



Order to Trade Ratio

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1. List of abbreviations

This section lists all the abbreviations used to describe the Order to Trade Ratio.

Abbreviation	Description
ALV	Allianz Option
CRE	Common Report Engine
FDAX	DAX® Futures
FESX	EURO STOXX 50® Index Futures
FGBL	Euro-Bund Futures
HFT	High-frequency trading
OESX	EURO STOXX 50® Index Options
OTR	Order to Trade Ratio
QP	Quote performance
QSQ	Quote size quality
SMC	Stressed market conditions
SQ	Spread quality
T7	Eurex Exchange's trading architecture

Table 1 : Abbreviations

2. Introduction

Eurex Exchanges will redesign the Order to Trade Ratio (OTR) with effect from 3 January 2018. Main changes compared to the current OTR regime is the switch from monthly to daily observation period and the introduction of a transaction based OTR.

The limits for the volume based OTR are set on the ratio between volume of all order-entries (ordered volume) to the trading volume per product and per day generated by orders and quotes sent by the participants to T7. The limits for the transaction based OTR are set on the ratio between number of all order-entries (number of orders) to the number of trades per product and per day generated by orders and quotes sent by the participants to T7. For calculation of the ordered volume (respectively the number of orders), all types of orders and/or quotes are considered. This includes any/all of the following: add, modify and delete. For calculation of the traded volume (number of trades) all executions are taken into account. Please note, aggregation of volume is done on a daily basis.

The limits are defined based on the product type. For some products with a different behaviour, the limits are increased by a product specific factor. In case a participant fulfilled the minimum quotation requirements the limits will be increased considering the quotation performance.

At the end of a day, if the value of an OTR for a particular product for a particular participant is greater than a pre-defined limit, such instance is considered a violation. A violation may trigger sanctions against the participant.

Participants can calculate a preliminary value of the OTR as well as the respective limit by themselves with the help of intraday reports that are supplied by Eurex. However, the conclusion on whether the OTR is violated can be drawn only at the end of a day.

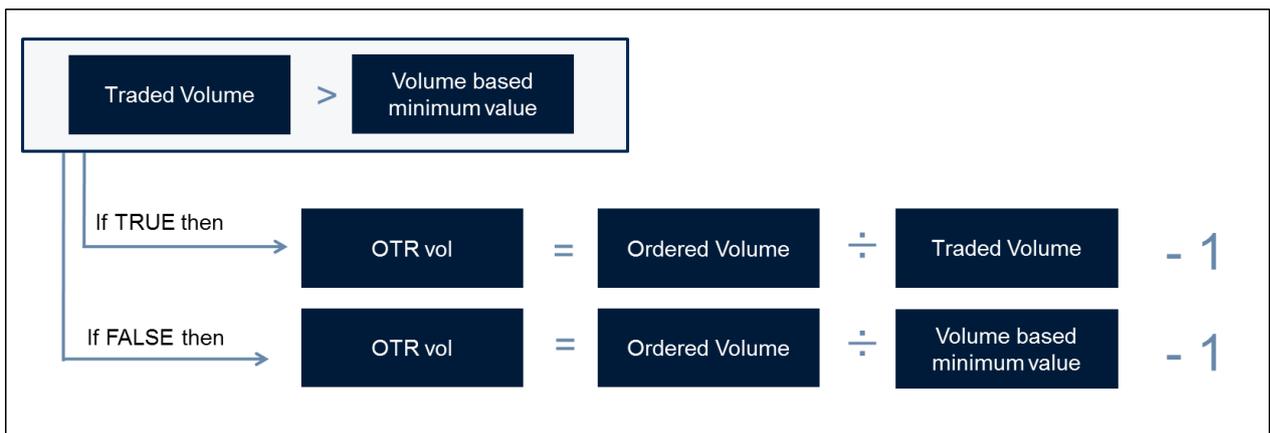
3. Methodology of the Order to Trade Ratio

The new methodology of the Order to Trade Ratio regime at Eurex consists of two parts: first the volume based, and second the transaction based Order to Trade Ratio itself as described in section 3.1 and the corresponding Limits (i.e. the maximum allowed Order to Trade Ratio) as defined in section 3.2. At the end of a day, if the value of at least one of the two OTR metrics for a particular product for a particular participant is greater than the limit, such instance is considered a violation. Such a violation may trigger sanctions against the participant.

Participants can calculate a preliminary value of both OTR's as well as the respective limit by themselves with the help of reports that are supplied intraday by Eurex. However, the conclusion on whether the OTR is violated can be drawn only at the end of a day.

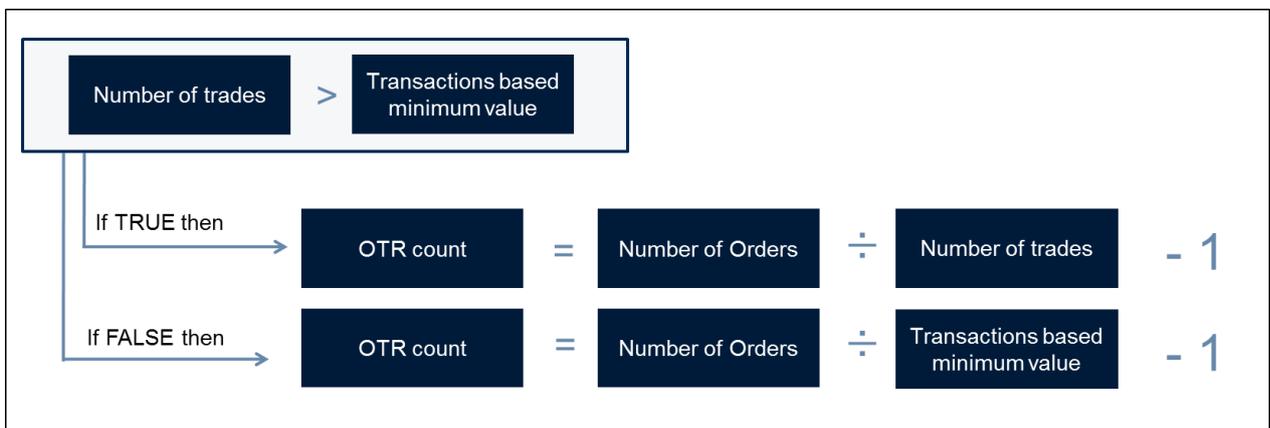
3.1 Calculation of the Order to Trade Ratio

The volume based Order to Trade Ratio is calculated using Equation 1 and the transaction based Order to Trade Ratio is calculated using Equation 2.



Equation 1 Calculation of the volume based Order to Trade Ratio

Ordered Volume is the sum of all order entries, modification and deletions. The traded volume is the sum of all executions. The Volume based minimum value is a fixed number, and is used if the trading volume is too small to create a reasonable Order to Trade Ratio, the rationale is to have only a small impact on the Overall Order to Trade Ratio in case of a small increase in the trading volume.



Equation 2 Calculation of the transaction based Order to Trade Ratio

Number of orders is the number of all order entries, modification and deletions. The number of trades is the sum of all executions. The transaction based minimum value is a fixed number, and is used if the number of trades is too small to create a reasonable Order to Trade Ratio, the rationale is to have only a small impact on the Overall Order to Trade Ratio in case of a small increase in the number of trades.

The following two subsections describe the calculation process of the input factors for both Order to Trade Ratios.

3.1.1 Ordered volume and Number of Orders

In this section the ordered volume and the number of orders is described in the context of the Eurex Order to Trade Ratio regime. The Eurex Order to Trade Ratio regime applies to the Eurex exchange and its order books only (off book business etc. is disregarded). Ordered volume and number of orders is aggregated per product and per day for each participant. The ordered volume is the sum of:

- The number of contracts generated by those orders and quotes that are accepted by the matcher and are added to the order book and
- The number of contracts that the participant deletes from the matching engine and thus has not been executed.

The number of orders is the sum of

- The number of orders and quotes that are accepted by the matcher and are added to the order book and
- The number of orders that the participant deletes from the matching engine and thus has not been executed.

The order executions are neither counted towards the ordered volume nor the number of orders. A modify of an order or quote is treated as a "delete" followed by an "add". Thus, the original order and the new order will both be counted towards the ordered volume total and the number of orders. This process applies regardless of which attribute of the order is changed. Table 2 shows a sample calculation of ordered volume and the number of orders for a particular sequence of orders sent by the participant.

Transaction	Order Size	Volume in Order book	Counted ordered volume	Ordered volume (cumulative)	Number of Orders	Number of orders (cumulative)
Order entry	100	100	100	100	1	1
Order delete	100	0	100	200	1	2
Order entry	100	100	100	300	1	3
Partial execution	50	50	0	300	0	3
Order modify	100	100	150 [50 (deleted) + 100 (added)]	450	2	5
Order modify	150	150	250 [100 (deleted) + 150 (added)]	700	2	7

Table 2 : Calculation of the ordered volume and number of orders

The calculation method explained in Table 2 is applied to quotes in the same way. A double sided Quote is treated like two orders, massquotes are treated like multiple quotes. Quotes can be modified by sending a quote 'add' instead of a quote 'change'. This 'quote add' is treated like an 'order modify'. The inactive flag describing whether quotes are active and visible to the market is disregarded.

On the similar lines, 'immediate or cancel' order is considered as an 'add' order followed by a 'delete' order. Matched quantity is deducted from the 'delete' count. Similarly a 'fill or kill' order is treated as an 'add' order followed by a 'delete' order and corresponding quantities are counted towards ordered volume. If the order is filled instead, no contracts are deleted and only the added contracts are counted towards the ordered volume.

If an order or a quote is fully or partially deleted by the Self-Match Prevention (SMP) functionality then the ordered volume increases both on the buy- and the sell-side only by the number of deleted contracts.

Special handling is required for orders and quotes that combine several legs, such as strategies. A strategy-order or strategy-quote is split into its components and the corresponding volumes are incorporated into the overall ordered volume as well as the number of orders of the primary product. For example, if a strategy involves a spread between FDAX and FESX, then the corresponding leg volume will be considered separately for these two products. The ordered volume and number of orders of the legs of a calendar spread in EURO STOXX 50[®] futures is counted towards the ordered volume and number of orders of the FESX. The case of a volatility strategy in the EURO STOXX 50[®] options differs from this. This strategy is comprised of EURO STOXX 50[®] options as well as EURO STOXX 50[®] futures. The ordered volume and number of orders of a volatility strategy is added to the ordered and traded volume of the EURO STOXX 50[®] options itself.

3.1.2 Traded Volume and Number of Trades

The traded volume and the number of trades is based on all trades in the order book. The traded volume is the sum of contracts traded on a given day in a given product. Special handling is required for orders and quotes that combine several legs, such as strategies.

A strategy-trade is split into its components and the corresponding volumes are incorporated into the overall traded volume as well as the number of trades of the primary product. For example, if a strategy trade involves a spread between FDAX and FESX, then the corresponding leg volume will be considered separately for these two products. The traded volume and number of trades of the legs of a calendar spread in EURO STOXX 50[®] futures is counted towards the traded volume and number of trades of the FESX. The case of a volatility strategy in the EURO STOXX 50[®] options differs from this. This strategy is comprised of EURO STOXX 50[®] options as well as EURO STOXX 50[®] futures. The traded volume and number of trades of a volatility strategy is added to the ordered and traded volume of the EURO STOXX 50[®] options itself.

In case the traded volume or the number of trades is below a certain minimum value, it will be replaced with the volume based minimum value respectively the transaction based minimum value. A typical minimum value is 10,000.

3.2 Definition of the Maximum Order to Trade Ratios

Figure 1 shows all components that influence the limit for the volume and transaction based Order to Trade Ratio.

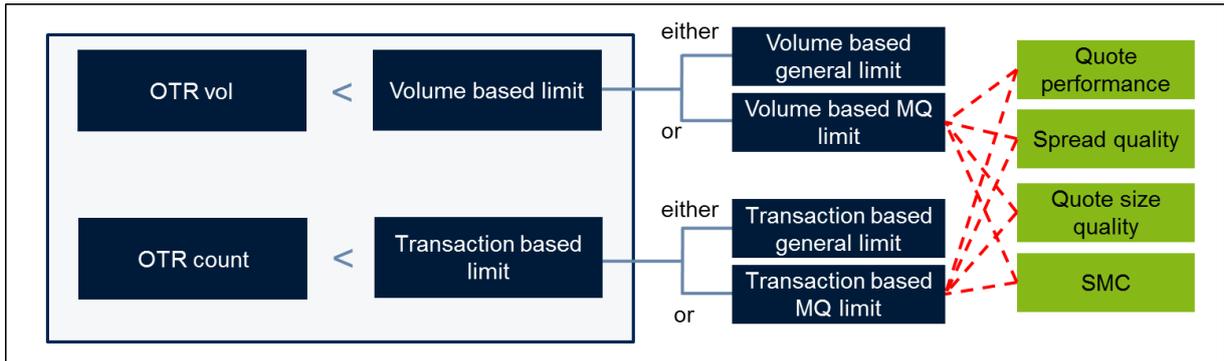


Figure 1 : Overview of factors affecting the limit used for the volume and transaction based Order to Trade Ratio

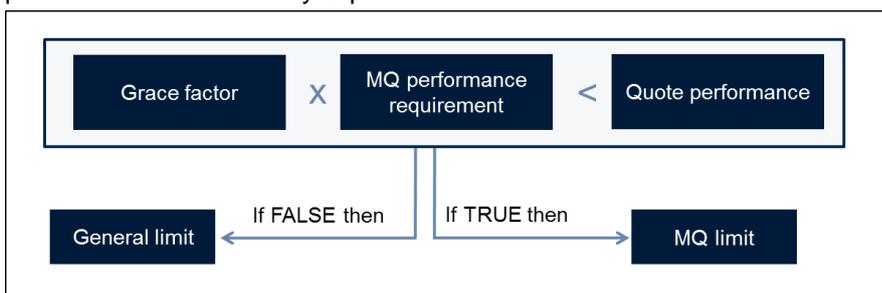
- **General Limit**

Independent of the behavior, each participant has a maximum allowed volume and transaction based Order to Trade Ratio for each product. The values are defined based on a base limit and a product specific factor. The base limits are predefined depending on the product type. The Product Factor is predefined and depending on the product. If no explicit definition of a product factor is available, the default value of 1.0 will be applied.

- **Limit for Market Participants fulfilling the Minimum Quotation Requirements**

This component is applicable only in case of products where Minimum Quotation Requirements are available and for the participants that satisfy the condition shown in Equation 3. The grace factor allows participants with a quote performance lower than that of the minimum quotation performance requirement to be eligible for the Minimum Quotation Limit (MQ limit). Equation 4 shows the formula to volume based MQ limit, and Equation 5 shows the formula to calculate the transaction based MQ limit.

Foremost, it is necessary to decide whether the MQ limit is applicable. This decision is taken by checking whether the participant under consideration meets the condition related to the quote performance described by Equation 3.



Equation 3 : Decision whether MQ limit is applicable

Example: Suppose, for a certain product,

- Grace factor = 0.10
- Minimum quotation performance requirement = 0.85
- Values of QP for two participants A and B: QP_A = 0.70 and QP_B = 0.05

Calculation:

[Grace factor] * [MQ performance requirement for the given product] = 0.10 * 0.85 = **0.085**

Therefore:

Since 0.085 is less than QP_A → MQ limit will be applicable for A

Since 0.085 is NOT less than QP_B → MQ limit will NOT be applicable for B

Equation 4 shows the formula to calculate the MQ limit for the volume based Order to Trade Ratio.

Equation 5 shows the formula to calculate the MQ limit for the transaction based Order to Trade Ratio.

$$\text{Volume based MQ limit} = \text{Volume based Base limit} \times \text{Volume based Product Factor} \times \text{maximum} \left[1, \text{Volume based MQ base}_{SO} \times \text{Quote performance} \times \text{Quote size quality} \times \text{Volume based SMC factor} \right]$$

Equation 4 : Calculation of the minimum quotation limit for the volume based Order to Trade Ratio

$$\text{Transaction based MQ limit} = \text{Transaction based Base limit} \times \text{Transaction based Product Factor} \times \text{maximum} \left[1, \text{Transaction based MQ base}_{SO} \times \text{Quote performance} \times \text{Transaction based SMC factor} \right]$$

Equation 5 Calculation of the minimum quotation limit for the transaction based Order to Trade Ratio

The following text describes various factors shown in Equation 4 and Equation 5.

• **Quote performance (QP):**

The quote performance is a ratio of "covered time" to "available time".

- Covered time: This is the total time in all the possible instruments even beyond the strike price window of a product the participant actually quotes in a day. To calculate the covered time, only those quotes that satisfy the constraints regarding the maximum spread and minimum quote size are considered. The "covered time" used in this context is the sum of all time intervals across all instruments in a given product, where a participant has quoted according to the minimum quotation requirement. The covered time is then set in relation to the accumulated time of those strikes which need to be quoted to fulfil the minimum quotation requirements. Therefore, the maximum quote performance is the relation of the amount of strikes that have been listed in the entire product and the amount of strikes that need to be quoted by participants.
- Available time: This is the total time in all the possible series of the strike price window of a product the participant could quote in a day.

Eurex Exchange minimum quotation requirements necessitate that a participant quotes at a high frequency for various series, which means that participants generate higher transaction counts as

compared to those participants that do not engage in quotation of products (even if a participant fulfills only minimum requirements).

Therefore, in case of participant fulfilling the minimum quotation requirements, the limit needs to be raised to a much higher level. Eurex Exchange does not want to discourage participants from quoting more series than the required ones.

For example, a participant is required to quote seven strikes (out of possible 15 in strike price window) to receive up to 100 percent (= 1.0) Market Maker performance. If the participant quotes 15 series, then this performance goes up to 214 percent (= 2.14). Thus, the quote performance is directly proportional to the amount of strikes a participant quotes. The higher the amount of strikes, the higher is the value of the quote performance.

- **Spread quality (SQ):**

The spread quality is a performance measure based on the average spread of all series quoted in the strike price window of a participant in a product for a day. The spread quality is applicable only to those quotes, which satisfy the constraints regarding the maximum spread and the minimum quote size as defined by the minimum quotation requirements.

The rationale for this factor is: if the bid-offer spread becomes tighter, then more quote updates are required to reflect the changes in the market price. Depending on the spread quality, values of the MQ base factor change. Table 3 shows example values for MQ base factor per spread quality (SQ).

SQ	MM base
SQ <= 0.2	1.00
0.2 < SQ <= 0.4	1.75
0.4 < SQ <= 0.6	2.00
0.6 < SQ	2.25

Table 3 : MQ base factor and spread quality for volume based OTR in the product type OINX

- **Quote size quality (QSQ):**

It is the average size (number of contracts) quoted per product for a given period.

All valid quotes of any participant are at least equal to the corresponding minimum quote sizes defined by the minimum quotation requirements per product. However, some participants do quote higher sizes. The contracts included in every quote increase if the quote size (in excess of the minimum quote size requirement) increases. Therefore, the volume limit needs to be increased to allow this type of a Market-Making quality. Quote size quality (QSQ) is an average size number of contracts quoted per product for the given period.

- **Stressed Market Conditions factor (SMC factor):**

This factor is dependent on two conditions, first the occurrence of stressed market conditions in a given product and second the fulfillment of the relaxed minimum quotation requirements during that period by the participant. If there was no stressed market conditions or the participant did not fulfill the relaxed minimum quotation requirement the volume and transaction based SMC factor will be set to one (i.e. there is no impact on the OTR limit). If both conditions are met, i.e. the participant fulfilled the relaxed minimum quotation requirements during stressed market conditions both the transaction based and the volume based SMC factor will be larger than one to account for the higher number of orders as well as the higher ordered volume due the increasing number of quote updates during such periods.

4. Limit parameters

This section contains the respective values to calculate the limit per product . Apart from the product specific factor all parameters are defined based on the product type of the product. The product types are published in the product overview section on the Eurex Website:

www.eurexchange.com > Products > Product Overview > Complete list of all Eurex products in csv format

The following tables shows the parameters used to calculate the volume based OTR.

Please note: The limit is based on the product type of the product.

Product group*	Product type	Grace factor	Volume based minimum value	Volume based base limit	Spread quality	Volume based MQ base factor	Volume based SMC factor
Single Stock Futures	FSTK	0.10	10,000	250	0.00	1.00	1.20
					0.20	1.25	
					0.40	1.50	
					0.60	1.75	
Equity Index Futures	FINX	0.10	10,000	1,000	0.00	1.00	1.20
					0.20	1.25	
					0.40	1.50	
					0.60	1.75	
Volatility Index Futures	FVOL	0.10	10,000	1,000	0.00	1.00	1.20
					0.20	3.00	
					0.40	3.50	
					0.60	4.00	
Equity Index Options	OINX	0.10	10,000	12,000	0.00	2.00	1.20
					0.20	4.00	
					0.40	6.00	
					0.60	8.00	
Equity Index Dividend Options	OFIX	0.10	10,000	1,200	0.00	1.00	1.20
					0.20	1.25	
					0.40	1.75	
					0.60	2.00	
FX Options	OCUR	0.10	10,000	12,000	0.00	2.00	1.20
					0.20	4.00	
					0.40	6.00	
					0.60	8.00	
FX Futures	FCUR	0.10	10,000	1,000	0.00	2.00	1.20
					0.20	4.00	
					0.40	6.00	
					0.60	8.00	
Equity Options	OSTK	0.10	10,000	5,500	0.00	2.00	1.20
					0.20	4.00	
					0.40	6.00	
					0.60	8.00	
Fixed Income Futures	FBND	0.10	10,000	1,000	0.00	1.00	1.20
					0.20	1.25	
					0.40	1.50	
					0.60	1.75	
Money Market Futures	FINT	0.10	10,000	1,200	0.00	1.00	1.20
					0.20	1.25	
					0.40	1.50	
					0.60	1.75	
Options on Fixed Income Futures	OFBD	0.10	10,000	1,200	0.00	1.00	1.20
					0.20	1.25	
					0.40	1.50	
					0.60	1.75	
Options on Money Market Futures	OFIT	0.10	10,000	1,200	0.00	1.00	1.20
					0.20	1.25	
					0.40	1.50	
					0.60	1.75	
New asset classes	New asset classes	0.10	10,000	12,000	0.00	2.00	1.20
					0.20	4.00	
					0.40	6.00	
					0.60	8.00	

Table 4 Limit Parameters for the volume based OTR

* The table contains only the main product group per product type. The list of the product group names shown above in the table is not exhaustive.

Product name*	Product ID	Volume based product factor
Options on Banco Bilbao Vizcaya Argentaria	BBVD	1.50
Commerzbank 1st Friday Weekly Options	CBK1	1.75
Options on Unicredit	CRI5	1.50
Credit Suisse 1st Friday Weekly Options	CSG1	1.25
Credit Suisse 2nd Friday Weekly Options	CSG2	1.50
Credit Suisse 4th Friday Weekly Options	CSG4	1.50
Deutsche Bank 1st Friday Weekly Options	DBW1	1.25
Deutsche Bank 2nd Friday Weekly Options	DBW2	1.50
Deutsche Bank 4th Friday Weekly Options	DBW4	1.25
Deutsche Bank 5th Friday Weekly Options	DBW5	2.00
E.ON Options	EOA	1.50
Futures on E.ON Uniper Basket	EOAH	2.50
Options on iShares DAX (DE)	EXS1	4.25
Bloomberg Commodity Futures	FCCO	3.00
Futures on DivDax	FDIV	1.75
Euro Stoxx Select Dividend 30 Index Futures	FEDV	1.25
Euro Stoxx Banks Futures	FESB	1.25
Euro Stoxx 50 Futures	FESX	1.25
Euro-Schatz Futures	FGBS	1.25
Stoxx Europe Mid 200 Index Futures	FMCP	1.25
MSCI Europe Index Futures	FMEU	2.00
Arcelor Mittal Options	ISPH	2.00
Lenzing Options	LEN	1.25
Options on Nokia (European)	NOAE	2.00
DAX 1st Friday Weekly Options	ODX1	2.00
DAX 2nd Friday Weekly Options	ODX2	1.50
DAX 4th Friday Weekly Options	ODX4	2.50
DAX 5th Friday Weekly Options	ODX5	1.25
1st Friday Weekly Options on Euro Stoxx 50	OES1	1.25
2nd Friday Weekly Options on Euro-Bund Futures	OGB2	1.25
4th Friday Weekly Options on Euro-Bund Futures	OGB4	1.25
5th Friday Weekly Options on Euro-Bund Futures	OGB5	1.25
Options on Euro-OAT Futures	OOAT	2.25
Options on VSTOXX® Futures	OVS2	1.50
Royal Dutch Shell 4th Friday Weekly Options	ROY4	1.25
UBS 4th Friday Weekly Options	UBS4	1.50
Unilever NV 1st Friday Weekly Options	UNI1	1.25
Unilever NV 2nd Friday Weekly Options	UNI4	1.50
Unilever NV 4th Friday Weekly Options	UNI5	1.50

Table 5 Product Factors for the volume based OTR. If a product is not included in the table, i.e. has no product factor assigned, the default value of 1.00 is applied.

The following tables shows the parameters used to calculate the transaction based OTR.

Please note: The limit is based on the product type of the product.

Table 6 Limit Parameters for the transaction based OTR

Product group*	Product type	Grace factor	Transaction based minimum value	Transaction based base limit	Spread quality	Transaction based MQ base factor	Transaction based SMC factor
Single Stock Futures	FSTK	0.10	10,000	75	0.00	3.00	1.20
					0.20	5.00	
					0.40	7.50	
					0.60	20.00	
Equity Index Futures	FINX	0.10	10,000	150	0.00	3.00	1.20
					0.20	5.00	
					0.40	7.50	
					0.60	20.00	
Volatility Index Futures	FVOL	0.10	10,000	150	0.00	3.00	1.20
					0.20	5.00	
					0.40	7.50	
					0.60	20.00	
Equity Index Options	OINX	0.10	10,000	225	0.00	50.00	1.20
					0.20	100.00	
					0.40	250.00	
					0.60	500.00	
Equity Index Dividend Options	OFIX	0.10	10,000	75	0.00	3.00	1.20
					0.20	20.00	
					0.40	30.00	
					0.60	50.00	
FX Options	OCUR	0.10	10,000	225	0.00	3.00	1.20
					0.20	5.00	
					0.40	7.50	
					0.60	20.00	
FX Futures	FCUR	0.10	10,000	150	0.00	3.00	1.20
					0.20	5.00	
					0.40	7.50	
					0.60	20.00	
Equity Options	OSTK	0.10	10,000	150	0.00	15.00	1.20
					0.20	30.00	
					0.40	45.00	
					0.60	60.00	
Fixed Income Futures	FBND	0.10	10,000	150	0.00	3.00	1.20
					0.20	5.00	
					0.40	7.50	
					0.60	20.00	
Money Market Futures	FINT	0.10	10,000	150	0.00	4.50	1.20
					0.20	20.00	
					0.40	30.00	
					0.60	40.00	
Options on Fixed Income Futures	OFBD	0.10	10,000	225	0.00	20.00	1.20
					0.20	30.00	
					0.40	40.00	
					0.60	20.00	
Options on Money Market Futures	OFIT	0.10	10,000	225	0.00	20.00	1.20
					0.20	80.00	
					0.40	150.00	
					0.60	225.00	
New asset classes	New asset classes	0.10	10,000	225	0.00	20.00	1.20
					0.20	80.00	
					0.40	150.00	
					0.60	225.00	

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* The table contains only the main product group per product type. The list of the product group names shown above in the table is not exhaustive.

Product name	Product ID	Transaction based product factor
ASML Holding Options	ASM	1.50
Option on Commerzbank (European)	CBKE	1.25
Euro-Bund Futures	FGBL	1.25
Iliad Options	ILD	1.75
Anheuser-Busch InBev Options	ITK	1.50
Lenzing Options	LEN	1.25
Options on Lindt & Spruengli	LISN	1.25
Options on Norilsk Nickel	NNIA	1.50

Table 7 Product Factors for the transaction based OTR. If a product is not included in the table, i.e. has no product factor assigned, the default value of 1.00 is applied.

A list of all products including their product types is published on the Eurex website www.eurexchange.com. It can be downloaded under the following link:

Products > Product Overview > Complete list of all Eurex products in csv format

5. Sample calculation of the Order to Trade Ratio

In this subsection, step-by-step calculation of a volume based Order to Trade Ratio is explained with the help of a simple example. In an example for the transaction based Order to Trade Ratio we would replace the ordered volume with number of orders and traded volume with number of trades, apart from that it would have the same steps and is therefore omitted.

Suppose, following information is available for a particular product:

Date	Traded Volume	QP	SQ	QSQ	SMC fulfilled	Ordered Volume	OTR vol	Limit Type	Limit	Limit Usage
For 15th business day	10,500	0.65	0.15	100	No	800,000,000.00	76,189.48	MQ limit	1,560,000.00	0.05
For 16th business day	200	0.05	0.15	200	No	30,000,000.00	2,999.00	General Limit	12,000.00	0.25

- Grace factor = 0.1
- MQ performance requirement = 0.85 (i.e. 85%)
- Base Limit = 12,000
- Product Factor = 1
- Volume based minimum value = 10,000
- SMC Factor = 1.20

Calculations for the 15th business day:

Step 1: Calculation of the volume based OTR

$$\text{OTR vol} = [\text{ordered volume}] / [\text{maximum}(\text{traded volume}, \text{volume based minimum value})] - 1$$

$$\text{OTR vol} = 800,000,000 / \text{maximum}(10,500, 10,000) - 1$$

$$\text{OTR vol} = 800,000,000 / 10,500 - 1 = 76,189.48$$

Step 2: Calculation of the limit

A] First to check whether the MQ limit is applicable.

$$\text{Grace factor} * \text{MQ performance requirement} = 0.10 * 0.85 = 0.085$$

Since 0.085 is less than QP (= 0.65) → MQ limit will be applicable

B] Calculation of the MQ limit

For the given value of SQ, corresponding value of the MQ base based from Table 3 is found to be 2.0 i.e. MQ base = 2.00.

Applying Equation 4,

$$\text{MQ limit} = [\text{Base limit}] * [\text{product factor}] * \text{maximum}(1, [\text{MQ base}] * [\text{QP}] * [\text{QSQ}] * [\text{SMC}])$$

$$\text{MQ limit} = 12,000 * 1.00 * \text{maximum}(1, 2.00 * 0.65 * 100 * 1)$$

$$\text{MQ limit} = 625,625.00$$

Limit for the 15th business day = 1,560,000.00

Step 3: Calculation of the limit usage for the 15th business day

Usage = [OTR vol] / [Limit]
Usage = 76,189.48 / 1,560,000.00
Usage = 0.05
Usage at the 15th business day = 0.05

Calculations for the 16th business day:

Step 1: Calculation of the volume based OTR

OTR vol = [ordered volume] / [maximum(traded volume, volume based minimum value)] - 1
OTR vol = 30,000,000 / maximum(200, 10,000) -1
OTR vol = 30,000,000 / 10,000 -1 = 2,999
Volume based OTR for the 16th business day = 2,999

Step 2: Calculation of the limit

- A] First to check whether the MQ limit is applicable.
Grace factor * MM performance requirement = 0.10 * 0.85 = 0.085
Since 0.085 is larger than QP (= 0.05) → General limit will be applicable
- B] Calculation of the general limit
Applying the equation for the general limit.
General limit = [Base limit] * [product factor]
General limit = 12,000 * 1.00
General limit = 12,000
Limit for the 16th business day = 12,000

Step 3: Calculation of the limit usage for the 16th business day

Usage = [OTR vol] / [Limit]
Usage = 2,999 / 12,000
Usage = 0.25
Usage at the 16th business day = 0.25

Note:

As shown above, the final value of Order to Trade Ratio is calculated at the end of the trading day. If the OTR value is less than the respective limit, it can be concluded that the participant has not violated the limit set by the Order to Trade Ratio.

6. Customer reports

Two reports will be made available on a daily* basis:

- TR100 (Order to Trade Ratio Report)
- CB069 (Transaction Report): This report is enhanced with further information

These reports will be available for the participants via the Common Report Engine. The participants themselves have to query this report from the Common Report Engine. Every day, the report for the previous trading day is available. The CRE stores the reports for the last 10 trading days.

* Additionally, intra-day versions of the report CB069 are available three times a day.

6.1 TR100

- The report is generated on a daily basis
- It contains the daily data per product for all the elapsed trading days
- As the name indicates, the columns 'OTRvol' and 'OTRnosh' show the daily volume and transaction based OTR
 - $-1 \leq \text{OTR}$
- The columns 'Limit Vol' and 'Limit Count' show the volume and transaction based limits.
- The columns 'LimUsageVol' and 'LimUsageCount' show the ratio between the volume and transaction based OTR with the respective limit. This value shows which portion of the limit has been used by the OTR, i.e. how close one came to a violation
 - If the usage gets close to 1.0, then it would be a matter of concern
- As the name indicates, the column 'Violation', shows whether a violation occurred on a given day

6.2 CB069

- If the values from TR100 for a particular product are observed to be so high that deeper investigation is necessary, then this report can be used to find out the further information at session ID level and/or trader ID level.
- Intra-day versions of this report are made available three times a day and can be used by the participants to track, for the respective trading day, number of transactions, ordered volume and traded volume - per product per limit type, per session ID and per trader ID. The report data will provide an aggregate of the current trading day.
- The intra-day reports are available via CRE and will have the following name convention: 90RPTCB069EUREXYYYYMMDDHHMM.
- The schedule of the availability of the intra-day reports is shown in the following table:

Report data		Report availability
from	to	
Start of trading	04:00 CET	05:30 CET
	07:00 CET	08:30 CET
	10:00 CET	11:30 CET
	14:00 CET	15:30 CET
	18:00 CET	19:30 CET

Please note that the intra-day report available at 19:30 CET will not be the final extract for the day. The final report will be made available on the following day.

- The intra-day reports are available in the following formats: .csv and .xml.

The CB069 report consists of three parts:

- The first part provides the information on number of transactions, number of orders, ordered volume, number of trades and traded volume per product per limit type.
- The second part provides additional granularity of session ID level to the information from the first part. The column 'Session' contains session IDs.
- The third part provides additional granularity of trader ID level to the information from the first part. The column 'User' lists trader IDs.

Participant Participant Long Name

XXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Product	Limit Type	Transactions Count	Ordered Volume	Orders Count	Trades Count	Traded Volume
FDAX	Standard	60	n/a	n/a	n/a	n/a
FDAX	All	60	250	60	50	130
FESX	Standard	5	n/a	n/a	n/a	n/a
FESX	All	5	60	5	5	60

BU BU Long Name BU Identifier

XXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX 123

Session	Product	Limit Type	Transactions Count	Ordered Volume	Orders Count	Trades Count	Traded Volume
90000001	FDAX	All	20	100	20	40	100
90000001	FDAX	Standard	20	n/a	n/a	n/a	n/a
90000001	FESX	All	2	50	2	2	50
90000001	FESX	Standard	2	n/a	n/a	n/a	n/a
90000002	FDAX	All	40	150	40	10	30
90000002	FDAX	Standard	40	n/a	n/a	n/a	n/a
90000002	FESX	All	3	10	3	3	10
90000002	FESX	Standard	3	n/a	n/a	n/a	n/a

User Product Limit Type Transactions Count Ordered Volume Orders Count Trades Count Traded Volume

TRD001 FDAX Standard 40 n/a n/a n/a n/a
 TRD001 FDAX All 40 150 40 10 30

User Product Limit Type Transactions Count Ordered Volume Orders Count Trades Count Traded Volume

TRD002 FESX Standard 2 n/a n/a n/a n/a
 TRD002 FESX All 2 10 2 2 10

User Product Limit Type Transactions Count Ordered Volume Orders Count Trades Count Traded Volume

TRD003 FDAX Standard 20 n/a n/a n/a n/a
 TRD003 FDAX All 20 100 20 40 100
 TRD003 FESX Standard 3 n/a n/a n/a n/a
 TRD003 FESX All 3 50 3 3 50

Figure 2 : Structure of the daily CB069 report

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- The number of orders and the ordered volume are shown in the columns 'Orders Count' and 'Ordered Volume'. The number of trades and the traded volume values are shown in the columns 'Trades Count' and 'Traded Volume' respectively.
- For the limit type 'Standard', the values of traded volume and ordered volume are not measured separately. "n/a" stands for not available.

Detailed information on the structure of all the reports is available on the Eurex Website:

www.eurexchange.com > Technology > T7 Trading architecture > System documentation > Release 6.0 > Eurex Reports > T7 Release 6.0 - XML Report Reference Manual