



SASB-Index

Deutsche Börse SASB-Index Security & Commodity Exchanges Standard 2022

Table 1. Sustainability Disclosure Topics & Accounting Metrics

Topic	Accounting Metric	Category	Code	Response									
Promoting Transparent & Efficient Capital Markets	(1) Number and (2) average duration of (a) halts related to public release of information and (b) pauses related to volatility	Quantitative	FN-EX-410a.1	<p>Cash Market (Xetra) as main trading venue:</p> <table border="1"> <thead> <tr> <th></th> <th>Number</th> <th>Average Duration</th> </tr> </thead> <tbody> <tr> <td>Halt ("trading suspension")</td> <td>34¹⁾</td> <td>49m²⁾</td> </tr> <tr> <td>Pause ("volatility interruption")</td> <td>216,325³⁾</td> <td>2m0s – 2m30s⁴⁾</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Halt number for FY2022 and for Xetra trading venue as benchmark cash market in terms of liquidity and turnover Halt duration as median of individual durations; 46m is benchmark while factual durations may deviate significantly e.g., with foreign shares dependent on a given circumstance Pause number is for FY2022 and Xetra (standard) volatility interruptions, which are processed automatically by the trading system; extended volatility interruptions, which require manual interruption by Market Operations, are not included Pause duration is a range of min and max possible, as currently set up in the trading system <p>Eurex:</p> <p>Suspension of the trading of the derivatives in Eurex may occur when trading of the underlying share is suspended in the home exchange of the underlying. The number of the halts due to the suspension of trading in the home exchange in the year 2022 totalled 45 (underlyings) altogether for 111 derivative products. The average duration of suspension was 5 hours and 15 minutes compared to the normal expected trading hours while median duration totalled 2 hours and 15 minutes. The difference is explainable by couple of underlyings being suspended the whole day or over several days.</p> <p>Volatility interruption at Eurex takes place if the next expected execution price of a derivative instrument within a specific time frame is outside of the specific price range during continuous trading. During the year 2022, 40 volatility interruptions occurred. Expected duration of the volatility interruption is a couple of minutes.</p>		Number	Average Duration	Halt ("trading suspension")	34 ¹⁾	49m ²⁾	Pause ("volatility interruption")	216,325 ³⁾	2m0s – 2m30s ⁴⁾
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Halt ("trading suspension")	34 ¹⁾	49m ²⁾											
Pause ("volatility interruption")	216,325 ³⁾	2m0s – 2m30s ⁴⁾											
	Percentage of trades generated from automated trading systems	Quantitative	FN-EX-410a.2	<p>Cash market (Xetra) as main trading venue:</p> <p>100% (all trades) in Xetra are generated from the automated trading system.</p> <p>Eurex:</p> <p>100% (i.e., all trades) at Eurex are generated from the automated trading system. In the year 2022, the number of traded contracts totalled 1,955,730,332 executed through 226,949,389 trades in 257 trading days. Of this volume 65.79% were created through automatic matching and remaining 34.21% through off-book trading (trade entry service).</p>									

Deutsche Börse Group is aware that automated or algorithmic trading on its trading platforms creates opportunities and risks. Deutsche Börse currently reviews mechanisms which will make it possible to systematically monitor and process opportunities such as higher trading volumes or risks such as higher volatility of securities.

Description of alert policy regarding timing and nature of public release of information	Discussion and Analysis	FN-EX-410a.3	<p>From the exchange point of view, non-public information regarding listed companies which, if it was made public, would be likely to have a significant effect on the price of the financial instrument issued by the company (aka “inside information” or “ad-hoc news”) as a rule reach the exchange over fax/email 30m before it is made public over information service providers such as e.g. EQS Group AG and presstext Nachrichtenagentur GmbH or the company’s own website (exception is a foreign share, listed on the exchange parallel to listing on its reference market, where the exchange follows the reference market decisions). These pre-publication messages may reach the exchange during or outside exchange trading hours. If the exchange is notified within exchange trading hours, the exchange evaluates the specific information in question, in particular whether or not orderly trading in the relevant financial instrument can still be ensured. If the result of the evaluation is that orderly trading cannot be ensured, the financial instrument is suspended (halted) from trading any time before the message is due to be made public and generally for 60m from suspension timestamp. Trading suspension is communicated on the exchange news board and on the website under Deutsche Börse Xetra - FWB Bekanntmachungen.</p>
Description of policy to encourage or require listed companies to publicly disclose environmental, social, and governance (ESG) information	Discussion and Analysis	FN-EX-410a.4	<p>Since April 2017 CSR reporting is mandatory as part of annual reporting for all listed companies with more than 500 employees in Germany. In order to fulfil the provisions of sections 289b–e and 315b–c of the Handelsgesetzbuch (HGB, German Commercial Code), companies must disclose information on non-financial matters, business related risks, due diligence processes and key performance indicators. 92% of all companies listed in DAX Indices were subject to the legal obligation to report on non-financial aspects. As there is already a EU-wide legal obligation to report on ESG aspects, Deutsche Börse does not require its listed companies to disclose ESG information, thus DB1 encourages companies to meet ESG rules and disclosure standards through the following measures:</p> <p>(1) Deutsche Börse Group’s products and services offer investors, issuers and other market participants the marketplace as well as the infrastructure and the needed support to execute financial transactions or offer financial instruments. A comprehensive product portfolio in sustainable investments has emerged over the past few years. While our ESG products and services of our respective segments generate economic value in different areas of the financial sector and the real economy and are often not comparable, they have one thing in common: They increase information transparency on ESG matters – be it by integrating ESG ratings (offered by ISS), data and/or analytics and indices (offered by Qontigo), showcase ESG data by listees (offered by Frankfurt Stock Exchange’s ESG Visibility Hub) or by reporting data on trading volumes and prices for securities (offered by Xetra), derivatives (offered by Eurex) and renewable energies and emission allowances (offered by EEX). To this end, our product portfolio can increase information transparency specifically by providing generally accepted indicators as market signals. And this encourages listed companies to publicly disclose their ESG information. You can find a comprehensive description of Deutsche Börse’s sustainable products on our ESG-Product Hub.</p> <p>(2) Deutsche Börse co-founded the “Green and Sustainable Finance Cluster Germany”, which is a sustainability initiative for the German financial market that was initiated in April 2018. It is a merger of the Accelerating Sustainable Finance Initiative of Deutsche Börse and the Green Finance Cluster Frankfurt of the Ministry of Economic Affairs for Hessen. The Cluster offers a platform for dialogue on topics relating to green and sustainable finance and involves all relevant stakeholders such as corporates, policymakers, civil society, and academics. Its central objectives – creating transparency and supporting standardisation. In that regard, Deutsche Börse aims at promoting and facilitating transfer of information among regulators, investors, and companies. The Cluster has also founded a so-called Task Force on Climate-related Financial Disclosures (TCFD) Think Thank, that organised a series of workshops on TCFD to foster knowledge on that topic and to provide training and written guidance and information on how to incorporate the TCFD reporting recommendations and on how to use the TCFD recommendations with regard to the companies ESG disclosure.</p> <p>(3) Furthermore, Deutsche Börse and ISS ESG, the responsible investment arm of Institutional Shareholder Services Inc. (ISS)*, have therefore developed an ESG KPI Report to help SMEs in particular get started with ESG reporting by providing guidelines and best practice examples. Companies that already publish sustainability reports can upload the ESG-KPI-Report in addition to their existing ESG data in the ESG Visibility Hub. This offers a structured approach to an above all efficient way of dealing with the topic of sustainability in capital market communications. This makes it particularly suitable for smaller and medium-sized companies as well as for newcomers to reporting.</p> <p>(4) Moreover, Deutsche Börse participates in disclosure programs such as the Sustainable Stock Exchange Initiative.</p>

Managing Conflicts of Interest	Total amount of monetary losses as a result of legal proceedings associated with fraud, insider trading, anti-trust, anti-competitive behavior, market manipulation, malpractice, or other related financial industry laws or regulations	Quantitative	FN-EX-510a.1	<p>As of 31 December 2022, there were no monetary losses as a result of legal proceedings associated with fraud, insider trading, anti-trust, anti-competitive behavior, market manipulation, malpractice, or other related financial industry laws or regulations.</p> <p>Further details regarding ongoing legal proceedings can be found in the annual report 2022 of Deutsche Börse Group on page 70.</p>
Discussion of processes for identifying and assessing conflicts of interest	Discussion and Analysis	Discussion and Analysis	FN-EX-510a.2	<p>Being a market infrastructure provider with broad interaction with major market participants along the value chain, the potential for conflicts of interest is inherent in Deutsche Börse Group's business. Moreover, individuals may be subject to circumstances in their professional as well as their personal life that create the potential for conflicts of interest. Thus, it is of utmost importance that Deutsche Börse Group can identify and effectively manage potential or actual conflicts of interest between itself (including its management body members, employees, or any persons closely associated to them) and third parties.</p> <p>Conflicts of interest may arise in situations in which the interests of one party interfere with (or appear to interfere with) the interests of another party. This can impair the ability of one or both conflict parties to act fairly and ethically, particularly either party's objectivity to take a decision or to participate in a decision-taking process in the course of its professional obligations.</p> <p>DBG has implemented a group framework to identify and appropriately manage conflicts of interest. The management bodies of DBG entities establish, approve and oversee the implementation and maintenance of effective organisational and administrative arrangements to identify, prevent, assess, manage, mitigate and/or make transparent (potential) conflicts of interest.</p> <p>General principles:</p> <p>In the context of the role performed at DBG, all persons in scope shall act with honesty, objectivity, personal responsibility and in accordance with the highest standards of integrity through their professional and personal behaviour. They shall respect all applicable laws and regulations in all relevant jurisdictions. They shall carry out their professional duties with due skill, care and diligence, in the fair interests of their customers and the integrity of the market. As a core principle regarding any business activity of DBG, all customers shall be treated fairly at all times.</p> <p>Persons in scope are not permitted to take any decisions in their own interest, or in the interest of third parties, other DBG entities or persons closely associated to them, where such decisions are not in line with or contrary to regulatory requirements or DBG's interests.</p> <p>Furthermore, they shall in particular abstain from activities that compete with activities of DBG, from grasping any business opportunities to the detriment of DBG, as well as from any kind of misuse of inside information or other sensitive, non-public information obtained in the course of their professional responsibilities, or of their professional position, for their own personal gain.</p> <p>When identifying a situation where a (potential) conflict of interest cannot be avoided, appropriate actions to manage, document and, as applicable, report this situation shall be taken. Generic checks supporting the identification of (potential) conflicts of interest are implemented in various processes and procedures in DBG, e.g. in the context of recruitment, the implementation of new products and services, and procurement.</p> <p>Mitigating measures include the Group Policy on Conflicts of Interest, a tool-based solution for notification, assessment and reporting (to management and regulators), awareness-raising measures, notification requirement for (potential) conflicts of interest, (physical, virtual) segregation, recusal, exclusion, termination, controls and monitoring, conflict disclosure to third parties.</p> <p>For more information, see the Principles on the management of conflicts of interest at Deutsche Börse Group, published (here).</p> <p>To do justice to the importance of this topic, Deutsche Börse has also integrated it into its Code of business conduct, see (here).</p>

Managing Business Continuity & Technology Risks	(1) Number of significant market disruptions and (2) duration of downtime	Quantitative	FN-EX-550a.1	<p>(1) In addition to multiple testing of the used software, its verified roll-out and the end-to-end monitoring of servers, network and applications disaster recovery tests were executed successfully after each major software deployment and also the yearly FIA test with customers and partners was used for testing. The system availability for the spot market trading system reached 100 per cent and the figure for the derivative market trading system is 99.999 per cent. (Minor delay of early morning startup due to data inconsistency for one product that was then suspended.)</p> <p>(2) This corresponds to a downtime of 2.81 minutes during the entire year.</p>
	(1) Number of data breaches, (2) percentage involving personally identifiable information (PII), (3) number of customers affected	Quantitative	FN-EX-550a.2	<p>Reporting of personal data breaches is subject to Deutsche Börse Group's Data Protection Policy in accordance with GDPR requirements. Within 2022 Deutsche Börse Group is reasonable comfortable having addressed potential data protection shortcomings in a sufficient way by the measures described herein. All employees have to conclude mandatory data protection training including personal data breach awareness. In case of personal data breaches additional training has been provided and data protection by design and default reevaluated. Where necessary additional controls have been performed by the Data Protection Officer. Lessons learned from personal data breaches are regularly considered for improvement of the data protection management system. In all cases notified to the competent data protection authority due to our proactive notification approach also in cases of doubt (maximum transparency towards authority) the authority responded that the incident had no impact on the individuals and all mitigating measures were adequate.</p> <p>Data for 2022:</p> <p>(1) Number of data breaches: 98 (2) Percentage involving personally identifiable information (PII): 2.04% (3) Number of customers affected: 37</p> <p>No case of delay disclosure.</p>
Description of efforts to prevent technology errors, security breaches, and market disruptions	Discussion and Analysis	FN-EX-550a.3	<p>Measures for high availability, short Recovery Time Objective (RTO) and a targeted zero RPO (Recovery Point Objective) of the applications is achieved with generally two different approaches:</p> <p>(1) Trading systems with design target of lowest latency are run in one data centre on a redundant server and process setup, where each server process has an immediately available backup process which steps in if primary fails. The physical layout of the servers and switches distribute these pairs in two rooms with separate power and air condition and secured by fireproof walls within the same data centre for fast fail over. In case of a total loss of one data centre, a disaster recovery system sets up as a logical copy of the primary is provided in a disaster recovery data centre. A manual restart within the given RTO is tested multiple times per year.</p> <p>(2) Clearing and risk systems with design target of high data resilience and a zero RPO are run in a disaster tolerant setup. The servers are distributed symmetrically over the two geographically distant data centres and the storage is synchronously copied. In case of failure of servers or even whole data centres, the residual capacity is still sufficient to run the service and the application fails over, respectively reconnects automatically. The synchronous data storage allows for a zero RPO.</p>	
			<p>Information Security:</p> <p>Deutsche Börse Group's information security approach is based on a model with three lines of defence and includes overall measures in accordance with ISO/IEC 27001 covering both the development phase and the operational phase. Across the Group we operate a programme to sensitise our employees to the responsible handling of information, raise their awareness of information security aspects and report security incidents promptly. The Group operates a situation centre (CERT), which detects and assesses threats from cybercrime at an early stage, and coordinates risk mitigation measures in cooperation with the business units. In order to maintain the integrity of our Group's data, and in order to mitigate and control the risks, we are continuously implementing measures to increase information security. These measures include regular threat analyses, for example, and the systematic testing of our applications for vulnerabilities. The aim is to proactively make procedures, applications and technologies against cybercrime and other potential attacks more robust by adapting them to the current threats and regulatory requirements. We are a full member of national associations (Cyber Security Sharing and Analytics, CSSA), trade associations (World Federation of Exchanges) and international networks (Financial Services Information Sharing and Analysis Center, FS-ISAC) which contribute significantly towards a forward-looking stance vis-à-vis cyber threats, and the development of strategies to fend off such threats. Furthermore, we are a member of the ECB's Euro Cyber Resilience Board for pan-European financial infrastructures (ECRB). There was no serious attack on the Group's IT systems in 2022. For more detailed information, see the annual report 2022 pp. 55, 56 (7. Our customers and markets) and p. 60 ff. (9. Risk Management).</p>	

Table 2. Activity Metrics

Activity Metric	Category	Code	Response
Average daily number of trades executed, by product or asset class	Quantitative	FN-EX-0	<p>Cash market:</p> <p>In 2022, the combined average daily number of trades (buy+sell) on trading venues Xetra, Börse Frankfurt and Tradegate (included up to June 2022, deconsolidated as of July 2022) amounted to</p> <ul style="list-style-type: none"> • Equities: 1,243,839 • ETFs, ETCs, ETNs: 134,240 • Bonds: 2,030 • Funds: 2,089 • Structured Products and Other Instruments: 25,856 <p>Eurex:</p> <p>The average daily number of trades in 2022 totalled 883,071 in 257 trading days resulting from 226,949,389 trades for year 2022. The average daily number of trades in Equity Index derivatives reached 405,669 (45.94%), interest rate derivative 453,286 (51.33%) equity derivatives 10,459 (1.18%) and all the rest asset classes including volatility index derivatives, dividend derivatives, ETF and ETC, FX derivatives and commodity derivatives 13,658 (155%).</p> <p>360T: The average daily number of trades in 2022 totalled 47,146 trades.</p>
Average daily volume traded, by product or asset class	Quantitative	FN-EX-000.B	<p>Cash Market:</p> <p>In 2022, the combined average daily order book turnover (single-counted) on trading venues Xetra, Börse Frankfurt and Tradegate (included up to June 2022, deconsolidated as of July 2022) amounted to:</p> <ul style="list-style-type: none"> • Equities: €5,538 million • ETFs, ETCs, ETNs: €1,091 million • Bonds: €19 million • Funds: €7 million • Structured Products and Other Instruments: €54 million <p>Eurex:</p> <p>The average daily number of traded contracts in 2022 totalled 7,609,846 in 257 trading days resulting from 226,949,389 trades for year 2022. The average daily contract volume in Equity Index derivatives reached 3,605,162 (47.37%), interest rate derivative 2,822,076 (37.08%), equity derivatives 1,019,661 (13.40%) and all the rest asset classes including Volatility Index derivatives, Dividend derivatives, ETF and ETC, FX derivatives and commodity derivatives 162,946 (2.14%).</p> <p>360T:</p> <p>360 T daily trade volumes reached 119 €bn in 2022.</p>