



# Nasdaq Clearing AB Disclosure Report

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## Responding institution:

Nasdaq Clearing AB

## Jurisdictions in which the Financial Market Infrastructure (“FMI”) operates:

Sweden

Norway

## Authorities regulating, supervising or overseeing the FMI:

Nasdaq Clearing AB's competent authority under the European Markets Infrastructure Regulation<sup>1</sup> is the Swedish Financial Supervisory Authority. Nasdaq Clearing AB is overseen by a college of European regulators, which includes the Riksbank, the central bank of Sweden, which is tasked with promoting financial stability. This includes the oversight of Nasdaq Clearing AB. Riksgälden, the Swedish National Debt Office, is the resolution authority for Nasdaq Clearing AB.

The date of this disclosure is May 2023.

This disclosure can also be found at:

<http://business.nasdaq.com/trade/clearing/nasdaq-clearing>

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<sup>1</sup> Regulation (EU) No 648/2012 Of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories.

## Definitions

BCP	Business Continuity Plan(s)
CMS	Collateral Management Service
CSD	Central Securities Depository
CPMI	Committee on Payments and Market Infrastructures
Clearing Rules	Collective name in this document for the Clearing Rules, referring to the Clearing Rules of Nasdaq Derivatives Market and the Clearing Rules of Nasdaq Commodity Derivatives Market
Clearing Rules FIN	Clearing Rules of Nasdaq Derivatives Market
Clearing Rules COM	Clearing Rules of Nasdaq Commodity Derivatives Market
DC	Default Committee
DvP	Delivery versus payment
EMIR	The European Markets Infrastructure Regulation
ERM	Enterprise Risk Management
EVT	Extreme Value Theory
GMRA	Global Master Repurchase Agreement
ICA	Individual Client Segregated Accounts
IOSCO	International Organization of Securities Commissions
ITL	IT Infrastructure Library
LR	Liquid Resources
LaR2	Liquidity at Risk (Liquidity Model)
MRC	Member Risk Committee
Nasdaq Commodities	Nasdaq Commodities Market which is the clearing of commodities instruments
Nasdaq Financial	Nasdaq Derivatives Markets which is the clearing of financial instruments
NCRC	Nasdaq Clearing Risk Committee
NPAC	New Product Approval Committee
NPAP	New Product Approval Policy
PFMI	Principles for Financial Market Infrastructures
RP	Recovery Plan
RCSA	Risk Control Self-Assessment
SOX	Sarbanes-Oxley Act
Swedish FSA	Finansinspektionen (unofficial translation: the Swedish Financial Supervisory Authority)
The Board	The Board of Directors of Nasdaq Clearing AB
TR	Trade Repository

## I. Executive Summary

This document (**Disclosure Report**) is prepared in accordance with the Principles for Financial Market Infrastructure” (**PFMIs**) published in February 2012 and developed jointly by the Committee on Payments and Market Infrastructures (**CPMI**<sup>2</sup>) and the Technical Committee of the International Organization of Securities Commissions (**IOSCO**).

The objective of this Disclosure Report is to provide relevant disclosure to market participants with respect to Nasdaq Clearing AB (hereinafter referred to as **Nasdaq Clearing**, the **clearing house** or the **CCP**) and its role as a central counterparty and its management of different types of risk. The scope of the Disclosure Framework is limited to the clearing activities performed by Nasdaq Clearing under its current clearing license: i.e. (1) Nasdaq Derivatives Markets, which is the clearing of financial instruments (**Nasdaq Financial**), and (2) Nasdaq Commodities which is the clearing of commodities instruments (**Nasdaq Commodities**). No disclosure is provided with respect to Principles 11 and 24 as they do not apply to CCPs.

Nasdaq Clearing is part of the Nasdaq Group – an international group that inter alia offers services for trading in securities and technical systems for trading and processing of transactions in securities in more than 50 countries. The European part of the Nasdaq Group regulated entities includes exchanges in Stockholm, Copenhagen, Helsinki, Reykjavik, Oslo, Tallinn, Riga and Vilnius, as well as the central securities depository with business presence in Latvia, Lithuania, Estonia and Iceland and additionally AS Pensionikeskus, pension business in Estonia.

For a market participant to access Nasdaq Clearing, there are several different clearing membership categories available. Throughout the document the terms participants and members will be used interchangeably. Regardless of the type of legal entity and membership category, an approved clearing member must at all times meet the financial requirements and be considered fit and proper for the relevant membership category. This includes possessing a suitable organization, necessary risk management organization and routines, secure technical systems, and otherwise, in Nasdaq Clearing’s opinion, being suitable to participate in clearing operations. Nasdaq Clearing has 136 clearing members from 15 different

jurisdictions at the time of publication of this report.

Nasdaq Clearing handles traditional business risks, as well as specific risks that are unique to the derivative clearing services it provides. The most noteworthy of these risks, with respect to the risk of loss, is counterparty default, the risk that one or several market participants will default on their obligations to the clearing organization. Nasdaq Clearing’s counterparty risks are professionally managed within the Risk Management department, through a comprehensive counterparty risk management framework. This consists of policies, procedures, standards, and human, informational and technological resources. All together this provides accurate measurement, adequate control, and desired level of protection from all identifiable counterparty risks and all risks arising within the operations and services of Nasdaq Clearing.

The European Market Infrastructure Regulation (Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories) (**EMIR**) came into force on August 16, 2012. One of the objectives of EMIR is to reinforce the role of central counterparties in mitigating certain aspects of market and counterparty risk with the aim to protect the stability of the financial system.

Nasdaq Clearing has been authorized by and is under supervision by the Swedish Financial Supervisory Authority, Finansinspektionen, (the **Swedish FSA**) to conduct clearing operations under EMIR. The operations of Nasdaq Clearing are also governed by the Swedish Securities Market Act (2007:528) (Sw: lagen (2007:528) om värdepappersmarknaden). All operations of Nasdaq Clearing are subject to the supervision of the Swedish FSA and the central clearing party operations are also overseen by the Swedish Central Bank (**Riksbanken**).

Nasdaq Clearing is also subject to obligations under Regulation (EU) 2021/23 of the European Parliament and of the Council of 16 December 2020 on a framework for the recovery and resolution of central counterparties, for which Riksgälden, the Swedish National Debt Office, is the resolution authority for Nasdaq Clearing.

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2 In June 2014, the Committee on Payment and Settlement Systems (CPSS), changed name to the Committee on Payments and Market Infrastructures (CPMI).

## II. Summary Of Major Changes Since The Last Update Of The Disclosure

This Disclosure Report has been conducted on the basis of Nasdaq Clearing's activities as a central counterparty as per 31 March 2023 .

The first version of Nasdaq Clearing's Disclosure Report (previously named the "Disclosure Framework") was published in March 2014. This is the fourth bi-annual update and changes include enhancements to the Enterprise Risk Management framework, as well as general updates to reflect the clearing house as of March 2023:

- Indirect Pledge (IDP) account structure decommissioned;
- Continued development of recovery plans in conjunction with Regulation (EU) 2021/23 of the European Parliament and of the Council of 16 December 2020 on a framework for the recovery and resolution of central counterparties, applicable as of 12 August 2022 with certain requirements applicable from 12 February 2023.
- Updated recovery tools, Senior Capital (Second Skin in the game (2SITG)) now allowed to be used not only for default losses but also for non-default losses.
- Anti-financial crime framework enhanced;
- Nasdaq Clearing enhanced the framework to manage its outsourcing and cloud outsourcing risks, following ESMA cloud outsourcing Guidelines;
- Nasdaq Clearing's liquidity model (LaR) updated;
- Default Fund recalculation changed from quarterly to monthly.

## III. General Background On The FMI

### General Description Of The FMI And The Markets It Serves

#### Nasdaq Clearing's Role In The Overall Payment, Clearing And Settlement Landscape

One of the principal functions of a clearing house is to guarantee that all contracts traded will be honored. The derivatives trading carried out at Nasdaq Stockholm AB (the financial derivatives exchange) and Nasdaq Oslo ASA (the commodities derivatives exchange) is automatically subject

to clearing at Nasdaq Clearing, whereby Nasdaq Clearing becomes the counterparty in all transactions, i.e. acts as a buyer to the seller and as a seller to the buyer. Nasdaq Clearing also clears seafood derivatives for the Norwegian exchange Fish Pool. Moreover, Nasdaq Clearing clears over the counter (OTC) transactions for interest rates swaps in SEK, which are reported into the clearing house and cleared. Counterparty risk is the risk that one party in a transaction will not be able to fulfil its obligations in due time. In its capacity as a clearing house, counterparty risk is always present for Nasdaq Clearing. In order to ensure that the clearing house has the capacity to fulfil its obligations, it requires and receives collateral from the participating counterparties. In addition, it holds a member-sponsored default fund and retains its own capital resources.

As part of the clearing house operations, Nasdaq Clearing carries out expiration procedures, cash settlement and deliveries that arise from the contractual responsibilities established between the clearing house and its members. Daily cash settlement related to premiums, fees, mark-to-market (variation margin) and other cash settlement not related to delivery of securities are settled through one of Nasdaq Clearing's approved settlement banks. Members of Nasdaq Clearing are required to hold a bank account with such approved settlement banks for purposes of managing daily cash settlement.

In addition to the settlement banks, Nasdaq Clearing has appointed concentration banks which act as an intermediary between Nasdaq Clearing's approved settlement banks. All transfers between Nasdaq Clearing's accounts with approved settlement banks are done through a concentration bank. For payments in SEK, DKK, EUR and GBP, the Swedish Riksbank, the Danish National Bank, the Finnish Central Bank, and The Bank of England respectively are engaged as concentration banks. For other currencies, a commercial bank is engaged as concentration bank.

As a central counterparty, Nasdaq Clearing guarantees all deliveries, independent of the original counterparty's delivery or payment ability. However, Nasdaq Clearing does not undertake the responsibility to fulfil the delivery of securities on the original settlement day if the original counterparty cannot fulfil its obligation. In that case, Nasdaq Clearing has the right to buy securities and charge a delay fee for failed delivery or take other steps to complete the delivery.

Delivery of shares is made through Nasdaq Clearing's

accounts in central securities depositories (**CSD**<sup>3</sup>). The principle Delivery-versus-Payment (**DvP**) applies for all financial deliveries of underlying securities due to expiration or exercise. Delivery of the emission allowances and the electricity certificates takes place in Nasdaq Clearing registry accounts with the relevant registry.

The credit enhancing effects of a centralized clearing house boost market efficiency, reduce risk and allow broader client participation. Each of these features contributes to increasing liquidity in the marketplace. As a central counterparty, Nasdaq Clearing also plays an important role in terms of stability in the financial system.

### General Description Of Nasdaq Clearing's Operations And Services

Nasdaq Clearing clears all trades executed on the derivatives markets operated by Nasdaq Financial and Nasdaq Commodities as well as OTC trades done outside the regulated markets and reported to the clearing house for clearing. Nasdaq Clearing offers clearing of equity and index derivatives, fixed income derivatives, repos in fixed income and commodity derivatives on power, natural gas, emission rights, electricity certificates, seafood and renewable energy.

As a clearing house, Nasdaq Clearing becomes the legal counterpart to the original buyer and seller in a trade, through so called novation. This means that the original counterparties no longer have risk towards each other. Instead, the clearing house takes on this counterparty risk.

The ability to manage the counterparty risk is dependent on pro-active risk management, a sound legal foundation and the financial strength of the clearing house. Furthermore, rigid financial and operational requirements are applied to its members. Nasdaq Clearing also relies on an advanced portfolio-based margining system to determine the amount of collateral appropriate for the counterparty risks it assumes. In the event of a loss resulting from a counterparty default, Nasdaq Clearing has a member sponsored default fund as well as its own funded risk-bearing capital, which serves as a buffer between any defaulting counterparty and all other counterparties.

By taking on the responsibility of the original counterparties to the trade, as described above, Nasdaq Clearing becomes

the counterpart to both the buyer and seller of the original trade. The clearing house thus becomes exposed to the risk of the original counterparties not being able to fulfil their obligations to the clearing house. Nasdaq Clearing is protected from this risk through a number of means, including the collateral it collects, the default fund and its own capital resources. Nasdaq Clearing also has pre-defined default management procedures, which are regularly tested via default management Fire Drills.

Please see below statistics showing the average aggregate intraday exposure that Nasdaq Clearing has towards its participants:

The intraday exposure of Nasdaq Clearing to its participants can be measured by the total average daily margin requirement, i.e. the total amount of collateral that it demands from its participants. For 2022, the average total daily margin requirement was SEK 124,4 billion or EUR 11,7 billion<sup>4</sup>.

One of the cornerstones of a clearing house is reliability of its operations. The clearing house should have stable and reliable systems, adequate capacity and the ability to quickly handle major disruptions by the use of backup facilities and well-tested routines to mitigate the impact of operational issues. The operational reliability of Nasdaq Clearing's systems is high with all availability targets met during the period. As well as resilience of systems, which is tested at least annually with failover from primary to secondary sites, the clearing house also has controls and checks in place to cover resilience of daily operations. These Business Continuity Plan (**BCP**) arrangements cover all aspects of the business including relocation of staff from the primary offices as well as back-up processes in case a critical function is interrupted.

Since the end of 2009 Nasdaq Clearing is in full compliance with the Sarbanes-Oxley Act (**SOX**). Each process that significantly contributes to the financial result of Nasdaq Clearing is described in detail and the existing controls are documented. Subsequently, each process is analysed from a risk perspective, utilizing the COSO framework, and any potential risk issues or control weaknesses are addressed and remedied.

3 Currently Nasdaq Clearing has various contractual and operational arrangements with CSDs in Sweden (Euroclear Sweden), Finland (Euroclear Finland), Denmark (Euronext Securities Copenhagen), Norway (Euronext Securities Oslo).

4 The average total daily margin requirement for 2021 was SEK 68,8 billion (or EUR 6,8 billion) and for 2020 SEK 53,5 billion (or EUR 5,1 billion).

## General Organisation Of The FMI

Nasdaq Clearing has in place a Board of Directors (the Board), represented by executive members of the Nasdaq Group as well as independent board members. The Board has overall responsibility for the functioning of the CCP. The Board committees include the Audit and Remuneration Committee as well as the Member Risk Committee (the MRC) which consists of six representatives of the clearing members, four client representatives and two independent members of the Board. These committees convene on a regular basis, typically in connection to the Board meetings. The management committees include the Default Committee, the Recovery Committee and the Nasdaq Clearing Risk Committee (NCRC). Internal Audit, the Chief Risk Officer and the Chief Compliance Officer report directly to the Board. Other functions report to the CEO. Key policies, including the ERM Policy, Risk Appetite Statement, Regulatory Capital and Default Fund Policy, Investment Policy, Liquidity Policy, Financial Risk Policy, Compliance Policy and Conflicts of Interest Policies (among others) are updated periodically, either annually or every second year, and when significant changes are required and approved by the Board.

## Legal And Regulatory Framework

Nasdaq Clearing is authorized as a central counterparty and is licensed to conduct clearing operations by the Swedish FSA pursuant to EMIR. The operations of Nasdaq Clearing are also governed by the Swedish Securities Market Act. Nasdaq Clearing was approved by the Swedish FSA as a clearing house under EMIR on 18 March 2014. The Swedish FSA has also approved and designated Nasdaq Clearing as a system for settlement and notified this to the European Securities and Markets Authority (**ESMA**) pursuant to the Swedish Act (1999:1309) concerning Systems for the Settlement of Obligations on the Financial Market (Sw: lagen (1999:1309) om system för avveckling av förpliktelser på finansmarknaden) (the Swedish Act implementing the Settlement Finality Directive (98/26/EC)). Similarly, the Norwegian Financial Services Authority has approved and registered Nasdaq Clearing Oslo Branch as a designated settlement system in accordance with Norwegian Payment System Act 17 December 1999 No 95. Nasdaq Clearing is also subject to Regulation (EU) 2021/23 of the European Parliament and of the Council of 16 December 2020 on a framework for the recovery and resolution of central counterparties.

All operations of Nasdaq Clearing are subject to the supervision of the Swedish FSA, and the central clearing party

operations are also overseen by the Riksbank. The National Debt Office is the resolution authority for CCPs. In Sweden, trading and clearing are primarily governed by the following acts and regulations, as amended:

- EMIR
- Securities Market Act (2007:528)
- Systems for the Settlement of Obligations on the Financial Market Act (1999:1309)
- Financial Instruments Trading Act (1991:980)
- Rights of Priority Act (1970:979)
- Swedish Bankruptcy Act (1987:672)
- Financial Instruments Accounts Act (1998:1479)

Directive 98/26/EC on Settlement Finality in Payment and Securities Settlement Systems (the **Settlement Finality Directive**) and Directive 2002/47/EC on Financial Collateral Arrangements (the **Collateral Directive**) are important legislative acts for the operations of a CCP and have been transposed into Swedish law primarily through the Systems for the Settlement of Obligations on the Financial Market Act, the Bankruptcy Act and the Financial Instruments Trading Act.

Nasdaq Clearing has issued the Clearing Rules of Nasdaq Derivatives Market and the **Clearing Rules** of Nasdaq Commodity Derivatives Market (collectively referred to as the Clearing Rules or the **Clearing Rules FIN** and **Clearing Rules COM** respectively) which are applicable to its clearing activities. The Clearing Rules together with the membership agreements constitute the contractual framework governing the relationship between Nasdaq Clearing and its participants. The Clearing Rules become binding for participants through the execution of the membership agreement. The contractual relationships between Nasdaq Clearing and the respective participants are governed by Swedish law (for Nasdaq Financial) and Norwegian law (for Nasdaq Commodities).

## System Design And Operations

The Genium INET Clearing system supports the clearing of equities, fixed-income, commodities and over-the-counter instruments, including functionality for margining, risk management, collateral management and settlement activities for all asset classes. CMS WIZER, which is linked to Genium INET is used as custody and payment system. In addition, Nasdaq Clearing uses the Megara system as a settlement hub, interacting with its clearing systems, enabling efficient settlement and monitoring of payments and securities settlement instructions versus banks, custodians, CSDs.



Systems and controls are in place to manage these processes day-to-day, and BCPs and crisis management plans and procedures are in place for situations out of the normal routines.

#### General Lifecycle Of The Transaction Process

Agreement on the details, e.g. contract, price, quantity and matching of a trade, occurs either on one of the exchanges for which the clearing house offers clearing services or bilaterally outside an exchange. Transactions matched on exchange are automatically reported to the clearing house for clearing whilst transactions matched outside an exchange are reported to the clearing house for clearing by the parties to the trade.

Trades reported to the clearing house are novated, meaning that the clearing house becomes the counterparty and takes on the counterparty risk towards each of the parties to the trade. The clearing house accepts trades for clearing in accordance with its own rules and the rules of the respective exchange. Certain trades concluded on a bilateral basis are subject to additional pre-novation collateral controls, requiring collateral to a certain level to be posted in advance.

For each trade and subsequent position, the clearing house calculates a margin requirement based on the market risk of the trade/position and the estimated cost of winding down the position in the event of a default. Members of the clearing house are required to cover their margin requirement with eligible collateral daily or, if deemed necessary by the clearing house, on an intraday basis. For certain contracts the clearing house also calculates variation margin, corresponding to the change in market value of a position, which is shifted between parties with open positions.

Matching and novation occurs during the opening hours of the exchange and clearing house respectively. At the end of the business day, at approximately 19:30 CET, the clearing house calculates margin requirements and other cash settlement obligations. Members have until 11:00 CET the following day to cover their margin and cash settlement obligations.

## IV. PRINCIPLE-BY-PRINCIPLE SUMMARY NARRATIVE DISCLOSURE

### Principle 1: Legal Basis

An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

Swedish and Norwegian law, together with EU legislation and the Clearing Rules provide a well-founded, clear, transparent and enforceable legal basis for Nasdaq Clearing's central counterparty clearing.

The material aspects in relation to Nasdaq Clearing operation include settlement finality, netting arrangements and collateral arrangements, including rights and interest in financial instruments, custody activity and default management procedures.

The legal basis provides a high degree of certainty for each material aspect of Nasdaq Clearing's activities in all relevant jurisdictions and is primarily monitored by the legal department. One of the key objectives of the legal department is to identify and mitigate the legal risks associated with the clearing operations. However, the Board, Risk Management and/or the head of the respective business unit, as well as independent law firms and the Swedish Securities Dealers Association also play an important role in the monitoring of the legal basis as they are involved in the process of reviewing and updating the rules, procedures and contracts. By having this process in place, Nasdaq Clearing ensures the consistency of its rules, procedures and contracts with relevant laws and regulations.

The cross-border nature of the clearing infrastructure gives rise to specific risks. The cross-border implications arise where the seller, the buyer and/or the assets are located in different jurisdictions. Furthermore, agents through which the parties act and/or intermediaries through which the assets are held may be located in different jurisdictions. This cross-border component of clearing necessitates that potential conflict of law issues are addressed and analysed.

By the implementation of the Settlement Finality Directive and Collateral Directive into Swedish and Norwegian legislation, many of the cross-border implications and risks have been reduced by providing legal certainty as to settlement, netting

and collateral risk. However, Nasdaq Clearing takes into consideration that the Settlement Finality Directive and Collateral Directive may have been implemented differently in different member jurisdictions.

Nasdaq Clearing obtains legal opinions in order to further enhance predictability and certainty as regards the enforceability of the material aspects of Nasdaq Clearing's operations in the relevant jurisdictions, including that any actions taken by Nasdaq Clearing will not be voided, reversed or subject to stays. Nasdaq Clearing has also obtained external legal analysis in relation to its operations and the Clearing Rules. The starting point for the external analysis has been the enforceability of the material aspects of the Clearing Rules (i.e. settlement finality, netting arrangements and collateral arrangements, including rights and interest in financial instruments, custody activity and default management procedures).

The legal opinions as per the above description are updated on a regular basis to ensure consistency with the latest legal developments.

The Clearing Rules state that their respective interpretation and application are subject to Swedish law (Nasdaq Financial) and Norwegian law (Nasdaq Commodities). The different rules are publicly available on Nasdaq Clearing's website, and the website also includes related information, and links that can be used as explanatory notes. Nasdaq Clearing's contact details are also available through the website so that participants can ask any questions directly to Nasdaq Clearing.

The Clearing Rules clearly specify Nasdaq Clearing's and the participants' rights and obligations, e.g. how and when registration, set-off, netting and settlement take place. The Clearing Rules also specify when a transfer order should be regarded as irrevocable and the measures available to Nasdaq Clearing in the event of any delay in the delivery of securities or cash. There are clear rules on the requirements to post collateral and the clearing house's right to enforce such collateral.

The process of changing or amending the Clearing Rules also ensures that the rules, procedures and contracts are clear and understandable and consistent with relevant laws and regulations. Changes and amendments to the Clearing Rules are approved on an ad hoc basis and, depending on how significantly the change would impact Nasdaq Clearing or any of its participants, Nasdaq Clearing needs to have the change approved by the Board, the risk management and the heads of respective business units.

Moreover, Nasdaq Clearing's legal department needs to approve the change or amendment and ensure that the change or amendment is consistent with relevant laws and regulations. When making changes to the Clearing Rules FIN, Nasdaq Clearing has an obligation, which is stipulated in the Clearing Rules FIN, to consult with the Swedish Securities Dealers Association before any such change would enter into force. Any change or amendment is notified well in advance before entering into force. In the membership agreement and the applicable Clearing Rules, which are publicly available on Nasdaq Clearing's website, Nasdaq Clearing states the applicable law and the legal basis for its activities to participants and to participants' customers. Through signing the membership agreement and thereby consenting to the relevant Clearing Rules, the participants confirm that they have received and understood the relevant Clearing Rules.

No court in any of the relevant jurisdictions has held any of Nasdaq Clearing's relevant activities or arrangements under its rules and procedures to be unenforceable.

## Principle 2: Governance

**An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.**

Nasdaq Clearing's overall objectives are to provide clearing services honestly, fairly and professionally and in a manner so that public confidence is maintained. Nasdaq Clearing also ensures that any safety requirements associated with the clearing business are met. The main principles guiding Nasdaq Clearing's services are (1) accessibility for participants that meet the requirements stipulated in law and Nasdaq Clearing's own requirements, and (2) neutrality such that the Clearing Rules are applied uniformly on the participants. These objectives and principles are clearly identified in the management report, in the annual report, in the Clearing Rules and in the various policies, guidelines and instructions used to govern the activities of the CCP. Nasdaq Clearing has well-established, documented and sound objectives and governance arrangements in place. The Swedish Companies Act, EMIR, the Swedish Securities Market Act, Regulation (EU) 2021/23 of the European Parliament and of the Council of 16 December 2020 on a framework for the recovery and resolution of central counterparties as well as the Articles

of Association provide the legal prerequisites<sup>5</sup> for the arrangements.

The governance arrangements are complemented by a framework of governance documentation defining the responsibilities of the Board, the CEO and the different committees, as well as the division of work, accountability and reporting lines between these organs.

The prerequisites for safety, efficiency and financial stability are reflected in the overall governance arrangements of Nasdaq Clearing and in its framework of committees and policies, as well as in the organization and reporting lines of the clearing risk management.

In addition to the above, Nasdaq Clearing has identified the following other public interest considerations:

- providing an efficient CCP solution to lower the risks for parties on the relevant derivatives market; and
- providing support for financial stability and ensure an efficient, safe and sound derivatives market.

These are reflected in the objectives by, inter alia, efficient collateral and risk management system, proper governance structure and a robust capital structure.

The governance arrangements enabling identification and mitigation of possible conflicts of interests pertain to the separation of clearing risk management organization, including the different committees' roles, from the business organization, compliance and Internal Audit organization working independently from the business line, and reporting directly to the Board of Directors of Nasdaq Clearing.

The legal basis for the responsibilities for the Board is derived from the Swedish Companies Act (Sw. Aktiebolagslagen (2005:551)), the Articles of Association and EMIR. All board members must pass the Swedish FSA's Management Suitability Assessment, which focuses on three areas: (1) personal conduct; (2) competence; and (3) conflicts of interest.

The Board has legal responsibility for major decisions related to Nasdaq Clearing, as well as for the legal and regulatory compliance of Nasdaq Clearing. All major decisions of legal or regulatory concern to Nasdaq Clearing need to be taken by the Board. The Board also adopts Risk Appetite Statement ultimately deciding on the appropriate level of risk taken by the management. The role and the responsibilities of the Board, and its individual members, especially the Chairman,

are further defined in the Rules of Procedure adopted by the Board. The Board has also adopted the Instructions for the CEO, which define the division of responsibilities between the Board and the CEO. The Board shall make all major decisions in respect of investments, organization and agreements, provided they are not defined as matters that should be resolved by the shareholders' general meeting in the Articles of Association or the Swedish Companies Act. The Board shall also ensure that Nasdaq Clearing complies with its obligations under the Swedish FSA's regulatory framework, including the obligations of Nasdaq Clearing as a licensed entity, the regulatory requirements under EMIR and under Regulation (EU) 2021/23 of the European Parliament and of the Council of 16 December 2020 on a framework for the recovery and resolution of central counterparties.

In addition, the Board adopts policies and reviews independent risk reports provided by Chief Risk Officer, incl. on anti-financial crime as well as reports on internal control, regulatory capital, compliance, remuneration, outsourcing, IT and information security, conflicts of interest, code of ethics, and internal audit. The Board also adopts the workplan for the Risk function, Compliance plan and the Internal Audit plan. Furthermore, the Board shall make decisions on amendments to the Clearing Rules, where the amendment is of principle significance or major importance.

Any conflict of interest issues with respect to the Board are dealt with according to a written policy. This policy ensures that the CCP assumes final responsibility and accountability for managing the CCP's risks as well as ensuring that the Board members understand their responsibilities with regard to personal conflicts.

The members of the Board, including the independent board members, and the committees, the CEO and the management have all appropriate skills, experience and integrity to carry out their duties and tasks. The remuneration principles and the performance review procedure have been implemented to ensure the integrity of Nasdaq Clearing's central counterparty clearing operations. Nasdaq seeks to strengthen the integrity of its managers by requiring them to go through regular training regarding the code of conduct and regulatory issues. Moreover, all managers are required to certify annually their compliance with information security, the code of ethics and related code of conduct policies. The CCP has an annual performance review process for the Board which assesses

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5 Nasdaq Clearing is additionally subject to the Protective Security Act in Sweden.

both the performance and competence of the Board as a whole and its individual members.

The Board of the CCP retains responsibility for compliance and risk management of the CCP and has adopted the relevant policies which pertain to this. These include (but are not limited to) the Risk Appetite Statement, the Risk Management Strategy and the Compliance Policy. The risk management framework within Nasdaq Clearing is substantially provided by way of the establishment of three risk committees:

- the Nasdaq Clearing Risk Committee (**NCRC**);
- the Default Committee (**DC**); and
- the Member Risk Committee (**MRC**);

and through the adoption of charters from the Board for each of these committees. The charters define the tasks and duties, composition, decision making, meeting procedure and reporting for each committee. They are updated regularly, and the framework is assessed in connection with the changes by the Board. Nasdaq Clearing also has in place a Remuneration Committee, an Audit Committee and a Recovery Committee. In addition, Nasdaq Clearing has established a Credit Committee (**CC**) which is a sub-committee to the NCRC. The CC assists the NCRC in its credit risk oversight role, ensuring that the credit risk management framework is appropriate and functioning as intended and that the level of risk assumed is consistent with Nasdaq Clearing's strategy and credit risk appetite.

Nasdaq Clearing has well-established ERM framework that helps the organization to identify, monitor, measure and report risks. Internal Audit, having an independent position in relation to Nasdaq Clearing's management, carries out regular audits in accordance with their annual plan as well as ad hoc audits, where appropriate. The external auditors, appointed by the general meeting, exercise the control from the owner's point of view. Nasdaq Clearing uses a framework of policies and guidelines, including, but not limited to, clearing operations and clearing capital, risk management, information security, remuneration and outsourcing.. The Chief Risk Officer, Chief Compliance Officer (**CCO**) and Internal Auditors report directly to the Board of the CCP.

Nasdaq Clearing has a well-established and multi-channel procedure in place in order to ensure that the legitimate interests of its direct and indirect participants and other relevant stakeholders will be taken into account in material decisions, for example pertaining to the strategy, design and Clearing Rules.

Nasdaq Clearing discloses on its public website a considerable amount of information of its governance arrangements, including, but not limited to, the Board, clearing operations and activities, clearing policies, default procedures, stress testing and the audited financial statement.

### Principle 3: Framework For The Comprehensive Management Of Risks

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

Nasdaq Clearing defines risk as the exposure to adverse consequences arising from internal or external changes, actions, events, decisions and/or circumstances that have the potential to reduce shareholder value. Those adverse consequences may include one or more of the following: financial gain/loss, regulatory censure, harm to Nasdaq Clearing's reputation, disruption to the clearing house's operations, and impact to members and clients.

Nasdaq Clearing's risk governance strengthens Nasdaq's "tone from the top" through an overarching risk appetite statement to guide risk-taking decisions, committees designed to oversee risks, and Enterprise Risk Management (ERM) policies and procedures that document core risk management principles. These risk governance elements combine to create a system, which promotes adherence to Nasdaq Clearing's risk appetite, while pursuing corporate strategy and objectives and adapting to changing regulatory and market environments. The framework ensures that all risks are recorded, addressed and controlled.

Nasdaq Clearing operates in accordance with the Three Lines Model where all employees have responsibility for managing risk. Sound risk management requires both clear accountability for risk as well as staff with the requisite technical skills and expertise. The First Line incorporates Business Units and Expert Functions. Various control functions compose the Second Line, i.e. risk, control and monitoring teams. The Third Line assurance function comprises of the Internal Audit function. The Board is ultimately responsible for the overall risk management framework.

The risk management framework is subject to annual reviews and re-approval by the Board. In addition to the annual review, updates are made if there are changes in the market, regulations, operations or product portfolio.

Nasdaq Clearing has set up a Member Risk Committee (MRC), established in accordance with Article 28 EMIR, which is chaired by an independent board member. The committee also consists of representatives of clearing members and clients and has the role to exercise oversight, as an advisory committee to the Board, over Nasdaq Clearing's risk management activities, controls, models, policies and procedures.

Nasdaq Clearing continuously monitors internal and external environments to identify and validate the clearing house risks. Risks are classified into the following broad categories:

1. **Financial Risk:** Risk to the company's financial position or ability to operate due to investment decisions and financial risk management practices in particular as it relates to capital, liquidity, market, and credit risks:
  - **Capital Risk:** Risk that a Nasdaq legal entity does not have sufficient capital to operate the business without disruption.
  - **Liquidity Risk:** Risk that the company will not be able to efficiently meet both expected and unexpected current and future cash flow and collateral needs without affecting either daily operations or the financial condition of the firm.
  - **Credit risk:** Risk that a client or counterparty will default on an obligation to the company; often mitigated by collateral and / or margin requirements.
  - **Market risk:** Risk that price changes will exceed the initial margin and total margin.
  - Risk of loss caused by market-price movements in the company's assets, and / or liabilities.
2. **Operational Risk:** Risks arising from the company's people, processes, and systems and external causes.
3. **Legal and Regulatory Risk:** Exposure to civil and criminal consequences - including regulatory penalties, fines, forfeiture, and litigation - while conducting business operations.
4. **Strategic and Business Risk:** Risk to earnings and capital arising from changes in the business environment and from adverse business decisions, improper implementation of decisions or lack of responsiveness to changes in the business environment.

5. **Environmental, Social and Governance Risk (ESG):** Risks arising from perceived or actual shortcomings in the management of material ESG matters.

The risk universe classifications and risk definitions are periodically re-evaluated in order to determine whether the identified risk universe remains appropriate or requires changes. Identified risks are for instance classified into the different risk categories as part of the risk assessment process. The ERM framework includes the methods and processes to identify, assess, monitor, and manage Nasdaq Clearing's risks. It provides the clearing house the opportunity to understand, control, and articulate the types and level of risk it chooses to take in pursuit of its strategy and in meeting its objectives. The ERM commits Nasdaq Clearing to employing an ERM approach that manages risk within an approved risk appetite (please see Principle 17 for further information).

Nasdaq Clearing has identified scenarios that may potentially prevent it from being able to provide its critical functions. They are presented in Nasdaq Clearing's Recovery Plan (RP). RP also includes different options for recovery events that are described in more detail under Principle 15. Nasdaq Clearing also has a Wind Down Plan in place, which provides clarity on the necessary steps and actions to be considered in a wind-down situation.

Nasdaq Clearing transparently provides its members and members' clients with a range of tools to stay well informed about the clearing process and the risk they have towards the clearing house. There is comprehensive information on the website<sup>6</sup>, including a description of the clearing process, margin methodology guides, default fund policy and stress test methodology descriptions, etc. Participants have access to more specific information via the clearing system, such as account positions, margin requirements, exposure reports, margin simulation, etc. The clearing system is available through a variety of interfaces, which enables the participant to establish its exposure and risk towards the clearing house, simulate anticipated changes in the exposure, as well as administrate its transactions with the clearing house in an efficient way.

In addition to the public information and the system tools available to its members, Nasdaq Clearing is in regular contact with market participants regarding exposures, margining

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6 <https://www.nasdaq.com/solutions/nasdaq-clearing-offering>

requirements, collateral arrangements and liquidity issues.

Nasdaq Clearing provides relevant authorities with information needed for resolution planning purposes.

A breach of a participant's obligations towards Nasdaq Clearing is a potential ground for default. Certain operational failures are also grounds for default, but more often, penalties are issued for late deliveries, late margin confirmation and late settlement payments. Communication, penalties and the risk of a defaulting member all contribute to incentives for members to handle and limit the risks they pose to the clearing house.

The mutualization of risk through the default fund also ensures that clearing participants are incentivized to manage the risk they, and other participants, are posing to Nasdaq Clearing.

Nasdaq Clearing identifies the material risks it bears from other types of entities, such as investment and counterparties for investments, settlement banks, nostro agents, custodians, liquidity providers and other services providers. In the implemented risk framework, Nasdaq Clearing has processes to address the different types of risk stemming from these entities, such as financial-, operational-, legal- and concentration risk.

As with all other parties in the financial markets, Nasdaq Clearing poses risks on its members and on its key providers such as settlement banks. The risks Nasdaq Clearing poses to others are in essence the same type of risks it is exposed to itself as a clearing house, e.g. credit risk, operational risk and liquidity risk. Thus, in building a robust infrastructure to manage the risks it bears from others, Nasdaq Clearing also builds arrangements that protect interdependent entities. Service providers are regulated through service level agreements (SLAs) with the clearing house, and quarterly meetings with the settlement banks are held to go through services and business continuity procedures. Further, Nasdaq Clearing developed a robust framework to manage its outsourcing and cloud outsourcing risks, following ESMA cloud outsourcing guidelines.

To manage and minimize the risks Nasdaq Clearing bears from and poses to other entities, Nasdaq Clearing has different arrangements in place to handle incidents and risk arising from the clearing activity, e.g.:

- in relation to settlement risk, Nasdaq Clearing has liquidity arrangements in place and access to the underlying markets for physical settlement. Well defined processes and routines are in place to handle a default situation,

including involvement of participants to secure an efficient close out process thereby mitigating the spill-over effect on other participants;

- third-party risk managed according to relevant Outsourcing Policy and Supplier Engagement and Management Policy provisions, which set overarching framework for third-party risk management;
- credit risk stemming from the members is managed via the margin and collateral regime and via robust stress testing framework that informs sizing of the default funds for each clearing service; and
- for system or business disturbances, Emergency Response Team, disaster recovery plans and business continuity plans are in place including back-up site outside the main office to secure continuous operations. Nasdaq Clearing Crisis Management team handles any situations that result in disturbances that are beyond business continuity.

These arrangements are monitored and reviewed by the Nasdaq Clearing Risk Committee (**NCRC**).

A key part of the framework for comprehensive management of risks is the New Product Approval Policy (**NPAP**) which outlines the approval process for the development of new or changes to existing products, services, markets, processes (e.g. new outsourcing structure), organization, governance and IT-infrastructure as well as exceptional transactions (such as mergers and acquisitions). NPAP defines a set of principles that guide a disciplined and consistent process for execution of the change prior to implementing it. The aim of applying a disciplined process to every change is to enhance customer value, address risks such as regulatory and reputational risks, mitigate oversights and achieve greater probability of market success. The NPAP Policy shall also provide a process for taking well informed decisions throughout the execution of the change.

## Principle 4: Credit Risk

An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.

Nasdaq Clearing has established a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Nasdaq Clearing has efficient processes in place to identify, monitor and manage the credit risk resulting from its clearing activity, including robust stress test modelling and a range of tools to control credit risk.

Nasdaq Clearing covers its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources. Nasdaq Clearing monitors and manages on a daily and intra-day basis changes in credit risk exposures against a range of risk limits and well-established margining methodologies which are validated regularly by automated model and parameter back testing and sensitivity testing and by independent validators annually. Nasdaq Clearing also monitors that the applicable membership requirements are complied with continuously, including provision of collateral in

accordance with the applicable Clearing Rules.

Nasdaq Clearing also controls and mitigates the credit risk by utilizing central bank money, where possible, and only uses DvP instructions in the delivery processes of financial securities.

Adequate prefunded financial resources are in place to cover the simultaneous defaults of the two largest credit exposures (the so-called Cover 2 test) in extreme but plausible market conditions. Nasdaq Clearing has implemented a multilayer protection system in its risk framework where different sources of prefunded resources ensure the fulfilment of the clearing house's obligations. The multilayer system, the Waterfall, includes (in order of utilization):

- Margin of defaulting member;
- Default fund contribution of defaulting member;
- Dedicated capital by Nasdaq Clearing (the **Junior Capital**) for the applicable clearing service;
- Default fund contribution by other members for the applicable clearing service;
- Dedicated capital by Nasdaq Clearing (the **Senior Capital**) for the applicable clearing service<sup>7</sup>;

Non-defaulting members are required to replenish any utilized default fund contributions with up to 130% of their default fund contribution. More details on the replenishment process are provided in the last section of this chapter.

In addition to these prefunded resources, as part of Nasdaq Clearing's Recovery framework, members have a guarantee commitment towards Nasdaq Clearing, the so-called Assessment Power, amounting to 100% of the original default fund contribution. Further, should the Assessment Power not be sufficient to fully allocate a default loss, members have a second guarantee commitment, the so-called Voluntary Cash Call. A Voluntary Cash Call, which is capped to 100% of the members' default fund contribution, will be issued only in case it would be sufficient to fully allocate the remaining loss and in case a super majority (>75%) of members vote in favor (where members' votes are based on their respective share of the default fund). In case Voluntary Cash Call is voted in favor of, Nasdaq Clearing will provide an amount equal to its Junior

7 Senior Capital (Second Skin in the Game (2SITG)) was amended and implemented to fulfil the requirements of the CCP Recovery & Resolution Regulation entering into force in February 2023. The Senior Capital shall be set as 25% plus an additional 5%, in total 30% of the Article 16 Capital (excluding the Notification Buffer). 2SITG was now allowed to be used not only for default losses but now also for non-default losses.

Capital before the members' Voluntary Cash Call. Should a Voluntary Cash Call not be sufficient to fully allocate a default loss or should it be voted down by members, Nasdaq Clearing will initiate Service Closure in order to terminate early and cash settle all open contracts and distribute the unallocated default loss to non-defaulting members. The distribution of unallocated default loss in case of Service Closure is done pro-rata for each member's share of the default fund. Assessment Power, Voluntary Cash Call and Service Closure can for the avoidance of doubt only be applied per default fund (clearing service). The structure of the financial Waterfall is specified and publicly available on the Nasdaq Clearing's website<sup>8</sup> and in the Clearing Rules.

Nasdaq Clearing documents the supporting rationale for, and has appropriate governance arrangements relating to, the amount of total financial resources it maintains.

The clearing house determines the amount and regularly tests the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing.

In more detail, the stress tests are performed and monitored daily by Nasdaq Clearing and used to size the appropriate level of financial resources including the default funds. As for maintaining the adequacy of financial resources, Nasdaq Clearing re-evaluates the size of the different layers in its Waterfall monthly. Nasdaq Clearing also has the right to initiate intra-monthly default fund updates, in order to mitigate the effect of increased stress levels between monthly updates. Nasdaq Clearing may call on extraordinary margin requirements from the relevant member(s) instead of updating its default funds intra-monthly. Nasdaq Clearing may also employ a Clearing Capital Buffer amounting to up to 25% of the available financial resources, in order to increase the robustness of the Waterfall at the monthly updates. In volatile market situations, Nasdaq Clearing has a discretion to increase the upper bound for the buffer to 50%, after informing the members. The Clearing Capital Buffer is funded by the members in the form of an increase to the relevant default fund, and its minimum level at monthly updates is 120% multiplied by the average Cover 2 stress levels over the last 10 business days, less the available financial resources prior to the application of the buffer.

The use of an extreme value theory (EVT) methodology and maximum available price history for individual instruments mitigates the risk of model failure that comes with solely statistical models, and secure coverage of historical extreme market conditions.

Finally, Nasdaq Clearing has established clear and explicit rules and procedures to address fully any uncovered losses it may face and to ensure it can operate in a safe and sound manner even during stress events.

Nasdaq Clearing is further performing the following routines in its framework for managing credit risk:

- Stress parameters and assumptions used in stress testing models are comprehensively and thoroughly reviewed, analyzed, validated and tested on at a minimum monthly basis.
- When the products cleared or markets served display high volatility or become less liquid, Nasdaq Clearing performs the analyses, validations and tests more frequently than on a monthly basis.
- Reverse stress tests are performed on Nasdaq Clearing's capital base, which allows it to determine how many defaults or how much stress would be necessary for its Clearing Capital to be depleted.
- Full validation of models, including validation from a party that is independent from Nasdaq Clearing's risk management function, is performed on at least an annual basis.

Nasdaq Clearing considers the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in the liquidation periods. Hypothetical scenarios include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. In more detail, Nasdaq Clearing divides its instruments in stress test markets (product areas). The hypothetical scenarios considered shift these markets up and down, and every combination thereof, to generate an exhaustive series of combinatorial scenarios. In that way, simultaneous stresses in the equity and funding markets, simultaneous equity

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8 <https://www.nasdaq.com/solutions/nasdaq-clearing-default-fund>



stresses across geographies, as well as idiosyncratic market disturbances are all covered. By maximizing the market moves simultaneously across product areas, as well as using scenarios with both maximum correlation and maximum anti-correlation, scenarios that have never been observed in history are generated, thereby adding to the robustness of this methodology. In addition, historical stress scenarios are implemented as replay of historical extreme market events. Nasdaq Clearing has a documented methodology for identifying relevant stress scenarios per market given current cleared portfolios.

Additional scenarios are generated as narrative scenarios. Narrative scenarios are based on a hypothetical event, and the assessed impact of that event is quantified and applied within the stress testing framework as a shock. These scenarios are used to examine a broader range of risks and inform the Board and other stakeholders and may, if deemed relevant, be included in the list of scenarios used to size the clearing capital and the default funds.

Nasdaq Clearing has established explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the clearing house.

The rules and procedures indicate Nasdaq Clearing's process to replenish any financial resources that Nasdaq Clearing may employ during a stress event, so that Nasdaq Clearing can continue to operate in a safe and sound manner. In more detail, the respective default fund rules fully address how utilized default fund contributions shall be replenished, both in regards of members that are obliged to contribute to the default fund and Nasdaq Clearing's own capital (see Appendix 16 of Clearing Rules FIN<sup>9</sup> and Appendix 9 of Clearing Rules COM<sup>10</sup>). Replenished funds will not be placed in their original position in the Waterfall until a 30-day period has elapsed (the "Interim Period"). During the Interim Period, the replenished funds will be placed above the Assessment Power in the Waterfall and the same priority order within the replenished funds will be applied as with the Waterfall (i.e. replenished Nasdaq Junior Capital below replenished default fund contributions etc.). When the Interim Period has elapsed, the funds will be moved down to their original, junior level.

9 <https://www.nasdaq.com/solutions/rules-regulations-derivatives-rules>

10 <https://www.nasdaq.com/solutions/legal-framework-european-commodities>

## Principle 5: Collateral

An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

Nasdaq Clearing only accepts highly liquid collateral with readily available market prices and with low market and credit risk. The haircuts on collateral are applied according to a conservative method to ensure that they can withstand volatility during times of market stress and to avoid pro-cyclical adjustments. Nasdaq Clearing avoids wrong way risk by not allowing securities issued by the counterparty itself, or securities issued by any subsidiary of the counterparty, or any other company in the same group. Eligible collateral, applicable haircuts and valuation principles can be found in Appendix 10 of Clearing Rules COM and in Appendix 14 of Clearing Rules FIN.

A broad range of acceptable collateral provides diversification and allows for ensuring the best collateralization for each type of participant, client, and position and market conditions at each time.

The following are accepted types of collateral (with restrictions) in the Eligible Collateral List of Nasdaq Clearing:

- Cash funds in pre-set currencies (only currencies in which Nasdaq Clearing is clearing products or in currencies which are a natural part of Nasdaq Clearing's day to day operation).
- Covered bonds issued by Swedish, Norwegian, and Danish mortgage institutions.
- Bonds issued by the Swedish Municipalities Agency, "Kommuninvest".
- Government bonds and bills.
- Sovereigns, supranationals and agencies bonds.
- Stocks (a selection admitted for trading on the Nasdaq Stockholm and Oslo Børs exchanges, excluding shares in credit institutions or investment firms).
- Net sellers of EUAs (European Union Allowances) and EI-Certs may pre-deliver allowances to Nasdaq Clearing

registered accounts to use it as collateral to cover net sold positions.

According to Appendix 14 of Clearing Rules FIN and Appendix 10 of Clearing Rules COM, all securities accepted as collateral shall have daily prices available. If daily prices are missing, the security is valued at zero. All collateral is valued in Nasdaq Clearing's proprietary Collateral Management Service (CMS). The end-of-day collateral valuation is based on the previous business day's margin and collateral prices. The evaluation of collateral in respect to intraday margin calls is done intraday.

Haircuts are applied according to Nasdaq Clearing's Collateral List (Appendix 14 to Clearing Rules FIN and Appendix 10 of Clearing Rules COM). The individual haircut parameter for each security is based on an analysis of the volatility of historical prices for a specified look back period. The haircuts are validated regularly under assumptions of severe (extreme but plausible) market stress. Nasdaq Clearing uses a sufficiently long look-back period to ensure that periods of stress are included in the data sample, at a high confidence level. This approach reduces the need for pro-cyclical adjustments of the haircuts.

Nasdaq Clearing handles concentration risk by applying limits based on the observed risk of the posted collateral. The concentration limits used by Nasdaq Clearing are based on an analysis of the accepted collateral. The asset types perceived to have the highest total risk in terms of credit- liquidity- and market risk get a lower concentration limit compared to asset types with a lower total risk. Concentration limits are reviewed at least annually. Concentration limits and haircuts are approved by the NCRC and are included in the collateral list. On a clearing house level, Nasdaq Clearing only allows a 10% of its total collateral to be guaranteed by a single credit institution.

In addition, the clearing house has a concentration limit of how much of each individual member's total collateral may be issued by one and the same issuer. The limit applies to collateral issued by credit institutions and to members with a total margin requirement higher than SEK 250 million. The limit is 33% of the total posted collateral by that member.

Nasdaq Clearing has various means and processes in place to mitigate the risks associated with the use of cross border collateral, particularly the risk of conflicts of law issues arising in relation to the realization of cross-border collateral.

## Principle 6: Margin

A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

Nasdaq Clearing has a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves. Currently, Nasdaq Clearing runs three different margin models, SPAN® for commodities, OMSII for equities and CFM for interest rates. Each margin model is tailored for its respective market. All three margin models are parametric, i.e. margins are established through structured simulation of significant risk factors. SPAN is implemented for commodities due to its robustness, its wide acceptance in the market and its capacity to cater for the price dependencies manifested in the commodities markets. OMSII is chosen for equities primarily due to its capacity to handle options and its robustness. CFM is implemented for interest rates primarily due to its capacity to handle yield curves, and as such to capture the natural price dependency between different interest rate products.

In addition to the main margin models, Nasdaq Clearing also maintains specialized concentration margin add-on models – one for each of the main models – as well as a more general stress margin add-on. The concentration add-ons ensure additional coverage for risks related to concentrated positions within an asset, where the size of the position is in itself a source for increased liquidation costs in the event of a default. The stress margin add-on applies additional margin for portfolios where the difference between the margin result and the stress test result becomes too large, indicating that the amount of risk the portfolio is placing in the mutualized part of the default Waterfall is significantly higher than its peers – and then returning that risk to the margin portfolio with the add-on.

Nasdaq Clearing covers its credit exposures to its participants for all products it clears through an effective margin system that is risk-based and with individual risk models per asset class. The margin system calculates accurate and timely risk-based margin requirements for all cleared products on an hourly basis throughout the day as well as end of day.

All open positions in various markets are margined with regards to the specific nature of the risks involved. Nasdaq Clearing calculates margin requirements based on price volatility, price dependence between products in a market as well as price dependence between markets and market liquidity for determination of close-out periods. Individual

product characteristics (settlement/delivery cycle, physical delivery/financial settlement) are reflected in the margining parameters and margin models structure. In addition, when evaluating credit exposures, Nasdaq Clearing also takes into account the size and concentration of positions a participant holds. For portfolios of significant size and concentration Nasdaq Clearing applies concentration risk charges.

Nasdaq Clearing has reliable sources of timely price data for its margin system. Nasdaq Clearing primarily uses prices from the markets it clears products from as the main sources for price data in its margining system. For the vast majority of the products cleared by Nasdaq Clearing, prices are electronically fed into the margin system. The design and implementation of the system secure that the prices used are appropriate for margin calculations.

Nasdaq Clearing uses either industry standard price models, and/or price models that are agreed with the market participants. Such models are included in the scope of the annual independent model validations.

Nasdaq Clearing has the capacity to manually enter prices into the system used for margin calculations. In such cases prices are either calculated by models or retrieved from a third-party (Reuters, Bloomberg or Market makers).

Nasdaq Clearing has procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.

Nasdaq Clearing has initial margin models and parameters that are risk-based and generate margin requirements, which are sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default.

Initial margin calculated by Nasdaq Clearing meets an established single-tailed confidence level of at least 99% with respect to the estimated distribution of future exposure. Currently 99.2% confidence level or higher is applied by Nasdaq Clearing. Where correlation netting between products is allowed, it is ensured that the confidence level requirement is met for all portfolios.

The models employed use highly conservative estimates of the time horizons for the effective hedging or close out of the types of products cleared by Nasdaq Clearing (including in stressed market conditions). Nasdaq Clearing considers liquidity, presence of close-out arrangements, hedging possibilities in underlying contracts or equivalent products in other markets, price reliability and required confidence level as

the main factors for determination of the size of the liquidation period. Nasdaq Clearing's minimum liquidation period is 2 days for listed derivatives and 5 days for OTC derivatives. The liquidation period is reviewed at least on an annual basis and more often if deemed necessary. Concentration risk which could have an impact on the liquidation period is handled by requiring additional margin for positions in a market segment, which poses a concentration risk to the clearing house.

Re-estimation of risk parameters is made at minimum monthly or more frequently in case market conditions are stressed or changed crucially in the opinion of Risk Management.

Nasdaq Clearing has appropriate methods for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products. Nasdaq Clearing estimates parameters to the margin models based on historical prices, market information and the established confidence level. To estimate the parameters, distribution-free or robust estimation methods are applied to address the fact that price changes are not Gaussian distributed.

Nasdaq Clearing uses margin parameter floors to mitigate tail risks and make the margin system more robust with respect to the systemic risks, originated from unexpected events influencing the markets Nasdaq Clearing is involved in. This helps to avoid destabilizing changes in margin requirements in times of market stress. The margin parameter floors are based on estimations with a ten-year sample period or a buffer of 25% on the normal parameter estimation that is based on a one- or two-year lookback period.

Nasdaq Clearing marks participant positions to market and collects variation margin at least daily to limit the build-up of current exposures.

Nasdaq Clearing has the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants. Nasdaq Clearing has decided on an intra-day margin policy, and immediately calls for more margin in case pre-defined collateral deficit limits are breached. For some markets, pre-novation collateral checks are utilized, i.e. trades reported for clearing are only novated in case there is sufficient collateral in place.

In calculating margin requirements, Nasdaq Clearing allows offsets or reductions in required margin across products that it clears, if the risk of one product is significantly and reliably correlated with the risk of the other product. Nasdaq Clearing uses a highly conservative approach when estimating offset levels considering the established confidence level for its margin system. Margin offset is only provided in case

correlation between products historically has been high and stable. By choosing a sufficiently long sample period for historical data when estimating correlation, Nasdaq Clearing accounts for variability of price dependence with overall market conditions.

Nasdaq Clearing has implemented a comprehensive model validation framework for its margin models. The framework is governed by a number of policies approved by the Board and/or the NCRC and provide governance in relation to back-testing, sensitivity testing and validation.

Nasdaq Clearing performs daily testing of its margin models by conducting several back-tests. These are done both on an enterprise level, where actual changes in portfolios' market valuation are tested against required margin under applicable time horizon, and on individual risk parameters (which are monitored against actual movement to determine that the parameter holds up to the expected levels).

On a monthly basis, a thorough analysis of all back-testing results on various levels of portfolios and sub-portfolios are conducted and reviewed. Moreover, model tests and sensitivity analyses are conducted on the margin models where main risk factors are stressed in order to detect any weaknesses in the models. In conducting sensitivity analysis of the models' coverage, Nasdaq Clearing takes into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices. The model behavior in hypothetical stressed market scenarios worse than experienced by Nasdaq Clearing, is also examined. The NCRC reviews the results of the margin model validation tests, including ex-post margin coverage back-testing of all portfolios and all cleared products, ex-ante back-testing on margin model level and other model specific validation tests.

Results on the back-testing are presented to the MRC and the Board in the ongoing risk reporting. Moreover, back-testing results are also made publicly available on the website of Nasdaq Clearing.

On an annual basis Nasdaq Clearing performs a thorough validation of its margin system. The independent validation includes an assessment of all model risk dimensions (input, formulation, implementation, and use) and follows Nasdaq Clearing's model validation framework. The validation of the

margin methodology ensures that the applicable valuation and margin models are fit for purpose, that model assumptions are conceptually sound and that the models have proper model governance in place with proper model documentation and performance monitoring. The results from the independent validations are reported to the MRC and the Board together with remediation action plans for validation findings. The progress in closing validation findings is reported to the NCRC, MRC and the Board.

The models used are documented and available on the website<sup>11</sup>.

## Principle 7: Liquidity Risk

**An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.**

Nasdaq Clearing has developed a robust framework to identify, measure and manage its liquidity risks. The framework is primarily focused on the potential stressed liquidity needs in conjunction with its clearing operations and its role as clearinghouse.

The various sources of liquidity risk that Nasdaq Clearing has identified are: 1) default of a member (including its affiliates and all its customer positions); 2) operational problems in a settlement bank; 3) liquidity need due to delivery failures; 4) failure of participants also serving as liquidity providers; 5) possibility to realize collateral and the number of lead-days for such realization; and 6) cash call back outflows. These liquidity risks can occur in the currencies in which Nasdaq Clearing's cleared contracts are denominated. The framework identifies the total need for liquidity across all currencies as well as the liquidity need in each applicable currency. Generally, the liquidity need in SEK is significantly larger than other currencies since the majority of Nasdaq Clearing's contracts are denominated in SEK and daily cash settled products

11 <https://www.nasdaq.com/solutions/nasdaq-clearing-margining-methodology>

with higher volumes are primarily SEK-contracts. However, in periods of market stress any of Nasdaq Clearing's eligible currencies can have the largest liquidity need.

Nasdaq Clearing's Liquidity at Risk (**LaR**) model is a robust framework for liquidity risk management which daily measures and monitors, the Total Requirement (**TR**) in all relevant currencies (both total cross-currency need and in each applicable currency). The liquidity requirements are calculated based on rigorous stress testing using a wide range of relevant scenarios, including the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to Nasdaq Clearing in extreme but plausible market conditions.

Nasdaq Clearing maintains sufficient Liquid Resources (**LR**) to meet TR with a significant excess. Nasdaq Clearing measures the TR as well as the size of LR daily in each currency. Finally, Nasdaq Clearing has established rules and procedures and suitable governance arrangements to enable it to affect same-day or intraday and multiday settlement of payment obligations on time following any default of its participant(s).

In SEK the LR are composed of: (i) committed credit facilities among four liquidity providers; (ii) cash and cash equivalent and (iii) highly liquid securities issued by or explicitly guaranteed by the Swedish government, the Riksbank or supranational entities. The securities included in LR are the most liquid and credit worthy instruments in the Swedish financial market and are all eligible as collateral in the Riksbank. To cover operational flows that can occur late in the day and ensure diversification of liquid resources, cash and available credit facilities should always cover the largest of the maximum delivery failure during the last twelve months or 10% of TR. LR in DKK, NOK and GBP are composed of (i) committed multi-currency credit facilities, which enable quick utilization with minimal time delay and direct liquidity supply in the applicable currency and (ii) cash and cash equivalent and (iii) highly liquid securities issued or explicitly guaranteed by government, central bank or supranational entities. LR for EUR and USD are composed of (i) committed credit facilities; (ii) cash and cash equivalent and (iii) highly liquid securities issued or explicitly guaranteed by government, central bank or supranational entities. All securities included in LR are available to sell or repo, under prearranged Global Master Repurchase Agreement (**GMRA**), with same day value.

Nasdaq Clearing's four credit facilities are multi-currency and provided by Nordic banks. The providers have central bank access in almost all the applicable currencies, but it differs

among the banks. However, in the currencies the banks do not have direct central bank access, several options to access liquidity in applicable currencies are available. Three of the providers have direct access to the Riksbank and their status as approved counterparties in the Riksbank's monetary policy operation forms the basis for the assessment that they understand and can manage their liquidity risk. The Nasdaq Clearing Liquidity Policy stipulates a lowest credit rating threshold for Nasdaq Clearing's liquidity providers. Since the credit facilities providers also are settlement banks of Nasdaq Clearing, the clearing house performs ongoing monitoring of these entities as service providers. Nasdaq Clearing ensures that all credit facilities are utilized at least once a year.

The process to establish the TR includes a daily report which is run by Nasdaq Clearing. The report identifies the estimated liquidity requirement based on current positions and various default assumptions in a range of stressed market scenarios. This process includes a check on whether a new historic "High Point" has occurred.

The stress model is based upon a variety of scenarios where the main markets (Fixed Income, Equity, Commodity and Seafood, per currency) are fully uncorrelated and can move either in same or opposite market direction. A combination of peak historic price volatilities shifts in other market factors such as price determinants and yield curves are captured. Nasdaq Clearing utilizes a 12-month look-back period to determine the "High Point".

Other types of liquidity risks, deliveries, and settlement amounts and cash outflows in terms of cash call-backs are assessed based on maximum historical values using a 12 month look back period.

The liquidity model is based on rigorous stress testing, including forward-looking scenarios, and the results are presented and used in a predetermined process according to the Nasdaq Clearing Liquidity Policy. Nasdaq Clearing should ensure and verify that the LR exceed TR daily. To ensure sufficient LR at all times and to reduce the reliance on credit facilities, LR should always cover TR with a buffer. The buffer is set to the largest of 10% of TR or 25% of available credit facilities. If the buffer in LR is utilized (due to either new "High Point" or decrease in LR) a Trigger 1 has occurred, and the matter shall be escalated to the Chief Risk Officer of Nasdaq Clearing, and the Chief Risk Officer of Nasdaq Clearing shall in turn convene a NCRC meeting. The NCRC should, based on a risk assessment decide whether any action should be taken in order to restore the buffer. Actions are not required if the "High Point" is not

structural but due to a temporary, one-off event. A temporary event cannot last for more than 3 business days, and the TR shall not be considered a new "High Point" in such case. The Board shall be informed about the Trigger 1, the risk assessment and any decision on actions. If TR exceeds LR a Trigger 2 has occurred. In such event the Chief Risk Officer of Nasdaq Clearing should immediately inform the Board and provide a remediation plan. The Chief Compliance Officer of Nasdaq Clearing should communicate the Trigger 2 to the Swedish FSA and the remediation plan to remedy the Trigger 2 should be implemented immediately (or as soon as possible). The Chief Risk Officer of Nasdaq Clearing should inform the Board and the Chief Compliance Officer of Nasdaq Clearing should inform the Swedish FSA when the measures have been implemented.

Furthermore, cash and available credit facilities should always cover the largest of the maximum delivery failure during the last twelve months or 10% of TR in order to diversify liquid resources and cover operational flows that can occur later in the day. If cash and credit facilities are insufficient to cover such need, a Trigger 1 has occurred, and the Trigger 1 escalation process is applicable.

Nasdaq Clearing has documented its Liquidity method in the Nasdaq Clearing AB Liquidity Policy and Liquidity Stress Test Policy. The Liquidity Policy is subject for approval by the Board and is reviewed annually. The Liquidity Stress Test Policy is approved by the NCRC and reviewed on an annual basis. If deemed necessary, both policies can be reviewed more frequently due to change in risk exposure for Nasdaq Clearing.

Nasdaq Clearing utilizes central bank services in SEK and DKK, where intra-day liquidity is also obtained. The services consist of accounts and payments. For EUR and GBP the Bank of Finland respectively the Bank of England provide central bank services, however, intra-day liquidity is not obtained.

Most of the liquidity resources are replenished automatically, e.g., non-cash collateral held but not yet realized would, when realized, replenish the utilized liquidity resources.

If liquidity is utilized and it corresponds to Waterfall losses, such funds will not be automatically replenished. In such circumstances, the default fund rules stipulate that members must replenish the default fund within 2 business days. Moreover, Nasdaq Clearing holds substantial buffer in non-regulatory tangible equity according to its Regulatory Capital and Default Fund Policy, which means that financial resources backing this buffer in equity could, within a short time period, replenish any used LR. The replenishment rules are explicitly specified in the Default Fund rules.

## Principle 8: Settlement Finality

An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

By registration of a contract a participant is obliged to perform liabilities consistent with the Contract Specifications as specified in the Clearing Rules, and the participant shall accordingly complete settlement on the date specified by Nasdaq Clearing. Other than as set forth in the Clearing Rules regarding protest, the obligations in the contracts are binding and the settlement instructions shall prevail. Any late payments or deliveries are considered a breach of the Clearing Rules.

Section 2.9.30 of the Clearing Rules FIN stipulates that a transfer order with respect to cash settlement or delivery shall be deemed to have been placed in the clearing system upon receipt of a request by Nasdaq Financial or when the clearing system, without such a request, generates a final settlement report in accordance with section 2.11 of the Clearing Rules FIN. Other than as set forth in the section 2.10 of the Clearing Rules FIN, clearing transactions may not be revoked.

Transfer of funds by participants in accordance with transfer orders under the Clearing Rules FIN section 2.9.30 are final once the transfer of funds have been completed by way of book entries to Nasdaq Clearing's accounts with the applicable credit institutions/Central Banks. For equity and debt securities, the deliveries shall be completed on the delivery day and in accordance with the Central Securities Depositories (CSDs) rules and routines (Clearing Rules FIN 2.11).

Section 4.1.1 of the Clearing Rules COM stipulates that a clearing transaction including all related variable fees to the clearing house, shall be deemed entered into the Security Settlement System and be deemed registered for the purposes of the Clearing Rules COM at the time when it has been created through a registration of a clearing transaction. Other than as set forth in the section 4.7 of the Clearing Rules COM, clearing transactions may not be revoked. According to section 7.1 of the Clearing Rules COM, each account holder warrants to the clearing house on each date on which a transaction is registered for clearing that its obligations under each clearing transaction and the clearing rules constitute legal, valid and binding obligations.

Nasdaq Commodities operates through the Emission Registry for emission allowances and the EI-cert Registry for the electricity certificates (jointly referred to as the **Registries**). The deliveries are considered final and binding on the members account when the members receive confirmation that the delivery is completed.

A delivery of emission allowances and electricity certificates shall be deemed completed when the delivering counterparty has received a confirmation that the relevant deliverables have been deposited to the applicable delivery point of the receiving counterparty.

If the settlement obligation is not fulfilled on the day specified in the Contract Specifications, it constitutes a breach of the Clearing Rules. The breach of a participant's obligations towards the clearing house is a ground for default. In situations of operational failure, such as late deliveries and delays in confirming margins, the clearing house has the right to declare a participant in default. However, this is not enforced by default, and the clearing house may make an exception and accept a later delivery.

## Principle 9: Money Settlements

**An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.**

Nasdaq Clearing operates in accordance with EMIR Article 50.1, which sets obligations to use central bank money to settle transactions, where practical and available.

Nasdaq Clearing monitors the levels of settlement amounts in absolute terms paid to and from the clearing members in the different currencies, and prioritizes that central banks are appointed as concentration banks and that the main currencies are settled in central bank money. Nasdaq Clearing currently operates money settlement operations in the Central Banks<sup>12</sup> of Sweden, Finland, United Kingdom and Denmark.

Approved settlement banks are used in the settlement process. Nasdaq Clearing sends payment instructions to approved settlement banks to debit the clearing members' account and credit Nasdaq Clearing's account in the respective settlement banks. When the settlement banks

have confirmed that the payments have been received, Nasdaq Clearing issues payment instructions for exchange of payments between the settlement banks in question in the concentration banks.

Nasdaq Clearing provides system generated payment instructions, effective monitoring of the accounts and real-time updates on payments. Nasdaq Clearing follows the principle of first receiving the incoming payments and then sending out the payments. If additional funds would be needed, Nasdaq Clearing's accounts are equipped with credit facilities, in order to prevent delays in the payment process.

The money settlement is performed in SEK, DKK, EUR, NOK, USD and GBP. For NOK and USD, commercial banks are appointed as concentration banks, and they comply with the same terms as the appointed approved settlement banks. According to the Settlement Bank Agreement the approved settlement banks shall comply with the technical requirements (SWIFT, lead times, etc.), the support requirement, the credit rating requirements and the operational requirements related to the respective markets. Before being approved, the settlement bank shall participate in tests in order to verify that their payment flows operate in accordance with the Settlement Bank Agreement. When the tests are successfully passed, and the Settlement Bank Agreement is signed by the parties, the settlement bank may participate in the daily money settlement process and be appointed as a settlement bank by clearing members. Transfers in settlement bank are processed within agreed timeframes stated in the service level agreements (**SLAs**) with each settlement bank. Transfers are deemed final only when a confirmation is received from the settlement bank (via MT messages) or when the funds are visible via the internet bank. The received funds follow the same logic with confirmations. Different types of MT messages have different time limit agreements.

Nasdaq Clearing uses concentration banks and settlement banks with a minimum rating level, A- (S&P) or A3 (Moody's), in order to ensure the banks' creditworthiness. All banks appointed by Nasdaq Clearing are reviewed and evaluated in accordance with the Credit Risk Policy. The management of the liquidity risks and the mitigations taken by Nasdaq Clearing are described in Nasdaq Clearing's Liquidity Policy and in more detail in Principle 7.

<sup>12</sup> Nasdaq Clearing is planning to start using Bank of Norway as a concentration bank for settlements in NOK as of April 2023.

Nasdaq Clearing has appointed a number of banks to participate in the settlement, in order to spread the concentration exposure and to ensure that Nasdaq Clearing has parallel arrangements in case of a disruption.

## Principle 10: Physical Deliveries

An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

Nasdaq Clearing operates in accordance with EMIR Article 50.2, which sets obligations with respect to deliveries.

Nasdaq Clearing is the central counterparty for the deliveries of equities, debt securities, emission allowances and electricity certificates, i.e. has an obligation to make or receive delivery. The delivery instructions of mentioned instruments are monitored daily in the respective markets, registries and internal systems to ensure that deliveries are completed on the correct date. More detailed information regarding physical deliveries can be found on Nasdaq Clearing's website<sup>13</sup>.

If a member fails to fulfil their physical delivery obligation in a timely manner, Nasdaq Clearing is liable and has several methods to choose from in order to manage the failed delivery and indemnify the participants for losses incurred in the delivery process in accordance with the Contract Specifications, cf. section 2.11 of the Clearing Rules FIN and section 6.3 of the Clearing Rules COM. Borrowing process is initiated to cover a potential short equity delivery position when there is a potential risk that Nasdaq Clearing receives a settlement instruction, i.e. underlying settlement instruction, which will not settle on its intended date. Nasdaq Clearing applies Late Settlement Administrative Fee in Connection with Delayed Delivery of equities and debt securities (described in more detail in Nasdaq FIN Fee List available on the website<sup>14</sup>) as well as Delay fee for late Delivery of allowances and electricity certificates (Appendix 7 of Clearing Rules COM).

Nasdaq Clearing always complies with the requirements stipulated by the CSDs or Registry (the delivery system appointed for emission allowances and electricity certificates) and therefore continuously monitors new updates from the delivery systems. This is done to verify that Nasdaq Clearing

is compliant with the processes and rules applied at each delivery system.

By signing an agreement with Nasdaq Clearing, Clearing Members agree to comply with the Clearing Rules (including Contract Specifications) and confirm their ability to comply with physical delivery obligations and that they have the necessary set up to fulfil the delivery obligations.

The delivery settlement arrangements at Nasdaq Clearing are continuously evaluated to provide the best possible delivery solution for Nasdaq Clearing and its participants.

## Principle 12: Exchange-Of-Value Settlement Systems

If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

The DvP mechanism implemented for Financial and Commodities markets is supported by Clearing Rules as well as Physical Settlement Guidelines in order to ensure that the delivery is at all times processed in accordance with EMIR Article 50.3..

The deliveries of equities and debt securities are always performed in accordance with the principle of DvP (i.e. the settlement obligations payment and delivery are linked together and finalized simultaneously) and the CSDs guarantee that the DvP instructions shall be performed accordingly. To limit principal risk, the DvP mechanism implies that if deliveries are late no cash is withdrawn. In this case both, the delivering and the paying counterparty, will pay an overdue delivery margin to the settlement until delivery is finalized.

The emission allowances and electricity certificates are registered as DvP transactions in the clearing system. However, the delivery is not simultaneously performed with cash settlement. Instead, the cash settlement is performed in the CMS system. In order to limit the principal risk, Nasdaq Clearing issues a margin requirement (equal to the contract value) on the final trading day and Nasdaq Clearing receives the collateral on D+1 (D denotes the expiration day of the applicable instrument).

13 <https://www.nasdaq.com/solutions/nasdaq-clearing-expiration-and-delivery>

14 <https://www.nasdaq.com/solutions/rules-regulations-derivatives-rules>



## Principle 13: Participant-Default Rules And Procedures

An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

Nasdaq Clearing has rules and procedures that enable it to continue to meet its obligations in the event of a participant's default and to address the replenishment of resources following a default. The Clearing Rules clearly state what constitutes a default in section 8 of the Clearing Rules COM and in section 1.8 of the Clearing Rules FIN, as well as steps available to Nasdaq Clearing in the event of a default. The key aspects of the default procedures are made available through the respective Clearing Rules, the respective Default Fund Rules, and through the Guide to Nasdaq Clearing Default Funds, all publicly available on the website<sup>15</sup>. The rules include rights for non-defaulting participants to have their claim against a defaulting participant assigned to them and rights to exit the default fund and thereby have a limited exposure towards Nasdaq Clearing. The General Terms for Custody Account form an integral part of the default structure and disclose Nasdaq Clearing's right to appropriate contributed assets.

The Default Committee is the single decision-making authority for all decisions concerning default situations and close-out handling. The Default Committee Charter, approved by the Board, stipulates that the committee shall convene when a default event has occurred or if a default event is likely to occur. The Head of Clearing Risk of Nasdaq Clearing is the Chairman of the Default Committee. The overall guideline for how the Default Committee shall act in case of a default event is documented in the Default Management Policy, approved by the Nasdaq Clearing Risk Committee (**NCRC**). Nasdaq Clearing has wide discretion as to the actions it may take in the event of a default by a participant, with any such discretion being exercised by the Default Committee. The default rules in combination with a robust and pre-defined default management process ensure that Nasdaq Clearing can

continue to meet its obligations in the event of a participant's default. Nasdaq Clearing is well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules. The default rules in combination with a robust and pre-defined default management process ensure that Nasdaq Clearing can continue to meet its obligation in the event of a participant default.

The default management process includes a transparent structure with a clear mandate and the involvement of participants to secure efficient handling of a default. The default management process is tailored for each asset class, driven by the specific market characteristic and product liquidity. Nasdaq Clearing has different arrangements in place for Equity, Fixed Income and Commodities as well as different approaches to default strategy. In respect of a defaulting participant's customer transactions, Nasdaq Clearing may transfer some or all open positions, pending settlement and collateral provided for such positions, to another participant in accordance with the Clearing Rules. Should such transfer not be possible, Nasdaq Clearing will close out the open positions of the customer. The participant's proprietary positions will be forced closed-out in case of a member default.

The order in which the financial resources can be utilized is described in the Default Fund Rules and on the website<sup>16</sup>. The collateral structure and the liquidity facilities available to Nasdaq Clearing in a pressured liquidity situation provide Nasdaq Clearing with prompt access to liquidity resources (both from the participants in regards to margin, default fund contributions, replenishments, guarantee commitments and also Nasdaq Clearing's own capital, outlined in the Waterfall<sup>17</sup>). Under the Default Fund rules, Nasdaq Clearing is entitled to realize the default fund contributions, including the replenishment, without requiring additional consent from participants. The Default Fund Rules also stipulate that any realized default fund contributions shall be replenished by new contributions by each non-defaulting default fund participant and Nasdaq Clearing, so that the Default Fund requirement is fulfilled within two (2) business days following a replenishment request. Replenishment refers to the participant's obligation to provide new (pre-funded) Default Fund contributions to restore the size of the fund in the event when the clearing

15 <https://www.nasdaq.com/solutions/default-fund-and-clearing-capital>

16 <https://www.nasdaq.com/solutions/nasdaq-clearing-default-management>

17 <https://www.nasdaq.com/solutions/default-fund-and-clearing-capital>

house has had to use any contributions to the Default Fund. Non-defaulting members are required to replenish any utilised Default Fund contributions with up to 130% of their Default Fund contribution. Replenished funds will not be placed in their original position in the Waterfall until a 30-day period has elapsed (the “Interim Period”). During the Interim Period, the replenished funds will be placed above the Assessment Power in the Waterfall, and the same priority order within the replenished funds will be applied as with the Waterfall (i.e. replenished Nasdaq Junior Capital below replenished Default Fund contributions, etc.). When the Interim Period has elapsed, the funds will be moved down to their original, junior level.

In addition, as part of Nasdaq Clearing’s Recovery framework, members have a guarantee commitment towards Nasdaq Clearing, the Assessment Power, amounting to 100% of the original Default Fund contribution. Further, should the Assessment Power not be sufficient to fully allocate a Default Loss, members have a second guarantee commitment, the so-called Voluntary Cash Call. A Voluntary Cash Call, which is capped to 100% of the member’s Default Fund contribution, will be issued only in case it would be sufficient to fully allocate the remaining default loss and in case a super majority (>75%) of members vote in favour (where members’ votes are based on their respective share of the Default Fund). In case Voluntary Cash Call is voted in favour of, Nasdaq Clearing will provide an amount equal to its Junior Capital before the members’ Voluntary Cash Call. Should a Voluntary Cash Call not be sufficient to fully allocate a Default Loss or should it be voted down by the members, Nasdaq Clearing will initiate Service Closure in order to terminate early and cash settle all open contracts and distribute the unallocated Default Loss to non-defaulting members. The distribution of unallocated Default Loss in case of Service Closure is done pro-rata for each member’s share of the Default Fund. Assessment Power, Voluntary Cash Call and Service Closure can, for the avoidance of doubt, only be applied per Default Fund (clearing service).

Default Management Fire Drills are conducted on – at a minimum – an annual basis or more often, following changes to the rules and procedures to ensure that those changes are practical and effective. Nasdaq Clearing involves internal and external stakeholders, including clearing members, in the testing and review of the default procedures, including close-out strategies. Different scenarios are tested in each Fire Drill (inter alia member default, client default, different type of portfolios, etc.). The results of Fire Drills are documented in a final report and an annual summary is presented to the NCRC, the MRC and to the Board.

## Principle 14: Segregation And Portability

A CCP should have rules and procedures that enable the segregation and portability of positions of a participant’s customers and the collateral provided to the CCP with respect to those positions.

Nasdaq Clearing’s rules and procedures enable segregation and portability on client-by-client level for certain categories of members and members’ customers (i.e. so-called Direct Clearing Clients, customers with Individual Client Segregated Accounts (**ICA**) and Clearing Clients). This arrangement offers a high level of protection and a high likelihood of portability for positions and collateral. For members/customers that have chosen other account types than the aforementioned, Nasdaq Clearing offers segregation and portability at client/house level.

With respect to segregation arrangements, Nasdaq Clearing offers a range of account types, both individual and omnibus, to its members and customers with varying degrees of separate identification and treatment.

Independent of which account type the customer has chosen, the clearing system always keeps the positions and collateral of participant’s customers separate from the positions and collateral of the participant. Nasdaq Clearing provides a separate account type for participants (House Accounts) and it is clear from the Clearing Rules that this account type may only be used by the participant itself and that it is fully segregated from the accounts of its customers.

In addition to the protection of a participant’s customer’s positions and related collateral from the default or insolvency of the participant, Nasdaq Clearing also offers protection of customer’s positions and collateral against default of fellow customers.

The portability arrangements are designed to facilitate a transfer of a customer’s positions and collateral from a defaulting participant to another clearing participant. To some extent the likelihood of portability is dependent on the account type the respective customer has chosen and whether customers have ensured back up clearing member solution.

With respect to the legal framework, EMIR provides for requirements and support as to, inter alia, the segregation and portability of client positions and assets (collateral) in the event of a clearing member’s default. EMIR has direct effect in the Member States of the European Union, including Sweden.

In DS 2012:39 the Swedish Ministry of Finance has concluded that EMIR and the structures prescribed therein, including segregation and portability, will be enforceable in Sweden without the need for legislative changes.

Nasdaq Clearing's arrangements to protect and transfer the positions and collateral of a participant's customers have been developed to provide legal protection for the customers of participants in accordance and compliance with the requirements set out in the Principles for Market Infrastructure (PFMI) as well as EMIR.

In addition, in developing the mechanics for portability Nasdaq Clearing obtained external legal advice to ensure that the regulatory requirements are met as well as ensure enforceability in the relevant jurisdictions. The relevant jurisdictions are the jurisdictions where the collateral and positions are held as well as the jurisdiction which law will apply in connection with the default of a participant.

The arrangements have been calibrated with the ISDA/FOA European Client Clearing Addendum aimed at providing a standardized solution consistent with international best practice.

If the arrangements are provided to members outside of the EEA or a different jurisdiction's legislation is determined to apply in the event of insolvency of a participant, Nasdaq Clearing has a process for verifying the enforceability of the arrangement in relation to such foreign legislation (as described further under Principle 1).

Nasdaq Clearing has an account structure with a range of account types. Please see below for short descriptions of the different account types. Some account types are common for Nasdaq Financial and Nasdaq Commodities, and others are only used within one of the markets. These differences are noted below. Following the list is a description of the level of segregation.

- 1. House Account (Nasdaq Financial and Nasdaq Commodities):** House accounts for clearing members' own positions. Netting of positions within the House Account is possible.
- 2. Omnibus Account (Nasdaq Financial and Nasdaq Commodities):** Several customers per account, netting of customer positions within the Omnibus Account is possible (however subject to the prohibition of netting between the Omnibus Account and any connected Single-client Account, please see below). There is no legal relationship between customers and Nasdaq Clearing.

- 3. Single Client Account (Nasdaq Financial):** The Single Client Account is regarded as a sub-account of an Omnibus Account. One customer per account, no netting of positions with any other account (including the Omnibus Account to which the Single Client Account is a sub-account). The Single Client Account is normally used by Non-Clearing Members (NCMs). There is no legal relationship between the customer and Nasdaq Clearing.
- 4. Individually Segregated Client Account (Nasdaq Financial and Nasdaq Commodities):** One customer per account, no netting of positions with any other account. There is no legal relationship between the customer and Nasdaq Clearing and the clearing member posts collateral directly to Nasdaq Clearing.

It should be noted that accounts can have sub-accounts set up in the clearing system. If the clearing members prefer, Nasdaq Clearing can set up a number of sub-accounts, e.g. one for each customer. However, this is only for information purposes and the internal use of the participant. The sub-account and the "main account" will be regarded and managed as one account and hence follow the segregation requirements applicable for the main account.

In all account types, positions are always segregated between the participant and its customers, at a minimum. There are no accounts that hold a mix of positions from participants and customers. Furthermore, there are no accounts, mentioned above, that hold any positions of the clearing house.

With regard to segregation of collateral, this is fully achieved for all above mentioned account types. For customers with Individually Segregated Client Accounts (account type 4 above), collateral is posted to the participant rather than directly to the clearing house but is held on individually segregated accounts at the clearing house, with unique customer identifiers, and is never mixed with the collateral of other customers, the participant, or the clearing house.

For account types 2 and 3 above, Nasdaq Clearing offers the ability to segregate customer collateral from that of the participant. In practice, this is achieved by establishing separate collateral accounts for the participant's house business and for its customer(s). Specifically, in relation to the Omnibus Account and the Single Client Account, the participant posts collateral to Nasdaq Clearing on an aggregate basis for the Omnibus Account (i.e. net collateral for Omnibus Account plus net collateral for the respective connected Single Client Account(s)). The collateral provided

by the participant with respect to this account type is held in two separate collateral custody accounts at the clearing house.

Nasdaq Clearing does not rely on participants' records in order to ascertain customer's interests held by the clearing house. For customers in Omnibus Accounts, individual customer interest is only held at participant level and is not known by Nasdaq Clearing (and is not required by the clearing house either).

For customers with account type 4, positions and margin requirements are calculated for each individual customer account. Customer margin is collected on a gross basis, i.e. customer by customer. Netting is only performed within a customer account. Collateral may only be used to cover losses associated with the default of the customer in question, so customer collateral is not exposed to "fellow-customer risk". Accordingly, account type 4 fulfils the segregation requirements in Article 39.3 of EMIR, i.e. individual client segregation.

For customers with account type 3 (Single Client Account), each customer has individual accounts and positions, and margin requirements are calculated for each customer account. Customer's margin is collected on a gross basis, i.e. customer by customer. Netting is only performed within a customer account. The difference compared to account type 4 is that Nasdaq Clearing aggregates the margin figures for all accounts under the participant (types 2 and 3 above – the participant's house account is not included in this aggregation) and collateral is held on a single custody account. Also for these account types netting is only performed within a customer account, not between customer accounts.

For customers that use Omnibus Accounts (account type 2), Nasdaq Clearing does not generally have information on the customers in this account. Netting of margin requirements is performed within the Omnibus Account, i.e. between customers in the account, subject to the prohibition of netting with any connected Single Client Account. However, please note that there is no netting of positions on the Omnibus Account). Margin is thus obtained on an aggregate net basis for the Omnibus Account and the Single Client Account, but no netting is done between different Omnibus Accounts. Customers in an Omnibus Account, including those customers that have a Single Client Account within the Omnibus Account, may be exposed to "fellow-customer risk", as collateral posted can be used by Nasdaq Clearing to cover losses on the account, irrespective of which customer has caused the loss.

Accordingly, account types 2 and 3 fulfil the segregation requirements in Article 39.2 of EMIR, i.e. omnibus client segregation.

Nasdaq Clearing has arrangements in place to enable porting of a customer's positions and collateral in the event of a participant's default. Porting is possible for all different account types even though the likelihood of porting for customers having an Individual Client Segregated Account is slightly higher as such porting is only subject to the customer's and the back-up clearing member's consent.

For customers in an Omnibus Account, portability can be achieved if the customers agree on the same back-up participant and if such back-up participant is willing to accept all positions and collateral belonging to the Omnibus Account.

In all cases above, portability is dependent on the customer having a back-up participant on standby or the customer being able to find a back-up participant that is willing to receive the positions and collateral of the customer.

The Clearing Rules include provisions regarding the porting of participants' customers' positions and collateral to a back-up participant. The Clearing Rules specify that Nasdaq Clearing shall in the first instance attempt to port the customer's positions and collateral to another participant, rather than forcibly settling the customer's positions.

It is the responsibility of the customer to initiate the porting of positions and collateral to a back-up participant. It is up to the customer to find a back-up participant, if the customer has not already a back-up participant on stand-by. When the customer has requested the clearing house to initiate the porting, the clearing house is required to take certain actions to start the porting. The process of porting is described in the Clearing Rules. However, it is never the responsibility of Nasdaq Clearing to find a back-up participant or obtain the consent of the back-up participant.

Nasdaq Clearing has actual experience from performing the transfer of customer positions and collateral from a defaulting participant to an alternative participant.

Nasdaq Clearing's segregation and portability arrangements are disclosed in its Clearing Rules.

A participant's customer can establish whether its collateral is protected on an individual or omnibus basis through the type of account it has chosen, in addition to asking its clearing participant to explain the level of segregation that is being provided.

Customers do not have a legal relationship with Nasdaq Clearing and must rely on the information provided by the participant to determine what level of protection they have. Provided the customer has information about the type of account being used, the customer can refer to the Nasdaq Clearing website<sup>18</sup> to read more about the level of protection that is provided for each account type.

The risks, costs and uncertainties associated with Nasdaq Clearing's segregation and portability arrangements are identified in an Risk Disclosure Document published on Nasdaq Clearing's website<sup>19</sup>.

## Principle 15: General Business Risk

An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Strategic and Business risks are risks to earnings and capital arising from changes in the business environment and from adverse business decisions, improper implementation of decisions or lack of responsiveness to changes in the business environment. Strategic and Business risks are managed as part of the ERM framework. For further details in regard to the ERM framework refer to Principle 17.

In addition to this, the New Product Approval Policy (NPAP) establishes the process to ensure that all risks inherent to the new products or any significant changes are taken into consideration. In the New Product Approval Committee (NPAC), major changes to new or existing products and services are discussed as well as changes related to legal & regulatory, operational, strategic and business risks.

Different risk scenarios for relevant risk types are defined for the purpose of assessing the capital need of Nasdaq Clearing, and whether the impact of such scenarios could jeopardize Nasdaq Clearing's ability to perform its critical functions.

Moreover, Nasdaq Clearing has established BCPs in which scenarios are identified in relation to critical processes/

functions (e.g. disturbances/close of IT systems) which could potentially prevent Nasdaq Clearing from carrying out its services. For the defined scenarios, mitigating actions have been set up in the BCPs.

Nasdaq Clearing has a Recovery Plan (RP) that has been approved by the Board. The RP describes the Recovery process for the clearing house, including stress scenarios where the "business as usual" procedures are not sufficient to cover credit losses, liquidity shortfalls, non-default losses encountered by the clearing house. The recovery procedure also includes early warnings and triggers, defining when the clearing house should consider entering into recovery and the decision-making process in these events. Furthermore, the RP sets out proposed recovery tools that can be used to restore Nasdaq Clearing in such a way that it can continue to perform its operations and obligations as a clearing house and be financially viable. The RP is reviewed on an annual basis or more often if deemed necessary due to, inter alia, major changes in recommendations and/or regulations or the operations of Nasdaq Clearing.

Orderly wind-down of the clearing house is covered in a separate Wind-down Plan that has been approved by the Board.

In accordance with EMIR Article 16, defining capital requirements for a CCP, Nasdaq Clearing ensures it holds sufficient capital at all times to cover for general business risk and the potential capital need from an orderly wind-down. The capital dedicated for business risk is set to 3 months gross operational expenses. The capital for wind-down is set to 7 months gross operational expenses (i.e. one additional month compared to regulation for planning and ramp-up for the wind-down process. Gross operational expenses are based on audited and approved annual financial statements.

The capital is fully funded by shareholders' equity. According to Nasdaq Clearing's Investment Policy, the capital shall be invested in highly liquid securities and only in SEK. The method for assessing the quality and liquidity of the net assets is fully integrated in Nasdaq Clearing's other investment operations i.e., an ongoing monitoring of the credit quality of the investments and the annual review of the Investment Policy. These funds are held in addition to the Waterfall and are consequently held outside the resources of the Waterfall.

18 <https://www.nasdaq.com/solutions/nasdaq-clearing-clearing-model>

19 <https://www.nasdaq.com/solutions/nasdaq-clearing-clearing-model>

In addition to the regulatory capital, Nasdaq Clearing holds a buffer in non-regulatory tangible equity equal to 33% of its own regulatory capital, i.e. Junior capital + Senior Capital and Article 16 capital). This buffer is regulated in the Regulatory Capital and Default fund policy, which is approved by the Board annually. If the buffer (or any additional tangible equity) is not sufficient to meet additional capital requirements, the plan entails requesting further capital from Nasdaq Clearing's parent company. As Nasdaq Clearing is owned by a single entity, this process can be achieved within a very short timeframe, if needed.

Measures to address regulatory capital shortfall (e.g., utilize self-imposed buffer to the Article 16 capital, other liquid resources, etc.) are set out in the Regulatory Capital and Default Fund Policy and are reviewed and updated, if deemed necessary, by the Board on an annual basis.

## Principle 16: Custody And Investment Risks

An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.

The majority of assets that are used by Nasdaq Clearing to support its regulatory capital or that have been provided by members to secure their obligations to Nasdaq Clearing are all held with CSDs in Nasdaq Clearing's own name (own account or nominee account). This ensures a limited exposure towards a single custodian and a quick access to the securities, if needed.

To mitigate the custody risk in relation to member's contributions to the default fund, or posted collateral, all securities held with CSDs are held on segregated nominee accounts and can never be co-mingled with the CSD's own assets.

In those cases where it is not possible for Nasdaq Clearing to hold assets directly with a CSD, e.g., Nasdaq Clearing does not have direct access to the CSD or the local security settlement system, Nasdaq Clearing will hold the assets with a custodian institution.

A custodian institution must fulfil Nasdaq Clearing's requirements of minimum restricted equity capital and minimum rating in order to be eligible as a custodian institution. To become a custodian institution, the institution must be approved by the NCRC. The NCRC is presented with an analysis where the custodian institution is assessed. The assessment

is based on a due diligence questionnaire, due diligence into its financial requirements, credit rating, supervisory authority, organization, ownership structure and legal analysis.

Custodian institutions are monitored by Nasdaq Clearing with specific regards to the custodian institution's rating and financial requirements.

Nasdaq Clearing continuously measures the exposure towards custodian institutions. Moreover, the entities, which have multiple roles with Nasdaq Clearing are monitored and the risks, in terms of custody service and liquidity provider, are measured daily.

Assets that are used by Nasdaq Clearing to support its regulatory capital or that have been provided by members to secure their obligations to Nasdaq Clearing are all secured by or are claims on high quality obligors as stipulated in Nasdaq Clearing's Investment Policy. The credit quality is ensured by strict rating requirements on eligible investments.

The Investment Policy is processed by the NCRC and approved by the Board, which ensures that it is aligned with Nasdaq Clearing's overall risk management strategy.

Nasdaq Clearing has limits on how large the exposure towards an individual counterparty or towards a type of counterparty may be. The size of the limit is determined by the counterparty's credit rating and investment type. All investments except exposures towards AAA-rated government bonds are subject to limits and controlled on a daily basis. Nasdaq Clearing does not invest in participants' own securities or those of its affiliates.

All Nasdaq Clearing's investments are highly liquid securities which ensures a quick liquidation if required. Nasdaq Clearing invests in assets with a maximum average maturity of two (2) years. This limitation on the maturity risk in the portfolio ensures that no significant adverse price effect can arise in the portfolio. Furthermore, due to the limitations in its Investment Policy Nasdaq Clearing cannot invest in other underlying instruments to the derivative contracts cleared by Nasdaq Clearing or invest in securities issued by any participant (or its affiliates), which ensures that Nasdaq Clearing's investments are exposed to little, if any, adverse price effects. Derivative contracts are not accepted investments. However, they may be used under the circumstances when it is needed to hedge a defaulted Clearing Participant's portfolio or to manage arising liquidity risk in different currencies. Nasdaq Clearing discloses a summary of its investment policy on its website<sup>20</sup>.

20 <https://www.nasdaq.com/solutions/nasdaq-clearings-investment-policy-guidelines>

## Principle 17: Operational Risk

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.

Operational risks are risks arising from the clearing house people, processes, and systems and external causes and are managed through the Enterprise Risk Management (ERM) framework.

### Policies And Procedures

Nasdaq Clearing's ERM Policy sets out the CCP's framework for comprehensive risk management, including Operational risk. The ERM framework establishes requirements and practices working in unison to identify, assess, monitor, measure, treat, and report on risks to facilitate strategic and operational decisions that enable Nasdaq Clearing to achieve its business objectives while optimizing risk-adjusted returns consistently and objectively.

One of the core components of the ERM framework is the risk assessment program, which utilizes separate yet related risk assessment components (Top-down, Bottom-up assessments) to inform holistic risk profile for the company. A top-down risk assessment process is conducted to identify and manage risks that may impede achievement of strategy and objectives and the risk assessment process provides an understanding of the relationship between the control environment and the risks that could threaten the successful execution of business objectives, cause potential reputational and brand damage, and/or result in financial loss.

Through the risk assessment process, risk owners assess inherent risks, identify and determine the effectiveness of controls in mitigating those risks, and determine whether to accept, mitigate, transfer, avoid, or increase the resulting residual risk levels.

In addition to periodic risk assessments (e.g., Risk Control Self-Assessment (RCSA)), certain triggers may prompt Nasdaq Clearing to re-assess selected processes, risks and controls. Trigger examples include, inter alia: changes in the external

or internal environment such as new products and initiatives; findings from second and third line reviews; or the occurrence of incidents.

Key preventive measures for operational risk consist of strong internal control processes, which are performed and documented according to an internal control framework, as well as second line risk function control reviews, which aim to reduce errors and omissions further.

Another component of the ERM framework is risk incidents. Employees have the responsibility for identifying and escalating risk incidents in a timely manner. Risk incident refers to the materialization of a risk that leads directly to, or has the potential to result in, one or more financial or non-financial impacts. The risk incident process promotes the structured reporting, documentation, and compilation of risk incident data, thus allowing timely analysis and mitigating actions.

Low probability events undergo Scenario Risk Assessments which serve as a tool to assess the company's ability to survive extreme events and are part of the ERM Framework. Scenario Assessment Standards were established as a global methodology to identify and estimate the company's direct financial exposure to low-probability events that may have severe impacts (i.e. "tail-end events") by utilizing the expertise of experienced Nasdaq management.

NCRC oversees the enterprise risk management practices, promotes pro-active risk management, monitors current and emerging risks and reviews management actions taken to reduce risks to an acceptable level. The NCRC also serves as a forum for management to assess the risk profile and the risks that affect the Company's strategic objectives. In addition, the Board is kept informed about operational risk developments via quarterly reporting.

On an annual basis, Nasdaq Clearing identifies a list of positions that are considered to be risk takers in accordance with Nasdaq Clearing's Remuneration Policy. These positions/names are reviewed and approved by the Board, after review by the Remuneration Committee. Nasdaq Clearing defers variable remuneration for these risk takers in accordance with relevant regulations and the Remuneration Policy. Nasdaq uses group compensation programs like the Corporate Incentive Program to ensure that merit and equity programs are tied to performance. The performance appraisal process includes two annual opportunities where employees and managers meet to evaluate performance against the corporate goals and personal goals, at mid-year and year-end.

Fraud prevention is embedded in the corporate policy

framework, i.e. no specific fraud prevention policy exists. Fraud prevention is addressed from different angles in Ethics & Compliance, Information Security, Accounting, Finance, Legal Review and SOX Compliance Policies.

Nasdaq Clearing ensures that employees have adequate knowledge and experience required by their respective role. Employees have the opportunity for further education and training to maintain and advance their knowledge and qualifications. For example, mandatory online trainings are provided to foster risk awareness and culture within the company by focusing on the personal responsibility of every individual employee regarding their risk management duties.

## Systems

Nasdaq Clearing and its outsourced functions within the Nasdaq Group follow the Nasdaq Clearing's New Product Approval Policy and where relevant Nasdaq Group Change Management Policy to ensure control over the changes that are made in its environments, minimize risks and prevent errors, and to assure that the right people are informed about the changes and that the changes have been formally approved by relevant governance bodies.

Nasdaq Clearing applies an IT Infrastructure Library (ITIL) based on Technical Incident Management Policy and process for resolving incidents in its IT systems. The clearing house manages the business implications of major incidents through its own incident management organization, and the Emergency Response Team. The Emergency Response Team is responsible for taking all business-related decisions and works closely together with the Technical Incident Management organization to restore services to normal operation.

Operation objectives are defined in service agreements between Nasdaq Clearing and its IT service providers. The system uptime objective for core systems is at least 99.90%. To achieve this, the clearing house's systems are designed to be fault tolerant and with fail over capabilities to at least one, and sometimes two, standby instances.

Capacity and performance requirements are defined for IT systems, and systems undergo performance and capacity tests. Load tests are also executed due to architectural changes in the systems. To ensure that new hardware and network solutions comply with the requirements, benchmark tests are performed. These are typically done prior to major releases.

In addition, service agreements contain quantitative service levels such as service desk response time, incident

management priority levels, volumetric parameters, hours of operations and load profile parameters. Qualitative service levels include adherence to internal policies such as the Code of Ethics and the Information Security Policy.

Reports on IT services are produced monthly. Quarterly review meetings are held with the outsourcing service providers.

If a service level parameter is near or exceeds its stated limit, the situation is analyzed.

The clearing house has adopted the Nasdaq Group Information Security Policies and Standards which are designed to maintain the confidentiality, integrity and availability of information and which apply to development, maintenance and production of systems within the clearing house as well as to outsourcing service providers and third-party vendors.

Information security standards provide specific requirements for implementing business technologies in a secure and reliable manner.

Detailed standards and procedures have also been established in many IT security related areas such as firewall management, Internet access, intrusion detection, password management and remote access.

The clearing house follows industry best practices with regards to policies, processes, controls and security auditing. The clearing house's data centers are SSAE16-certified and the clearing house's information security professionals hold the industry relevant certifications such as CISSP, CISA, ISSAP, CISM, and GIAC.

## Operations

Operational risks posed by external parties such as participants, FMIs and service and utility providers are managed in several ways. Operational risks from participant connections are controlled by secure interfaces providing reliable and secure information. All internal communication in the platform is based on reliable messaging technologies to ensure consistent and accurate transactions within the systems. The messaging system is designed to handle both software and hardware failures without effect on the business operations. All external access to the clearing platform is done via well defined, documented, and supported APIs and protocols. The clearing house is dependent on electronic communications and ensures the integrity of messages by using reliable networks and procedures to transmit data. External applications are subjected to a certification process before being permitted to connect to the production



system. The certification process is aimed at securing that the connecting application behaves correctly and doesn't generate any unwanted activity, such as excessive transaction rates or erroneously formatted transactions. Connectivity is provided by approved and certified service providers that offer dedicated or VPN based communication lines. Two-factor authentication is used for access directly via Internet. Finally, information transmitted within the clearing house is protected by IT security processes and controls as outlined in the Information Security Policy.

The clearing house has outsourced parts of the IT responsibilities to intragroup IT services providers. Certain services provided by intragroup service providers rely on sub-outsourcing to third party external providers. The risks posed by central banks and CSDs are issues in the settlement process, such as erroneous or delayed settlement. Risks are managed through real time monitoring of settlement flows and BCPs. Risks are mitigated through the collection of detailed statistics from which issues are identified and addressed.

The clearing house ensures that the operational and technical requirements for connecting to Central Banks and CSDs are met. In addition, the clearing house takes part in the planning and execution of industry wide crisis exercises arranged by Finansiella Sektorns Privat-Offentliga Samverkan (FSPOS), an organization for private-public co-operation in the financial sector.

The clearing house adheres to the business continuity planning requirements with the Central Banks and CSDs set by FSPOS and participates in the exercises arranged by them. Issues that impact the business continuity planning are identified and changes are introduced in the documentation through regular revisions. The clearing house keeps itself informed about testing arranged by central banks and CSDs via newsletters and participation in meetings for this purpose.

## Controls

The Board has adopted working procedures to execute oversight and control of information security related issues. These procedures outline reporting requirements to support the Board when assessing the risk exposure and when evaluating the adequacy of and adherence to the Information Security Policy and related standards. It also establishes critical decision points for the Board during the annual cycle.

Operational management, the CEO, the Chief Risk Officer, the Head of First Line Risk Management and the Chief Technology Officer of the clearing house are responsible for making sure there are independent controls of operational procedures.

Management is supported in its responsibilities to identify, evaluate and control risks in their respective areas, supported e.g. by the Risk Monitoring & Control team and by risk- and security professionals from Nasdaq Group level.

The Internal Audit function is responsible for making independent reviews of the adequacy of controls, reporting to the Audit Committee. The members of the Audit Committee are two Board members of Nasdaq Clearing. A charter that is approved on an annual basis governs the internal audit function. The Internal Audit function performs continuous reviews of the adequacy of controls based on an annual audit plan approved by the Board.

The Internal Audit function reviews systems, policies, procedures and controls as well as risk management based on risks and in accordance with Internal Audit's annual planning. Procedures covered by SOX requirements for Nasdaq Clearing's operational and system related controls are also part of both Internal Audit and External Audit annual testing.

Both manual and automated controls have been built into the day-to-day clearing and settlement processes to mitigate potential risks at an early stage. These controls are reviewed on a continuous basis by the clearing house. All significant deviations from normal operations are registered in a system for follow-up and resolution.

## Business Continuity And Disaster Recovery

Nasdaq Clearing has a Business Continuity Management and Disaster Recovery Policy and established business continuity plans (BCPs), describing the management objectives and procedures for how to achieve continuity of the business, its key operations and processes in the event of a disruption. The plan includes a strategic and operational framework to secure the clearing house's resilience to disruption, interruption or loss, in supplying its products and services. It also describes the process for how to prioritize, organize and manage the business operations to secure our service offering in case of a disruptive event or other serious situation, in order to fulfil our obligations towards customers, regulators and other stakeholders and minimize any negative consequences. This involves both a proactive planning element and reactive measures to be taken when an incident occurs. The BCP also enables Nasdaq Clearing to complete settlement transactions by the end of the day of the disruption. Nasdaq Clearing's systems are designed to recover and resume business critical operations within two hours of a critical event, including a complete loss of the primary data center or an evacuation of the Nasdaq Clearing offices.

The clearing house's BCPs address situations where the operations could become severely disrupted. Formal incident response procedures have been developed and are tested on a regular basis and carried out with different scenarios. Scenarios of large-scale disasters, typically complete outage of the primary site, are tested on a yearly basis. Failover procedures are performed in the production system and members are offered to test their connectivity to the secondary site and perform basic business queries. Verification of connectivity from the secondary site to CSDs and SWIFT is included in the yearly testing.

The clearing house's critical systems are designed and tested to provide full redundancy and failover functionality including maintaining transaction integrity. Failover for individual components is also available. The access network allows participants to connect to either or both primary and secondary sites, thus being able to reduce their risk and lessen the impact of a system disturbance affecting one site. In the event of a serious system disturbance, making the primary site unable to continue operating, system operation will failover to the secondary site.

There is a back-up site for business operations in both Stockholm (Sweden) and Vilnius (Lithuania). All operational procedures can be executed from the contingency office, using separate equipment located there. Procedures for relocating the staff are tested regularly.

Backup routines, partly manual, are established for all time critical activities.

The clearing house conducts regular reviews of its BCPs, or more often if necessary. Periodic reviews of the BCPs are conducted by Compliance (either as assurance or risk-based activities set out under the Annual Compliance Plans), Internal Audit and independent auditors and the results are reported to the Board.

Nasdaq Clearing also has a crisis management team that is assembled when situations arise that could subject the clearing house to highly significant or serious damage.

## Principle 18: Access And Participation Requirements

An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

Nasdaq Clearing operates in accordance with the EMIR Article 37.1, which sets out the participant requirements.

All participants of Nasdaq Clearing are subject to the same access criteria, which are set out to maintain acceptable risk controls while ensuring fair and open access. The categories of admissible clearing members and the admission and participation criteria are set out in the pertinent Clearing Rules and procedures and are available on the website<sup>21</sup>. Members and potential members can thereby access information about the risk, cost and requirements to participate in clearing through Nasdaq Clearing.

Section 1.2.1 of the Clearing Rules FIN and section 3.1.2. of the Clearing Rules COM set out that Nasdaq Clearing shall only admit clearing members that have sufficient financial resources and operational capacity to be members of Nasdaq Clearing and that meet the membership requirements set out for the applicable membership category. For Commodities members, the membership requirements for each applicable membership category are set out in Appendix 8 of Clearing Rules COM.

To the extent there are any participation requirements stipulated in applicable law, such requirements have been incorporated in the Clearing Rules and procedures. Examples of such statutory participation requirements relate to e.g. capital requirements, credit requirements, operational and risk management and technical requirements that the participant is considered as appropriate to participate in the clearing. The participation requirements included in the Clearing Rules are regularly reviewed and updated if deemed necessary.

The requirements for Nasdaq Clearing Financial participants can be found in the Clearing Rules FIN (2.2.6., 2.2.A., 2.2.B.). The requirements for Nasdaq Clearing Commodities participants can be found in the Clearing Rules COM section 3.1 and Clearing Appendix 8.

Nasdaq Clearing also has exposure limit framework which means that each clearing member has an individual exposure

21 <https://www.nasdaq.com/solutions/nasdaq-clearing-membership-requirements>

limit towards Nasdaq Clearing, to help ensure that a clearing member has sufficient financial capacity to serve its positions, also during extended periods of stress.

Nasdaq Clearing has a dedicated Member Onboarding team that handles all applications from prospective members and direct clearing clients. The Member Onboarding team reviews all applications and ensures together with the Legal, Anti-Financial Crime and Risk Management teams that the applicant has the necessary operational capability, meets Nasdaq Clearing's technical standards and both legal and financial requirements. Finally, the application is approved by the Nasdaq Clearing Credit Committee.

Members and direct clearing clients are monitored by Risk Management and Clearing Operations in order to ensure that the membership or direct clearing client requirements are fulfilled at all times. If a member no longer fulfils the membership requirements, Nasdaq Clearing applies risk mitigation measures in steps, whereof termination of the membership agreement is the last step. Such risk mitigation measures are stipulated in the respective Clearing Rules. Furthermore, in case of suspension or termination, the Default Committee will assemble and make a decision to suspend or to declare the participant into default. The process and actions to be taken if a participant is declared in default are described in the default procedures of Nasdaq Clearing (described in more detail in Principle 13). The default procedures are publicly available on the website<sup>22</sup>. Member & Account Configuration team will execute the suspension in the system if requested by the Default Committee.

## Principle 19: Tiered Participation Arrangements

An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

Nasdaq Clearing offers both agency and member clearing to its participants. Within these two clearing structures, different types of tiered participation exist, where different liabilities and obligations among Nasdaq Clearing and either direct participants or indirect participants occur. The right to gather information on indirect participants is included in the Clearing Rules.

Nasdaq Clearing has identified the following risks from tiered participation arrangements:

- Counterparty risk, i.e. the risk that a default of an indirect participant would spill over and lead to a default of the direct participant.
- Settlement risk, i.e. the risk that a failure in settlement (payment or delivery) of an indirect participant will not be managed by the direct participant and hence disturb the general settlement process.

Most of the tiered participants are set up with individual accounts, sub accounts or segregated accounts in the clearing system. Nasdaq Clearing manages and mitigates the tiered counterparty risk by:

- calculating margins on individual account level (including sub accounts),
- define concentration limits on individual account level, and
- issue extraordinary/intraday margin calls on an individual account level.

In respect of the tiered settlement risk, Nasdaq Clearing has sufficient arrangements in place, such as liquidity resources and security lending, to mitigate the impact if a failure by an indirect participant would lead to disturbance for the direct participants.

Nasdaq Clearing has the following tiered participation arrangements on Nasdaq Commodities and Nasdaq Financials; (i) Non-Clearing Members (NCM), (ii) Omnibus Clients and (iii) Individual Client Segregated Account (ICA) clients. In terms of NCM and ICA, the identities of these clients are known to Nasdaq Clearing. As regards Omnibus Clients, the identities of these clients are generally unknown to Nasdaq Clearing. Nasdaq Clearing does not request or gather credit information on a regular basis in respect of these participants, but has, according to the Clearing Rules, the right to require different information from the clearing members regarding the indirect participants.

Market information such as positions and exposures are generated and reviewed in real time through Nasdaq Clearing's systems. Hence, Nasdaq Clearing has the full capacity to analyze the market risk in real time for these indirect participants and the impact that may have on the direct participant. Limits can be set on indirect participants' portion of the exposures of direct participants, and in case there is a limit breach, the indirect participants can be scrutinized in terms of their credit worthiness, and the direct clearing

22 <https://www.nasdaq.com/solutions/nasdaq-clearing-default-management>

member can be asked for its risk management procedures with regards to the relevant indirect participant.

In offering both agency and member clearing, Nasdaq Clearing has implemented an IT structure and operational procedure that provides Nasdaq Clearing and its direct participants with information and tools to manage the risk of the indirect participants. Nasdaq Clearing continuously monitors the positions and exposure of indirect participants and the tiered participants through its proprietary risk systems.

## Principle 20: FMI Links

**An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.**

Nasdaq Clearing has processes in place to evaluate both the risks associated with prospective new FMI links as well as with already established FMI links, in line with its framework for comprehensive management of risks (described in Principle 3). Below follows a more detailed description for the different types of FMI links applicable to Nasdaq Clearing.

### Links with Central Securities Depositories (CSDs)

Currently Nasdaq Clearing has various contractual and operational arrangements with CSDs and iCSDs in Sweden (Euroclear Sweden), Finland (Euroclear Finland), Belgium (Euroclear Bank), Denmark (Euronext Securities Copenhagen (VP Securities)), Norway (Euronext Securities Oslo (VPS)). All linked CSDs are licensed and supervised by Financial Supervisory Authorities and/or Central Banks, also all CSDs, except Euronext Securities Oslo, are CSDR licensed. Linked CSDs are monitored by Nasdaq Clearing through re-occurring due diligence to ensure that minimum requirements on capital, credit worthiness and operational capacity are met. Capital and liquidity risks are monitored through regular stress testing where scenarios include the simulated failure of CSDs. Operational risk procedures (further described in Principle 17) include specific BCPs to activate in case a CSD would fail or experience operational disturbances. Furthermore, Nasdaq Clearing participates in Fire Drills run by the Swedish FSA that simulate failures or disturbances to FMIs.

With respect to legal and regulatory risks, all linked CSDs are located within the EEA, which ensures that the CSDs' activities are governed by local laws which have implemented relevant EU legislation and that the CSDs are obliged to comply with

international standards and recommendations for securities settlement systems. Before establishing links with CSDs Nasdaq Clearing ensures that the links have a well-founded legal basis, which provides adequate protection for the parties involved.

Nasdaq Clearing has an ongoing project to update FMI links according to the CSDR and the changes each CSD makes. Nasdaq Clearing participates actively in project working groups established by the FMIs and carefully monitors the development and possible changes in how the regulation is implemented by the FMIs/CSDs, and also runs recurring periodic bi-lateral meetings with each CSD to ensure efficient day-to-day functioning of the link.

### Links with trade repositories (TRs)

Nasdaq Clearing has a link with a TR which is used for purposes of reporting of derivative contracts and security financing transactions<sup>23</sup>. This link was established after a thorough analysis and risk assessment and acceptance tests were run before establishing the connection. Upcoming links with TRs will be established following the policy and procedures defined below.

### Future links with FMIs

New, or substantial changes to existing FMI links, would be handled through the Nasdaq Clearing NPAP (described in Principle 3) in order to identify the risks related to the new or changed link and to outline the minimum requirements for risk management. Furthermore, the NPAP ensures that all risks inherent to the change are clearly identified, addressed, monitored and controlled as well as are in line with the relevant Board strategy and risk appetite.

## Principle 21: Efficiency And Effectiveness

**An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.**

The design of Nasdaq Clearing has been done with high attention to achieving efficiency and effectiveness in relation to inter alia margin models, cash settlement, securities settlement, account structure, risk management and technology.

23 Nasdaq Clearing is currently using DTCC Report Hub as a reporting solution for its SFTR reporting but planning to move to TRACK by the end of Q2-2023 and report directly to DTCC Trade Repository.

Nasdaq Clearing's mission is to deliver services for capital efficient management of risk, that empower businesses and investors to succeed while safeguarding the financial stability in the markets we operate.

Nasdaq Clearing's strategic plan is to build a preeminent European CCP by focusing the core business, seizing opportunities through diversification across the value chain and to be a catalyst for economic growth built on a foundation of technology, innovation and sustainability.

The CCP will continue to extend its business across the European landscape with a firm anchoring in the Nordic markets<sup>24</sup>.

It is of utmost importance to the clearing house to constantly keep in touch with market developments, competitors' movements and participants' views and requirements regarding new developments and the efficiency of the clearing services offered.

In accordance with Article 28 of EMIR, Nasdaq Clearing has an established risk committee, the MRC. The MRC advises the Board in their risk oversight role, ensuring that the Company's risk management framework is appropriate and functioning as intended and the level of risk assumed is consistent with Nasdaq Clearing's strategy and risk appetite.

Nasdaq Clearing uses a number of ways to collect information on participant's requirements. These include regular meetings with the Securities Dealers Associations in key countries, the establishment of Clearing Councils in key locations and in some cases for specific asset classes, wider Clearing Forums and IT forums, in addition to continuous dialogue with members. The organization has dedicated resources that follow market and regulatory developments, and a robust organization to respond to changes.

Overall, Nasdaq Clearing regularly reviews its efficiency and effectiveness. Metrics including late settlements, delays fees, STP ratios, etc., are gathered daily and Monthly Metrics reports are analyzed by management. Annual surveys are also performed to better respond to participant needs. In addition, input on efficiency and effectiveness is also received from i.e. Internal Audit reviews, Compliance reviews and the RCSA, which are conducted at regular intervals.

## Principle 22: Communication Procedures And Standards

An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

The clearing information is visible to members via graphical user interfaces (GUIs) and via communication protocols, the latter enabling members to access the clearing information via third party applications.

The GUIs available for members are the following: Genium INET Clearing Workstation, Q-Port, CMS Web and Nasdaq Member Portal. The communication protocols available are: FIX, FPML, OMnet API and SWIFT.

Clearing information is also available for members via reports via SFTP and through the GUIs, in CSV, Excel and PDF format.

Nasdaq Clearing is continuously working on improving the clearing functionality of the FIX protocol as the FIX standards become defined and implemented. Settlement instructions follow internationally accepted standards such as ISO and SWIFT messaging.

## Principle 23: Disclosure Of Rules, Key Procedures, And Market Data

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.

Nasdaq Clearing has developed and publicly discloses information on the systems rules and procedures and is continuously taking steps to enhance the members' knowledge of the systems. This is done through a website designated for clearing participants. It provides support for the participants to understand the rules, risks and procedures they face from participation.

Rules and key procedures, which cover rights and obligations of the participants are laid down in the Clearing Rules, which

24 More information on Nasdaq Clearing's governance, strategy, rules and policies can be found on the website: <https://www.nasdaq.com/solutions/about-nasdaq-clearing>

are publicly available on the website<sup>25</sup>. Nasdaq Clearing's respective Clearing Rules underpin the various stages of derivatives clearing. The Clearing Rules provide instructions regarding risk management policy and security policy, if and when Nasdaq Clearing assumes counterparty risks, the rights and obligations of Nasdaq Clearing and dealing with the parties involved in a default situation. The Clearing Rules are regularly updated, and all upcoming changes of the Clearing Rules are announced and accessible to all participants in advance.

Nasdaq Clearing also publicly discloses basic data on transaction volumes and values for Nasdaq COM<sup>26</sup> and Nasdaq FIN markets<sup>27</sup>.

Nasdaq Clearing's website<sup>28</sup> contains dedicated areas for: Cleared markets & Clearing model, Collateral, settlement & reporting, Risk Management, Technology & Connectivity, and Governance, policies & regulations. The area of Risk Management covers essential information on CCAR – Capital-At-Risk, Margin methodology, Default fund and clearing capital and Default management. It also displays specific information on the different margin models, default management procedures, parameter and collateral lists and details of the Investment Policy and default fund.

In addition, Nasdaq Clearing AB Risk Disclosure is presented/ summarized in a separate document which describes the levels of protection and the costs associated with the different levels of segregation offered by, and certain risks that are associated with the process of clearing derivatives through, Nasdaq Clearing AB, based on the Clearing Rules.

In accordance with the requirements of EMIR Article 38, fees and other material costs are publicly disclosed, and changes are notified well in advance. Fees are separated into two different areas: business-related fees and technical fees. The fees are specified per individual service offered (fee list for Nasdaq FIN<sup>29</sup> and Nasdaq COM<sup>30</sup> are available on the

website), and any discounts are made publicly available in the respective fee list. Should a member request additional information on the systems rules, procedures, technology or operations, Nasdaq Clearing can provide specific training and education in that area.

Moreover, CPMI-IOSCO Public Quantitative Disclosure data is published on the website<sup>31</sup> every quarter, providing transparency to Nasdaq Clearing members. Nasdaq Clearing monitors changes to the Public Quantitative Disclosure industry standard and continuously improves the disclosures.

Nasdaq Clearing completes regularly, i.e. every second year, and discloses publicly responses to the CPMI-IOSCO Disclosure framework for financial market infrastructures.

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25 Clearing rules for Nasdaq Financial: <https://www.nasdaq.com/solutions/rules-regulations-derivatives-rules>

Clearing rules for Nasdaq Commodities: <https://www.nasdaq.com/solutions/legal-framework-european-commodities>

26 <https://www.nasdaqomx.com/commodities/market-prices/transactions?>

27 <https://www.nasdaqomxnordic.com/optionsandfutures>

28 <https://www.nasdaq.com/solutions/nasdaq-clearing-offering>

29 <https://www.nasdaq.com/solutions/rules-regulations-derivatives-rules>

30 <https://www.nasdaq.com/solutions/legal-framework-european-commodities>

31 <https://www.nasdaq.com/solutions/about-nasdaq-clearing>

## V. List Of Publicly Available Resources

Public information related to Nasdaq Clearing can be found on the company website

<https://www.nasdaq.com/solutions/nasdaq-clearing-offering>.

From this page interested parties can navigate to detailed information about:

- Governance, Policies & Regulations, including Clearing Rules;
- Cleared Markets, Clearing Model and Membership Requirements;
- Collateral Management, Expiration and Delivery, Reporting;
- Risk Management, including Margining Methodology, Default Management, Capital-At-Risk, Default Fund and Clearing Capital;
- Technology and Connectivity for clearing.

This is not an exhaustive list.

### Clearing Rules FIN

<https://www.nasdaq.com/solutions/rules-regulations-derivatives-rules>

### Clearing Rules COM

<https://www.nasdaq.com/solutions/legal-framework-european-commodities>