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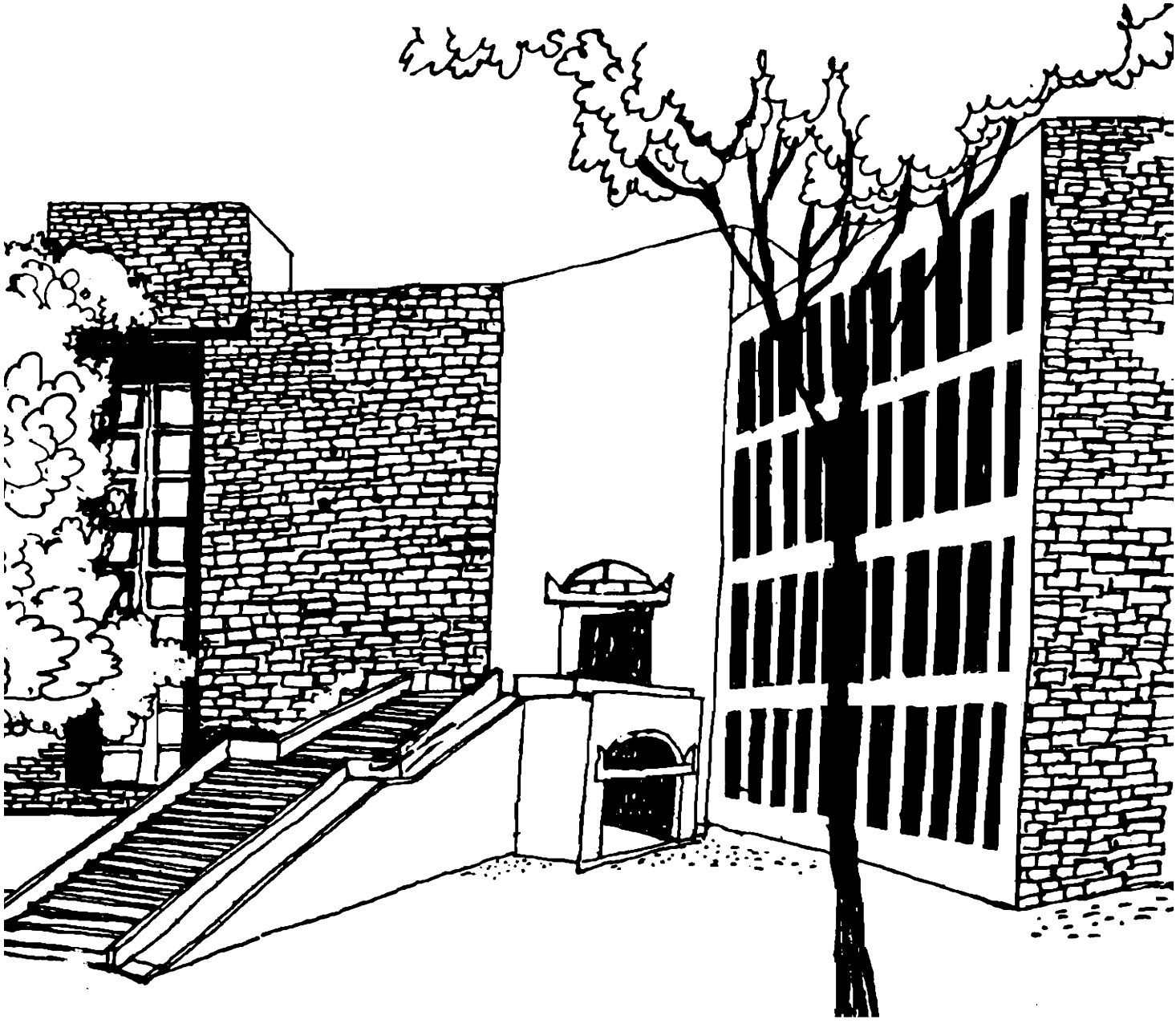

OPTIONS TRADING : A PRIMER AND A PROPOSAL

By

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W.P. No. 952

August 1991

INDIAN INSTITUTE OF MANAGEMENT
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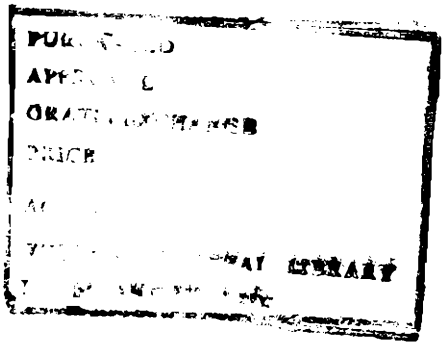
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OPTIONS TRADING : A PRIMER AND A PROPOSAL

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ABSTRACT

The option industry has witnessed explosive growth since 1973 when the first organized option exchange opened in Chicago. Moreover, this growth is continuing into the 1990s as entirely new types of options are created and as more of the traditional options on securities are listed and traded. Options on commodities, options on financial indices and options on future contracts are all exciting new products. Understanding these new products well enough to sell them has been straining the capacity of the world security industry.

At present, instruments prevalent in India are meant primarily to raise resources from public for corporate sector. We hardly have any mechanism or instruments which would help the investors in managing the risk commensurate with their preferences. It is high time that option trading is launched in Indian stock exchanges. This paper provides a primer on option trading and a preliminary proposal for its implementation in India. For successful launching of option trading in India we would require the following :

1) The standardization of the terms of option contracts.

2) The careful selection of underlying security.

3) The appointment of a number of market makers with adequate financial resources

4) The creation of an Option Clearing House as the single guarantor of every exchange traded option.

5) The creation of an active secondary market.

6) The creation of a central market place with its attendant regulatory, surveillance and price-dissemination capabilities.

7) The creation of paperless trading and book- entry transfer system.

OPTIONS TRADING : A PRIMER AND A PROPOSAL

(Dr. Ramesh Gupta)

Research by one of the Nobel Laureates in economics, Dr. Kenneth Arrow* has shown that resources within a nation can be allocated better if a greater variety of contingent claims on assets is available than that provided by only the long position. That is the existence of warrants, options and futures actually increases the nation's welfare. Existence of these securities increases the chances that an investor will find a set of financial claims which are consistent with his or her preferences, thus inducing the investor to make additional investment.

Options and futures are useful to both risk-averse hedgers and risk-taking speculators. People who wish to limit their losses from an adverse move in prices may do so by hedging. Risk averse investors who must maintain a long (short) position during a period of time when they expect the price of the asset to rise (decline) may buy call (put) options. Thus, options perform an important risk-reducing function, somewhat analogous to the function performed by insurance.

Similarly, individuals who want to speculate that the market price of an asset will rise or fall may profit only in a limited way by assuming a long or short position, respectively. However, if he desires more financial leverage and/or wants only a limited

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* Kenneth Arrow, "The Role of Securities in the Optimal Allocation of Risk Bearing " *Review of Economic Studies*, April 1964.

liability - which are not obtainable with long and short positions - then call or put options would be appropriate. On the other hand, a speculator who thinks that the price of some security will not change and wants to profit from this expectation can do so, by writing the options, the person can profit if the security's prices remain stationary. The existence of such profitable opportunities encourages good securities research, help keep securities prices aligned with their true intrinsic values and makes securities markets more efficient allocators of capital.

The option industry has enjoyed explosive growth since 1973 when the first organized option exchange opened in Chicago. Moreover, this growth is continuing into the 1990s as entirely new types of options are created and as more of the traditional options on securities are listed and traded. Options on commodities, options on financial indices and options on future contracts are all exciting new products. Understanding these new products well enough to sell them has been straining the capacity of the world security industry. It is high time that option trading is launched in Indian stock exchanges. This paper provides a primer on option trading and a preliminary proposal for its implementation in India.

Understanding of options

An option is a vehicle that gives the holder the right, but, not the obligation, to buy or sell an underlying futures contract at a set price for a specified period of time.

Options are often confused with future contracts. A **future contract** is an arrangement whereby the buyer currently agrees to take delivery from the seller a specified asset on a specified future date at a fixed price, and to pay on the **delivery date.** The owner of a future contract is committed to make this exchange; whereas the owner of an option has the right, but not the obligation to make subsequent exchange. The exchange will take place only if the option holder feels it is in his best interest. Options require the payment of a nonrefundable premium; futures do not.

There are two types of options- calls and puts.

A **Call** option is a contract giving its owner the right to **buy** a fixed number of shares of a specified common stock at a fixed price at any time on or before a given date.

A **put** option is a contract giving its owner the right to **sell** a fixed number of shares of a specified common stock at a fixed price at any time on or before a given date.

The act of making this transaction is referred to as **exercising** the option. The specified stock is known as the **underlying security.** The fixed price is termed the exercise price or **strike price,** and the given date, the maturity date or **expiration date.** The individual who creates or issues an option is termed the **writer** and the individual who purchases an option is termed the holder or **buyer** . The market price of the call is termed the call price or **premium.**

For example, let us say, an ACC /December/3000 call for 10 shares bought on the BSE at the close of trading on July 24,1991 costs Rs. 5000 exclusive of commissions. This call gave the buyer the right to purchase 10 common shares of ACC for Rs. 3000 per share at any time until last trading of December 1991. On any trading day, until the expiration date, the option holder can do any of three things: liquidate (or sell) it, exercise it, or abandon it. The implications of each are given below :

1. **Sell** a similar call (with same strike price and expiry date) back in the secondary market, and thereby canceling his position. In this process, the option holder may make money or at least recover part of the premium paid.

2. **Exercise** the call by payment of Rs. 30000 in return for 10 shares of ACC.

3. **Retain** the call and do nothing. On the expiration date, the call would expire and the buyer would lose the payment made as premium.

Basic Terminology in option trading

1. The Option Strike Price

When buying or selling exchange traded puts or calls, there are always several strike prices available for each option, giving the investor the flexibility to tailor the position to his risk posture and market view. Investors can choose the strike price that best balances their approach to risk and reward. In

almost all cases there are strike prices under the current market price, at or close to the current market price and above the current market price.

2. The Option Premium

The option premium (the option's price) is determined competitively on the floor of the exchange like any other security. This means that premiums are affected most fundamentally by the influx of buy and sell orders on the floor of the exchange. Option buyers pay premiums in cash, which are credited to option sellers.

The price that the option sells for (its premium) is determined and affected by a number of variables, including the price of the underlying security, volatility, length of time to expiration and short-term interest rates. Above all, however, option prices are affected by the buying and selling of investors seeking profits or wishing to offset risk. The other important factors affecting prices are - tax rules with regard to gains or loss accruing from option trading, margin requirements in case of uncovered option writers, transaction costs and the market structure in terms of its liquidity, transparency and efficiency in settling the transactions.

3. The Underlying Stock Price

This is simply the current price of the security upon which an option is based. Movements in the underlying stock price will

directly affect the option's value.

4. Intrinsic Value

An option's intrinsic value, if any, is based on the rupee difference between its strike price and the current price. If an option is currently profitable to exercise, it is said to have intrinsic value and it is termed as **in-the-money**. An option with a strike price the same as the current future price- whether a call or a put- is referred to as **at-the money**. An option with no intrinsic value is **out-of-the-money**.

5. Time Value

Even if an option does not have intrinsic value, it may have time value. In fact, the premium for an out-of-the-money option is entirely a reflection of its time value. This is the amount buyers are willing to pay for the option on the chance that, at some time prior to expiration, it will become profitable to exercise. Or, in the case of an option that's already in-the-money, it is whatever buyers may be willing to pay (over and above the intrinsic value) in the hope that it will move further into the money.

6. The Time Decay Factor

An important factor to keep in mind is that an option's premium will lose time value each day. This time decay occurs on both puts and calls. An interesting point, however, is that the

time decay on a put is generally quicker than on a call.

7. Volatility

An option's price is affected by market volatility. The more the price of an underlying security fluctuates, the greater the likelihood that the option's intrinsic value will increase. Because the buyer stands a greater chance to benefit and thus would be willing to pay more for an option in a volatile market. On the other hand, should volatility decline, the premium will likely to decline as well.

8. Interest Rates

The level of interest rates influence option premiums to the extent the rate of interest makes various instruments more or less attractive. For instance, a covered call writer needs to consider the cost of holding the share in the event of the call getting exercised by its buyer. The higher the interest rates, the lower the present value of the striking price (in relation to current stock price) and accordingly the premium demanded for writing a call would be higher.

Stock Index Options

In a stock index option, essentially one buys the option in the whole market by investing in the overall business trend instead of in separate companies. There is no need to worry about either how well a company is being managed or about govern-

ment policies with regard to that company's products. One is really investing in the whole market represented by an index.

Some of the index options available in U.S.A. are

1) The S & P Options

The S & P 500 index option allow one to invest in the overall trend of the stock market with defined and limited risk and a relatively small capital commitment. The S & P 500 option began trading on the Chicago Mercantile Exchange in January, 1983 and volume has grown at over 60 % every year since then. The popularity of S & P 500 options is mainly due to the tremendous moves that occurred in the stock market in recent years.

The S & P 500 Index options are dollar valued at $ 500 times the current premium quotation and a variety of strike prices are available. A favorable 1 point move in the S & P 500 index will often result in an approximately $ 500 increase in the premium of an at-the-money or in-the money option.

2) The NYSE Composite Index Option

Option on NYSE Composite Index is traded on the New York Stock Exchange (NYSE). This index is a broader measure of the market as it includes all the NYSE listed common shares. There are currently about 1550 such issues in the index. As with the S & P 500 index options, a range of strike prices are available for NYSE Composite Index Options and are valued at $500 times the

current premium quotation.

buyer to exercise the option and thus end up holding the security, but it also considerably increased a writer's exposure to risk.

As a response to these and other deficiencies in OTC market, in 1973, Chicago Board of Exchange (CBOE) became the first registered exchange for trading listed call contracts. At the time, a total of 48 option series were traded in 16 underlying securities for three different maturities.

The CBOE's success was immediate and dramatic. The concept was quickly copied by the American, Philadelphia, Pacific and Mid-west Stock Exchanges. In all five exchanges, a beginning was made by only listing call options. Put option trading was deferred till 1977. The NYSE opened trading in options on its Composite Index in 1983 and in 1985 on selected NASDAQ equity issues. Business in option market grew rapidly and understandably, business on OTC has fallen off.

The options business has grown far beyond even the most optimistic of early growth projections. The key to this growth was clearly the previously mentioned ability to extract profit (or cut losses) through trading the contracts, as opposed to exercise or awaiting expiration, the only method readily avail

Advantages of Options Trading to an Investor

1. Unlimited profit potential. Profit increases as market moves in anticipated direction.

2. Limited, defined risk. Potential loss limited to premium plus commissions paid.

3. The opportunity to enter the market for a relatively low capital commitment.

4. The ability to maintain a position without margin calls or forced liquidations.

5. The opportunity to profit in both bull and bear markets.

6. The ability to hedge profits achieved on other transactions without closing out those positions.

7. The ability to speculate in future market without the risk of losing more than your original investment.

8. An opportunity to write a covered call on a portfolio as a method of creating a bond alternative.

Assessment of Risk in Option Trading

Because of the volatile nature of the stock markets, a high degree of risk is involved in the purchase and granting of options . The buyer should not buy any option unless he is able to sustain a total loss of the premium and transaction costs of purchasing the option. A person should not write an option unless he is able to meet additional calls for margins when the market moves against his position and, to sustain the very large financial loss in such circumstances.

Risk of an Option Buyer

A person who purchases the option should know that in order to realize any value from the option, it will be necessary either to offset the option position or to exercise the option. Many times it may be difficult to offset an existing option position in the market, and in such situation, he should be ready to take delivery of the stock and expose himself to the risk of future price changes in holding the security.

Risk of an Uncovered Writer of a Call Option

An option writer who writes a call against some security without owning that security, is said to be **writing naked or writing uncovered.** That is, this particular call writer had not covered himself by buying the securities for which he wrote the option. In this case the call buyers profits are the call writer's losses. The naked option writer's profits are limited to the premium, while potential losses are unlimited.

For an option clearing system to be an effective and viable guarantor of the option contracts, it would be imperative that exchange rules require the writer of an option to make a margin deposit when the option position is opened and payment of additional margin in the event of adverse market movement. The writer of an option is subject to the risk of substantial losses which may be many times greater than the margin deposit required to

open the option position.

Risk of a covered writer of a call option

Sometimes options writers buy the security on which they are writing the option. When they do so, they are said to have **covered** themselves. The writer of a covered call option is subject to the full risk of a decline in price of the underlying security less the premium received for writing a call option. Also, the option writer gives up all of the potential gain resulting from an increase in the price of the underlying security above the option strike price upon exercise or expiration of the option.

The simplest, most conservative and most widely used strategy of option writing is selling call options against holdings of common stock or equivalents, such as convertible bonds, or holding of warrants to be exercised during the same period. Any other strategy by a call writer would involve a very high risk, continuous monitoring by the stock exchanges, and maintenance of margin to make sure that the contract would be honored by the writer.

For example, suppose a market maker buys 100 Tisco @ 230 and simultaneously sells 100 Tisco September 225 call for Rs. 1500. The "covered call" so created would have no margin maintenance requirement, thus allowing the premium to be applied against the cost of TISCO shares for a total cash investment of Rs. 21500. If markets remained unchanged through September, rises by any amount, or falls by less than RS. 5 per share, the call would be exercised generating a Rs. 1000 profit. The market maker

would have sold stock to the buyer of the call at @ Rs. 225 when it costs 230, resulting in a loss of Rs. 500. The option premium, on the other hand, more than offsets this amount.

Indeed, even if Tisco shares fall by fewer than 15 points, the overall position is still profitable at the option's expiration. If price of the share drops to Rs. 215, the writer incurs a loss of Rs. 1500, which would be evened out by the premium he received earlier, since at or less than a price of Rs. 225 the call would not be exercised. Consequently, a sale of the stock at any higher price must show an overall profit even though the stock position itself may lose money. To illustrate further, a sale of Tisco @ 222 registers a loss of Rs. 800 on the stock but a net gain of Rs. 700 when the premium is included.

If this appears to be a virtually no-loss proposition, consider the possibility of Tisco @ Rs.250 just prior to the call expiration. The option will be exercised at the agreed striking price of Rs. 225 and the writer's premium will appear a poor bargain. By the same token, had Tisco fallen to Rs. 200, the loss on the shares would have substantially exceeded the cushion provided by the premium.

The question is who would be willing to write calls? The conservative financial institutions may find covered call writing attractive on total rate of return basis. That is, the return from premium income, dividends, and possibly limited price appreciation may exceed that of simply buying and holding a stock portfolio.

Launching of Option Trading in India

At present, to provide liquidity and continuity in share trading, buying and selling on short are being permitted through the dubious method of carrying forward transactions. The margins required are low. They defy all norms of prudent trading. Such low margins, and that too on net positions encourage unsustainable speculation. A new framework of trading and settlement procedures which would segregate speculative trade from investment trade has to be evolved. At present, the trading of a speculator in shares like Reliance, Tisco etc. is mixed with the business deal of a genuine investor. As a result, a genuine investor is subject to the same risk of price volatility, settlement delays, payment problems etc. which a speculator is willing to take. Trading for these two kinds of investors must be segregated, so that a genuine investor may still participate in the secondary markets without taking undue risk.

One solution to the above problem is to permit option trading on Indian Stock Exchanges. It would serve the useful purpose of providing liquidity and continuity in the stocks markets without hurting the genuine investors. Further, many investors are willing to pay for hedging the risk, as it allows the risk of price changes to be shifted to the writers. Writers of the options are basically speculators who are looking for extra ordinary gains on their risk capital. However, writers of the options should have a sufficiently large resource base and,

to be on the safe side, should hold the warrants to subscribe for the underlying security, or convertible bonds or some such other instrument which would allow them to fulfill their obligations in case the buyer of the option decides to exercise his option.

Because of the volatile nature of the stock markets, the purchase and writing of stock options involves a high degree of risk. Trading in options may not be suitable for the general investor. It is a myth to say that by paying a small premium one can protect one's accrued gains. Premiums on volatile securities are not small, sometimes they are prohibitively expensive and general investors by and large have been losers, as sophisticated writers would be able to make abnormal profits. Furthermore, if a proper institutional mechanism is not evolved, general investors also take the risk of non-fulfillment of the contract by the writer of an option. Setting up an institutional framework is a must and the cost of such a system can be very high. The other alternative is to charge an endorsement fee (to guarantee the performance of an option in the event of exercise) in addition to brokerage and broker's spread which would make the whole exercise of option trading uneconomical and wasteful.

People associate option trading with indulging in speculation, and speculation is a word which has undesirable connotations to some people. People who do not understand option trading, erroneously identify it with market manipulations and high volatility in security prices. Unregulated speculative activities allow a few powerful and unethical operators to benefit while hurting many genuine investors. On the other hand, a regulated

form of speculation can be socially and economically desirable.

Several desirable economic benefits result from option trading. Some of them are :

1. **Management of Investment Risk**

Management of risk becomes easy and economical as risk can be redistributed as per investor preferences. Some risks can be hedged away, while speculators may assume risk if they see an opportunity to make abnormal profits.

2. **Public Forecasts of Prices.**

Publicly available forecasts are contained in future prices. Speculators fortunes depend on their ability to forecast. The general populace may avail itself of a free, up-to-date, expert forecast of the future prices of a security simply by observing the published prices of futures contracts.

3. **Efficient Price Adjustment.**

In option trading price adjusts more efficiently and quickly. The option traders will uncover the relevant facts about supply and demand and act upon them without delay in an effort to maximize their profits. This action causes continuous, unbiased price adjustments.

4. **Efficient Resource Allocation.**

Efficient resource allocation requires (a) efficient prices and (b) resources which may be readily shifted between places and time periods. The activities of speculators facilitate these needs by (1) making prices adjust in an efficient manner and (2)

making inventories available when and where demand is high.

5. **Liquidity for Traders .**

A variety of instruments helps in developing new markets and in attracting new investors. Active markets provide liquidity and continuous market for traders.

Prerequisites for Successful Options Trading in India

The success of an organized options exchange would require:

1) The **standardization** of the terms of option contracts. It would decrease transaction costs and facilitate development of secondary markets in options. All contracts of a specific kind on the same stock should have identical expiration dates, strike prices and the contract units, leaving only the premium to be negotiated in an open market.

2) The careful selection of **underlying securities** . The securities chosen for listing must meet a number of requirements. They must be registered and listed on a national securities exchange, be widely held; meet a minimum trading volume requirement; have a fairly high closing market price (Rs. 50 and above). Initially, only call option should be introduced in frequently traded securities like Reliance, Tisco, ACC, L & T, Grasim and Century. After gaining some experience, call options in all group A securities and put options on selected securities (such as Reliance, Tisco, Century, Grasim, ACC) may be allowed.

3) The appointment of a number of **market makers** for each underlying security. These market makers should be assigned the responsibility of trading in options on a regular basis. To further reduce the potential for conflict of interest and to increase liquidity, the exchanges would have to institute a competitive market maker system. Capital adequacy requirements for market makers would need to be strictly enforced.

Initially, it may be prudent to allow only financial institutions which are active in the stock markets (such as SBICAP, Canbank, etc.) to act as market makers. These institutions generally have large resource bases and also hold underlying securities in their portfolios. So in the event the option is exercised, it would not be difficult for them to fulfill their obligations. In fact, they can use writing call option with a long position in the underlying security to create a bond portfolio for their risk management and improve upon their profitability.

4) The creation of a ***Options Clearing House*** as the single guarantor of every exchange traded option. The buyer of a contract would look directly to the Clearing House and not to the particular writer, for performance in the event of exercise. The Option Clearing House would collect a fee from every trade and create a *Guarantee Fund* for insuring future performance of the contract. When one of the parties to a futures contract defaults, the clearing house pays whatever costs are necessary to carry out the contract from this fund. This provision frees future traders from checking on another's credit every time they

transact a trade and thus helps make the option contract a freely negotiable financial instrument.

5) The creation of a ***secondary market***. This is possible only when the Option Clearing House stands as the opposite party to every trade, making it possible for buyers and sellers to terminate their position at any time by an offsetting transaction. Without this arrangement, buyers and writers of options would essentially remain committed to their position until the expiration date.

6) The creation of ***a central market place*** with its attendant regulatory, surveillance and price-dissemination capabilities. Initially, the exchange would need to educate its brokers and the investing public about the intricacies of trading in options.

7) The creation of **paperless trading and book-entry transfer system**. The ownership of options should be evidenced by confirmations and monthly statements received by customers from their brokers. This would facilitate one-day business settlement on option sales and purchases and thus reduce costs.

Although Indian capital markets have grown tremendously in recent years, yet there is a surging need to introduce new instruments in the market. Most of the suggested new instruments (for example, zero-coupon bond, non-voting shares etc.) are meant primarily to raise resources from the public for corporate sector. We hardly have any mechanism or instruments which would help the investors in managing the risk commensurate with their

preferences. Launching of exchange-trade options on selective basis, with proper institutional support and regulatory framework, can serve a useful purpose in promoting equity-cult among investors by helping them in their risk management and in the equitable growth of the capital markets. However, our present trading and settlement procedures are grossly inadequate to ensure smooth operation of option trading. The question is whether our government is ready to create the institutional and procedural mechanisms described above, to ensure smooth operations of the options market.