ISDA® Safe, Efficient Markets

Central Clearing in the Equity Derivatives Market

An ISDA Study

June 2014

INTRODUCTION

The approval of the first central counterparty (CCP) under the European Market Infrastructure Regulation (EMIR) – Sweden's Nasdaq OMX on March 18 – has focused attention on how a clearing determination will be applied across the European Union (EU). Alongside an assortment of interest rate derivatives, Nasdaq OMX was authorised to clear several single-name, basket and equity index futures and options, kick-starting a six-month process by the European Securities and Markets Authority (ESMA) to determine whether a clearing obligation should apply for those classes of derivatives.

Given this process is now under way, ISDA and its members believe the criteria used to determine a clearing obligation, as proposed in an ESMA discussion paper published on July 12, 2013[1], must be carefully considered. In particular, the criteria used to define a 'class' of equity derivatives for the purposes of determining a clearing mandate should be highly granular, taking into account both the specificities of the equity derivatives market, as well as the important differences between exchange-traded and over-the-counter (OTC) instruments. An overly broad definition for an equity derivatives class could mean certain products unsuitable for clearing end up being captured by a clearing mandate, which would ultimately be detrimental for market participants that rely on those instruments for investment and risk management purposes.

There is already a well-developed cleared business for exchange-traded contracts, which make up the vast majority of the overall equity derivatives market, and this has proved to be highly responsive to client demand. Where there has been a need for greater standardisation, exchange-traded, cleared contracts have emerged – and this trend is expected to continue in the future. A number of OTC products are becoming increasingly standardised, and may migrate to exchange trading and clearing over time as customer need for these services grows.

Despite the size of the cleared exchange-traded market, however, there continues to be strong demand for the flexibility and customisation offered by non-cleared OTC products. These instruments exist because they allow market participants to meet unique, tailored hedging and investment needs – demands that cannot be met by using more standardised contracts. An overly broad clearing mandate could leave end-users unable to access customised instruments that meet their specific objectives, resulting either in an increase in risk in the system or a restriction in investment choices by market participants.

As recognised in EMIR, and by ESMA in its joint draft regulatory technical standards on risk mitigation techniques for non-cleared derivatives[2], there is a role for tailored OTC contracts that meet end-user risk management needs, but which aren't suitable for clearing. Those customised, non-cleared trades are subject to mandatory reporting, and capital and margin requirements will be applied to mitigate other potential risks.

---

[1] http://www.esma.europa.eu/system/files/2013-925_discussion_paper_-_the_clearing_obligation_under_emir_0.pdf

[2] https://www.eba.europa.eu/documents/10180/655149/JC+CP+2014+03+%28CP+on+risk+mitigation+for+OTC+derivatives%29.pdf

This paper outlines the composition of the equity derivatives market and the extent of central clearing today, as well as the criteria that should be assessed when determining whether a clearing mandate should apply in the EU. The important distinctions between listed and OTC products are highlighted, alongside key product, market and underlier features that must be considered when determining whether an equity derivatives instrument is suitable for mandatory clearing. In addition, the paper examines whether the liquidity of the underlying reference share – proposed by ESMA as a possible method of defining a class of product – is appropriate for clearing mandate determinations.

BACKGROUND

Under EMIR, ESMA is required to determine whether a clearing obligation should apply once a CCP has been authorised by a national competent authority to clear certain classes of OTC derivatives. As part of this process, ESMA has six months to conduct a consultation and draw up separate regulatory technical standards for each class of derivatives authorised for clearing.

In its discussion paper on the clearing obligation under EMIR, ESMA identifies several characteristics for the purposes of defining an equity derivatives class:

- Product type – for instance, vanilla, dividend or volatility
- Product sub-type – for instance, basket, index or single name
- Transaction type – for instance, option, contract for difference (CFD) or forward/swap
- Settlement currency, which could be grouped by geographic zone
- Maturity

ESMA also states that equity derivatives contracts traded on multilateral trading facilities (MTFs), such as futures and options, are classified as OTC derivatives under EMIR. Furthermore, products that are known as 'futures' by market participants, but which don't trade on regulated markets – such as the flexible futures contracts available on services such as Bclear, described later in this paper – are categorised by ESMA as 'forward/swap' to avoid confusion with exchange-traded contracts.

The approach for defining a class of index product is considered to be relatively straightforward, but the ESMA discussion paper acknowledges the definition of single-name classes is more complex. A variety of options are proposed, including reference to an entity identifier, reference to membership of a specific index, cross-reference to a list of liquid shares as defined under the Markets in Financial Instruments Directive (MIFID), and reference to an unspecified set of criteria. The advantages and disadvantages of each option are briefly outlined by ESMA.

ESMA writes that it will consider a variety of factors when determining whether to apply a clearing obligation for any class of derivatives product, including the degree of standardisation of contract terms, the volume and liquidity of the relevant class of OTC derivatives, and the availability of fair, reliable and generally accepted pricing information.

EQUITY DERIVATIVES MARKET CHARACTERISTICS

The equity derivatives market can loosely be divided into three segments: exchange-traded and centrally-cleared standard contracts; centrally-cleared but privately-negotiated 'flexible' exchange-like contracts; and OTC contracts. While instruments with similar features can exist in each grouping (for instance, referencing the same underlying share or index and/or denominated in the same currency), they can be very different in terms of their characteristics, their uses, the level of standardisation, and their suitability for clearing.

This section briefly describes the three groupings and their main characteristics.

- **Exchange-traded contracts**

This segment primarily comprises single-name futures and options and index futures and options. These contracts reference a particular underlier (for example, the Euro Stoxx 50 index) and may include secondary characteristics, such as volatility or dividends (for instance, Euro Stoxx 50 index dividend futures contracts). These products are highly standardised in terms of maturity/expiry, strike and contract size, and in how they are modified to take account of adjustment events and corporate actions.

The contracts can be executed via an order book, but many exchanges also allow participants to originate standard trades over-the-counter before submitting them to the exchange. Eurex, for instance, reports that 88% of standard single-name futures contracts were executed via its EurexOTC block trade facility in 2013.

All exchange-traded equity derivatives products are cleared through CCPs. Eurex clears through Eurex Clearing, and NYSE-Liffe clears via ICE Clear Europe for transactions executed in London and LCH.Clearnet SA for trades conducted via its continental European platforms. Other clearing houses active in this space include BME Clearing in Spain, CC&G in Italy, Holland Clearing House and Nasdaq OMX.

- **Index contracts**

There are hundreds of index futures and options listed on European exchanges, with the majority of trading activity occurring on Eurex and NYSE-Liffe. According to data compiled by the Bank for International Settlements (BIS)[3], open interest in exchange-traded equity index futures totalled $1.48 trillion at the end of December 2013, with roughly 38% coming from Europe. Turnover in that product during the whole of 2013 hit $30.43 trillion in Europe versus $26.82 trillion in 2012.

Meanwhile, open interest in exchange-traded equity index options reached $5.76 trillion at the end of 2013, with 27% originating in Europe. Over the course of 2013, $15.45 trillion worth of equity index options contracts traded in Europe versus $13.04 trillion in 2012 (see Table 1).

[3] http://www.bis.org/statistics/extderiv.htm

Table 1: Open interest in equity derivatives traded on organised exchanges (notional principal, $ billion)

	Amounts outstanding				Turnover	
	Dec 2011	Dec 2012	Sept 2013	Dec 2013	2012	2013
Equity index futures						
All markets	970.3	1,205	1,417.6	1,482.2	104,022.2	138,361.7
North America	391	441.5	465.1	502.2	40,849.8	50,232.4
Europe	402.2	461	592.3	563.9	26,822	30,433.6
Asia-Pacific	159.5	284.1	343.1	399.9	34,923.3	56,251.8
Others	17.6	18.4	17	16.1	1,427.2	1,443.9
Equity index options						
All markets	3,749.5	4,035.1	6,265.9	5,755	99,664.9	112,804.2
North America	1,956.8	1,972.6	3,041.6	3,025.8	38,261.4	60,408.6
Europe	1,400.8	1,411.4	1,822.7	1,534.5	13,039.2	15,454.7
Asia-Pacific	351	614.8	1,364.4	1,158.7	46,407.3	35,098.4
Others	40.9	36.2	37.1	36	1,957.1	1,842.4

Source: BIS

In terms of number of contracts, 19% of the 39.7 million outstanding equity index futures and 25% of the 142 million outstanding equity index options contracts at the end of 2013 were located in Europe (see Table 2).

Table 2: Number of equity derivatives contracts traded on organised exchanges (millions of contracts)

	Contracts outstanding				Turnover	
	Dec 2011	Dec 2012	Sept 2013	Dec 2013	2012	2013
Equity index futures						
All markets	15	18.1	37.7	39.7	2,315	2,406.8
North America	4.3	4.9	5.1	5.1	657.2	660.6
Europe	7.7	7.7	8.4	7.7	945.1	811.2
Asia-Pacific	2.3	4.9	23.5	26.3	632.5	843.8
Others	0.7	0.6	0.7	0.6	80.3	91.2
Equity index options						
All markets	70	68.6	178.1	142	3,715.6	2,236.4
North America	17.5	19.7	23.9	23.1	395.6	495.2
Europe	44.9	39	47	35.1	445.6	417.2
Asia-Pacific	6.2	8.6	105.8	82.5	2,802.1	1,968.4
Others	1.5	1.3	1.5	1.3	72.4	55.6

Source: BIS

Despite the size of the market, trading volume is very concentrated on a relatively few indices. For example, trading in the top 20 most popular index futures contracts by value on Eurex between April 2013 and March 2014 represented close to 100% of total index futures trading volume over the 12-month period. The top five most-traded contracts comprised 98% of total volume, while the most popular product – the Euro Stoxx 50 index futures – accounted for 53% of volume over the April 2013-March 2014 period. Similarly, trading in the most popular index options contract on Eurex as of March 2014 – Euro Stoxx 50 index options – comprised 58% of total volume in index options on that exchange over the prior 12 months (see Appendix 3 and 5).

- **Single-name contracts**

There are thousands of single-name futures and options contracts listed in Europe, with most of the trading activity again centred on Eurex and NYSE-Liffe. Eurex alone listed 1,187 single-name futures and 508 single-name options contracts as of March 2014.

The BIS does not report open interest and number of contracts traded for single-name contracts, but the World Federation of Exchanges reports 951 million and 3.97 billion single-name futures and options contracts, respectively, were traded in 2013[4].

Similar to index contracts, trading volume tends to be concentrated on a relatively small number of names. An analysis of single-name futures trading on Eurex between April 2013 and March 2014 found the top 20 most popular futures by value represented 78% of total single-name futures volume traded over the entire 12-month period. Trading of single-name options are slightly more dispersed, with the top 20 most-traded contracts representing 67% of total volume over the prior 12 months (see Appendix 3 and 5).

- **Cleared, flexible exchange-like contracts**

Cleared, flexible exchange-like contracts closely resemble exchange-traded products, except that market participants are able to bilaterally negotiate a limited number of terms, such as contract maturity, exercise price and settlement method. Once the terms are agreed, the contracts are sent to an exchange or CCP for confirmation, processing and clearing.

The largest provider of these products is NYSE-Euronext's Bclear platform, which lists 2,419 unique flexible single-name futures, 2,410 flexible single-name options and 16 flexible index options. The flexible single-name futures contracts include 168 dividend-adjusted single-name futures, launched in November 2013 to give users the ability to trade an instrument that is adjusted for both ordinary and special dividend payments, as opposed to just special dividends.

Following the acquisition of Bclear parent NYSE Euronext by ICE, all Bclear contracts are now cleared through ICE Clear Europe.

Like exchange-traded contracts, Bclear trading volume is highly concentrated, with the top 20 most-traded flexible single-name futures contracts by value accounting for 85% of total single-name volume over the April 2013-March 2014 period.

Single-name options are again more dispersed, with the top 20 most-traded names in March 2014 comprising 36% of total single-name option volume over the prior 12 months (see Appendix 4 and 5).

[4] http://www.world-exchanges.org/files/2013_WFE_Market_Highlights.pdf

- **OTC instruments**

OTC instruments are highly customisable, bilaterally negotiated contracts that allow counterparties the flexibility to negotiate terms relating to underlier, size and tenor. Participants can also agree how risk will be allocated between the parties with regards to dividend treatment, corporate actions and other similar events, as well as possible disruptions to the underlying market, including inconvertibility and market disruption events.

The products are used by end-users for a variety of purposes, including the hedging of employee stock option programmes, risk-managing retail guaranteed investment products, reducing risk related to strategic initiatives such as mergers and acquisitions or capital raising, and hedging or monetising existing stock holdings. In each case, the contracts are customised to meet the specific needs of the user, and so are, by definition, non-standard.

Despite the existence of a large exchange-traded futures and options market, OTC contracts continue to make up an important part of the overall equity derivatives universe, proving there is demand for customisation that the listed market is unable to satisfy.

According to a semiannual study of OTC derivatives markets by the BIS[5], the notional amount outstanding of equity derivatives contracts fell from $6.82 trillion as of June 2013 to $6.56 trillion at the end of that year, a decline of 4%.

This may look to be roughly on par with the $7.24 trillion combined open interest in equity index futures and options, as reported by the BIS, but these two numbers cannot be compared like for like. Exchange contracts are fungible, meaning offsetting line items cancel each other out. Open interest therefore reflects those trades that have not been liquidated or offset by another transaction. Notional outstanding, in contrast, reflects the total face value of all existing OTC trades, regardless of whether they can be offset or netted against another transaction.

Turnover arguably provides a more accurate reflection of the relative scale of the exchange-traded market. Total turnover for equity index futures and options reached $251.17 trillion in 2013, representing 5.34 billion contracts, according to the BIS.

As well as being smaller relative to the listed equity derivatives market, OTC equity derivatives also represent a minor share of the total OTC derivatives market – the $6.56 trillion in OTC equity derivatives notional outstanding represented just 0.92% of total derivatives notional at the end of 2013.

The BIS breaks down this figure into two categories: forwards and swaps, which reached $2.28 trillion at the end of 2013; and options, which stood at $4.28 trillion. It also breaks it down by geography – 42% of OTC equity derivatives notional outstanding was referenced to European equities, according to the BIS (see Table 3).

[5] http://www.bis.org/statistics/derdetailed.htm

Table 3: Equity-linked derivatives by instrument and market ($ billion)

Instrument/market	Dec 2011	Jun 2012	Dec 2012	Jun 2013	Dec 2013
Total contracts	**5,982**	**6,313**	**6,251**	**6,821**	**6,560**
US	1,700	1,903	1,936	2,082	2,187
Europe	2,675	2,646	2,829	2,946	2,752
Japan	644	641	460	710	565
Asia ex-Japan	387	438	322	339	297
LatAm	68	76	132	130	162
Other	509	610	573	615	596
Forwards/swaps	**1,738**	**1,880**	**2,045**	**2,321**	**2,277**
US	563	630	669	722	727
Europe	798	841	915	1,070	999
Japan	78	85	88	95	78
Asia ex-Japan	53	64	75	87	101
LatAm	31	31	73	78	101
Other	214	229	224	268	271
Options	**4,244**	**4,434**	**4,207**	**4,501**	**4,283**
US	1,137	1,273	1,267	1,360	1,460
Europe	1,876	1,805	1,914	1,876	1,753
Japan	566	555	372	615	487
Asia ex-Japan	333	374	247	252	196
LatAm	37	45	59	51	61
Other	294	381	349	347	325

Source: BIS

However, the OTC equity derivatives market is far more granular than the two generic categories of forwards/swaps and options reported by the BIS. The following list includes a selection and brief explanation of some of the most frequently traded instruments.

- **Equity options**

These instruments are similar in many respects to exchange-traded options, but can be highly customised to meet the needs of the buyer. Customisation may include non-standard strikes, expiries and contract size, as well as specific arrangements relating to pricing, special pricing features, valuation terms, dividends, corporate-action and other adjustments, risk allocation terms and margin. The contracts may also be referenced to custom underliers.

The level of customisation for OTC options varies trade by trade, depending on user needs. OTC option users requiring less customisation may trade ‘listed lookalike’ options, where customisation is typically limited to pricing, size and margin, and with the remaining terms mirroring the relevant futures or options contract listed on an exchange.

Participants can also take advantage of the limited elections offered by the flexible options on Bclear, which are cleared by ICE Clear Europe.

Nonetheless, the OTC equity option market stood at $3.62 trillion in notional at the end of 2013, according to a snapshot of the OTC equity derivatives market compiled by ISDA (see Appendix 1, Table 4), suggesting there is a need for more tailored options.

- **Equity swaps**

In a typical equity swap, one party receives payments based on the performance of a certain underlier in exchange for fixed or floating payments to the other counterparty. Unlike listed futures, equity swaps enable users to eliminate exposure to unexpected changes in dividend payments and alterations to dividend withholding levels. The transactions are often tailored to meet the needs of the client, involving a unique combination of underliers, maturity, notional size, valuation and reset terms, margining arrangements and financing terms. Treatment of corporate actions (for instance, dividends, rights issues, stock splits or mergers), risk allocation terms and other special pricing features are negotiated bilaterally, and this negotiation can continue throughout the life of the trade as market conditions change. This high degree of customisation means few contracts have the same terms.

These contracts come in two predominant types: discrete equity swaps and portfolio swaps. The former are referenced to a single underlier and are typically traded in the interdealer market. Portfolio swaps, in contrast, involve a portfolio wrapper under which multiple swaps can be traded with operational efficiency, and are generally traded by end-users.

The notional outstanding of portfolio swaps was $497.36 billion at the end of 2013, while discrete equity swaps totalled $1.26 trillion (see Appendix 1, Table 5), according to the ISDA survey.

- **Contracts for difference**

A CFD is a cash-settled derivative that enables market participants to take a view on the difference between the current value of an underlier and the value at a future, non-specified date. Investors with long exposure receive the positive difference and pay the negative performance. These products enable investors to take a view on the direction of price movements without having to actually buy the underlier.

Although CFDs have similarities with equity swaps, they tend to have a smaller number of trading parameters that can be customised, and typically pose less of a challenge from a lifecycle event processing perspective.

The notional outstanding of OTC CFDs totalled $43.72 billion notional at the end of 2013.

- **Equity variance swaps, volatility swaps and dividend swaps**

Variance swaps and volatility swaps allow parties to gain exposure to the volatility of an underlier, with the payout based on the difference between realised volatility and a pre-agreed strike price. Dividend swaps, meanwhile, give the buyer a payout equal to the stream of dividends on a share, basket or equity index in exchange for a fixed payment.

Like other OTC equity derivatives, these products provide market participants with the ability to customise key terms, such as size and tenor. However, they typically trade under industry agreed

standard documentation, as there tends to be less demand for customisation of non-economic terms. Listed versions of some of these products are available on certain exchanges – for instance, Eurex offers futures and options contracts on volatility indices, as well as dividend futures on single names and equity indices.

According to the ISDA survey, $4.77 billion in OTC variance swap notional (excluding volatility swaps) and $22.15 billion in dividend swap notional was outstanding at the end of 2013 (see Appendix 1, Table 6).

- **Exotic equity derivatives**

'Exotic equity derivatives' is a broad term that captures all structured products. They come in a variety of forms, but generally have a very high level of customisation. Common exotic products include barrier options, accumulators, decumulators, Asian options and look-back options, but many other exotic instruments, including one-off bespoke products, fall under this category too. They are used by market participants to meet very specific needs, such as reducing the cost of a hedge, and tend to be executed to order, meaning the market is illiquid and sparsely traded.

The ISDA survey lists $1.20 trillion in products categorised as accumulators, exotics and 'other' at the end of 2014.

CURRENT AVAILABILITY OF CLEARING

There is a long history of equity derivatives products developing in the OTC market and then migrating to exchange trading and central clearing as they become more standardised and liquid. A recent example includes dividend swaps, which began life in the OTC market but migrated to an exchange as liquidity improved, taking much of the trading activity with it. Euro Stoxx 50 index dividend futures, for instance, were the sixth most traded index futures contract on Eurex in March 2014 – a ranking it more or less maintained throughout the prior 12 months.

This same trend has occurred for other products. As described in the earlier sections, thousands of exchange-traded single-name and equity index futures and options are now cleared, and a variety of CCPs are active in this space. The more flexible exchange-like futures and options with a limited number of bilaterally negotiated terms are also cleared, with Bclear – the largest provider of these products – using ICE Clear Europe as a CCP.

Clearing of OTC equity derivatives contracts is much more limited, however. LCH.Clearnet launched a clearing service for CFDs in October 2013 through its EquityClear arm. The service is in its early days, and volumes are believed to be limited so far. No volume data was publicly available as of the end of April 2014. Meanwhile, Chicago-based Options Clearing Corporation announced on April 28, 2014 that it had cleared its first OTC equity index option on the S&P 500 index – a trade bilaterally negotiated between JP Morgan and Morgan Stanley. However, the terms available for negotiation are clearly defined, making this service more akin to the Bclear flexible options.

These clearable OTC products are those with the least potential for high levels of customisation (as in the case of CFDs), or where liquidity has built around a particular contract with a popular underlying and certain common contractual terms (for instance, the S&P 500 index option). It's important to note that the clearing of an OTC option on one index does not necessarily mean OTC options on any index can be cleared, or that any OTC product on the S&P 500 index is clearable – it depends on the liquidity of the derivatives contract, and whether a consensus has emerged on key contractual terms, among other things. This is vital, as a broad clearing determination – for instance, options on European equities – could require participants to clear contracts for which clearing is severely limited or non-existent (for example, two-year at-the-money options on Hellenic Telecom), creating significant market disruption.

ESMA CLEARING MANDATE DETERMINATIONS

Despite the massive size of the listed equity derivatives market relative to the OTC world, market participants continue to demand customised solutions to meet their hedging and investment needs. Very few OTC contracts are currently cleared, although there may be a natural progression towards central clearing for some highly commoditised OTC products as standardisation and liquidity increases and customer demand for clearing grows.

In the absence of demand and the existence of clearing facilities for many OTC equity derivatives products, ISDA notes that all the other risk mitigation rules under EMIR would apply, which provide enhanced risk management of non-cleared products. The EMIR reporting requirements that came into force in February 2014 provide complete transparency to regulators, and additional risks can be mitigated by capital and margin requirements that will be applied to uncleared products.

As demand and clearing services for other OTC equity derivatives develop over time, however, regulators may be required to determine whether a clearing obligation should apply. In making a determination about the suitability of a clearing mandate for OTC equity derivatives, ISDA recommends the following issues be carefully considered.

- **ESMA's determination process should be based on a granular product taxonomy**

ISDA and its members believe any clearing obligation determination made by ESMA must recognise the key differences between instrument types. The ability to clear a listed single-name option on one European share, for instance, does not mean all OTC contracts on that stock are clearable, as described in the previous section.

Under current proposals, however, the potential exists for a clearing mandate to be applied too broadly. This is partly due to the way equity derivatives are categorised under EMIR: all products traded on MTFs are classified as OTC derivatives. Meanwhile, contracts that are referred to as 'futures' but are not traded on regulated exchanges are classified as 'forward/swap'. This raises the possibility that a clearing mandate could be applied to a futures product but also pull in non-clearable OTC swaps and forwards on that same underlying name.

This is more important for some products than others. Products like dividend swaps typically trade with less customisation, and a comparable listed future exists that allows market participants to achieve similar results from an economic perspective. That is not the case for OTC equity swaps, which typically have a high degree of customisation and are very different to single-name futures. The various customised features, particularly with regards to special events such as corporate actions, mean equity swaps can be used to manage key economic risks, such as dividend uncertainty, in a way that futures cannot.

ESMA states in its clearing obligation discussion paper that it prefers to keep the definition of product classes broad, but then rely on the public register to distinguish between cleared and non-cleared classes. In that way, it argues, non-cleared products could never be subject to a clearing mandate if a clearing service doesn't exist for them.

However, this approach potentially incentivises CCPs to claim to be able to clear certain products for commercial reasons: as soon as a clearing service is launched for a product that meets the broad criteria for a clearing mandate, market participants would immediately be forced to clear all transactions meeting those broad criteria through that CCP (regardless of whether the cleared contract is a true substitute for the OTC contract), without the need for ESMA to alter its regulatory technical standards or conduct a new consultation. The CCP would effectively benefit from a clearing monopoly in that product, especially if other clearing houses are unable or reluctant to claim to be able to clear the instrument for risk management purposes.

A more granular description of equity derivatives classes would eliminate this problem and bring the regulatory language more in line with market practice. Use of the ISDA taxonomy – which, importantly, differentiates between futures, forwards, swaps and other instruments – could help in this regard (see Appendix 2).

- **ESMA's determination process will require a careful and granular assessment of liquidity**

An assessment of liquidity of any derivatives instrument potentially subject to a clearing determination is also crucial. ESMA acknowledges this point in its discussion paper, noting that the volume and liquidity of the relevant class of OTC derivatives would be considered, alongside the level of standardisation of contractual terms and the availability of fair, reliable and generally accepted pricing information. ISDA and its members support those conditions.

However, in its proposals for defining a class of single-name equity derivatives for the purposes of a clearing obligation determination, ESMA suggests using a list of liquid shares compiled for the purposes of MIFID. This list catalogues all stocks traded on regulated markets in the EU, and included 5,930 securities with unique international securities identification numbers (ISINs) as of May 6, 2014, of which 807 were deemed to be liquid.

Comparing that list with the futures and options contracts on Eurex and Bclear in March 2014 throws up some interesting findings.

Eurex overall

- Just 11% of the stocks included in the MIFID list had Eurex single-name futures and/or options referenced to them. Seventy-seven per cent of those contracts were referenced to stocks categorised as liquid on the MIFID list, while 23% were linked to illiquid names.
- Eighty-five per cent of the Eurex single-name futures contracts referenced to liquid shares had no trading activity for at least one month between January 2013 and March 2014. Eighteen per cent had no reported trading volumes at all (see Appendix 5).
- Forty-one per cent of the single-name options contracts referenced to liquid shares had no trading activity for at least one month between January 2013 and March 2014. Seven per cent had no reported trading volume over the year.
- On a monthly basis, an average of 54% of liquid single-name futures and 23% of liquid single-name options had no trading activity.

Eurex single-name futures

- In March 2014, only 416 of the 1,187 single-name futures contracts on Eurex saw trading activity during the month.
- Of those that had trading activity reported on them, 84% were linked to stocks categorised as liquid on the MIFID list. Three per cent were referenced to illiquid stocks and 13% could not be matched with ISINs on the MIFID list.
- Of those contracts that had no reported trading activity, 36% were referenced to liquid stocks, 18% were linked to illiquid names, and 46% could not be matched with securities on the MIFID list.
- The top 25th percentile of the most traded futures in March 2014 represented 96% of the total single-name futures trading volume on Eurex that month. Of those contracts, 85% were linked to liquid names, 1% were referenced to illiquid stocks and 14% could not be matched with securities on the MIFID list.
- Of the futures in the bottom 25th percentile, 82% were referenced to liquid stocks, 8% were illiquid and 10% couldn't be matched with the MIFID list.

Eurex single-name options

- In March 2014, 385 out of the 508 listed single-name options contracts were traded.
- Of those that had reported trading activity in the month, 71% were referenced to shares classified as liquid on the MIFID list, 10% were linked to illiquid stocks and 19% could not be matched with the ISINs on the MIFID list.
- Of the contracts that had no reported trading activity during the month, 56% were linked to liquid stocks, 21% were illiquid and 23% could not be matched with securities on the MIFID list.
- The top 25th percentile of the most traded single-name options in March 2014 represented 96% of total trading volume. Of those contracts, 76% were referenced to liquid stocks and 24% were linked to illiquid names.
- Of contracts in the bottom 25th percentile, 62% were referenced to liquid shares, 24% were linked to illiquid names and 14% weren't on the MIFID list.

Bclear overall

- Fourteen per cent of the stocks included in the MIFID list had Bclear flexible single-name futures and/or options referenced to them. Seventy-eight per cent of those contracts were referenced to stocks categorised as liquid on the MIFID list, while 22% were linked to illiquid names.
- Seventy-one per cent of the single-name futures contracts referenced to liquid shares had no trading activity at all between January 2013 and March 2014 (see Appendix 5).
- Seventy-three per cent of the single-name options contracts referenced to liquid shares had no trading activity between January 2013 and March 2014.
- On a monthly basis, an average of 94% of liquid single-name futures and 90% of liquid single-name options had no trading activity.

Bclear flexible single-stock futures

- In March 2014, only 115 of the 2,419 flexible single-name futures contracts on Bclear saw trading activity during the month.

- Of those that had trading activity reported on them, 89% were linked to stocks categorised as liquid on the MIFID list. Three per cent were referenced to illiquid stocks and 8% could not be matched with ISINs on the MIFID list.
- Of those contracts that had no reported trading activity, 47% were referenced to liquid stocks, 12% were linked to illiquid names, and 41% could not be matched with securities on the MIFID list.

Bclear flexible single-stock options

- In March 2014, 163 out of the 2,410 flexible single-name options contracts were traded.
- Of those that had reported trading activity, 93% were referenced to shares classified as liquid on the MIFID list, while 7% could not be matched with the ISINs on the MIFID list.
- Of the contracts that had no reported trading activity during the month, 62% were linked to liquid stocks, 6% were illiquid and 32% could not be matched with securities on the MIFID list.

Many futures and options contracts listed on Eurex or Bclear do not trade regularly. Certain Eurex single-name futures contracts on household names such as Commerzbank, Enel, Nokia, Porsche and Telecom Italia, for instance, can go entire months without any trading activity (see Appendix 5). In many cases, futures and options contracts referenced to non-liquid stocks trade in higher volumes and with greater frequency than contracts linked to liquid stocks. For example, trading on the single-name futures contract linked to Austrian property company Conwert Immobilien Invest reached €2.8 million on Eurex in March 2014, higher than the trading activity on many futures referenced to liquid stocks in that month.

The swings in trading activity are clearly visible in Appendices 3, 4 and 5.

- The number one most-traded single-name futures contract on Eurex in March 2014 was Daimler. It is included in the MIFID liquid list, but was the sixtieth most liquid single-name future on the exchange as recently as November 2013. Monthly traded value was reported at €3.96 billion in March 2014 versus €27.29 million in November 2013.
- Roche Holding was the third most liquid single-name futures contract on Eurex in March, but was languishing at number 219 last November. As a Swiss company, it is not included on the MIFID list. Monthly traded value was reported at €2.12 billion in March 2014 versus just €964,751 in November 2013.
- These swings are even more pronounced for the more flexible exchange-like contracts offered by Bclear. The most traded single-name futures contract in March 2014 – TDC A/S (cash settle) – was number 22 a month earlier. It had negligible futures trading volumes in January 2014 , as well as other months, despite the fact the underlying stock is considered liquid by MIFID.
- March 2014 top 20 single-name futures contracts linked to Canadian Natural Resources, Bankia SAU, Banco de Sabadell SA, Pandora SA and TDC A/S (physically settled) only traded in that month, with no reported volume between January 2013 and February 2014. These are all considered liquid except Canadian Natural Resources and Pandora SA, which are absent from the MIFID list.

These results show that trade frequency can be very low, even for 'liquid' MIFID stocks. Therefore, looking at the MIFID liquid stocks list is not an appropriate method for determining the suitability of a clearing determination for derivatives contracts on those names. The analysis shows the liquidity of a share does not necessarily reflect the liquidity of exchange-traded futures contracts or the more flexible exchange-like futures products. The OTC market is likely to be one further step removed, as contracts are traded to order in highly customised forms and sizes to meet specific risk management needs.

While ESMA has not proposed using the MIFID liquid shares list as the sole determinant, ISDA believes any decision on whether to impose a clearing obligation should consider the liquidity of each specific derivatives contract, as well as the liquidity of the underlying share. In addition, ESMA must consider the consistency of liquidity – a contract may be considered highly liquid based on trading over the course of a 12-month period, but activity may in fact be concentrated over a few days or weeks in the year. This should not be considered sufficiently liquid for the purposes of an OTC clearing mandate determination. Other criteria should also be considered, including market capitalisation of the issuer and size of issuer free float.

- **ESMA's determination process will require a careful assessment of current levels of standardisation by product**

Product standardisation is critical. While there have been significant advances in developing industry documentation standards for OTC equity derivatives to facilitate greater levels of electronic confirmation, this is only one element in enabling migration to clearing – the key factor is product standardisation.

Product standardisation currently does not exist for many OTC products. Market participants require the flexibility to negotiate an assortment of contract terms, as well as the ability to negotiate throughout the life of the contract, which means there can be an almost limitless number OTC contract variations on the same basic instrument.

These variations allow end-users to entirely offset specific risks they face in their business, but could create complexity from a clearing perspective: CCPs could end up having to clear millions of similar contracts, each structured to order, each slightly different, and each with limited trading activity, which would introduce significant operational risks and costs to CCPs and, ultimately, to the users of these products.

The variety of corporate actions and other adjustment events would also likely prove difficult for CCPs, especially for products that require more customisation. Processing events like corporate actions and market disruption events for bespoke transactions can be manually intensive – and this is an area where the experience of clearing houses is currently limited to highly standardised contracts. Significant additional development in lifecycle processing systems may be required to facilitate a successful migration to a centrally cleared environment.

Current levels of standardisation vary product by product. The instruments that are the most tailored – and therefore present the most challenges for clearing – include equity swaps, OTC single-name equity options and exotic equity products. While certain CCPs have indicated they

are reviewing the clearability of some of these products, ISDA and its members are unaware of any CCP solutions or proposals that are close to replicating the custom solutions of OTC products required by end-users today.

Conversely, some of the more standardised/commoditised OTC products, including ‘listed lookalike’ options, index variance swaps and index volatility swaps typically have lower levels of customisation and are therefore more likely to develop demand for clearing at some point in the future. Indeed, some of these more standardised products have seen OTC volumes naturally migrate to exchange-traded and cleared substitute products.

However, it is important to note that index licensing issues may limit the clearing of certain OTC index products, at least in the short term.

CONCLUSION

The equity derivatives market is uniquely varied in terms of the factors that influence investment and hedging decisions. It is important to understand the different product characteristics, as well as how standardised, exchange-traded futures and options contracts differ from the highly customised contracts traded in the OTC market.

The vast majority of the equity derivatives market is already cleared, including all listed futures and options contracts and the more flexible products offered by services like Bclear. A nascent clearing service for OTC CFDs has also recently emerged. This capability is likely to continue to naturally increase over time, capturing those products with the most standardised product terms, in the most popular maturities and referenced to the most liquid stocks and indices.

However, the broad availability of clearing for OTC equity derivatives products will not develop overnight and is likely to remain limited in the near future, largely because of the highly tailored nature of these instruments, and the complex, non-standard adjustment events such as corporate actions that are negotiated between counterparties. While demand for clearing is likely to gradually build for more standardised/commoditised OTC products, it will be challenging to develop clearing solutions in the near future for OTC products such as equity swaps, OTC single-name options and exotic equity products.

These contracts meet an important need, as they allow non-financial counterparties, asset managers, pension funds and other end-users, as well as banks, to meet their investment objectives and hedge very specific, business-critical risks. The size of the OTC market, despite the existence of a listed, standardised and clearable equity derivatives market, proves these instruments continue to have an important role in the equity derivatives market.

European legislators recognised there is a place for customised, non-clearable OTC contracts that enable end-users to manage risk and achieve their investment objectives, and draft regulatory technical standards on risk mitigation techniques for non-cleared OTC derivatives were recently jointly published by ESMA and other supervisory authorities. As well as mandatory reporting and higher capital, these rules will mean non-cleared trades will be subject to margin requirements to mitigate associated risks – although calibration of these requirements will be important to ensure the continued availability of these products, given the absence of cleared substitutes.

As clearing availability develops for sufficiently liquid OTC equity derivatives, however, any clearing obligation decision should consider the unique features of listed and OTC instruments, as well as the specificities of individual products. The cleared futures contracts available on Bclear, for instance, are very different from OTC equity forwards and swaps. Under current rules, they would all be captured under the same bucket, potentially leading to circumstances where a clearing mandate is applied to that entire ‘class’, despite an absence of demand for clearing and no existing clearing service for OTC equity swaps. An overly broad clearing mandate based on underlying, product type or settlement currency – for example, options on European equities – would also be disruptive, potentially capturing contracts for which no clearing service exists.

A granular approach to evaluating whether products should be cleared, including a detailed product taxonomy, a comprehensive review of liquidity and analysis of product standardisation, is vital to the process. This will ensure additional operational hazards are not introduced to the market, and CCPs do not have the opportunity to improperly benefit from a clearing monopoly in certain products.

APPENDIX 1
OTC EQUITY DERIVATIVES SURVEY Q4 2013

Table 4: OTC Equity options Q4 2013

			G-14 dealers		Non-G-14	
Base product	**Sub-product**	**Region**	**Trade count**	**Gross notional (US$)**	**Trade count**	**Gross notional (US$)**
Equity options	**Share**	US	5,737	32,085,216,928	31,773	218,587,944,761
		Europe	4,201	33,508,534,559	6,792	65,262,643,497
		Japan	2,742	24,136,732,521	3,889	29,252,202,200
		Asia ex-Japan	894	5,192,743,184	5,802	14,141,651,437
		EM	627	2,571,212,438	3,894	16,355,988,777
	Basket	Multi	1,231	47,785,689,234	3,776	66,998,268,582
	Index	US	22,554	888,007,102,947	34,894	673,839,714,501
		Europe	3,200	203,580,451,257	4,880	214,835,978,064
		Japan	8,546	339,079,368,180	5,825	339,345,899,110
		Asia ex-Japan	11,721	236,938,233,974	6,233	127,625,620,065
		EM	205	1,505,040,657	313	5,297,812,132
		Global	684	22,965,417,051	929	12,632,867,168

Source: ISDA

Table 5: Equity swaps Q4 2013

			G-14 dealers		Non-G-14	
Base product	**Sub-product**	**Region**	**Trade count**	**Gross notional (US$)**	**Trade count**	**Gross notional (US$)**
Equity Swaps	**Index**	US	291	33,750,875,004	2,021	126,582,606,545
		Europe	947	136,218,078,384	2,097	91,407,367,417
		Japan	428	32,287,799,450	499	20,117,522,524
		Asia ex-Japan	54	2,146,708,799	244	4,425,892,120
		EM	0	0	75	1,095,095,319
		Global	2,903	69,801,841,224	2,508	89,148,484,460
	Share	US	956	56,063,095,676	18,840	105,798,907,273
		Europe	1,155	22,669,386,695	26,721	58,573,366,328
		Japan	119	3,096,660,916	5,140	8,763,029,296
		Asia ex-Japan	210	514,484,505	17,481	14,919,380,742
		EM	1,745	8,078,159,219	13,164	21,098,200,159
	Basket	Multi	1,130	144,920,993,540	5,546	211,366,294,229
Equity swaps - portfolio	**Basket**	Multi	3,448	49,958,249,106	40,913	447,402,156,312

Source: ISDA

Table 6: Variance and dividend swaps Q4 2013

			G-14 dealers		Non-G-14	
Base product	**Sub-product**	**Region**	**Trade count**	**Gross notional (US$)**	**Trade count**	**Gross notional (US$)**
Variance swaps	**Index**	US	12,853	2,416,127,375	4,022	719,116,236
		Europe	1,542	410,212,986	1,038	217,569,902
		Japan	1,057	117,877,275	487	62,019,003
		Asia ex-Japan	628	77,148,119	705	86,416,784
		EM	19	1,252,862	15	1,693,009
		Global	0	0	9	1,110,000
	Share	US	149	261,336,852	2,484	289,268,269
		Europe	127	8,159,471	65	10,481,463
		Japan	335	28,583,173	461	36,168,252
		Asia ex-Japan	17	826,461	55	703,107
		EM	5	90,274	30	1,191,331
	Basket	Multi	2	250,000	48	17,932,828
Dividend swaps	**Index**	US	2,506	7,947,346,087	597	2,181,600,924
		Europe	474	4,718,028,502	386	3,297,908,290
		Japan	367	616,842,129	291	881,474,888
		Asia ex-Japan	25	14,423,217	4	14,612,820
		EM	0	0	0	0
		Global	0	0	0	0
	Share	US	76	30,625,901	201	56,317,353
		Europe	3,078	1,309,396,304	1,899	855,384,044
		Japan	44	89,360,506	55	74,859,094
		Asia ex-Japan	26	13,103,604	33	11,524,195
		EM	1	370,769	0	0
	Basket	Multi	13	6,580,541	15	34,813,511

Source: ISDA

APPENDIX 2
THE ISDA TAXONOMY

#	Asset Class	Base Product	Sub-Product	Transaction type
1	Equity	Swap	Price return basic performance	Single name
2	Equity	Swap	Price return basic performance	Single index
3	Equity	Swap	Price return basic performance	Basket
4	Equity	Swap	Parameter return dividend	Single name
5	Equity	Swap	Parameter return dividend	Single index
6	Equity	Swap	Parameter return dividend	Basket
7	Equity	Swap	Parameter return variance	Single name
8	Equity	Swap	Parameter return variance	Single index
9	Equity	Swap	Parameter return variance	Basket
10	Equity	Swap	Parameter return volatility	Single name
11	Equity	Swap	Parameter return volatility	Single index
12	Equity	Swap	Parameter return volatility	Basket
13	Equity	Portfolio swap	Price return basic performance	Single name
14	Equity	Portfolio swap	Price return basic performance	Single index
15	Equity	Portfolio swap	Price return basic performance	Basket
16	Equity	Contract for difference	Price return basic performance	Single name
17	Equity	Contract for difference	Price return basic performance	Single index
18	Equity	Contract for difference	Price return basic performance	Basket
19	Equity	Option	Price return basic performance	Single name
20	Equity	Option	Price return basic performance	Single index
21	Equity	Option	Price return basic performance	Basket
22	Equity	Option	Parameter return dividend	Single name
23	Equity	Option	Parameter return dividend	Single index
24	Equity	Option	Parameter return dividend	Basket
25	Equity	Option	Parameter return variance	Single name
26	Equity	Option	Parameter return variance	Single index
27	Equity	Option	Parameter return variance	Basket
28	Equity	Option	Parameter return volatility	Single name
29	Equity	Option	Parameter return volatility	Single index
30	Equity	Option	Parameter return volatility	Basket
31	Equity	Forward	Price return basic performance	Single name
32	Equity	Forward	Price return basic performance	Single index
33	Equity	Forward	Price return basic performance	Basket
34	Equity	Other		

Source: ISDA. Note: Price return basic performance sub-product includes instruments such as vanilla options, delta-one, EFS, TRS etc; the other sub-product includes structured and exotic