X-pand into the Future

eurex circular 051/07

Date: Frankfurt, March 15, 2007
Recipients: All Eurex Members and Vendors
Authorized by: Peter Reitz

⚠ **Action required** ⚠ **High priority**

Credit Derivatives: Pricing Methodology/Final Settlement Price Calculation for Credit Futures and Revenue Sharing Scheme for Designated Market Makers

Related Eurex Circulars: 266/06, 012/07, 015/07, 037/07, 043/07

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Content may be most important for:

➲ All departments

Attachments:

1. Document: Credit Futures Pricing and Final Settlement Price Calculation
2. Designated Market Maker Application
3. Designated Market Maker Quote Obligations

On **March 27, 2007** Eurex will launch three new Credit Index Futures (credit futures). The underlying index series are the on-the-run iTraxx® Europe 5 year, iTraxx® HiVol 5 year and iTraxx® Crossover 5 year series.

This circular contains information on the following topics:

1. The credit futures pricing methodology used by Eurex to determine final settlement prices
2. A Revenue distribution scheme for the top five Designated Market Makers

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Credit Derivatives: Pricing Methodology/Final Settlement Price Calculation of Credit Futures and Revenue Sharing Scheme for Designated Market Makers

1. Application for the Pricing and Final Settlement Price Calculation of Credit Futures

Attachment 1 reviews the credit futures pricing methodology used by Eurex to determine the final settlement prices of the three Credit Futures contracts as well as the methodology for market participants to reproduce the credit futures prices using the Bloomberg Pricing Model for credit default swaps (CDS).

The document "Credit Futures Pricing and Final Settlement Price Calculation" will also be published on the Eurex website in due time under the path:

www.eurexchange.com > Trading > Products > Credit Derivatives

by selecting the individual credit futures product.

2. Revenue distribution for Designated Market Makers

The Management Boards of the Eurex Exchanges decided to offer a revenue sharing scheme to Designated Market Makers in Credit Futures in the period between March 27, 2007 and December 31, 2008.

In addition to a 100 percent reimbursement of trading and clearing fees for transactions concluded by the Market Makers on M-accounts, the five Designated Market Makers with the highest monthly contract volume in Credit Futures on the M-Account will benefit from a new revenue sharing scheme. Eurex will grant its Designated Market Makers in Credit Futures a participation of 50 percent in net revenues from the Eurex Credit Futures segment until December 31, 2007 and a participation of 30 percent in net revenues from the Eurex Credit Futures segment in the period from January 1, 2008 until December 31, 2008, for Market Makers joining the scheme prior to March 27, 2007. The distribution will be made to the top five Designated Market Makers according to a pre-defined schedule. Qualifying Designated Market Makers will be informed individually of their ranking.

For details of the Designated Market Making and the revenue sharing scheme please see attachment 2 and 3.

Participants interested in fulfilling Designated Market Maker functions are requested to complete and fax back the attached Designated Market Maker Application (attachment 2) by March 21, 2007 for the attention of Mehtap Dinc, Eurex, fax no. +49-69-211-61 72 84.

Frankfurt, March 15, 2007

Eurex iTraxx® Futures

Credit Futures Pricing and Final Settlement Price Calculation

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1. Introduction

On March 27th 2007 Eurex will launch three new Credit Index Futures (credit futures). The underlying index series are the on-the-run iTraxx® Europe 5 year, iTraxx® HiVol 5 year and iTraxx® Crossover 5 year in their unfunded form. This document reviews the credit futures pricing methodology used by Eurex to determine the settlement prices of the three contracts as well as the methodology for market participants to reproduce the credit futures prices using the Bloomberg Pricing Model for credit default swaps (CDS) and the Bloomberg FCDS screen.

An essential part of the credit future pricing application is a CDS pricing model to evaluate the present value change (PV change) of the underlying iTraxx® index and therefore the credit futures contract. This PV change represents the change in the value of the index due to a change in the perceived default likelihood by the market. The model Eurex will use to evaluate this PV change in the final settlement price of the credit futures is the Bloomberg CDS pricing model. This model will be outlined in more detail below. A further section will in addition describe the layout and design of the FCDS screen and its use in pricing the credit futures contracts.

Finally, throughout this documentation there will be an emphasis on clarifying scenarios in which a default event for a reference entity of the underlying index series happens during the lifetime of a credit futures contract.

2. Credit Futures Pricing with No Defaults

In general the credit futures are based on indices with N reference entities, each entity i having a weight n_i. The credit futures are quoted using a bond-like price quotation consisting of the sum of three contributing elements:

- A static base number of initially 100 (the Basis)
- The PV change, reflecting the change in value of the index, due to the markets current perception of the default risk in comparison to that at the launch of the relevant index.
- The premium, reflecting the payment due for protection payable by the protection buyer (the future seller) to the protection seller (the future buyer). This premium accrues linearly over the lifetime of the credit futures contract to and includes the expiration day.

All three contributions listed above change in the case that a default takes place. This situation will be discussed in detail in section 4.

In all the following calculations the contributing elements or prices are determined to a precision of 4 decimal places. The resulting credit futures price is then rounded to the nearest minimum tick. The minimum tick size for the future on the iTraxx® Europe 5 year is 0.005 representing a tick value of 5 Euros. For the iTraxx® Hi Vol 5 year and the iTraxx® Crossover 5 year the minimum tick size is 0.01 representing a tick value of 10 Euros. The only exception to this

rounding procedure is with the final settlement price for each contract where 4 decimal places are used, and then commercially rounded to the nearest 0.0005 or 0.0010 in the case of the iTraxx® Europe 5, the iTraxx® Hi Vol 5 year and the iTraxx® Crossover 5 year. For example if, after summation of the three contributing elements, the settlement price determined is 99.2741, then this price would be rounded to a final settlement price of 99.2740. Similarly if, after summation of the three contributing elements, the settlement price determined is 99.2743, then this price would be rounded to a final settlement price of 99.2745. The value of the Basis at launch will be 100 representing the full weighting of the underlying reference entities, and all three credit futures have a nominal contract size of 100,000 Euros. The numerical examples detailed will be based upon the current iTraxx® Europe index series (Series 6) and a hypothetical credit futures contract based upon them. Note that in all of the numerical examples from this point, that for calculation purposes the generic recovery rate of the index is assumed to be 40% in line with market practice and that in terms of yield curve calculations a flat term structure of 4% is used.

2.1 The Basis

The basis is determined for an index with N reference entities as the $\Sigma\, n_i$, with each entity i having a weight of n_i within the index. In the absence of any credit event this corresponds to a basis of 100. In the case of an actual credit event, where an entity i has a weight n_i of 0.8% in the index, then $\Sigma\, n_i$ would correspond to a basis of 99.2 and so on.

2.2 The PV Change

In terms of the pricing methodology, the underlying iTraxx® index series is initially treated as a single name CDS. This CDS is valued at zero on the launch of the index series, based upon the fixed coupon attached to the index at launch. After the index series is launched the market will change its perception of the default risk of the index CDS. The credit spread quoted in the market may be larger than the fixed coupon (the default risk is now seen as higher) or smaller than the fixed coupon (the default risk is now seen as lower). The currently implied default risk, taken from the current market spread, is now used to revalue the index CDS to obtain a value that reflects the change in the default risk since the inception of the index and this value is the PV change.

Section 3 discusses in detail how this PV change is evaluated based on the Bloomberg Pricing Model for CDS.

2.3 The Premium

The premium accrues from and includes the effective date of the underlying index series and accrues to and includes the expiration date of the credit futures contract. The premium coupon is fixed at the effective date of the index by the index provider and remains constant over the lifetime of that index series. The accrual calculation is based on an actual/360 day-count convention. The accrued premium is equal to

$$B * \frac{C}{100} * \frac{x}{360}$$

Where B is the Basis (100 in the case of no default), C is the fixed premium coupon in percent and x is the number of actual days passed from the effective date of the underlying index series. Note that at final settlement the expiration date of the credit futures contract will be included into the premium calculation.

2.4 Accrued Premium Example

A new on-the-run iTraxx® Europe 5 year is listed on September 20th 2006 with a scheduled termination date of December 20th 2011 and a premium coupon fixed at 30 basis points (bps) per annum. Quarterly coupons are paid with the first coupon payment on December 20th 2006. The corresponding credit future is launched on September 20th 2006 with an expiration date of March 27th 2007. During the life of the credit futures contract no credit event occurs. The credit futures contract thus starts to accrue premium coupon from and including September 20th 2006. The premium is paid to and includes March 27th 2007. Altogether there are 189 calendar days of accrual to be accounted for at expiration corresponding to a total contribution to the credit futures final settlement price of 0.1575. Therefore if the PV change value was determined as zero, this would result in a final settlement price of 100.1575

In comparison an underlying over-the-counter (OTC) iTraxx® index would pay coupons on December 20th 2006 and March 20th 2007 (following the normal market convention of quarterly payments). Therefore at final settlement the credit future will have 8 days more of accrued premium, than the equivalent underlying two quarterly payments. The additional amount is due to the 5 trading day roll period between when a new credit future is listed on the March 20th 2007 and the expiration of the credit future (a total of 7 calendar days), plus the inclusion at final settlement of accrued for the expiration date.

3. The Bloomberg CDS Pricing Model

The Bloomberg CDS pricing model is based on a standard methodology accepted by the market. It uses a (time changed) Poisson process to drive the hazard rate and uses an assumed recovery rate on default.

The benchmark par or fair market CDS spread for the underlying iTraxx® index series contract is the fixed fee for CDS protection such that the present value of the index contract is zero. The fair market CDS spread is calculated with an effective date equal to the trade date plus one business day, and regular fee payments on a March 20th, June 20th, September 20th and December 20th annual cycle. In addition any accrued, but unpaid fixed premium is paid upon the triggering of a contingent payment after a credit event has occurred.

This initial zero valuation is based on the fixed premium coupon of the underlying index series and is applicable at the point in time the index is launched. After the index launch the markets perception of the default probability or hazard rate changes. A current market quote of the single fair market premium for the underlying index can be used to compute a term structure of implied default probabilities, assuming a single hazard rate, up to the maturity date. This procedure is called bootstrapping the hazard rate. The resulting hazard rate is calculated so that the present value of the CDS contract is zero (using the formula detailed below). The input data required is the effective date, maturity date, premium payment dates, a discounting curve derived from Euribor and Swap rates, the survival probability curve obtained from the hazard rate, and the assumed recovery rate for a credit event. Premium payments are calculated on an actual/360 day-count convention.

After the implied hazard rate has been determined, the underlying index CDS contract can then be valued using the same pricing formula for bootstrapping the hazard rate. The difference being that in the case of valuation of the index, the fixed premium coupons for the index series (rather than the current fair market premiums) are used.

3.1 Hazard Rate Model

The value to a holder of protection of a CDS subject to premium p basis points per annum is given by the following formula:

$$V = \int_{t_0}^{t_n} (1 - R(t)) \cdot h(t) \cdot \exp(-\int_{t_0}^{t} h(x)dx) \cdot D(t)dt$$

$$- p \cdot \sum_{i=1}^{n} \frac{t_i - t_{i-1}}{360} \cdot S(t_i) \cdot D(t_i) - p \cdot \sum_{i=1}^{n} \int_{t_{i-1}}^{t_i} \frac{t - t_{i-1}}{360} \cdot S(t) \cdot D(t) \cdot h(t)dt$$

Where R(t) = R is the constant assumed recovery rate, h(t) = h is the constant hazard rate, S(t) is the survival probability given by

$$S(t) = \exp(-\int_{0}^{t} h(x)dx = \exp(-ht)$$

And D(t) are the discount factors (log-linearly interpolated from the input data).

The CDS model is implemented as a “closed form” model using fast numerical integration (the accuracy of which is controlled by setting the “number of intermediate points in numerical integration” for each name).

The formula is in three parts. The first part represents the value of the payment to the protection holder of par minus recovery. This payment can occur at any time between the effective and the scheduled termination date and occurs at time t with a probability equal to the probability that the reference entity survives up to time t multiplied by the hazard rate. This payment is then discounted using the discount curve back to today (assuming a 30 day delay in the payment of the recovery amount).

The second element is the calculation of the quarterly premium amount (the difference in days between payment dates divided by 360 and multiplied by the premium coupon), multiplied by the probability that the reference entity survives up to the premium payment date, discounted back to today.

Thirdly the calculation of accrued premium to be paid on a credit event at time t (number of days since last coupon date divided by 360 multiplied by the premium coupon), multiplied by the probability that a default occurs at time t (as above - the probability that the reference entity survives up to time t multiplied by the hazard rate), again discounted back to today.

3.2 Example PV change

An on-the-run iTraxx® Europe 5 year-Index-series was listed on September 20th 2006 with a scheduled termination date of December 20th 2011 and a premium coupon fixed at 30 bps per annum. Quarterly coupons are paid with the first coupon payment on the December 20th 2006. The corresponding credit futures contract is listed on September 20th 2006 and expires on March 27th 2007. Assuming no defaults occur, to calculate the final settlement of the credit futures contract on March 27th 2007, we need to calculate the PV change and accrued premium. On a straight line basis there would be 189 days of accrued premium, which sums up to 0.1575. The PV change is determined by evaluating the underlying index CDS to the changed default probability perception of the market. If the market fixing of the credit spread of the underlying index series is at 30 bps at expiration, the PV change value would be zero. The credit futures settlement price will therefore be based upon 100.1575 the summation of the basis 100 and the straight line accrued pricing elements.

If the market fixing for the underlying index CDS series is below 30 bps, then a credit futures buyer (which equates to the OTC protection seller) would expect to receive a premium coupon below the fixed 30 bps of the index and thus would expect to compensate a seller at the higher fixed level. In the same way a seller of a credit future would expect to receive a greater value than at launch to account for the higher cash flow attached to the contract in comparison to the market fixing of the underlying market. Hence the price in this case will be greater than par. This can be equated to the underlying OTC market for iTraxx® Europe, where in this case the protection seller would pay the protection buyer an upfront fee. If for example the market fixing at expiration date for the underlying index given by the International Index Company (IIC) was at

10 bps, the PV change value would be 0.8683 and this would be incorporated with the accrued premium amount into a final settlement price of 101.0258 which will be rounded to 101.0260 (rounded to the nearest 0.0005).

Correspondingly the PV change for a market fixing in the underlying index series above 30 bps will be negative. If for example the market fixing at expiration date was at 50 bps the PV change value would be -0.8534 and this would be incorporated with the accrued premium amount into a final settlement price of 99.3041 (similarly rounded to 99.3040).

4. Credit Futures Pricing with One Default

A default that affects the credit futures takes place if the International Swaps and Derivatives Association (ISDA) publish a CDS protocol for a reference entity i which is a constituent of the underlying index with weight n_i (an actual credit event). The day the protocol is announced by ISDA is the credit event date.

In addition there is a procedure whereby, if the index provider lists a new version of the respective index series with the weight n_i of an index reference entity i being set to zero, due to, for example, an anticipated credit event then a similar reduced pool approach as detailed below is adopted (an anticipated credit event).

In both the above cases Eurex will list an additional credit futures contract based on the new version of the iTraxx® index series, where the weight n_i of one reference entity is set to zero (reduced pool index), on the business day following the credit event date. As the weights of the reduced pool index sum up to less than 100% the basis in regards the credit future on the reduced pool index will similarly be less than 100. In the case of the on-the-run iTraxx® Europe 5 year the weight of each index constituent is 0.8%, if one reference entity suffers a credit event and is weighted zero then the reduced pool index would have a basis of 99.2.

The pricing of the reduced pool index will be analogous to the outline given in the no-default case but with two important differences:

- The basis is reduced by the weighting to zero of the credit event entity (e.g. to 99.2 as above)
- The accrued premium is evaluated based on the reduced basis but with the start date for accrual still being the effective date of the original underlying index series.

It is important to note that the reduced pool index credit future is essential to price the original credit future contract. The difference between the two parallel listed credit futures can be used to represent the market opinion as to the value of the entity suffering the credit event (and particularly the implied recovery rate of a defaulted entity). The exact evaluation of this contribution is described below where the calculation of the final settlement of the original credit futures contract with a defaulted entity is outlined.

4.1 Reduced Pool Credit Future Example

An on-the-run iTraxx® Europe 5 year-Index-series was listed on September 20th 2006 with a scheduled termination date of December 20th 2011 and a premium coupon fixed at 30 bps per annum. Quarterly coupons of 30 bps are paid with the first coupon payment on December 20th 2006. The corresponding credit futures contract is listed on September 20th 2006 and expires on March 27th 2007. To calculate the value of the reduced pool credit futures contract (with 124 names in it having a weighting) at final settlement, we again need to calculate the PV change and accrued premium contributions. There are 189 days of accrued still, but with a contract base of 99.2 instead of 100, thus the accrued premium sums up to 0.1562. If the market fixing at expiration date of the credit spread of the reduced pool index was 35.62 bps, the PV change value would be -0.2405 and this would be incorporated with the reduced basis and the accrued premium amount into the determined final settlement of 99.1157, which gives a final settlement price of 99.1155 when rounded.

In the case where a new reduced pool index has been issued, due to example for an anticipated credit event, but where no actual credit event occurs, then the original fully weighted index settles based on market fixing at expiration date for that version of the underlying index given by the IIC, and on the accrued premium as for the example given in section 2.4 above.

4.2 Recovery Contribution

In the case of one default, the original (full pool) credit futures contract is based on an underlying index series containing as a constituent the defaulted entity. Due to the defaulted name being in the index the credit futures contract has to be settled based upon the fixing for the reduced pool index of non-defaulted names plus a contribution from the defaulted name that reflects its recovery rate (the recovery contribution).

The recovery contribution is

$$RR * \frac{n_i}{100}$$

Where *RR* is the recovery rate, in percent, and n_i the original weighting of the defaulted entity in percent. For a recovery rate of 40% and a weighting of 0.8% the recovery contribution would be 0.3200. The recovery contribution is added into the final settlement pricing for the original credit index future. Therefore the original credit future is now priced as the sum of

- the reduced Basis,
- the accrued premium from the effective date of the underlying index series up to and including the credit event date, based on the original basis,
- the accrued premium from the day following the credit event date up to and including the expiration date, calculated with the reduced basis,
- the PV change of the reduced pool index series,
- the recovery contribution

Therefore whilst trading, the price difference between the original credit future and the reduced pool credit future can thus be used in determining the implied recovery rate of the defaulted entity.

4.3 Example PV change for a Credit Future with One Defaulted Entity

An on-the-run iTraxx® Europe 5 year-Index-series was listed on September 20th 2006 with a scheduled termination date of December 20th 2011 and a premium coupon fixed at 30 bps per annum. Quarterly coupons of 30 bps are paid with the first coupon payment on December 20th 2006. The corresponding credit futures contract is listed on September 20th 2006 and expires on March 27th 2007. A CDS protocol is announced by ISDA on December 5th 2006. To calculate the value of the original credit future based on a 125-name index with one default at final settlement we again need to calculate the PV change and accrued premium, plus the recovery contribution. We still have 189 days of accrued however these 189 days are split into the 77 days to and including the credit event date with a base of 100 and 112 days after the credit event to and including the expiration date with a base of 99.2. The accrued premium is 0.1568 (i.e. 77 days at a basis of 100 = 0.0642 plus 112 days at a basis of 99.2 = 0.0926). If the market fixing at expiration date of the credit spread of the reduced pool index is at 45.36 bps, the PV change contribution is -0.6564. The recovery rate of the defaulted name is determined for the final settlement under the ISDA protocol at 42.625%, therefore the recovery rate contribution is 0.3410 (which equates to 42.625 * 0.8/100). Therefore this recovery contribution would be incorporated with the reduced basis, the PV change of the reduced pool and accrued premium amount into the determined final settlement of 99.0414, which gives a final settlement price of 99.0415 when rounded.

With the publication of an ISDA CDS protocol announcing a default, a recovery auction is announced. The recovery rate determined under this ISDA protocol is used for pricing purposes to determine the recovery contribution of the defaulted entity. Note that if the reference obligation listed in reference to the underlying index series does not correspond exactly to the reference obligations for which the recovery determination takes place then the reference obligation with the closest seniority to that listed for the index series is used.

4.4 Single Name Recovery Future.

As detailed above, the recovery rate determined under reference to the ISDA protocol is used to settle the original credit futures. In this case the original credit future settles on the expiration date based on the fixing of the reduced pool credit future plus the recovery contribution of the defaulted entity based on its original weighting in the relevant index.

If however the ISDA recovery determination is scheduled to occur after the expiration date of the original credit futures contract, the original credit futures contract is split at expiration into the non-defaulted entities reduced pool credit future (priced and settled based on the reduced pool market fixing as described above) and a position in a single name recovery future with a nominal value of EUR 100,000 * n_i. For example if the defaulted entity i has a weighting n_i in the original credit future of 0.8%, then the nominal value of that single name recovery credit future for that reference entity is EUR 800. The position in the single name recovery future will be automatically generated at the final settlement for those open positions held in the original credit index futures that contain a defaulted entity. This position will be generated with a trade price of zero and a daily settlement price corresponding to the theoretical recovery rate.

The final settlement price of the single name recovery future is the recovery contribution that corresponds to the recovery rate determined under the ISDA protocol. The expiration date of the single name recovery future is on the fifth exchange trading day after the auction date announced in the ISDA protocol. The last trading day for the single name recovery future corresponds to the day on which the final recovery value is determined under the ISDA protocol.

4.5 Example Final Settlement of a Single Name Recovery Future.

An on-the-run iTraxx® Europe 5 year-Index-series was listed on September 20th 2006 with a scheduled termination date of December 20th 2011 and a premium coupon fixed at 30 bps per annum. Quarterly coupons of 30 bps are paid with the first coupon payment on December 20th 2006. The corresponding credit futures contract is listed on September 20th 2006 and expires on March 27th 2007. A CDS protocol is announced by ISDA on March 15th 2007 and recovery auction is set for April 10th 2007. The expiration date of the single name recovery future is therefore April 17th 2007 five exchange days after the announced auction date. If under the ISDA protocol the recovery rate determination is concluded on the April 10th at 42.625% i.e. the value is set on the first day of the ISDA auction process, then this day April 10th is the single name recovery futures last trading day, and the final settlement price at expiration of this single name recovery future is 42.625.

The following section now details the defaults that Eurex will use in its determination of the final settlement price for the credit index futures.

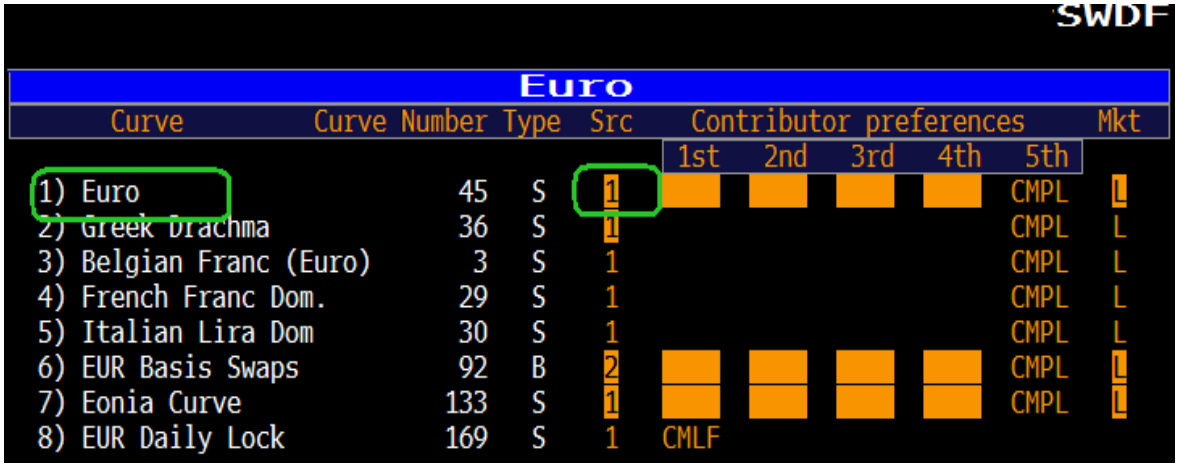
5. The Bloomberg FCDS Screen and Eurex Settlement CDSD/SWDF Defaults

In order to replicate with transparency the CDS Future final settlement prices or its intraday levels, it is important to specify how settings must be changed on the Bloomberg Terminal. Once the settings are properly organized users can calculate the Future Fair Price (Intraday, at Settlement, also for Historical dates) through a new analytical Bloomberg function: FCDS <go>.

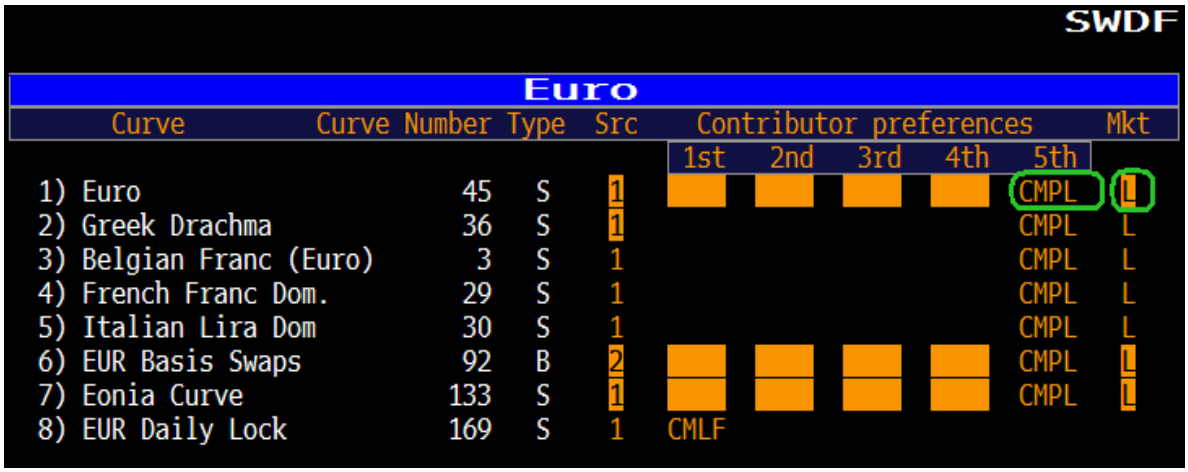
5.1 Interest Rate Curve Settings

Interest Rates Curves settings affect CDS pricing since they determine the discounting rates to be applied to any Credit Derivative cashflow; they can be changed through the **SWDF <go>** function. The three indispensable settings are:

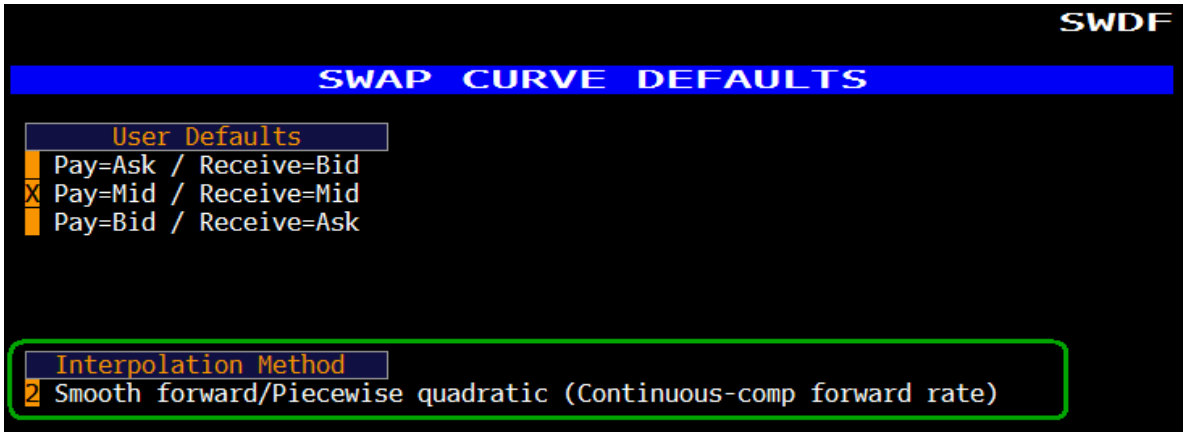
1) the Curve Type (how the interest rate curve is built; we advise to build it on “Standard Rates”, selection number 1),



2) The Pricing Source (the contributor preference, the rate source for each curve. For a list of choices, move your cursor to any of the highlighted fields. The sources are used in order of preference. If the first choice is not available, the second choice is used, etc. NOTE: If you do not select a contributor, SWDF defaults to Bloomberg composite pricing). For consistent Intraday and historical CDS Future pricing use the Bloomberg Composite (“CMPL”) and London trading hours (“L”).



3) The Interpolation method (the method used to interpolate values between maturity points on the swap curve). The interpolation method can be changed in SWDF, under "User Defaults",
4) and should be set to "Smooth Forward/Piecewise quadratic".

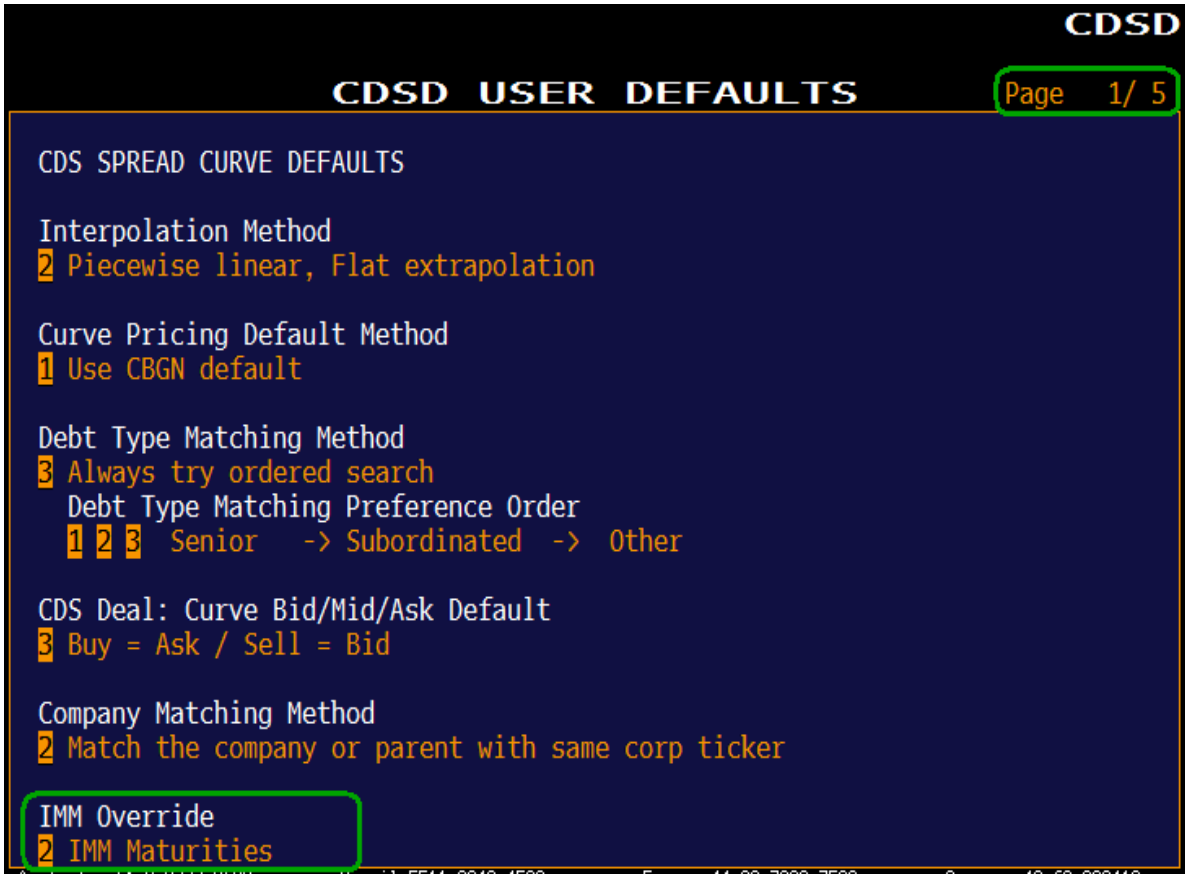


5.2 CDS Curve Settings

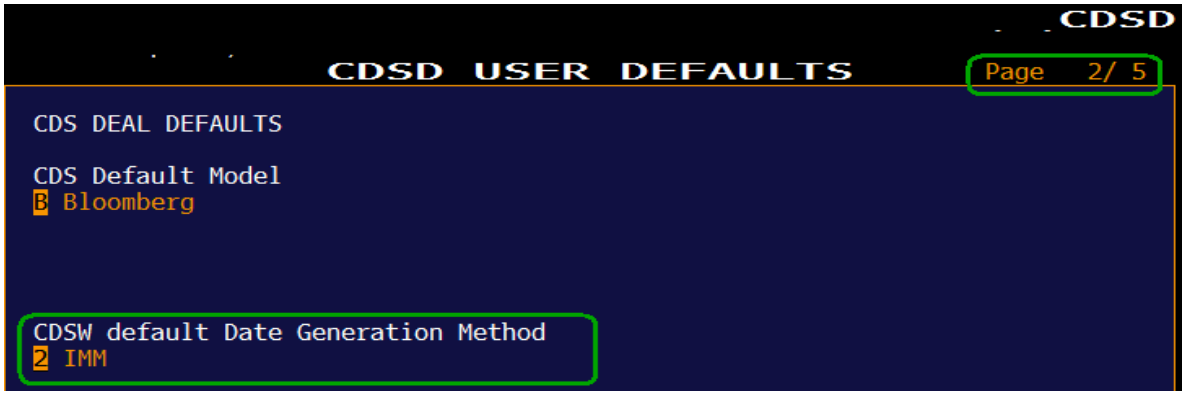
The standard Bloomberg CDS Curve Spread Defaults settings that Eurex will use for the Bloomberg CDS pricing models used to calculate the credit futures settlement prices should be changed via the Bloomberg function **CDSD <go>** and are relevant as follows:

1) Set the "IMM Override" field (reference dates for the Par-CDS-Curve). The setting

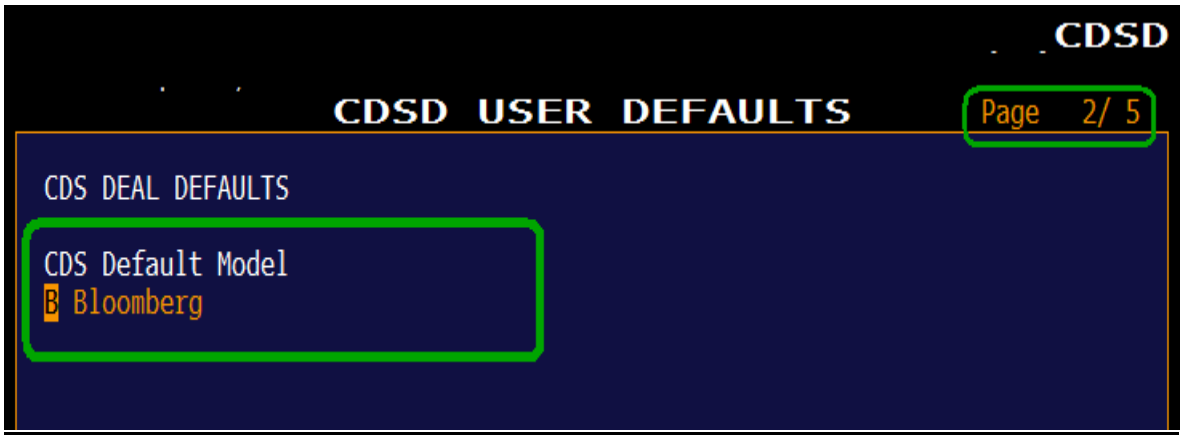
should be number 2 “IMM Maturities”.



2) Set the “CDSW default Date Generation Method” (choosing again number 2 “IMM”, the CDS cashflow dates are generated with IMM defaults).

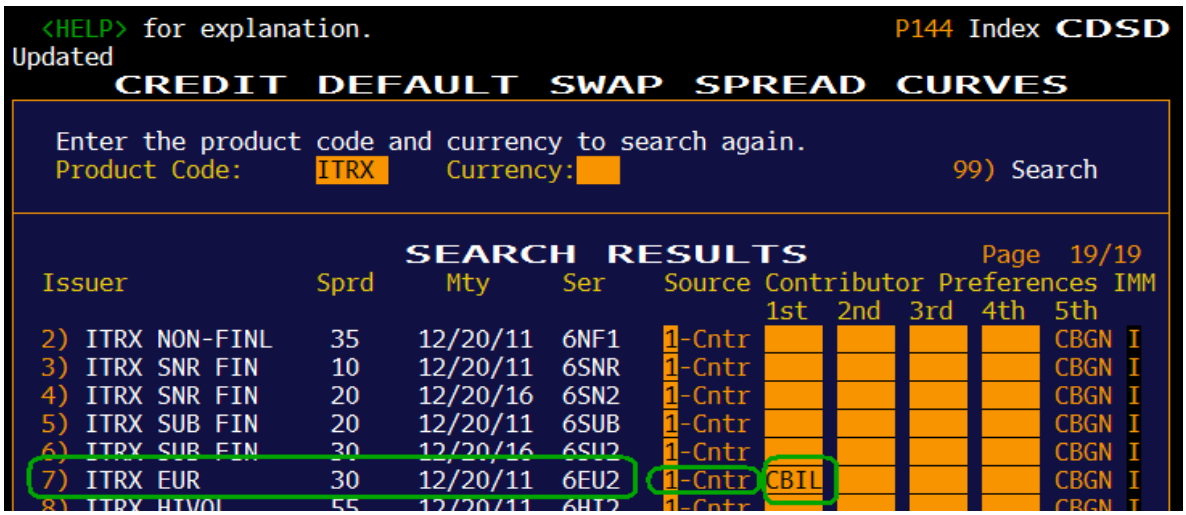


3) **Set the Pricing Model.** Set as default pricing model ("CDS Default Model") the **"Bloomberg" Model.**



4) **Set the pricing source for the underlying iTraxx® Indices to "CBIL"**

Change your settings from the CDSD function (number 12: Indices) for the future underlying indices.



5.3 CDS Futures in Bloomberg: how to find them?

The CDS Futures are retrievable with the following tickers:

BBG Tickers:	Index	Eurex Product Code	ISIN
- **FEAU7 Index**	:iTraxx Europe 5yr Index Futures (125)	F5E0	DE000A0LLV01
- **FEBU7 Index**	:iTraxx Europe 5yr Index Futures (124)	F5E1	DE000A0LLV19
- **FHAU7 Index**	: iTraxx Hi Vol 5yr Index Futures (30)	F5H0	DE000A0LLV35
- **FHBU7 Index**	:iTraxx Hi Vol 5yr Index Futures (29)	F5H1	DE000A0LLV43
- **FXAU7 Index**	:iTraxx Crossover 5yr Index Futures (50)	F5C0	DE000A0LLV68
- **FXBU7 Index**	:iTraxx Crossover 5yr Index Futures (49)	F5C1	DE000A0LLV76

Where, in the ticker:

- "**F**" stands for "Future";
- "**E**", "H" and "X" relate respectively to "iTraxx® Europe", "iTraxx® HiVol" and "iTraxx® Crossover";
- "**A**" means "Active" (which will be the contract with the lowest Factor, the contract containing no defaults);
- "B", "C" increasing letters of the alphabet describe indices that contain "1", "2" and in general an increasing number of defaults;
- "U7" indicates the September 2007 expiry.

Those futures can also be accessed via:

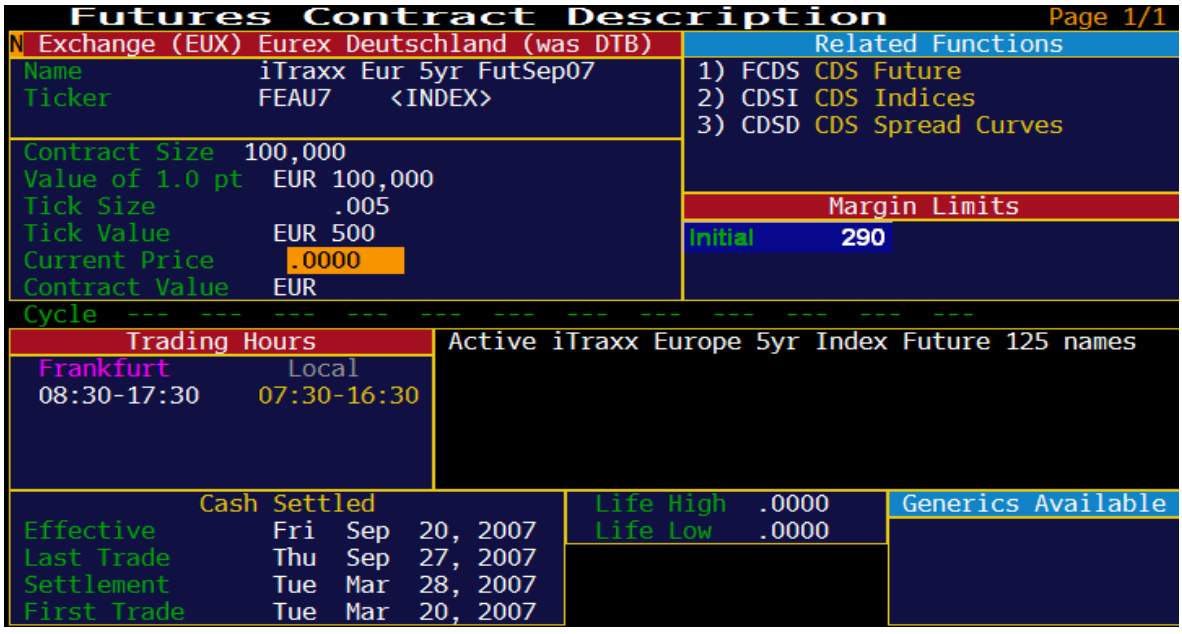
- **CEM EUX <go>**; which is the contract exchange menu for Eurex Deutschland;
- **CTM CDS <go>**; which is the contract table menu for all futures on CDS-single-name and CDS-Indices.

5.4 CDS Futures in Bloomberg: how to calculate their Fair Price?

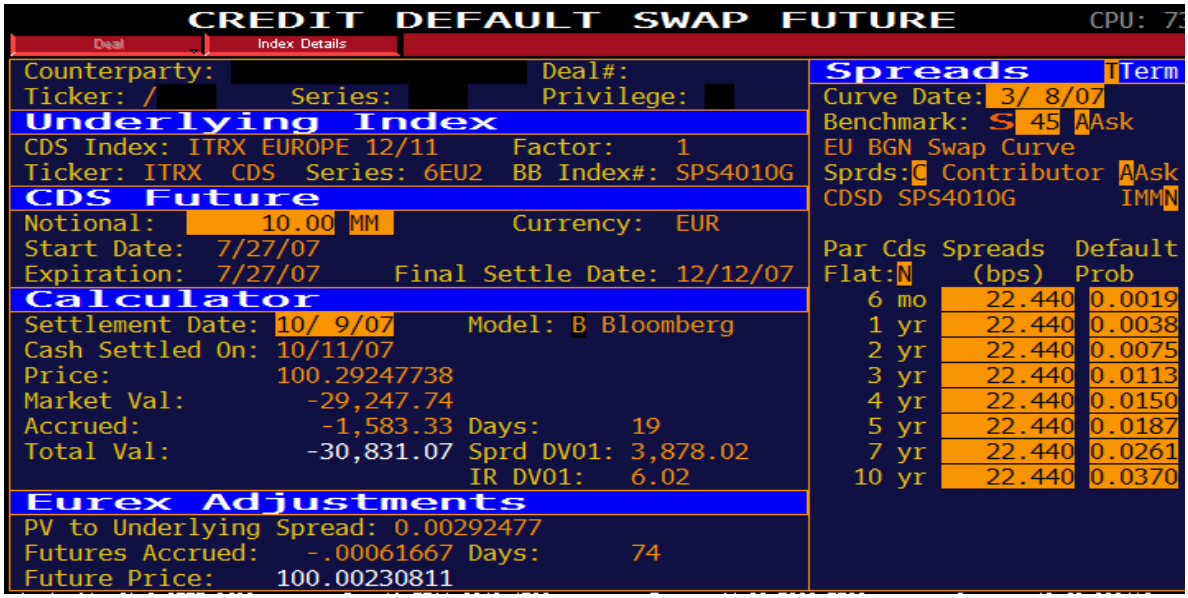
Once all the settings have been completed, you can evaluate the Fair Price of a CDS Future via the analytical function **FCDS <go>.**

FCDS can be launched in two ways:

- either from the Description Page (DES) of the Future;



- Or by typing, for instance, **FEAU7 Index FCDS <go>.**



PLEASE NOTE: The above screenshots are taken from the development stage of FCDS <go> and are only representative of the final screens that will be available.

Disclaimer

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Application Form - Designated Market Making Scheme

To Eurex
Product Strategy
Mehtap Dinc
Neue Börsenstraße 1

60487 Frankfurt am Main

Fax no.: +49-69-211-61 72 84

Application for the Status of Designated Market Maker in Futures on iTraxx® Indices

1. We _____
(name of firm)

herewith apply for the status of Designated Market Maker in the following contract (s)

Product	Eurex Code	Please check box (✓)
iTraxx® Europe 5 year Index Futures	F5E0	☐ yes
iTraxx® Europe Hi Vol 5 year Index Futures	F5H0	☐ yes
iTraxx® Europe Crossover 5 year Index Futures	F5C0	☐ yes

for the period from March 27, 2007 until December 31, 2008 (commitment period) in accordance with the terms and conditions stated in the Quote Obligations (attachment 2).

2. As a Designated Market Maker

a) we will provide bid and ask quotes on both sides of the market

- for the minimum number of contracts specified in the quote obligations
- in compliance with the maximum spreads (see Quote Obligations)
- for the period of time specified in the Quote Obligations (also, and in particular, on a daily basis at the beginning of trading and at the end of trading in the contract and in response to quote requests)
- for all available contracts e.g. during the roll and for new index contracts introduced as the result of a credit event

b) we will give you the name of a manager who has the authorization and expertise necessary to make decisions and act as the coordinator in our firm, who will be available for Eurex with respect to this agreement;

c) we will ensure that a Eurex trading screen and a qualified trader are available for Designated Market Making; and

d) we will inform Eurex within one business day in the event that we find ourselves no longer in a position to fulfill these obligations.

3. Eurex will in return

a) publish the name of the Eurex member with the Designated Market Maker status in advertising and informative material in connection with the contracts, if desired;

b) make Eurex speakers and printed material available for seminars organized by the Designated Market Makers regarding credit futures; and

c) refund all trading and clearing fees for the contracts traded by Designated Market Makers on M-accounts up to December 31, 2008, upon fulfillment of the obligations, for Market Makers joining the scheme **prior** to March 27, 2007. The refund for the respective month will be calculated at the beginning of the subsequent month. No refunds will be made if iTraxx® Futures are traded on A- or P-accounts.

d) offer the following revenue sharing scheme with effect from March 27, 2007 until December 31, 2008 for Designated Market Makers **joining the scheme prior to March 27, 2007**:

- After fulfillment of the obligations, Eurex will grant the top five Designated Market Makers a participation in 50 percent of the net revenues (transaction fees minus Designated Market Maker rebates) for each Credit Futures contract they have the status of Designated Market Maker in with effect from March 27, 2007 until December 31, 2007 according to the following schedule:
    - Each Designated Market Maker receives 5 percent after fulfillment of the obligations
    - The distribution for the remaining portion (75 percent) will be made to the top five Designated Market Makers according to their volume ranking in the M-accounts, proportionately, as shown in the table below:

Designated Marker Maker Ranking according to volumes in the M-account	In % of remaining portion
1	30%
2	25%
3	20%
4	15%
5	10%

- For the period from January 1, 2008 until December 31, 2008, Eurex will grant the top five Designated Market Makers, after fulfillment of the obligations, and depending on their volume ranking in the M-accounts a participation in 30 percent of the net revenues (transaction fees minus Designated Market Maker rebates) for each Credit Futures contract they have the status of Designated Market in according to the following schedule:

Designated Marker Maker Ranking according to volumes in the M-account	In % of 30% net revenues
1	30%
2	25%
3	20%
4	15%
5	10%

e) The revenue distribution for the respective month will be calculated at the beginning of the subsequent month.

4. Compliance with the obligations specified under No. 2 shall be monitored by Eurex.

   In the event that we will not meet the obligations specified under No. 2 , Eurex shall have the right to terminate the agreement and to publicly disclose the termination of the Designated Market Maker status at Eurex' discretion. In this case, Eurex shall be released from its obligations pursuant to No. 3 with immediate effect.

5. In the event of a significant change in the Contract Specifications for the contract or due to a revision of the law or rules with respect to the contract, we as well as Eurex will have the right to terminate this agreement with immediate effect or to renegotiate the requirements indicated in paragraph 2 and/or in the associated Quote Obligations.

6. Eurex shall have the right to amend or expand one or more of the condition(s) laid down in this agreement for limited periods of time at its sole discretion with validity for all Designated Market Makers, if it deems this appropriate (for example, in circumstances which lead to high market volatility or if such amendments or expansion is not expected to have an adverse effect on market quality). In the event that Eurex amends or expands one or more condition(s), the Designated Market Makers must, for their part, ensure that they can be contacted so that they can be promptly advised that this situation has ceased to exist.

7. Other than the aforementioned measures, no special status at Eurex shall be accorded to the participant in conjunction with the Designated Market Maker status, which will expire on December 31, 2008. After that time, the title "Designated Market Maker" can no longer be used unless otherwise agreed upon with Eurex.

9. The associated Quote Obligations (attachment 3) are an integral part of this application.

SHOULD BE FILLED OUT BY THE PERSON DESIGNATED IN ACCORDANCE WITH PARAGRAPH 2. b)

_____
Place, date

_____	_____
Name	Position
_____	_____
Phone	Fax
_____	_____
(Signature / Stamp of the firm)	E-mail address

Please send the completed application for the status of Designated Market Maker to the indicated fax number.

Designated Market Maker Scheme for Futures on the iTraxx® Europe 5 year Index Series

Quote Obligations

Eurex Code:	**F5E0**
Minimum Size:	**500** contracts on the bid and ask side for all expiration months
Maximum Spread:	4 ticks = 0.02 Euro
Quotation Period:	80 percent of the daily trading period on a monthly average The commitment period starts March 27, 2007 and ends December 31, 2008
Parallel Listing	Obligation levels must be fulfilled for all available contracts e.g. during the roll and for new index contracts introduced as a result of a credit event
Fast Market	In “fast” market conditions e.g. after significant changes in the underlying credit market, the maximum spread requirements will be doubled and the minimum size of contracts to be quoted will be halved

Designated Market Maker Scheme for Futures on the iTraxx® Europe Hi Vol 5 year Index Series

Quote Obligations

Eurex Code:	**F5H0**
Minimum Size:	**250** contracts on the bid and ask side for all expiration months
Maximum Spread:	4 ticks = 0.04 Euro
Quotation Period:	80 percent of the daily trading period on a monthly average The commitment period starts March 27, 2007 and ends December 31, 2008
Parallel Listing	Obligation levels must be fulfilled for all available contracts e.g. during the roll and for new index contracts introduced as a result of a credit event
Fast Market	In “fast” market conditions e.g. after significant changes in the underlying credit market, the maximum spread requirements will be doubled and the minimum size of contracts to be quoted will be halved

Designated Market Maker Scheme for Futures on the iTraxx® Europe Crossover 5 year Index Series

Quote Obligations

Eurex Code:	**F5C0**
Minimum Size:	**100** contracts on the bid and ask side for all expiration months
Maximum Spread:	10 ticks = 0.10 Euro
Quotation Period:	80 percent of the daily trading period on a monthly average The commitment period starts March 27, 2007 and ends December 31, 2008
Parallel Listing	Obligation levels must be fulfilled for all available contracts e.g. during the roll and for new index contracts introduced as a result of a credit event
Fast Market	In “fast” market conditions e.g. after significant changes in the underlying credit market, the maximum spread requirements will be doubled and the minimum size of contracts to be quoted will be halved