

Counterparty Risk Management

NASDAQ OMX Derivatives Markets faces 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 the risk of counter-party default, i.e. the risk that one or several market participants will default on their obligations to the clearing organization.

The ability of NASDAQ OMX Derivatives Markets to manage overall counterparty risk is dependent upon several factors including the quality and controls of the overall clearing operations, the quality and controls of the counterparty risk management framework, the quality and controls of the collateral that is pledged by participants, pro-active risk management, a sound legal foundation (i.e. established rules and regulations) and the financial strength of the clearing organization as evidenced by its capital resources and financial liquidity.

NASDAQ OMX Derivatives Markets relies on an advanced portfolio-based margining system, RIVA, and margining methodology (OMS II) to calculate the appropriate amount of required collateral to compensate for the counterparty risk it assumes in its capacity as a clearing organization. The validity of the margining methodology is supported by regular Margin Back Testing.

NASDAQ OMX Derivatives Markets also relies on a proprietary capital-at-risk calculation model and system called RCaR to serve as the main driver in establishing an appropriate level of clearing capital. RCaR generates implied “loss given default” calculations based on extreme stress counterparty default assumptions. These are well defined extreme stress risk parameter assumptions applicable to an extensive range of market price movement scenarios along with well defined counterparty default assumptions. The data generated by RCaR is crucial to NASDAQ OMX Derivatives Markets’ capital adequacy planning and has been in use in this capacity since June 30, 2003.

1.1 Counterparty Risk

Counterparty risk is the risk that one party in a transaction will not be able to fulfill its obligations. In return for collateral, the clearing organization assumes the obligations under each derivative contract that has been accepted, thus minimizing the counterparty risk. NASDAQ OMX Derivatives Markets therefore enters as counterparty for both the buyer and the seller. See below figure.



NASDAQ OMX Derivatives Markets collateral requirements are calculated based on the specific counterparty’s trading positions. The collateral requirements are determined by risk models used to calculate an individual counterparty’s daily margin requirements and intraday margin calculations. The risk models and methodologies applied within NASDAQ OMX Derivatives Markets have been specifically designed by the Risk Management department to address near worst-case scenarios.

In a clearing structure where the member clearing model is applied, the end-customer has a risk towards the member as the end-customers do not have a direct legal relationship with the clearing organization. In a clearing structure where the end-customer clearing model is applied, the end-customer has a limited counterparty risk towards the clearing member since the end-customer has a direct relationship with the clearing organization.

Since NASDAQ OMX Derivatives Markets always acts as seller to the buyer and as buyer to the seller, its portfolio is perfectly matched. Market risk, which is defined as the risk of loss from fluctuations in market price, is maintained at zero unless a counterparty defaults in its obligations or if operational errors occur that affect the balanced position of NASDAQ OMX Derivatives Markets. If market risk occurs because of an operational error, the internal operational procedure is to close down the position immediately to minimize the potential market risk. Counterparty default events are managed by NASDAQ OMX Derivatives Markets' Default Committee.

1.2 Risk Management Department

The Risk Management department within NASDAQ OMX Derivatives Markets is primarily responsible for professionally managing NASDAQ OMX Derivatives Market's counterparty risks.

This is accomplished through a comprehensive counterparty risk management framework made up of policies, procedures, standards and resources. These resources are human, informational and technological. These resources and the framework that is applied are relied upon to provide the accurate measurement, reasonable control and desired level of protection from all identifiable counterparty risks and all operational risks arising within the Risk Management's scope of responsibility. The framework is also designed to meet the counterparty risk management and related corporate governance objectives of NASDAQ OMX Derivatives Markets.

The day-to-day work is directed at achieving the following:

- Supporting the business operations by assessing and managing the counterparty risk associated with NASDAQ OMX Derivatives Market's existing and/or new products and services.
- Delivering professional risk management via a comprehensive risk management framework
- Ensuring that executive management and relevant Boards of Directors are appropriately informed of all significant counterparty risk control issues which occur.
- Maintaining compliance with international industry standards specific to Risk Management.
- Making continuous improvements to NASDAQ OMX Derivatives Markets' counterparty risk management framework.

The Risk Management department manages changes in counterparty risk exposures against a range of risk limits on a daily and intra-day basis. The Risk Management department relies on a well established margining methodology which is validated regularly by automated margin back testing, standardized and customized risk reporting and a broad range of counterparty reference information. The Risk Management department also monitors and responds to noteworthy changes in risk exposure and changes in the financial markets, which can affect the risk profile of the counterparties.

The Risk Management department also plays an important role by:

- Screening of the creditworthiness and financial performance capacity of:
 - Applicants seeking approval as Derivatives Clearing Members.
 - Custodian Institutions.
 - Guarantors.
 - Prospective and approved Link Clearing Houses.
- Monitoring the performance capacities of the above referenced counterparties
- Ensuring that the liquidity requirements specific to NASDAQ OMX Derivatives Markets' own financial performance obligations are appropriately managed.
- Responding to Regulatory Authority and other significant stakeholder inquiries concerning Derivatives Market's counterparty risk management framework.
- Managing the day-to-day capital and liquidity planning tied to NASDAQ OMX Derivatives Market's cross border margining.
- Providing analysis and recommendations on counterparty risk issues relating to NASDAQ OMX Derivatives Market's business development initiatives as well as those in other areas of NASDAQ OMX if they potentially affect Derivatives Markets' counterparty risk and/or require risk management specialist input, advisory services or support.

1.3 NASDAQ OMX Markets Counterparty Risk Management Framework

The following depicts the overall Counterparty Risk Management Framework which the Risk Management department uses/applies in its approach to managing counterparty risk within NASDAQ OMX Derivatives Markets. This overall framework is purposely designed to incorporate continuous improvement to the methods used in professionally managing counterparty risk:

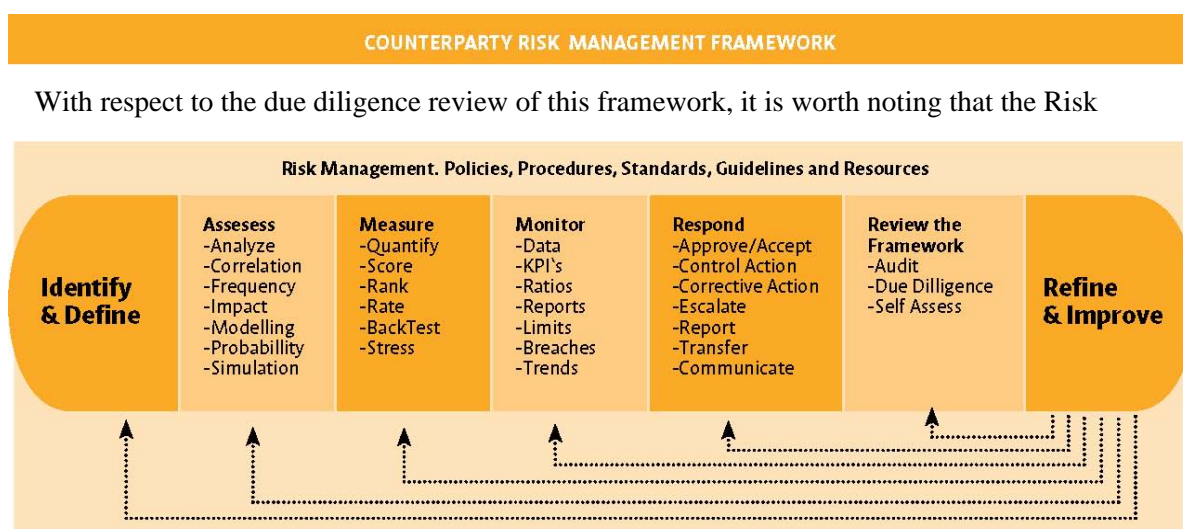


Figure 12: Summary overview of OMX Derivatives Markets' Counterparty Risk Management Framework

Management department and the framework which it applies is the subject of comprehensive (typically annual) due diligence reviews from a broad range of stakeholders including the following: Board of Directors, regulatory authorities, internal auditors, external auditors, rating agency, default

risk insurance providers and a broad range of credit institutions providing NASDAQ OMX and NASDAQ OMX Derivatives Markets with financial support.

1.4 Risk Management procedures

The following procedures within the Risk Management department are worthy of specific emphasis and comment:

- Procedures for handling parameter breaks
- Intraday risk reporting and monitoring
- Intraday margin calls
- Blocking of trades and offsetting trades

1.4.1 Parameter breaks

Each morning, the Risk Management department is made aware of any risk interval parameter breaks (i.e. situations where the change in day-to-day market prices has exceeded the approved risk interval parameter level for any underlying security). The following is tracked when a parameter break occurs:

- the day-to-day price movement of the underlying security that has resulted in a parameter breach,
- the approved parameter of the underlying security,
- the change in price relative to the parameter, and
- the volume of outstanding contracts for the respective underlying product

When a risk interval parameter break occurs, the respective affected counterparty accounts are reviewed in detail, the cause of the price movement is also reviewed and a decision is taken by the Risk Management department as to what action, if any, is required, immediately or during the course of the day in response.

It is important to note that from a statistical standpoint, risk interval parameter breaks are an “expected phenomenon”. A statistical numerical probability of 99.2 percent as a component of NASDAQ OMX Derivatives Market’s RIVA margining methodology for calculating parameters is applied. It is therefore reasonable to expect that parameter breaks on individual underlying series can and will occur.

It is also worth noting that if there has been a break in a risk interval parameter, it does not necessarily signify an automatic need to change the parameter. What it indicates is a need to evaluate the positions of the counterparties that are affected and to evaluate the overall impact of the parameter break on the collateral position of the counterparty accounts that are affected. Typically, accounts will have diversified portfolios and such diversification is a factor that helps to mitigate the effects of the risk interval parameter breaks in individual instruments.

1.4.2 Intraday risk monitoring

Intraday risk reports are generated every hour (starting at CET 10:00 and ending at CET 18:00). Each intraday margin report reflects any Clearing Member or Direct Pledge counterparties which at that time of day, has an intraday margin calculation that exceeds its approved intraday risk limit. Intraday risk limits are established by the Risk Management department but as they are designed for

internal risk management control these limits are not shared with market participants. It is also worth noting that breaching of intraday risk limits is not grounds for default, it simply serves as one of many early warning measures applied by the Risk Management department.

The automatic reporting includes added reference information including:

- the mark-to-market valuation of the counterparty's positions,
- the margin amount that is currently pledged to NASDAQ OMX Derivatives Markets,
- the variance between the current risk exposure and the intraday risk limit, and
- the variance between the current risk exposure and the margin in hand

If it is deemed necessary or beneficial by the Risk Management department to increase the frequency of intraday risk reporting, it can be carried out with one day's advance notice. Individual intraday risk limits can be adjusted during the day with immediate effect. Intraday margin calculation on an account level can be generated at any time.

Intraday risk exposures of all Clearing Member or Direct Pledge counterparties which exceed approved intraday risk limits are reviewed and approved by the Risk Management department at least once per day. This is consistent with industry standards and recommendations applicable to international clearing organizations set out by EACH (European Association of Central Counterparty Clearinghouses) and IOSCO (International Association of Securities Commissions) respectively. On trading days where the markets are considered to be particularly volatile, intraday risk positions are monitored throughout the day.

Breaches of individual intraday limits are reviewed and approved by the Risk Management department regularly (at least once per quarter). While new limits or limit changes are decided by the Risk Management department, the registering of limits in the system is managed by the Clearing & Market Operations department of NASDAQ OMX Derivatives Markets. NASDAQ OMX Derivatives Markets can also generate comprehensive reporting of intraday risk levels for all Clearing Member and Direct Pledge accounts regardless of the intraday limits that have been set, or the level of intraday risk exposures relative to the approved limits.

1.4.3 Intraday margin calls

NASDAQ OMX Derivatives Markets has both the authority and the proven capacity to calculate and require intra-day margin as a means of maintaining a desired level of margin coverage if it determines that such intraday margin calls are necessary. The Rules and Regulations of NASDAQ OMX Derivatives Markets stipulate that the new Margin Requirement shall enter into force not earlier than 90 minutes after the Clearing House notified the Clearing Member that a new Margin Requirement would be calculated. The purpose behind the 90-minute provision is to permit the affected counterparties to comply by pledging the new margin call amount or alternatively, to trade out of positions to a point that an appropriate level of risk exposure relative to already pledged margin can be achieved to help mitigate the risk of counterparty default.

NASDAQ OMX Derivatives Markets has only found it necessary to make a few intraday margin calls for isolated incidents involving individual counterparties or small groups of counterparties in the period from 2000 – 2007. In each instance the margin call was promptly and successfully met by the counterparty/ counterparties involved.

NASDAQ OMX Derivatives Market's right to make an intraday margin call is covered under section 3.7 Collateral and subsection 3.7.24 in the Rules and Regulations of NASDAQ OMX Derivatives Markets.

1.4.4 Blocking of trades and offsetting trades

There have been instances where counterparties have been contacted and instructed to discontinue any additional trades in a given instrument in order to limit the concentration risk of a specific position or to prevent an increase in a position of the counterparty in question. In all such instances, the counter-parties have complied and cooperated in full with NASDAQ OMX Derivatives Market's instructions.

There have also been instances where counterparties have been requested by the Risk Management department to offset trades to reduce the current margin requirement to a level which the counterparty is capable of delivering margin. These incidents do not occur frequently but when they do occur, their resolution is documented as "Resolved margin problem" and retained as part of the Risk Management department records.