

Terms and Conditions for Participation and Trading on Eurex Bonds

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I. Part: General Conditions

§ 1 Scope of Application

(1) The following conditions lay down the rules for participation and trading on Eurex Bonds GmbH (hereinafter referred to as “Eurex Bonds”) for all Participants of the Eurex Bonds trading platform (hereinafter “Market Participants”) to ensure the orderly conduct of business in the Eurex Bonds off-exchange market segment for fixed-interest bonds and zero-coupon bonds (hereinafter “Bonds”) and basis instruments (hereinafter jointly referred to as the “Products”). The conditions in the German version, in effect from time to time, are binding on all Market Participants.

(2) The Eurex Bonds trading platform enables admitted Market Participants – in addition to off-exchange trading in Bonds – to engage in a simultaneous off-exchange purchase of bonds and sale of a Future contract tradable at Eurex Deutschland (Euro-Bund-, Euro-Bobl or Euro Schatz Future contract) and vice versa (basis trading) by using an electronic trading system (hereinafter referred to as the “System”).

§ 2 Changes and Additions

(1) The following conditions have been issued by the Board of Management of Eurex Bonds (hereinafter referred to as the “Board of Management”). The Board of Management has the right to change and add to these conditions from time to time to the extent that this may appear necessary in the light of market conditions.

(2) Market Participants shall be notified of any changes at least 10 trading days before they are to take effect unless special market conditions require the Board of Management to take action at short notice.

(3) The Board of Management shall give notification of changes and additions to these conditions by electronic means through circular via e-mail and on the Internet (www.eurex-bonds.com).

§ 3 Market Model

(1) The Trading hours are divided into three consecutive phases:

- the Pre-Trading Phase
- the Main Trading Phase
- and the Post-Trading Phase

During the Trading Phases, orders and quotes can be entered, changed or cancelled in the system by the market participants. A quote is a limited order specifically indicated which is placed for the purchase- and the sale side of at product at the same time. The Trading hours for the commencement and end of the individual phases shall be determined by the Board of Management for all products. The Board of Management may extend or reduce the trading hours and postpone or advance the commencement of the individual phases on any particular trading day to the extent necessary to maintain orderly trading conditions or for reasons relating to the system.

(2) During the Pre-Trading and Post-Trading Phases, the order book shall remain closed.

(3) The Pre-Trading Phases is followed by the Main Trading Phase during which products can be traded continuously.

(4) At the end of the Main Trading Phase, the system shall continue to be available to the market participants in the Post-Trading Phase for data entry.

(5) Besides continuous trading the Pre-arranged-Trade-Facility provides all market participants with the possibility to enter trades into the system outside the order book which are agreed upon by two market participants and to have them cleared by Eurex Clearing.

II. Part: Conditions for Participation in Trading on Eurex Bonds

§ 4 General Participation Requirements

(1) The Board of Management decides on an enterprise's participation in trading or on an enterprise's participation in trading restricted to certain products at Eurex Bonds.

(2) Applications for the conclusion of an agreement for the granting of permission to participate must be submitted in writing to Eurex Bonds. Each application must include information as to whether the enterprise is to be granted an explicit admission to trading in Bonds or an admission to trading in basis instruments as well.

In addition, the applying company has to indicate if it intends to authorize affiliated companies within the meaning of the Exchange Act to trade on his behalf at Eurex Bonds. This needs a formal authorization by Eurex Bonds which, besides the prerequisites pursuant to paragraph 3, requires that the applying company:

a) provides for an Excerpt from the Commercial Register and

b) hands in a written affirmation vis-à-vis Eurex Bonds that no legal provisions, in particular with respect to supervisory regulations, are opposed to the trading by the respective affiliated company on its behalf and

c) commits each affiliated company acting on its behalf to comply with these Terms and Conditions in the respective valid version.

In addition, Eurex Bonds may at any time require further information from the market participant about the affiliated company, provided it is necessary in order to fulfill obligations with respect to supervisory regulations or other legal specifications of Eurex Bonds.

(3) Participation in trading at Eurex Bonds is only possible if the enterprise submitting the application meets the following requirements. The enterprise submitting the application must

a) hold a Eurex Bonds Clearing License of Eurex Clearing AG as a "General Clearing Member" (GCM) or "Direct Clearing Member" (DCM), or it must have concluded an NCM-CM agreement with an institution which holds a respective Clearing License of Eurex Clearing AG;

b) possess the necessary technical and organizational clearing facilities so that the enterprise is in a position to duly settle Bonds transactions;

c) have access to the technical infrastructure of the Eurex Bonds system and have concluded the Connection Agreement for Participation in the Electronic Trading System of Eurex Bonds for the term of participation in Eurex Bonds;

d) possess equity capital of at least EUR 50,000,00, unless the enterprise submitting the application is a credit institution, a financial service provider or a securities company complying with the definition of article 1 paragraph 1 and 2 and article 4 paragraph 1 of Council Directive 2004/39/EG on markets for financial instruments ("MiFID") or with a company acting pursuant to § 53 paragraph 1 clause 1 or § 53 b paragraph 1 clause 1 KWG ("German Banking Act") which is authorized to conduct financial commission business within the meaning of § 1 paragraph 1 clause 2 number 4 KWG or to provide a financial service within the meaning of § 1 paragraph 1 a clause 2 number 1 to 4 KWG; the deposited money and the reserves after deduction of the owner's or personal liable shareholders' withdrawal and the credits granted to them as well as a liabilities' overhang with the free assets of the owner are regarded as equity capital.

No facts should justify the assumption that the enterprise submitting the application which is, pursuant to clause 1, obligated to provide evidence of equity capital would, taking into account the proved equity capital, does not have the necessary financial capability to properly participate in the trading on Eurex Bonds.

(4) By way of exception from the foregoing requirements for participation in Eurex Bonds trading, the Federal Republic of Germany, the Bundesbank, the Kreditanstalt für Wiederaufbau and other enterprises and institutions to

be separately specified by the Board of Management, shall receive the status of a Market Participant for the participation in trading in Bonds provided that they meet the requirements of § 4 paragraph 3 a), b) and c) above.

(5) In order to be admitted to trading in basis instruments at Eurex Bonds, an enterprise must – in addition to the requirements detailed in § 4 paragraphs 3 and 4 – :

a) be admitted to trading at Eurex Deutschland and

b) possess the necessary technical and organizational clearing facilities so that the enterprise is in a position to duly settle basis transactions.

(6) In the application pursuant to Paragraph 2, a company seated abroad must specify to Eurex Bonds an authorized recipient (name and address) for the term of the business relationship at home, such recipient being legally and factually able to accept deliveries of Eurex Bonds effective for the company. A change of the authorized recipient shall immediately be communicated to Eurex Bonds; Clause 1 and 2 shall apply accordingly.

(7) The Market Participant is obligated to allow Eurex Bonds or its agents at any time the examination of the compliance with the duties from these Terms and Conditions. Eurex Bonds or its agents shall, in particular,, be allowed to view any necessary documents, to question staff members of the Market Participant and to take all other measures necessary for an adequate examination. In case of reasonable suspicion that the market participant violated its obligations from these Terms and Conditions, Eurex Bonds may, at the expense of the Market Participant, commission a neutral institution - in particular an auditor - with the revision.

(8) Applicants shall provide evidence that they meet the requirements to participate in Eurex Bonds trading. Market Participants are obligated to notify the Board of Management without delay of any changes regarding legal or actual matters of fact as a result of which they might no longer meet participation requirements.

§ 5 Resignation, Suspension and Termination of Participation Authorization

(1) Market Participants may terminate their authorization to participate in Eurex Bonds trading at any time upon providing written notification thereof to the Board of Management. The notice of termination shall take effect three months after receipt by Eurex Bonds. Thereupon, all rights and obligations of the Market Participant to enter orders or quotes into the system will terminate. The obligation of the Market Participant to complete transactions that have already been concluded will remain unaffected thereby.

(2) The Board of Management may, at its discretion, terminate the participation authorization of a Market Participant at any time without supplying prior notification and without notice or unilaterally suspend the participation authorization if it learns that a Market Participant has ceased to meet one of the conditions set forth under § 4 or that the Market Participant does not fulfill its obligation to cooperate or to accept revisions. The Board of Management may suspend the authorization of a Market Participant without delay if Eurex Deutschland orders that the admission of the Market Participant be suspended. The rights of restriction, suspension and termination of the Board of Management pursuant to § 19 of these conditions remain unaffected. The regulations of this paragraph apply mutatis mutandis to the revocation or suspension of an authorization granted by Eurex Bonds pursuant to Section 4 paragraph 3 Sentence 3 and 4.

(3) In the event of the termination or suspension of the authorization to participate, the Market Participant concerned is obligated to cancel all its orders and quotes as well as those of its affiliated company. The Board of Management will use technical means to block the entry of new orders or quotes into the system by the Market Participant concerned. The obligation on the part of the Market Participant to fulfill transactions that have already been concluded will remain unaffected thereby.

§ 6 Rights and Obligations of Market Participants

(1) Market Participants are authorized, within the limits of their participation authorization, to enter limit buy and/or sell orders into the system in their own name concerning all Eurex Bonds tradable products.

(2) Entries in the Eurex Bonds system by a company affiliated to a Market Participant shall be made on behalf of the Market Participant. Such entries exclusively effect for and against the Market Participant who is legally bound by these entries. In case the affiliated company does not comply with the Terms and Conditions, the Market Participant is responsible within the meaning of Section 19.

(3) The Market Participant is obligated to provide at any time during the trading hours sufficient qualified personnel in order to guarantee orderly trading, and shall ensure availability via telephone. In case of technical breakdowns, the Market Participant shall specify a contact person or provide evidence for conclusion of a Service Agreement with a Third Party.

§ 7 Market Makers

(1) All market participants are authorized to act as Market Makers at Eurex Bonds.

(2) Eurex Bonds shall measure the quotation activities of the Market Makers and, upon request by such Market Makers, inform them electronically about their own performance. Parameters for the measurement are – depending on the product segment and scope of term – the minimum volume, maximum bid-/ask spread and minimum duration.

If a market maker enters a quote pursuant to § 10 Paragraph 2 for an instrument for which he has already entered a quote, the quote entered most recently shall substitute its original quote. In addition, Market Makers are authorized to enter limit orders into the system

(3) Market Makers entering quotes in the system shall agree that Eurex Bonds records their market making activities electronically and submits them to the respective issuer for information upon its request. The data shall be submitted in statistical form. These reports shall only be submitted upon conclusion of a non-disclosure agreement between Eurex Bonds and the respective issuer; they shall not be submitted to other issuers or market participants.

The market participants who act as Market Makers, can be specified as Market Maker for a product segment in publications of Eurex Bonds (e.g. “Eurex Bonds Newsletter”).

III. Part: Trading Regulations

§ 8 Trading Days and Trading Periods

(1) Unless otherwise determined by the Board of Management, the Eurex Bonds trading days correspond to the common trading days of Eurex Deutschland and Frankfurter Wertpapierbörse.

(2) Trading periods for Bonds and basis instruments are determined by the Board of Management. Trading in basis instruments is limited to the trading periods for German government bonds on Eurex Bonds and German capital markets futures on Eurex Deutschland. Trading in the basis instrument commences with the establishment of the first price for the respective futures contract (Euro Bund, Euro Bobl, Euro Schatz or FBTP Future) on Eurex Deutschland and ends before the close of trading for German capital market futures on Eurex Deutschland.

§ 9 Conduct of Trading in Bonds, Break-Even Instruments and Basis Instruments

(1) During continuous trading, the orders or quotes entered into the system which can be executed against one another shall be matched and transactions concluded (Matching). The system shall rank the orders initially according to price. With regard to trading in price terms, the highest bid limit and/or the lowest offer limit, and with regard to yield term trading, the lowest bid limit and/or the highest offer limit shall be ranked first. If the price is the same, the chronological order of entry is determinative. All existing orders and quotes shall be displayed in aggregate form at the respective limit (open order book).

(2) Orders may be executed completely, partially or not at all. Depending on the execution parameters according to § 10 paragraph (4), orders or parts

of orders which have not been executed will be placed in the order book or will be deleted.

(3) The Board of Management shall determine minimum trading sizes for continuous trading (round lots) and the Pre-arranged Trade facility (odd lots) for each security: Only orders above the minimum trading size or integral multiples thereof are eligible for continuous trading and can be executed therein. Other orders (odds lots) shall be executed via the Pre-arranged Trade facility.

(4) After orders and quotes have been matched in the system, both Market Participants shall receive an execution confirmation and a trade confirmation. In the case of a basis transaction, each party receives a confirmation of execution, containing details of the execution price, the quantity traded and the time. In addition, a trade confirmation will be sent to both parties without delay. Furthermore, each party shall receive a trade confirmation for each of the cash and the futures legs having been concluded with the respective basis trade.

(5) With regard to transactions of inflation-linked bonds, the exercise price including interest is calculated by means of using the so-called inflation coefficient. After having calculated the exercise price and interest, an execution and trading confirmation regarding the cash leg concluded shall be sent to the respective trading parties.

(6) A Market Participant on Eurex Bonds may buy or sell the basis relating to a government security (basis trade). Buying the basis means in one single transaction, buying the government security and selling the corresponding number of futures contracts. Selling the basis means in a single transaction, selling the government security and buying the corresponding number of futures contracts. The basis is traded in a separate order book. Quotes and orders relate to the tradable lot and the price of the basis.

(7) A Market Participant may buy or sell Break-Even Instruments on Eurex Bonds. Buying a Break-Even Instrument means buying the inflation-indexed government security and selling the corresponding number of the allocated fixed-interest government securities in one single transaction. Selling a Break-Even Instrument means selling the inflation-indexed government security and buying the corresponding number of the allocated fixed-interest government securities in one single transaction. The Break-Even Instruments are traded in a separate order book. Quotes

and orders relate to the tradable lot and the price of the Break-Even Instruments.

(8) Data pertaining to the implicitly traded security and the futures contract of the basis transaction will be computed daily through “trade enrichment”. The number of futures contracts per “minimum trading size” will be computed by the system for each basis transaction as described in more detail in section 4 of the Annex. Eurex Bonds will publish the number of futures contracts computed by the system per “minimum trading size” for each valid combination of cash bonds / futures contracts on the Eurex Bonds web-site, or send it to all Market Participants via e-mail.

§ 10 Order Types

(1) Orders and quotes may be entered by market participants into the system.

(2) Limit orders are buy and sell orders which are to be entered with a price limit and executed at the specified price or better. A quote is either the simultaneous entry of a limited buy and sell order or the one-sided entry of a limited buy or sell order. Upon entry of a quote for the same instrument and under the same sub-group ID for which the same Market Participant has already entered a quote in the past, the quote entered most recently shall substitute the quote previously entered.

(3) When being entered into the system, the orders must contain the following data:

- buy/sell offer (bid/ask)
- type of security
- principal amount
- price limit

Orders must be entered as proprietary orders or customer orders. The quotes must also be specifically designated as such.

Orders for continuous trading can be entered subject to one of the following execution conditions:

- immediate execution of the order in full or cancellation (“fill-or-kill”)
- immediate execution of the order to the extent possible and cancellation of the unexecuted part (“immediate-or-cancel”)

- as a limited order which is entered into the system with a specific overall quantity, but entered into the order book only successively with a specific fraction of the volume at the determined price limit ("Iceberg")

In the case of orders subject to the execution "Iceberg", the Board of Management shall determine the minimum overall quantity of such order and the minimum peak quantity which, on the basis of such order, is to be entered in the order book for the individual product.

(4) Orders can be entered subject to one of the following validity specifications:

- Good-for-day (valid for the respective trading day)
- Good-till-date (valid until the end of the specified period, but no longer than 90 calendar days, T+89)
- Good-till-cancelled (valid until revoked, but no longer than 90 calendar days after entry, T+89)

Limit orders which are entered without validity specifications are only valid until the end of the Main Trading Phase on a given trading day. To the extent that they are not executed, they shall be cancelled at the end of the Main Trading Phase in the system; quotes and orders subject to the execution condition "Iceberg" are only valid for the respective trading day.

§ 11 Orderbook

(1) All entered orders shall be marked by the system with a time stamp and a transaction identification number. Orders which do not meet the prescribed minimum standards shall be rejected. The market participants shall be informed of the recording of orders by the system.

(2) For each product an order book shall be kept in which all orders shall be ranked according to their price and date of entry and administration. Amendments to an order shall result in a new chronological ranking in the order book if such amendments concern the price or other terms of the order, particularly an increase in the lot size, which can have a detrimental effect on the ability of other orders to be executed. In this order book, all orders shall be ranked according to their lot size, price and date of entry and administered.

(3) Individual orders in the order book can be amended or cancelled by the participant who entered them in accordance with the described rules. All orders as a whole of a given market participant may be cancelled by the Board of management at the market participant's request.

(4) In addition, existing orders shall be cancelled if the minimum trading size is changed. The Board of Management may determine other cases in which existing orders may be cancelled in the system.

§ 12 Pre-arranged-Trade-Facility

(1) The Pre-arranged-Trade-Facility is provided for Bonds, Basis Instruments and Break-Even Instruments.

(2) Pre-arranged Trades will always be processed with the settlement code „Delivery versus payment".

(3) The settlement date for Pre-arranged Trades with regard to Bonds and Break-Even Instruments can be selected within the range of T+1 and T+89 and with regard to Basis Instruments within the range of T+2 and T+4.

(4) Pre-arranged Trades are to be confirmed by one of the counterparties by means of a request to be sent to the Eurex Bonds system. After the confirmation of the Pre-arranged trade Eurex Bonds shall transfer the respective trades for clearing to Eurex Clearing AG.

(5) The Board of Management may exclude Market Participants from the utilization of the Pre-arranged-Trading-Facility if this is necessary to ensure orderly trading on Eurex Bonds. In this case, such Market Participants shall have no claims towards the refund of costs, charges or any other damages.

§ 13 Price Indication and Price Gradations

(1) Basis instruments will be quoted in percent, carried out to three decimal places.

(2) Fixed-interest bonds are quoted as a percentage of the nominal value carried out to three decimal places.

(3) Zero-coupon bonds are discount papers and will be quoted as a percentage of the nominal value or in yield terms to three decimal places. The Management Board of Eurex Bonds shall determine the method of price fixing.

(4) The minimum change in price for all securities shall be 0.001 percentage of the nominal value.

§ 14 Binding Nature of Transactions and Treatment of Erroneous Entries

(1) All transactions carried out on Eurex Bonds by utilization of the Market Participant's user identification are binding for the Market Participant concerned.

(2) The Board of Management is authorized to cancel a transaction and to remove it from the electronic trading system if a Market Participant or the counterpart of the executed trade directly affected by the transaction notifies Eurex Bonds without delay that it has entered its order/quote into the Eurex Bonds system inadvertently or incorrectly. The cancellation of a transaction is excluded if the resulting price does not deviate significantly from a fair market price (reference price) unless all the parties to the transaction approve the cancellation of the transaction in question. The Market Participant that gave rise to the erroneous entry is obligated to pay Eurex Bonds a handling fee pursuant to Number 2.4 of the Eurex Bonds Pricing Model in its respective current version.

(3) Notification without delay in accordance with paragraph 2 is deemed to have been supplied if, within 15 minutes of the determination of the execution price, a counterpart directly involved in the trade informs Eurex Bonds by telephone that an incorrectly or accidentally enterted order or quote has been executed. Upon the receipt of the notification, the Company shall immediately contact the Trade counterparty with respect to such cancellation.

(4) If all the parties involved in a Pre-arranged-Trade transaction approve the cancellation of the Pre-arranged Trade, executed through the Pre-Arranged Trade Facility, within the trading hours of the respective business day, the Board of Management is authorized to cancel the Pre-arranged Trade.

(5) In the event that a transaction is cancelled, Eurex Bonds will immediately inform all parties involved in the transaction via telephone and then in written form about the cancellation of the transaction.

(6) In addition, the Board of Management may, independent from a request according to paragraph 2 and 3 or in agreement of the counterparties according to paragraph 4, cancel a transaction if it is necessary to ensure orderly trading on Eurex Bonds.

(7) The following provisions apply additionally and precede for trades in European Government Bonds:

1. If the counterparty promptly agrees with the trade cancellation request, the request shall be treated as a bilateral cancellation and the trade shall be cancelled by Eurex Bonds, without determining of the reference price.

2. In the event that the other counterparty does not respond promptly or does not agree with the cancellation of the trade, Eurex Bonds must verify that the trade was executed at a price level which is inconsistent with the market value at the time of execution. In case of a significant deviation, Eurex Bonds cancels the trade. The trade price deviates significantly from the market value, when the trade price has been executed at a price that was greater than 50% outside the current bid/offer spread of the security in question at the time of its execution. An example is given in Annex to Chapter III.

3. In order to calculate whether the trade is greater than 50% outside the current bid/offer spread, Eurex Bonds may request up to five (5) dealers, but no less than three (3) (excluding the counterparties) to provide a firm two-way inter-dealer electronic quote for the instrument in question at the time of execution of the trade. The market participants consulted are chosen from a pre-defined list, appointed by AFME (Association for Financial Markets in Europe). The list of market participants will be published on the AFME website. The selected market participants shall respond as soon as possible after the request, and will communicate by email their current bid/offer quote for that instrument at that time.

4. In order to determine whether a significant market deviation exists, Eurex Bonds will discard the bid/offer couple containing the highest

bid and the bid/offer couple containing the lowest offer. In case there are multiple couples with the same bid or the same offer, the couple with the tighter bid/offer spread will be deleted: if this spread is expressed by more than one couple, only one will be eliminated. In case the highest bid and the lowest offer are contained in the same couple, only this couple will be deleted.

5. Eurex Bonds will than averaging the remaining bid prices and averaging the remaining ask prices, will round the result to the third decimal to determine the fair market value and calculates the relevant spread.

6. If the relevant fair market value could not be determined within a appropriate time periode according to the subparagraphs 3 to 5, Eurex Bonds may determine such reference price on the basis of external price sources such as Bloomberg ALLQ.

7. The trade price in question will be considered to deviate significantly from the fair market value:

   a) If the cancellation request is made by the seller and the trade was executed at a price that was lower than the bid side of the calculated fair market value by more than 50% of the calculated bid/offer spread at the time of the execution of the trade.

   b) If the cancellation request is made by the buyer and the trade was executed at a price that was higher than the ask side of the calculated fair market value by more than 50% of the calculated bid/offer spread at the time of the execution of the trade.

(8) The following provisions apply additionally and precede for trades in other instruments than European Government Bonds:

1. The reference price shall generally be computed as the average of the prices of those transactions that were concluded immediately before and after the erroneous entry. If only one of these prices is available, then that price shall be used as the reference price.

If it is not possible to determine a reference price that could be deemed a fair market price in accordance with the above conditions, Eurex Bonds shall determine three competent Market Participants, who are not involved in the transaction, from the group of Market Participants admitted to trading on Eurex Bonds. Each of them shall compute a market price for the Bond/basis instrument concerned. The average of the three prices serves as reference price.

If it is not possible to find a reference price according to above-mentioned procedure, Eurex Bonds may use other pricing tools such as Bloomberg ALLQ in order to determine the reference price.

2. A deviation from the reference price for Bonds and basis instruments will be deemed significant if the deviation is higher than the limit indicated in the table set forth in under section 3 of the Annex.

3. In case of an erroneous entry for transactions in corporate bonds, the following applies with regard to the calculation of a reference price and the occurrence of a significant deviation of the price of the erroneous entry price from the reference price: The reference price will be calculated by at least three transactions occurring in the market on the same trading day directly before or after the timeframe of the erroneous entry. The average of the prices of such transactions shall be the reference price. If less than three transactions exist, the Management Board may determine three competent participants not being involved in the transaction or determine such reference prices on basis of sources such as Bloomberg ALLQ. From the respective average of the bid and ask prices, an average shall be calculated serving as reference price. Two basis points (0.02 % of the profits) shall be added to respectively subtracted from the reference price. The deviation will be regarded as significant if the price of the erroneous trade lies outside the price range thus determined.

4. In case of an erroneous entry for transactions in break-even instruments, the reference price may – in addition to the procedure described in Paragraph 6 – be determined by the Bloomberg function ‘YAS’, if no other transactions are available as reference

price or if other market participants cannot transfer usable reference prices. An average value shall be determined on basis of the indicated “Yield Spread”; afterwards, the value from the chart in the Annex to Chapter III shall be added to or subtracted from such average value. If the price of the respective transaction is outside this spread, it is deemed to be deviating significantly from the reference price.

5. Eurex Bonds will waive the determination of a reference price if all the parties involved in a transaction approve the cancellation of the transaction in question.

§ 15 Consummation of Transactions and Clearing

(1) Transactions on Eurex Bonds may only be effected between Eurex Clearing AG and a credit institution holding a Clearing License. If a Market Participant is not itself authorized to participate in the clearing procedure (a ”Non-Clearing Member”), it may only effect transactions through the General Clearing Member or the affiliated Direct Clearing Member that performs the clearing of its transactions on Eurex Bonds.

(2) If an order or quote entered into the system by a Non-Clearing Member is matched with another order or quote a transaction is effected between such Non-Clearing Member and the General Clearing Member or the affiliated Direct Clearing Member, and a corresponding transaction is simultaneously effected between such General Clearing Member or the affiliated Direct Clearing Member and Eurex Clearing AG.

(3) A basis transaction consists of a transaction in bonds and a future transaction according to section 1.4 of the Annex. Both transactions will be concluded according to the foregoing paragraphs (1) and (2).

(4) Each fixed-interest bonds transaction on Eurex Bonds (section 1.1 paragraph 2, section 1.2, section 1.3, and section 1.5 of the Annex) shall be processed on the third working day following the trading day, each zero-coupon bonds transaction on Eurex Bonds (section 1.1 paragraph 3 of the Annex) shall be processed on the second working day following the trading day.

(5) Each transaction concluded on Eurex Bonds will be processed, collateralized and cleared in accordance with the Clearing Conditions of Eurex Clearing AG. This also applies to transactions which arise from a basis transaction in accordance with paragraph (3).

(6) In order to ensure an orderly settlement and clearing, the Management Board may agree to Eurex Clearing AG entering orders into the system. If such orders permitted by the Management Board are matched with orders or quotes by Market Participants, transactions are concluded between Eurex Clearing AG and – if such Market Participants have a clearing authorization – such Market Participants or – if the Market Participants do not have a clearing authorization – their respective Clearing Member.

§ 16 Exclusion from Trading due to Default

(1) If a Market Participant of Eurex Bonds is excluded according to paragraph 3.12.4.1 or 3.12.4.2 of the Exchange Rules for Eurex Deutschland and Eurex Zürich from trading at Eurex, the authority to trade on Eurex Bonds will automatically be terminated instantly by the Board of Management. In this case, an authorization automatically granted to the Market Participant for its affiliated company shall be omitted pursuant to Section 4 paragraph 2.

(2) If the enterprise that has been excluded is a “General Clearing Member” of Eurex Clearing AG, all “Non-Clearing Members” associated with this “General Clearing Member” will also be excluded from trading at Eurex Bonds.

(3) During the duration of its exclusion, a suspended Market Participant may, under the supervision of the Boards of Management of the Eurex Exchanges, close or transfer its positions. If a “Non-Clearing Member“ is excluded from trading on Eurex Bonds, the “General Clearing Member“ or the “Direct Clearing Member” may request of the Eurex Clearing AG that the positions of such “Non-Clearing Member“ be closed. If a “General Clearing Member“ is excluded from trading on Eurex Bonds pursuant to the provisions of paragraph 1, the “Non-Clearing Members“ for which such “General Clearing Member“ acts shall only be excluded from trading according to paragraph 2 on Eurex Bonds until they are able to engage in trading at Eurex Bonds through another “General Clearing Member“. The

right to revoke the admission to trading on Eurex Bonds shall remain unaffected.

§ 17 Suspension of Trading

(1) The Board of Management may suspend all trading or trading in one or more instruments if this is required by market conditions. The Board of Management may cancel the suspension of trading if the reasons which gave rise to the suspension no longer exist. If trading in an instrument has been suspended for more than six months, it will automatically be excluded from trading at the earliest possible date.

(2) The Board of Management's decision concerning the suspension of an instrument will be made after the end of the trading period and all Market Participants will be informed by electronic means thereof before the commencement of the next trading day.

(3) In exceptional and emergency circumstances, the Board of Management is authorized to suspend a traded security from trading with immediate effect if it appears that orderly trading in the security is at risk. All Market Participants will be informed thereof via the system.

§ 18 Market Surveillance

(1) Eurex Bonds will monitor the functionality of the system during the trading periods and compliance with all the provisions of these Terms and Conditions. The Board of Management may apply all measures that are necessary to ensure orderly trading and the smooth functioning of the system.

(2) To ensure orderly system operation, the Board of Management may order that the commencement of trading for the entire system be postponed or that a trading period may be extended beyond its scheduled duration.

(3) In the case of technical problems, the Board of Management may suspend or limit access to the system or trading in the system for individual or all Market Participants, irrespective of whether the technical problems occur with the Market Participant itself or with one, several or all Market Participants. If trading in the system is suspended, the Board of

Management may delete all orders and/or quotes entered into the order-book.

(4) In case of a suspension of the technical access for all Market Participants, no further entries in the system can be made (halt status). After a halt status, trading shall be continued according to these Terms and Conditions. The Management Board shall immediately inform the Market Participants with regard to the chronological order of the trading periods.

(5) In case of a breakdown of the Participant Trading System or a partial breakdown of the system, the Management Board may, upon request of the Market Participant, make entries on its behalf (trading on behalf). In this case, the Management Board verifies legitimation for the entry by means of the communicated participant ID.

(6) The “heartbeat” facility is software provided upon request to the Market Participant, which allows the permanent monitoring of the connection between a facility of the Market Participant (Quote Machine) and the system by means of a clock pulse. If the clock pulse is not received within a period bindingly determined in advance, all quotes of the previously defined user group of the company shall automatically be deleted. The quotes are deleted even in case the system fall-over mechanism reconstructs a connection. During the trading periods in which a deletion of orders is not possible, the orders are deleted in the next trading period. In case of technical problems or an impairment of the system, in particular in case the capacity of the heartbeat facility is exceeded, the Management Board may interrupt the provision of such facility for individual or all users. In this case, an automated deletion of quotes of the users affected by such interruption does not take place.

(7) The companies shall immediately inform the Management Board via phone if the entry or receipt of data is impeded in whole or in part by a breakdown of their operation or by instruction of higher authority. A breakdown of the telephone system or another failure which prevents communication via telephone shall immediately be communicated to the Management Board by the Market Participant.

(8) In the event of the application of measures significantly influencing the operation of the system, the Market Participants affected will be notified as far as possible without delay through the system or, in the case of system failure, by another appropriate electronic means. In case of a suspension

of trading in accordance with paragraph 3, this shall also apply to such point in time at which trading is to recommence. In case of technical problems of the system, the Market Participants are obligated to grant the Management Board and/or third parties commissioned by it access to their locations in which participant trading systems are installed in order to repair the problem. The Market Participants are obligated to read up on technical requirements and modifications by means of the media provided by the Management Board.

(9) If individual Market Participants are unable to participate in trading on Eurex Bonds due to technical disruptions, the system will remain available to other Market Participants.

(10) The Board of Management may completely discontinue Eurex Bonds trading at any time.

§ 19 Measures in the Event of a Breach of Obligations by Market Participants

(1) The Board of Management is entitled, depending on the gravity of the breach of obligations and after issuing a written warning, to restrict, suspend or cancel the authority to participate on Eurex Bonds of Market Participants who fail to comply with their obligations under these terms and conditions or, intentionally or negligently, place orderly trading in the securities traded on Eurex Bonds at risk. In cases of grave breaches, in particular those placing orderly trading on Eurex Bonds at risk, the Board of Management is entitled to take any of the actions mentioned above without prior warning.

(2) Notwithstanding the provisions of paragraph 1, the Board of Management may suspend the authorization to participate on Eurex Bonds if there is a substantial suspicion that a Market Participant is suffering a significant deterioration in its financial situation, as a result of which the fulfillment of transactions on Eurex Bonds, or the obligations of the Market Participant under these terms and conditions, seem in doubt.

(3) The Board of Management will inform the Market Participant concerned, in writing, of a possible breach pursuant to paragraph 1, and of the nature of such breach, while simultaneously requesting the Market Participant to respond thereto.

(4) The Market Participant is obliged, within 10 trading days, to respond to the allegations made.

(5) The Board of Management shall adopt a decision pursuant to paragraph 1 on the basis of a majority vote. A representative of the Market Participant concerned shall not have the right to cast a vote.

In addition, the Board of Management reserves the right to introduce transaction limits and fees for the breaching of transaction limits if this appears necessary for the purpose of ensuring orderly market conditions.

IV. Part: Final Provisions

§ 20 Board of Management Decisions and Notices

(1) The Board of Management may at any time transfer the decisions vested in it under these terms and conditions to designated third persons within Eurex Bonds GmbH.

(2) Unless otherwise determined, notices of the Board of Management will be distributed via circular to be sent by e-mail to the market participants.

§ 21 Data Protection

(1) In order to fulfill the duty to monitor the correctness of trading and settlement, Eurex Bonds records incoming and outgoing telephone calls on the telephone lines communicated via circular. The recordings shall at the latest be deleted after expiration of 10 years.

(2) Data collected pursuant to Clause 1, whose non-disclosure is within the interests of the Market Participants or a third party – in particular personnel data as well as operational and business secrets – shall only be used for the purpose named in Paragraph 1 and only if the clarification of facts relevant therefore cannot or not reasonably be retrieved by other means of conclusion or evidence. In the cases of Clause 1, collected data may be disclosed to the authorities indicated in § 8 Paragraph 1 Clause 3 Securities Trading Act to the extent the fulfillment of these authorities' duties requires knowledge of such data.

(3) Eurex Bonds shall use the descriptive indication of the company name of the Market Participant within the internet presence and participant presentation of Eurex Bonds as well as in according press releases by Eurex Bonds.

(4) The Market Participant agrees that any data and information relating to the Market Participant and arising within the scope of these Terms and Conditions may be passed on to the group companies of Deutsche Börse Group, www.deutsche-boerse.com, in particular for purposes of information and analysis with the intention of improving the product portfolio, as well as for advertising.

§ 22 Governing Law and Place of Jurisdiction

(1) These terms and conditions shall be solely governed by German law.

(2) The legal venue for all disputes arising in connection with these terms and conditions shall be Frankfurt am Main.

V. Annex to the Terms and Conditions for Participation and Trading on Eurex Bonds

The following line-up describes the products tradable at Eurex Bonds and its segmentation and supplements the General Rules for trading in fixed-interest and zero-coupon bonds as well as for basis trading.

1. Products and Segmentation

1.1. German Government Bonds

(1) Upon determination of the Board of Management, fixed-interest and zero-coupon German government bonds as specified under this provision are admitted to trading on Eurex Bonds.

(2) An admission to trading on Eurex Bonds is given for such fixed interest government bonds which satisfy the following criteria:

- fixed interest securities
- Outstanding volume of at least EUR 4 billion or USD 4 billion, or
- Inflation-linked bonds with an outstanding volume of at least EUR 1 billion or USD 1 billion.

The Board of Management shall divide into different groups such fixed-interest German government bonds with a residual maturity between one and thirty-five (35) years for which market making will be carried out by Market Makers. The division into groups of the individual securities is made depending on the residual maturity of the particular securities and deliverability as regards the capital market products Euro Bund, Euro Bobl, and Euro Schatz futures of Eurex Deutschland. Such fixed-interest government bonds which are deliverable to the next due date of the aforementioned futures contract are defined as “Benchmark Bonds” by default. All other German government bonds are defined as “Liquid Bonds”. Exceptions to this rule may be defined by the Board of Management. The calculation of the residual maturity of the securities and the allocation of the securities to their appropriate classes shall be carried out by the Board of Management at the end of every calendar month.

(3) Zero-coupon German government bonds shall be treated as an individual group and shall be tradable as a percentage of the nominal value or in yield terms to three decimal places. The Management Board of Eurex Bonds shall determine the method of price fixing. Only such zero-coupon German government bonds which satisfy the following criteria shall be admitted to trading on Eurex Bonds:

- Treasury Discount Papers (Bubills)
- Maturity of three to twelve months
- Outstanding volume of at least EUR 4 billion

The calculation of the residual maturity of the securities and the allocation of the securities to their appropriate classes shall be carried out by the Board of Management at the end of every calendar month.

1.2. Bonds of Supranational Institutions and Bonds of State Agencies (Agencies)

(1) Upon determination of the Board of Management and as specified under this provision, Bonds of supranational institutions of the European Union (e.g. European Investment Bank) and Bonds of state agencies of Member States of the European Union (e.g. Reconstruction Loan Corporation or NRW.Bank), all such Bonds being denominated in EUR or in other currencies, are admitted to trading on Eurex Bonds. In order to be admitted to trading on Eurex Bonds, such Bonds must satisfy the following criteria:

- fixed-interest securities
- minimum outstanding volume of EUR 500 million . In the case of a trading currency other than EUR, the required outstanding volume shall be determined for the respective trading currency and announced by the Management Board of Eurex Bonds.
- minimum rating of AA- by Standard&Poor's or of Aa3 by Moody's or according rating by Fitch

(2) The calculation of the residual maturity of the securities and the allocation of the securities to their appropriate maturity classes through the Board of Management takes place at the end of every calendar month.

1.3. Bonds of the States within the Federal Republic of Germany (State Bonds)

(1) Upon determination of the Board of Management and as specified under this provision, Bonds of the States within the Federal Republic of Germany (State Bonds), all such Bonds being denominated in EUR, are admitted to trading on Eurex Bonds. In order to be admitted to trading on Eurex Bonds, such Bonds must satisfy the following criteria:

- fixed-interest securities
- minimum outstanding volume of EUR 500 million

(2) The calculation of the residual maturity of the securities and the allocation of the securities to their appropriate maturity classes through the Board of Management takes place at the end of every calendar month.

1.4. Covered Bonds of Mortgage Banks and Credit Institutions under Public Law (Pfandbriefe – Mortgage Bonds)

(1) Upon determination of the Board of Management and as specified under this provision, selected Bonds of mortgage banks or of credit institutions (Mortgage Bonds), all such Bonds being denominated in EUR or in other currencies, are admitted to trading at Eurex Bonds. In order to be admitted to trading at Eurex Bonds, such Bonds must satisfy the following criteria:

- fixed-interest securities
- minimum outstanding volume of EUR 500 million. In the case of a trading currency other than EUR, the required outstanding volume shall be determined for the respective trading currency and announced by the Management Board of Eurex Bonds.
- minimum rating of AA- by Standard&Poor's or of Aa3 by Moody's or of an according rating by Fitch

(2) The calculation of the residual maturity of the securities and the allocation of the securities to their appropriate maturity classes through the Board of Management takes place at the end of every calendar month.

1.5. Basis Instruments

(1) In addition to the Bonds mentioned above the basis instruments specified in paragraph 2 are also admitted through the Board of management to Eurex Bonds trading. The basis instruments listed below according to paragraph 2 comprise a combination of securities and futures contracts that have a common price ("basis"). The purchase of basis instruments means the purchase of a certain quantity of securities and the simultaneous sale of the corresponding quantity of futures contracts. Conversely, the sale of basis instruments means the sale of a certain quantity of securities and the simultaneous purchase of the corresponding quantity of futures contracts.

(2) The following basis instruments are admitted to trading on Eurex Bonds;

- The combination of German government bonds with a residual maturity ≥ 1.75 years and ≤ 2.25 years and the current Euro Schatz Futures Contract (FGBS)
- The combination of German government bonds with a residual maturity ≥ 4.5 years and ≤ 5.5 years and the current Euro Bobl Futures Contract (FGBM)
- The combination of German government bonds with a residual maturity ≥ 8.5 years and ≤ 10.5 years and the current Euro Bund Futures Contract (FGBL).
- The combination of German government bonds, which are not deliverable components of the baskets of the respective Euro Bund Futures, Euro Bobl Futures and Euro Schatz Futures Contracts, with a tradable Future-Contract at Eurex Deutschland. The Board of Management shall decide on the number of bonds and the respective futures-contracts that form the said combinations.
- The combination of Italian government bonds with a residual maturity ≥ 8.5 years and ≤ 11 years and the current Euro BTP Futures Contract (FBTP).

(3) Basis instruments at Eurex Bonds are divided into deliverable (paragraph 2: a, b and c) and non-deliverable (paragraph 2: d) basis instruments. The calculation of the residual maturity of the securities and the allocation of the securities to their appropriate classes shall be carried out by the Board of Management at the end of every calendar month.

(4) One trading day before the last trading day of the expiration month of the current Euro-Bund-, Euro-Bobl, Euro-Schatz and Euro-BTP-Futures Contracts on Eurex Deutschland, trading in the basis product for the subsequent expiration month of the aforementioned future contracts becomes available on Eurex Bonds.

(5) The last trading day for a basis instrument on Eurex Bonds is the trading day before the last trading day for the corresponding futures contract on Eurex Deutschland.

(6) Possible changes to the combinations admitted for basis trading will be defined and determined by the Board of Management and will be noticed to the market participants.

1.6. European Covered bonds

(1) Upon determination of the Board of Management and as specified under this provision, European Covered Bonds, all such Bonds being denominated in EUR or in other currencies, are admitted to trading on Eurex Bonds. In order to be admitted to trading on Eurex Bonds, such Bonds must satisfy the following criteria:

- fixed-interest securities
- Outstanding volume of at least EUR 500 million. In the case of a trading currency other than EUR, the required outstanding volume shall be determined for the respective trading currency and announced by the Management Board of Eurex Bonds.
- minimum rating of either AA- by Standard&Poor's or Aa3 by Moody's an according rating by Fitch

(2) The calculation of the residual maturity of the securities and the allocation of the securities to their appropriate maturity classes shall be carried out by the Board of Management at the end of every calendar month.

1.7. Corporate bonds

(1) Upon determination of the Board of Management and as specified under this provision, Corporate bonds, all such Bonds being denominated in EUR or in other currencies and issued within the EU, are admitted to

trading on Eurex Bonds. In order to be admitted to trading on Eurex Bonds, such Bonds must satisfy the following criteria:

- fixed-interest securities
- Outstanding volume of at least EUR 500 million. In the case of a trading currency other than EUR, the required outstanding volume shall be determined for the respective trading currency and announced by the Management Board of Eurex Bonds.
- "Investment Grade Rating" by Standard&Poor's, Moody's and Fitch

(2) The calculation of the residual maturity of the securities specified in paragraph 1 and the allocation of the securities specified in paragraph 1 to their appropriate maturity classes shall be carried out by the Board of Management at the end of every calendar month.

(3) SLIMBOS (Short Liquid Money Market Bonds) are issues ("Inhaberschuldverschreibungen") of private Banks and state Banks covering the short maturity range up to two years. They may be covered by mortages but they do not have to be. In order to be admitted to trading on Eurex Bonds, such Bonds must satisfy the following criteria:

- fixed-interest securities
- minimum outstanding volume of EUR one half billion
- minimum rating of AA- by Standard&Poor's or of Aa3 by Moody's.
- Maturity of two years as a maximum.

(4) The calculation of the residual maturity of the securities specified in paragraph 3 and the allocation of the securities specified in paragraph 3 to their appropriate maturity classes through the Board of Management takes place at the end of every calendar month.

1.8. European Government Bonds

(1) Upon determination of the Board of Management and as specified under these provisions, selected fixed-interest and interest-free Bonds (Debt Securities) of Member States of the European Union, all such Bonds being denominated in EUR or in other currencies, are admitted to trading at Eurex Bonds. In order to be admitted to trading at Eurex Bonds, such Government Bonds must satisfy the following criteria:

- Securities with fixed coupons (except with interest-free bonds)

- Outstanding volume of at least EUR 1 billion. In the case of a trading currency other than EUR, the required outstanding volume shall be determined for the respective trading currency and announced by the Management Board of Eurex Bonds.
- "Investment Grade Rating" of Standard & Poor's, Moody's or Fitch
- Admission for delivery versus payment between Clearstream Banking Luxembourg and Euroclear Banking Brussels

(2) The calculation of the residual maturity of the securities named in paragraph 1 and the allocation of the securities named in paragraph 1 to their appropriate maturity classes through the Board of Management takes place at the end of every calendar month.

1.9. Spread Products

(1) Upon determination of the Management Board and as specified under these provisions, selected spread products being denominated in EUR are admitted to trading at Eurex Bonds. The spread instruments listed below according to Paragraph 2 comprise a combination of two securities, which has a price determined by the spread of the respective yield of each of the two bonds or the spread between the yield of a bond and another benchmark like the "Libor" or "Euribor".

(2) The following spread instrument is admitted to trading on Eurex Bonds:

- Break-Even Instruments

From a financial point of view, break-even instruments are a combination of trades between an inflation-linked bond and a nominal bond. The purchase of break-even instruments means the purchase of an inflation-linked bond and the simultaneous sale of a nominal bond. Thereby, the volume of the break-even transaction corresponds to the trading volume of the inflation-linked bond. The trade volume of the nominal bond shall be defined by the ratio of the two 'basis point values'. The ratio of the basis point values (PVO1 inflation-based: PVO1 nominal bond = ratio of two trading volumes) determines the trade volume of the nominal bond. After calculation, the amount of the nominal bond will be rounded to the nearest million. (If the smallest tradable unit in break-even instruments of one million is admitted, the volume of the traded nominal bond shall be rounded up to EUR 100,000.)

2. Trading Parameters

	Minimum Trading Size (continuous trading) EUR or other trading currency	Minimum Trading Size (Pre-arranged Trade) EUR or other trading currency
German Government Bonds	1 mn	1 mn
Agencies	1 mn	1 mn
Mortgage Bonds/State Bonds	1 mn	1 mn
Covered Bonds	1 mn	1 mn
Basis Instruments	5 mn	1 mn
Non French Treasury Discount Papers	1 mn	1 mn
French Treasury Discount Papers[1]	1 mn	0.5 mn
Corporate bonds	0.5 mn	0.5 mn
SLIMBOS	0.5 mn	1 mn
European Government	1 mn	1mn

	Minimum Trading Size (continuous trading) EUR or other trading currency	Minimum Trading Size (Pre-arranged Trade) EUR or other trading currency
Bonds except France		
French Government Bonds[1]	2 mn	0.5 mn
Break-Even Instruments	5 mn	5 mn

[1] Larger Orders or quotes must be a multiple of 0.5 million Euros. Surplus volumes smaller than the minimum order- or quote sizes in the order book are tradable by entry of regular orders or quotes.

3. Erroneous Entries (in Euro or in another trading currency)

3.1. Erroneous Entries for Non Government Bonds

Maturity in years	Agencies	Covered & State Bonds, SLIMBOS	Basis Instru-ments	Break-Even Instru-ments	Corporate & Financials
< 1	0.10	0.14	n.a.	25 bp	5 bp
≥ 1 - < 3.5	0.10	0.14	0.10	25 bp	5 bp
≥ 3.5 - < 6.5	0.14	0.20	0.10	25 bp	10 bp
≥ 6.5 - < 13.5	0.20	0.30	0.10	25 bp	15bp
≥ 13.5 - < 25	0.50	0.50	n.a.	25 bp	25 bp
≥ 25	0.80	0.80	n.a.	25 bp	25 bp

3.2. Trade cancellation example for Government Bonds

BUNDOBL 24.02.2017 0.75% S162

The following best bid/offer prices were in the order book –
98.20 / 99.65

The seller aggresses the bid price at 98.20 and then reports it as an error trade (being an error sale).

Following a poll of five market participants, the five quotes are as follows:

99.60 / 99.75
99.50 / 99.65
99.90 / 99.50
99.25 / 99.30
99.10 / 99.20

The high/low bid and high/low offer are thrown out which leaves the following:

99.60 / 99.75
99.50 / 99.65
99.25 / 99.30

The average bid and the average offer rounded to the third decimal is therefore:

99.45 / 99.567

and the average bid/offer spread is 0.117.

The following bid/offer limits are obtained by appling the 50% deviation margin to the average bid/offer spread (0.117) and rounding to the third decimal:

99.392 / 99.626

The sale executed at 98.20 will be cancelled as the low parameter is 99.392 i.e. all sales < 99.392 may be cancelled should that be requested by the seller in the present example.

4. Basis Trading

The components and calculation of a basis transaction (Cash Bond Leg and Futures Leg) are explained in the following.

4.1. The Cash Bond Leg

The nominal volume of the security is equivalent to the nominal volume of the basis:

(1) $s_b = s$

where

s_b - nominal volume of the security

s - nominal volume of the basis

The "clean price" for the security is calculated as follows:

(2) $p_b^{clean} = p + p_f * c_{b;f}$

where

p_b^{clean} - clean price, carried out to five decimal places

p - basis price of the transaction

p_f - last futures price traded, set immediately prior to the execution of the basis transaction (to be found on the Eurex @X-ceed Online Time and Sales Sheet window),

$c_{b;f}$ - price factor of the bond

deliverable Bonds: to be found on the Eurex Clearing Front End on the "Deliverable Bonds Overview" screen

non-deliverable Bonds: price factor will be deviated out of the "hedge ratio2 and will be fixed by Eurex Bonds

The settlement price ("dirty price") of the security also includes accrued interest:

(3) $$p_b^{dirty} = p_b^{clean} + i_b^{acc}$$

where

p_b^{dirty} - dirty price, carried out to five decimal places

i_b^{acc} - accrued interest (ACT/ACT) up until the settlement date (t+3)

4.2. The Futures Leg

The price of the futures will be defined as the last futures price traded immediately prior to the basis transaction. This is the same price used for calculating the cash leg price (formula (2).

The number of futures contracts generated per "minimum trading size" of the basis transaction (the hedge ratio) is daily calculated after end of business with two decimal places, whereas the amount of the Future contracts will be rounded mathematical. Changes of the hedge ratio or the conversion factors will be communicated to the market participants.

The hedge ratio is calculated by the system as follows:

(4) $$h_{b;f} = gerun\left(\frac{d_b^{mod} * p_b^{dirty} * c_{CTD;f} * s_{BL}}{d_{CTD}^{mod} * p_{CTD}^{dirty} * n_f}\right)$$

where

$h_{b;f}$ - hedge ratio – number of futures per "minimum trading size"

d_b^{mod} - modified duration of the securities,

d_{CTD}^{mod} - modified duration of the CTD,

p_b^{dirty} - dirty price of the security

P_{CTD}^{dirty} - dirty price of the CTD

$c_{CTD:f}$ - price factor of the CTD,

n_f - contract value of the futures (= 0.1 mill.),

s_{RL} - “minimum trading sizes” of the basis transaction (= 1 mill.)

The dirty price of the security/the CTD required for calculating the hedge ratio is determined by Eurex Bonds using the last price of the basis of the relevant security traded on the preceding trading day, the settlement price of the corresponding futures and the relation represented in formulas (2) and (3). If the last traded price of the basis does not correspond to the current market conditions, Eurex Bonds may instead use the last quote in the basis quote book for determining the basis or determine that the last traded or quoted price of the security be the final price instead.

The number of futures contracts are thus calculated as follows:

(5) $s_f = \frac{s_b}{s_{RL}} * h_{b:f}$

where

s_f - number of futures per basis transaction,

s_b - nominal volume of the security,

s_{RL} - “minimum trading size” of the basis transaction (= 1 mill.),

$h_{b:f}$ - hedge ratio – number of futures per “round lot size” (as calculated using formula (4))

For calculating the hedge ratio the “modified duration” is used as an estimate of the price sensitivity of the security and the future leg. The “modified duration” of the actual future contract corresponds to the “modified duration” of the CTD. Assuming a uniform repo rate for all German government bonds, the “cheapest-to-deliver” (CTD) of the relevant interest rate futures contract is the bond within the delivery basket, which has the highest implicit repo rate or the lowest net basis. The CTD in Eurex Bonds system correlates to the CTD of the corresponding Eurex interest rate futures contract. This information appears daily on the Eurex K055 screen and the Eurex Bonds web-site.

The “modified duration” is calculated as follows:

(6)
$$d_b^{mod} = \frac{\frac{n*N}{(1+r_b)^n} + \sum_{t=1}^{n} \frac{t*C}{(1+r_b)^t}}{\frac{N}{(1+r_b)^n} + \sum_{t=1}^{n} \frac{C}{(1+r_b)^t}} * \frac{1}{1+r_b}$$

where

n - number of full coupon payments until the security's maturity date,

N - repurchase value of the security in %,

C - annual coupon of the security in %,

r_b - current yield of the security (as calculated using formula (7)).

The exact cash flow of the security is calculated from the security's key data. The cash flow serves to calculate the yield of the security, which is defined as follows:

(7) $$r_b = f\left(N, C, n, p_b^{dirty}\right)$$

where N, C, n, p_b^{dirty} are defined as above.

The yield is calculated using an iteration algorithm (Newton approach).

The calculation of the modified duration of the CTD is performed using the same procedure as illustrated above for the security.

4.3. Treasury Discount Papers denominated in Yield Term Trading

For the calculation of the price for Treasury Discount Papers, the "true money market" yield calculation method specified below is used:

$$p = \frac{R}{\left(1 + \frac{yL}{36000}\right)}$$ and, inverted, we have $$y = \frac{36000}{L}\left(\frac{R}{p} - 1\right).$$

where p = price

R = redemption value in % (100 for full redemption)

y = yield in %

L = calendar days given by: (maturity date – settlement date)