikes (in the money, near the money and out of the money)
5. The Initial Margin requirements shall be based on worst case loss of a portfolio of an individual client to cover 99% VaR over a one day horizon. The Initial Margin requirement shall be netted at level of individual client and it shall be on gross basis at the level of Trading / Clearing Member. The Initial margin requirement for the proprietary position of Trading/Clearing member shall also be on net basis.
6. A portfolio based margining approach shall be adopted which will takes an integrated view of the risk involved in the portfolio of each individual client comprising of his positions in Derivative Contracts. The parameters for such a model should include the following-

A. ***Worst Scenario Loss***

The worst case loss of a portfolio would be calculated by valuing the portfolio under several scenarios (as specified in SEBI Circular No. IES/DC/CIR-5/00 dated December 11, 2000) of changes in the Stock prices and changes in the volatility of the Stock. The price range for generating the scenarios for Stock Option Contracts would be three and a half standard deviation (3.5 Sigma). The sigma value would be calculated using the methodology specified for Index Futures as per the Prof. J.R Varma Committee Report. The volatility range for generating

scenarios for Stock Options would be taken at 10% for an initial period of six months, after which it shall be reviewed.

For the purpose of the calculation of option values the exchanges may use any of the following standard Option Pricing Models – Black-Scholes, Binomial, Merton, Adesi-Whaley.

The maximum loss under any of the scenario is referred to in this circular as the Worst Scenario Loss. Subject to the additions and adjustments mentioned hereunder, the Worst Scenario Loss shall be the margin requirement for the portfolio.

B. ***Short Option Minimum Margin***

A Short Option Minimum Margin equal to 7.5 % of the Notional Value based on the previous days closing value of the underlying stock, of all short stock options shall be charged if sum of the Worst Scenario Loss is lower than the Short Option Minimum Margin for the given underlying.

C. ***Net Option Value***

The Net Option Value shall be calculated as the current market value of the option times the number of options (positive for long options and negative for short options) in the portfolio. This Net Option Value shall be added to the Liquid Net Worth of the clearing member. This means that the current market value of short options will be deducted from the Liquid Net Worth and the market value of long options will be added thereto. Thus market to market gains and losses on option positions will get adjusted against the available Liquid Net Worth. Since the options are premium style, mark to market gains and losses will not be settled in cash for stock option positions also.

D. ***Cash Settlement of Premium***

For the Stock Option positions, the premium shall be paid in by the buyers in cash and paid out to the sellers in cash on T+1 day.

E. ***Exercise & Assignment***

The Exchanges are free to set exercise limits, if any, for the Stock Option Contracts. The assignment of all exercise shall be done randomly at the client level by the Exchange and its Clearing House.

F. ***Unpaid Premium***

Until the buyer pays in the premium, the premium due shall be deducted from the available Liquid Net Worth on a real time basis.

G. ***Exposure Limit***

The notional value of gross open positions at any point in time for Index Futures and all Short Index Option Contracts shall not exceed 33 1/3 (thirty three one by three) times the liquid networth of a member, and in case of Stock Option Contracts, the notional value of gross short open position at any point in time shall not exceed 20 (twenty) times the liquid networth of a member.

Therefore, the exchanges are required to ensure that 3% of the notional value of gross open position in Index Futures & Short Index Option Contracts, and in the case of Stock Options, 5% of the notional value of gross short open position in stock Option Contracts is collected /adjusted from the liquid networth of a member on a real time basis.

It is further clarified that the notional value of the options contract would be calculated on the basis of the previous days closing value of the underlying.

H. ***Position Limits***

The existing member wise position limits in the Index Futures and Index Options market shall be applicable to Stock Options also on the basis of notional value of the contract. In addition, a market wide limit on the open position on stock option contract is also prescribed. The market wide limit of open positions (in terms of the number of underlying stock) on an option on a particular stock shall be **lesser** of –

- 20 times the average number of shares traded daily, during the previous calendar month, in the cash segment of the Exchange,

  or

- 10% of the number of shares held by non-promoters i.e. 10% of the free float, in terms of number of shares of a company.

When the total open interest in a contract reaches 80% of the market wide limit in that contract, the exchanges would double the price range and volatility range as specified in Point No. (A) in this circular. The exchanges are required to continously review the impact of this measure and take further proactive risk containment measures as may be appropriate, including, further increases in the scan ranges and levying additional margins. The cash market segment of the Exchange should be informed of these developments so as to enable the cash segment also to take such risk containment and surveillance measures as may be appropriate.

I. The computation of Worst Scenario Loss has two components. The first is the valuation of each option contract under sixteen scenarios using an appropriate option pricing model. The second is the application of these Scenario Contract Values to the actual positions in a portfolio to compute the portfolio values and the Worst Scenario Loss. For computational ease, exchanges are permitted to update the Scenario Contract Values only at discrete time points each day. However, the latest available Scenario Contract Values would be applied to member/client portfolios on a real time basis.

7. Eligibility of Stocks for Option trading

The stocks which would be eligible for option trading, should meet the following criterion:

i. The stock should be amongst the of top 200 scrips, on the basis of average market capitalisation during the last six months and the average free float market capitalisation should not be less than Rs.750 Crores. The free float market capitalisation means the non-promoter holding in the stock.
ii. The stock should be amongst the top 200 scrips on the basis of average daily volume (in value terms), during the last six months. Further, the average daily volume should not be less than Rs. 5 Crore in the underlying cash market.
iii. The stock should be traded on at least 90% of the trading day in the last six months, with the exception of cases in which a stock is unable to trade due to corporate actions like de-mergers etc.
iv. The non promoter holding in the company should be at least 30%.
v. The ratio of the daily volatility of the stock vis-à-vis the the daily volatility of the Index *(either BSE-30 Sensex or S&P CNX Nifty)* should not be more than 4, at any time during the previous six months. For this purpose the volatility would be computed as per the Exponentially Weighted Moving Average formula specified in the Prof. J. R Varma Committee Report on the risk containment measures for Index Futures. It is further clarified that the stock on which option contracts are permitted to be traded on one derivative Exchange/Segment would also be permitted to trade on other Derivative Exchanges/Segments.

The volatility estimates calculated as mentioned in Point No.(v) above shall be calculated on the last one and a half year closing price data in the following manner:

- The standard deviation of logarithmic return (natural log) would be calculated on the first six months data.
- The standard deviation calculated above shall be used as Sigma (t-1) for calculation of Sigma (t) on the first day of the next one year period, by using the formula specified in the Prof. J.R Varma Committee Report on risk containment measures for index futures. The same formula would also be used to calculate the daily volatility estimates (Sigma {t}) of the entire one year period.

- The above calculation would be done for individual stock and index.
- Sigma (t) calculated above for individual stock and index would be used to compute the ratio of scrip volatility vis-à-vis the index volatility each day during the last six month period.

In the calculation mentioned above the closing prices of stocks should be normalised / adjusted for corporate actions like bonus, stock split, demerger etc.

At the end of six months from the date of introduction of trading in stock options, it should be verified whether the stocks on which options is permitted continues to comply with the aforementioned criterion. The eligibility criterion would be reviewed after a period of six months to examine whether, in light of the experience, the list of eligible stocks could be expanded.

8. The Derivative Exchange/Segment shall submit their proposal for approval of the stock option contract to SEBI which shall include:

a. the details of proposed derivative contract to be traded on the exchange which would include:

i. Symbol
ii. Underlying – giving details of the calculations mentioned above and ensuring that the stock fulfills the eligibility criterion specified.
iii. Lot Size / Multiplier
iv. Strike Price Intervals
v. Premium Quotation
vi. Last Trading Day
vii. Expiration day/month
viii. Exercise Style
ix. Mode of Assignment
x. Time period of settlement of Option Exercise
xi. Position and Exercise Limits
xii. Margin
xiii. Trading Hours

b. the economic purpose it is intended to serve,
c. likely contribution to market development,
d. the safeguards and the risk protection mechanism adopted by the exchange to ensure market integrity, protection of investors and smooth and orderly trading,
e. the infrastructure of the exchange and the surveillance system to effectively monitor trading in such contracts, and
f. details of settlement procedures & systems with regard to Stock Options.
g. details of back testing of the margin calculation for a period of one year considering a call and a put option on the underlying with a delta of +25 & -25 and actual price of the underlying security.

Yours sincerely,

(N. PARAKH)
CHIEF GENERAL MANAGER
DERIVATIVE CELL