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## Assessment of NASDAQ OMX Derivatives Markets as a central counterparty, 2008

NASDAQ OMX Stockholm AB (hereinafter referred to as NOMX STO) is the central marketplace for trading in, among other things, equities, fixed income securities and derivative instruments in Sweden. NASDAQ OMX Derivatives Markets (hereinafter referred to as NASDAQ OMX DM) is the secondary legal name of NOMX STO and is used for operations involving the trading and clearing of derivative instruments.<sup>1</sup>

NASDAQ OMX DM is a central counterparty in the clearing of standardised derivative instruments traded on the NASDAQ OMX DM derivatives exchange. In its capacity as central counterparty, NASDAQ OMX DM assumes risks and therefore is of significance to the stability of the financial system.

The assessment is carried out on the basis of the recommendations drawn up by the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) and which can be found in the *Recommendations for Central Counterparties*.<sup>2</sup> The recommendations aim to provide a comprehensive assessment of a central counterparty's management of different types of risk.

### Background

NOMX STO conducts stock exchange operations relating to, for instance, equities, debt securities and derivatives.<sup>3</sup> Transactions in shares and debt securities are cleared and settled in VPC's<sup>4</sup> system for securities settlement. NASDAQ OMX DM organises and is responsible for the clearing and settlement of standardised derivatives transactions. For the standardised derivatives transactions,

<sup>1</sup> A secondary legal name is not a legal entity but refers to a certain part of a company's operations. A subsidiary is registered with the Swedish Companies Registration Office.

<sup>2</sup> The CPSS-IOSCO Recommendations for Central Counterparties, BIS November 2004.

<sup>3</sup> NASDAQ OMX DM conducts trading in and the central counterparty clearing of standardised derivatives. NOMX STO also organises trading in warrants, which are cleared in the VPC-system.

<sup>4</sup> On 2 February 2009, VPC AB (VPC) changed its legal name to Euroclear Sweden AB (Euroclear Sweden), but as this is an assessment of NASDAQ OMX DM's operations in 2008 the name VPC is used here.

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■ NASDAQ OMX DM acts as the central counterparty.<sup>5</sup> This means that NASDAQ OMX DM acts as a seller to all the buyers and as a buyer to all the sellers. Both the buying and the selling party thus have NASDAQ OMX DM as the legal counterparty.

#### *Legal status and supervision*

In order to conduct trading and central counterparty clearing in derivatives NASDAQ OMX Stockholm AB (NOMX STO) is authorised as an exchange and has a permit to run clearing operations from Finansinspektionen in accordance with the *Swedish Securities Market Act (2007:528)*. Finansinspektionen has approved and registered NOMX STO with the European Commission in accordance with the *Act (1999:1309) on Systems for the Settlement of Obligations on the Financial Market*. NOMX STO is subject to supervision by Finansinspektionen. As NASDAQ OMX DM is a secondary legal name for NOMX STO, the same legal status and supervision applies to NASDAQ OMX DM as to NOMX STO.

#### *Ownership and governance*

NOMX STO is part of the NASDAQ OMX Group and is a subsidiary of NASDAQ OMX Nordic Ltd, which in turn is a subsidiary of the listed company NASDAQ OMX Group. The NASDAQ OMX Group includes the stock exchanges in Copenhagen, Stockholm, Helsinki, Iceland, Tallinn, Riga and Vilnius as well as the central securities depositories in Estonia, Latvia and Iceland. The NASDAQ OMX Group also owns a share of the Lithuanian central securities depository.

Derivative operations are conducted organisationally in the business area Nordic Transaction Services, which runs the stock and derivatives exchanges in Stockholm, Helsinki, Copenhagen and in Iceland. Trading and clearing are conducted under the secondary legal name NASDAQ OMX DM. The management and board of NOMX STO are responsible for the derivatives operations of NASDAQ OMX DM.

### **History**

The privately-owned company OM Stockholm AB was founded in 1984. In the following year, OM started the first derivatives exchange in the Nordic region, an exchange for the trading and clearing of standardised options and derivatives. The company offered its shares on the market in 1987 and was thus the first exchange in the world to be noted on the stock market.

In early 1998, OM AB acquired Stockholms Fondbörs (the Stockholm Stock Exchange). From 1 July 1999, share and derivatives operation were conducted in the same company, which was then called OM Stockholmsbörsen.

In the autumn of 2003, OM AB merged with the Finnish company HEX Plc, which owned the stock exchanges in Finland, Estonia and Latvia. After the merger the company was renamed OM HEX AB and the Finnish derivatives trading operations were transferred to the Stockholm exchange. In the same year, OM HEX and the London Stock Exchange founded the derivatives exchange EDX London Exchange, which via LEC (Linked Exchange Clearing) offers its counterparties trading in Nordic share derivatives with local clearing.

In August 2004, the exchange was renamed OMX. During 2004 a majority of the stock exchange in Lithuania was acquired, together with parts of the securities depository in Lithuania. A further step towards increased integration was taken at the end of 2004, when equities trading in Finland, Estonia and Latvia was transferred to the same technical platform used by other stock exchanges in the Nordic region. The Lithuanian stock exchange was transferred to this platform in 2005. The Copenhagen stock exchange was integrated into OMX on 1 January 2005.

<sup>5</sup> For a discussion of the advantages and disadvantages of a CCP, see Financial Stability Report 2002:2, pp. 47-58.

Consolidation on the stock exchange side continued in 2006, with OMX acquiring the Icelandic stock exchange and purchasing 10 per cent of the shares in Oslo Børs (the Oslo stock exchange). On the derivatives side, consolidation took place with the start of trading and clearing in Finnish and Danish derivatives at OMX in the wake of the merger between the stock exchanges. In December 2006, OMX launched trading and clearing in Russian derivatives.

Several changes took place in the OMX Group in 2007. Some of the companies in the Group were renamed to reflect OMX's Nordic strategy. For example, Stockholmsbörsen AB was renamed OMX Nordic Exchange Stockholm AB. The central counterparty for derivatives clearing took the secondary legal name OMX DM. The range of products in the derivative operations was increased during the year when it became possible to trade and clear Icelandic and Baltic derivatives at OMX DM. Two acquisitions were made at the end of 2007: the Armenian stock exchange and securities registry and Nord Pool ASA's clearing and consulting activities and international derivative products. The acquisition of Nord Pool means that trading in energy derivatives and carbon dioxide products will be conducted within the NASDAQ OMX Group.

In early autumn 2007, NASDAQ Stock Market Inc. and Borse Dubai presented a joint solution for the purchase of OMX. This meant that Dubai would become a major owner of a merged NASDAQ OMX. The integration of NASDAQ and OMX began in 2008. The Nordic operations, for example, were extensively reorganised towards the end of the year as a result of the integration work. OMX Nordic Exchange Stockholm AB was also renamed NASDAQ OMX Stockholm AB (NOMX STO). Apart from the merger with NASDAQ, 2008 was marked by the turmoil on the financial markets around the world.

## Operations

NOMX STO offers trading in, among other things, equities, premium bonds, convertibles, warrants, bonds and exchange-traded funds. In addition, trading and clearing in Swedish, Finnish, Norwegian, Danish, Baltic, Russian and Icelandic derivatives is offered, such as stock options, index options, interest derivatives, share and index futures as well as certain OTC derivatives.<sup>6 7</sup>

NASDAQ OMX DM clears all standardised derivatives products, such as clearing-listed instruments, semi-standardised instruments and TM-cleared instruments.<sup>8</sup> The kinds of instrument cleared are set out in the valid list.

There is also collaboration with derivatives exchanges and clearing organisations in London and Oslo, set up through a trading and clearing link, LEC (Linked Exchanges and Clearing). The link makes trading in all Nordic derivatives possible in all three marketplaces. NASDAQ OMX DM handles the clearing of these transactions for its own participants. NASDAQ OMX also has a collaboration agreement with the German derivatives exchange Eurex, where the Finnish derivatives contracts with the highest turnover are traded.

### *NASDAQ OMX DM's commitments as a central counterparty*

NASDAQ OMX DM acts as central counterparty for the derivatives traded in its own trading system and for certain derivatives traded over-the-counter (OTC), i.e. outside of NASDAQ OMX's trading system but reported to NASDAQ OMX DM.<sup>9</sup> For derivatives traded on the stock exchange and in the trading system, the transaction is transferred to the clearing system immediately on completion. Once

<sup>6</sup> The Russian derivatives are made up of depository receipts and are traded on EDX in London and on NASDAQ OMX DM. Turnover is less than one per cent of the total turnover for derivatives on NASDAQ OMX DM. The risks associated with the Russian derivatives are thus limited. During the financial turbulence in the autumn of 2008, NASDAQ OMX DM temporarily ceased to offer trading and clearing in new contracts for Russian and Icelandic derivative products.

<sup>7</sup> OTC stands for over-the-counter and means that the sale and purchase of products is conducted directly between buyers and sellers, normally by phone.

<sup>8</sup> Tailor-made (TM) clearing is clearing of non-standardised derivatives contracts traded on the OTC market.

<sup>9</sup> Does not apply to all types of derivative, for example not warrants.

the transaction has been recorded in the clearing system, NASDAQ OMX DM acts as the central counterparty. In connection with this registration, NASDAQ OMX DM replaces the original contracts with two new contracts. This makes NASDAQ OMX DM the legal counterparty to both sides of the transaction – buyer to each seller and seller to each buyer. For certain derivatives traded outside the stock exchange and the trading system, and reported to NASDAQ OMX DM, NASDAQ OMX DM offers central counterparty services. This applies both to instruments that are only cleared and to instruments that are approved on a case-by-case basis.

As counterparty, NASDAQ OMX DM guarantees completion of each transaction, regardless of the original counterparty's ability to pay and deliver. NASDAQ OMX DM does not, however, undertake to complete the transaction on the appointed day if a counterparty cannot complete its commitments or fails to supply securities promptly. If a counterparty cannot complete its commitments, it is deemed to be violating NASDAQ OMX DM's regulations.

If a counterparty fails to meet its obligations, NASDAQ OMX DM is entitled to close down its positions and liquidate its collateral. NASDAQ OMX DM completes the transaction when this process has been completed at the latest. If a counterparty cannot discharge its commitments, NASDAQ OMX DM can, with the consent of its counterparty, substitute a cash amount for a security.

Delays to security deliveries can arise without the original counterparty being deemed to be violating NASDAQ OMX DM's regulations. In such cases delivery can be deferred subject to the counterparty's consent. The counterparty will then also be entitled to a delay charge, though this is currently fixed at zero. This type of delay is relatively rare and in most cases lasts one or two days at most.

### *Participants*

There are three categories of participant in NASDAQ OMX DM's derivative operations:

- Exchange members
- Clearing members
- End-customers

Exchange and clearing members, comprising chiefly banks and broking firms, enter into exchange member agreements or clearing member agreements with NOMX STO. Exchange members can trade directly with NOMX STO both under their own name and on behalf of their customers. Exchange members are usually clearing members too, but it is possible to act solely as an exchange member or clearing member.

At NASDAQ OMX DM, so-called end-customer clearing is applied, which involves the customers, both financial institutions and private individuals, normally having their own accounts and a direct contractual relationship with the central counterparty.<sup>10</sup> They cannot, on the other hand, trade directly with NASDAQ OMX DM, nor can they handle the clearing of transactions. Trading and clearing are handled solely by exchange and clearing members. The services that exchange and clearing members perform on behalf of the customer and the risk taken depend on the customer's choice of account structure (see below).

As an alternative to end-customer clearing, NASDAQ OMX DM offers so-called member clearing. Member clearing means that a clearing member can be either a direct or a general clearing member. Both direct and general clearing members are allowed to clear transactions on their own behalf, for customers who have concluded a customer agreement with NASDAQ OMX DM, and for customers

<sup>10</sup> The CCPs in most other countries only have a direct relationship with clearing members. At NASDAQ OMX DM then end-customers also have their own accounts with VPC or the equivalent organisation. This is also different in most other countries, where only the broker has an account with the central depository.

on whose behalf transactions are registered in an omnibus customer account.<sup>11</sup> What distinguishes general from direct clearing members is the fact that general clearing members are allowed to clear transactions for exchange members who are not clearing members. As an exchange member may be responsible for a substantial proportion of trading, general clearing members are subject to special requirements. They must, for example, have financial resources of at least SEK 500 million.

Unlike end-customer clearing, member clearing means that NASDAQ OMX DM may only have a contractual relationship with the clearing member and not the customer. This in turn means that NASDAQ OMX DM does not take any customer-specific risk in member clearing as it does in end-customer clearing.

#### *Account structure*

The account structure at NASDAQ OMX DM reflects both end-customer clearing and member clearing. End-customer clearing is the type of clearing that NASDAQ OMX DM has always used, while member clearing is a relatively new service at NASDAQ OMX DM.

NASDAQ OMX DM provides member accounts<sup>12</sup> and customer accounts. For member accounts the members are account holders on their own behalf, which involves members following their transactions on the day of trading and receiving information about their rights and obligations in terms of collateral requirements, payments and deliveries. Customer accounts are intended for registering transactions on behalf of customers. Customer accounts are divided into individual customer accounts, omnibus accounts and segregated customer accounts.

In end-customer clearing, individual customer accounts are offered. These accounts may be either integrated trading and clearing accounts or separate trading and clearing accounts. The individual customer account is a customer account that is opened for a customer that has entered into a contractual agreement with NASDAQ OMX DM. The fact that the customer has signed a customer agreement with NASDAQ OMX DM means that the customer and NASDAQ OMX DM have a direct contractual relationship with each other.

Two different accounts are offered in member clearing. The first is an omnibus account, which is an integrated trading and clearing account that is opened for a clearing member. In an omnibus account, transactions are cleared on behalf of one or several customers but not for the clearing member that holds the account. Both direct clearing members and general clearing members can have omnibus accounts. The second type of customer account is the segregated account. The segregated account is also an integrated trading and clearing account but only for the transactions conducted by general clearing members on behalf of exchange members or customers. An advantage of the segregated account is that if the need arises to transfer a customer's contract from one clearing member to another the process is made much easier because all the information is readily available.

In functional terms, member accounts and customer accounts are divided into trading accounts and clearing accounts. These accounts are opened by NASDAQ OMX DM at the request of the trading account holder or clearing account holder on behalf of the holder or a customer. Transactions involving instruments approved for registration by NASDAQ OMX DM are recorded in a trading account. A clearing account lists the contracts that are registered in one or more trading accounts linked to the clearing account. A trading account can be linked to a clearing account or to an integrated trading and clearing account.

End-customers are offered two different account structures: an integrated trading and clearing account or separate trading and clearing accounts. Most end-customers opt for an integrated trading and clearing account and then have to use the same intermediary for their trading and clearing. As a

<sup>11</sup> Read more about omnibus accounts under the heading "Account structure".

<sup>12</sup> The following types of member account exist: daily, interim, proprietary, market maker and APT accounts.

■ result, only members who are both exchange and clearing members can manage integrated trading and clearing accounts.

Major end-customers trading through a number of different market players often use separate trading and clearing accounts, since it is then possible to have several separate trading accounts linked to the same clearing account. Multiple trading accounts with various account holders mean that the end-customer's aggregated positions are only visible in the clearing account and hence the positions on the various trading accounts can be netted in the clearing account. A clearing account lists the contracts that are registered in one or more trading accounts linked to the clearing account. In a clearing account, rights and obligations for certain account holders are also established.

#### *Provision of collateral*

End-customers and clearing members must provide collateral for commitments made as part of their clearing operations.

End-customers with an integrated trading and clearing account provide collateral indirectly, which involves collateral being pledged for clearing members, who in turn pledge collateral to NASDAQ OMX DM on behalf of the customer. The clearing members manage collateral requirements from NASDAQ OMX DM and clearing accounts for their customers using an integrated trading and clearing account.<sup>13</sup>

Customers holding separate trading and clearing accounts provide collateral directly to NASDAQ OMX DM. The clearing member that manages a trading account assumes the risks for the end-customer's account from the moment the transaction has been booked in the account to the time collateral has been pledged. Once collateral has been pledged, the risk associated with the exposures not covered by the collateral rests with NASDAQ OMX DM.

In the case of end-customer clearing, the value of the collateral that the clearing member must provide to NASDAQ OMX DM cannot be calculated on the basis of the net total of the various end-customers' positions. Netting is done at end-customer level, not at member level. Member clearing means that the customer is responsible for its collateral in relation to clearing members, and the customer thus has no contractual relationship with the central counterparty. The clearing member can then add the customers' collateral together and take responsibility for pledging the net collateral to the CCP. The major difference between end-customer clearing and member clearing is that end-customer clearing yields a higher total value for the collateral pledged to the central counterparty compared with a system that allows netting at member level.

#### *Technical platform*

NASDAQ OMX DM's derivative clearing is conducted in SECUR<sup>TM</sup>; a system developed by NASDAQ OMX. Transactions involving derivatives are transferred directly from the trading system to the clearing system. Customers are able to monitor their transactions and calculate their transaction costs and collateral requirements using the software in the SECUR<sup>TM</sup> system.

NOMX STO has entered into an agreement with Global IT Services, a part of NASDAQ OMX, on the outsourcing of system operations and development services. Under this agreement, NASDAQ OMX DM has the possibility to expand the capacity of the system. NASDAQ OMX uses a network, the Stockholm Financial Network (SFN), that the participants can use to communicate with NOMX STO.

<sup>13</sup> Integrated trading and clearing accounts can only be managed by clearing members.

## ■ Clearing

NASDAQ OMX DM offers both end-customer clearing and member clearing. In 2008, it was primarily end-customer clearing that applied; it was not until December 2008 that the first general clearing members were approved.

End-customer clearing entails end-customers having a credit risk in relation to NASDAQ OMX DM and not in relation to the clearing member. For the clearing member, who is an agent, the settlement risk in relation to NASDAQ OMX DM is minimised. Formally, the clearing member is only an agent and thus not a counterparty for the end-customer's transactions in the legal sense.<sup>14</sup> In its role as an agent, the clearing member is, however, accountable to NASDAQ OMX DM for the end-customer's commitments. Given the fact that NASDAQ OMX DM applies end-customer clearing the end-customers have a higher degree of protection in the event that the clearing member goes bankrupt.

When NASDAQ OMX DM clears at the end-customer level, it does not usually have any information about the end-customers' identities, as they are only identified by a number in NASDAQ OMX DM's system. To uphold the end-customer's anonymity, it is instead the clearing member who is responsible for ensuring that the end-customer has signed the necessary contracts and supplied sufficient collateral. This means that NASDAQ OMX DM does not handle or hold collateral itself. NASDAQ OMX DM and the Swedish Securities Dealers Association are joint owners of the company Clearing Control AB (CCAB), which has the task of ensuring that the customer contracts are correct and of carrying out annual random tests to check that the collateral provided is acceptable and correct. CCAB also has the right, if and when NASDAQ OMX DM so wishes, to carry out inspections at various participants to verify the collateral volume. In certain circumstances, when NASDAQ OMX DM deems this to be necessary, NASDAQ OMX DM is entitled to be told the end-customer's identity by CCAB. NASDAQ OMX DM has made it easier to gain access to the identity of the customers, which in turn facilitates risk management.

As soon as a derivatives transaction is registered in the clearing system, counterparty risks arise at NASDAQ OMX DM. As NASDAQ OMX DM does not require capital until 11.00 on the day following the trading day, the transaction entails an overnight credit risk. NASDAQ OMX DM's derivatives regulations stipulate that the clearing members must bear the risks relating to exposures in their end-customers' accounts before the collateral reaches NASDAQ OMX DM. However, NASDAQ OMX DM bears the risks relating to exposures in the clearing members' own accounts.

## Statistics

In 2008, NASDAQ OMX DM had a turnover of approximately 569 000 derivative contracts per day. The average collateral requirement in SEK per day in 2008 amounted to approximately SEK 16.6 billion.

## Risk management

One of the services a central counterparty offers the market is managing the counterparty risks that arise between the conclusion of a contract and the final settlement of a transaction. In its role as central counterparty, NASDAQ OMX DM takes counterparty risks on all participants in the derivative clearing system. In order to manage the counterparty risks, NASDAQ OMX DM has a risk management policy that includes the following main components<sup>15</sup>:

- Financial and operational requirements for membership and monitoring of the members' continuous compliance with the requirements (see rec. 2)

<sup>14</sup> Only in cases where clearing members trade under their own auspices do they formally become counterparties.

<sup>15</sup> The evaluation is based on CPSS/IOSCO's recommendations (see also the section "Method and summary"). The recommendation relating to the respective components is specified in brackets after each point in the list of the risk management policy's main components.

- Monitoring and management of NASDAQ OMX DM's exposures to each participant (see rec. 3).
- Calculation of the collateral required to cover the exposures, and the administration of collateral (see rec. 4)
- Routines to minimise disruptions and close positions in the event of a participant failing to meet its obligations (rec. 1 and 6)
- Financial resources to cover losses (rec. 5)
- Financial and operational requirements for collateral institutions (rec. 7)
- Investigation in connection with new links to other exchanges, followed by the continuous monitoring of existing links (rec. 11).

In addition to the points above, the Risk Management Department that conducts NASDAQ OMX DM's risk management, should also develop NASDAQ OMX DM's policy and routines relating to risk management and provide NASDAQ OMX DM's managers with information about risk management. Since the autumn of 2008, when a major reorganisation was carried out at NASDAQ OMX, the Risk Management Department no longer lies organisationally under NOMX STO but directly under the parent company NASDAQ OMX Group Inc.

NASDAQ OMX DM checks that those applying for exchange and clearing membership meet the membership requirements from a counterparty risk perspective. Once a member has been admitted, regular monitoring takes place to ensure that this member also continues to comply with requirements.

The counterparties must provide collateral to their collateral institutions in the form of ready cash, surety bonds or securities that are approved by NASDAQ OMX DM. It is incumbent on the collateral institution to apply the haircut stipulated by NASDAQ OMX DM and set out in the "Collateral List" in NASDAQ OMX DM's regulations. These routines keep NASDAQ OMX DM informed about the day-to-day collateral requirements, but provide no insight into the individual collateral furnished by these members and customers.

The collateral requirement for each individual counterparty is calculated at least once an hour. If the collateral requirements prove to be high in relation to the stipulated limits, the Risk Management Department will take action in accordance with established routines to reduce NASDAQ OMX DM's exposure to the counterparty.

The financial turmoil that affected the world markets in 2008, and particularly the situation in the autumn, has, not least, pointed to the great need for supervision and a readiness to act. There has been an even sharper focus on risk management and NASDAQ OMX DM has made several and more frequent adjustments to its risk management in certain periods.

NASDAQ OMX DM calculates the capital requirement needed to cover NASDAQ OMX DM's costs for closing (liquidating) the positions in a portfolio in the event that a counterparty is unable to discharge its obligations. In calculating these costs, account is taken, among other things, of the lead time; that is the time it takes to close the positions (two days for NASDAQ OMX DM), the underlying volatility of the instrument, any correlation between different instruments and spread costs. The collateral requirement is calculated using a confidence interval of 99.2 per cent, which roughly corresponds to the fourth largest price movement over a two-year period.

If a counterparty fails to discharge its commitments and it emerges that the collateral furnished by this counterparty was inadequate, NASDAQ OMX DM must have the financial strength to bear any loss itself. NASDAQ OMX STO has financial assets and insurance policies amounting to SEK 2 075 million. Of this sum, SEK 925 constitutes equity and SEK 1 150 million insurance policies. SEK 150 million of the equity also has to cover losses stemming from operational risks. The so-called clearing capital amounts to SEK 1 925 million and is only intended to cover counterparty losses in the clearing operations.

## Method and summary

In accordance with the current agreement on cooperation within the framework of their financial stability work, the Riksbank and Finansinspektionen have conducted this assessment jointly. The two authorities have cooperated on the assessment work at all times and both agree on the results.

The assessment focuses solely on NASDAQ OMX DM's clearing of derivatives transactions. It complies with the recommendations and the methodology drawn up in collaboration between the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) and which can be found in the *Recommendations for Central Counterparties*. The report was published by the Bank for International Settlements (BIS) in November 2004.

The assessment is based on 15 recommendations, which are applied to NASDAQ OMX DM. An assessment is then made of the degree to which NASDAQ OMX DM fulfils each of the recommendations. This is indicated as one of the following: observed, broadly observed, partly observed or not observed.

Recommendation 15 relates to the regulation, supervision and monitoring of central counterparty clearing. In the assessment, the activities of the respective authorities are described on the basis of the relevant recommendation. However, the authorities have deliberately refrained from assessing the degree to which the recommendation has been met themselves.

The Riksbank and Finansinspektionen have chosen to comment on three recommendations. The comment on one of the recommendations is made despite the fact that, overall, NASDAQ OMX DM is deemed to fulfil the recommendation concerned. This is because the structure of the Swedish financial market and NASDAQ OMX DM's routines differ in certain respects from those used as a basis for the stipulated requirements, for example the fact that end-customer clearing is mostly used, and there are therefore grounds for stipulating additional requirements for NASDAQ OMX DM. Two of the comments are made on the grounds that NASDAQ OMX DM does not meet the recommendations concerned. The Riksbank and Finansinspektionen intend to follow up these comments in their ongoing monitoring work.

### Summary of the assessment

Assessment categories	Recommendation
Observed	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 14
Broadly observed	8, 13
Partly observed	
Not observed	
Not assessed	15

The table shows that NASDAQ OMX DM meets 12 of the 14 recommendations that Finansinspektionen and the Riksbank have assessed. Two recommendations are assessed as broadly observed.

■ **Proposed measures**

Recommendation	Comment
8 – Broadly observed	<ul style="list-style-type: none"> <li>• NASDAQ OMX DM should have methods to avoid interruptions in the continuity of the overall analysis of operational risks.</li> <li>• An overall analysis of the operational risks should be performed for the period, that is the current period, until the future policy for the overall identification and analysis of the operational risks is in place.</li> </ul>
13 – Broadly observed	<ul style="list-style-type: none"> <li>• Evaluate internal supervision to identify areas where problems may arise and implement improvements where weaknesses are discovered.</li> <li>• Examine the exchange of information between the Risk Management Department and those that run the systems in order to improve the ability to assess the import of the problems that arise.</li> </ul>
14 – Observed	<ul style="list-style-type: none"> <li>• NASDAQ OMX DM should publish quarterly statistics on the value of the collateral pledged to NASDAQ OMX DM.</li> <li>• NASDAQ OMX DM should publish availability statistics for derivative clearing in SECUR, in addition to data concerning availability in relation to availability targets.</li> </ul>

## The assessment

### Recommendation 1: Legal risk

*A CCP should have a well founded, transparent and enforceable legal framework for each aspect of its activities in all relevant jurisdictions.*

### Assessment

The Riksbank and Finansinspektionen deem that Recommendation 1 is observed.

### Considerations

It is the assessment of the Riksbank and Finansinspektionen that Swedish legislation and NASDAQ OMX DM's derivatives regulations provide adequate support for NASDAQ OMX DM's role as a central counterparty in clearing operations.

### Statement

NASDAQ OMX DM's role as a central counterparty is regulated by Swedish legislation and NASDAQ OMX DM's own regulations. This assessment considers both. All Swedish legislation and NASDAQ OMX DM's derivatives regulations with attendant member and customer agreements are public and available on the Internet. Below, Swedish legislation is dealt with first and then NASDAQ OMX DM's derivatives regulations.

#### *Swedish legislation*

*The Swedish Securities Market Act (2007:528)(Lagen om värdepappersmarknaden)* applies to all companies that conduct securities business, exchange operations or clearing operations. The act came into force in 2007, thus implementing the EC Markets in Financial Instruments Directive – MiFID – in Swedish law.<sup>16</sup> The introduction of MiFID gives the member states, including the EEA, common regulations for the European capital market.

Finansinspektionen has authorised NASDAQ OMX DM as a clearing organisation in accordance with the *Swedish Securities Market Act (2007:528)*. The act specifies that NASDAQ OMX DM is to operate its activities honestly, fairly and professionally, so as to maintain the confidence of the general public in the securities market. NASDAQ OMX DM shall also ensure that sufficient collateral is pledged for the commitments made and that this collateral is maintained for the duration of the commitments concerned.

Finansinspektionen has approved and reported NASDAQ OMX' settlement system to the European Commission in accordance with the *Act (1999:1309) on systems for the settlement of obligations on the finance market*. NASDAQ OMX DM falls under the supervision of Finansinspektionen and is monitored by the Riksbank, owing to the potential system risks entailed by central counterparty services on the Swedish financial market.

Swedish law provides support for the settlement of obligations that is central to NASDAQ OMX DM's derivatives clearing. *The Financial Instruments Trading Act (1991:980)* stipulates that the settlement of obligations between two or more participants in a notified settlement system applies to bankrupts and their creditors if settlement has been made in accordance with the regulations of the

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<sup>16</sup> The Directive on Markets in Financial Instruments, MiFID, aims to increase competition on the European securities markets, improve supervision and strengthen consumer protection.

■ system. This provision also applies to the settlements that takes place during the clearing process in NASDAQ OMX DM's system.

Moreover, provisions exist in Swedish law concerning the pledging of collateral and realisation of securities in the event of a bankruptcy. *The Rights of Priority Act (Förmånsrättslagen (1970:979))* stipulates that a pledgee, in this case NASDAQ OMX DM, has a specific right of priority to pledged assets in cases of distraint or bankruptcy. This entitlement means that where payment of a pledge is involved NASDAQ OMX DM need not rank behind any other creditor. *The Bankruptcy Act (Konkurslagen (1987:672))* enables NASDAQ OMX DM to sell without delay any financial instruments it holds as collateral, as long as this is done in a commercially acceptable manner.

Final settlement at NASDAQ OMX DM is effected by means of delivering cash or securities. For the most part, the final settlement of cash is effected through RIX, the Riksbank's system for payments.<sup>17</sup> RIX has been assessed in accordance with CPSS *Core Principles for Systematically Important Payment Systems* and is deemed to comply with the principle of a well-founded legal basis.<sup>18</sup>

The final settlement of securities is in most cases conducted through VPC. The bulk of all securities are registered in VPC's system which enables gross settlement and is based on the principle of delivery-versus-payment (DvP) in central bank money.<sup>19</sup> The legal basis for VPC has been assessed in accordance with CPSS *IOSCO Recommendation for Securities Settlement Systems* and is deemed to comply with the requirements for a sound legal basis.<sup>20</sup>

#### *NASDAQ OMX DM's derivatives regulations<sup>21</sup>*

NASDAQ OMX DM has adopted a set of what are known as derivatives rules and regulations that regulate exchange and clearing activities as well as the legal relationship between the exchange and the various participants, i.e. exchange members, clearing members and customers. The derivatives rules and regulations also contain certain stipulations regarding the relationship between clearing members and customers. The rules and regulations become the subject matter of the contract between NASDAQ OMX DM and the participants by virtue of contracting a member agreement or customer agreement. Since NASDAQ OMX DM provides end-customer clearing, it has a direct legal relationship, through the agreements, with the end-customers. The agreements drawn up for clearing members and end-customers are included as appendices to the derivatives rules and regulations.

The derivatives rules and regulations specify NASDAQ OMX DM's rights and obligations by describing how and when registration, set-off, futures netting and settlement take place. They also specify when a transfer order should be regarded as irrevocable and describe the actions open to NASDAQ OMX DM in the event of a delay in the delivery of securities (see also recommendation 10).

Approved securities and the attendant haircuts are also defined in the rules and regulations. There is also a description of the procedures for the customers' and clearing members' provision of collateral, as well as the determination of the collateral balance and the need for additional collateral and when this is to be furnished. The derivatives rules and regulations also contain a description of all the derivatives contracts that can be traded and cleared at NASDAQ OMX DM.

<sup>17</sup> A small proportion of NASDAQ OMX DM's cash settlement is conducted in the Danish, Finnish and Norwegian equivalents of RIX. These have been examined on the basis of CPSS *Core Principles for Systematically Important Payment Systems* and are deemed to comply with the principle of a well-founded legal basis. See [www.nationalbanken.dk](http://www.nationalbanken.dk) for Denmark and [www.imf.org](http://www.imf.org) for the IMF's assessment of the payment systems in Finland and Norway.

<sup>18</sup> See [www.riksbank.se](http://www.riksbank.se).

<sup>19</sup> A small proportion of NASDAQ OMX DM's delivery of securities is effected in the Danish, Finnish and Norwegian securities systems, which are all based on the delivery versus payment principle (DvP) in settlement.

<sup>20</sup> See [www.riksbank.se](http://www.riksbank.se).

<sup>21</sup> See NASDAQ OMX DM's derivatives regulations, <http://nasdaqomx.com/listingcenter/nordicmarket/rulesandregulations/stockholm/>

■ The rules and regulations make it clear that their interpretation and application are subject to Swedish law. Moreover, it is specified that if a customer is a non-resident of Sweden, Denmark, Finland or Iceland, the clearing members are responsible for ensuring that the derivatives rules and regulations and collateral arrangements issuing from the derivatives rules and regulations are legally valid in the customer's homeland and that the derivatives rules and regulations are in all respects binding on the customer and vis-à-vis the customer's bankruptcy estate or equivalent.

#### *Cross-border activities*

NASDAQ OMX DM has foreign participants and therefore needs to be sure that its own derivatives rules and regulations are legally binding on these participants and that OMX DM has backing for its actions in the event of foreign participants' bankruptcy. The risk of uncertainty as to which country's laws apply is minimised by the fact that Sweden and the other European countries have implemented EU *Directive 98/26/EC on Settlement Finality in Payment and Securities Settlement Systems* (the Settlement Finality Directive). The Settlement Finality Directive states that if a participant in a notified settlement system were to be adjudicated bankrupt, the law that is valid is the one applicable in accordance with the system's rules.

NASDAQ OMX DM accepts foreign securities as collateral. Lien on dematerialised securities follows the laws in the country where the security is registered. NASDAQ OMX DM accepts securities from Norway, Denmark, Finland and Iceland as collateral. The Settlement Finality Directive and *Directive 2002/47/EC on Financial Collateral Arrangements (The Collateral Directive)* has been implemented in all these countries. The Finality and Security directives regulate, among other things, NASDAQ OMX DM's right to pledged collateral. NASDAQ OMX DM settles transactions in these four countries. The implementation of the Settlement Finality Directive provides support so that the risk of revocation of payment or security transfers no longer exists once they have been approved in accordance with the settlement system's rules.

A more detailed examination of NASDAQ OMX DM's trading and clearing cooperation with other exchanges and clearing organisations and the legal basis for this can be found in recommendation 11.

## Recommendation 2: Participation requirements

*A CCP should require participants to have sufficient financial resources and robust operational capacity to meet obligations arising from participation in the CCP. A CCP should have procedures in place to monitor that participation requirements are met on an ongoing basis. A CCP's participation requirements should be objective, publicly disclosed, and permit fair and open access.*

### Assessment

The Riksbank and Finansinspektionen deem that Recommendation 2 is observed.

### Considerations

NASDAQ OMX DM continually monitors that the members comply with the requirements set for membership. The requirements, which are clearly stipulated and accessible to the public, are defined in NASDAQ OMX DM's derivatives rule and regulations and ensure, in the Riksbank's and Finansinspektionen's judgement, that the members have sufficient financial strength and operational resources. The rules and regulation are objective and are applied uniformly.

### Statement

Requirements for membership in NASDAQ OMX DM's derivatives clearing are defined in NASDAQ OMX DM's derivatives rules and regulations. The requirements set out the types of company that can become exchange and clearing members as well as the requirements made in terms of organisation, risk management and technical systems at these companies. The financial requirement is that a direct clearing member must have a capital base of at least SEK 10 million and a general clearing member of at least SEK 500 million. A general clearing member also needs to have permission to conduct operations at a credit institute in accordance with the Banking Coordination Directive. Both direct and general clearing members must be legal entities with permission to operate securities business in accordance with the law of the land where they are domiciled.

According to *the Swedish Securities Market Act (2007:528)* NASDAQ OMX DM must apply the principles of free access and neutrality for its participants. NASDAQ OMX DM evaluates its members continuously to ensure that membership requirements are constantly being met. In accordance with NASDAQ OMX DM's derivatives rules and regulations each member must provide NASDAQ OMX DM with information regarding its financial strength and creditworthiness. NASDAQ OMX DM also makes requirements of brokers and back office personnel. The latter must have undergone a course provided by NASDAQ OMX DM and have passed an examination before being allowed to take part in clearing operations. In addition, they must have a general knowledge of NASDAQ OMX DM's derivatives products. Back office personnel that meet these requirements are registered for participation in clearing.

A description of what is referred to by exchange member, clearing member and customer's non-fulfilment and the measures NASDAQ OMX DM is at liberty to take under such circumstances can be found in NASDAQ OMX DM's derivatives rules and regulations.

### **Recommendation 3: Measurement and management of credit exposures**

*A CCP should measure its credit exposures to its participants at least once a day. Through margin requirements, other risk control mechanisms or a combination of both, a CCP should limit its exposures to potential losses from defaults by its participants in normal market conditions so that the operations of the CCP would not be disrupted and non-defaulting participants would not be exposed to losses that they cannot anticipate or control.*

#### **Assessment**

The Riksbank and Finansinspektionen deem that Recommendation 3 is observed.

#### **Considerations**

NASDAQ OMX DM's exposures are continually calculated every hour with up-to-the-minute pricing information; there is also scope for gauging them more often, if needed. NASDAQ OMX DM uses these calculations to manage its exposures to participants during the day. The assessment of the Riksbank and Finansinspektionen is that NASDAQ OMX DM's requirements for collateral and risk management procedures are designed in such a way that the risk of losses as a consequence of counterparty failure, in the event of adverse though not extreme price fluctuations, is limited.

#### **Statement**

NASDAQ OMX DM has routines in place for calculating and handling its counterparty exposures. NASDAQ OMX DM's exposure to each counterparty is automatically calculated once every hour, based on real-time pricing information for share products and closing price information for interest products. These exposures are checked at least once a day by the Risk Management Department. After the end of the trading day, a calculation is made of NASDAQ OMX DM's final exposure and this forms the basis for the collateral balance at the start of trading on the following day.

These calculations also constitute the basis for NASDAQ OMX DM's management of counterparty risks. A cornerstone of risk management is the pledging of collateral, which is described in more detail in recommendation 4. NASDAQ OMX DM also monitors members' financial positions and works out credit limits based on this. Limits to exposures are set for every member and end-customer that pledges collateral direct to NASDAQ OMX DM. If these limits are exceeded, the Risk Management Department will investigate the situation and various measures can be taken. For instance, the positions can be reduced or NASDAQ OMX DM can also request additional collateral intraday.

#### **Recommendation 4: Margin requirements**

*If a CCP relies on margin requirements to limit its credit exposures to participants, those requirements should be sufficient to cover potential exposures in normal market conditions. The models and parameters used in setting margin requirements should be risk-based and reviewed regularly.*

#### **Assessment**

The Riksbank and Finansinspektionen deem that Recommendation 4 is observed.

#### **Considerations**

The Riksbank's and Finansinspektionen's assessment is that NASDAQ OMX DM has, under normal market conditions, adequate collateral in order to deal with a counterparty's bankruptcy. NASDAQ OMX DM values the size of the collateral stock daily and is entitled to request additional collateral in the event of a negative collateral balance. Back-testing of the valuation model is carried out regularly every quarter. At the end of 2008, it was discovered that an error occurred during the first half of 2008 which meant that the results of the back-tests were not correct. It was therefore not possible to make a correct analysis on the basis of the tests carried out during 2008, with the exception of the test in the first quarter. However, it is the assessment of the Riksbank and Finansinspektionen that the incident entailed limited risk, although it indicates shortcomings in internal supervision (see recommendation 13 for an assessment of and statement on NASDAQ OMX DM's organisation for risk management). The error that occurred has been corrected and since the beginning of 2009 it has once again been possible to carry out and analyse back-testing correctly. The daily monitoring of the collateral requirement was very active and adjustments to the parameters of the model were made more frequently than normal as a result of the major market fluctuations.

In the view of the Riksbank and Finansinspektionen, knowledge concerning the composition of the collateral stock would be valuable in terms of risk management. At present, it is not possible for NASDAQ OMX DM to get this information continuously and at regular and brief intervals. NASDAQ OMX DM's checks to ensure that collateral institutions can provide information about a customer's collateral quickly, if need be, are valuable and should be repeated at suitable intervals.

The haircuts that NASDAQ OMX DM makes when valuing pledged collateral are relatively large, which may be considered reasonable with reference to the fact that NASDAQ OMX DM does not hold the collateral itself. Since the collateral is administered by the collateral institution engaged, realising the collateral stock can take somewhat longer.

#### **Statement**

The collateral pledged to NASDAQ OMX DM is intended to cover losses as a consequence of NASDAQ OMX DM's counterparties' inability to honour their commitments in the event of adverse, but not extreme, price movements. The need for collateral is calculated based on the exposures to each individual counterparty's portfolio. The value of the collateral must cover NASDAQ OMX DM's costs for liquidating the counterparty's portfolio. The value of the portfolio, when calculating the collateral requirement, is the value it reaches when valued in connection with adverse price movements. These price fluctuations are calculated on the basis of a statistical method that presupposes a confidence interval of 99.2 per cent based on the historical data of the last two years for each underlying instrument. This is roughly equivalent to the fourth largest price movement during the two-year period. Price movements are calculated for a time interval of two days for all products apart from cash bonds, for which price movements are calculated for three days. The time

interval reflects the number of days NASDAQ OMX DM expects it to take to close down all a counterparty's positions.<sup>22</sup>

The need for collateral is calculated daily and NASDAQ OMX DM's Risk Management Department is responsible for performing the calculations. It is possible to calculate the collateral requirement more frequently than once a day and this is done when the market climate is very volatile. When calculating the collateral requirement, NASDAQ OMX DM uses conservative parameters. The parameters are adjusted as needed and are reported daily to the risk committee at NOMX STO. During the turmoil of the autumn of 2008, the parameters were adjusted frequently as a result of the major market movements. If the stock of collateral is insufficient, additional collateral has to be furnished to cover the negative collateral margin.

NASDAQ OMX DM's model for calculating the collateral requirement, RIVA margining, is compared with other existing models and examined by both internal and external auditors. When any significant changes are made to the model, both internal and external approval are required. Approval must be given and pretesting carried out before any changes in the methodology of the model are applied. NASDAQ OMX DM does have the possibility, however, to revise the risk parameters frequently and at short notice in connection with extreme price movements.

NASDAQ OMX DM conducts back-testing of the model on a quarterly basis in accordance with customary market standards. The purpose of back-testing is to ensure, using historical data, that the model yields fair and predictable results. Back-testing has been conducted regularly since 1 July 2005. At the end of 2008, it was discovered that errors had been made in the calculations for the second, third and fourth quarters. It was therefore not possible to perform a correct analysis using the results of these back-tests.

NASDAQ OMX DM accepts the following assets as collateral:<sup>23 24</sup>

- cash in SEK, GBP, DKK, EUR, NOK, CHF, ISK and USD
- certain warranties/guarantees (subject to separate approval)
- bank certificates issued by Swedish, Danish, Finnish and Icelandic banks
- bonds and certificates issued by Swedish, Danish, Finnish and Icelandic banks and building societies
- treasury bills and government bonds (for selected countries and with credit rating restrictions)
- shares (a selection admitted for trading on the NASDAQ OMX Nordic list<sup>25</sup> and Oslo Børs<sup>26</sup>)

There are limitations on amounts and deductions when valuing the above instruments. For bank certificates, bonds and government bonds NASDAQ OMX DM has criteria for the lowest approved rating (Moody's and S&P). NASDAQ OMX DM does not approve securities issued by the counterparty itself, nor securities issued by the counterparty's subsidiary or some other company in the same group.

The collateral is managed by whichever collateral institution has been engaged, NASDAQ OMX DM itself therefore has no direct access to information about the collateral actually included in the collateral stock. This means that NASDAQ OMX DM itself cannot normally investigate the connections that exist between the counterparties and their collateral as well as the adequacy of the

<sup>22</sup> If a counterparty cannot discharge its obligations, NASDAQ OM DM estimates that it will take a day to confirm and announce this and an additional day to close the positions.

<sup>23</sup> For a complete collateral list, see NASDAQ OMX DM's derivatives rules and regulations, Appendix 12.

<sup>24</sup> In the autumn of 2008, changes were made in the types of Icelandic collateral that were approved. Icelandic bank certificates, for example, were removed from the Collateral List.

<sup>25</sup> See NASDAQ OMX DM's derivatives rules and regulations, Appendix 12a.

<sup>26</sup> Refers to shares listed on Oslo Børs and included on the so-called Hovedlisten (Master List), and on which there are also derivatives listed on Oslo Børs.

■ collateral in various market scenarios. NASDAQ OMX DM's Risk Management Department may therefore, when they find it necessary, ask for information about individual counterparties and the collateral that they hold. At present, however, it is not possible for NASDAQ OMX DM to continually check the collateral included in the collateral stock. NASDAQ OMX DM is aware of the risk this entails and therefore uses relatively large haircuts for the securities pledged to NASDAQ OMX DM.

On the other hand, enquiries about the composition of the collateral stock are made regularly, once a year, by NASDAQ OMX DM Risk Management. The aim of this annual enquiry is to make sure that the information is easily available if needed. The enquiries made have revealed that the information is quickly available. CCAB verifies the stock by making annual spot checks at members' premises. To date no situation has ever arisen in which the collateral stock has failed to conform with NASDAQ OMX DM's derivatives rules and regulations or been in any other way inadequate.

The list of approved collateral, known as the Collateral List, found in NASDAQ OMX DM's derivatives rules and regulations shows the haircuts that should be made when valuing pledged collateral. The haircuts are largely in line with the current recommendations of the Swedish Bankers' Association, but are in some respects larger. The haircuts are revaluated every quarter and influenced by volatility changes and falls in prices.

## Recommendation 5: Financial resources

*A CCP should maintain sufficient financial resources to withstand, at a minimum, a default by the participant to which it has the largest exposure in extreme but plausible market conditions.*

### Assessment

The Riksbank and Finansinspektionen deem that Recommendation 5 is observed.

### Considerations

The size of NASDAQ OMX DM's clearing capital is calculated on the working assumption that the two counterparties responsible for the greatest risk exposures and all counterparties with equity of less than SEK 100 million cannot simultaneously discharge their commitments in the event of extreme but plausible price fluctuations. The clearing capital currently amounts to SEK 1 925 million. The model for calculating clearing capital has been the subject of verification by Finansinspektionen in accordance with the *Swedish Securities Market Act (2007:528) (VpML)* and has been approved. It is the assessment of the Riksbank and Finansinspektionen that OMX DM uses a relevant automatic stress test (RCaR – a risk capital model) to determine the size of the financial resources designed to cover any counterparty losses. Automatic stress tests are performed daily.

End-customer clearing, which NASDAQ OMX DM uses in the main, has both advantages and drawbacks. One drawback is that when NASDAQ OMX DM assesses its risk exposures, the end-customer's anonymity can create uncertainty. An anonymous end-customer may account for a considerable part of NASDAQ OMX DM's exposure. NASDAQ OMX DM cannot monitor the creditworthiness of anonymous end-customers or assess the risk of an anonymous end-customer being unable to meet its obligations. As a result, NASDAQ OMX DM might find that it has reason to assess the inherent risk in exposures to anonymous end-customers as being higher than to known counterparties, and adjust its financial strength accordingly. Since September 2008, however, NASDAQ OMX DM is entitled, when necessary, to be informed of an end-customer's identity by CCAB. This information is used in risk-related matters in clearing operations. This is a change that, compared to the previous situation, is positive from the point of view of NASDAQ OMX DM's risk assessment.

Apart from end-customer clearing, NASDAQ OMX DM also offers member clearing. In member clearing there is no need for NASDAQ OMX DM to know the customer's identity, as NASDAQ OMX DM only has a contractual relationship with the clearing members, not with the customers. It is the clearing members that have risk exposures vis-à-vis the customers and who are responsible for managing these risks by raising the requisite collateral.

### Statement

If the counterparty's collateral were inadequate in connection with a counterparty default in accordance with the derivatives regulations, NASDAQ OMX DM would have to have sufficient financial strength to bear any loss itself. At the end of 2008, NASDAQ OMX DM had financial assets and insurances amounting to SEK 2 075 million. Of this sum, SEK 925 constitutes equity and SEK 1,150 million insurance policies. SEK 150 million of the equity also has to cover any losses stemming from operational risks. NASDAQ OMX DM's clearing capital amounts to SEK 1 925 million (SEK 775 in equity and SEK 1 150 million in insurances) and is intended solely to cover counterparty losses in clearing operations.

The clearing capital comprises two components: partly the value ascribed by the RCaR calculation and partly a buffer. RCaR (RIVA Capital-at-Risk) is a risk capital model developed by NOMX STO. The model is used to carry out stress tests that estimate the need for capital to cover any

■ counterparty losses if the pledged capital falls short.<sup>27</sup> This need is calculated on the basis of the assumption that the two counterparties with the greatest risks exposures and all the counterparties that have equity of less than SEK 100 million cannot, at one and the same time, meet their commitments in the event of extreme but plausible price movements.<sup>28</sup> The model is intended to cover the highest measured price movements on various markets. The aim of the buffer is to intercept any fluctuations in RCaR and its size is determined by the size of the RCaR calculation.

NASDAQ OMX DM stress tests its exposures and monitors the results daily. In a situation where the RCaR calculation rises to such levels that the clearing capital is not deemed adequate, NASDAQ OMX DM can either reduce the risk exposure or increase the clearing capital. Both alternatives are workable, operationally speaking, in several different ways.

The insurance included in the clearing capital is with OMX Capital Insurance AG (OMXCI), an authorised insurance company in Switzerland owned by OMX Treasury AB. OMXCI holds a guarantee facility from Credit Suisse International. The guarantee only falls due in the event of counterparty losses at NASDAQ OMX DM resulting from the counterparty failing to meet its commitments in accordance with NASDAQ OMX DM's derivatives rules and regulations. Both the equity (SEK 775 million) and the insurance are obtainable at short notice.

As well as its clearing capital, NASDAQ OMX DM has access to two credit lines in Swedish kronor for SEK 700 and SEK 500 million, respectively, as well as smaller amounts in Norwegian, Danish and Icelandic kroner, and in euro for immediate disbursement. The parent company NASDAQ OMX Group Inc. also provides credit facilities so that liquidity will soon be available. See recommendation 7 for a description of NASDAQ OMX DM's liquid assets.

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<sup>27</sup> The counterparties with the greatest risk exposures may be end-customers, who are anonymous to NASDAQ OMX DM, or clearing members.

<sup>28</sup> For individual derivatives, extreme price movements are defined as 1.5 times greater than the fourth-largest price movement during the past two years (the so-called stress factor is 150 percent). For NASDAQ OMX index products the stress factor is currently 200 %. This means that OMXS30 is stress tested to a level corresponding to a price movement of 21 %, which is considerably higher than the just over 12 % that is the greatest movement that has ever been measured on the Stockholm Stock Exchange.

## Recommendation 6: Default procedures

*A CCP's default procedures should be clearly stated, and they should ensure that the CCP can take timely action to contain losses and liquidity pressures and to continue meeting its obligations. Key aspects of the default procedures should be publicly available.*

### Assessment

The Riksbank and Finansinspektionen deem that Recommendation 6 is observed.

### Considerations

In the assessment of the Riksbank and Finansinspektionen, NASDAQ OMX DM's rules and routines for handling a counterparty's bankruptcy are clear, explicit and generally accessible. They enable NASDAQ OMX DM to handle a defaulting counterparty. NASDAQ OMX DM's derivatives rules and regulations lay down what is meant by non-fulfilment and the measures NASDAQ OMX DM is entitled to take, such as claiming pledged collateral and closing down positions quickly.

NASDAQ OMX DM has observed recommendation 1 on legal risk, which, among other things, entails support in Swedish legislation for realising collateral pledged to NASDAQ OMX DM.

### Statement

NASDAQ OMX DM's derivatives rules and regulations specify what is meant by exchange member, clearing member and end-customer non-fulfilment, respectively. In addition, there is a description of the measures NASDAQ OMX DM can take in the event of default. Among other things, NASDAQ OMX DM can utilise pledged collateral, refuse completion and registration, partly or wholly compulsorily close out a clearing member's or end-customer's contract, purchase deliverable replacement instruments and sell the contract basis. NASDAQ OMX DM can also transfer end-customers' accounts and pledged collateral from one clearing member to another. In *OMX Derivatives Market as a Counterparty*<sup>29</sup>, which is available on the NASDAQ OMX homepage, there is a chapter describing the rules and the process on which NASDAQ OMX DM bases its actions in the event of non-fulfilment and a description of the seven cases of non-fulfilment vis-à-vis NASDAQ OMX DM that have occurred since December 1989.

NASDAQ OMX DM has a formal committee, a "default committee", which can be convened at short notice. It has the authority to make a number of decisions relating to defaulting participants. Furthermore, the committee makes decisions as to whether NASDAQ OMX DM's own financial resources should be increased. The committee's routines are continually monitored by the board of NOMX STO. Final decisions with regard to defaulting participants are made by the CEO of NOMX STO.

As described in recommendation 1 on legal risk, Swedish law permits pledged collateral to be realised.

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<sup>29</sup> Refers to the version that will be issued in 2009.

## ■ Recommendation 7: Custody and investment risks

*A CCP should hold assets in a manner whereby risk of loss or of delay in its access to them is minimised. Assets invested by a CCP should be held in instruments with minimal credit, market and liquidity risks.*

### Assessment

The Riksbank and Finansinspektionen deem that Recommendation 7 is observed.

### Considerations

NASDAQ OMX DM's equity is invested in assets with a low market and liquidity risk, meaning that the assets can be disposed of quickly with little adverse effect on prices.

Swedish collateral institutions, also called custodial banks, apply rules and routines which, according to the Riksbank and Finansinspektionen, fulfil recommendation 12 on protection of the customer's securities in *Recommendations for Securities Settlement Systems (RSSS)*.<sup>30</sup> The Riksbank and Finansinspektionen find that NASDAQ OMX DM's method of safekeeping collateral in custodial banks rather than holding them itself may result in certain delays in the process of disposing of collateral, but the rules and routines applied to a collateral institution prevent delays of any significance.

### Statement

#### *Administration of collateral*

NASDAQ OMX DM does not itself administer the collateral pledged for commitments made in the clearing operations. Instead, such collateral is managed by a collateral institution, also called a depot or custodial bank, engaged by the end-customer or clearing member and approved by NASDAQ OMX DM. A list of collateral institutions approved by NASDAQ OMX DM can be found in Appendix 9 to the derivatives rules and regulations.

In order to be approved as a collateral institution, the institution is required, among other things, to have taxed capital in excess of SEK 500 million and otherwise be suitable as a collateral institution. The collateral institution is to keep collateral on behalf of the exchange in a safe manner and report that adequate collateral has been furnished for each particular clearing account. The application to become a collateral institution is examined and approved by NASDAQ OMX DM, which also monitors the collateral institution on a continuous basis. Once the application has been granted, the collateral institution is admitted to NASDAQ OMX DM by entering into a collateral institution agreement.

CCAB is responsible for ensuring that customer agreements are correct and for conducting annual random sampling in order to check that the collateral pledged is acceptable and correct. When necessary, NASDAQ OMX DM has the right to be told the end-customer's identity by CCAB.

A majority of the collateral institutions are also clearing members at NASDAQ OMX DM and handle collateral on behalf of their customers. However, the collateral institution cannot administer its own collateral or collateral pledged by an affiliated company within the same group. Such collateral must be administered by another collateral institution.

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<sup>30</sup> [www.riksbank.se](http://www.riksbank.se)



■ *Management of the clearing capital*

OMX Treasury AB manages NASDAQ OMX DM's equity and OMX Capital Insurance's liquid funds. Management must adhere to the NASDAQ OMX Group's investment policy for clearing capital. The equity and liquid funds must be invested in government securities with a very low market and liquidity risk.

OMX Treasury AB is a subsidiary of the NASDAQ OMX Group that handles the Group's liquidity management. The treasury operation is run independently and is the subject of annual internal and external audits. The management remit from NASDAQ OMX DM and OMX Capital Insurance is regulated in agreements and OMX Treasury AB reports back regularly on the outcome of its management. Clearing capital funds under management are separated from other funds in the Group.

## **Recommendation 8: Operational risk**

*A CCP should identify sources of operational risk and minimise them through the development of appropriate systems, controls and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Business continuity plans should allow for timely recovery of operations and fulfilment of a CCP's obligations.*

### **Assessment**

The Riksbank and Finansinspektionen assess that Recommendation 8 is broadly observed.

### **Considerations**

NASDAQ OMX DM has an incident organisation and a business continuity plan, which are tested regularly with the clearing organisations with which NASDAQ OMX DM has clearing links. Together with its participants, NASDAQ OMX DM works with the testing of various types of potential operative incidents. During the most recent twelve months, accessibility of the system has been at a level of 99.99 percent.

In 2008 and early 2009, NOMX STO has been on the point of transitioning from OMX's previous method for the identification and analysis of operational risks to a new method. During this transitional period, known risks have been followed up and monitored as usual, although no overall identification or analysis of operative risks has been carried out for 2008. However, the objective has been to implement a new policy, to affect NOMX STO as a whole, during the spring of 2009. The Riksbank and Finansinspektionen consider the overall analysis and identification of operational risks, continually and without interruption, to be a matter of importance. As with all changes to routines and systems, it is important that this transition be made without any deterioration of risk control.

### **Comment**

Recommendation 8 cannot be considered to have been fulfilled, as NASDAQ OMX DM has not conducted any comprehensive analysis of operational risks in the operation in 2008. The Riksbank and Finansinspektionen consider that NASDAQ OMX DM should have performed a comprehensive analysis of operational risks, without interruption, during the period of transition between the methods.

### **Statement**

In conjunction with the merger with NASDAQ Inc. during 2008, work was initiated in the implementation of a new and comprehensive process for the identification and analysis of operative risks. This process is to be integrated for the entire company. The objective is for the new process to be presented and implemented in the organisation during the spring of 2009.

Prior to the merger with NASDAQ Inc., the OMX Group had an organisation-wide policy, the "Enterprise Risk Management Policy", to govern the process of the comprehensive risk analysis, which was reported annually and updated semi-annually. The operational risks affecting NASDAQ OMX DM were analysed as an integrated part of a comprehensive risk analysis in accordance with the so-called COSO ERM Framework<sup>31</sup>, which resulted in an assessment of various types of risk in terms of probability and consequences. This type of analysis has not been executed for the year 2008.

During the period of transition between the termination of the previous policy and the adoption of the new policy, no comprehensive analysis of the operational risks is carried out. However, the

<sup>31</sup> Committee of Sponsoring of the Treadway Commission Enterprise Risk Management Framework (COSO), 2003

■ control routines and monitoring areas developed through the use of previously applied analytical methods continue to be maintained.

New demands are also being placed on the organisation, which must now comply with the requirements of the Sarbanes-Oxley Act. NASDAQ OMX DM is required to have complied completely with the Sarbanes-Oxley Act by no later than the end of 2009.

The technical systems for trading in and clearing of derivative financial instruments, CLICK and SECUR, together with the system for trading in shares, SAXESS, form focal points for the work on operative risk. NASDAQ OMX DM has ultimate responsibility for trading and clearing operations, while the ongoing operation and monitoring of the system are carried out by Global IT Services. Global IT Services is included in the NASDAQ OMX Group. The operation of the system is, accordingly, outsourced and regulated by an agreement between Global IT Service and NASDAQ OMX DM, although the assignment remains within the NASDAQ OMX Group.

The agreement regulates details regarding:

- the scope of the systems
- level of service
- supply routines and change procedures
- requirements for security routines in operation and development
- action to be taken in the event of disruptions to systems
- monitoring and control routines

Among other stipulations, the agreement specifies that technical monitoring and support for members is available around the clock, seven days a week. NASDAQ OMX DM continually follows up the outcome of Global IT Services' commitments regarding the agreement. Regular reconciliation and follow-up meetings are held by the parties.

NASDAQ OMX DM takes complete responsibility for ensuring that the system fulfils the functional requirements and that the level of service is maintained in accordance with requirements. The system owner appointed within NASDAQ OMX DM is responsible for ensuring that production and development of the systems takes place in accordance with the requirements placed and the company's own guidelines.

The operation of NASDAQ OMX DM's systems takes place via two identical but separate computer installations, working in parallel. These two computer installations have independent infrastructures and are situated at two separate geographical locations. All members are linked to both installations and are recommended to use both. The installations are each dimensioned to be able to cope with the entire workload alone, if necessary. In order to safeguard the operation of the production systems, one member of staff of NOMX STO (Financial Market Clearing) is always available, at short notice, in the event that any problem should arise.

In the event that it should become impossible for NASDAQ OMX DM to conduct operations from its head office, there also exist reserve premises for operational activities. NASDAQ OMX DM has an incident organisation and a business continuity plan. The plan is tested regularly, together with the clearing organisations with which NASDAQ OMX DM has clearing links. Among other controls, tests are carried out entailing the physical relocation of essential personnel from the main office to the reserve premises. The objective, attained in the tests, is for this relocation to be accomplished in between 45 and 75 minutes. The participants are unaware of the business continuity plans covering the eventuality that both computer installations are inaccessible, for example in the event of software-related problems. A shutdown of the SECUR application would imply the application by NASDAQ OMX DM of its reserve routines and, depending on the actual situation, the issue by the company of instructions to members on the action they should take.

■ If the SECUR clearing application should become unavailable, there exist both a reserve plan and guidelines regarding the action to be taken by NASDAQ OMX DM. The clearing and settlement operations have developed a manual reserve routine for disruptions to data communication and software-related systems errors. Among other measures, this implies the continual issue of instructions by NASDAQ OMX DM to its members regarding the actions they should take in the actual situation. Accordingly, the members do not receive advance knowledge of any reserve routines other than those related to technical disruptions in the computer installations.

In the event that the communication systems fail to function, NASDAQ OMX DM will communicate by telephone or fax. Lists exist with contact persons, telephone numbers and fax numbers for all members. These lists are updated on an ongoing basis.

There exist documented and tested reserve routines for the eventuality that one or more support applications (RIX, SWIFT, VPC and CLICK) are not available. NASDAQ OMX DM's data security policy is based on ISO/IEC 17799.

The minimum goal for availability in the system between 08:00 and 18:00 is 99.90 percent. During 2008, the system was accessible 99.99 percent of opening hours.<sup>32</sup> However, the internal system for back-testing did not function in an entirely satisfactory manner (for further information, refer to Recommendation 4). The Riksbank and Finansinspektionen consider this failure to remedy the fault in time to be a problem indicating a deficiency in internal control (refer to Recommendation 13 for the assessment and presentation of NASDAQ OMX DM's risk management organisation).

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<sup>32</sup> Downtime refers to access for trading activities in the trading system CLICK and the portions of SECUR providing real time information during the measurement period (trading days 08:00 – 18:00). Consequently, problems arising in SECUR during evening and night processes do not result in any downtime. For a detailed description of the concept of downtime, refer to FMSA Schedule 4 Service Level Description.

## Recommendation 9: Money settlements

*A CCP should employ money settlement arrangements that eliminate or strictly limit its settlement bank risks, that is, its credit and liquidity risks from the use of banks to effect money settlements with its participants. Funds transfers to a CCP should be final when effected.*

### Assessment

The Riksbank and Finansinspektionen deem that Recommendation 9 is observed.

### Considerations

The major portion of cash settlements is made in SEK and DKK through the payment systems of the relevant central bank - that is to say, in the central bank's money. Recommendation 9 is thereby fulfilled.

A minor portion of cash settlement arrangements takes place in NOK and ISK, EUR and USD. Those participants making settlements in these currencies who are members of the relevant central bank's payment system make settlements in central bank money, while those participants that are not members of the central banks' payment systems utilise a settlement bank. NASDAQ OMX DM takes a risk in connection with the settlement of these currencies, as this settlement takes place through the settlement bank used by NASDAQ OMX DM in the respective country. NASDAQ OMX DM has approved the settlement banks in accordance with the standards for collateral institutions and continually monitors each settlement bank. All relevant payment systems are deemed to provide "intraday finality" and have been evaluated in accordance with international standards.

### Statement

Two flows of payments arise in NASDAQ OMX DM's operations. The first of these refers to pure cash settlement arrangements arising in the full or partial redemption of contracts with cash.<sup>33</sup> The second refers to the type of payment flow arising when securities are exchanged against cash.<sup>34</sup> This recommendation concentrates on cash settlement, while payments taking place in conjunction with the exchange of securities are principally dealt with in Recommendation 10.

The predominant portion of NASDAQ OMX DM's payments are made in SEK. Cash settlement in Sweden takes place via the Riksbank's payment system, RIX. NASDAQ OMX DM participates in the RIX system and, accordingly, the majority of NASDAQ OMX DM's cash settlements are made in central bank money. Cash settlements in SEK stand for slightly over half of NASDAQ OMX DM's payments in SEK.<sup>35</sup>

Payments made in conjunction with securities settlement take place through a settlement bank. NASDAQ OMX DM limits risk regarding the settlement bank used by way of monitoring and placing requirements on the settlement bank. However, NASDAQ OMX DM's clients are not exposed to the settlement bank and are, thereby, not subjected to any risk as regards the settlement bank.

In addition to Swedish derivative financial instruments, NASDAQ OMX DM offers trading and clearing of Finnish, Danish, Icelandic, Baltic and Russian derivative financial instruments.<sup>36</sup> NASDAQ

<sup>33</sup> Pure money settlements take place in conjunction with payments of premiums, fees and daily settlements of futures contracts.

<sup>34</sup> That is to say that the payment flows arising after redemption of a contract and the exchange of the underlying security against cash (Delivery versus Payment) via the local CSD.

<sup>35</sup> On a gross amount basis.

<sup>36</sup> Trading in Russian derivative instruments has been temporarily suspended from autumn 2008 due to the impact of the current financial turbulence on the Russian market. During 2008, trading and clearing of Icelandic derivatives has been offered. However, trading and clearing of Icelandic derivative products was temporarily suspended during autumn 2008. This suspension was implemented due to the situation arising on the financial market in Iceland in conjunction with the global financial crisis. It was



■ OMX DM also operates a link cooperation with the derivative exchanges in Norway and the UK. As a consequence of this, NASDAQ OMX DM also makes payments in NOK, DKK, ISK, EUR and USD.

Settlement in DKK takes place in the same manner as settlements in SEK - that is to say, directly into the payment system of Danmarks Nationalbank, KRONOS. NASDAQ OMX DM is, itself, a member of KRONOS.

For settlements in NOK, ISK, EUR and USD, NASDAQ OMX DM engages a settlement bank for each currency. Unlike NASDAQ OMX DM, each of these settlement banks is a member of the relevant payment system. Clearing members make payments in these four currencies to NASDAQ OMX DM's account in Nordea in Norway, Kaupthing Bank in Iceland, SEB in the UK and Nordea in Finland. In those cases in which NASDAQ OMX DM uses a settlement bank, participants are not required to have accounts in that settlement bank. NASDAQ OMX DM's utilisation of a settlement bank implies the undertaking of a risk regarding the settlement bank in question. Such a risk is not taken by other participants making settlements directly in the central bank or via their own settlement bank. NASDAQ OMX DM limits the risk that it is exposed to by way of monitoring and placing requirements on the settlement banks it utilises. In order to diversify its risks, NASDAQ OMX has selected to use different settlement banks in different countries.

NASDAQ OMX DM conducts ongoing verification to ensure that cash settlements are taking place in accordance with the applicable instructions. In RIX and KRONOS, NASDAQ OMX DM confirms that payments are correct before settlement. Payments and account balances in each settlement bank are controlled on a daily basis. Each settlement bank is a member of the local central bank's payment system in each respective country and is an approved securities institute in accordance with NASDAQ OMX DM's derivatives regulations. NASDAQ OMX DM monitors the settlement banks' financial stability on an ongoing basis.

The six payment systems used by NASDAQ OMX DM for cash settlements in SEK, DKK, NOK, ISK, EUR and USD provide so-called "intraday finality", which is to say that they enable orders for payment to be settled on the same date they are received. Sweden, Denmark, Norway, Finland, Iceland and the UK have all implemented the Settlement Finality Directive, thereby complying with the principle of "intraday finality".

## Recommendation 10: Physical deliveries

*A CCP should clearly state its obligations with respect to physical deliveries. The risks from these obligations should be identified and managed.*

### Assessment

The Riksbank and Finansinspektionen deem that Recommendation 10 is observed.

### Considerations

NASDAQ OMX DM's derivative regulations include clear rules for the manner in which the delivery of securities is to be conducted. The derivatives regulations also regulate the manner in which NASDAQ OMX DM may act in the event of delayed deliveries. As the delivery of securities is administered by a securities register centre in accordance with the principle of delivery versus payment (DvP), no credit risks arise in the settlement process. However, replacement cost risks may arise in the event that a counterparty is unable to deliver securities in time. In order to facilitate the delivery of securities to its counterparties, NASDAQ OMX DM has agreements with two financial institutes regarding securities loans.

### Statement

According to NASDAQ OMX DM's derivative regulations, the delivery and receipt of securities is included in NASDAQ OMX DM's role as central counterparty. The regulations provide NASDAQ OMX DM with the possibility of determining and requiring a fee from any counterparty failing to deliver securities as agreed, in addition to compensation for expenses arising in conjunction with any such delay. The regulations provide NASDAQ OMX DM with the right to take out a fee for delayed delivery, but, in accordance with established practice, this right is not applied. However, in individual cases, members may be required to provide reimbursement for any expenses arising in conjunction with delayed deliveries.

In order to facilitate the delivery of securities to its counterparties, NASDAQ OMX DM has agreements with two financial institutes regarding securities lending. Alternatively, NASDAQ OMX DM can purchase securities, make a partial delivery of securities or wait to complete its delivery until such time as delivery is finalised by the counterparty obligated to deliver the securities.

The delivery and safekeeping of securities is conducted in dematerialised form and is administered by the central securities depositories; VPC in Sweden<sup>37</sup>, VP in Denmark<sup>38</sup>, VPS in Norway<sup>39</sup>, ISD in Iceland and APK in Finland<sup>40</sup>. In Sweden, Finland, Denmark and Iceland, NASDAQ OMX DM is a member of the appropriate settlement system, and issues and controls all securities instructions. NASDAQ OMX DM is not a member of the Norwegian settlement system, but uses Nordea as a custodial and settlement bank in Norway. Nordea handles deliveries to and from clearing members and monitors all deliveries. The delivery of Russian depository receipts is conducted through DTCC or Euroclear. NASDAQ OMX DM uses SEB London as a custodial bank for deliveries of Russian depository receipts.

Payment and delivery take place in accordance with the routines applied by each central securities depository, as well as in accordance with the specifics of the relevant contract. Delivery is always made in accordance with the principle of delivery versus payment (DvP). Accordingly, no credit risks arise in the settlement process. The total balance of each securities account at NASDAQ OMX DM should be equivalent to zero at daily closing.

<sup>37</sup> Refer to the assessment of securities development in Sweden, [www.riksbank.se](http://www.riksbank.se) or [www.fi.se](http://www.fi.se)

<sup>38</sup> Refer to the assessment of VP, [www.nationalbanken.dk](http://www.nationalbanken.dk)

<sup>39</sup> Refer to the assessment of VPS, [www.norges-bank.no](http://www.norges-bank.no)

<sup>40</sup> Refer to the assessment of ECB User Standards, [www.ecb.int](http://www.ecb.int).

- The primary risk remaining is the replacement cost risk. Replacement cost risk is equivalent to the cost arising when one party in a transaction does not receive a security within the agreed timeframe and, consequently, must obtain a specific security in order to fulfil its obligations. For NASDAQ OMX DM, the replacement cost risk for derivative financial instruments is equivalent to the difference between the strike price of the derivative contract and the underlying security's market price, while for forward agreements it is equivalent to the difference between the price of the forward agreement and the market price of the underlying security. The amount of this price difference determines the extent of the risk. NASDAQ OMX DM may have no securities for a counterparty whose security delivery is delayed. NASDAQ OMX DM manages this risk in the same manner as the open exposure arising overnight in the other clearing activities, that is through counterparty limits and coverage with clearing capital. If there should arise any extra costs in conjunction with the failure of a counterparty to deliver a security within the stipulated period of time, NASDAQ OMX DM also has the right to transfer all expenses arising to the counterparty failing to fulfil its obligations.

## Recommendation 11: Risks in links between CCPs

*CCPs that establish links either cross-border or domestically to clear trades should evaluate the potential sources of risks that can arise, and ensure that the risks are managed prudently on an ongoing basis. There should be a framework for cooperation and coordination between the relevant regulators and overseers.*

### Assessment

The Riksbank and Finansinspektionen deem that Recommendation 11 is observed.

### Considerations

NASDAQ OMX DM has analysed the risks that may arise as a result of these links and has taken consideration of them in its risk management plan. The laws and agreements regulating the various links between the clearing organisations are specified and are considered sufficient in the judgement of the Riksbank and Finansinspektionen. Finansinspektionen has established cooperative supervisory activities with its equivalent bodies in those countries with whose stock exchanges NASDAQ OMX DM has links.

### Statement

In December 2008, NASDAQ OMX DM had links to two stock exchanges and two clearing organisations. These links facilitate cross-border trade and central counterparty clearing. The stock exchanges and clearing organisations with which NASDAQ OMX DM has links are:

- EDX London Exchange and LCH.Clearnet Ltd.
- Oslo Børs and Oslo Clearing ASA

The link with LCH.Clearnet provides participants in the stock exchanges EDX London Exchange, Oslo Børs and NASDAQ OMX DM with the opportunity to trade Nordic derivative financial instruments with each other. This link is subject to British law. The link with Oslo Børs provides participants in NASDAQ OMX DM with the opportunity to trade in derivatives admitted for trading in NOMX STO and Oslo Børs, which are cleared by NASDAQ OMX DM and Oslo Clearing, respectively. This link is subject to Swedish law. The cooperation agreements with EDX London Exchange, LCH.Clearnet, Oslo Børs and Oslo Clearing have been cancelled. Following the expiry of the periods of notice at the end of 2009 (EDX and LCH) and the start of 2010 (Oslo Børs and Oslo Clearing), linking collaboration with these partners will cease.

Both links are formed in such a manner that exposure accumulated by a participant by trading derivatives in a linked trading venue are assumed by the clearing organisation when this is a participant. This implies that the clearing organisations included in the links are only exposed to their own participants and that the participants are only exposed to their own clearing organisation. In turn, the clearing organisations are exposed to each other. As an example, NASDAQ OMX DM, consequently, has an exposure towards each linked clearing organisation that is equivalent to the net exposure of NASDAQ OMX DM's participants.

Oslo Børs has a link to EDX London Exchange, but Oslo Clearing, Oslo Børs' clearing organisation, does not have a link agreement with LCH.Clearnet. This implies that participants in Oslo Børs may trade on the EDX London Exchange, but that Oslo Clearing does not directly furnish collateral for the resulting exposures. Consequently, NASDAQ OMX DM acts as a hub in the linking activities, which implies that Oslo Børs combines these exposures with its participants' exposures to NASDAQ OMX DM and provides collateral corresponding to the net in relation to NASDAQ OMX DM. In turn,

- NASDAQ OMX DM furnishes collateral for its participants' net and Oslo Clearing's participants' net in relation to LCH.Clearnet.

The linking agreement specifies the manner in which the clearing organisations are to furnish collateral for their exposures to one another. The collateral requirement is somewhat lower for clearing organisations than it would be for other clearing members with equivalent exposure. In addition, NASDAQ OMX DM and each linked clearing organisation have specified the legal system and regulatory framework to be applied to the different stages of trading and clearing.

For each link, NASDAQ OMX DM have implemented an investigation (due diligence), covering history, organisation, management, risk management, cash management, clearing, calculation and handling of collateral, stress-testing, IT activities, legal bases and various control functions. Furthermore, NASDAQ OMX DM has analysed the various risks that may arise as the result of the link, including legal risks, operational risks, credit risks and liquidity risks. Ongoing monitoring of each linked clearing organisation is initiated when the link is in place.

Finansinspektionen has established cooperation for supervision with the equivalent bodies in Norway and the UK.

## **Recommendation 12: Efficiency**

*While maintaining safe and secure operations, CCPs should be cost-effective in meeting the requirements of participants.*

### **Assessment**

The Riksbank and Finansinspektionen deem that Recommendation 12 is observed.

### **Considerations**

It is difficult to make cost comparisons between NASDAQ OMX DM and its equivalents, as the services provided by these organisations differ. NASDAQ OMX DM is the only clearing organisation for derivative financial instruments on the Swedish market, with the only competition arising from OTC trading.

NASDAQ OMX DM performs an annual investigation to follow up levels of participant satisfaction with the clearing services.

Accessibility to NASDAQ OMX DM's system is high and NASDAQ OMX DM performs regular follow-ups of accessibility.

### **Statement**

Clearing members are faced with a number of varied expenses associated with derivative clearing. These expenses include fees per transaction, expenses associated with the furnishing of collateral and expenses associated with compliance with the requirements placed by NASDAQ OMX DM on its members in terms of organisation, competence and technical equipment.

Even if NASDAQ OMX DM is the only clearing organisation for derivative financial instruments on the Swedish market, it still faces a certain degree of competition. This competition is due to the fact that participants can choose to trade certain products OTC, instead of via the derivative exchange, thereby utilising no clearing organisation whatsoever. Furthermore, there exist products, such as warrants, which form substitutes for the derivative products traded on NASDAQ OMX DM. There is nothing to prevent other derivative exchanges and clearing organisations from offering trading and clearing services of the same contracts as NASDAQ OMX DM, should such activities be regarded as profitable. NASDAQ OMX DM has lowered the prices of specific products in recent years, which may indicate a certain level of competition.

NOMX STO undertakes annual investigations of the levels of satisfaction with NOMX STO's services among participants. The first investigation for derivative clearing was conducted in 2001 and follow-up investigations have been conducted on an annual basis since then. The main objective of these investigations has been to measure participants' confidence in the trading venue and the clearing services, as well as for NASDAQ OMX DM as a whole. The investigation is divided into three separate questionnaires, one for derivative trading, one for risk management and one for derivative clearing. The two latter activities are related to the central counterparty services offered by NASDAQ OMX DM. A customer survey of this nature was also conducted during 2008.

Proposals from participants in derivative clearing are processed through various channels: direct contact is made with participants, while NASDAQ OMX DM arranges specific forums aimed towards different groups of participants. Clearing forums and reference group meetings are arranged, in which proposals regarding operative clearing activities, system changes and products can be discussed. In addition, there exist forums for risk management in which participants have the opportunity to present proposals regarding risk management. There also exist forums for IT

- discussions and forums for derivative financial instruments, in which trading and product-related issues are discussed.

Proposals and opinions can also be presented to the Derivatives Market Committee, which is regularly convened by NASDAQ OMX DM, together with the Swedish Securities Dealers Association. The Derivatives Market Committee consists of participants in the derivative clearing market. Proposals for changes to the regulatory framework surrounding derivatives, which is updated every six months, are discussed by the Derivatives Market Committee.

In autumn 2007, the Riksbank and Finansinspektionen carried out joint interviews of a selection of clearing members of NASDAQ OMX DM. According to these interviews, NASDAQ OMX DM's data system was perceived to be reliable, while technical support was considered to function well. NASDAQ OMX DM does not separate charges for trading and clearing, although such separation is common internationally. Several clearing members have requested increased transparency in pricing. A number of members expressed a desire to see a separation between trading and clearing charges. The interviewed clearing members were satisfied with the forms for the presentation of information by NOMX and considered this service to have improved in recent years.

NASDAQ OMX DM regularly follows up access to its system. During 2008, the level of access was 99.99 percent. This is described in Recommendation 8.

### **Recommendation 13: Governance**

*Governance arrangements for a CCP should be clear and transparent to fulfil public interest requirements and to support the objectives of owners and participants. In particular, they should promote the effectiveness of a CCP's risk management procedures.*

#### **Assessment**

The Riksbank and Finansinspektionen assess that recommendation 13 is broadly observed.

#### **Considerations**

NASDAQ OMX DM is a registered subsidiary of NOMX STO. The Board of Directors of NOMX STO is responsible for decisions affecting central counterparty clearing. Public information regarding NOMX STO's own governance is difficult to understand, as this information is focused on the NASDAQ OMX Group.

Risk management within NASDAQ OMX DM is performed by the risk management department of NASDAQ OMX, which reports directly to NASDAQ OMX Finance, implying that there exists a clear separation, in the reporting chain, between risk management and the other operations.

The annual report includes feedback on NASDAQ OMX Nordic Ltd's targets and accomplishment of its objectives, which are subsidiary objectives of the NASDAQ OMX Group.

In the assessment for 2007, Finansinspektionen and the Riksbank identified deficiencies in NASDAQ OMX DM's internal control of the correctness of the actual amount of the clearing capital. NASDAQ OMX DM has replied to Finansinspektionen and the Riksbank with a specification of the measures undertaken to strengthen the internal control of the correctness of the actual amount of the clearing capital. However, during 2008, deficiencies have again been identified in the internal control, this time regarding the back-testing of the correctness and reliability of the security calculations. The reliability of the internal control of the various processes, in this case the back-testing, is of fundamental importance for a central counterparty. Finansinspektionen and the Riksbank view the fact that NASDAQ OMX DM has not had reliable internal control of the back-testing of security calculations, particularly during the highly turbulent period experienced during 2008, with a great deal of concern. The fact that this type of error has arisen two years in a row indicates that internal control within NASDAQ OMX DM has deficiencies requiring action.

#### **Comment**

Recommendation 13 cannot be considered to have been fulfilled, as internal control has demonstrated deficiencies. These deficiencies in internal control became apparent when NASDAQ OMX DM failed to identify the problems arising in back-testing in good time. In the view of the Riksbank and Finansinspektionen, it is of great importance to have an internal control system able to draw attention promptly to the unpredictable problems that may arise in the various parts of the organisation.

#### **Statement**

Our recommendation refers, first, to the organisation and governance of the company and, second, to the organisation of risk management. According to the legal structure of the Group, NASDAQ OMX Stockholm AB (NOMX STO) is a subsidiary of NASDAQ OMX Nordic Ltd. The ultimate Parent Company of the Group is NASDAQ OMX Group Inc. Activities regarding derivative financial instruments in NOMX STO are conducted by the business area NASDAQ OMX DM, which is also registered as a subsidiary.

■ Among other individuals, the Board of Directors of NASDAQ OMX Nordic Ltd consists of the Chief Executive Officer of NASDAQ OMX Group Inc. and a number of external board members. The Board of Directors of NOMX STO consists of internal board members. Finansinspektionen conducts a suitability assessment of the members of the Board. Among other criteria, the suitability requirements specify that the Board of Directors, as a whole, shall possess sufficient experience of the financial markets. The Board of Directors has delegated a number of decisions to the CEO of NOMX STO. The Board of Directors has clearly described the delegated decisions in the terms of reference issued to the CEO.

In order to obtain the opinions of participants in the market regarding the services provided by NASDAQ OMX DM, work is being conducted with several different participant groups. NASDAQ OMX runs several different forums of its own, in which participants have the possibility of presenting their opinions. In addition, in collaboration with Svenska Fondhandlarföreningen (the Swedish Securities Dealers' Association), the company runs Derivatmarknadskommittén ("the derivative market committee"), which primarily focuses upon issues related to trading in derivatives and Clearinggruppen ("the clearing group"), which focuses on unadulterated clearing issues.

Information regarding the organisation of the NASDAQ OMX Group's organisation and the Board of Directors of NOMX STO is available from NASDAQ OMX's website, although it is difficult to determine which information applies to NOMX STO, as the information presented is focused on the NASDAQ OMX Group. Important Board decisions are published via press releases and general information on NOMX STO is available from sources such as Bolagsverket (the Swedish Companies Registration Office).

The risks associated with the operations of NASDAQ OMX DM are assessed and managed by the company's risk management department. The head of this department reports directly to the head of the business area NASDAQ OMX Finance, but is also specifically obligated to report risks directly to the Board of Directors of NASDAQ OMX Stockholm AB (NOMX STO), as well as to the Board of Directors of NASDAQ OMX Nordic Ltd. A risk report is prepared for each Board meeting, which, among other data, includes information on counterparty risks, market risks and important decisions regarding risk management.

One important area of risk management refers to the validation of the security calculations. For this purpose, NASDAQ OMX DM back-tests the valuation model. At the end of 2008, it was discovered that the tests conducted after the first quarter were not producing correct results. (For further information, refer to Recommendation 4) The fact that this error was noticed by the systems operator but not communicated further within the organisation indicates the existence of deficiencies in internal communication and internal control.

## Recommendation 14: Transparency

*A CCP should provide market participants with sufficient information for them to identify and evaluate accurately the risks and costs associated with using its services.*

### Assessment

The Riksbank and Finansinspektionen deem that Recommendation 14 has been fulfilled.

### Considerations

According to the assessment of the Riksbank and Finansinspektionen, Recommendation 14 requires that both NASDAQ OMX DM's existing participants and its potential participants shall receive the information deemed necessary for the assessment of the risks and costs associated with the central counterparty. Consequently, the information required to comply with this recommendation should be easily available. As NASDAQ OMX DM conducts end-customer clearing, information requirements are even more stringent, as end-customers who are not professional financial players must also make use of NASDAQ OMX DM's information. Consequently, this information must be clear, easy to understand and easily available.

The Riksbank and Finansinspektionen consider that NASDAQ OMX DM provides its participants, in all essentials, with the information they require to assess the risks and costs associated with the derivative clearing activities of NASDAQ OMX DM.

- The publication *OMX Derivatives Market as Counterparty* provides clear information on NASDAQ OMX DM's activities and matches the degree of clarity considered appropriate by the Riksbank and Finansinspektionen.
- NASDAQ OMX DM's website includes a link to the Riksbank and Finansinspektionen's evaluation of NASDAQ OMX DM's activities as central counterparty. This evaluation includes a description of NASDAQ OMX DM's responses to the key questions in *Recommendations for Central Counterparties*.
- The Riksbank and Finansinspektionen are publishing their evaluation of NASDAQ OMX DM's activities as central counterparty.

All information is available in accordance with the requirements of Recommendation 14. Additionally, statistics for access to NASDAQ OMX DM's clearing system for derivative financial instruments are lacking.

### Comment

NASDAQ OMX DM should publish the value of the assets pledged to NASDAQ OMX DM on an annual basis. The Riksbank and Finansinspektionen consider that NASDAQ OMX DM should publish availability statistics for derivative clearing in SECUR, in addition to data concerning availability in relation to availability targets.

### Statement

NASDAQ OMX DM provides the following information on the Internet:

- NASDAQ OMX DM's derivatives regulations
- Information regarding the legal support for clearing
- Costs associated with clearing
- Information on derivative activities and NASDAQ OMX DM's role as central counterparties

- Statistics on the volumes of transactions referring to trading in derivative financial instruments, in the form of both turnover and the number of outstanding contracts
- A certain amount of information regarding NASDAQ OMX DM's corporate governance can be gathered from the information presented for the NASDAQ OMX Group

NASDAQ OMX DM's derivative regulations support the various stages of derivative clearing. The regulations provide instructions regarding risk management policy and security policy, if and when NASDAQ OMX DM undertakes counterparty risks, the rights and obligations of NASDAQ OMX DM and the management of participants in a bankruptcy situation. Recommendation 1 on legal risk includes a more detailed description of the rules and regulations covering derivative financial instruments.

NASDAQ OMX DM discloses information regarding its operations, the organisation and activities of the risk management function, bankruptcy administration, bankruptcy history and its routines for the management of securities. In the publication *OMX Derivatives Market as a Counterparty*, NASDAQ OMX DM provides a clear description of its operations in a more straightforward manner than in the derivatives regulations. Among other disclosures, this publication discusses participants' rights and obligations towards NASDAQ OMX DM, as well as NASDAQ OMX DM's risk management activities.

NASDAQ OMX DM communicates its commitments as central counterparty in a clear manner, both over the Internet and in *OMX Derivatives Market as a Counterparty*. On the Internet, it is stated that, as central counterparty, NASDAQ OMX DM undertakes to act as counterparty in all transactions, thereby guaranteeing the completion of the transactions.

All information published on the Internet is in English. In addition, portions of this information are available in Swedish, Danish, Finnish and, to a certain extent, Icelandic. The publication *OMX Derivatives Market as a Counterparty* is only available in English.

## ■ Recommendation 15: Regulation and oversight

*A CCP should be subject to transparent and effective regulation and oversight. In both a domestic and international context, central banks and securities regulators should cooperate with each other and with other relevant authorities.*

In this recommendation, the Riksbank and Finansinspektionen separately present the work they are conducting regarding the supervision and monitoring of the requirements placed by Recommendation 15 in regard of supervision and monitoring.

The Riksbank and Finansinspektionen have opted not to perform their own assessments of their own work. The supervisory and monitoring work of the Swedish authorities was last evaluated in the IMF's Financial Sector Assessment (FSAP) of Sweden in 2002, when the IMF deemed that the requirements had been partially fulfilled. In its consideration, the IMF argued that supervision needed to be developed further and that the Riksbank's lack of means of bringing legal pressure to bear constituted a weak point in supervision.<sup>41</sup>

### Finansinspektionen

#### *Regulation and supervision*

The conduct of clearing activities in Sweden requires licensing in accordance with the *Swedish Securities Market Act (SFS 2007:528)*. NASDAQ OMX Stockholm AB has been granted such a license by Finansinspektionen, which also exercises supervision. In order to conduct this supervision, Finansinspektionen possesses the right to demand the information deemed necessary, both from NASDAQ OMX DM and from other parties. Finansinspektionen also possesses the right to conduct investigations on site. Should NASDAQ OMX DM fail to comply with the requirements deemed necessary for the conduct of clearing activities, Finansinspektionen possesses the right to revoke the license, signifying that these activities must cease. Finansinspektionen's rights are stipulated in the *Swedish Securities Market Act (SFS 2007:528)*, the *Swedish Financial Instruments Trading Act (SFS 1991: 980)* and the *Swedish Act on Systems for Settlement of Obligations on the Financial Market (SFS 1999:1309)*. In addition to companies licensed to conduct stock exchange and clearing operations, the regulations also cover the clearing participants.<sup>42</sup>

Supervision of stock exchange and clearing organisations is primarily conducted by a supervisory group of three individuals within the Department of Market Supervision. Licensing matters and support in legal issues are dealt with by the Legal Department. Issues of supervision and analyses of particular risk areas are handled by the Department of Stability Supervision's risk analysis units, which perform investigations on the basis of the current supervision plan.

#### *Objectives of the supervision*

Finansinspektionen is an authority responsible for the supervision of financial markets, marketplaces and financial companies. Its overall objective is to contribute to the stability and efficiency of the financial system and to work for effective consumer protection. In order to achieve these goals, Finansinspektionen draws up rules for financial operations, grants licenses, exercises supervision and

<sup>41</sup> IMF "Sweden: Financial System Stability Assessment, including Reports on the Observance of Standards and Codes on the following topics: Monetary and Financial Policy Transparency, Banking Supervision, Securities Regulation, Insurance Regulation, and Payment Systems". IMF Country Report no 02/161, August 2002, point 55, s. 23.

<sup>42</sup> Entities participating in clearing operations on behalf of a third party must be either financial institutions under the supervision of Finansinspektionen or foreign companies under equivalent supervision in their country of domicile. Clearing participants only participating in clearing activities for their own benefit and who are not under the supervision of FI or equivalent supervision in their country of domicile are obligated to provide information on circumstances affecting participation in clearing activities when requested by FI.

■ analyses changes in the external environment. Among other entities, companies under the supervision of Finansinspektionen include banks and other credit institutions, securities companies, trusts and fund management companies, stock exchanges, clearing organisations and insurance companies.

Risks in the financial sector are not spread evenly as these companies are of varying size and type. Consequently, Finansinspektionen applies a supervisory strategy in which risk assessment is conducted in two stages:

- Financial companies are initially categorised on the basis of their significance on the financial market. Both the scope and direction of the operations are considered.
- Following this, an assessment is made of the likelihood of disruptions in the company, with consideration being taken of risk of contagion, among other factors. The companies are subsequently divided into four different categories on the basis of size and operative content. Finansinspektionen's assessment of any acute problems or more long-term risks of disruption subsequently determine the intensity of the supervision and the analyses and supervisory measures to be undertaken.

At present, the most highly prioritised companies are the four major banking groups, NOMX STO and VPC. Each of these is deemed to have a significant impact on the financial market and is thus subject to more comprehensive investigations and supervisory measures.

Finansinspektionen's overall objectives and operational focus are presented in the annual report and operational focus documentation, among others. These and other documents are available on the website ([www.fi.se](http://www.fi.se)). The website also presents various supervisory reports, for example the annual report on the stability of the financial sector. The report "Clearing and settlement risks" (FI Dnr 02-3436-000) describes the settlement risks existing in systematically important institutions, the manner in which supervision of these is conducted and the manner in which such supervision should be conducted in future in order to guarantee compliance with regulations and requirements placed by international standards. Furthermore, the allocation of roles between Finansinspektionen and the Riksbank is discussed.

#### *Current reporting to the authority*

Finansinspektionen regularly meets with representatives of NOMX STO to review all changes in operations, according to a fixed agenda, covering, amongst other points, changes in products and services, organisation, systems and rules and regulations. NOMX STO reports financial information to FI each quarter. In accordance with Finansinspektionen's general advice, NOMX STO has a reporting obligation as regards significant events, such as a failure by NOMX STO to fulfil its commitments to its clients or the occurrence of faults in the technical systems. This reporting obligation is also undertaken for operations outsourced by NOMX STO. One prerequisite for outsourcing is that Finansinspektionen has full insight, via NOMX STO.

#### *Cooperation with foreign authorities*

Finansinspektionen has signed special agreements with the Finnish and Danish supervisory authorities, Rahoitustarkastus (the Finnish Financial Supervision Authority)<sup>43</sup> and Finanstilsynet (the Danish Financial Supervisory Authority), regarding collaboration in the supervision of the stock exchange and clearing activities of the NASDAQ OMX Group. The aim of this collaboration is to ensure effective and comprehensive insight. The authorities hold regular meetings for the exchange of information, to consult in cross-border matters and to perform joint investigations.

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<sup>43</sup> As of 1 January 2009, the Finnish supervisory authority, Rahoitustarkastus, has changed its name to Finanssivalvonta (the Finnish Financial Supervisory Authority).

## The Riksbank

NASDAQ OMX DM is significant for the stability of the financial system, and thereby for the supervisory work of the Riksbank, due to its function as a central counterparty in the clearing of derivative financial instruments.

### *Monitoring*

The basis of the Riksbank's supervisory role is formed by the Sveriges Riksbank Act<sup>44</sup>, according to which the Riksbank is responsible for the promotion of a safe and efficient payment system. In addition, the Riksbank is to act as a lender of last resort, providing emergency liquidity assistance in the form of credits granted under special terms and conditions. The Sveriges Riksbank Act also provides the Riksbank with the right to demand from institutions any information the Riksbank deems necessary for its supervisory activities.

The Riksbank has defined two overall objectives from the responsibilities stipulated by the Sveriges Riksbank Act. The Riksbank is to act to reduce the risk of any crisis arising in the Swedish financial system, thereby also reducing the risk of being required to support institutions with emergency liquidity assistance. If, despite everything, a crisis should develop, the Riksbank should have the ability to manage the crisis at the lowest cost possible - that is to say, the Riksbank should have a satisfactory crisis management capacity.

The Riksbank's supervision of the systematically important financial infrastructure constitutes a central element of its work in reducing the risk of a financial crisis. An analysis of the risks arising in the clearing and settlement of payments and securities transactions forms the basis of this supervision. In its supervisory work, the Riksbank identifies the extent to which such risks have been managed through market practice or via the development of rules, regulations and routines or technical systems. If the Riksbank identifies deficiencies in risk management, the Riksbank attempts to initiate appropriate changes or an investigation to identify the measures to be implemented. However, the Riksbank does not have the legal possibility of requiring market players to undertake any action. Instead, the Riksbank attempts to enjoin players to act by means of so-called "moral suasion"<sup>45</sup>. Two expressions of this moral suasion are the publication of evaluations and the presentation of the results of the supervisory work in the Riksbank's report *Financial Stability*.

The Riksbank has made the assessment that NASDAQ OMX DM is systematically important in its role as central counterparty in derivative clearing, despite the fact that the amounts handled are relatively small. The basis for this assessment is that the counterparty risks that the parties in a transaction would have had towards each other have, instead, been assumed by NASDAQ OMX DM in conjunction with clearing, when NASDAQ OMX DM act as central counterparty. Accordingly, there exists a risk that disruptions in NASDAQ OMX DM will be spread to other institutions and other areas of the payments system. All derivative financial instruments traded on NASDAQ OMX DM are automatically cleared in NASDAQ OMX DM's system. Consequently, parties trading with these derivatives have no alternative but to utilise NASDAQ OMX DM's central counterparty service. Consequently, as a part of its supervision of the financial infrastructure, the Riksbank annually evaluates NASDAQ OMX DM's operations as central counterparty in the clearing of derivatives, in accordance with CPSS and IOSCO's international standards, *Recommendations for Central Counterparties*.

In its supervision of NASDAQ OMX DM, the Riksbank strives to ensure that NASDAQ OMX DM manages counterparty risks in a sound manner, at the same time as it has firm financial resources and routines minimising settlement risks. The assessment of NASDAQ OMX DM's role as central counterparty against CPSS-IOSCO's *Recommendations for Central Counterparties* forms a significant

<sup>44</sup> Section 4 of the Sveriges Riksbank Act (1988:1385).

<sup>45</sup> "Moral suasion" entails informal pressure, as opposed to formalised forcible means.

portion of the Riksbank's supervisory work. In the event that risks or efficiency losses are identified, these are highlighted in order to allow appropriate changes to be implemented.

At the Riksbank, the Financial Infrastructure Division of the Financial Stability Department works with the supervision of the financial infrastructure. Of the total of nine individuals working within this unit, three work with clearing and settlement issues. In addition, specialist skills within the areas of risk management, law and IT are available within the Riksbank.

The Riksbank published a general description of its role in 1995<sup>46</sup>. A presentation of the Riksbank's view of its mandate was published in 1997<sup>47</sup> and a description of the Riksbank's roles as supervisory body was published in 2001<sup>48</sup>. Both of these publications, as well as speeches and responses to consultations dealing with the financial markets, are available from the Riksbank's website. Furthermore, the result of the Riksbank's work on the supervision of NASDAQ OMX DM is presented annually in the *Financial Stability* report. The complete results of the evaluation of NASDAQ OMX DM are also available on the Riksbank's website.

### *Collection of information*

Pursuant to the Sveriges Riksbank Act, the Riksbank has the right to demand any information that the Riksbank deems necessary to the pursuit of its mandate. In order to collect this information, the Riksbank utilises:

- Quarterly meetings, at which representatives of the Riksbank meet with representatives of NASDAQ OMX Stockholm to discuss NASDAQ OMX DM's operations as central counterparty. These meetings focus upon NASDAQ OMX DM's operations, systems maintenance and risk management.
- Analyses of the availability of the clearing system SECUR in the RIX system. As the cash settlement of NASDAQ OMX DM is effected in the Riksbank's payment system, RIX, the system's technical robustness can be analysed on the basis of accessibility in RIX.
- An annual evaluation of NASDAQ OMX DM as central counterparty, in accordance with international standards. This entails the annual update by NASDAQ OMX Stockholm of the information provided to the Riksbank for this purpose.

Within the framework of its international work, the Riksbank also actively participates in the gathering of information and statistics for various purposes.

### **Cooperation between the Riksbank and Finansinspektionen**

In 2003, the Riksbank and Finansinspektionen signed an agreement covering cooperation in issues of financial stability. In 2005, this agreement was reviewed, among other matters, to also include the Swedish Ministry of Finance. This agreement has enabled the authorities to unite over guidelines for consultations and the exchange of information in their work on financial stability and crisis management.<sup>49</sup>

In the autumn of 2005, the Riksbank and Finansinspektionen decided to extend their collaboration to include a joint evaluation of the Swedish clearing and settlement systems.<sup>50</sup> Accordingly, the authorities' collaboration has been intensified by means of a more comprehensive exchange of both information and working methods. However, the Riksbank and Finansinspektionen are in agreement that this collaboration can be further improved so as to streamline both oversight and supervision.

<sup>46</sup> Financial Market Report 1995:1.

<sup>47</sup> Financial Market Report 1997:1.

<sup>48</sup> Martin Andersson, Gabriela Guibourg and Björn Segendorf, *Riksbankens roll som övervakare i den finansiella infrastrukturen*, (The role of the Riksbank as monitor of the financial infrastructure) Penning- och valutapolitik 2001:3.

<sup>49</sup> See [www.fi.se](http://www.fi.se) and [www.riksbank.se](http://www.riksbank.se).

<sup>50</sup> Cooperation takes place in the evaluation of NASDAQ OMX DM's derivative clearing, Bankgirocentralen BGC AB's payment system and the evaluation of securities settlement at VPC.

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