

Example calculations for cash equity transactions

Version 2.8

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1 Introduction

To facilitate the understanding of all costs that Deutsche Börse Group's customers will have to pay for trading and post-trading services related to cash equity transactions, three example calculations are provided.

The calculations in this document show average prices on the basis of specific customer and order profiles, as outlined in the following table. It is important to note that prices will vary based on the specific factors defined in the customer and order profiles as well as other factors such as the number of settlement instructions generated.

Customer and Order Profiles

	Example A	Example B	Example C
Trading arrangement	Xetra participant	Xetra participant	Xetra participant
Trading volume per month	€120 million	€6,600 million	€750 million
Number of orders per month	20,000	220,000	50,000
% trading volume ETS/NP ¹	0%	75%	0%
% number of orders ETS/NP	0%	75%	0%
Price model (Xetra) ²	Medium volume	High volume	High volume
Connectivity to Xetra (including price information and access to order book)	3 rd party provider (multi-member MISS)	2 leased lines (2 Mbit/s bandwidth) Consolidated ETS connection: 2 lines (10 Mbit/s), 2 Values/MISS lines (2 Mbit/s), 2 ETS lines (2 Mbit/s), 3 ETS trading sessions, 2 Enhanced Connectivity Services	1 leased line (512 kbit/s bandwidth) and 1 internet line (512 kbit/s bandwidth)
Clearing arrangement	Not a member of ECAG; clears through clearing arrangement with GCM	General Clearing Member (GCM) of ECAG	Direct Clearing Member (DCM) of ECAG
Connectivity to Eurex Clearing AG	Not applicable for non-members	2 leased lines (64 kbit/s bandwidth)	2 leased lines (64 kbit/s bandwidth)
Settlement arrangement	Account with Clearstream Banking Frankfurt	Account with Clearstream Banking Frankfurt	Account with Clearstream Banking Frankfurt

¹ ETS/NP: Xetra orders marked as non-persistent and sent via Enhanced Transaction Solution (ETS) interface

² Xetra customers can select their preferred price model every month. In the example calculation, choice of the most advantageous price model for the customer profile is assumed.

Order Profile	Order value	€10,000	€20,000	€50,000
	Trading venue	Xetra	Xetra	Xetra
	Central counterparty clearing (CCP)-eligible at ECAG	yes	yes	yes
	Traded Instrument type	DAX	DAX	non-DAX, non-ETF/ETC
	Interface used	Values	ETS	Values
	Order label	NP	NP	P
	Number of modifications or deletions	3	0	2
	Number of partial executions	1 (executed in one piece)	2	6
	Aggressive or originating quality of trades	Originating	Aggressive	3 aggressive; 3 originating
	Number of different prices at which trades are executed	1	2	3

Summary fee information

The following table provides total fees necessarily associated with trading, clearing, and settlement charged by Deutsche Börse Group. For details on calculations, see the following pages.³

	Example A	Example B	Example C	
Fees	Total one-off fees	€0.00 (+ possible fees paid to 3 rd party providers)	€50,000.00	€50,000.00
	Total periodic fees per year	€1,500.00 (+ fees paid to 3 rd party providers)	€219,700.00	€70,300.00
	Total transaction fees per order	€0.63 (+ fees paid to GCM for clearing and settlement - GCM is charged €0.17)	€0.89	€2.97

Note:

- n Based on (1) Fee Regulations for the Frankfurt Stock Exchange, 12 October 2009, (2) Xetra price list, 2 November 2009, (3) Eurex Clearing AG price list, 2 November 2009, (4) Domestic Fee Schedule Clearstream Banking Frankfurt, 1 August 2009.

³ All fees are rounded to full euro cents.

2 Trading fees

	Example A	Example B	Example C
One-off fees	€0.00	€0.00	€0.00
Annual participation fee	€1,500.00	€1,500.00	€1,500.00
Annual connectivity fee	Paid to 3 rd party provider	€176,400.00	€27,000.00
Access to order book and basic price information	€0.00	€0.00	€0.00
Total periodic fees per year	€1,500.00 (+ fees paid to 3 rd party provider)	€177,900.00	€28,500.00
Basic transaction fee per order	€0.63	€0.62	€2.40
Order entry/ modification/ deletion fee	€0.00	€0.00	€0.00
Basic price information fees	€0.00	€0.00	€0.00
Other transaction-related fees required for trading	€0.00	€0.00	€0.00
Total transaction fees per order	€0.63	€0.62	€2.40

Notes:

- n Xetra transaction prices are calculated per order (not per trade or per trade executed at different prices). This means that the number of partial executions (trades) into which the order is split is not relevant for calculating the fee. Therefore, customers can easily predict the transaction fees incurred by an order.
- n Xetra does not charge order management fees nor fees for cancellations or modifications of orders. Customers only pay for successfully executed orders.
- n Under the Xetra price model, both buyer and seller pay transaction fees, so whether the trade is aggressive or originating is not relevant for calculating the fee (except for ETFs)
- n Non-persistent orders sent via the Enhanced Transaction Solution (ETS) interface are eligible for the Xetra ETS/NP rebate scheme. This applies to Example B. ETS/NP Orders in DAX- and ETF-instruments are not subject to a minimum transaction price (floor).
- n It is possible that a customer could incur additional fees for non-standard reports or optional services.
- n MISS/Values Connection: 1 dedicated leased line with 2 Mbit/s bandwidth in locations with Access Point (e.g., Frankfurt, London, Paris, Zurich, and others) costs €2,500 per month; 1 dedicated leased line with 512 kbit/s bandwidth costs €1,500 per month; 1 internet line with 512 kbit/s bandwidth costs €750 per month.
Consolidated Xetra/ETS Connection via Enhanced Connectivity Services: The Enhanced Connectivity Services Option costs €1,500 per month per chosen interface. 1 Consolidated Xetra Connection line

with 10 Mbit/s costs €1,500 per month. The lines (Channels) that can be embedded into the chosen Consolidated Xetra Connection are e.g.: 1 Values/MISS line with 2 Mbit/s costs €800 per month, 1 ETS line with 2 Mbit/s costs €800 per month, 3 ETS trading sessions.

Transaction Fee Calculations:

Example A: The customer has order volumes for which pricing under the Xetra medium-volume package is most appropriate. Under the medium-volume package, the minimum fee for an executed Xetra order sent via the Values interface and marked as either persistent or non-persistent in DAX instruments is €0.63, the value-based price is 0.504 basis points (which means $0.504 / 10,000 \times$ the value of the order. For executed Xetra orders with a volume of more than €1,500,000 the maximum fee per order applies.

For the order size of €10,000, the minimum fee of €0.63 applies as the value-based price of 0.504 bps would result in a fee of €0.504, which is below the minimum fee. (For executed Xetra orders with a volume of less than €12,500, the minimum fee per order applies.)

Example B: The customer has order volumes for which pricing under the Xetra high-volume package is most appropriate. Under the high-volume package, the value-based price for an executed Xetra order sent via the ETS interface and marked as non-persistent in DAX instruments is 0.36 bps; no minimum fee is applied. (For executed Xetra orders with a volume of more than €1,500,000 the maximum fee per order applies.)

For the order size of €20,000, the value-based price of 0.36 bps applies resulting in a transaction fee of €0.72. Because the order is non-persistent and sent via ETS, it is eligible for the Xetra ETS/NP rebate scheme. The customer's total ETS/NP volume for the month is €6.6bn \times 75% = €4.95bn. The marginal ETS/NP rebate on orders that fall within monthly order volumes between €3.75 billion and €7.5 billion is 20%. The marginal transaction fee on the order is therefore $\text{€}0.72 \times (1-20\%) = \text{€}0.58$. On an average basis, the rebate would be $(0.25\text{bn} \times 0\% + 0.25\text{bn} \times 4\% + 0.5\text{bn} \times 8\% + 1\text{bn} \times 12\% + 1.75\text{bn} \times 16\% + 1.20\text{bn} \times 20\%) / \text{€}4.95\text{bn} = 13.9\%$. This implies an average transaction fee on the order of $\text{€}0.72 \times (1-13.9\%) = \text{€}0.62$.

Example C: The customer has order volumes for which pricing under the Xetra high-volume package is most appropriate.

For the order size of €50,000, sent via the Values interface as either persistent or non-persistent in non-DAX instruments, the value-based price of 0.48 bps applies resulting in a fee of €2.40. (For executed Xetra orders with a volume of more than €1,500,000 the maximum fee per order applies.)

3 Clearing fees

	Example A	Example B	Example C
One-off membership fee	Not applicable since clearing through GCM	€50,000.00	€50,000.00
Periodic	Annual membership fee	Not applicable since clearing through GCM	€25,000.00
	Annual connectivity fee		€10,800.00
	Annual connectivity-related fee		€6,000.00
	Total periodic fees per year		€41,800.00
Transaction	Transaction fee per order	(GCM is charged €0.16 by ECAG)	€0.25
	Other transaction-related fees required for clearing	(GCM is charged €0.01 by ECAG)	€0.01
	Total transaction fees per order	(charged by GCM)	€0.26
			€0.55
			€0.01
			€0.56

Notes:

- n For equity clearing at ECAG, transaction prices are calculated per order. The number of partial executions (trades) into which the order is split is not relevant for calculating the fee. Therefore, customers can easily predict the transaction fees incurred for clearing. All Xetra orders are eligible for the ECAG Xetra rebate scheme. This applies for all examples.
- n GCMs can clear for other trading participants as well as for themselves. One-off membership fees for GCMs are always €50,000 and annual membership fees are always €25,000, regardless of the number of trading participants for which they clear.
- n Three different clearing services are available. Here, it is assumed that the Basic Service is chosen.
- n It is possible that a customer could incur additional fees for non-standard reports or optional services.
- n 1 leased line with 64 kbit/s bandwidth costs €450 per month; an additional connectivity charge of €500 per month applies per member (i.e., not per line).

Transaction Fee Calculations:

Example A: Transaction fees per order are determined by and paid to the GCM with which the bank has a clearing agreement. The GCM will pay ECAG a fee on the order of a fixed component of €0.06 and a value-based component of 0.10 bps; for executed Xetra orders with a volume of more than €380,000, the value based clearing fee per order is capped at €3.80. The fixed component of €0.06 is eligible for the ECAG Xetra rebate scheme. The customer's total number of Xetra orders per month is 20,000. The marginal rebate for orders falling within monthly orders between 10,001 and 20,000 is 6%. This implies a marginal fee for the €10,000 order of $€0.06 \times (1-6\%) + 0.10 \text{ bps} \times €10,000 = €0.156$.

The average discount for 20,000 orders is $(10k \times 0\% + 10k \times 6\%)/20k = 3\%$. This implies an average transaction fee on the order of $\text{€}0.06 \times (1-3\%) + 0.10 \text{ bps} \times \text{€}10,000 = \text{€}0.16$.

Furthermore, a fee for the Delivery Management is applied. The fee is $\text{€}0.40$ per position. Within the ECAG clearing service, netting takes place such that the total number of instructions is significantly smaller than the number of orders. The average number of instructions resulting from 100 CCP-eligible orders of a certain instrument (executed on Xetra) is 2.5. Therefore, on average, an executed Xetra order will generate a delivery management fee of $\text{€}0.40 \times 2.5\% = \text{€}0.01$. In most cases, these transaction fees are passed on by the GCM to the bank. There might be additional transaction fees levied by the GCM.

Example B:

The transaction fee on the order is composed of a fixed component of $\text{€}0.06$ and a value-based component of 0.10 bps; for executed Xetra orders with a volume of more than $\text{€}380,000$, the value based clearing fee per order is capped at $\text{€}3.80$. The fixed component of $\text{€}0.06$ is eligible for the ECAG Xetra rebate scheme. The customer's total number of Xetra orders per month is 220,000. The marginal rebate for orders falling within monthly orders between 150,001 and 300,000 is 30%. This implies a marginal fee for the $\text{€}20,000$ order of $\text{€}0.06 \times (1-30\%) + 0.10 \text{ bps} \times \text{€}20,000 = \text{€}0.242$. The average discount for 220,000 orders is $(10k \times 0\% + 10k \times 6\% + 20k \times 12\% + 40k \times 18\% + 70k \times 24\% + 70k \times 30\%)/220k = 21.8\%$. This implies an average transaction fee on the order of $\text{€}0.06 \times (1-21.8\%) + 0.10 \text{ bps} \times \text{€}20,000 = \text{€}0.25$.

Furthermore, a fee for the Delivery Management is applied. The fee is $\text{€}0.40$ per position. Within the ECAG clearing service, netting takes place such that the total number of instructions is significantly smaller than the number of orders. The average number of instructions resulting from 100 CCP-eligible orders of a certain instrument (executed on Xetra) is 2.5. Therefore, on average, an executed Xetra order will generate a delivery management fee of $\text{€}0.40 \times 2.5\% = \text{€}0.01$.

Example C:

The transaction fee on the order is composed of a fixed component of $\text{€}0.06$ and a value-based component of 0.10 bps; for executed Xetra orders with a volume of more than $\text{€}380,000$, the value based clearing fee per order is capped at $\text{€}3.80$. The fixed component of $\text{€}0.06$ is eligible for the ECAG Xetra rebate scheme. The customer's total number of Xetra orders per month is 50,000. The marginal rebate for orders falling within monthly orders between 40,001 and 80,000 is 18%. For the order size of $\text{€}50,000$, the value-based clearing fee of $\text{€}0.50$. This implies a

marginal fee for the €50,000 order of $€0.06 \times (1-18\%) + €0.50 = €0.549$. The average discount for 50,000 orders is $(10k \times 0\% + 10k \times 6\% + 20k \times 12\% + 10k \times 18\%)/50k = 9.6\%$. This implies an average transaction fee on the order of $€0.06 \times (1-9.6\%) + €0.50 = €0.55$.

Furthermore, a fee for the Delivery Management is applied. The fee is €0.40 per position. Within the ECAG clearing service, netting takes place such that the total number of instructions is significantly smaller than the number of orders. The average number of instructions resulting from 100 CCP-eligible orders of a certain instrument (executed on Xetra) is 2.5. Therefore, on average, an executed Xetra order will generate a delivery management fee of $€0.40 \times 2.5\% = €0.01$.

4 Settlement fees

	Example A	Example B	Example C
One-off fees	€0.00	€0.00	€0.00
Membership fees	€0.00	€0.00	€0.00
Account management fees	€0.00	€0.00	€0.00
Connectivity fees	Paid to 3 rd party provider	Paid to 3 rd party provider	Paid to 3 rd party provider
Total periodic fees per year	€0.00 (+ fees paid to 3 rd party provider)	€0.00 (+ fees paid to 3 rd party provider)	€0.00 (+ fees paid to 3 rd party provider)
Average transaction fee on the order (assumes netting of 95% of settlement instructions in CCP)	(GCM is charged €0.01 by ECAG)	€0.01	€0.01
Other transaction-related fees required for settlement	€0.00	€0.00	€0.00
Total transaction fees per order	(charged by GCM)	€0.01	€0.01

Notes:

- n Settlement transactions for CCP-eligible equities are carried out by Clearstream Banking Frankfurt (CBF) but charged by ECAG. It is assumed that the example customers are also customers of CBF in order to settle transactions that are not CCP eligible. CBF does not charge one-off or periodic fees for membership or account management. For connectivity fees related to CBF, fees are payable to third parties. Separate connectivity to CBF systems is only necessary for direct settlement of non-CCP eligible instruments. These instruments comprise only a minor part of the cash equity business.
- n Within the ECAG clearing service, netting takes place, such that the total number of settlement instructions is significantly lower than the gross number of orders. Therefore, average settlement

fees per order amount to much less than the settlement transaction fee per net instruction shown in the price list.

Transaction Fee Calculations:

- Example A: The fee is €0.275 per net settlement instruction. Within the ECAG clearing service, netting takes place, such that the total number of settlement instructions is significantly smaller than the number of orders. The average number of settlement instructions resulting from 100 CCP-eligible orders of a certain instrument (executed on Xetra) after shaping is 5 (described as a netting efficiency of 95% after shaping). Therefore, on average, an executed Xetra order will generate a settlement fee of $€0.275 \times 5\% = €0.01375$. Under normal circumstances, the transaction fee is passed on by the GCM to the bank. There might be additional transaction fees levied by the GCM.
- Example B: The average number of settlement instructions resulting from 100 CCP-eligible orders of a certain instrument (executed on Xetra) after shaping is 5 (described as a netting efficiency of 95% after shaping). Therefore, on average, an executed Xetra order will generate a settlement fee of $€0.275 \times 5\% = €0.01375$.
- Example C: The average number of settlement instructions resulting from 100 CCP-eligible orders of a certain instrument (executed on Xetra) after shaping is 5 (described as a netting efficiency of 95% after shaping). Therefore, on average, an executed Xetra order will generate a settlement fee of $€0.275 \times 5\% = €0.01375$.
-