# The Quest to classify OTC Derivative Instruments

***for publication in the March edition of Trading Places***

We have recently seen banks experiencing the financial equivalent of black holes appearing their general ledgers, with funds disappearing over the event horizon never to be seen again. The collapse of Lehman Brothers exposed new fault lines in the credit default swap market, highlighting the need to effectively quantify credit, market and operational risk. To understand these risks the ability to classify OTC Derivative Instruments is essential.

Although not mandatory under MiFID, some regulators have taken the opportunity to extend the scope of transaction reporting, as defined in the Directive, to include OTC Derivative Instruments. However this has lead to the realization that no mechanism exists to classify such instruments. This resulted in February 2009 with the Committee of European Securities Regulators (CESR) issuing a "Call for Evidence" to identify an appropriate solution.

A standard exists, which is widely used for classifying transferable securities (equity, debt, etc), in for form of ISO 10962 – the Classification of Financial Instruments (CFI), nevertheless it does not cover OTC Derivative Instruments.

"So where can one look for an appropriate source of an OTC classification?"
On the whole financial intuitions tend to break down OTCs into broad classifications, along the lines of Credit Default Swaps, Commodity Swaps, Equity Swaps, Inflation Swaps , Interest Rate Swap, and Total Return Swap and so on. There is normally a further level of breakdown which usually identifies the underlying asset.

For market practice and standards within this domain, the first point of call is the International Swap Dealers Association (ISDA). Originally founded, in 1985, by a group of 18 swap traders to develop the standard terms for interest rate swaps, today its membership has grown to 800 member institutions from 56 countries on six continents. Over the years ISDA has defined a comprehensive suite of legal Master Agreements (or Definitions) that are widely used by the industry.

As the millennium approached an independent organization – FpML.org – was founded to develop and promote an XML-based "lingua franca" for derivatives trading. Given that Financial products Markup Language (FpML) is closely aligned with the ISDA Definitions, it provides a window into identifying the appropriate solution. The FpML "product type" scheme can be used, for instance, to identify OTC instrument types. (See Table 1 – FpML Product Type Scheme version 1.2).

| Product Type | Description |
|---|---|
| Asset Swap | A swap agreement where one leg mimics the return of the underlying asset. No transfer of asset takes place (sometimes the sale of the bond is included in the "asset swap construct"). |
| Bond Option | A contract that gives the buyer of the option the right to exercise it into the bond underlyer (or its cash equivalent) under specified conditions. |
| Bullet Payment | A single known payment between two parties. |
| Cap Floor | A contract that guarantees either a maximum (cap) or a minimum (floor) level of a variable interest rate reference. |
| Convertible Bond Option | An option contract in which the underlying asset is a convertible bond. |
| Credit Default Basket | A swap agreement in which one party pays a periodic fee in return for a contingent payment by the other party following a credit event on a basket of credit entities. |
| Credit Default Basket Tranche | A swap agreement in which one party pays a periodic fee in return for a contingent payment by the other party following a credit event on a Tranche of an Index of a basket of credit entities. |
| Credit Default Index | A swap agreement in which one party pays a periodic fee in return for a contingent payment by the other party following a credit event on an Index of credit entities. |
| Credit Default Index Tranche | A swap agreement in which one party pays a periodic fee in return for a contingent payment by the other party following a credit event on a Tranche of an Index of credit entities. |
| Credit Default Option | An option to buy protection (payer option) or sell protection (receiver option) as a credit default swap on a specific reference credit with a specific maturity. |
| Credit Default Swap (single underlyer) | A swap agreement in which one party pays a periodic fee in return for a contingent payment by the other party following a credit event on a reference entity, a specific reference obligation or a basket of such reference names. |
| Cross Currency Swap | An interest rate swap agreement which interest streams are denominated in different currencies. |
| Dividend Swap | A deal where the investor exchanges an underlying stock or index's current dividend. |
| Equity Forward | A contract between two parties regarding the future value of the equity underlyer (or its cash equivalent). |
| Equity Option | A contract that gives the buyer of the option the right to exercise it into the equity underlyer (or its cash equivalent) under specified conditions. |
| Forward Rate Agreement (FRA) | A contract corresponding to an agreement between parties regarding the level of a variable interest rate at a future date. |
| FX Forward | An agreement between two parties regarding the future value of a currency exchange rate. |
| FX Option | A contract that gives the buyer of the option the right to exercise it into the FX underlyer (or its cash equivalent) under specified conditions. |

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| FX Option Strategy | A transaction consisting of several component transactions, at least one of which is a foreign exchange option transaction. |
| FX Spot | A foreign exchange deal that consists of a bilateral contract between a party delivering a certain amount of a currency against receiving a certain amount of another currency from a second counterparty, based on an agreed exchange rate. |
| FX Swap | A financial instrument that corresponds to the combination of an FX spot and an FX forward transactions. |
| Inflation Swap | A swap agreement where one leg references an inflation index while the other one will typically reference a variable interest rate. |
| Interest Rate Swap | A swap agreement which consists in swapping interest rate streams, whatever the type of interest rate references that are being used (i.e. float vs. float swaps, also known as basis swaps, are included in this category). |
| Interest Rate Swaption | An option to enter into an interest rate swap. |
| Term Deposit | The simple commoditized term deposit that is typically a trade with a tenor of 1 year or less with no interim interest payments. |
| Total Return Swap | A swap agreement in which one party transfers the economic performance of a reference asset to the other party, typically in the exchange of the financing cost of this asset. |
| Variance Swap | A financial derivative instrument whose price is a function of the variance of the price of the underlyer. |

**Table 1 – FpML Product Type scheme version 1.2**

An alternative source for classifying OTC Derivative Instruments can be found in the Bank of International Settlement (BIS) publication, "Guidelines for semi-annual OTC derivatives statistics", which defines a hierarchical classification scheme. Under the main the categories (FX Transactions, Interest Rate Derivatives, Credit Derivatives, and so on) one finds a similar set of product types to those found in the FpML Product Type scheme. Nevertheless the FpML scheme has a more compressive set of financial products and a new version is imminent.

If one combines the two sources (ISDA and BIS) of information, a reasonable classification can be constructed. Each Category within this hierarchy has multiple sub-categories (or Groups) and in some cases additional characteristics are needed to qualify the specific attributes of the financial product. Diagram 1.0 is an abridged OTC Derivative Hierarchy that identifies how Credit Events/Credit Default Swaps can be classified. In the case of Credit Default Swaps, one of the key attributes is the event type. In the ISDA Credit Derivatives publications the possible event types are identified as Bankruptcy, Obligation Acceleration, Obligation Default, Failure to Pay, Repudiation/Moratorium and Restructuring. This hierarchical structure also has the advantage in that it adheres to the existing ISO 10962 – the Classification of Financial Instruments (CFI) standard and as such provides a consistent approach to classifications across asset classes.

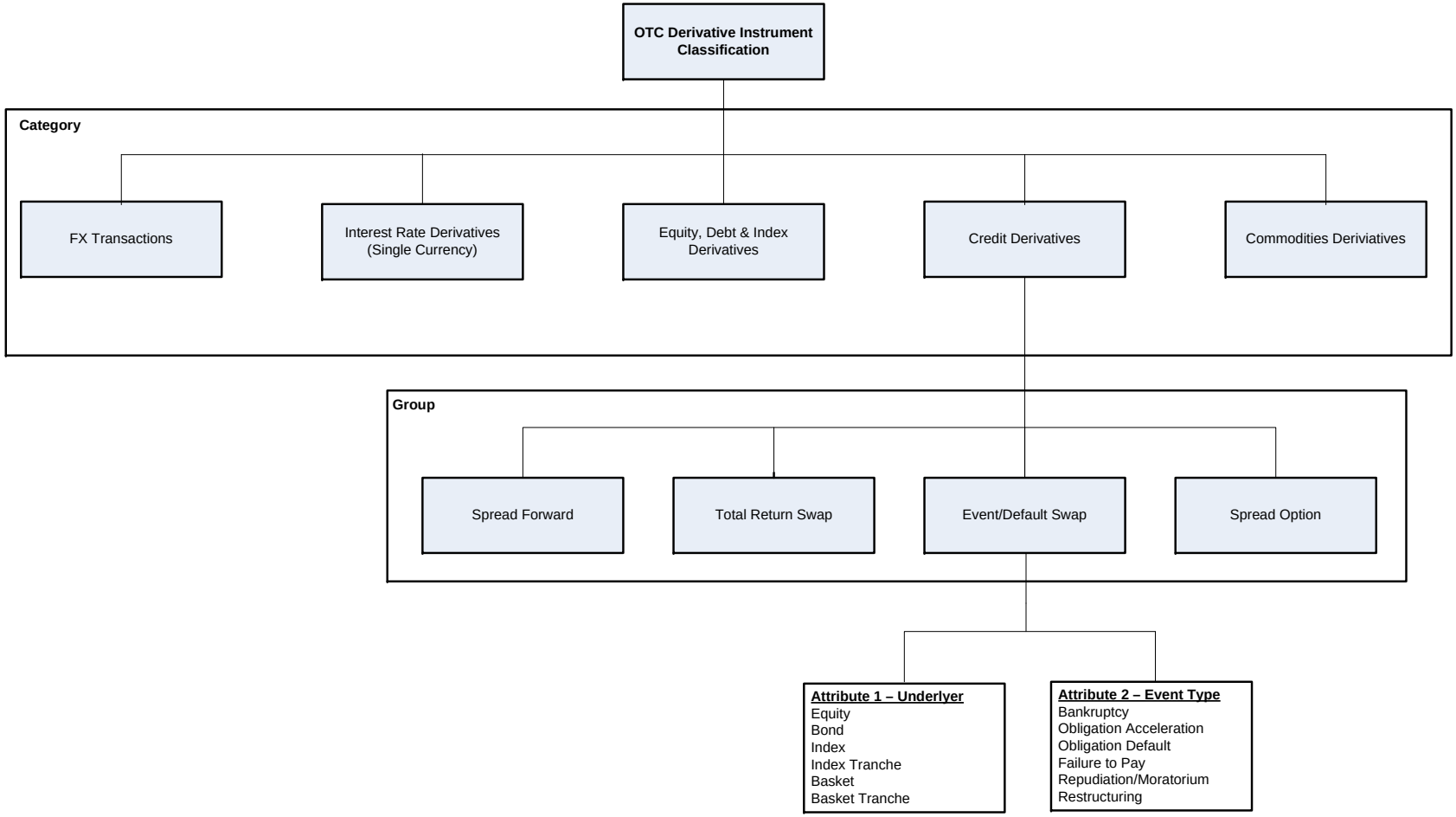


**Diagram 1.0 – Abridged OTC Derivative Classification Hierarchy (based on BIS and ISDA/FpML published material)**

Of course, if one is a purest, OTC Derivatives should be broken down by their atomic characteristics. For example, Swaps would be categorised under one of the following headings:

- Interest rate/price (that includes Interest Rate and Inflation Rate Swaps),
- Underlyer cash flows (Equity, Dividend & Correlation , Variance Swaps),
- A combination of Interest rate/price,
- Underlyer cash flows (Total Return Swaps), and
- Event driven (i.e. Credit Default Swap).

Another aspect that needs to be considered is, "Who will take on the role of Registration Authority and maintain the new classification into the future?" History has shown that volunteers are few and far between. The brave exceptions have been the Society for Worldwide Interbank Financial Telecommunication (SWIFT), and the Association of National Numbering Agencies (ANNA) responsible for the allocation and maintenance of the ISO International Securities Identification Number (ISIN) and the ISO CFI. Given the risk of not identifying a Registration Authority, it would be prudent for the OTC classification scheme to be easily integrated into the existing CFI, leaving the door open for ANNA to maintain this on behalf of the industry. An alternative solution would be to maintain the classification within the ISO 20022 Universal financial industry message scheme repository and thus reduce the time to market associated with the ISO standards, which on the whole can take over a year to complete the approval process.

Assuming that an OTC Derivative Instrument classification is agreed upon, "How will the classification be used?"
The classification will be used in conjunction with a recognized market identifier, such as an ISIN, ticker or the Alternative Instrument Identifier to link the derivative with its underlying asset(s). Given that by their nature OTCs are unique, allocating ISINs to each agreement may be considered inappropriate, however using proprietary identifiers commonly used by the industry, such as the Markit CDS RED™ codes, is worth examining.

It makes sense for any OTC derivative instrument classification to be based on legal definitions and any pre-existing OTC classification. It is important for any scheme to not just be limited to the requirement of regulatory transaction reporting. To achieve market acceptance it is essential that it is globally recognised and able to be used outside the single business context. And finally an owner has to be identified to ensure that it is properly managed and maintained into the future.

Like Black Holes, OTC Derivative Instruments are a mystery to most of us mortals, hopefully by effectively classifying these instruments a better understanding of risk will prevail.

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