TRADING SERVICES DESCRIPTION

LONDON STOCK EXCHANGE DERIVATIVES MARKET TRADING SERVICES DESCRIPTION

Version 4.6

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London
Stock Exchange Group

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1. Introduction

The London Stock Exchange Derivatives Market offers trading of single stock, index and dividend derivatives based on United Kingdom, International Order Book (IOB) and Norwegian products.

The London Stock Exchange Derivatives Market trading platform is hosted in the data-centres of LSEG and has interfaces common to other markets of LSEG, ensuring that customers accessing other LSEG markets can enjoy access to the London Stock Exchange Derivatives Market with minimal incremental cost or effort.

London Stock Exchange Derivatives Market offers Member firms new and innovative features in addition to the highly successful market models used for its existing Norwegian and IOB business which has been developed alongside Members.

1.1. Clearing and margining

Members can improve operational efficiency and net margin payments across geographies, all through one clearer - LCH.Clearnet Limited. EquityClear members can benefit (with the exception of Norwegian contracts due to interoperability arrangements) from margin offsets and cross source trade netting.

1.2. Product Overview

Underlying	Single Stock	Index	Dividend
Norway	**Futures and Options** on the Norwegian stocks	**Futures and Options** on OBX, Futures on the OBOSX	
Russia and IOB	**Futures and Options** on the most liquid IOB DRs[1]	**Futures and Options** on FTSE RIOB	**Futures** on the most liquid IOB DRs[1]
UK	**Futures and Options** on UK underlying shares	**Futures and Options** on FTSE 100; Futures on the FTSE UK Large Cap Super Liquid Index	

For a current list of all products traded on the London Stock Exchange Derivatives Market, as well as full Contract Specifications, please refer to the London Stock Exchange Derivatives Market Contract Specifications document.

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[1] **I**nternational **O**rder **B**ook **D**epository **R**eceipts. This includes Dividend Neutral Stock Futures.

2. Trading services and functionalities

2.1. Series Generation

Detailed contract specifications for each product are specified in the London Stock Exchange Derivatives Market Contract Specifications document and on the London Stock Exchange Derivatives Market website. A comprehensive list of product codes and underlying ISIN's codes can be found in the Product list on the London Stock Exchange Derivatives Market website.

2.1.1. Symbology

The following symbology rules apply to derivatives available for trading on the London Stock Exchange Derivatives Market

During the normal Trading Hours for each Standardised Product, London Stock Exchange Derivatives Market disseminates 5 levels of market depth. The Market Data information is distributed via HSVF as described in the technical specification.

In the absence of an express statement to the contrary, information relating to a Series which is listed in conjunction with Oslo Børs reflects the combined activity in such Series of Members of the London Stock Exchange Derivatives Market and Members of Oslo Børs coding system (international convention) is being used for all other products going forward.

2.1.2. Standardised Series Codes

Each instrument is identified by a string of 4-9 characters (excluding Options strike)

- a maximum of six characters designates the Underlying instrument or Index

- one character designates the Expiration Year

- one character designates the Expiration Month

- (Options only) the following numeric characters designate the strike price

- An additional symbol may also be added to indicate that a corporate action has occurred and the readjustment rules have been applied to that series (see below).

2.1.3. Tailor-Made Series Codes

Each instrument is identified by a string of 6-12 characters (excluding Options strike)

- a maximum of six characters designates the Contract Underlying

- one character designates the Expiration Year

- two characters designate the Expiration Day

- one character designates the expiration month

- (Options only) the following numeric characters designate the strike price

- (Options only) an "A" or "E" designates whether the option is American or European style

- An additional symbol may also be added to indicate that a corporate action has occurred and the readjustment rules have been applied to that series (see below).

2.1.4. Month Code Convention

The London Stock Exchange Derivatives Market currently uses two separate month

coding systems. One system is in use for IOB and Norwegian derivatives, and a separate coding system (international convention) is being used for all other products going forward.

All other products			
September	U	I	U
October	V	J	V
November	X	K	W
December	Z	L	X

Norwegian and IOB			
Month	Index Futures	Call Options	Put Options and SSF
January	A	A	M
February	B	B	N
March	C	C	O
April	D	D	P
May	E	E	Q
June	F	F	R
July	G	G	S
August	H	H	T
September	I	I	U
October	J	J	V
November	K	K	W
December	L	L	X

2.2. Corporate Actions Treatment Rules

Where possible, the London Stock Exchange Derivatives Market harmonises the treatment of corporate actions to market standards, please refer to the Derivatives Corporate Actions Policy. For Norwegian products, the London Stock Exchange Derivatives Market follows Oslo Børs Corporate Action policy.

2.3. Corporate Action Identifier

The presence of any of the following additional letters on the end of a series code indicates that a corporate action has occurred and the readjustment rules have been applied to that series. For example, an "R" would indicate that five corporate actions have been applied to a series during its lifetime with the readjustment rules having been applied five times.

All other products			
Month	Futures	Call Options	Put Options
January	F	A	M
February	G	B	N
March	H	C	O
April	J	D	P
May	K	E	Q
June	M	F	R
July	N	G	S
August	Q	H	T

Corporate action number	Identifier
1st	X
2nd	Y
3rd	Z
4th	Q
5th	R
6th	S
7th	G
8th	U
9th	V

2.4. Strike Price Generation

London Stock Exchange Derivatives Market generates new strikes on Options series according to the following:

- Minimum number of series in-the-money (ITM)

- Minimum number of series out-of-the-money (OTM)

- Always one series at-the-money (ATM)

2.4.1. Designation of the ATM strike

Every minute, the SOLA derivatives system marks one of the series listed the "ATM" strike price. It does this by looking at the price of the underlying and seeing which series is closest to this level.

At the end of each day, an ATM strike is chosen (or created if it is the night before the listing of a new series) relative to the closing price of the underlying.

New In-the-Money strikes and Out-of-the Money strikes are generated relative to this ATM price.

The ATM strike for a particular underlying/ expiry combination will be created at a level determined by the strike price increment for that expiration. For example, if the strike price generation increment for a particular underlying/expiry combination is 25 index points, the ATM series will be created/ chosen at a price ending in 25 points, 50 points, 75 points or 00 points. If the generation increment is 50 points, the ATM strike will be created/ chosen at a price ending in either 50 points or 00 points.

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2.4.2. IOB Market

a) FTSE RIOB Options

Expiration	Minimum ITM strikes generated	Minimum OTM strikes generated	Bid price	Increment
All contracts	5	5	0 1000	10.00 20.00

b) IOB DR Options

Expiration	Minimum ITM strikes generated	Minimum OTM strikes generated	Bid price	Increment
All contracts	7	7	0 5 10 50 100 200 300	0.10 0.25 0.50 1.00 5.00 10.00 20.00

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2.4.3. Norwegian Market

a) OBX Options

Expiration	Minimum ITM strikes generated	Minimum OTM strikes generated	Bid price	Increment
<6 months	2	2	0 -150	3.00
			150 – 500	5.00
			500 – 1000	10.00
			1000 +	20.00
6 months >			0 -150	6.00
			150 – 500	10.00
			500 – 1000	20.00
			1000 +	40.00

b) Norwegian Stock Options

Expiration	Minimum ITM strikes generated	Minimum OTM strikes generated	Bid price	Increment
<6 months	2	2	0 -2	0.10
			2 – 5	0.25
			5 – 10	0.50
			10 – 30	1.00
			30-50	2.00
			50-80	3.00
			80-200	5.00
			200-400	10.00
			400-600	20.00
			600 +	30.00
6 months >			0 -2	0.20
			2 – 5	0.50
			5 – 10	1.00
			10 – 30	2.00
			30-50	4.00
			50-80	6.00
			80-200	10.00
			200-400	20.00
			400-600	40.00
			600 +	60.00

2.4.4. UK Market – FTSE 100 options

Expiration	Minimum ITM strikes generated	Minimum OTM strikes generated	Strike price increment used
1 month	10	10	25 points
≤ 3 months	10	10	50 points
≤ 1 year	10	10	100 points
≤ 2 years	20	20	100 points
≥ 2 years	0	0	-

2.5. Strategy instruments

2.5.1. User generated strategies

On all orderbook traded Futures and Options, the London Stock Exchange Derivatives Market has enabled SOLA functionality that allows users to create their own 2 legged strategy instruments and list them for trading by the rest of the market.

2.5.2. Automatically generated strategies

For orderbook traded Futures, the London Stock Exchange Derivatives Market automatically lists "Roll" strategy instruments in addition to enabling user generated strategies.

Typically, the London Stock Exchange Derivatives Market will automatically generate a roll instrument between the expiring series and the following expiry month which are available for trading on the orderbook.

2.6. Trading Functionality

2.6.1. Multilateral Order book Trading

London Stock Exchange Derivatives Market orderbook operates with on a Price-Visibility-Time priority basis. A summary of orderbook types, and key information on each, is given in Section 7 and Appendix A. All executed trades in the London Stock Exchange Derivatives Market orderbook will contribute to price and quantity updates in the Market Data Feed (HSVF).

The Risk Controls section describes controls applicable to the London Stock Exchange Derivatives Market.

2.6.2. Block Trades

London Stock Exchange Derivatives Market allows for the entry of bilaterally negotiated trades between counterparties ("Committed" trade) or with a single counterparty filling both sides of a trade ("Cross/ Two sided" trade). Block trades are permitted within the Bid/Ask and must conform to the specific product tick table. Please refer to the "LSEDM401 HSVF Market Data Technical Specification" on the London Stock Exchange Derivatives Market website for details.

A summary of block order types, and key information on each, is given is Appendix A.

Such trades are subject to different risk control parameters in addition to quantity and entry requirements. A summary of minimum

block sizes on a product basis is provided in Appendix B.

Block trades do contribute price and quantity updates to the Market Data Feed (HSVF).

2.6.3. Trade Reporting

London Stock Exchange Derivatives Market Cleared only service offers reporting of bilaterally negotiated trades. These can be reported either in a Listed Series or Tailor-made all with the guarantee of CCP Clearing with LCH Clearnet Limited. A template is provided to report trades to the Market Operations team via email at etd.tradereporting@lseg.com.

Transactions in Tailor-made contracts are reported to London Stock Exchange Derivatives Market through templates provided by London Stock Exchange Derivatives Market and available on the website.

For Listed Series, trades can be reported to London Stock Exchange Derivatives Market as a Cross or Committed transactions provided that the trade complies with the minimum block size. Details are available within Appendix B. For hidden series Contracts, these transactions are not published.

Principal vs Agency trades: when a member trades against a client who clears through a London Stock Exchange Derivatives Market member, the Executing Broker needs to report the trade as a cross. Both sides of the trades must be marked appropriately (House/Client), and the Client side should also include the appropriate clearing reference on the template.

London Stock Exchange Derivatives Market will register each side of the trade and confirm that they are now on the appropriate accounts as per the template received. If required the client side can be given up to the clients' clearing broker.

When one side of the trade needs to be given up to another London Stock Exchange Derivatives Market member, it is the responsibility of the reporting member to request that both the buy and sell side of the trade go onto their own account; they will then be required to manage any give ups with their GCM directly.

London Stock Exchange Derivatives Market should be provided with details of the transaction to include:

- the type[2] of and class of a Listed or Non-Standardised Contract;

- the term if a Tailor-made Contract

- the Strike Price

- the style;

- whether it wishes to buy or to sell;

- the name and account(s) of the Counterparty/Counterparties

In addition, the London Stock Exchange Derivatives Market permits certain aspects of the product can be following flexible parameters

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[2] This includes whether or not the product is a Dividend Neutral Stock Future

- Price/ Premium (product dependent – up to four decimals for single stock derivatives)

- The Strike Price (up to four decimals for single stock derivatives)

- Expiration (configurable to exact day up to five years for Stock or Depositary Receipts and a lesser term of two years for Index Products. The London Stock Exchange Derivatives Market may specify a different term from time to time in relation to a particular Tailor-made Contract

- Option exercise style (European or American style, product dependent);

- Type of settlement (physical or cash, product dependent)

If for any reason the registered Expiration Day for a Tailor-made Contract proves not to be a Trading Day for the relevant Contract, the London Stock Exchange Derivatives Market shall have the power to modify the Expiration Day by bringing it forward to the Trading Day for the Contract in question immediately preceding the Reported date.

Members are able to receive through secure FTP in Excel or CSV formats reports containing ISIN information on a Cleared only series to aid FCA Transaction Reporting. Please contact Market Operations for further information.

2.7. Bulk Quoting (product dependent)

Members that have conformed to the London Stock Exchange Derivatives Market SAIL API are also able to send Bulk Quotes to the London Stock Exchange Derivatives Market orderbook. Bulk quotes may contain up to 280 separate quotes with the London Stock Exchange Derivatives Market validating each quote within the message. Throttles apply as per rates described in the SAIL technical specification. Bulk Quoting is a more efficient way of sending quotes to the trading system as only a single message is required as opposed to multiple cancellations and resends of order messages.

Bulk quotes are only valid for the current trading day.

Risk/ exposure protections for Members using Bulk Quoting are described in the Risk Controls section.

Before the Opening, an "Intervention Period" allows bulk quote users to enter Bulk Quote data which would be used to retrieve the quote ID. The Intervention Period is only available for specific products. Members can continue to cancel orders during this period.

2.8. Quoting Obligations for Market Makers

Firms specifically assigned as Market Makers in a certain instrument class will have to meet a set of quoting obligations that are monitored in real-time by the London Stock Exchange Derivatives Market.

Market Makers should note the following:

- Quotes must be sent using the Bulk Quote message in the SAIL API

- Quotes must meet the instrument size requirements for a minimum instrument specific percentage of the trading hours in a month

- Quotes must meet the instrument spread requirements for a minimum instrument specific percentage of the trading hours in a month

- Market Makers that do not meet their obligations over the month will not be eligible for Market Maker fees for that month and will be required to repay the difference between such fees and the non-Market Maker fees. Consistent failure to meet obligations will result in termination of "Market Maker" status and any associated agreements.

2.9. Request for Quote (RFQs)

Request for Quote (RFQ) allows any Member to broadcast a message to Market Makers in a particular instrument via the HSVF market data feed. Market Makers, as part of their agreement with the London Stock Exchange Derivatives Market, have an obligation to reply by entering a quote in to the orderbook for that specific instrument.

RFQs contain:

- Instrument Class

- Instrument ID Code

2.10. On Request listing of additional standardised series

Members may request by phone or electronic communication to the London Stock Exchange Derivatives Market Operations for a specific Options Series to be listed on the Orderbook if it is not automatically generated in accordance with the parameters described in the relevant Contract Specifications and the Strike Price Generation document. This is known as an 'On Request' listing.

Members shall provide the following information:

- The Underlying instrument;

- The Expiration Month, which should already exist on screen, (Expiration Day will always be standardised as per the relevant Contract Specification)

- The Strike Price (should be within the same strike price interval that already exists).

2.11. Order Types

Orders of the following type may be placed by Members

- By Price type: (Limit Order, Market Order, Top Order, Stop (loss) order, if touched order);

- By Quantity type: (Minimum quantity order, Iceberg Order)

- By Duration type: (Day order, Good Till Day (GTD), Good Till Cancelled (GTC), Immediate order (FAK/IOC), While connected order)

A Market Order is an Order which is for immediate acceptance only. A Market Order may not be stored on the Orderbook. There are two types of Market Order:

- "Fill or Kill" being an Order which must be traded in its entirety or cancelled; and

- "Fill and Kill" being an Order which can be executed in part with the unfilled part of the Order being cancelled.

A Combination Order is an Order comprising two or more individual Orders in Series which are subject to the condition that each individual order forming part of the Combination Order must be executed simultaneously.

A Standardised Combination is an Order which meets the following requirements:

- it comprises two individual Orders;

- these Orders are both subject to the condition that they be executed simultaneously;

A Standardised Combination may be placed as either as a Limit Order or a Market Order. The Limit Order will be stored on the Orderbook until the time specified by the Member. A Limit Order is subject to the condition that both Orders comprised in the Combination Order must be executed simultaneously. The Market Order will not be stored on the Orderbook.

See Appendix A for more details.

2.12. **Placing, Cancellation and Variation of an Order**

On placing, cancelling or varying an Order by way of the electronic trading system, a Member shall provide the following information:

- the Series, Type/ Style, Class and the Listed Product in question;

- the Expiration Month;

- whether its Order is to buy or to sell;

- in the case of an Options Contract, whether it is a Call or a Put;

- the price for the Order;

- the Order's volume;

- whether it is a Limit Order, Market Order or a Combination Order;

- the Account to which the transaction, if executed, is to be allocated;

- if appropriate, the identification code of the Client for whom the Order has been placed.

On placing an Order into the orderbook Members should ensure that the value of the Order does not exceed the maximum permitted size for the Contract in question, Members should note that any Order placed on the orderbook which exceeds the applicable maximum permitted size shall be rejected. Members will receive a message stating this. Price and Quantity restrictions are detailed in the London Stock Exchange Derivatives Market Trading Services Description on the London Stock Exchange Derivatives Market website.

The Tick size applicable for trading on the orderbook is described in the relevant

Contract Specification. A Committed or Cross Trade can however be registered on the orderbook at a Tick size that differs from the one specified in Contract Specifications.

The primary Rule for ranking of Orders stored on the orderbook is that priority is given to the Order having the best price.

Where two or more Orders are entered at the same price, priority is given to the Order which has been stored on the orderbook longest period of time.

Any variation in an Order involving its price, the extension of its period of validity, or an increase in the volume of an Order is treated as the cancellation of the original Order and the submission of a new Order. The time priority of such Order shall be determined by reference to the time at which the amended Order is entered on to the orderbook.

Where the variation of an Order involves only a reduction in its volume or period of validity or a variation in the Client identity, the ranking of the original Order is not affected.

Where volume terms attached to an Order having priority prevent it from being executed, the first available Order below such Order in the order of priority which can be matched will be selected for execution.

Where a Combination Order can be executed against another Combination Order a Transaction will be executed on the terms of the matching Combination Orders provided that it is not possible to execute the Combination Order against Orders on the orderbook on better terms than those provided by the matching Combination Order.

An Order will remain valid and effective unless and until an instruction to cancel or vary is given by the Member which placed the Order.

A Member may contact Market Operations to cancel an Order originated from the electronic trading system. Such request must be from a Registered Person.

3. Connectivity and Access

		Trading	Clearing	Market Data
API and Connectivity	**Extranex** / **Hosting** / **VPN** / **NSP**	SAIL API FIX 4.2 API	BCS API	HSVF API
	Vendor Access Network (VAN)	VAN* provided network and applications		

		Trading	Clearing	Market Data
Application	**LSE Derivatives Market solution**	BTS	BCS	CC&G FTP site	BTS
	External solution	Member In-House GUI	ISV provided GUI*	ISV GUI*	Market Data Vendor*

* **See the London Stock Exchange Derivatives Market website for a full list**

Please refer to the "LSEDM102 Connectivity Guide" on the London Stock Exchange Derivatives Market website for further details on the connectivity options listed below.

3.1. Physical Connectivity

3.1.1. Extranex

Extranex provides customers of the London Stock Exchange Group, including the London Stock Exchange Derivatives Market Members with a dedicated, resilient and secure point to point connection allowing transmission of data traffic to and from the Group's Trading, Clearing and Information Systems. A range of service options are available to suit varying customer requirements. See the London Stock Exchange website or contact the London Stock Exchange Derivatives Market technical team for more details:

http://www.londonstockexchange.com/products-and-services/connectivity/extranex/extranex.htm

3.1.2. Hosting

Members may choose to house their servers in LSEG's data centre in close proximity to the London Stock Exchange Derivatives Market servers.

- Virtual Private Network (VPN)

For Members seeking a low cost solution and who are less sensitive to latency, the London Stock Exchange Derivatives Market will configure and deliver a router to allow trading and clearing access over a standard internet connection.

- Network Service Providers (NSP)

As an alternative to using the Extranex network, the Group's services, including the London Stock Exchange Derivatives Market, can also be accessed through accredited NSPs.

Members contract with the NSP for provision of network connectivity but sign agreements directly with the London Stock Exchange Derivatives Market for access to our trading and information services.

Clients using an NSP connection will have individual service enablement's set up on our trading, clearing and information systems. The data and trading feeds (APIs) are in exactly the same format as those received by a direct customer and are subject to the same testing requirements.

A list of all current NSPs for the London Stock Exchange Derivatives Market can be found on the the London Stock Exchange Derivatives Market website.

3.2. Vendor Access Networks (VANs)

VANs provide a full end to end solution comprising network connectivity and pre-conformed software applications through which their clients can interface with the London Stock Exchange Derivatives Market.

3.3. Vendor Software Solutions

- MDVs, ISVs and VANs

A full list of the London Stock Exchange Derivatives Market conformed Front, Middle and Back Office Independent Software Vendors (ISVs), Market Data Vendors (MDVs) and VAN providers can be found on the London Stock Exchange Derivatives Market website.

- BTS Trading Application

The Borsa Italiana Systems (BItS) Trading Station (BTS) Service allows access to the London Stock Exchange Derivatives Market trading services. In addition, it is also used to access all other London Stock Exchange Group Equity and Fixed Income markets.

The London Stock Exchange Derivatives Market can supply BTS to members as an off-the-shelf ready-made trading application. Using BTS, members can access functionality including order entry, deletion, viewing of the orderbook to five levels of depth, creation of strategy instruments and the reporting of Cross and Committed block trades.The following BTS documents are available from the London Stock Exchange Derivatives Market website: LSEDM801 BItS Trading Station (BTS) User Manual

- BCS Clearing Application

Members can develop directly London Stock Exchange Derivatives Market clearing API, however most clearing members will take the London Stock Exchange Derivatives Market supplied BCS application to enable them to view reports, perform give ups/ take ups, move trades between accounts and perform other post trade administration.

The following BCS documents are available from the London Stock Exchange Derivatives Market website:

LSEDM701 BItS Clearing Station (BCS) User Manual, LSEDM702 BItS Clearing Station (BCS) Application Data Layouts, LSEDM703 BItS Clearing Station (BCS) Technical Notes

3.4. BCS FTP Service

The London Stock Exchange Derivatives Market clearing reports are available via an FTP site accessible with a user name and password

Contact Technical Account Management for FTP Service documentation

3.5. Trading APIs

The London Stock Exchange Derivatives Market provides two derivatives trading APIs that applications can be developed to. These are:

- **FIX 4.2**

SOLA Access Information Language (SAIL) – the SOLA native API

The native SAIL API provides a slight latency advantage over the FIX API along with additional functionality for bulk quoting.

The following FIX and SAIL documentation is available from the London Stock Exchange Derivatives Market website including the SOLA 5 Release documentation

LSEDM200 - FIX 4.2 Business Design Guide

LSEDM201 - FIX 4.2 Specification

LSEDM300 - SAIL Business Design Guide

LSEDM301 - SAIL Specification

3.6. Market Data API

The London Stock Exchange Derivatives Market provides a single market data API that applications can be developed to. This is:

- **High Speed Vendor Feed (HSVF)**

HSVF disseminates trades, quotes, request for quotes, market depth, trade cancellation, strategies, bulletins, instrument keys, instrument summaries and administrative messages for all order-book traded derivatives on the London Stock Exchange Derivatives Market. HSVF uses a TCP/IP broadcast interface. Users may subscribe to:

Level 1 data – best bid and ask price and aggregate size, last trade price and size and other market data as detailed in the documents listed below.

Level 2 data – level one data augmented with a further four levels of price depth and size

The following HSVF documentation is available from the London Stock Exchange Derivatives Market website including the SOLA 5 Release documentation: LSEDM401 - HSVF Market Data

Members wishing to redistribute market data must do so under the terms of the ILA and should refer to our Tariff Schedule, or contact the London Stock Exchange Derivatives

Market Business Development team for more information.

3.7. Clearing API

The London Stock Exchange Derivatives Market provides a clearing API that applications can be developed to for the purpose of allowing clearing processing and trade administration.

The documentation is available on request from Technical Account Management.

4. Clearing and Market Operations

4.1. Transaction reporting and MIC

Every series on the London Stock Exchange Derivatives Market has an associated ISIN code. This ISIN is a unique identifier that can be used for transaction reporting purposes.

Each series can also be identified by its unique series level code, described in the symbology section.

The Market Identifier Code (MIC) for the London Stock Exchange Derivatives Market is XLOD.

4.2. Central Counterparty Protection

All Future and Option Contracts traded/reported on the London Stock Exchange Derivatives Market will have LCH.Clearnet Limited acting as Central Counterparty.

At the point of trade registration, trades are novated to LCH.Clearnet Limited whereby the trade by assuming a long position against the short counterparty to the trade, and a short position against the long counterparty.

4.3. Margining

Initial margin is calculated and collected by LCH.Clearnet Limited using London SPAN V 4.0 which is a portfolio based margining system. There are three major inputs to the London SPAN margin calculation, Positions, Prices and Parameters (determined by LCH.Clearnet and reviewed on a continual basis). Any change to any one of these parameters will result in a change to the margin requirement.

The London Stock Exchange Derivatives Market calculate daily variation margin of a members' profits or losses using the Daily Settlement Price to mark-to-market open positions. The collection/return of variation margin is administered by LCH.Clearnet Limited.

Derivative outurns with the exception of the London Stock Exchange Derivatives Market Norwegian contracts benefit from margin offsets and optional cross trade source netting through LCH Clearnet EquityClear Service.

Buyer elections on all physical delivered contracts, excluding the London Stock Exchange Derivatives Market Norwegian contracts, will be allowed under the Equityclear Service. Members will have the ability to choose an option or combination of options, in a participating Corporate Action giving more control over their investments, as opposed to the current default option process.

4.4. Account Structure

Members can request the following types of account from the London Stock Exchange Derivatives Market Operations.

- Client account

- House account

- Market Maker account (for members under provision obligations)

Market Operations will supply the member with a "Static Data Form" upon request, on which account set up requirements can be specified. The member can then segregate business as required.

4.5. Market Operations and Clearing Processing Timetable

Times may vary depending on market conditions

Start of consultation period (Members can delete orders)	05:30
Start of Intervention Period (Members can retrieve Bulk Quote ID for certain products)	07:30
Start of Trade Reporting hours	07:30
End of Trade Reporting hours[3]	17:30
Surveillance intervention period ends for LSE Derivatives products (Members can no longer delete orders)	18:00
Surveillance intervention period ends for Oslo Derivatives products (Members can no longer delete orders)	18:20
Clearing closes (read-only access available in BCS)	18:00
Clearing batches begin (BCS inaccessible)	18:45
Clearing reports available	19:30
Official closing prices disseminated (can be amended over-night)	21:00

All times are London times

Until clearing closes at 18:00 daily, members are able to perform trade administration such as give ups/ takes ups, position transfers and close outs in the clearing system.

4.6. Clearing reports

Members can extract reports summarising their activity on the London Stock Exchange Derivatives Market from the clearing API and clearing applications (including the CC&G FTP Server).

For more detail on these reports and how to access them, please refer to the Connectivity and Access section.

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[3] For UK and IOB derivatives only. Trade Reporting for Norwegian derivatives end at 16:00 London Time

4.7. Exercise and Assignment guide

Currently, the London Stock Exchange Derivatives Market offers two Options styles on its derivatives markets with the following exercise windows:

Option style	Exercise	Exercise window	
		Open	Close
American style	Any business day from trade date until day before expiry	07:30	18:00
European style and American style	Expiry day only	18:10	18:40

All times are London times

The London Stock Exchange Derivatives Market applies the following automatic exercise rules on expiration:

Market	Index Options	Stock/ DR Options
Norway	All series that are in-the-money by more than the exercise fee payable	All series that are 1% or more in-the-money
IOB	All series that are in-the-money by more than the exercise fee payable	All in-the-money series
UK	All in-the-money series	All in-the-money series

Manual exercise can be performed through the member's clearing application (for example on a Norwegian series that is less than 1% in-the-money).

4.8. Settlement and Delivery for Physical Settled Contracts

If the Member holds a net Short Futures position, Exchange shall make available normally prior to 22:00 London time on the day in question through the Clearing Application the report "Expired Futures Positions to be settled MD51". This report provides details relating to the Settlement Delivery obligations for the Underlying Stock in respect of its own Account Transactions and of Transactions executed on behalf of a Client together with the Settlement Amount payable to the Member in respect thereof.

If the Member holds a net Long Futures position, Exchange shall make available normally prior to 22:00 London time on the day in question through the Clearing Application BCS, the report "Expired Futures Positions to be settled MD51". This report provides details relating to the receipt obligations for the Underlying Stock in respect of its own Account Transactions and of Transactions executed on behalf of a Client together with the Settlement Amount due to the Member in respect thereof.

Where a Member Exercises an Option and the Exercise is accepted by Exchange, or the Member is Assigned, Exchange shall make available normally prior to 22:00 London time on the day in question through the Clearing Application BCS the report "Options Exercise/Assigned to be settled MD01". This report specifies the number of Underlying Stock to be delivered by or to the Member in respect of own Account Transactions and of Transactions executed on behalf of a Client together with the Settlement Amount payable to or by the Member in respect thereof.

The Member shall ensure that the information specified in the relating reports "MD51 and MD01" are accurate in all respects and notify Exchange of any discrepancy no later than 08:00 London time on the Trading Day after the affected day of Delivery or Exercise.

5. Risk Controls

5.1. Price Controls on Multilateral Order book Trades

Circuit breakers will activate and trigger a 60 second suspension of trading when a trade occurs at a price level deemed to be an unacceptably large percentage margin away from static or dynamic control prices defined by the London Stock Exchange Derivatives Market.

The London Stock Exchange Derivatives Market can set separate circuit breakers against the static control price with respect to both orders and trades. In particular market conditions, London Stock Exchange Derivatives Market may, with reference to markets, categories of financial instruments or individual instrument modify the maximum price variation limits, the static price, the dynamic price and other trading conditions.

Definitions of control prices are as follows:

- **Static control price** – the previous day closing price as determined by the London Stock Exchange Derivatives Market and CC&G OR a manually inputted price;

- **Dynamic control price** – the last traded price in the current session

Levels set by the London Stock Exchange Derivatives Market are detailed in Appendix B.

For Stop Loss and If Touched orders, the incoming order price cannot be outside the price control thresholds detailed in Appendix B. Additionally if, when triggered, the price on such an order violates the control parameters, the incoming order is deleted and the circuit breaker suspension is triggered. In the event that the circuit breaker will continue to persist due to a member's order(s) that is outside the static or dynamic thresholds and the London Stock Exchange Derivatives Market has taken reasonable action to contact the member in relation to that order and the member has not responded, the London Stock Exchange Derivatives Market reserves the right to delete the order to resume continuous trading.

5.2. Price Controls on Block Trades

Block trades electronically submitted to the London Stock Exchange Derivatives Market will be subject to the following controls:

- Where the price of the block falls outside the real-time bid/ ask spread, the London Stock Exchange Derivatives Market defines a minimum acceptable quantity for the trade which is product specific.

- The London Stock Exchange Derivatives Market sets a maximum permitted percentage deviation from the real-time bid/ ask spread for such block trades.

- Any block trade at a price more than this percentage below the bid/ above the ask, will not be processed.

- Where the price of the block falls inside the real-time bid/ ask spread, the trade is subject to normal order quantity controls

Product specific settings are in detailed in Appendix B

5.3. Price Controls on Cleared only Trades

All Cleared only trades are processed by the London Stock Exchange Derivatives Market Operations with open interest kept separately from the Listed Series open interest. All Cleared only trades are subject to fair value price control by the London Stock Exchange Derivatives Market surveillance.

5.4. Order Quantity Controls

Single orders or combination orders are reviewed by the London Stock Exchange Derivatives Market surveillance for purposes of market quality. Product specific settings are in detailed in Appendix B.

6. Position Controls

The London Stock Exchange Derivatives Market monitors positions and may place limits on their size. LCH Clearnet Limited will request margin on all positions and it is each member's responsibility to meet their margin requirements

6.1. Cancellation on Disconnection

Members should be aware of the following;

- When conducting the login procedure, SOLA allows for the member to specify an "inactivity interval" which indicates the number of system "heartbeats" that must be missed before the Member is considered disconnected. This only applies to "While Connected" orders and not to GTD or GTC orders.

- If the inactivity interval is set to "0" then the user is never considered to be disconnected

- "Good Till Day" and "Good Till Cancelled" orders will not automatically cancel on disconnection

- London Stock Exchange Derivatives Market therefore strongly recommends the use of "While Connected" orders for Members that are concerned about cancellation on disconnect.

6.2. Global Cancellation of orders and bulk quotes

Members wishing to remove all their orders from the orderbook in one go should contact The London Stock Exchange Derivatives Market operations who can perform this action.

A specific Global Cancellation message, applying only to quotes placed using the Bulk Quote message, can be sent by Bulk Quote users and will pull all quotes related to a specific trader on all instruments in the same class. The Trader ID and instrument Group ID are used to specify which quotes to cancel. Separate orders will not be cancelled.

6.3. Order Modification

A member may modify any order still on the orderbook. The following modifications will affect price and time priority:

Modification	Price priority	Time priority
Quantity decrease	Maintained	Maintained
Quantity increase*	Maintained	Lost
Price change*	Lost	Lost

*results in deletion of original order and entry of a new order with new price time priority and associated order number

6.4. Order Cancellation

A Member may cancel any order still on the orderbook by sending a cancellation message to the trading system or by contacting the Market Operations.

6.5. Trade Cancellation

Requests for cancellations of reported and block trades as well as trades done via the orderbook should be made to Market Surveillance. All requests for cancellations must follow the rules set out in the Rulebook.

The futures contracts value ranges are available in Appendix C.

6.6. Drop Copy

The drop copy feature allows drop copy participants to receive a copy of all order acknowledgements and trade notifications that belong to a specific Member.

Drop copy messages are all sent using the SOLA Access Interface Language (SAIL), even where the Member's original order protocol was FIX.

SAIL messages included in the drop copy are:

Message
Order Acknowledgement
Order Modification Acknowledgement
Order Cancellation Acknowledgement
Order Cancellation Notice
Execution Notice*
Leg Execution Notice*
Execution Cancellation notice*
Leg Execution Cancellation Notice*

* contains "Maker-Taker" flag

For more information on drop copy functionality please refer to the following document on the London Stock Exchange Derivatives Market website: LSEDM302 SAIL Drop Copy

6.7. Bulk Quoting Protection

Bulk quoting protection is a London Stock Exchange Derivatives Market provided function that will result in an automatic cancellation of all quotes in a particular instrument class.

The feature protects Bulk Quote users against any "excessive" trades due to the following:

- Technical problems at participant's end preventing normal market updates
- Quoting errors at participant's end due to erroneous underlying price information
- Unintentionally being "swept" by another participant

6.8. System Protection Methodology

Users may opt for one of two types of bulk quoting protection:

- **Standard protection:** If protection is triggered on an instrument class, quoting will be restarted and counters (detailed below) reset the next time a bulk quote message is sent to any instrument in the class.
- **Advanced protection:** If protection is triggered on an instrument class, any subsequent quote update is rejected and quoting can only be resumed after the a new "Protection subscription" (RP) message is sent.

Once protection is triggered, the London Stock Exchange Derivatives Market will automatically cancel all quotes posted by the trader on all instruments in the class and send a "Notice of cancellation of all quotes" (NP) message.

Bulk quoting protection is active on all quotes sent using the Bulk Quote message functionality

The London Stock Exchange Derivatives Market provides five protection counters which can be set by firms using bulk quotes in a specific instrument class

Any number of counters can be activated simultaneously. Traders must define a "Time Interval" The protection counters are reset in the event that the time elapsed between any

two trades is longer than the user defined "Time Interval".

Protection counters are listed and described in the table below:

Counter type	Counter change condition (applies to all trades in any instrument of the class)	Trigger for bulk quoting protection
Trade counter	Increases by 1 with each execution of a trade of at least N lots (where N is a user defined number)	LSEDM default threshold **OR** User defined number of trades of at least N lots in size
Volume counter	Increases by the trade volume of every execution	LSEDM default threshold **OR** User defined volume
Value counter	Increases by the trade value of every execution	LSEDM default threshold **OR** User defined value
Delta volume counter	**Increases** by trade volume of every bought call option, sold put option and bought future; and **Decreases** by trade volume of every sold call option, bought put option and sold future	LSEDM default threshold **OR** User defined net volume
Delta value counter	**Increases** by trade value of every bought call option, sold put option and bought future; and **Decreases** by trade volume of every sold call option, bought put option and sold future	LSEDM default threshold **OR** User defined net value

7. Tariff Models

7.1. Overview

The London Stock Exchange Derivatives Market operates several products with specific pricing models. Tariff schedules are available on the London Stock Exchange Derivatives Market website.

The different tariff models currently in use on the London Stock Exchange Derivatives Market are detailed below.

Fee per lot

Products using this system simply apply one universal fee to each side of the trade based on the number of contracts traded, Per-Trade Charging

Percentage of Futures value

Some products are charged based on a "percentage of future value" system, for example IOB dividend Futures.

Future Value = (future price traded) x (number of contracts) x (multiplier)

Percentage of premium value

Some products are charged based on a "percentage of premium value" system, for example IOB DR Options

Premium Value = (premium) x (number of contracts) x (multiplier)

TRADING SERVICES DESCRIPTION

8. Contacts

For more information on the London Stock Exchange Derivatives Market, or any services offered by the London Stock Exchange Derivatives Market, please contact a member of our team.

Business Development and Membership Enquiries	+44 (0) 20 7382 7650	lsedm.sales@lseg.com
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Market Surveillance	+44 (0) 20 7797 1578	MarketAbuse@lseg.com
Corporate Actions team	+44 (0) 20 7797 3660	etd.corporateactions@lseg.com
Technical Account Management *Functional Queries, Client On-Boarding, Technical Advice*	+44 (0) 20 7797 3939	londontam@lseg.com
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London Stock Exchange Group

9. Appendix A – Order Types

9.1. Order types for electronic, anonymous orderbook trading

	Order type	Description
Price Type	**Limit order**	Enters orderbook at specified price and will execute at that level or better. Residual is retained on order-book (unless designated as an **immediate order**) until withdrawn or traded.
	Market order	Executes at best available price until all volume on opposite side has been traded. Residual is converted to a **limit order** at last price that original order was executed.
	Top order	Executes at best available price against any single contra order. Residual is converted to a **limit order** at price just traded.
	Stop (loss) order	Order enters book to prevent further loss once either the Last price or Bid or Ask (as selected) reaches a stated trigger price. Entering order can be set as limit order by entering a specific order price. Alternatively, it can be set as a market order by leaving the order price field blank. Residual is retained on order-book.
	If-Touched order	Order enters book seeking to capitalise once either the Last price or Bid or Ask (as selected) reaches a stated trigger price. Entering order can be set as limit order by entering a specific order price. Alternatively, it can be set as a market order by leaving the order price field blank. Residual is retained on order-book.
Quantity Type	**Minimum quantity order**	Tries to execute at the specified price for at least the stated 'Additional Quantity' (AQ). If the AQ cannot be immediately filled, the order is rejected. If the AQ is filled, the residual is retained on the Orderbook and can trade without further quantity constraints.
	Iceberg/ disclosed quantity order	Enters book as **Limit order** for only the 'Additional Quantity' (AQ) visible, and any balance is held "in reserve". The visible quantity is assigned time-priority at the point of insertion in relation to other displayed orders, whilst the reserve quantity is assigned time priority in respect of other non-displayed orders. When this disclosed/ AQ amount has been traded, the system refreshes the visible quantity from the reserve quantity.
Duration Type	**Day order**	Remains on the book and cancelled at end of the day unless traded or deleted.
	Good Till Day (GTD)	Remains on the book and cancelled at the end of the day specified in the GTD field unless traded or deleted.
	Good Till Cancelled (GTC)	Remains on the book until expiration unless traded or deleted.
	Immediate order (FAK/ IOC)	Immediately executed against any existing orders at the specified price of better, up to the stated volume. Residual volume is deleted.
	While connected order	Remains on the book until participant disconnection or front end failure unless traded or deleted.

TRADING SERVICES DESCRIPTION

9.2. **Block Trades**

Price type	Order type	Description	Effect market data	Matching requirements
	Committed (interbank)	Matching facility to support reporting of executions negotiated between different members for the purpose of trade publication and clearing. Trades must specify the intended counterparty and do not interact with the anonymous multilateral orderbook. Trades stay in the committed book until the end of the day unless matched or deleted.	Trades must meet certain quantity and price threshold determined by the London Stock Exchange Derivatives Market on a product specific basis, Trades contribute to the Market Data Feed with quantity and price updates	Both sides must enter a committed trade with opposing buy and sell sides, same price, same quantity and the correct counterparty or the trades will not match. Committed trades not matched by the end of the trading session are automatically deleted.
	Cross (intrabank)	Trade is pre-arranged by one member acting on behalf of each side and reported to the London Stock Exchange Derivatives Market. Trades do not interact with the anonymous multilateral orderbook.		Matching not required as trade details are entered by one participant only.

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10. Appendix B – Controls

10.1. Price and Quantity Restrictions

	Product	Orderbook price control		Block Trade price control		Orderbook quantity control		Block trade quantity control		Trade Reporting
		% from static control	% from dynamic control	Minimum quantity for outside spread	Allowable % from bid/ask	Single order maximum	Combo order maximum	Minimum size	Maximum size	Minimum quantity for outside spread
Futures	FTSE 100	+/- 5.0% for orders +/- 3.5% for trades	+/- 1.5%	250 lots	+/- 7.5%	500 lots	2500 lots	100 lots	5,000 lots	1 lot
	FTSE UK SLQ	+/- 5.0% for orders +/- 3.5% for trades	+/- 1.5%	250 lots	+/- 7.5%	500 lots	2500 lots	100 lots	5,000 lots	1 lot
	FTSE RIOB	-+/- 5.0% for orders +/- 3.5% for trades	+/- 1.5%	1 lot	Within bid/ask spread	500 lots	2,500 lots	1 lot	5,000 lots	1 lot
	OBX	n/a	n/a	1 lot	Within bid/ask spread	50,000 lots	50,000 lots	1 lot	50,000 lots	1 lot
	OBOSX	n/a	n/a	1 lot	Within bid/ask spread	50,000 lots	50,000 lots	1 lot	50,000 lots	1 lot
	Norwegian stock	n/a	n/a	1 lot	Within bid/ask spread	50,000 lots	50,000 lots	1 lot	50,000 lots	1 lot
	IOB DRs	+/- 20.0% for orders +/- 7.5% for trades	+/- 3.5%	1 lot	Within bid/ask spread	10,000 lots	10,000 lots	1 lot	60,000 lots	1 lot
	IOB DR dividends	+/- 25.0% for orders +/- 10.0% for trades	+/- 5.0%	1 lot	Within bid/ask spread	10,000 lots	10,000 lots	1 lot	100,000 lots	1 lot
Options	FTSE 100	See below	See below	250 lots	+/- 7.5%	500 lots	2500 lots	250 lot	5,000 lots	1 lot
	FTSE RIOB	See below	See below	1 lot	Within bid/ask spread	5,000 lots	10,000 lots	1 lot	10,000 lots	1 lot
	OBX	n/a	n/a	1 lot	Within bid/ask spread	50,000 lots	50,000 lots	1 lot	50,000 lots	1 lot
	IOB DRs	See below	See below	1 lot	Within bid/ask spread	10,000 lots	10,000 lots	1 lot	30,000 lots	1 lot
	UK stocks	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1 lot
	Norwegian stock	n/a	n/a	1 lot	Within bid/ask spread	50,000 lots	50,000 lots	1 lot	50,000 lots	1 lot

10.2. Index options

Strike Price	Trade vs. Settlement		Trade vs. Last
	Front month	All subsequent expiries	All Expiries
	(% Increase - % Decrease)	(% Increase - % Decrease)	(% Increase - % Decrease)
Over 8th OTM	900% - 80%	890% - 70%	450% - 50%
7th OTM	700% - 80%	690% - 70%	350% - 50%
5th and 6th OTM	500% - 80%	490% - 70%	200% - 50%
3rd and 4th OTM	250% - 80%	240% - 70%	100% - 50%
2nd OTM	200% - 80%	190% - 70%	70% - 50%
1st OTM	150% - 80%	140% - 70%	50% - 50%
ATM	**100% - 80%**	**90% - 70%**	**40% - 40%**
1st ITM	80% - 80%	70% - 70%	30% - 30%
2nd ITM	70% - 70%	60% - 60%	30% - 30%
3rd and 4th ITM	60% - 60%	50% - 50%	25% - 25%
5th and 6th ITM	40% - 40%	30% - 30%	15% - 15%
7th to 11th ITM	35% - 35%	25% - 25%	10% - 10%
Over 12th ITM	25% - 25%	15% - 15%	5% - 5%

10.3. Stock options

Strike Price	Trade vs. Settlement		Trade vs. Last
	Front month	**All subsequent expiries**	**All Expiries**
	(% Increase - % Decrease)	(% Increase - % Decrease)	(% Increase - % Decrease)
Over 8th OTM	900% - 80%	890% - 70%	450% - 50%
7th OTM	700% - 80%	690% - 70%	350% - 50%
5th and 6th OTM	500% - 80%	490% - 70%	200% - 50%
3rd and 4th OTM	400% - 80%	390% - 70%	100% - 50%
2nd OTM	350% - 80%	340% - 70%	70% - 50%
1st OTM	250% - 80%	240% - 70%	60% - 50%
ATM	**150% - 80%**	**140% - 70%**	**50% - 50%**
1st ITM	80% - 80%	70% - 70%	40% - 40%
2nd ITM	70% - 70%	60% - 60%	35% - 35%
3rd and 4th ITM	60% - 60%	50% - 50%	30% - 30%
5th and 6th ITM	50% - 50%	40% - 40%	20% - 20%
7th to 11th ITM	45% - 45%	35% - 35%	15% - 15%
Over 12th ITM	30% - 30%	20% - 20%	10% - 10%

11. Appendix C - Futures Contracts Value Ranges

Product	Value Ranges	Fast Market Value Ranges
Stock index Future	1.5%	3%
Stock Futures	5%	10%
Dividend Futures	10%	20%