T.R.
MARMARA UNIVERSITY
THE INSTITUTE OF BANKING AND INSURANCE
BANKING SECTION

FORWARD OPERATIONS AND MARKET MECHANISM IN SECURITIES MARKET

FOCUSING ON OPTIONS

MASTER THESİS

THE NAME OF STUDENT
CELAL TAŞÇI

ISTANBUL, 1991

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I - INTRODUCTION

The purpose of this study is to introduce the basics and market mechanism of options on securities. In order to emphasize the importance of the subject, first of all, we should explain that
- from what conditions options stem,
- why options are so important as a financial tool for forward operations.

On July 31 1945, the Bretton Woods Conference laid out an international agreement that fixed exchange rates for the major currencies. Paper money was then linked to the gold standard. For 26 years there was no need for futures contracts to lock in purchase and sale prices to be settled at some future time, for nothing changed. But, in 1971, Bretton Woods was suspended and international currencies, no longer backed by gold, were allowed to float to their own levels, based strictly on supply and demand. As a result of that, it became clear that there was a worldwide need forward operations to hedge large debt positions and to minimize investment risks. Therefore, the early 1980s witnessed the dramatic growth of the swap market and the resulting development and integration of a global capital market. By 1985, the volume of trade in options and futures has grown enormously.

The reason for this extraordinary growth is the exceptional volatility in inflation, interest rates and exchange rates. Options, like futures, offer protection to the risk averse to reduce their exposure to currency and interest rate risks and opportunities to traders to profit from volatility. A third use of options is for arbitrage.

Benefiting from such a cheap and highly geared way is also important for Turkish investors and fund managers. From this point of wiev, we hope that The Capital Market Board in Turkey will set up the necessary legal infrastructure. Altough it is not realistic to expect the emergence of a options market in a short period of time, we believe that the enrichment of the capital market by defining new instruments not only accelerates its development but also prepares the ground for its healty development.

It is obvious that it is not possible to explain all aspects of options which consist of many complex chapters. For this reason, this study focuses on the basics that show the options are rewards to investors including:

- A brief, and simplified, explanation of option pricing and strategies,
- Explanations of various options on securities, their uses and how the market mechanism works, and
- A conclusion with a suggested market mechanism for international exchanges to deal and to settle in options, from point of the fact that Turkey may links up to this system as well.

II - BASICS OF OPTIONS ON SECURITIES

1 - The Definition of Option

An option is a contract in which the writer of the option grants the buyer of the option either the right to purchase from, or sell to, the writer a designated instrument at a specified price within a specified period of time. The writer, also referred to as the seller, grants this right to the buyer for a certain sum of money called the option premium. The price at which the instrument may be bought or sold is called the exercise or strike price. The date after which an option is void is called the expiration date. An American option may be exercised any time before the expiration date. An European option, on the other hand, may only be exercised at the expiration date.

When an option grants the buyer the right to purchase the designated instrument from the writer, it is called a call option. When the option buyer has the right to sell the designated instrument to the writer (seller) the option is called a put option. It should be noted that the buyer of an option has the right but not the obligation to perform. The option seller (writer) has the obligation to perform.

2 - A Brief History of the Development of the Options

The history of options can be traced back to Holland and the tulip bulb industry of the late 1500s where suppliers wished to guarantee in advance the future price they would receive for their corps.

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However, this early market was not one of the success stories of the industry as many speculative writers of put options suffered severe losses as prices plummeted in the early seventeenth century. The market closed for around 100 years (1)

In 1973 the Chicago Board Options Exchange (CBOE) established the first market in call options on 16 stocks. The CBOE was an immediate success within the year 1,1 million contracts were traded and another 16 stocks were added. In March and July 1983 it introduced the S&P 100 index option and the S&P 500 index option.

Other exchanges began trading options, including in 1978 the European Options Exchange (in Amsterdam) and the London Stock Exchange. By now options are traded on at least 14 separate exchanges world-wide (2). In London, the traded options market was founded in April 1978.

3 - Introduction To World Markets
3.1 - Major Exchanges
3.1.1 - London Options Clearing House (LOCH)

LOCH is a wholly owned subsidiary of The International Stock Exchange. Of the 10m contracts traded by the end of 1986, half were traded in that year itself. And in the first half of 1987, more than 1m contracts a month were traded. So the market is growing rapidly, though options are still considerably less polular than in the USA: options turnover is generally less than 10% that of the underlying equity. And while almost all US investment managers use options, less than one-fifth of their British counterparts do so. In particular, index options are much less popular in the UK: they constitute a virtually insignificant proportion (around 5%) of total options business.

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(1) : Diroctory of World Futures and Options-Malcoln J.Robertson
(2) : Options, Recent Advances in theory and Practice-Steward Hodges

3.1.2 - The Chicago Mercantile Exchange (CME)

The CME (nicknamed the Merc) was founded in 1919 and is now one of the world's leading financial futures. It is the world's most diversified exchange, trading over 30 futures and options on future contracts in physical commodities, currencies, interest rate and stock index products. The CME is a non profit corporation owned by it's members. It provides an open forum for trading futures and options on futures. It establishes and enforces trading rules, collects and disseminates information about its markets and provides the clearing mechanism for transactions executed on its trading floor. The ICM introduced option on S&P 500 futures in 1983 and options on a number of foreign currency futures contracts in 1984. In this manner, the potential for utilisation of futures and options was vastly increased with an ever greater number of domestic and international participants.

3.1.3 - Chicago Board of Trade

The CBOT was established in 1848 and offered options on Treasury Note futures in May 1985. In June 1985 the CBOT introduced a Municipal Bond Index futures contract to enable cash market users to hedge in the 'apples-to-apples' contract rather than the surrogate US T-bond contract. Options were made available on this futures contract in June 1987. The CBOT T-bond/note futures and options contracts are attractive instruments for institutional and individual investors because the high contract volumes give the market depth and liquidity and consequently narrow bid/ask spreads.

3.1.4 - Chicago Board Options Exchange

In April 1973 CBOT established the Chicago Board Options Exchange (CBOE) for the sole purpose of trading options on limited number of NYSE-listed equities. Now totally independent of the CBOT, the CBOE is at present the largest options exchange in the world. Options are now available on over 160 NYSE-listed stocks and the CBOE accounts for almost 45 per cent of all the share options trading in the USA.

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In March and July 1983 it introduced the S&P 100 Index option and the S&P 500 Index Option. The former is an American option Whilst the latter was re-defined as a European option in April 1986. Both are cash-settled contracts. The re-definition of the S&P 500 contract resulted in spectacular rise in volume for what had previously been a moribund contract, indicating that an unsatisfied demand for such a hedging instrument had existed within the US investment community.

The CBOE now dominates the US Index options market. Various component indices (telecommunications, transportation, oil, computers, OTC) have been introduced but the lack of activity has resulted in some, such as telecommunications and transport, being de-listed.

On September 27 185 Eupopean options on six currencies were introduced; however, the CBOE's continuing share of less than 5 per cent of the foreign currency options market encouraged it to de-list these contracts in august 1987 and transfer the business to the Philadelphia Stock Exchange (PHLX).

In February 1987 the CBOE, in a move which had the CSE approval, became affiliated to the Cincinnati Stock Exchange. This enables CBOE members to trade as well as options and at the same time should improve liquidity and volume on the Cincinnati Exchange Floor. The CBOE still remains strong links with the CBOT, including a bridge connecting both the two exchanges, opened in July 1986.

3.1.5 - London Traded International Financial Futures Exchange (LIFFE)

The London International Financial Futures Exchange (LIFFE) opened in September 1982 with the approval of the Bank of England and Department of Trade and Industry, to provide a market within the European time zero offering financial futures. More recently it has provided financial options, for dealers and investors worldwide. Regulation is overseen by the Bank of England.

LIFFE is now the largest futures and options exchange outside the US. It offers fourteen futures and seven options contracts.

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3.2 - The Volume of Options in the World Markets

The volume of trade inoptions market has grown enormously in recent years. It is difficult to obtain up to date data for international markets. However, as you see from table (Annex:1)(3), the leading US options market, the Chicago Board Options Exchange (CBOE), Frequently trades more of a stock in the form of options than all other stock markets.

4 - Types of Options in Securities Market

4.1 - Traditional Options

A 'traditional' option bargain is made between a broker and a firm which makes a market in options, known as an option dealer. Traditional options are offered by option dealers on any traded shares, on gilts, and on other and overseas securities.

The option dealers can either be the taker of the option money (or premium) and write the option themselves, or they can find a broking firm whose clients will be responsible for all or part of the option. A Purchaser of a traditional option is known as the giver (of the option premium).

A traditional option:

- *has a maximum life of 7 account periods*
- *can only be exercised on one day in each account period (Declaration Day). It will thus be cheaper than a comparable American style option.*
- *may be a call or a put option*
- *may be a 'double' option, that is a call and a put combined. however if all of one side of the contract is exercised the other is cancelled*
- *may be exercised in part*
- *may only be purchased or written through member firms and cannot be sold to a third party. They are not tradable.*

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(3) : International Capital Markets Developments and Prespects- International Monetary Fund.

When a traditional option bargian is established the agreement must specifiy the:

- striking price: the price at which the underlying security may be transacted
- option money : the price or premium paid for the option
- option period : the life of the option and when it expires
- underlying security : the description and guantity of the shares or security subject to or underlying the option.

A giver buys the option and the taker is responsible for fulfilling it. Once the option is agreed a contract note is then issued by the broker to the giver, and to the taker if the option dealer has sought a taker. A traditional option bargain is checked and settled in accordance with normal Stock Exchange arrangements.

Payment of the option money is not due until the account day of the account period in which the option may be exercised.

Once an option is agreed the giver has the power to exercise his option by notifying the taker, or letting it lapse if it would not be profitable to exercise it. The taker has no rights and can only wait to see if the option is exercised.

If the giver decides to exercise the option he must notify the option dealer who will pass this information on to any taker. The exercise of a traditional option is called declaration and this must be done by 2,45pm on the declaration day, this being the penultimate day in any account period during which the option may be exercised. There is one declaration day for each account period over the life of the option.

On declaration a further bought (call) or sold (put) contract note is issued to the giver, referring to the striking price, with the opposite contract note being issued to the taker.

Unlike traded options there are no rules or regulations specifying minimum amounts of cover or margin which the takers of the option money must put up as security in the event of the price of the underlying security moving agianst them. There are only in-house brokers'rules.

Another major difference between traditional and traded options concerns the rights of the holder or giver to benefits on the security if he exercises the option. The holder is entitled to all dividends, rights, and powers in the security provided that the option is exercised.

- *any dividends paid during the option period belong to the giver even if the option is exercised after the share has gone ex-dividend. The dividend is paid as 'cash in lieu of dividend' since no dividend voucher could be raised for it.*

- *any rights issues made during the option period belong to the giver if the option is exercised. When a security goes ex-rights an official price is fixed for the rights on application to the Head of the Quotations Department. The rights are settled between counter-parties by the payment of an amount equal to the valuation whilst the exercise price of the option remains unchanged (unless the result of the valuation is zero or less when no payment is made).*

- *in the case of a scrip or bonus issue both the stiking price and the number of shares are adjusted.*

- *if a takeover bid is made for the shares then upon exercise the giver will usually receive non-assented stock. If he wishes to assent he must declare sufficiently in advance in order to obtain the securites and accept the bid.*

Prices of traditional options on the major shares are published in the finanical press.

4.2 - Negotiated Options on Gilts

4.2.1 - Introduction

The Council of the Stock Exchange introduced rules in October 1987 (Ise Rules 381 to 394) to allow the writing of negotiated options on gilts, following the framework for warrants on gilts. Discussions between the Gilt Edged Markets Committee and the Traditional Options Sub-Committee produced two forms of option, a 'traditional' option

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and a 'negotiated' option, differentiated by contract size. These are in addition to the long and short gilt traded options.

The terms of negotiated options are, subject to certain conditions, the result of agreement between two parties. The name 'negotiated' means that its terms and conditions are negotiated. It is not envisaged that negotiated options will be transferable. The buyer will simply have the opportunity of exercising the option, selling it back, or allowing it to lapse and no transfer to a third party is allowed.

As with the warrants on gilt-edged stock it is intended that negotiated options on gilts, unlike the traditional options, will be used by professional institutions rather than private clients.

The following are the features of negotiated options.

- they may only be written on gilt-edged stock
- negotiated options are not permitted on any security referred to under ise rule 602.1 b-1
- the size of the contract reflects the intended professional nature of the instrument. The size of the contract is negotiable subject to a minimum of £100,00 nominal value of the gilts into which the option may be exercised
- the striking price is negotiable subject to the proviso that the buyer is informed of the underlying price of the gilts
- the premium is negotiable and should be paid no later than three business days after the option has been agreed between the counterparties. This is to allow time to recieve payments from overseas clients
- the provision for exercise is fully negotiable and the option may thus be either of an 'European', 'American' or other form as determined by the counterparties.
- the maximum life of a negotiated option is 12 months. (In order to parallel the conditions currently applying to warrants)

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- *the original writer of a negotiated option may re-purchase it from the holder but is not obliged to do so.*
- *negotiated options are exercisable only at 'clean' prices (as with traded options)*
- *there are no rules covering margin on negotiated options*
- *adjustment to the terms of a negotiated options contract are prohibited.*

4.2.2 - Writing Negotiated Options

Member firms may write negotiated options as principals or act as agents in arranging the writing of such options on behalf of their clients provided that the client has given informed consent under Ise Rule 312. Following discussions with the Inland Revenue it was decided that agency crosses are not to be permitted on negotiated options. Thus while a member firm may act as an agent for a client it must always effect the business with another member firm and not act as an agent on behalf of a client with another client. A member firm is not permitted to write or act on behalf of its client in arranging for another member firm to write a negotiated option unless the client has given and not withdrawn authority in a form approved by the Stock Exchange.

A member firm writing or buying a negotaiated option as a principal or agent must provide the Stock Exchange with a contract note no later than the next business day.

4.2.3 - Capital Adequacy requirements

The Bank of England established the capital adequacy requirements for Gilt-Edged Market Makers who are writers of negotiated options. It published a supervisory notice detailing these requirements. For other Firms writing negotiated options The Securities Association is responsible for establishing the capital requirements. Until such time as The Securities Association Rules become effective, exposure to negotiated options will be catered for under the normal Minimum Liquidity Margins premium.

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4.2.4 - Exercise

Where the giver of the option money wishes to exercise the option declaration must be made by 2,45 pm on the day on which the option expires.

The exercise of the option shall not entitle the purchaser of the outcome bargain to any dividend or any distribution of income of which the underlying security is marked ex before the option is declared. (ie exercise is at the 'clean price'). This also has tax implications.

Any negotiated option not declared as above is deemed to have expired.

Negotiated options may be sold back to the writer.

4.3 - Traded Options (4)

4.3.1 - Introduction

Different types of traded options have been introduced to the Stock Exchange from 1978 and as their name implies are negotiable securities and may be bought and sold in their own right. Traded options are available on a wider range of financial instruments than traditional options and also provide more flexibility.

While the basic principles remain the same as traditional options there are separate and more detailed rules in relation to expiry dates, trading hours, settlement etc. Unlike traditional options, it is not possible to have a double option and separate call and put options must be purchased.

There ara five main groups of traded options:

- *equity options on the shares of certain large companies (also restricted life options)*
- *Long and short gilt options based on actual goverment securities (Deleted February 1989)*
- *currency options on the dollar-sterling and dollar-deutschemark exchange rates*

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(4): Dealing in Traded Options-Richard Hexton ./..

- *index options on the FT-SE 100 share index*
- *international equity options on (at present) certain French companies.*

About half a dozen shares account for half the traded options business. The gilt and currency options are poorly traded. Currency has a well developed forward market and gilt options after, a promising start did not show enough liquidity.

Traded options provide the most flexible and versatile instrument available for the control of investment risks and hence are becoming increasingly important.

The following describe some of the terminology relating to traded options.

- *Traded option: An option which can be bought and sold on the trading floor of the ISE*
- *Writer: A person who executes an opening sale of an option contract*
- *Holder: A person who purchases or holds a traded option contract*
- *Contract: The dealing unit in which traded options are bought and sold. A contract usually represents options on 1,000 shares of the underlying security.*

There are specific minimum units in options contracts and a maximum number that may be held. Contracts are not divisible.

- *Position Limit: The maximum number of contracts permitted to be held or written by a single party or partier acting in concert*
- *Crowd: The market makers and broker dealers at a particular pitch*
- *Market Maker: A member firm of the Stock Exchange which under the rules if the ISE is allowed to make a market as a principal in traded options*
- *Public Order Member (POM): A broking firm which is not a market maker or a clearing member but which is able to deal in traded*

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options on it's own behalf or on it's client's behalf as an agent

A public order member may only deal in traded options it has appointed a clearing agent to act on it's behalf

- *Clearing Agent: A Clearing member of LOCH which is authorised by the Council of the ISE to clear traded options business on it's own behalf and for the other member firms*
- *Board Official: A member of the ISE staff appointed to be responsible for the custody and execution of public limit orders*
- *Pitch Official: A member of the ISE staff appointed to ensure orderly trading on the Floor*
- *LOCH: is a wholly owned subsidiary of the Stock Exchange responsible for registering and settling all Stock Exchange traded options transactions. Currency transactions are cleared through the International Commodities Clearing House ICCH, a subsidiary of the major British banks*
- *Option Premium: The price of an option paid by the buyer to the seller or writer*
- *Opening Purchase/Opening Sale: The transaction by which the buyer becomes the holder of the option and by which the seller assumes liability for the contract by becoming the writer respectively*
- *Margin: The sum required from option writer by LOCH as collateral, comprised of proportion of the underlying security's price and a variation margin, calculated by reference to the exercise price and the price of the underlying item. The margin ie re-calculated daily as the underlying security price moves*
- *Closing Purchase: A transaction by which a writer buys an option which has exactly the same terms as an option that he has previously sold and thereby terminates his liability*
- *Closing Sale: A transaction whereby a holder of an option disposes it*

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- *Open Interest: The number of traded options contracts outstanding at any time, either in a particular class or all classes*
- *Expiry Date: The last day on which the holder of an option can exercise his right to purchase or to sell the underlying security*
- *Life Cycle (Expiry Cycle): Different types of options have different cycles and expiry dates. For equity, gilt, and currency options the cycles are three-monthly and for index options they are related to a continuous four month cycle. Restricted Life Options have 2, 4, 6 monthly cycles*
- *Class: All options of the same type relating to the same underlying security are of the same class. Thus calls and puts form separate classes*
- *Series: All options of the same class and with the same exercise price and expiry date form a series*
- *Spread: The purchase and sale of different series of options in the same class by the same principal*
- *Spread Margin: The margin required for a spread. Because a spread reduces the risk to the writer the margin requirement is lower*
- *Straddle: This is where an investor buys both a put and a call option or writes both a put and a call option on an underlying security*
- *Exercise Price or Striking Price: The price per security at which the holder of a call option may buy or the holder of a put option may sell the underlying security. The exercise price is closely related to the current actual price of the underlying security. It is established by the Stock Exchange in line with fixed scales*
- *Underlying Security: The security to which the option relates*
- *Abandon: To allow an option to expire without exercising it*

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- *Exercise: A formal notification to LOCH that the holder of an option wishes to exercise it by buying or selling the underlying stock*
- *Automatic Exercise: Since September 1987 LOCH automatically exercises in-the-money equity and index options without requiring notice.*

Contracts at-the-money or where the exercise price is within 1% of the underlying security price are not subject to automatic exercise because the holder may find this unprofitable once transactions costs and commissions are taken into account.

- *Assignment Notice: Formal notification from the LOCH to a writer requiring fulfilment of his contractual obligation to buy or sell the underlying security.*

4.3.2 - Types of Traded Options

4.3.2.1 - Stock Options

Underlying Security:

The underlying security is a stock on which traded options are listed by the Stock Exchange.

Contract Size:

One contract normally represents the options on 1,000 shares of the underlying security. Contracts are indivisible.

All orders should refer to the number of contracts, not the number of shares. If the share price is greater than £10 the maximum contract is 100 shares.

Unit of Trading:

Traded options on listed securities are quoted in pence. The minimum unit of trading is one contract.

Exercise Price:

Exercise prices are quoted from a fixed scale.

For each exercise price for each expiry date currently traded there will be at least one exercise price above and below the

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current share price quoted. This will be changed if the current share price closes outside this range for four successive days.

The fixed scale for exercise prices on traded options on UK equities is at 10p intervals from 50p to 140p, 20p intervals from 140p to 300p, 30p intervals from 300p to 420p, 40p intervals from 420p to 500p, 50p intervals to 1,500. 100p intervals to 2,000, 200p to 3,000, and 300p above this.

Expiry Date:

The maximum life is 9 months.

Life Cycle:

Expiry dates are arranged on a quarterly cycle so that at any one time there are always three different expiry dates listed for each class. The cycles are:

January, April, July, October; and

February, May, August, November; and

March, June, September, December.

When a new class is introduced the Stock Exchange allocates it to a cycle of expiration dates and it is rarely transferred (although this may be done if a company alters its dividend dates).

Puts and calls are allocated to the same expiry date.

There will thus be three expiry dates trading at any one time.

Margin:

Margin is comprised of two components. Margin is 20% of the price of the underlying security and the addition of the amount by which the option is 'in-the-money' (or deduction of the amount that it is 'out-of-the-money'.

Position Limit:

The maximum number of contracts which a group of investors may hold is 5,000 contracts of 1,000 shares (ie options on 5,000,000 shares) on companies with £5m issued; 10,000 contracts where £5-1,000m;

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and 20,000contracts where more than £1,000m are issued.

Dividends and Entitlements:

Unlike the giver of a traditional option the holder of a traded option does not have full entitlement to dividends paid on the share during the option's life. Dividends paid on the underlying securities stay with that owner of a security when they are marked ex-dividend. If a holder wants to gain the dividend he can only do so by exercising the option and purchasing the shares before the share goes ex-dividend. However, in the case of a scrip of rights issue on the underlying securities the Stock Exchange adjusts the exercise price and in the case of a scrip issue the number of shares in the contract is also altered.

4.3.2.2 - Restricted Life Traded Options

These options were introduced in July 1988. They were introduced to allow institutional investors to use options in take-over situations (rather than dealing in the cash market), once a take-over bid had been announced. These options will only be introduced for a stock once a take-over is announced, at the discretion of the Council.

These classes will be traded on a two-four-six month expiry cycle.

Towards the end of the last expiry month the Council will decide whether to retain the classes or to allow them to lapse. If the classes continue to be traded they may be assigned to the restricted life cycle, or to a regular three-six-nine month expiry cycle. Otherwise trading will cease on the expiry day of the last month and no further expirations will be introduced.

Restricted life traded options thus allow an option class to be introduced during a period when there is a high degree of interest and activity in a share (a take-over). This is a 'temporary' addition to the traded options. It may be extended by a further restricted life cycle being assigned. It may even become a standard traded option.

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The first of these options to be introduced was on the ordinary share of Rank Hovis McDougall Plc, in the September-November-January cycle, from 28 July 1988. The position limit was 5,000 contracts in each class, written and held contracts considered separately.

4.3.2.3 - FTSE 100 Index Options

Underlying Security:

The FT-SE 100 Share Index

Contract Size:

Each contract comprises 1,000 units of 1p each and thus each contract represents a value of £10 multiplied by the Index exercise Price. Thus a series for exercise at 1,800 has an underlying value of £18,000.

Unit of Trading:

The premium for each option series is quoted in pence per unit of the contract. Thus a premium of 40p per unit represents a cost of £400 (40 x £10) per contract. The smallest permitted price fraction is 1/2p.

Exercise Price:

Exercise prices are quoted at intervals of 50 points for options having 4 months or less to expiry.
Exercise prices are quoted at intervals of 100 points for options with more than 4 months to expiry until it becomes the fourth month of the cycle when the 50 point intervals apply. Exercise takes place on a cash basis unlike the account basis used for stock options. There is no underlying stock. Exercise is automatic for 'in-the-money' options. Exercise is available on each day of an account up to and including the day of expiry. The settlement takes place two business days after the submission of the exercise notice. The settlement consideration is the 'in-the-money' element calculated by reference to the difference to the index value on the day of exercise and the striking price

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of the series being exercised, multiplied by £ 10. Except on expiry days the index is calculated at 3,40pm on each day. On expiry days it is the average of all values between 11,10 and 11,20 am ignoring the highest and lowest values. Dealings on expiry day cease at 11,20am.

Expiry Date:

Index options have a maximum life of 12 months.
Index options expire on the last business day of the month.

Life Cycle:

At any time index option contracts are available with one, two, three and four months to expiry, plus a June and December expiry month, whether or not they are within the nearest four expiry months.

Margin:

Public Order Members: The margin required is 12,5% of the underlying value (Index Value x £10) plus or minus the in or out-of-the-money element, with a minimum margin of 3% of the underlying value.

Market Makers: Calculated on the same basis as applies to traded options on stocks.

Position Limit:

The maximum number of index option contracts that can be held or written by a single party or several parties acting in concert is 20,000 per class.

4.3.2.4 - European FTSE Option

This is a new product introduced on 2nd February 1990 and is basically the same as the existing contract (it is based on the FT-SE 100 Index and priced similarly ie 1 FT-SE point equals £ 10), except that it can only be exercised on expiry date. It was introduced at the request of market users who were prevented from

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running a long term equity portfolio hedge by the frequency of being exercised against once their written "American Style" FTSE option had gone into-the-money. The margining is exactly the same as for the Amercian Style FTSE option but the strike prices are at intervals of 25p and 75p (rather than 50p and 100 p) for ease of identification.

Underlying Security:

The FT-SE 100 Share Index

Contract Size:

As for FT-SE 100 Index Options

Unit of Trading:

As for FT-SE 100 Index Options

Exercise Price:

Exercise prices are set at intervals of 100 index points When the series reach 3 months to expiry, the 50 point intervals will apply.

Expiry Date:

As for FT-SE 100 Index Options

Life Cycle:

European style exercise FT-SE 100 Index Options contracts are available with 3, 6, 9, and 12 months to expiry

Margin:

As for FT-SE 100 Index Options

Position Limit:

As for FT-SE 100 Index Options

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4.3.2.5 - International Traded Options

Underlying Security:

The underlying security is a foreign stock on which traded options are listed by the Stock Exchange. Trading in the first such stocks commenced in January 1988 on Peugeot S.A., STE Nationale Elf-Aquitaine (SENA), and Saint Gobin. Further launches are expected and will probably be from stocks popular on SEAQ International. They could be from any country.

Contract Size:

The contract size for these options is for options on 100 shares.

Unit of Trading:

International traded options are quoted in the unit of the country. In the case of the first issues this was in francs.

Exercise Price:

Exercise prices are quoted from a fixed scale. In the case of French equity options there are at f10 intervals to f140, 420 intervals to f300, f30 to f420, f40 to f500, f50 to f1,000 and f100 intervals above this.

Expiry Date:

The maximum life of 9 months. 15th of the month in London. Around 20-22nd in Paris.

Life Cycle:

These contracts have been attached to the March, June, September and December cycle.

Margin:

The margin is 35% of the price of the underlying security plus or minus the in or out-of-the-money element respectively.

Position Limit:

The position limit is 5,000 contracts.

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4.4 - LIFFE Options on Futures

The London International Financial Futures Exchange, LIFFE, offers futures contracts and options on futures and cash. The details of these contracts are shownoverleaf. (Annex:2)

The most liquid of these instruments was the LIFFE long Gilt Future, and is now the T-Bond and Bund futures.

Options on LIFFE have expiry dates on a cycle of March, June, September and December. The actual expiry date coinciding with the delivery month of the underlying Future. Thus the June 1991 Treasury bond option is exercisable into the June 1991 Treasury bond futures contract.

The unit of trading in each case is one contract of the underlying future.

All options traded of LIFFE are American style options and as such may be exercised by 17.00 on any trading day between the purchase of the option and the last trading day of the underlying future when the option may be exercised up to 18.00 hours. Delivery is on the first business day after the exercise day.

As a new expiry month is introduced, 13 exercise prices are listed for new series (9 for Euromark and Bund), new exercise prices are introduced on the day after the futures contract settlement price approaches the sixth highest or lowest exercise price (fourth highest or lowest in the case of Euromark and Bund). Exercise prices are set at 0.25 (i.e. 0.25%) intervals on the interest rate futures, 1 intervals on the Long Gilts, $1 on the 'T' bond and DM 0.5 on the Bund.

The principal differences with LTOM options lie with the premium and margin arrangements.

The option price is not paid when the contract is taken out. It is only payable by the buyer to the seller on exercise or expiry of the option, not at purchase.

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The intial margin is paid by both parties. It is the futures margin multiplies by a risk factor (the delta of the option - a measure of it's volatility compared to the price of the underlying asset as determined by LIFFE).

Futures initial margin x LIFFE Risk Factor

The risk factor will generally be less than one, reflecting the fact that option premiums normally change by less than the change in the underlying futures price, and will never be higher than the value of the premium.

4.5 - XMI Options (USA) (5)

The Amex's Major Market Index (ticker symbol: XMI). Composed of 20 US blue-chip industrial companies, 17 of which are in the Dow, XMI maintains an impressive 97% correlation to the Dow and a sensitive five-to-one price relationship.(For every five point move in the Dow, XMI will move by approximately one point). Thus, the XMI index presents investors with a reliable, easy-to-understand gauge of broad market movement while XMI options provide a way to hedge a portfolia of blue-chip stocks or seek profit from anticipated market moves.

XMI was introduced in April1983 and through the end of September had been trading about 75,000 contracts a day with the public accounting for about 40% of the activity. XMI activity has grown by nearly 600% since the option's introduction nine years ago.

Today, they are giving investors the opportunity to participate in the US stock market with a reduced exposure to risk.

XMI options have develepod broad investor appeal, especially in view of the fact that much of the US stock market's recent perpormance has centred on trading in blue-chip stocks. Its popularity has been further enhanced by the emergence of index funds in the US and by the trading of XMI futures on the Chicago Board of Trade, under a 1984 licensing agreement with the Amex, which has enabled investors to devise new hedging strategies.

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(5) : Euromoney-November 1987

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The details of the Major Market Index Option Contract are Shown below

Ticker symbol:

XMI

Trading Unit:

XMIx$100. For example, if the index is at 510, the dollar value of the contract would be $51,000.

Premium Quotations:

1=$100. Fractional prices up to 3 are quoted in sixteenths;prices over 3 are quoted in eighths. For example, a premium of $3\frac{1}{8}$ represents $312,50.

Expiration Months:

Three consecutive (near-term) expiration months traded at any one time. For example, at the end of the January expiration, February, March and April expirations would be listed for trading.

Expiration day:

The Saturday after the third Friday of the expiration month.

Exercise prices:

Set at 5-point intervals around the index value. For example, if the index is at 505.10, strike prices of 500, 505 and 510 will be available.

Exercise settlement:

In cash, on the next business day after an exercise notice is tendered. Settlement is based on the difference between the strike price and the closing value of the day the exercise notice is tendered.

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III - ANALYSIS OF OPTIONS

1 - Why Use Options

1.1 - Basic Explanation

An option provides both a form of insurance policy and a highly speculative investment. It is an instrument which can be used for controlling or managing price risk, especially if used in conjunction with holding or selling the underlying security. It may also be used to perform a highly geared speculation on future price movements.

If an investor holds the view that the price of a security currently valued at 100p will rise in price he may but £1,000 worth of that security with the intention of selling it once has risen. His gain if the security rises, or loss if it falls, will be the percentage change in the price of the security multiplied by his £1,000.

Alternatively, the expenditure of the £1,000 on a call (right to purchase) option, if the price of the premium for exercise at the current price were say 4p a share, would give him the right to purchase 25,000 ((100-4) contracts on 1,000 shares each) shares at a of £25,000 buy a future date. If on the expiry of the option the price of the security has risen he will exercise the option and purchase 25,000 shares from the writer for resale.

Let us assume that the share price rises by 5p. In the first case he would have purchased £1,000 of the security and sold it for £1,050. The profit would be £50 excluding commissions.

In the second case he would have purchased options worth £1,000 on £25,000 of stock. On exercise the stock would have risen by 5% to be worth £26,250. He could purchase this stock for £25,000 and sell it in the market for £26,250 which after deduction of his £1,000 premium and excluding commissions gives a profit of £250.

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If the rise had been 10% he would have made £100 by direct investment in the security and £1,500 by the use of an option.

However there is also considerable risk involved. If the price of the security only rose by 4% then the gain from the direct investment would be £340. But while the £25,000 of stock underlying the option would be worth £26,000 and the exercise of the option would provide a profit of £1,000 the original cost of the option premium would cancel it out.

Any rise from 100p to 104p would provide a profit on the direct investment but not to the purchaser of the option because the cost of the premium would more than eradicate it.

Even worse, if the price of the stock fell by 5% then the loss from the direct investment would only be £50. Because the option would not be worth exercising (the price the investor could sell the stock for in the market would be lower than that which he would pay for it under the terms of the option) then he would not exercise it and would have lost all the money paid for the premium - £1,000. However, once the price of the stock falls below the exercise price this is the absolute limit of his loss even if the stock were to be worth nothing. Yet, if the stock rose above 104p (the 100p exercise price plus the price of option, 4p) then his profit will rise far more effectively than from direct investment in the stock. This describes the gearing. For the same outlay a much greater investment can be made, although it is much riskier. It also demonstrates another feature of options - that whilst the upside potential for gain can be unlimited the downside loss is restricted to the cost of the premium.

The example above could have been demonstrated with investor deciding that the price of a security might fall. In this case, subject to certain restraints, he could have sold the security short and purchased it back in the future, or purchased a put option. The profits profile would then be reversed. If the

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security fell below 96p (the exercise price of 100p less the premium cost of 4p), then he would make a profit. If the price did not fall that far he would make a loss, depending upon how far it fell, and if it rose he would lose £1,000.

The risk position of the writer of an option is the reverse of that of the purchaser, the two summing to zero. The writer's maximum gain in the above two examples would be £1,000 from the premium, whilst his loss could be unlimited.

1.2 - Gearing

Let us consider another aspect of the gearing allowed with options.

Consider the Storehouse share trading at 240p on the following FT options page. A call option for exercise at 220p will yield a profit when the share rises above 220p by an amount greater than the premium. Since the share is already at 240p the premium must be at least 20p or else investors could buy the options and immediately exercise them for a profit. In fact the April calls are 25p.

If the share price rose to 245p over the next week when similarly the option price would rise to be at least 25p, and let us say if moves to 30p. Note that it is not profitable to exercise the options bought.

Consider two investors, one who buys a thousand shares and one who puts the same money in traded call options, over the price rise from 240p to 250p.

Direct Investment in shares :

1,000 shares	*240p*	:	*£2,400*
	245p	:	*£2,450*
Profit		:	*£ 50*

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Percentage Profit	:	£ 50 x 100 :2.00% £2,400

Investment in call options:

£2,400 buys options on 9,600 shares. Contracts are for 1,000 shares and not divisible, so call it 10,000 shares or 10 contracts at 25p premium.

Cost	£250 per contract	:	£2,500
"	35p or £350	:	£3,500
Profit		:	£1,000
Percentage Profit		:	£1,000 : 40% £2,500

So, the direct investment in shares yields a profit of £50, or 2.08%, whereas the investment in options, even though the option does not become profitable to exercise, if sold and the position closed, gives a profit of £1,000 or 40%. The option price is far more volatile than the stock price. This is really the gearing element.

Equally if the price of the stock had fallen then the option premium would fall in price by a corresponding amount to the rise, producing much greater losses than on the share.

The other point to note is that the purchase of 1 contract would have cost £250, and yielded £100 profit, or double that from an expenditure of £2,400 direct in the equity.

2 - Option Pricing

2.1 - Basic Concepts in Option Pricing

Understanding of the value of options must start with a clear understanding of some key concepts which are explained simply below.

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2.1.1 - The Premium

This cost is regarded as a sunk cost after a while not be a part of the decision making process about whether to exercise. The longer the maturity the more expensive the option will be, i.e. the higher the premium, because of the higher probability that there will be a price change favourable to the holder and the option will be exercised. Equally the higher the volatility of the stock the higher the possibility it will be exercised and the higher the premium.

The price of a premium is determined statistically by reference to six main factors: the strike price, the maturity expected volatility, interest rate levels and anticipated share growth. Market conditions and supply and demand are also taken into account.

Market conditions affecting the premium include changes in the taxation regimes of investors, general economic conditions, interest rate changes, illiquidity in the markets, and especially in the case of currency options, the possibility of the imposition of exchange controls and political instability.

2.1.2 - Intrinsic Value

This is a measure of the amount by which an option is 'in the money'. A lower option has intrinsic value if the exercise price is lower than the current price of the underlying security and a put option if the exercise price is higher:

Intrinsic value : current underlying price - exercise price.

Example:

If current underlying price : 140 Exercise price : 130 Premium : 12

Intrinsic value : 140 - 130
: 10

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2.1.3 - Time Value

The time value represents the amount that is paid at purchase of an option (when issued or traded) for the right to exercise it immediately, in fact the amount that would usually be lost if it was exercised immediately. If exercised immediately the total cost would be the amount paid for the option (the premium) plus the exercise price at which the underlying stock could be bought, less the income from the current sale at the underlying value.

Thus:
Time value : Premium + Exercise price - current underlying value
and thus

Time value : Premium + Intrinsic value

or

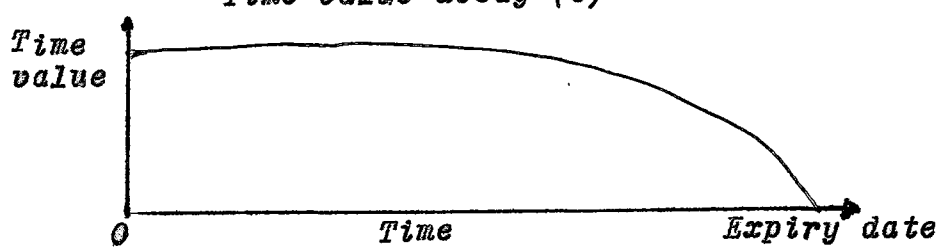
Premium : Intrinsic value + Time value

So referring to the example above

Time value : 12 130 - 140
: 2

The Time value of an option usually decays as it reaches maturity because the potential for gain usually becomes more limited. This need not be the case if the market becomes much more volatile, but even so unless exercise is advantageous time value will become zero on the expiry day.

Time value decay (6)



So, essentially the premium is composed of intrinsic value (the amount it is 'in the money') plus the time value, an amount representing the value of the chance of it becoming in the money.

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(6) : Introduction to financial futures and options ./..
Keith Redhead

2.1.4 - Volatility

Time value is closely related to the volatility of prices in the underlying security. There are at least three ways of assessing volatility. Normally defined as the standard deviation of returns, volatility can indeed be calculated on the basis of historic price data. This can be the last 20 or 30 days closing prices with each day having equal importance, or with weightings to give the most recent date most emphasis. A trader might decide to make his own forecast of volatility, believing that his view of the future is more likely to prove profitable than extrapolating historic information. Lastly, one might use the implied volatility, that is the volatility which is implicit from the premium which is trading in the market place.

2.1.5 - 'In the Money', 'At the Money' and 'Out of the Money'

An option is said to be 'in the money' if the strike price or exercise price compared with the current market value of the underlying stock is favourable to the purchaser of the option, and vice versa. In the case of an equity option, if the current share price were 240p: for the following ranges of exercise prices;

'in the money'

option	*- Call option at below 240p (holder expects share to rise)*	*Put option at above 240p (holder expects share to fall)*

'at the money'

option	*- Call option at 240p (holder expects share to rise)*	*Put option at 240p (holder expects share to fall)*

'out of the money'

option	*- Call option above 240p (holder expects share to rise)*	*Put option below 240p (holder expects share to fall)*

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2.2 - Pricing with the Black-scholes Formula (7)

The first important compenent is one which we have already looked at : The relationship of the striking price to underlying security price. Obviously, an option must be worth at least its intrinsic value. The averall price of option is the sum of its intrinsic value and its time value.

In 1973, shortly before traded equity options were introduced to the Chicago Board Options Exchange, two mathematicians, Drs Fisher Black and Myron Scholes evaluated a mathematical model for determining the "Fair value" of option premiums.

Black-scholes option pricing formula provides a value that an option should take idealised circumstances. Assuming no dividends and a lognormally distributes share price, the price of a call option is given by:

$$C : S_0 N(d_1) - \frac{X}{e^{rt}} N(d_2)$$

where $$d_1 : \frac{ln(S_0/X) + (r - {}^1/_2\, v^2)\, t}{v\sqrt{t}}$$

where $$d_2 : \frac{ln(S_0/X) + (r - {}^1/_2\, v^2)\, t}{v\sqrt{(t)}}$$

X : exercise price
C : Cost price of call option
S : Underlying share price at expiry
e : 2.71828
r : riskless rate of interest (continuously compounded)
t : time of expiration (in years)
v : standard deviation of annual return on the security
N(d) : cumulative standard normal distribution at d

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(7) : Karaşin Gültekin; "Menkul Kıymet Opsiyonları ve Opsiyon Değerleme Modelleri", Para ve Sermaye Piyasası Dergisi, 1987.

Example:

S_o : 48 $

X : 50 $

T : 6 months ($^1/2$ year)

r_f : 0,10

v : 0,40

$$d_1 : \frac{\ln(48/50) + (0,10 + 1/2(0,40^2)\ )1/2}{0,40\sqrt{1/2}} : 0,1739$$

$$d_2 : 0,1739 - 0,40\sqrt{1/2} : -0,1089$$

$$C_o : 48\ N\ (0,1739) - (50/e^{(0,1)(0,5)})N\ (-0,1089):$$

$$: 48\ (0,5690) - 47,56(0,4562 : 5,62\ \$$$

$$P_o : 5,62 - 48 + 50/e^{(0,1)(0,5)} : 5,18\ \$$$

Note that this formula provides a direct estimate of the hedge ratio, namely $N(d_1)$.

The hedge ratio is the estimated change in the price of the option associated with a £1 change in the price of the underlying security. Clearly the hedge ratio is the slope of the dotted line curve drawn in the following diagram.

The hedge ratio tells you in what proportions the underlying stock and the option must be held in order to neutralise the effects of small stock price changes on an investors portfolio.

Put options are readily priced using the calculated call price of the hedge ratio, namely the put-call parity theorem.

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It should be realised that option pricing models do not attempt to describe reality. A model is useful if the behaviour of the theoretical price has the same characteristics as the behaviour of real option prices such that the model provides good predictions of the levels of real option prices.

The Black-scholes model has a number of deficiencies. Firstly, it ignores expected returns on the underlying instrument (e.g.dividends), but the rate of interest used in the equarion can be adjusted to reflect such returns. Secondly, it is really only suitable for European-type options, which can be exercised only on the expiry date. Thirdly, it does not reflect any market expectations. A general expectation that the price of the underlying instrument will rise might cause a rise in call option prices and a fall in the prices of put options. The Black-Scholes model also fails to capture other possible price behaviour patterns, such as those arising from the frequent popularity of deep out-of-the money options. The relative cheapness of such options might attract individuals and the resulting additional demand for them may raise their prices above those predicted by an options pricing model.

The Black-Scholes model treats $S \leq X^{-rt}$ *rather than* $S \leq X$ *as defining the at-the-money condition, and correspondingly intrinsic value is treated as* $S - X^{-rt}$ *rather than* $S - X$. *This reflects the fact that the Black-Scholes model is relevant only to European-type options. American-type call options have an intrinsic value of* $S - X$ *since intrinsic value is defined as the profit obtained from immediate exercise of the option. European-type options cannot be immediately exercised (except at expiry) and in their case an alternative definition of intrinsic value is appropriate. This definition is the excess of the price of the underlying instrument over the strike price when the two values have been rendered comparable by discounting the strike price to its present value.*

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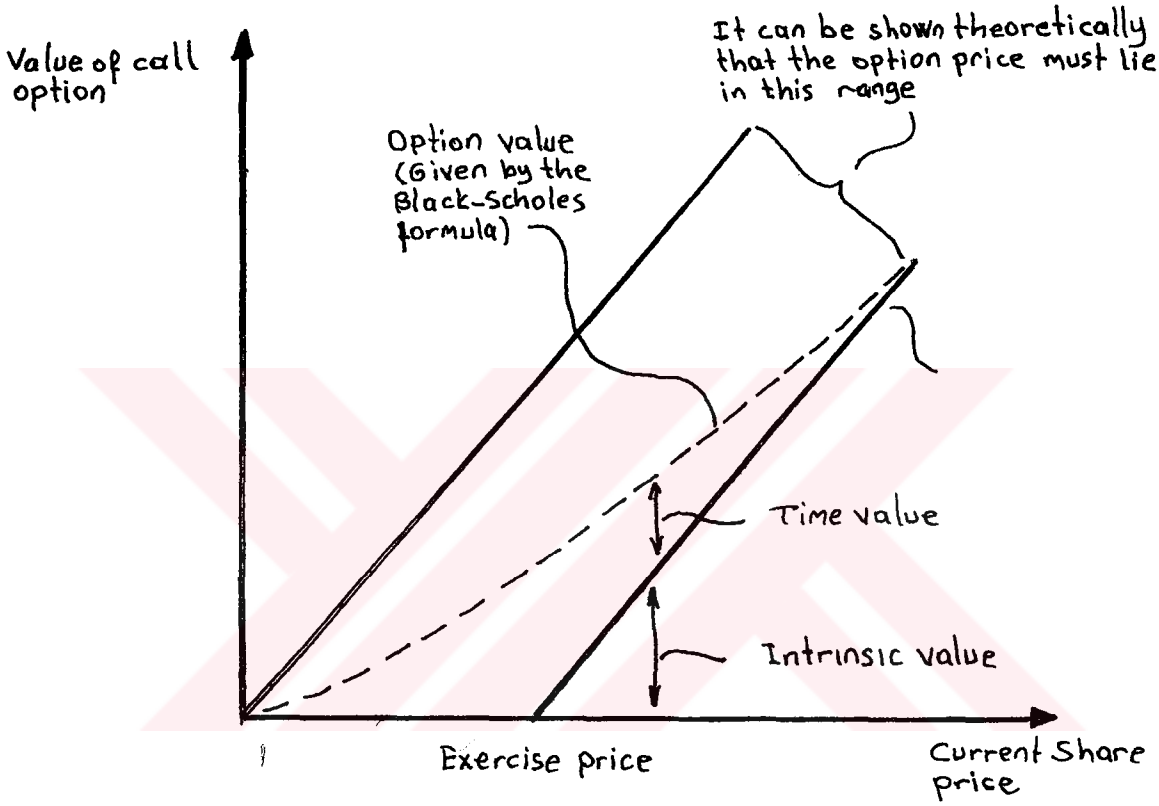
OPTION PRICING



The dashed line on the above graph shows the value of the call option typically varies with the underlying share price. Note that the time value of the option is greatest in the region where the share price is close to the exercise price, tapering off at both ends. This is because the time value is greatest when the decision to exercise or abandon the option is not a foregone conclusion.

3 - Option Strategies

Profit and loss profile for options associated with four basic strategies are examined below: buying call options, buying put options, writing (selling) call options, and writing (selling) put options. You should refer to the diagrams on the following pages. (8)

Let us consider an option on a security. The exercise price is 100, and the premium is priced at 5. These are the prices in March and the contract expires in December. The range of exercise prices available will be close to the current price, and there will be different premiums for different exercise prices.

3.1 - Buying Call Options

If the investor purchases the December call option he pays a premium of 5 to buy the stock at 100 up until December. He would do this if he believed that the price of the stock was going to rise, and to rise by more than 5 by December.

If the stock stays at 100 or falls in price the investor loses the premium amount. He will not exercise.

If the stock rises in price to 105 then the investor will reduce his loss to an amount less than the option premium by exercising the option.

If the stock does indeed rise above 105 then the investor may exercise the option, and the greater the price rise the greater the profit. Let us say the stock rises in price to 107, and the investor exercises the option, then he will be able to buy the stock at 100 by exercising the option, sell it at 107 in the market and deducting the premium cost of 5 will make a profit of 2. This profit of 2 was made for an expenditure of 5. Thus there is much higher gearing available than by solely buying the stock.

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(8) : High Profit/Low Risk Options Strategies
Humphrey E.D Lloyd.

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Another Example:

Underlying security	:	*Amstrad*
Underlying price	:	*164-166*
Delivery cycle	:	*March June September December*
Purchase	:	*March 180 calls at* $6^1/2$
Total cost	:	$6^1/2p \times 1000 = £65.00$
Breakeven	:	$180 + 6^1/2 = 186^1/2$

3.2 - Writing Call Options

The other side of the above transaction is the writer. An investor who believes that the stock price will stay steady or fall can add to his income by writing a call option.

His returns will be the exact opposite of the holder of a call option. If the price rises above 105 he will incurr loses, but if it falls below 100 then he will have profited to the extent of the price of the premium, 5. Such a position is known as a short call. It is only suitable for an investor who understands the risks, and has the capacity to absorb the losses and liquidity to meet the margin requirements.

Such a writer would be advised to write options on stock he holds. The combined position is shown by the dotted line. So, if the writer purchases stock at 100, sells a call option at 5, and sees the price fall to say 90, he will not be exercised against. Whilst the stock lost him 10, this is partly offset by the premium income of 5. If the stock stayed priced at 100 he has added 5 to his income.

If the stock rose to 115, then he would be exercise against. He delivers the stock for 100, to which can be added the premium, giving him an effective sale price of 105. He has thus only benefitted from the rise in price by the amount of the premium. Thus in this example he can lock in a sale price of 105 if forced to sell.

If he had been a naked writer (ie did not hold the stock) and the market price rose to 115, then he would have to buy the stock at

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115, sell it at 100, thereby losing 10 after allowing for the premium. If the price went higher he would lose more. Compare this with holding the stock above, where as the price rises he can effectively sell at 105. Naked call writing has unlimited potential for loss as the price goes higher. Covered call writing forgoes the opportunity to benefit from an increase in the value of the security above the exercise price, but continues to bear the risk of a decline in the value of the security.

Another Example:

Underlying security	:	BAT
Underlying price	:	462-464
Delivery cycle	:	February, May, August, November
Write	:	February 460 calls at 13p
Total income	:	13p x 1000 = £130

3.3 - Buying Put Options

The most straightforward protective strategy for investors holding stock is to purchase a put option at the current price.

In this example the investor wants to ensure that his stock position will not lose value, although he thinks its price is likely to fall. (By buying a put option at 5 without holding any stock the profit/loss position is shown in the figure).

If he holds the stock and the price rises above 105 then he can sell it in the market, and after allowing for the option premium, will make a profit.

If the stock remains priced at 100 then he will not profit from exercise and will have lost the cost of the premium.

If the stock falls below 95 then his hedge has paid off. He will exercise the option allowing him to sell the stock at 100, but has paid 5 for this right. So no matter how far the stock price falls he has locked in a price of 95 (purchase price less the premium) and protected the downside risk.

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Note that the diagram of profit and loss for holding the stock and buying a put is the same as that for purchasing a call. This position is thus a synthetic call. It follows from this that:

Cost of Call Option	=	*Cost of Put Option*	+	*Current unterlying share price* — *exercise price discounted back to the present.*

This is the put-call parity theorem.

Another Example:

Underlying security	:	*Blue Circle*
Underlying price	:	*463-465*
Delivery cycle	:	*March, June, September, December*
Purchase	:	*March 460 puts at 14*
Total cost	:	*1000 x 14p = £140*
Breakeven	:	*460-14 446*
At expiration price is	:	*465*
Action	:	*Option is worthless*
Price is	:	*440*
Action	:	*Option is exercised profit is 460-440= 20p minus cost = 6p Profit is theoretically unlimited for outlay and maximum loss of £140, insurance of £4,600 of stock is purchased.*

3.4 - Writing a Put

If an investor believes that stock prices will rise, or stay the same then he might consider writing a put. His profit and loss profile is the reverse of writing a naked call in respect of the stock price moving up or down. His potential for loss increases as the market value falls below the exercise less the premium.

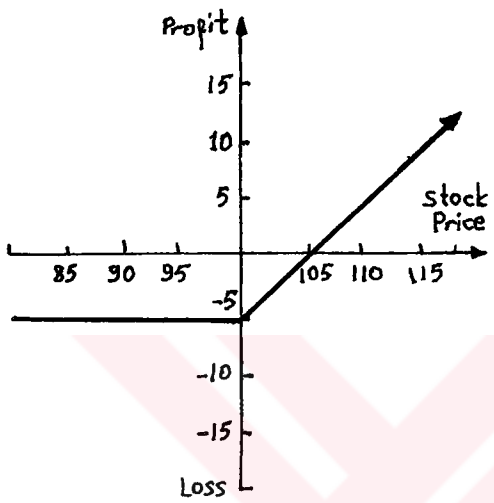
Another Example

Underlying security	: *British Aerospace*
Underlying price	: *470-473*
Delivery cycle	: *February May August November*
Write	: *February 460 puts at 8p*
Income	: *8p x 1000 = £80*
Breakeven	: *460-8 = 452*
At expiration price is	: *472*
Action	: *Option is abandoned-writer makes maximum profit of 8p*
Price is	: *440*
Action	: *Option is assigned-writer must purchase stock at 460 loss is 460-440= 20p offset by premium= 12p*

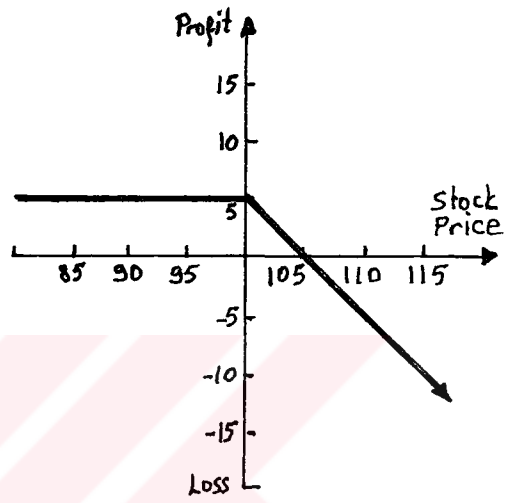
PROFIT AND LOSS PROFILE FOR HOLDING AND WRITING CALL AND PUT OPTIONS

Exercise Price = 100 Premium = 5

Holder

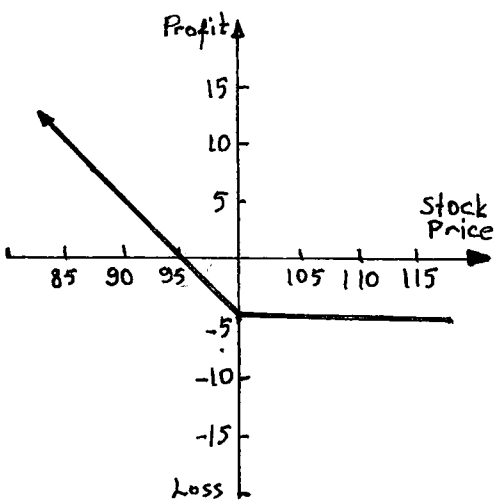


Writer

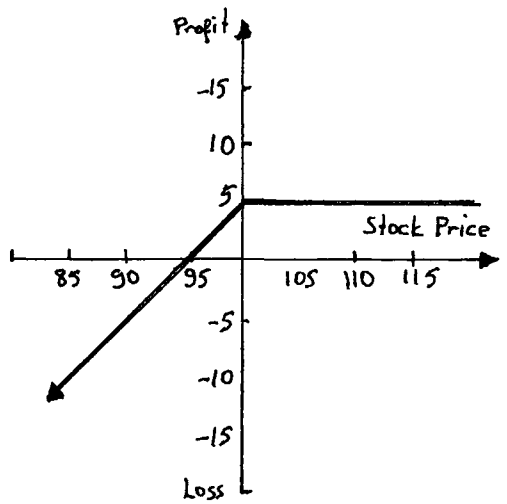


CALL OPTION

Holder



Writer



PUT OPTION

3.5 - Other Strategies (9)

The four option strategies above are the basics that show the risks are rewards to writers and holders. Many more complex positions can be established through writing/purchasing call/puts at the same/different exercise prices. It is complex and exhoustive to introduce those strategies. However, the most used ones are explained briefly below.

3.5.1 - Bull Spread

Use : Bullish but less aggressive than outright call purchase.

Method : Purchase of call option and simultaneous sale of call option further out of the money.

Profit profile : Profit is limited to the difference between the two striking prices less the cost of the spread. The cost of the spread is the price of the nearest to the money call offset by the sale of the deeper out of the money call.

Loss profile : Maximum loss is tne cost of the spread.

Time decay : If the market is midway between striking prices there will be no effect. If the market is nearrer to the higher strike price profits accelerate with passing of time. If market is nearer to the lower striking price time works against the position.

3.5.2 - Bear Spread

Use : To back a bearish view but less aggressive than outright purchase of a put.

Method : Purchase of a put option and simultaneous sale of put option further out of the money.

Profit profile : Profit is limited to the difference between the two striking prices less the cost of the spread. The cost of the spread is the price of the purchased put less the proceeds from the written put.

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(9) : Futures and Options-Maureen Miskovic

Loss profile : Maximum loss is the cost of the spread.

Time decay : Time decay has no effect if the market is midway between striking prices. If the market is nearer to the written out of the money put, time decay is advantageous. If the market is close to the purchased put, time decay will work against the position.

3.5.3 - Long Strangle/Combination

Use : To back the view that the market will move very sharply one way or the other.

Method : Purchase of an out of the money call and an out of the money put.

Profit : Theoretically unlimited. Breakeven is strike price of the call plus the combined call and put premium or the strike of the put less the combined call and put premium.

Loss profile : Limited to the combined call and put premium.

Time decay : Strangles are not normally run to expiration but are lifted to avoid accelerating time decay as expiration approaches.

3.5.4 - Short Strangle/Combination

Use : If the view is that the market is going nowhere.

Method : Write an out of the money call and an out of the money put.

Profit profile : Maximum profit is the premium from the sale of the call and put.

Loss profile : Breakeven is the call strike plus the combined premium or the put strike less the combined premium. Every point the market rises above the call breakeven or falls below the put breakeven is loss.

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Time decay : Works in favour of writers of strangles and accelerates as expiration approaches.

3.5.5 - Long Straddle

Use : When the market is due for a sharp move but the direction is uncertain.

Method : Purchase of a call and a put with the same striking price generally at the money.

Profit profile : Theoretically unlimited. Breakeven is the striking price plus or minus the combined call and put premium. Every point above or below this is profit.

Loss profile : Loss is limited to the combined cost of the call and the put.

Time decay : Works against the purchaser of a straddle and loss due to time decay increases as expiration approaches.

3.5.6 - Short Straddle

Use : If the view is that the market will stagnate, perhaps ahead of an extended public holiday season.

Method : Sale of a call and a put with the same strike price generally at the money.

Profit profile : Maximum profit is the premium received from the written options.

Loss profile : Breakeven is the strike price plus or minus the money received from the sale of the call and the put. Every point above this on the upside and every point below on the downside is loss.

Time decay : Works to the advantage of writers of straddles. Time decay accelerates as the options approach expiration.

The above strategies are, it should be reemphasised, only a sample of what is possible. They are however the most popular

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strategies, part of their appeal being their simplicity. The simpler the position the easier it is to initiate and to adjust if needs or views change.

3.6 - The Most Useful twO Strategies for XMI (US) options

Observers and participants agree that two of the most useful strategies involving XMI options are "protective put purchasing" and the so-called "90/10" strategy which combines options and fixed-income investment.

Both strategies apply to investors with portfolios of blue-chip US stocks having a high correlation to the Dow, as the following examples illustrate. It should be noted that, for the sake of clarity and simplicity, these examples assume a fixed relationship between XMI, the Dow and the portfolio's value and do not allow for the impact of dividends, taxation, margin requirements, commissions or other possible costs.

3.6.1 - Protective Put Purchasing

This is a strategy for investors who either expect a market decline or wish to protect against such a decline but do not want to liquidate their portfolio of stocks. The strategy limits downside risk while allowing room for upside appreciation in the underlying stocks. If the market does retreat, as anticipated, profit on the puts could partially offset the loss in stock values. If the market advances, the portfolio will realise the full benefit, less the cost of the puts.

Before entering the market, the investor must decide which puts to buy, depending on such factors as the remaining life of the available puts, how well they are likely to track a declining market and their cost. The investor must also decide how many puts tu buy in order to best implement the strategy. A common methot of arriving at this figure is to divide the portfolio's market value by the exercise price of the put.

Assume, for example, that an investor with a $10 million portfolio of blue-chip US stocks expects a sharp near-term market correction.

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It is January and the Dow is at 2500 while XMI is at 500. the investor buys 200 XMI March 500 put options at 12 ($1,200), for a total outlay of $240,000 (200x$1,200=$240,000).

If the market does indeed decline, say by 5%, before the options expire, the Dow would be at 2375, XMI at 475 and the portfolio's value at $9,5 million, for a loss of $500,000. However, each of the puts would have a minimum (intrinsic) value of $2,500 (500-475x$100), as well as some remaining value. If the investor can sell the puts at 26 (a price reflecting an additional time value), for aprofit of $280,000 ($520,000-$240.000=$280.000), the overall loss would be reduced to $220,000 and the portfolio would remain intact to benefit from possible future price gains.

If the market instead were to advance by 5% before the options expire, the Dow would be at 2625, XMI at 525 and the portfolio's value at $10,5 million, for a gain of $500.000. In this case, the puts would have no intrinsic value and the investor could lose the entire amount paid for them ($240,000), or they could be sold to realise any remaining time value they might have. In any event, the maximum loss on the puts would be limited to $240.000 and the investor would still be ahead by at least $260,000.

3.6.2 – The 90/10 Strategy

This strategy gives investors leverage and opportunity to participate in the US stock market without major overall exposure by spliting the omount of funds available for invesment in a ratio of 90:10 (or some similar ratio), and deploying the two parts in different ways. It can be of particular value to non-US investors as a method of reducing or eliminating potential currency exposure.

Instead of buying $10 million of US equities, for instance, a foreign investor anticipating a rise in the US blue-chih market could buy $1 million of XMI calls and $9 million of risk-free domestic fixed-income securities such as government bonds.

As a result, the currency risk would be greatly reduced while the

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investor would still reap substantial benefits if the US stock market staged a major rally.

For example, a British investor may expect a significant market advance when the Dow is at 2400, XMI is at 480 and the sterling exchange rate is £1=$1,65.

The investor could convert £1 million into $1,65 million and invest the proceeds in a portfolio of stocks replicating the Dow. If the Dow advances 5% over the next month, but the dollar declines 2% against sterling, the investor's portfolio of $1,732,500 would be worth £1,029,412, for a gain of £29,412.

Consider the results, however, if the investor had used 10% of the original funds to buy call options-specifically, 206 XMI January 490 calls at 8 each, for a total of $164,800-investing the remainder in UK gilt-edged securities at 10%.

In the same circumstances, XMI would rise to 504, giving the calls an intrinsic value of $288,400 (504-490x$100x206=$288,400). At the new exchange rate, that would be worth £171,361, for a gain of £71,482. Meanwhile, interest on the gilts would amount to about £7,501, for an overall gain of £79,983.

In this case, the more conservative approach actually proves more rewarding due to the greatly reduced impact of currency erosion on the total portfolio and the leverage provided by options.

IV - THE MARKET MECHANISM

1 - The Market Mechanism for Traded Options

Traded options are dealt in by 'open outcry' on the old floor of the Stock Exchange. At the centre of the market is LOCH, fulfilling the same role as ICCH in the futures market.

1.1 - London Options Clearing House (LOCH)

The London Options Clearing House Ltd (LOCH) is a wholly owned

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subsidiary of The International Stock Exchange.

LOCH is responsible for:

- *the Registration of Traded Options contracts into names of member firms*
- *the Settlement of premiums on Traded Options contracts*
- *the calculation of minimum margin Reguirements on a daily basis*
- *the Assignmet of exercised Traded Option contracts to sellers following exercise by the buyer*
- *maintaining a register of all open, held and written positions, and securities pledged as Collateral*
- *Supervising cover and margin*
- *Settlement and exercise.*

1.2 - Margin on Traded Options

Margin has to be provided by writers on all traded options. This collateral must be lodged with LOCH by option writers against the option that they have written, calculated by reference to the exercise price and the price of the underlying item.

For public order members and clearing members margin is calculated at 20% of the price of underlying stock (in the case of equities), plus or minus the amount it is in or out-of-the-money. There are concessions if different positions offset each other (spreads and straddles).

Margin is recalculated daily as the price of the underlying item moves and can thus involve a very heavy financial burden on the assets of the option writer as the option moves further and further into the money.

Margin is lodged through the writer's broker and is usually in cash, but it may be one of a range of acceptable gilts or underlying shares.

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Margin shows that the writer has the financial resources to meet his obligations if exercised against. Margin may be:

- *cash (no interest paid except for currency options)*
- *sterling bank guarantees*
- *full of partly paid British Funds*
- *treasury bills (at the value of the bill less 5%)*
- *local authority bonds*
- *corporation and county stocks*
- *any stock convertible into the underlying security of any traded option class (valued at 80% of LOCH periodic valuation)*

Thus, cash any many types of securities can be put up as collateral to cover written positions. All securities are pledged to LOCH and can be held in safe custody by the Stock Exchange (LOCH Nominees) or a recognised bank.

Firms are quite entitled (and encouraged) to ask for a higher margin from their clients.

1.3 - Exercising a Traded Option

If a holder of a traded option wishes to exercise it he must do so through his broking firm.

- Day 1 -

- *the holder of an option contract informs his broking firm that he wishes to exercise the option*
- *the broker completes and exercise notice and delivers to LOCH:*
  - *directly if a clearing member*
  - *indirectly if not, through a clearing agent*
- *the exercise notice formally notifies LOCH that the holder of*

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the option wishes to deal the underlying stock at the exercise price. It must be lodged:

- *by 5.15 pm on any day including the day of purchase, for equity and currency options*
- *by 6.00 pm on expiry days, or the last day of a Stock Exchange Account.*
- *by 4.25 pm in the case of FT-SE 100 index options*

- *LOCH, on receipt of the exercise notice, carries out a random selection process overnight and assigns a writer of the option down to firm level. In other words it randomly selects a clearing member or clearing agent which has itself written an option of the type exercised against or has a client who has written such an option.*

- Day 2 -

- *the next morning LOCH will provide assignees (the clearing member or clearing agent) with an assignment notice which formally requires the firm to fulfil its obligation*

- *on receipt of the assignment notice the clearing member or clearing agent will further randomly select the writer, by a random selection system approved by the Stock Exchange, down to client level if necessary*

- *the writer of an option contract does not receive an assignment notice until the day after the exercise notice is submitted because the random selection process does not occur until the currenct day's records have been updated. This delay is necessary in order to ensure that writers who may be assigned have not closed their positions.*

On this same business day (that following the submissison of the exercise notice to LOCH):

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A contract note for the purchase or sale of the security is issued to the holder of the option by his member firm.	*(and)*	*A contract note for the purchase or sale of the security is issued to the writer of the option by his member firm.*

- *the bargain date for the cash transaction is the next working day following the date the exercise notice was lodged.*
- *because the writer may be an 'uncovered' writer of a call option he must have a day in which to buy the stock and deliver it.*
- *the value date is the last day on which the security may be delivered.*

- Value Day -

Settlement of Exercised and Assigned Options

- *equity options are settled on the Account Day relevant to the bargain date*
- *FT-SE Index options settled following day (day 3) via the Financial Statement (settled in cash)*
- *currency options settled 2 days later (day 4) by ICCH.*

2 - The Market Mechanism for LIFFE Futures and Options

It must be noted that, although Stock Exchange members are involved in LIFFE, transactions in this market are not regarded as Stock Exchange business.

2.1 - Supervision of LIFFE

The LIFFE market was established with the approval of the Bank of England, which oversees the regulation of the market, and the UK Department of Trade and Industry. Day-to-day supervision

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is the responsibility of the Board of the Exchange. The Department monitors the financial standing of the Exchange's members and requires members to report their aggregate open positions daily in each contract. In addition, the department is authorised to inspect a members accounting records.

2.2 - Membership and Financial Integrity on LIFFE

LIFFE has a membership which is widely representative of the financial industry and includes; banks, member firms, commodity brokers, discount houses, Eurobond houses, money brokers and be experienced traders (frequently known as 'locals') who trade on their own account. Nearly half of the members are based outside the UK.

Members have to meet stringent financial criteria before acceptance by the clearing house and the Exchange.

2.3 - Dealing on LIFFE

On the futures market, trading is by open outcry, on an organised exchange, in standardised contracts, with all trades guaranteed by the clearing house (ICCH).

Each product of LIFFE is traded in a separate pit by means of open outcry, an order from a customer would be executed as follows:

- *on receipt of an order from a customer in the member's office, the order is phoned to the members booth on the LIFFE trading floor. Details must be put on an order slip and time stamped;*

- *the order slip shows the contract type, delivery month, sale or purchase, quantity and price, The slip is given to a trader in the pit by a runner identified by his gold jacket;*

- *in the pit the trader must give his orders by open outcry and may use officially approved hand signals.*

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- *details of the executed order are put on the order slip and confirmed with the customer, either directly or via the members office on the phone;*

- *all trade require a clearing slip on which full details of the trade including the trading counter-party must be entered;*

- *trading slips are collected at a central point by exchange staff and entered on the computerised matching system.*

- *the trade is between two members, but the obligations are to ICCH, the LIFFE clearing house.*

After an order has been executed, Exchange staff match the details provided by the buyer and seller's slips to ensure that the details correspond, this information is then passed to the Clearing House.

The fast reporting of bargains is a very important ingredient of LIFFE. The trading floor of the exchange is dominated by a large electronic price board. As soon as a trade has been reported it will appear upon the board within seconds rather than minutes. This ensures that everybody is aware of what is happening.

2.4 - The International Commodities Clearing House

ICCH operates a computerised system which records all details of transactions entered into. Only Clearing members of the Exchange are entitled to clear their transactions directly with ICCH and to use the facilities provided by the on-line clearing system.

All bargains on LIFFE are settled with the International Commodities Clearing House or the ICCH. They act as guarantors for each contract.

Since one contract may be traded hundreds of times before it is due to be delivered it makes sense for one organisation ICCH to keep track of this rather than leaving it to the individual traders or the firms they work for.

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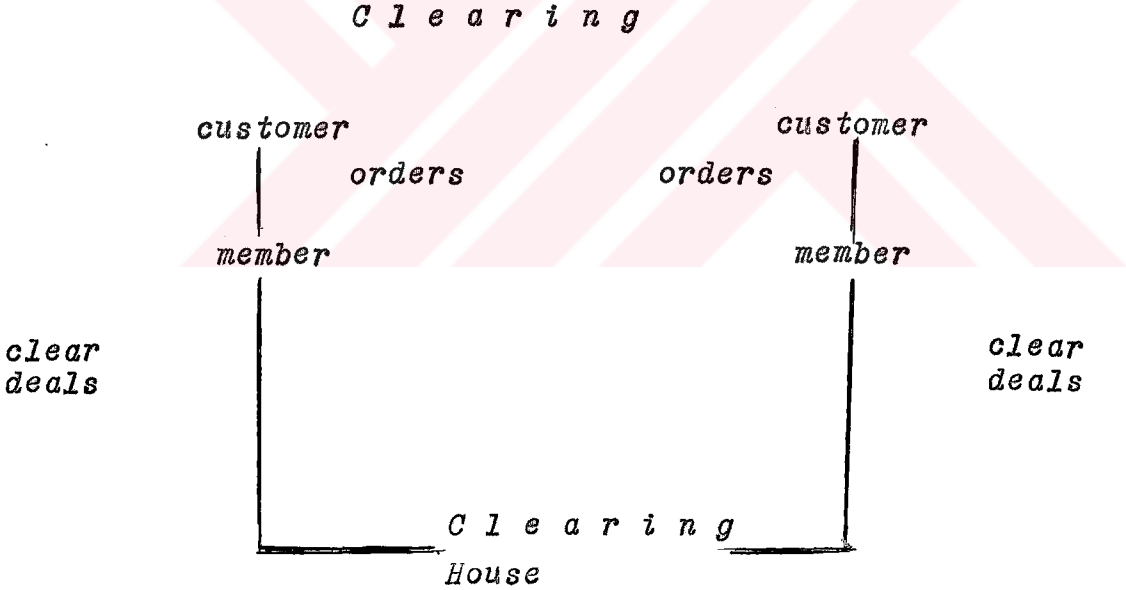
Clearing on LIFFE is undertaken through the International Commodities Clearing House (ICCH), an organisation owned by the UK's six lorgest clearing banks.

Clearing is an exceptionally important part of the function of trading in futures and options on an organised exchange. It has two vital functions.

- *clearing ensures that traders on the exchange, although carrying out their transactions with other members, actually make and receive obligations with the clearing house.*
- *clearing also makes trading easier as it allows transactions to be closed out by opposite transactions. For example, if you have sold an option, the obligation can be voided by buying an option identical in exercise price and expiration date.*



A clearing house may either be an Individual Clearing Member or a General Clearing member. A general Clearing Member has the right to clear other members transactions in addition to their own. Non Clearing Members must clear all transactions through a General Clearing Member.

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In order to achieve Clearing Member status certain conditions set by the Exchange and the Clearing House must be met, including a minimum net worth requirement.

Each Exchange Member may enter into transactions on its own account or, if it is a "Public Order Member", also on behalf of non member customers. Arrangements also exist on the Exchange for certain members to act in the capacity of Floor Agents executing transactions on behalf of other Exchange members.

The clearing house safeguards its exposure by requiring members (both parties to a trade) to deposit cash or collateral (margin) to cover the risk of movement in rates. All open positions are re-evalued daily, and the level of initial margin must be maintained.

2.5 - Margin on LIFFE

When future or option on a future transaction is completed both buyer and seller must deposit an initial margin with the broking firm with which they have dealt - either cash or collateral - to provide a cushion against adverse price movements of the futures contract.

For futures contracts initial margin charged on both buyer and seller is described in the contract specifications. For the long gilt future this is £750 for a contract on £50,000 nominal value. (A down payment of only $1\frac{1}{2}\%$ gives very substantial gearing).

For options on futures contracts initial margin charged on both buyer and seller is calculated with reference to daily published risk factors times the level of initial margin for the related futures contract. In addition, writers ara charged an additional prudential risk margin. This initial margin will never exceed the premium or the initial margin of the futures contract. The initial margin can also change on a daily basis as the risk factors change.

Initial margin is reduced for all options and options-futures combinations which include offsetting positions, in recognition of the fact that complex positions can be less risky.

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As prices fluctuate each day, the value of each day's gain (or loss), called variation margin, is calculated as being aqual to the movement in the contract in the last day's trading. This is added to (or subtracted from) each members margin account. In order to maintain the initial margin intact, any losses must be covered in cash on a daily basis. Similarly any gains on open positions held by customers are paid out daily. Because the initial margin is greater that the likely daily movement of the underlying cash instrument, losses on a given day will not exceed the amount in the customers margin account. Variation margin arises on a daily basis and is essentially the profit or loss on the contract since the previous day. This arises because all contracts are valued daily and this process is know as marking to market. At the end of each day's trading the last trade in the market becomes the settlement price and this is the price used to value all contracts.

Depending on the contract this margin may be securities, or cash only.

If a contract is held to delivery, the broker acts as an intermediary for the transfer of the obligation and the buyer must pay the seller the full value of the contract. Futures contracts are settled on margin.

3 - The Market Mechanism for the Chicago Mercantile Exchange (CME)

3.1 - Trading

Trading is by open outcry. The main CME trading floor can accommodate up to 4,300 people: brokers, traders, employees of member firms and pit observers and supervisors. When a price change occurs in the course of trading these pit observers notify other staff members situated at computer terminals. New price information is recorded immediately and the system transmits the new data to the quote boards.

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At the same time the network also puts the price information out around the world via various global quotation systems. To aid users the CME has introduced Merc_ine, a computerised system which contains up to the minute data for CME contracts and markets and offers an easy to use link to the market place. callers can obtain futures and options updates as well as information of a general nature on the exchange and world economy.

3.2 - Clearing

The clearing house is an adjunct to the CME through which all CME futures and option transactions are made, and through which all financial settlements against contracts are made. The CME clearing house adjusts all open positions daily to reflect the settlement price of each contract. Each position is credited with profit or charged with loss and begins the next trading day at the settlement price. A CME Trust was established in 1969 to provide financial assistance on a discretionary basis to customers of any clearing member which should become insolvent. The Trust is funded through contributions of profits from exchange operations.

3.3 - Regulation

The CME futures and options trading is regulated by the Commodity Futures Trading Commission (CFTC). To reduce market volatility associated with the simultaneous expiry of futures and options on the CME and NYSE, the exchange provided a solution via a change to the S&P 500 futures and options settlement. It based its settlement on the expiry day's opening prices rather then the closing prices on the NYSE. The CFTC approved the petition which was supported by the SEC and NYSE.

The new settlement became effective with the expiry of June 1987 contract. The audit trail requirements of the CFTC were met by the Computerised Trade Reconstruction (CTR) programme which was developed by the CME in conjunction with the CBOT. In the

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aftermath of the October 1987 market crash, CME officials have staunchly defended the right of CFTC to regulate the futures industry, countering suggestions that the SEC should take over.

3.4 - Membership

The exchange membership, numbering approximately 2,700, is made up of independent traders (locals) as well as representatives of major brokerage firms, banks, investment houses and corporations who execute trade for others. All CME memberships, or seats, are approved by the axchange's board of governors and are purchased from existing members at prevailing prices.

The price of each seat is determined by means of a bid-offer system handled by the CME's memberships and registration department. To qualify for membership, an individual must be investigated by the CME as regards capital adequacy and knowledge of trading. Members wishing to sell a seat submit an offer form with the price they are asking for the seat; prospective buyers tender their bids independently. Seat prices vary with such factors as the state of the economy, market activity and underlying commodity/cash market developments. A seat provides 1987. Within the last few years the CBOT has launched futures contracts of the Major Market Index (with options), Institutional Index (developed by AMEX) and a Corporate Bond Index. Along with the stock/bond index contracts of other exchanges, this segment of the futures industry is now suffering from congestion and subsequent low trading volumes for new contracts.

In 1976 financial instruments futures contracts amounted to less than one per cent of total turnover. By 1981 this had risen to one-third and by 1986 it exceeded three-quarters or approximately 78 million contracts out of the CBOT's total of 101 million contracts.

4 - The Market Mechanism for Chicago Board of Trade

4.1 - Trading

On April 20 1987 the CBOT began an evening trading session in US

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T-bond/note futures and options. This enables Japanese investors in US instruments to hegde during morning trading in Japan. Evening trading hours (subject to change) are from 17.00 to 20.30 (CST) or 18.00 to 21.00 (Dayligh Saving Time), Sunday through to Thursday. This marks a step towards internationalising the US futures market over and above direct linkages and the establishment of fungible contracts. To encourage participation in its evening trading session, the CBOT waived certain fees and allowed traders with Limited membership rights to purchase permits at $2,000 each to participate in the new trading session. Trade volume per session has averaged 15,000 contracts, which is seen as a hopeful start.

The CBOT treats the evening session as part of the following day, which enables it to meet its operational needs and regulatory requirements. To encourage further foreign participation on CBOT opened a London office in November 1986, which co-ordinates all of the axchange's functions in Europe including marketing, public relations and economic analysis.

Trading is carried out in pits. Each business day trading is officially opened and closed by the clanging of an 80-year old gong. No futures trading is permitted outside the official time. The floor itself is an information centre on gain and financial instruments markets, and major news wire services provide a constant information flow. Contract price changes during trading are flashed on CBOT quotation boards and then disseminated to other US exchanges and to more than 80 foreign countries.

4.2 - Clearing

Throughout the trading session, each trader turns endorsed orders of his completed trades over to his clearing firm, one of the approximately 145 clearing member firms of the Clearing Corporation of the CBOT which is a separate entity. Traders are financially responsible to their clearing firms; the Clearing Corporation guarantees the performance of all contracts traded

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and cleared. Clearing member firms must maintain clearing margins which are set by the Clearing Corporation margin committee and directors. The presence of the Clearing Corporation has been so successful that, since its formation in 1925, there has never been a financial loss to any party due to a default on a CBOT futures contract.

4.3 - Regulation

The CBOT is regulated by the Commodity Futures Trading Commission, a federal regulatory agency charged and empowered under the Commodity Futures Trading Commission Act, 1974 with the regulation of futures and options on futures trading in all commodities. There are five commissioners, one of whom is designated as chairman, all appointed by the President and subject to Senate confirmation, The Commission, which is independent of all other cabinet departments, is self governing, with a Board of Directors and a president of the CBOT. More than 50 committees of members are responsible for policy making concerning all aspects of CBOT activity.

4.4 - Membership

The CBOT is a membership association with many of the characteristics of a corporation. It has several types of memberships, with each having to all or some of the contract makers listed at the exchange. Members include independent traders, producers, brokerage houses, banks and investment banks. A membership is sold through a bid-and-ask system when one becomes available for sale. Certain financial requirements must be met and two exchange members must sponsor the applicant. At present full membership of the CBOT costs about $400,000.

There are over 1400 full members eligible to trade any CBOT contract. In addition there are approximately 700 associated members plus another 1300 memberships which offer holders limited groups of products to trade.

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5 - The Market Mechanism For Chicago Board Options Exchange

The CBOE has the world's largest and most information-intensive trading floor. CBOE index options are traded in the same manner as equity options by market makers and floor brokers. Trading on that floor is facilitated by today's technological advances. In 1984, the CBOE committed $35 million do develop automated systems that would ensure low-cost, easy access, fast service and reliable reporting for all customers. CBOE is currently able to handle peak volumes of three million contracts a day.

Small investors and brokers are assured a trade at the current market's bid-ask spread when they enter an order under 10 contracts on the retail automatic execution system (RAES). CBOE market makers sign up take the other side of these customer orders, and fills are reported back to the originating branch office in less than 10 seconds.

Today, the system executes market orders and limit orders at the market in OEX, SPX and some of the most active equity options. Active series in all CBOE options should be on RAES by year-end.

The floor broker routing system (FBR) allows member firms to bypass their floor booths and route orders directly to brokers in the trading crowd. The filled orders are transmitted back to the member firm branch office via the CBOE's order routing system.

An automatic quotation system enables CBOE to provide vendors with up-to-the-minute price information from the floor. Market makers can update quotes in all series automatically by changing a few "trigger" quotes in the more active near-term series. After piloting this system in 16 equity classes in 1986 CBOE expanded it to all other equities.

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V - CONCLUSION

The option market today is a product of the growth of financial engineering in the 1980s. Each type of option has been given impetus by the introduction of related options traded on financial futures and option exchanges in the US, Europe and Asia. These exchange traded options created a wave of interest from both professional traders and other end users seeking to cover in a more creative fashion their interest and currency risks.

The development of corporate interest in turn spurred the growth of the "over-the-counter" (or non-exchange traded) market, as banks offered tailor made option packages to their customers. Banks designed the appropriate packages taking some intermediate risk themselves and covered the bulk of the resulting risk either on one of the exchanges or through hedging their risk in the forward markets.

Until very recently, options were only offered for short periods. Exchange traded options generally have a life of less than a year, and most banks were reluctant to rely on various hedge theories (such as delta neutralisation) for periods much beyond two to three years. Besides the market risks involved, both parties to the contract (bank and corporate customer) found that for the longer maturities there was no liquidity should one wish to reverse the original option position. During 1985, the public debt markets provided the impetus to create such a secondary market.

As a product, options have many of the same uses as swaps or cash instruments. An option can be used in much the same way as an interest rate or currency swap to protect against adverse currency and interest rate movements. However, an option allows thu buyer to gain from any market movements in the buyer's favour while limiting the downside loss to the original value of the option. One difference between using a swap and using an option is the initial up-front cost.

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Altough it is cheap and hiphly geared the most common comment about any option is that it is too expensive, and hence difficult to justify in terms of a capital budgeting decision. This comment is often made in the absence of a thorough understanding of how the option market works and, more appropriately, how options can be used profitably by corporate treasurers, bank liability managers and others in managing their financial risks. Indeed, even among existing users there remains a high degree of uncertainty as to the pricing, risks entailed, and market for options.

For this reasons, we think that options markets should have a kind of market mechanism which allows member firms to connect directly to brokers in any world market. This system should also enables exchanges to provide customers with up-to-the-minute price information from all other exchanges with a 24-hour automated trading sytem. Extended trading hours and linkages are the methods used by major exchanges now, but not complete answer to needs.

We believe that the best solution everyone is looking for will be provide by an agreement with Reuters. Because the Reuters terminal will certainly provide the information and liguidity necessary to attract traders with enough number of monitors worldwide.

In case, exchanges uses this suggested system the wolume in financial markets will increase enormously.

Before finishing our study, I would like to mention about Turkish capital market shortly from point of forward operations. As we now, in recent years, Turkish capital markets have shown a significant growth. There is no doubt that the most striking development is in the daily volume and the index of Istanbul Stock Exchange which is the first and only Stock Exchange in Turkey. But all transactions are on a cash or spot basis. Due to insufficient legal system, no

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forward, options or futures market has yet been organized. However, we know that Turkish capital markets legislation will be amended in following days. As far as we know, the new low will allow the Capital Market Board to prepare the legal framework of forward operations.

We hope that once the new Capital Market law is approved by the National Assembly the Capital Market Board will start to set up the necessary legal infrastructure which will give Turkish investors an opportunity to use an higly geared tool for making profit and hedging from risks.

FINANCIAL FUTURES AND OPTIONS:EXCHANGES, CONTRACTS, AND VOLUME OF CONTRACTS TRADED,1986-OCTOBER 198

EXCHANGE TYPE	Face Value of Contract	Volume of Contracts Traded 1986	1987	1988	1988 Jan.-Oct.	1989 Jan.-Oct.
UNITED STATES		(In thousands of contracts)				
Chicago Board of Trade (CBOT)						
Interest rate.						
Futures						
US Treasury bonds	$100.000	52.598	66.841	70.308	58.706	61.231
US Treasury notes	$100.000	4.426	5.254	5.708	4.505	6.677
Municipal bond index	$1.000 x index	907	1.613	1.274	1.118	915
Thirty-day interest rate	$5.000.000	n.t	n.t	19	9	55
Options						
US Treasury bonds	$100.000	17.314	21.72	19.509	16.435	17.89
US Treasury notes	$100.000	1.001	1.422	1.012	819	974
Municipal bond index	$100.000 x index	-	119	172	151	77
Stok index						
Futures						
Major Market index	Max $250xindex	1.739	2.631	1.176	1.027	927
CBOE 250 index	$500 index	n.t	n.t	56	n.t	14
Chicago Board Options Exchange(CBOE)						
Interest Rate						
Options						
U.S Treasury bonds and notes	$100.000	319	208	140	132	141
Stok index						
Options						
Standard_Poor's(S&P) 100 index options	$100.000 x index	-	-	57.434	46.627	50.745
Standard_Poor's(S&P) 500 index options	$100.000 x index	-	-	4.817	4.012	4.675
Chicago Mercantile Exchange(CME)						
Futures						
U.S Treasury bills	$1000.000	1.815	1.927	1.374	1.14	1.247
Options						
U.S Treasury bills	$1000.000	64	12	6	5	13
Currency						
Options						
Eurodollar	$1000.000	1.757	2570	2600	2.026	5.181
Pound sterling	L25.000	497	569	543	474	350
Deutsche mark	DM 125.000	2.206	3.126	2.734	2.247	3.164
Swiss franc	Sw F 125.000	818	1.053	1.070	896	1.305
Japanese yen	Y 12.500.000	865	2.251	2.945	2.450	2.780
Canadian dollar	Can$100.000	26	49	314	204	246
Australian dollar	SA 100.000	-	-	7	5	21
Stok index						
Futures						
S&P 500	$500xindex	19.505	19.045	11.354	9.705	8.949
Options						
S&P 500 index	$500xindex	1.886	1.877	734	607	963

FINANCIAL FUTURES AND OPTIONS:EXCHANGES, CONTRACTS, AND VOLUME OF CONTRACTS TRADED,1986-OCTOBER 198

EXCHANGE TYPE	Face Value of Contract	Volume of Contracts Traded				
					1988	1989
		1986	1987	1988	Jan.-Oct.	
UNITED STATES						
New York Future Exchange						
Stock index						
Futures						
NYSE composite stock index	$500 x index	3.124	2.916	1.669	1.457	1.365
Options						
NYSE composite stock index	$500 x index	296	206	23	18	35
New York Stock Exchange						
Stock index						
Options						
NYSE composite stock index	$100 x index	3.775	2.047	781	607	519
American Stock Exchange(AMEX)						
Interest rate						
Options						
U.S. Treasury notes	$1.000.000					
U.S. Treasury bills	$100.000	27	33	37	...	8
Stok index						
Options						
AMEX indices	$100 x index	19.064	16.881	7.001	1.854	7.297
Philadelphia Stock Exchange (PHLX)						
Stock index						
Options						
PHLX indices	$100 x index	1.267	277	51	34	...
United kingdom						
London Int. Financial Futures						
Exchange (LIFFE)						
Interest rate						
Futures						
Gilt	L50.000	2.717	7.036	5.662	4.929	6.052
U.S. Treasury bonds	$100.000	1.575	1.571	2.052	1.747	895
German Government bond	DM 250.000	n.t	n.t	315	122	4.144
Yen bond	Y 100.000.000	n.t	136	122	106	102
Options						
Gilt	L50.000	285	1.045	1.15	1.023	654
U.S. Treasury bonds	$100.000	53	56	86	69	64
German Government bond	DM 250.000	n.t	n.t	315	123	334

FINANCIAL FUTURES AND OPTIONS:EXCHANGES, CONTRACTS, AND VOLUME OF CONTRACTS TRADED,1986-OCTOBER 198

EXCHANGE TYPE	Face Value of Contract	Volume of Contracts Traded 1986	1987	1988	1988 Jan.-Oct.	1989 Jan.-Oct.
Stock index				(In thousands of contracts)		
Futures						
Financial Times stock index	L25 x index	124	470	470	348	827
France						
Marche a Terme d'Instrument financier(MATIF)						
Interest rate						
Futures						
French Government bonds	F500.000	1.1139	11.911	12.357	10.542	12.451
Options						
National Bonds	F500.000	n.t	n.t	3.259	2.909	6.111
Japan						
Osaka Securities Exchange						
Stock index						
Futures						
OSF 50	50 stocks	n.t	186	545	341	...
Nikkei 225 stock average	Y 1000 x index	n.t	n.t	1.892	962	4.41
Tokyo Stock Exchange						
Interest rate						
Futures						
Ten-and 20-year yen government bonds	Y 1.000.000	8.575	18.262	17.46	...	...
Tokyo Stock Price Index	Y 10.000 x index	n.t	n.t	2.289	...	...
Canada						
Montreal Exchange						
Interest rate						
Futures						
Bankers' Acceptances		n.t	n.t	8	8	22
Bond Futures		n.t	n.t	n.t	n.t	47
Options/Can.Treasury bond	Can$25.000	289	416	334	290	289
Toronto Futures Exchange						
Stock Index						
Futures/TSE 300 spot	Can$500xindex	-	29	27	23	30
Options/TSE 35	Can$500xindex	-	199	430	333	414
The Netherlands						
European Options Exchange(EOE)						
Interest rate						
Options						
Dutch Government treasury bonds	f. 10.000	-	635	...	454	441

FINANCIAL FUTURES AND OPTIONS:EXCHANGES, CONTRACTS, AND VOLUME OF CONTRACTS TRADED,1986-OCTOBER 198

EXCHANGE TYPE	Face Value of Contract	Volume of Contracts Traded 1986	1987	1988	1988 Jan.-Oct.	1989 Jan.-Oct.
Stock index					(In thousands of contracts)	
Options						
EOE stock index and	f.100xEOE					
MMI stock index	and $100xMMI	-	428	707	587	1.741
Sweden						
Stockholm Options Market						
Options						
OMX 30	Skr 100 x index	-	6.739	3.651	363	871
Interest rate options		n.t	n.t	142	193	1
Currency options		n.t	n.t	n.t	n.t	15
Australia						
Sydney Futures Exchange						
Interest rate futures						
Ninety-day bank bill	$a 500.000	1.073	2.094	2.989	2.521	4.998
Ten-year treasury bonds	$A 100.000	1.448	2.068	2.627	631	740
Three-year bonds		-	-	-	359	791
Options						
Ninety-day bank bill	$a 500.000	32	58	192	160	444
Ten-year treasury bonds	$A 100.000	170	37	722	624	621
Three-year bonds		-	-	38	11	22
Stock index						
Futures/all ordinaries index	$A 100 x index	466	616	285	260	292
Options/all ordinaries index	$A 100 x index	40	137	82	67	122
New Zeland						
New Zeland Futures Exchange						
Interest rate Futures						
N.Z Treasury bonds	$NZ 100.000	74	176	320	234	268
Ninety day bank bills	$NZ 100.000	3	38	64	61	98
Options						
N.Z Treasury bonds	$NZ 100.000	n.t	n.t	n.t	n.t	19
Stock index futures						
Barclays-stock index	$NZ 20 x index	-	120	15	13	14
Options						
Barclays-stock index	$NZ 20 x index	n.t	n.t	n.t	n.t	2

FINANCIAL FUTURES AND OPTIONS:EXCHANGES, CONTRACTS, AND VOLUME OF CONTRACTS TRADED,1986-OCTOBER 1989

EXCHANGE TYPE	Face Value of Contract	Volume of Contracts Traded				
					1988	1989
		1986	1987	1988	Jan.-Oct.	
Singapore				(In thousands of contracts)		
Singapore International Monetary Exchange(SIMEX)						
Currency options						
Deutsche mark	DM 125.000	-	7	12	11	1
Eurodollar	$1.000.000	-	30	11	9	10
Japanese yen	Y 12.500.000	-	15	61	58	2
Stock index						
Futures						
Nikkei stock index	Y 500 x index	34	363	587	408	731
Hong Kong						
Hong Kong Futures Exchange						
Stock index						
Futures						
Hang Seng stock index	HK$50 x index	691	3.611	140	124	212

Note: n.t.= not traded $A=Australian dollar:Can$=Canadian dollar:DM=deutsche mark:ECU=European Currency Unit:F=French franc:HK$=Hong Kong dollar:Y=Japanese yen:$NZ=New Zeland dollar:f.=Netherlands guilder:L=pound sterling:SKr=Swedish Krone:and $= U.S dollar . Options volume is puts end calls combined.

Japanese Government Bond (JGB) Future

Unit of Trading	: Y100.000.000 face value national long term JGB with 6 % coupon
Delivery Months	: March,June,September,December
Delivery Day/ Settlement Day	: First business day after the Tokyo Stock Exchange last trading day.
Last Trading Day	: 16.05 One business day prior to Tokyo Stock Exchange last trading day.
Quotation	: Per Y100 face value.
Minimum Price Movement (Tick size&value)	Y0.01 :: (Y10.000)
Initial Margin (Straddle Margin)	: Y1.500.000 (Y250.000)
Trading Hours	: 08.10-16.05 London time

Japanese Government Bond Future

Contract Standard
Cash settlement based on the delivery settlement price of the Tokyo Stock Exchange JGB futures contract.
Price Limit
(1) Y100 from Tokyo Stock Exchange closing price. If limit is hit,price limits removed one hour later for remainder of day.
(2) No limit during last hour of trading on each day.

FT-SE 100 Future

Unit of Trading	: Valued at £25 per full index point(e.g.value £52.500 at 2100.0)
Delivery Months	: March,June,September,December
Delivery Day/ Settlement Day	: First business day after the last trading day
Last Trading Day	: 11.20 Last business day in delivery month.
Quotation	: Index points (e.g. 2100.0)
Minimum Price Movement (Tick size&value)	: 0.5 : (£12.50)
Initial Margin (Straddle Margin)	: £ 2.500 (£100)
Trading Hours	: 08.35-16.10

FT-SE 100 Future

Contract Standard
Cash settlment at the Exchange Delivery Settlement price
Exchange Delivery Settlement Price
The EDSP is based on the average level of the FT-SE 100 index between 11.10 and 11.20 on the last tarding day.

Option on US Treasury Bond Future

Unit Of Trading	: 1 US Treasury Bond futures contract
Delivery/Expiry Months	: March,June,September,December
Delivery Day/ Exercise Day/ Expiry Day	: Exercise by 17.00 on any business day;extended to 20.30 on last trading day.Delivery on the first business day after the exercise day.Expiry at 20.30 on the last trading day.
Last Trading Day	: 16.10 First Friday preceding by at least six CBOT working days the first delivery day of US Treasury Bond futures contract.
Quotation	: Multiples of 1/64
Minimum Price Movement (Tick size&value)	: 1/64 ($15.625)
Initial Margin (Straddle Margin)	: See footnotes
Trading Hours	: 08.17-16.10

Option on US Treasury Bond Future

Contract Standard
Assignment of 1 US Treasury Bond futures contract for the delivery month at the exercise price.
Exercise Price Intervals
$1 e.g. 96-00,97-00 etc.
Introduction of New Exercise Prices
13 exercise prices will be listed for new series.Additional prices will be introduced on the business day after the US Treasury Bond futures contract settlement price is within $ 16/32 of the sixth highest or lowest existing price.
Initial Margin
Initial margin charged by the clearing house for long and short options positions is calculated with reference to daily published risk favtors and the level of initialmargin for the related futures contract which it cannot exceed initial margin is reduced for all options and options-futures combinations which include offsetting positions.
Option Price
The contract price is payable by the buyer to the seller on exercise or expiry of the option not on purchase. positions are marked to maerket daily
Last Trading Day
The last trading day is defined to coincide with the last trading day for the Chicago Board of Trade Option on US Treasury Bond futures where this is a LIFFE tarding day.

Option on Long Gilt Future

Unit of Trading	: 1 Long Gilt Future
Delivery/Expiry Months	: March, June, September, December
Delivery Day/ Exercise Day/ Expiry Day	: Exercise by 17.00 on any business day, extended to 18.00 on last trading day. Delivery on the first business day after the exercise day. Expiry at 18.00 on the last trading day.
Last Trading Day	: 16.15 Six business days prior to first day of delivery month
Quotation	: Multiples of 1/64
Minimum Price Movement (Tick size & value)	: 1/64 (£7.8125)
Initial Margin (Straddle Margin)	: See footnotes
Trading Hours	: 08.32 - 16.15

Option on Long Gilt Future

Contract Standard
Assignment of 1 Long Gilt Futures contract for the delivery month at the exercise price.

Exercise Price Intervals
£ 1 e.g. £96-00, £97-00 etc.

Introduction of New Exercise Prices
13 exercise prices will be listed for new series. Additionel prices will be intoduced on the business day after the Long Gilt futures contract settlement price is within £16/32 of the sixth highest or lowest existing exercise price.

Initial Margin
Initial margin charged by clearing house for long and short options positions is calculated with reference to daily published risk factors and the level of initial margin for the related future contact which it cannot exce Initial margin is reduced fo all options and options futures combinations which included offsetting position

Option Price
The contract price is payable by the buyer to the seller o exercise, or expiry of the option not at the time of purchase. Position are marked to market daily.

Option on German Government Bond(Bund) Future

Unit of Trading	: 1 Bund futures contract
Delivery Months	: March, June, September December
Delivery Day/ Exercise Day Expiry Day	: Exercise by 17.00 on any business day, extended to 18.30 on last trading day. Delivery on the first business day after the exercise day. Expiry at 18.30 on the last trading day.
Last Trading Day	: 16.00 Six business days prior to first day of delivery month.
Quotation	: Multiples of DM 0.01
Minimum Price Movement (Tick size &value)	: DM 0.01 : (DM 25)
Initial Margin (Staddle Margin)	: See footnotes
Trading Hours	: 08.07 - 18.00 London time

Option on German Government Bond Future

Contract Standard
Assignment of 1 Bund futures contact for the delivery month at the exercise price.
Exercise Price Intervals
DM 0.50 e.g. 94.00 94.50 etc
Introduction of New Exercise Price
9 exercise prices will be listed for new series. Additional prices will be introduced on the business day after the Bund future contract settlement price is within DM 0.25 of the fourth highest or lowest existing price.

Initial Margin
Initial margin charged by the clearing house for long and short options positions is calculated with referance to daily published risk factors and the level of initial margin for the related futures contarct which it cannot exceed. Initial margin is reduced for all options and options-futures combinations.
Option Price
The contract price is payable by the buyer to the seller on exercise or expiry of the option not at the time of purchase. Positions are marked to market daily.

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TEZ DANIŞMANININ ÜNVANI, ADI SOYADI
Y.DOÇ.DR. OSMAN GÜRBÜZ

İSTANBUL, 1991

İ Ç İ N D E K İ N L E R

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I - GİRİŞ

Bu çalışmanın amacı Menkul Kıymet opsiyonlarının temel öğelerini ve pazar mekanizmasını tanıtmak amacını taşımaktadır. Konunun önemini vurgulamak için herşeyden önce, opsiyonların ne şekilde doğduğunu ve bir finansal araç olarak neden bu denli önemli olduğunu kısaca vurgulamak gerekir.

31 Temmuz 1945 te Bretton Woods konferansı ile birlikte belli başlı dövizlerin kurları fikse edilerek kağıt paralar altın standardına bağlandı. 26 yıl süreyle herhangi bir vadeli işlem yapılmasına gerek duyulmadı çünkü altın para standardının sağladığı istikrar vardı. Fakat 1971 den itibaren Bretton Woods hükümleri iptal olduğundan uluslararası paralar dalgalanmaya bırakılarak değerleri arz ve talep ile belirlenmeye başlandı. Böylece yatırım ve borçlanma işlemlerinde vadeli işlemlerin sağladığı korunma olanaklarından faydalanma ihtiyacı Dünya genelinde hissedilmeye başlandı. 1980 yılı başlarında vadeli işlemlerde ve bunun doğal sonucu olarak da sermaye pazarlarında büyük bir gelişme meydana geldi. 1985 li yıllarda vadeli işlemlerin bir türü olan opsiyon işlemlerinde büyük bir patlama oldu.

Bu gelişmenin temelinde enflasyonda, faiz oranlarında ve döviz kurlarında görülen değişkenlik yatmaktadır. Opsiyonlar, diğer vadeli işlemler gibi, fiyat değişmelerinden istifade ederek kâr sağlamak ve faiz ve kur risklerine karşı korunma sağlar. Böylesine ucuz ve kazanç potansiyeli taşıyan yöntem Türk yatırımcılar içinde cazip olacaktır görüşündeyiz. Her ne kadar kısa sürede yasal altyapının hazırlanarak opsiyon pazarının kurulması mümkün değilse de yeni estrümanların sermaye pazarını sağlıklı olarak gelişmesini sağlayacağı gerçeğini gözönünde tutarak hareket edilmesi gerektiği görüşündeyiz.

Birçok karışık bölümlerden oluşan opsiyonları her yönüyle açıklamak mümkün olamıyacağından amacımız, opsiyonların yatırımcılar için büyük bir olanak olduğunu;

- Opsiyon fiyatlandırma ve stratejileriyle ilgili basitleştirilmiş açıklamalar,

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- Opsiyon türleri ve pazar mekanizmalarının çalışma şekline yönelik açıklamalar,

- Yakın bir gelecekte opsiyon işlemlerinin Türkiye'de de başlayabileceği görüşünden hareketle, tüm uluslararası borsalarda kullanılabilecek bir pazar mekanizması modeli önerisinin de yer aldığı bir sonuç,

bölümlerinide kapsayan temel açıklamalar üzerine yoğunlaşacaktır.

II - MENKUL KIYMET OPSİYONLARIYLA İLGİLİ TEMEL KAVRAM VE AÇIKLAMALAR

1 - Opsiyonun Tarifi

Opsiyon, belirli bir tarihte ve fiyattan alıcısına alma veya satma hakkını seçmeli olarak veren, finansal enstrüman üzerine düzenlenmiş bir sözleşmedir. Satıcı sözkonusu hakları prim olarak adlandırılan belirli bir para karşılığında alıcıya devreder. Opsiyon konusu menkul kıymetin alınıp satılabileceği fiyata işlem fiyatı denir. Amerikan tipi opsiyonlarda vade tarihinden önce işlem gerçekleştirilmesine karşın Avrupa tipi opsiyonlarda ancak vade tarihinde işlem yapılır.

Alıcısına opsiyon konusu finansal aracı satıcısından tekrar geri alma hakkı veren opsiyon türüne "call option" denir. Tersi olursa yani alıcıya satma hakkı verilirse buna "Put Option" denir. Ancak unutulmamalıdır ki alıcının sahip olduğu alım veya satım hakkı bir zorunluluk değil ihtiyari bir haktır.

2 - Opsiyonların Tarihsel Gelişimi

Opsiyon anlaşmalarının ilk yaygın kullanımı 17. yüzyılda gerçekleşmiştir. Lâle soğanı üreticileri ile spekülatörler arasında gerçekleştirilen bu işlemler daha sonra spekülatörlerin yükümlülüklerini yerine getirmemeleri üzerine opsiyon piyasası yaklaşık 100 yıl süreyle kapanmıştır.

Satma ve satın alma opsiyonlarında ilk örgütlü işlemler 18.yüzyılda Londra'da başlamışsa da 1931 yılında ve 2. Dünya savaşı ile

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1958 yılı arasında bu işlemler yasaklanmıştır.

A.B.D.de 18. yüzyıl sonlarında başlayan opsiyon ticareti 1930 öncesine kadar spekülâtif amaçlarla kullanılmıştır. 1973 yılı öncesinde Opsiyon Tacirleri ve Komisyoncuları Birliği'ne bağlı olan firmaların faaliyet gösterdiği borsa dışı piyasasında düşük likidite ve yüksek maliyetle opsiyon işlemleri yapılmaktaydı. Bu tarihte 16 hisse senedi üzerine organize edilen ilk opsiyon piyasası Şikago'da (Chicago Board Options Exchange) kuruldu. Daha ilk yılda üstün bir performans göstererek 1,1 milyon sözleşme hacmine ulaşması üzerine 16 hisse senedi daha opsiyon kapsamına alındı. Avrupa opsiyon Borsası ve Londra Borsası 1978 yılında opsiyon ticaretine başlamış olup bugün Dünya üzerinde en az 14 ayrı borsada opsiyon üzerine işlem yapılmaktadır.

3 - Dünya Pazarlarının Tanıtımı

3.1 - Opsiyon Üzerine İşlem Yapan Belli Başlı Borsalar

3.1.1 - London Options Clearing House (LOCH)

Uluslararası Menkul Kıymet Borsasının bir uzantısı şeklinde faaliyet gösteren Londra Opsiyon işlem merkezi 1986 yılı sonu itibariyle 10 milyon sözleşme hacminde işlem yapmıştır. İşlem hacmi günden güne artmakta ise de USA seviyesine yaklaşamamıştır. Toplam Dünya işlem hacminin % 5 lik payına sahiptir.

3.1.2 - The Chicago Mercantile Exchange

1919 yılında kurulmuş olup 30 çeşitten fazla opsiyon ve futures sözleşmelerinin alınıp satıldığı en büyük Finansal merkezlerden biridir. Ortaklarının sahip olduğu, kâr amacı taşımayan bu kuruluşta ülke içi ve uluslararası düzeyde işlem yapılır.

3.1.3 - Chicago Board of Trade

1848 te kurulmuş olup ilk opsiyon işlemleri 1985 te hazine bonosu üzerine düzenlenmiştir. Sabit faizli menkul kıymetler üzerine yüksek işlem hacmi, pazar derinliği ve likidite özellikleri ile

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kuruluşlar ve kişiler düzeyinde opsiyon yatırımlarının populer olduğu bir merkezdir.

3.1.4 - Chicago Board Options Exchange

1973 te kurulmuş olup bugün Dünyanın en büyük opsiyon borsasıdır. 160 hisse senedi üzerine düzenlenen opsiyonların ticareti yapılır ve USA deki toplam opsiyon ticaretinin % 45'lik payına sahiptir. Ayrıca değişik sektörlerle ilgili index opsiyon piyasasına da hakim olmuş durumdadır.

3.1.5 - London Traded International Futures Exchange

1982 yılında İngiltere Bankasının onayı, yasal denetleme ve düzenlemesi ile faaliyetine başlamıştır. USA pazarı dışında, şu anda, en geniş opsiyon ve Futures borsası olarak tanınmaktadır. 14 tür futures ve 7 tür opsiyon sözleşmesi üzerinden işlem yapmaktadır.

3.2 - Dünya Pazarlarındaki Opsiyon İşlem Hacmi

Dünya pazarlarındaki opsiyon işlem hacmi son yıllarda hızla artmıştır. Vadeli işlemleri tür ve ilgili borsanın adına göre gösteren 1986 - 89 tarihli işlem hacmi listeleri Ek:1'de gösterilmiştir.

4 - Menkul Kıymet Opsiyonlarının Türleri

4.1 - Traditional (Geleneksel) Opsiyonlar

Geleneksel opsiyon pazarlığı bir aracı firma ile opsiyon piyasasını oluşturan opsiyon işlem yetkilisi arasında herhangi bir menkul kıymet türü üzerine yapılır. Bu tür opsiyon,

- En fazla 7 hesap dönemine sahiptir.
- Her hesap döneminde belli bir gün üzerine işlem yapılır
- Alım ve satım opsiyonu olarak düzenlenebilir
- Her iki tür opsiyon türünü birlikte içerebilir

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- *Kısmi olarak alınıp satılabilir ancak üye firmalar dışında üçüncü kişiler aracılığı ile işleme tabi tutulamaz.*

Opsiyon pazarlığında, işlem fiyatı, prim tutarı, opsiyon dönemi ve ilgili menkul kıymetlerin nelerden oluştuğunun belirtilmesi zorunludur.

Opsiyon priminin hesap döneminin işlem gününden önce ödenme zorunluğu yoktur.

En az işlem miktarı ve uygulanacak karşılık oranı konusunda herhangi bir kural ve düzenleme yoktur. Opsiyon dönemi içindeki tüm parasal ve hukuksal haklar, opsiyon sözleşmesi gereklerinin gerçekleştirilmesi durumunda, opsiyonu elinde bulunduran tarafa aittir.

Belli başlı hisse senetleri üzerine düzenlenen geleneksel opsiyonların fiatları finansal yayın organlarında yer alır.

4.2 - Gilts (Sabit Getirili Menkul) üzerine ve Müzakere ile Düzenlenen Opsiyon Sözleşmeleri

4.2.1 - Genel Açıklamalar

1987 yılında Londra Uluslararası borsa kurulunun getirdiği düzenlemeler doğrultusunda işlem görmeye başlamıştır. Özel müşterilerden ziyade kuruluşların itibar ettiği, uzun veya kısa vadeli gilts'ler üzerine düzenlenen sözleşmeler vade tarihinde sonuçlandırılabilir veya vadeden önce geriye satılabilir.

Başlıca aşağıdaki özelliklere sahiptirler.

- *Yalnızca sabit getirili menkul kıymetler (Gilts) üzerine düzenlenirler*

- *Sözleşme büyüklüğü en az £100.000.- olmak üzere müzakere ile belirlenir.*

- *İşlem fiyatı müzakere ile belirlenir.*

- *Opsiyon primi anlaşmadan sonra en fazla üç gün içinde ödenir.*

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- Opsiyon süresi en fazla 12 aydır.

- Karşılık konusunda herhangi bir kurala sahip olmayan bu opsiyon sözleşmeleri belirli bir fiyat üzerinden işlem görürler ve ilk alıcı tarafından tekrar satım konusu yapılabilirler.

4.2.2 - Alım-Satım işlemlerinde Aracı Kurumların Hareket Şekli

Aracı firmalar müşterileri adına vekil veya acenta olarak işlem yaparlar. Bir müşteri aracılığı ile bir başka müşteriye ait aracılık işlemini yapamayacakları gibi, Borsa yetkisi olmadan diğer aracı kurumlar tarafından gönderilen müşteriler adına da işlem yapamazlar. Vekil veya acente olarak yaptığı işlemlerle ilgili sözleşmeleri, aracı kurumlar en geç ertesi günü Borsaya sunmakla yükümlüdürler.

4.2.3 - Sermaye Yeterliliği Koşulu

İngiltere Bankasınca yayınlanan şartlara uygun olarak pazar oluşturucusu satıcılar için asgari sermaye yeterliliği getirilmiştir. Diğer firmalar için gerekli sermaye asgari sınırı ise Menkul Kıymetler Kuruluşu'nca belirlenen kurallara göre belirlenir.

4.2.4 - İşlem

İşlem yapmak isteyen alıcı opsiyon vadesinin dolduğu günün saat 2,45'e kadar işlem yapabilir. Opsiyon işleminin gerçekleşmesiyle alıcı opsiyon tarihinden önceki temettü veya diğer gelirler üzerinde hak iddia edemez.

4.3 - Ticari Opsiyonlar

4.3.1 - Genel Açıklamalar

1978'den beri geniş bir uygulama alanı bulan ticari opsiyonlar yatırım risklerinin kontrolunda gittikçe önem kazanan ve değişen koşullara uygun bir finansal araçtır.

Ticari Opsiyonlarla ilgili önemli terminoloji aşağıda kısaca açıklanmıştır.

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- *Writer: Opsiyon sözleşmesini satın alan kişi*
- *Holder: Opsiyon sözleşmesini satın alan ya da elinde bulunduran kişi.*
- *Contract: Alım ve satıma konu olan ticari opsiyon brimi.*
- *Position Limit: Alım ve satımına müsaade edilen en fazla sözleşme sayısı.*
- *Crowd: Belirli bir satış üzerindeki pazar oluşturucuları ve aracı kurum yetkilileri.*
- *Market Maker: Uluslararası Londra Borsasınca pazar oluşturmaya yetki verilmiş üye firma.*
- *Public Order Member: Kendi adına veya müşterisi adına işlem yapmaya yetkili aracı firma.*
- *Clearing Agent: Kendi veya diğer üye firmalar adına borsa tarafından takas yapmaya vetki verilmiş üyedir.*
- *Board Official: Borsa tarafından alım ve satımların yapılmasında gözlemci olarak görevlendirilen yetkili.*
- *Pitch Official: İşlemlerin düzenli olarak yapılmasıyla görevli borsa yetkilisi.*
- *LOCH: Opsiyon işlemlerinin yapıldığı borsa bölümü*
- *Option Premium: Alıcı tarafından satıcıya ödenen opsiyon bedeli.*
- *Opening Purchase/Opening Sale: Satıcının sorumluluğunu üstlendiği, alıcının da hak sahipliğini elde ettiği muamele türü.*
- *Margin: Opsiyon borsası tarafından satıcıdan teminat olarak alınan karşılık.*
- *Closing Purchase: Satıcının yükümlülüğünü yerine getirmek üzere satın aldığı aynı koşulları taşıyan bir muamele*
- *Closing Sale: Alıcıya üzerinde tasarruf hakkı kazandıran muamele.*
- *Open Interest: Herhangi bir zamanda alım satımı yapılan önde gelen opsiyon sözleşmelerinin sayısı.*
- *Expiry Date: Opsiyonu elinde bulunduran lehtarın son işlem yapabileceği tarih.*
- *Life Cycle: Menkul kıymetlerin herbirinin sahip olduğu işlem yapılabileceği dönem.*
- *Class: Aynı menkul kıymet üzerine opsiyonlar.*
- *Series: Aynı vade,sınıf ve fiyattaki opsiyonlar.*
- *Spread: Değişik serideki opsiyonların aynı sınıf içinde alım satımı.*
- *Spread Margin: Alım satıma konu bir opsiyon paketi için uygulanan karşılık oranı.*
- *Straddle: Alıcının herhangibir menkul kıymet üzerine hem alım hem de satım yapmasıdır.*
- *Exercise Price or Striking Price: Opsiyon sözleşmesine konu hisse senedi veya diğer menkul kıymetlerin vade tarihinde alım veya satımının yapılabileceği fiyat.*
- *Underlying Security: Opsiyonun ilgili olduğu menkul kıymet.*
- *Abandon: Opsiyonun vadesinden önce sona erdirilmesidir.*

Exercise: Opsiyon lehtarının opsiyon konusu menkul kıymeti vade tarihinde alacağını veya satacağını bildirmesidir.

Automatic Exercise: Kardaki hisse senedi veya indeks opsiyonlarının herhangi bir bildirime gerek görmeksizin vade tarihinde sonuçlandırılmasıdır.

Assignment Notice: Borsa idaresinin alım veya satım şartlarını yerine getirmesi konusunda satıcıya verdiği bildirimdir.

4.3.2 - Ticari Opsiyonların Türleri

4.3.2.1 - Hisse Senedi Opsiyonları

Borsa tarafından belirlenen hisse senetleri üzerine düzenlenir. Bir sözleşme normalde 1000 hisse senedini temsil eder ve bölünemez. Tüm siparişler sözleşme sayısı belirtilerek verilir hisse senedi sayısı dikkate alınmaz. Vade İşlem fiyatı vade tarihine göre sabit bir ölçek üzerinden belirlenir. En fazla 9 ay vadelidir. Vade tarihleri üçer aylık dönemler üzerine belirlenir.Opsiyonun temsil ettiği menkul kıymet fiyatının %20'si ile opsiyonun karda (parada) olup olmamasına göre negativ veya pozitif olarak belirlenen iki tür karşılığa(Marjin) tabidir.Bir hamilin her biri 1000 hisseyi temsil eden sözleşmelerden sahip olabileceği sayı 5000 dir. Hisse senediyle ilgili temettü ve diğer haklardan yararlanabilmesi için hamilin opsiyon sözleşmesi hükümlerini yerine getirmesi gerekir.

4.3.2.2 - Sınırlandırılmış Hayat dönemine Sahip Ticari Opsiyonlar

İki-dört-altı aylık üzerine işlem dönemi olan bu tür opsiyonların son ayında, Borsa Kurulu opsiyon vadesinin üç-altı-dokuz aylık dönemler şeklinde uzatılmasına veya sona erdirilmesine karar verir. Böylece belirli bir dönem içinde tanıtımı yapılan opsiyonun ilgi görüp görmemesine göre opsiyonun geleceği belirlenmiş olur.

4.3.2.3 - FTSE 100 İndeksine ayarlı Hisse Senedi Opsiyonu

Her sözleşme(£10 X Indeks İşlem Fiyatı) kadar değere sahiptir. Her sözleşme için pence olarak gösterilen opsiyon primi 40p ise, bu durumda sözleşme başına maliyet (40 X £10) olacaktır. Opsiyon uygulama fiyatı, vadesinin uzunluğuna göre belirlenen aralıklara göre belirlenir. Opsiyon sözleşmesinin uygulanacağına dair Borsa idaresine yapılan bildirimin kabul edilmesinden sonra iki gün içinde teslim işlemleri gerçekleşir. En fazla 12 aylık hayat dönemi olan indeksli opsiyonlar her ayın son iş gününe göre ayarlanmış vadeye sahiptir. Opsiyonun başlangıcı herhangi bir tarihte başlayabilir.

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Müşterileri adına alım satım yapan aracı kurumlar için(İndeks değeri X ₤10) üzerinden 12,5% oranında ve opsiyonun parada(kârda) olup olmamasına göre 3% oranında pozitif veya negatif karşılık uygulanır. Pazar Oluşturucularına uygulanacak karşılık ise Hisse Senedi Opsiyonlarına uygulanan oranlar kadardır. Her sınıf opsiyondan satın alınabilecek en fazla miktar 20.000 sözleşmedir.

4.3.2.4 - Avrupa tipi FTSE Opsiyon

Pazar Oluşturucularının uzun dönemli hisse senedi portföyünün sağlıyacağı riskten korunma yöntemine olan istekleri sonucunda Şubat 1990 tarihinde işleme konmuştur. Vadeye göre değişen fiyat aralıkları ile Opsiyon hayat(uygulama) dönemi dışında temelde FT-SE 100 İndeksli opsiyonun aynısıdır.

4.3.2.5 - Uluslararası Ticari Opsiyonlar

Uluslararası Londa Borsasında Ocak 1988 yılında başlatılan bu tür opsiyonlar, Borsa tarafından belirlenen herhangi bir ülkeye ait hisse senetleri üzerine düzenlenir. Sözleşme büyüklüğü 100 hisse senedine tekabül eden opsiyonlar en fazla 9 ay/olup vadeleri Londra'da ayın 15. günü, Paris'te ise 22-20. günleridir. Uygulama fiyatları sabit bir ölçekle belirlenir, hayat dönemleri ise mart, haziran, eylül ve aralık aylarına bağlı olarak belirlenir. Opsiyonla ilgili menkul kıymetin 35% oranı ile opsiyonun parada(karda) olup olmamasına göre de ayni oranda pozitif veya negatif karşılık uygulanır. En fazla satın alınabilecek sözleşme sayısı 5000 dir.

4.4 - LIFFE Opsiyonları

Uluslararası Londra vadeli finansal işlemler borsası(LIFFE), hazine bonosu, devlet tahvili gibi sabit faizli ve likiditesi yüksek finansal enstrümanlar üzerine kısa ve uzun vadeli opsiyon sözleşmeleri sunmaktadır. Opsiyon vadeleri ilgili menkul kıymetlerin vadeleri ile uyumlu ve mart, haziran, eylül ve aralık dönemlerine göre tanzim edilmişlerdir. Vade tarihine kadar herhangi bir gün uygulama yoluna gidilebileceğinden yani opsiyon sözleşmesi gereği yerine getirilebileceğinden Amerikan Opsiyonları tipindedirler. Diğer ticari opsiyonlarıyla aralarındaki başlıca fark prim ve karşılık konularında ortaya çıkar. Söşleşme bedeli ancak opsiyon vadesinde ödenir. Karşılık tutarı her iki tarafça ödenir ve prim toplamını aşamaz. Karşılık tutarının bulunması,

Futures'un ilk karşılığı X LIFFE Risk Faktör(Menkul kıymetin fiyatındaki değişmenin opsiyon üzerindeki etkisi)

formülü ile gerçekleştirilir.

4.5 - XMI Opsiyonları(USA)

17 Tanesi Dow indeksi içinde olmak üzere 20 endüstri kuruluşunun hisselerinin indeksi ile ilgili bir opsiyon türüdür. Dow indeksindeki 5 puanlık bir değişiklik bu opsiyonun fiyatında bir puanlık etki doğurur. 1983 Yılında uygulamaya giren ve bugüne kadar yaklaşık 600% büyüme gösteren bu opsiyon, yatırımcılarına risk korunması alanında Amerikan hisse senedi piyasasında bir fırsak olarak değerlendirilmektedir. Sözleşme fiyatı(XMI indeksi X $100.-) formülü ile bulunur. Opsiyon dönemi herhangü bir tarihten başlamak üzere üç aydır. Son ayın üçüncü cumasından sonra gelen cumartesi uygulama günüdür. Opsiyon uygulama fiyatı, indeks değerinin etrafında beşer puan aralıklarla tesbit edilir. Opsiyondan doğan teslim yükümlülüğü, uygulama yapılacağı bildirimi yapıldıktan sonraki iş günü ve nakit ile gerçekleştirilir.

III - OPSİYONLARIN ANALİZİ

1 - Opsiyon Kullanmanın Amacı

1.1 - Genel Açıklamalar

Opsiyon, fiyat riskinin yönetim ve kontrolunda kullanılan bir çeşit sigorta poliçesi niteliğinde fakat oldukça spekülatif araçtır. Opsiyonun değeri, temsil ettiği menkul kıymetin fiyatında meydana gelecek değişiklik oranında artı veya eksi yönde etkilenir. Örneğin: ₺1000.- prim fiyatı ile ₺25.000.- toplam değerinde hisse senedini temsil eden bir call(satın alma hakkı veren) opsiyonu satın aldığımızı varsayalım.
Öncelikle hisse senetleri fiyatında 5% artış gerçekleştiğini varsayalım. Eğer opsiyon satın almak yerine ₺ 1000.- tutarında hisse senedi alaydık ₺50.- karımız olacak toplam değer ₺1050.- ye yükselecekti. Oysa satın aldığımız opsiyonun toplam değeri şu anda ₺26.250.- olmuştur. Ödediğimiz ₺1000.- lık primi düştüğümüzde ₺250.- net karımız olacaktır. Eğer hisse senetlerinin fiyatı 10% artmış olaydı, bu defa net karımız ₺1.500.- olacaktı.
Eğer hisse senedi fiyatları 4% artmış olaydı, opsiyon karımız ödediğimiz ₺1000.-lık prime eşit olacağından başa baş noktasında olacaktık.

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Oysa doğrudan hisse senedine yatırım yapmış olaydık karımız ₺40.- olacaktı.
Bu defa hisse senedi fiyatlarının 5% oranında düştüğünü varsayalım. Bu durumda doğrudan hisse senedi yatırımındaki zararımız yalnızca ₺50.- olacaktır. Oysa satın aldığımız opsiyondaki zararımız ödediğimiz ₺1000.- tutarındaki primdir. Hisse senedi fiyatları daha da fazla düşse durum değişmeyecek zararımız ancak ₺1000.- ile sınırlı olacaktı.
Görüleceği gibi satın aldığımız opsiyonun temsil ettiği hisse senetleri fiyatında ödediğimiz primi aşan oranda bir artış başladığı noktadan itibaren opsiyonun karlılığı büyük ölçüde artmaktadır. Buna opsiyonun yüksek kar potansiyeli özelliği(gearing) diyebiliriz. Hisse senetleri fiyatının düşmesi durumunda ise düşme oranına bakılmaksızın zararımız ödediğimiz prim tutarı ile sınırlı kalmaktadır.

2 - Opsiyon Fiyatlandırması

2.1 - Fiyatlandırmada Temel Kavramlar

2.1.1 - Prim

Opsiyonun satın alınmasından belirli bir süre sonra ölü maliyet olarak nitelendirebileceğimiz ve opsiyonun satım kararına etkisi olmayan başlangıçta opsiyon bedeli olarak ödediğimiz paradır. Vadeye ne kadar uzun zaman varsa prim miktarı da o kadar yüksektir. Çünkü fiyat değişmelerinden kar elde etme ihtimali o denli yüksektir.
Prim tutarı, uygulama fiyatı, fiyatlarda umulan olumlu yöndeki değişiklik, faiz oranları, pazar koşulları, arz ve talep hususlarına bağımlıdır.

2.1.2 - Gerçek Değer

Opsiyonun parada(karda) olup olmadığının bir ölçüsüdür ve

Gerçek Değer : Cari fiyat - Uygulama fiyatı(vadedeki)

formülü ile ifade edilir. Örneğin, cari fiyatı 140 uygulama fiyatı 130 olan opsiyonun gerçek değeri (140 - 130) : 10 dur.

2.1.3 - Zaman Değeri

Bir opsiyonu tekrar satma hakkını elde etmek için satın alma aşamasında ödenen bedeldir ve aşağıdaki formüllerle ifade edilir.

Zaman Değeri : Prim + Uygulama Fiyatı - Cari fiyat

Zaman Değeri : Prim + Gerçek Değer

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2.1.4 - Değişkenlik

Zaman değeri ilgili menkul kıymetin fiyatında meydana gelen değişiklikle yakından ilgilidir. Bu, önceki tarihli fiyat değişiklikleri baz alınarak belirlenen standart bölünmeler yardımıyla bulunur. Yatırımcı bu datalar yerine kendisinin gelecekle ilgili beklentileri doğrultusunda da bir karara varabilir.

2.1.5 - Opsiyonun Kar Durumu

Opsiyonların cari fiyatı ile uygulama fiyatı arasındaki farka göre belirlenir. Cari fiyatı 240p olan hisse senediyle ilgili opsiyon sözleşmesinin karlılık durumu aşağıdaki gibidir.

Parada(Karda) olan Opsiyon:

240p nin altındaki satınalma opsiyonunda hamil hisse senedi fiyatının artacağını umar.

240p nin üzerindeki satım opsiyonunda hamil hisse senedi fiyatının düşeceğini ummaktadır.

Zararda olan Opsiyon:

Yukarıdaki iki durumun hamilin beklentileri açısından tersidir.

Başabaş Opsiyon:

240p deki satım opsiyonunda hamil fiyatın artacağını, alım opsiyonunda ise düşeceğini ummaktadır.

2.2 - Fiyatlandırmada Black-Scholes Formülü

Bu fiyatlandırma formülü opsiyonun ideal koşullara sahip olduğu varsayımına dayanır. Bu formül İngilizce tez bölümünün 32 nci ve 33ncü sayfalarda gösterilen ve $N(d_1)$ olarak belirtilen korunma rasyosunun doğrudan tahminine dayanır. Korunma rasyosu, ilgili menkuy kıymetin fiyatında meydana gelen bir birimlik değişmenin opsiyon üzerindeki beklenen değişikliği tahminidir.

Bu formül fazlaca gerçekçi değildir. Çünkü herşeyden önce ilgili menkul kıymetten sağlanacak getirileri gözönüne almaz. Yılnızca Avrupa tipi opsiyonlar için uygundur. Pazar beklentilerini de yansıtmaz.

Opsiyon fiyatlandırmasına ilişkin grafik tezimizin İngilizce bölümünün 35 nci sayfasında gösterilmiştir.

3 - Opsiyon Stratejileri

Uygulama fiyatı 100, prim tutarı 5 olan ve Martta başlayıp Aralık ayında sona erecek olan bir opsiyonun esas alındığı 4 ana strateji aşağıda kısaca açıklanmış olup, buna ilişkin grafik İngilizce böümün 40 ncı sayfasında gösterilmiştir.

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3.1 - Satın Alma Opsiyonu Elde Edilmesi

Eğer yatırımcı hisse senetlerinin yükseleceği beklentisinden hareketle Aralık ayında sona erecek bir opsiyona primle birlikte 105 öder ve fiyatlar 105 in üzerine çıkarsa yatırımcı bu opsiyonu satabilecek kârlı pozisyona gelmiş olur. Fiyatın 100 ün altına düşmesi veya 100 de kalması durumunda yatırımcı ödediği prim tutarı kadar zarar edecektir.

3.2 - Satın Alma Opsiyonunun Satılması

Yukarıdaki muamelenin diğer tarafı satıcıdır. Yatırımcı fiyatların aynı kalacağını veya düşüşünü beklerse sahip olduğu satınalma opsiyonunu satarak karını realize eder. Bu kâr satın alma opsiyonunu elinde bulunduran hamilin durumunun tam tersidir. Eğer fiyatlar 105 in üzerine çıkarsa zarar edecek, düşerse prim miktarı kadar kâr edecektir. Satıcının 100 ödeyerek hisse senedi aldığı ve 5 ilave ederek 105'e sattığı kombine pozisyonu düşünelim. Bu durumda hissenin 100'ün altına düşmesi satıcının zararına, 100 de kalması veya 100'ün üzerine çıkması ise prim tutarı kadar karına yol açacaktır. Satıcının opsiyon sözleşmesiyle ilgili hisselere sahip olmadığını (Naked position) varsayalım. Hisse fiyatının 105'in üzerine çıktığı oranda limitsiz zarara maruz kalınacaktır.

3.3 - Satma Opsiyonu Satın Alınması

Hisse senedi sahibi yatırımcılar için cari fiyattan bir satma opsiyonu satın alınması en uygun korunma stratejisidir. Hisse fiyatlarının düşeceği beklentisine dayanmaktadır. Yatırımcının hissesi 105'in üzerine çıkarsa piyasada satar prim tutarını satıcıya ödeyerek opsiyon hakkını kullanmaktan vazgeçer. Fiyat 100'de kalırsa prim tutarı kadar zarar eder. Fiyat 95'in altına ne kadar düşerse düşsün korunma pozisyonu gerçekleşmiş olur. Prim tutarı kadar zarar eder fakat piyasa fiyatı üzerinde olan 95'den satış yapmış olur. Bu strateji sentetik satın alma olarak da adlandırılır(put-call parity theorem) ve aşağıdaki formülle ifade edilir.

Satın Alma Opsiyonu Maliyeti = *Satma Opsiyonu Maliyeti* + *Hisse Senedinin Cari Fiyatı* — *Bugüne göre iskonto edilmiş uygulama fiyatı*

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3.4 - Satma Opsiyonu Satılması

Eğer yatırımcı hisse fiyatının yükseleceği veya ayni kalacağını umuyorsa bu stratejiyi uygulayabilir. Kar veya zarar profili, hissenin fiyatının alçalıp yükselmesi bakımından açık pozisyonda satın alma opsiyonu satılması ile ters orantılıdır. Zarar potansiyeli (Uygulama fiyatı - Prim) nın altına düşen pazar fiyatına bağlıdır.

3.5 - Diğer Stratejiler

Yukarıda açıklanan 4 temel strateji dışında birçok kompleks strateji bulunmaktadır. En fazla kullanılanlar aşağıda sayılmıştır.

Bull(Boğa) Dağılımı: Bir satın alma opsiyonunun satın alınarak ayni anda satılarak iki uygulama fiyatı arasındaki farktan kar sağlama amacını taşır.

Bear(Ayı) Dağılımı: Bir satma opsiyonu satın alınarak ayni anda satılması ve prim miktarı düşüldükten sonra iki fiyat arasındaki farktan kar sağlama amacını taşır.

Uzun Strangle Kombinasyonu: Pazarın günden güne çok şiddetli değişim göstereceği görüşünden hareketle bir satma bir de satın alma opsiyonu satın alınmasıdır.

Kısa Strangle Kombinasyonu: Pazarda hareket olmayacağı görüşünden hareketle zararda olan bir satım ve bir satınalma opsiyonlarının satılması esasına dayanır.

Uzun Straddle: Şiddetli fakat yönü tahmin edilemeyen fiyat değişikliği beklenen pazarda ayni uygulama fiyatına sahip bir satın alma ve bir de satma opsiyonu satın alma esasına dayanır.

Kısa Straddle: Pazarın sabit kalacağı görüşünden hareketle, ayni uygulama fiyatına sahip bir satım ve bir de satın alma opsiyonunun satılması şeklindedir.

3.6 - XMI(USA) Opsiyonu İçin En Faydalı İki Strateji

XMI opsiyonunun Dow indeksi ve portföy değeri arasında sabit bir ilişki olduğu varsayımı ile ve temettü, vergilendirme ve karşılık v.s. maliyetlerin ihmal edilmesi sonucu aşağıda açıklanan iki stratejinin en iyileri olduğu tüm gözlemciler tarafından onaylanmıştır.

3.6.1 - Koruyucu Amaçla Satım Opsiyonu Satın Alınması

Bu stratejide pazar fiyatlarının düşeceği tahmin edilir ve portföyü elden çıkarmadan korunma amaçlanır. Pazar fiyatları beklendiği gibi

gerçekleştiği taktirde, satım opsiyonundan elde edilen kârla hisse senetlerinde uğranılan zarar giderilmiş olur. Pazarda fiyatların artması durumunda ise elde edilen hisse senedi karından opsiyon priminin düşülmesiyle elde edilen tutar kadar kazanılmış olur. Pazara girmeden önce yatırımcının hangi satım opsiyonunu alacağına karar vermesi gerekir. Kaç adet sözleşme alacağı hususu da diğer kararı gereken konudur. Portföyün pazar değerini satım opsiyonunun uygulama fiyatına bölünmesi sonucu elde edilen rakkam genelde kullanılan belirleme yöntemidir.

3.6.2 - 90/10 Stratejisi

Muhtemel döviz riskini gidermek veya düşürmek amacıyla Amerika dışındaki yatırımcıların mevcut fonlarını iki değişik paket halinde ve 90/10 rasyosuna uygun olarak yatırım yapmak suretiyle oluşan kaldıraç etkisinden yararlanma temeline dayanır. Örneğin $10 milyon hisse senedi almak yerine $1 milyonluk XMI Satın Alma Opsiyonu ve $9 milyonluk da devlet tahvili gibi sabit faizli menkul kıymetlerden satın alınması bu amacı gerçekleştirir.

IV - PAZAR MEKANİZMASI

1 - Ticari Opsiyonların Pazar Mekanizması

1.1 - Londra Opsiyon Takas Kuruluşu

Uluslararası Londra Menkul Kıymet Borsasına bağlı bir tali kuruluştur. Opsiyon sözleşmelerinin üye firmalar adına tescili, sözleşme primlerinin tahsili, asgari karşılık miktarlarının günlük bazda hesabı, alıcı ve satıcı arasındaki sözleşme devirlerinin uygulanması, teminat ve pozisyonlarla ilgili kayıtların yapılması, karşılık ve teminatların kontrolü ve sözleşme hükümlerinin uygulanmalarının sağlanması konularında sorumludur.

1.2. - Ticari Opsiyonlarda Karşılık

Karşılık opsiyon uygulama fiyatı ve ilgili menkul kıymetin fiyatına bağlı olarak hesap edilip satıcıdan tahsil edilir LOCH emanetine tevdi edilir. Genel siparişlerle ilgili olarak ilgili menkul kıymet fiyatının 20% si ile opsiyonun kârda ya da zararda olmasına göre negatif ya da pozitif olarak ayni oranda hesaplanan karşılık, opsiyon karlılığı arttıkça satıcılar için bir yük olarak ortaya çıkar.

Genelde nakit olarak satıcının aracı kurumu tarafından tahsil edilen karşılık, satıcının taahhüdünü yerine getirecek mali güce sahip olduğunun göstergesidir. Nakit dışında menkul kıymetler de karşılık olarak kabul edilebilir ve Borsa veya tanınmış bir bankanın gözetiminde LOCH adına rehin tutulur.

1.3 - Bir Ticari Opsiyonun Uygulanması

Eğer hamil elinde bulundurduğu ticari opsiyon sözleşmesinin hükümlerini uygulamak isterse aşağıdaki işlemleri yapmak zorundadır.

Birinci Gün:
- İsteğini aracı kuruma iletir.
- Aracı kurum uygulama bildirimini LOCH'ye iletir.
- LOCH uygulama bildirimini alınca herhangi bir takas üyesi veya acentesini uygulama için belirler.

İkinci Gün:
- LOCH tarafından belirlenen takas üyesi ilgili firmaya taahhüdünü yerine getirmesi bildiriminde bulunur.
- Görevlendirme bildirimini alan takas üyesi rastgele usulde borsa tarafından da onaylanan satıcı firmayı seçer.
- Uygulama bildirimi onaylanıncaya kadar satıcının haberi olmaz.
- Nakit muamele için uygun tarih, uygulama bildiriminin yapıldığı günü izleyen iş günüdür.
- Hesap Günü menkul değerin tesliminin yapılabileceği son gündür.

Hesap Günü:
- Hisse senedi opsiyonlarında hesap günü ile üzerinde anlaşma sağlanan günde ödeme yapılır.
- FT-SE Indeks Opsiyonlarında ödeme ile teslim yükümlülüğü 3. gün yerine getirilir.

2 - LIFFE Opsiyonlarının Pazar Mekanizması

2.1 - LIFFE Denetimi

İngiltere Bankasının onayı ile kurulmuş olan Uluslararası Londra Finansal Vadeli İşlemler Borsası'nın günlük bazda denetiminden Borsa Kurulu sörumludur. İlgili departman üye firmaların finansal durum ve işlemlerini monitörlerden izler ve üye firmalardan açık pozisyonlarını bildirmelerini ister. Gerekirse muhasebe kayıtlarını denetler.

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2.2 - LIFFE Üyeliği

LIFFE'nın yarısı İngiltere dışından olmak üzere finansal sektörün her kesiminden kendi adına işlem yapan geniş çaplı üyelik yapısı bulunmaktadır. Üye firmalar Borsa ve takas odasına kabul edilmek için bir takım ciddi finansal koşulların yerine getirilmesi gerekmektedir.

2.3 - LIFFE Üzerine İşlem Yapma

Vadeli İşlemler pazarında işlemler organize edilmiş bir borsada takas odasının garantisi ile standart sözleşmeler üzerinden ve yüksek sesle yapılır. Bu nedenle her ürünün işlem yeri ayrı olup aşağıdaki gibi muameleye tabi tutulur.

- Bir müşterinin üye firmanın ofisine sipariş vermesi üzerine, ayrıntılar ve zaman bir slip üzerine aktarılarak LIFFE'deki işlem yerine telefon edilir,

- Sipariş formu üzerinde sözleşme cinsi, teslim ayı, alım ya da satım olduğu, miktar ve fiyat hususları kaydolur.

- İşlem yetkilisi işlem yerine giderek yüksek sesle siparişini verir.

- Gerçekleşen işlemle ilgili detaylar bir slip üzerine yazılarak hemen müşteriye haber verilir.

- Tüm ayrıntılar ve tarafların belirtildiği bir takas slipi düzenlenir.

- Slipler bir borsa elemanı tarafından toplanarak bilgisayara girişi sağlanır.

- İşlem iki üye arasındadır fakat sorumluluk takas kuruluşuna karşıdır.

2.4 - Uluslararası Mal Takas Kurumu

LIFFE üzerine tüm işlemler bu kuruluş aracılığı ile sonuçlandırılır ve onun garantörlüğü altındadır. İngiltere'nin en büyük 6 takas kurumunun sahip olduğu bu kuruluş tüm muameleleri bilgisayarlı çalışma ortamında gerçekleştirir. Takas işleminin iki önemli fonksiyonu vardır.

- İşlemler iki üye arasında yapılıyorsa da sorumluluklar takas kuruluşuna karşıdır.

- Takas işlemlerin yapılmasını kolaylaştırdığı gibi kapatılmalarınıda sağlar.

Bir takas kuruluşu diğer üyelere ait takas işlemlerini de gerçekleştirme yetkisine sahipse Genel Takas Üyesi olarak tanımlanır aksi halde tüm takas muamelelerini bir Genel Takas Üyesi aracılığı ile gerçekleştirir.

Her borsa üyesi aracı kuruluş kendi adına veya müşterileri adına

işlem yapabilir.

2.5 - LIFFE İşlemlerinde Karşılık

Vadeli işlem sözleşmelerinde başlangıç olarak hem alıcıdan hem satıcıdan karşılık alınır. £50.000.- nominal değerli uzun vadeli bir gilt için £750.-karşılık alınır. Vadeli işlemlerle ilgili opsiyonlarda, (Risk faktörü x Başlangıç Karşılığı) formülü ile iki taraftan ayrıca karşılık alınır. Satıcı ayrıca ihtiyati risk karşılığı da ödemek zorundadır. Ancak başlangıçta alınan karşılık toplamı prim tutarını aşamaz. Fiyatların değişmesine bağlı olarak karşılıkla günlük olarak hesaplanan ve her üyenin hesabına ilave edilir.

3 - Şikago Mal Borsası (CME) ile ilgili Pazar Mekanizması

3.1 - İşlem Yapılması

Borsa yetkilileri ve aracı kurum yetkililerinden oluşan 4300 kişilik işlem yerinde yüksek sesle yapılır. Fiyat değişiklikleri bilgisayarlı çalışma ortamıyla gerek borsa içine gerekse uluslararası borsalara anında iletilir.

3.2 - Takas İşlemleri

Takas odası borsa işlemlerine yardımcı olarak çalışır. Takas kurumu tüm açık pozisyonları her kontratın ödenmesini yansıtacak şekilde gösterir. Her pozisyon ertesi günün ödenme fiyatlarında kâr ve zararı gösterecek şekilde borçlandırılır veya alacaklandırılır.

3.3 - Yasal Düzenleme

CME Vadeli Mal Ticareti Komisyonu tarafından yasal düzenlemeye tabi tutulur.

3.4 - Üyelik

Yaklaşık 2.700 üyelik mevcuttur. Bağımsız üyeler, aracı kurum, banka, yatırım kurumu ve firma yetkililerinin oluşturduğu üyelikler, Borsa guvernörler kurulunun onayı ile satılabilir. Her üyelik yerinin satış fiyatı ilgili departman tarafından belirlenir ve ihale ile satış yapılır. Üye adaylar sermaye yeterliliği ve tecrübe açısından değerlendirmeye tabi tutulur.

4 - Şikago Ticaret Kurulunun Pazar Mekanizması

4.1 - İşlemler

CBOT Devlet tahvili ve bonolar üzerinden opsiyon ve vadeli işlemlerde

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gece seansları düzenleyerek bilgisayar bağlantılı bir çalışma düzeni ile USA vadeli işlemlerini uluslararası düzeyde yaygınlaştırmaya çalışmaktadır.

İşlemler 80 yıldır kullanılan gongun açıp kapadığı çalışma saatleri içinde özel işlem yerlerinde gerçekleştirilir. Fiyat değişiklikleri bilgisayar bağlantıları ile USA ve uluslararası borsalara aktarılır.

4.2 - Takas

Gerçekleşen muameleler aracı kurum yetkilisi tarafından kendi takas firmasına aktarılır. 145 civarında olan takas firmaları ayrı bir kişiliğe sahiptir. Alıcı ve satıcı taraflar takas firmalarına sorumludurlar. Takas firmaları tüm sözleşmelerin gereklerinin yerine getirilmesini garanti ederler.

4.3 - Yasal Düzenleme

Başkan, Müdürler Kurulu ve 50'den fazla üyesi ile Vadeli Mal İşlemleri Ticareti Komisyonu tarafından, 1974 tarihli bir yasaya istinaden yapılmaktadır.

4.4 - Üyelik

CBOT bir firmanın özellikleri ile ilgili bir üyelik kuruluşudur. Birçok çeşit üyelik vardır. Bugün için yaklaşık $400.000 satış fiyatı olan üyelikler için bazı finansal şartlar aranır. Her tür sözleşme üzerine işlem yapmaya yetkili 1400'ün üzerinde tam yetkili üyeler dışında 2000 kadar daraltılmış yetkili üyeler mevcuttur.

5 - Şikago Opsiyon Borsası'nda Pazar Mekanizması

CBOE dünyanın en geniş en gelişmiş işlem alanına sahiptir. Tüm teknolojik üstünlükleriyle, işlemlerde düşük maliyet, kolay erişim, hızlı ve güvenilir hizmet sağlar. Küçük çaplı ticarete olanak verir. Anında ve istenildiği gibi bilgi sunan bilgisayarlı çalışmı sistemiyle otomatik olarak işlem yapılır.

V - SONUÇ

Bugünün opsiyon pazarı 1980 yılında finansal alanda ortaya çıkan yeniliklerin sonucunun bir ürünüdür. Faiz ve kâr risklerini dengelemek isteyen gerek profesyonel yatırımcılar gerekse diğer kullanıcılar opsiyon piyasasına büyük bir ilgi göstermişlerdir. Bir yandan bankalar müşterilerine değişik opsiyon paketleri sunarken diğer yandan firmaların artan ilgisi karşısında borsa dışı opsiyon pazarı kurulmuştur.

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Çok yakın zamana kadar opsiyonlar yalnızca kısa bir dönem için uygulama buluyordu. bu da 2 - 3 yıllık dönemler için geliştirilmiş olan riskten korunma modellerine uygun düşmüyordu. Opsiyonlar genelde swap işlemleri ile ayni kullanım amacıyla yani faiz ve kâr risklerini giderme veya düşürme amacıyla kullanılmakla birlikte zarar olasılığında ortaya koyduğu limitle swap işlemlerine göre üstünlük sağlar.

Opsiyonlar ucuz ve kazanç potansiyeli yüksek bir finansal araç olmasına karşın, pazarın nasıl çalıştığı ve finansal risklerin giderilmesinde opsiyonların ne şekilde kullanılacağı hususları tam olarak bilinmediği için pahalı bir yöntem olarak tanınmaktadırlar. Bu nedenlerden ötürü, opsiyon pazarlarının müşterilere gerekli ve yeterli en son bilgiyi 24 saat süreyle verebilecek şekilde ve tüm aracı kuruluşların dünyanın herhangi bir opsiyon pazarına doğrudan bağlantı sağlayabilecekleri bir sisteme geçmesinde fayda görmekteyiz. Her ne kadar belli başlı borsalar arasında bağlantılar kurulmuş ve çalışma saatleri genişletildiyse de bu yeterli değildir. Kanımızca herkesin aradığı en iyi çözümü Dünyanın her yanında ve yeterli sayıda hizmete sunulan Reuters ekranlarının kullanılmasını organize eden bir sistem verecektir.

Çalışmamızı bitirmeden önce, vadeli işlemler açısından Türk Sermaye pazarından da kısaca bahsetmekte fayda görüyorum. Bilindiği gibi, son yıllarda, Türk Sermaye pazarında büyük bir gelişme görülmüştür. Hiç şüphesiz bu gelişmeden en büyük payı günlük işlem hacminde ve İndeksteki artışla İstanbul Menkul Kıymetler Borsası almıştır. Fakat bildiğimiz gibi, buradaki tüm işlemler kısa vadeli ve peşin esasına göre yapılmaktadır. Yasal yapının elvermemesi nedeniyle Türkiye'de vadeli işlemler piyasası organize edilememiştir. Bununla birlikte önümüzdeki günlerde yapılacak yasal değişiklikle Sermaye Piyasası Kuruluna vadeli işlemlerin yapılmasıyla ilgili yasal altyapıyı hazırlama görevi verileceğini bilmekteyiz.

Ümit ederiz ki yasal değişiklik gerçekleşir gerçekleşmez Sermaye Piyasası Kurulu gerekli çalışmalarını kısa sürede tamamlayacak ve Türk yatırımcılarına kâr potansiyeli yüksek ve finansal risklerin giderilmesi için etkin bir araç sunulmuş olacaktır.