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Recipients: Traders, Technical Contacts, Nominated Persons, General

30 September 2013

Amendments to Exchange Rules for the Frankfurt Stock Exchange regarding flagging of algorithms and order-to-trade ratios

Dear Sir or Madam,

On 27 September 2013, the Exchange Council of Frankfurter Wertpapierbörse (FWB[®], the Frankfurt Stock Exchange) approved 1) the new § 72 a and 2) the new § 72 b of the Exchange Rules for the Frankfurter Wertpapierbörse (hereafter: Exchange Rules) on 1) identification of algorithmic orders and of trading algorithms (algo-flagging) and 2) the order-to-trade ratio (OTR). The Amendment Ordinance to the Exchange Rules is attached to this circular. The adoption of § 72 a and § 72 b results from the amendments of the German Stock Exchange Act which were introduced by the German High Frequency Trading Act (HFT-Act) and came into force on 15 May 2013. This circular aims to provide you with additional information on both elements.

1) Algo-flagging

Direct trading participants are obliged to apply the rules regarding algo-flagging as of 1 April 2014. This means that the Trading Participants must flag orders and binding quotes generated by them through algorithmic trading and identify the trading algorithms used. This obligation also includes orders by Trading Members on the basis of client orders only in the case where orders received by clients are modified by own trading algorithms and then entered into the EDP System of Frankfurt Stock Exchange. In § 72 a para. 2 it is specified how to identify orders and firm quotes generated through algorithmic trading and of trading algorithms.

- a) Flagging of orders or quotes generated through algorithmic trading within the meaning of section 33 para. 1a sentence 1 of the German Securities Trading Act (“Wertpapierhandelsgesetz”, WpHG) and the identification of the algo-

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rithms must be comprehensible, definite and consistent. The identification of an algorithm must be clear without ambiguity and the identification key must remain unchanged during the lifetime of a respective algorithm until at least one of its characteristics was changed in a way that it constitutes a new trading behaviour. All algorithms must be identified with a single unambiguous key.

- b) The provision further requires that orders or quotes generated, modified or deleted via algorithms and the identification of the trading algorithms must be flagged. This flagging must be made utilizing the appropriate input options of the EDP System of Frankfurt Stock Exchange. In order to adhere to this requirement, the flagging of the orders or quotes generated and the identification of the trading algorithms used in each case must be made using the field regulatoryId that will be provided with Xetra Release 14.0 on 28 October 2013 and has been already available in simulation since 26 August 2013. Please note that the 4-byte field regulatoryId of type signed integer (as outlined in the Xetra Release 14.0 functional documents published on 15 July 2013 “VALUES API Member Front End Development Guide. Volume 5 - Xetra Application Requests and Subscriptions”, nr. 7.350 and “Enhanced Transaction Solution Specification”, nr. 4.154) differs slightly from Eurex's 4-byte numeric field as that one is of type unsigned integer.

The Exchange Supervisory Authority of the State of Hesse indicated that it will provide at the latest by mid-October 2013 Members with guidance to interpretation of the requirements of the German Stock Exchange Act and the Exchange Rules regarding flagging of algorithms. This information will be published on its website under the link:

<https://wirtschaft.hessen.de/wirtschaft/boerse/boersenrecht>

Based on this definition, the Management Board of Frankfurt Stock Exchange determines that these trading algorithms must be identified by marking the complete automated decision-making process by which the entry of orders or quotes into the EDP-System of Frankfurt Stock Exchange or the modification or deletion of such orders or quotes was effected. It is the responsibility of the direct trading participant when entering orders or quotes in the EDP-System or, modifying or deleting orders or quotes in the EDP-System to flag such orders and quotes accordingly. On the Xetra website www.xetra.com, examples of how such codification of the entire automated decision-making process can be performed by the direct exchange participant will be provided at the latest by mid-October 2013. Please see under the following link:

[Trading & clearing > Trading > Xetra > High-frequency trading](#)

2) Order-to-trade ratio (OTR)

As announced in Xetra circular 045/13, technical implementation for OTR will be finalized by the fourth quarter 2013. The OTR will come into force on 1 December 2013.

a) The OTR concept

The OTR is calculated on a per Member, per market and per security basis by dividing the ordered volume (“numerator”) by a limit (“denominator”). An OTR less than or equal to 1 is appropriate.

In the **numerator**, the number of shares (unit-based securities) respectively nominal values (nominal-based securities) of all binding orders and quotes (entries, modifications and deletions) are accumulated. A modification is considered as deletion of the previous volume and entry of the new volume. TOP and TOP+ orders as well as indicative quotes are excluded from the calculation. The **denominator** contains the limit. It comprises a volume component and a floor. The volume component is comprised of executed shares respectively nominal values multiplied by a volume factor. The floor is a pre-determined figure. It is allocated to all Members, even if the Member has no executed trades in the respective calendar month.

The parameters “volume factor” and “floor” per OTR instrument group are included in the Exchange Rules (see eighth amendment ordinance to the Exchange Rules which is attached to this circular).

The OTRs will be calculated on a daily basis, per Member, per market and per security by dividing the ordered volume by the limit. Provided values are calculated as month-to-date figures. The evaluation of the Member’s OTRs will take place at the end of the respective calendar month. In the event of a violation (i.e. $OTR > 1$), sanctions proceedings may be initiated. At the beginning of a calendar month, all counters are set to zero.

Please refer to the attachment for a description of the calculation model and an example.

b) Parameters and OTR instrument groups

Please find the parameters and the OTR instrument groups on the Xetra website www.xetra.com under the following link:

[Trading & clearing > Trading > Xetra > Trading parameters & tick size](#)

c) OTR reporting

Trading Members will receive a daily report. It shows OTRs and underlying information about all securities traded. The report “TL100 OTR Report” is available on the Common Report Engine and MISS servers in XML and TXT format.

d) Schedule

A two-month trial phase is provided to all members, ending on 30 November 2013. During this phase, Frankfurt Stock Exchange Members have the opportunity to make any necessary adjustments to their trading activity, in order to remain within the given limits of the OTR. During this phase no sanctions will be imposed. Reports are available as of:

- 1 October 2013: 2-month testing phase
- 1 December 2013: OTR provision effective

Trading participants are reminded that in case of violation of § 72 a and §72 b of the Exchange Rules, the Disciplinary Committee of Frankfurt Stock Exchange will be called to decide if measures according to § 22 of the German Stock Exchange Act (“Börsengesetz”, BörsG) should be taken.

Deutsche Börse has already provided information on various aspects of the HFT Act. The relevant information on order-to-trade ratios can be retrieved from previous Xetra circulars:

No. 073/13 Further Information on Implementation of single Elements of the German High Frequency Trading Act (HFT)

Nr. 034/13 HFT Bill: Information on Order/Trade Ratio, Excessive System Usage Fees and flagging of Trade Algorithms

Further information on the German High Frequency Trading Act has been published on the Xetra website www.xetra.com under the following link:

[Trading & clearing > Trading > Xetra > High-frequency trading](#)

If you have any questions, please do not hesitate to contact us.

Yours faithfully,



Martin Reck



Michael Krogmann

Attachments

Eighth Amendment Ordinance to the Exchange Rules for the Frankfurter Wertpapierbörse
OTR calculation method

**Eighth Amendment Ordinance
to the Exchange Rules for the Frankfurter Wertpapierbörse (FWB)**

On 27 September 2013, the Exchange Council of the Frankfurter Wertpapierbörse decided on the following Amendment Ordinance:

Article 1 Amendment to the Exchange Rules for the Frankfurter Wertpapierbörse in the version dated 28 March 2011, last amended by the Amendment Ordinance dated 14 June 2013

The Exchange Rules for the Frankfurter Wertpapierbörse in the version dated 28 March 2011, last amended by the Amendment Ordinance dated 14 June 2013, will be amended as follows:

MODIFICATIONS ARE MARKED AS FOLLOWS:

INSERTIONS ARE UNDERLINED

DELETIONS ARE CROSSED OUT

Exchange Rules for the Frankfurter Wertpapierbörse (FWB)

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Annex to § 3 Paragraph 1

Annex to § 19

Annex to § 72 b

Section VII Securities Transactions

[...]

Sub-section 2 Entry of Orders

[...]

§ 72 a Identification of algorithmic orders and of trading algorithms

- (1) Exchange Participants are obligated to mark the orders and firm quotes generated through algorithmic trading within the meaning of § 33 Paragraph 1a Clause 1 of the Securities Trading Act or to identify the trading algorithms used in each case. This shall also apply in the event that the Exchange Participant directly trades at the FWB or that orders are being transmitted to the FWB by an other Exchange Participant via an Order Routing System.
- (2) The orders or quotes must be marked when they are entered, modified and deleted into the Exchange-EDP of the FWB. The trading algorithms used in each case must be identified when orders or quotes resulting from the trading algorithms are entered into the Exchange-EDP of the FWB and when such orders or quotes are modified or deleted. The marking of the orders or quotes generated and the identification of the trading algorithms used in each case must be made using the appropriate input options of the Exchange-EDP of the FWB. The marking of the orders or quotes generated and the identification of the algorithms used in each case must be comprehensible, definite and consistent. Trading algorithms must be identified by setting out the complete automated decision-making process by which the entry of orders or quotes into the Exchange-EDP of the FWB or the modification or deletion of such orders or quotes was effected.
- (3) The Management Board may issue further provisions on the structure and format of the marks and identifications.

§ 72 b Order to Trade Ratio

- (1) Exchange Participants are obligated to ensure an adequate ratio between order- and binding-quote-entries, -modifications, and –deletions (order-entries) and contracts traded.
- (2) The Order to Trade Ratio is determined by dividing the volume of the order-entries of an admitted enterprise per marketplace pursuant to the Appendix to § 72 b per security within one calendar month by a limit as defined in Paragraph 4. The Order to Trade Ratio is adequate if it is less than or equal to 1 at the end of the last trading day of a calendar month.

- (3) Limit-Orders with the execution condition Top-of-the-Book (TOP) and TOP+ are not considered to determine the volume of the respective order-entry. The modification of an order or a quote is counted as a deletion of the previous and an entry of a new order or a new quote.
- (4) The limit is the sum of a volume component and a floor.
- a) The volume component is the volume of contracts traded by the admitted enterprise per marketplace pursuant to the Appendix to § 72 b, per security within one calendar month multiplied by the Volume Factor. The Volume Factor is a number specified per security pursuant to the Appendix to § 72 b.
- b) The Floor is a number specified per security pursuant to the Appendix to § 72 b. The Floor is available to an admitted enterprise independent of the number of traded contracts.
- (5) The Volume factor and the Floor can be increased for one or more securities by the Management Board under exceptional market conditions in order to adequately adjust the permissible Order to Trade Ratio to the respective exceptional market conditions. Exceptional market conditions can be characterized by rapid and significant changes in market activity, extraordinary volatility or rapid and significant interest rate fluctuations.

§ 73 Execution Conditions, Validity Specifications and Trading Restrictions

- (1) In Continuous Trading with Intra-Day Auctions:
1. Market Orders, Limit Orders and Market-to-Limit Orders may be entered during continuous trading 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”)
 2. Limit Orders may be entered during continuous trading subject to one of the following execution conditions, provided that such entry would not lead to an auction being started within a volatility interruption and that no execution condition pursuant to Number 1 has yet been entered:
 - entry of such order into the order book provided that such order cannot be immediately executed against any of the visible orders in the order book; otherwise deletion of order (book-or-cancel);
 - entry of such order into the order book provided that such order cannot be immediately executed against any of the visible orders in the order book and provided that such order has a better limit than the visible orders entered on the same side in the order book; otherwise deletion of the order (top-of-the-book).

- entry of such order into the order book provided that such order cannot be immediately executed against any of the visible orders in the order book and provided that the sum of the values of all orders entered on the same side in the order book with the same or a better limit is smaller than a maximum threshold determined by the Management Board; otherwise deletion of the order (TOP+).

Orders with execution condition book-or-cancel, top-of-the-book or TOP+ shall be deleted upon beginning of the call of an auction. This shall also apply provided that an auction is started within a volatility interruption.

- 2a. Market Orders and Limit Orders may be entered with the execution condition that buy orders shall be executed only upon reaching or exceeding a Strike Match Limit and that sell orders shall be executed only up to reaching or falling short of a Strike Match Limit (strike-match). The execution condition strike-match cannot be combined with an execution condition pursuant to Number 1. and 2.

3. all orders except ~~Iceberg Orders, as well as~~ the Market Order or Limit Order with the execution condition strike-match, may be entered subject to one of the following validity specifications:

- valid for the respective Exchange day ("Good-for-Day")
- valid until revoked, but no longer than 360 calendar days after entry ("good-till-cancelled")
- valid until the end of the specified period ("Good-till-Date")

Orders which are entered without validity specifications are only valid until the end of the respective Exchange day. Orders which have not or not completely been executed shall be deleted from the Trading System upon expiry of the last validity date. Binding Quotes, ~~Iceberg Orders~~ and Market Orders or Limit Orders with the execution condition strike-match are only valid for the Exchange Day for which they have been entered.

- (2) In Continuous Trading with Intra-Day Auctions and in the Auction, Limit Orders and Market Orders may be assigned to all auctions or a certain auction by making them subject to one of the following trading restrictions:

- Valid only for opening auction (Opening auction only)
- Valid only for closing auction (Closing auction only)
- Valid only for auctions (Auction only)
- Execution of order only in auctions during the main trading phase (Auctions in main trading phase only)
- Execution of order only during the main trading phase (Main trading phase only).

In the market compensation phase, a Market Order or Limit Order may be entered with the trading restriction that the overhang can be taken with this order (accept surplus). In deviation to Sentence 1 and Sentence 2, Market Orders and Limit Orders with the execution condition strike-match can only be entered with the trading restriction Closing auction only.

[...]

Sub-section 7 Special Provisions for the Trading of Structured Products in Continuous Auction

[...]

Section XI Final Provisions

[...]

§ 121 Transitional Provision

- (1) Securities which have been traded in floor trading until the effective date of these Exchange Rules for the FWB shall be traded in the electronic Trading System from the effective date of these Exchange Rules.
- (2) §§ 50, 51 shall apply for the first time to financial statements for the financial year which starts or has started after 31 December 2006. For financial statements the financial year for which started before 31 December 2006, §§ 62 and 63 of the Exchange Rules in the version dated 15 August 2007 shall apply, with the proviso that the Management Board assumes the functions of the Admissions Office.
- (3) The obligation of the Exchange Participants regarding the marking of orders and quotes generated through algorithmic trading and the identification of the trading algorithms used in each case under § 72 a apply as of 1 April 2014.
- (4) The obligation of the Exchange Participants regarding the Order to Trade Ratio under § 72 b apply as of 1 December 2013.

[...]

Annex to § 3 Paragraph 1

[...]

Annex to § 19

[...]

Annex to § 72 b

<u>Marketplace¹</u>	<u>Segment</u>	<u>Floor</u>	<u>Floor Liquidity providers²</u>	<u>Volume factor (dimensionless)</u>	
<u>Xetra (XETR)</u>	<u>DAX</u> <u>MDAX, SDAX, TecDAX</u> <u>Other German Shares</u>	<u>500</u>	<u>1.000</u>	<u>1</u>	
	<u>European Shares</u> <u>US Shares</u> <u>Other Shares</u>	<u>5.000</u>	<u>10.000</u>	<u>10</u>	
	<u>Exchange Traded Funds (ETF) & Exchange Traded Products (ETP)</u>	<u>50.000</u>	<u>100.000</u>	<u>100</u>	
	<u>Bonds (nominal)</u>	<u>5.000.000</u>	<u>10.000.000</u>	<u>10.000</u>	
	<u>Frankfurt Stock Exchange (XFRA)</u>	<u>Bonds (nominal)</u>	<u>5.000</u>	<u>10.000</u>	<u>10</u>
		<u>Shares and other securities traded in shares</u>			
	<u>Structured Products (Scoach Europa AG (XSCO))</u>	<u>50.000</u>	<u>100.000</u>	<u>100</u>	

¹ All amounts in million, Floors are expressed in shares (Exception: bonds and in percentages listed Structured Products are expressed in nominal), the Volume Factor is dimensionless.

² Liquidity Providers are Designated Sponsors, Professionals, Block Agents and Quote Providers during trading of structured products.

Article 2 Effectiveness

Except for the adjustment in § 73 Article 1 will be effective as of 1 October 2013.

The adjustment of the validity of Iceberg Orders in § 73 will be effective as of 28 October 2013.

The foregoing Eighth Amendment Ordinance to the Exchange Rules for the Frankfurter Wertpapierbörse is hereby executed. Pursuant to the decision of the Exchange Council of the Frankfurter Wertpapierbörse dated 27 September 2013, the Amendment Ordinance shall become effective on 1 October 2013 and 28. October 2013 as specified in such Paragraph 2.

The Hessian Ministry for Economics, Transportation and Regional Development has given its approval required pursuant to §16 Paragraph 3 of the Exchange Act by letter dated 27 September 2013 (File No: III 8 – 37 d 02.07.02#007).

The Eighth Amendment Ordinance shall be announced by notice on the premises of the Frankfurter Wertpapierbörse and by electronic publication on the internet, available on the websites of the Frankfurter Wertpapierbörse (<http://www.deutsche-boerse.com>).

Frankfurt/Main, 27 September 2013

Management Board of the Frankfurter Wertpapierbörse

Dr. Martin Reck

Dr. Cord Gebhardt



XETRA

DEUTSCHE BÖRSE
GROUP

German HFT Act Order-to-Trade Ratio

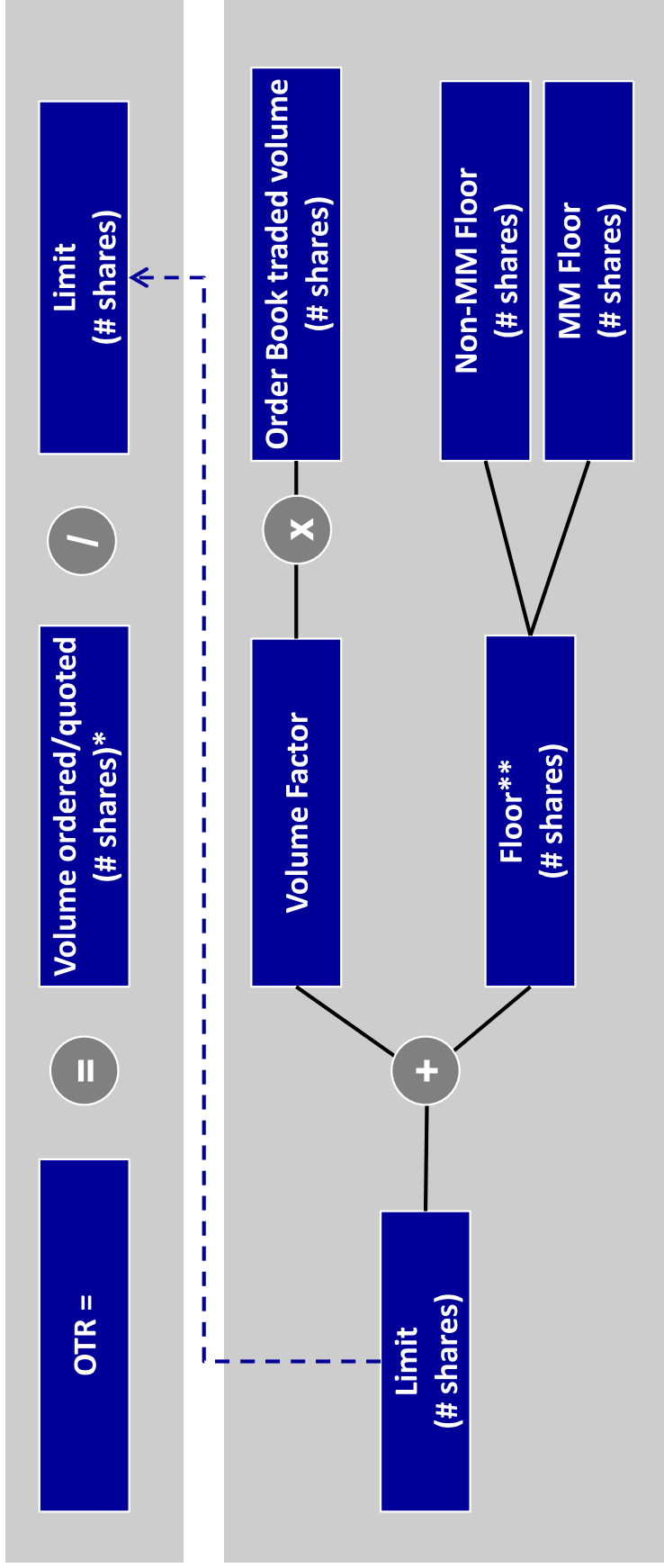
27. September 2013



OTR calculation method

Framework:

- Monthly ratio per member, per market, per instrument
- Volume factor and floor set per instrument group by FWB
- $OTR \geq 1$: Violation of OTR in respective instrument and month



*TOP, TOP+ orders and indicative quotes are exempt from the calculation

**MM Floor = Market Maker Floor applies to designated sponsors, specialists, block agents and "Quote-Verpflichteten" of Börse Frankfurt "Zertifikate"; Non-MM Floor = Regular Member

OTR calculation method: Example

Example model parameters:

- Volume factor = 10
- MM Floor = 500 shares

Example market maker behavior:

- A market maker inserts an order for 1.000 shares
- A total of 200 shares is executed.
- Remainder of 800 shares is deleted

