17 August 2010

Cooperation agreement
on cross-border financial stability, crisis management and resolution between relevant Ministries, Central Banks and Financial Supervisory Authorities of Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden

INTRODUCTION

1. This agreement is based on the following considerations:

   a. The Finance Ministries and other relevant ministries, Central Banks and Financial Supervisory Authorities of Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden (the Parties) recognise that there are common financial groups with significant activities in all their countries. The Parties further recognise that they therefore have common financial stability concerns stemming from potential systemic inter-linkages between their respective countries, justifying enhanced cooperation in financial crisis prevention, management and resolution.

   b. This agreement is specifically designed to facilitate the management and resolution of cross-border systemic crises, potentially affecting the stability of the financial sectors in their respective countries. The ultimate objective of such cooperation is safeguarding the smooth functioning of the financial system and avoiding spreading of a financial crisis as well as minimizing overall costs of a financial crisis. Financial problems of a purely domestic nature are not covered by this agreement.

   c. This agreement is in accordance with the responsibilities specified in the EU-wide MoU of June 2008[1]. Furthermore, the present agreement does not change the content of the EU-wide MoU but builds on it and expands it in a number of ways.

DEFINITIONS

2. For the purpose of this agreement, the following definitions are used:

   a. The **Parties** are defined as the Signatories to this agreement i.e. Financial Supervisory Authorities, Central Banks, Finance Ministries and other Ministries of the Signatory Countries according to their national competencies.

   b. **The Signatory Countries** are Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden.

   c. The **Relevant Parties** are those Parties that form a cross-border sub-set of the above signatories whose policy-making functions are or may be significantly affected by a specific financial crisis situation or that form a sub-set that is defined according to the operating area of the Relevant Financial Group.

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[1] Memorandum of Understanding on Cooperation between the Financial Supervisory Authorities, Central Banks and Finance Ministries of the European Union on Cross-Border Financial Stability of 1 June 2008

d. A **Financial Group** is any financial institution, including bank and/or banking group and/or insurance undertaking and/or insurance group and/or financial conglomerate and/or investment firm and/or occupational pension fund, with significant branches or subsidiaries in Host countries or which may be important in several Signatory Countries.

e. A **Relevant Financial Group** is a Financial Group with significant activities in more than one Signatory Countries relevant to the specific situation.

f. The **Home country** is the Signatory Countries where the parent company of the Relevant Financial Group is chartered.

g. The **Host countries** are, for the purpose of this agreement, the Signatory Countries where the Relevant Financial Group has subsidiaries or branches.

h. The **Domestic Standing Group (DSG)** is a group which consists of the competent Financial Supervisory Authorities, the Central Bank, and the Finance Ministry and other relevant parties at the national level, with the objective to enhance preparedness in normal times and facilitate the management and resolution of a financial crisis. Such a group could be extendable to other relevant bodies.

i. The **Nordic-Baltic Cross-Border Stability Group (NBSG)** consists of representatives from the Parties of the authorities from the Signatory Countries, with the objective of preventing a financial crisis, enhancing preparedness for and facilitating the management and resolution of a cross-border financial crisis.

j. **College of Supervisors** is a permanent, although flexible, structure for cooperation and coordination among supervisors responsible for and involved in supervision over the different components of a cross-border Financial Group.

k. **A financial "crisis"** is, for the purpose of this agreement, defined as a situation starting from the emergence of a disturbance, regardless of its origin, affecting the stability of the financial system in one or several Signatory Countries with a direct or indirect potential cross-border systemic impact in other Signatory Countries and involving at least one Financial Group or financial infrastructure, which (i) has substantial cross-border activities and (ii) is facing severe problems which are expected to trigger systemic effects in at least one Signatory Country; and (iii) is assessed to be at risk of becoming insolvent or illiquid.

OBJECTIVE AND NATURE OF THE AGREEMENT

3. The Parties have signed this agreement in recognition of the fact that a financial crisis involving a Relevant Financial Group could pose a threat to the stability of the financial system in several of their countries. The Parties therefore commit themselves to best efforts to follow the spirit of this agreement when cooperating in the management and resolution of a crisis situation.

4. The objective of this agreement is to ensure that the Parties are prepared to deal with the financial crisis situations by agreeing in advance on procedures for cooperation, sharing information and assessments as well as for the crisis management and resolution of cross-border crises. To help prevent financial crises, cooperation will be enhanced also in normal times, as appropriate.

5. While recognising that the responsibility for the management and resolution of financial crises remains with the individual authorities, the Parties will, as far as possible, voluntarily coordinate their decisions and actions and take account of each others' needs and problems. The aim is to reduce to a minimum overall financial crisis costs and, when relevant and possible, to share them in a balanced and equitable manner.

6. This agreement is not legally binding. Therefore its provisions may not give rise to any legal claim on behalf of any party or third parties in the course of their practical implementation.

7. The provisions of this agreement do not prejudge or assume that any particular decisions or remedies should or should not be taken.

8. Cooperation among the Parties will take place in accordance with, and without prejudice to, their responsibilities under national and Community legislation. This agreement does not override the respective institutional responsibilities of the different Parties or restrict their capacity for independent and timely decision-making in their respective fields of competence, notably with regard to the conduct of day-to-day ministry, central banking and supervisory tasks.

9. The Parties recognise the different responsibilities of Financial Supervisory Authorities, Central Banks and Finance Ministries and their roles at different stages of a financial crisis. Depending on the nature and severity of the financial crisis, cooperation may therefore require the intervention of different authorities of the Signatory Countries. This must not impair the flow of information between the Relevant Parties.

10. The Parties recognise that certain financial crises may require EU-wide or international cooperation with authorities from other countries than the Signatory Countries. When needed, such cooperation can be agreed on a case by case basis.

GENERAL PROVISIONS

11. The Parties agree that the Common Principles for cross-border crisis management included in the EU-wide MoU of June 2008 should guide their actions in any financial crisis management and resolution.

12. The Parties agree to cooperate closely in good faith and to the best of their ability, including through exchange of relevant information and assessments, with the aim of reaching an efficient and coordinated management and resolution of a financial crisis.

13. The Parties agree that if any public resources are involved in solving the crisis, direct budgetary net costs should be shared among affected Signatory Countries on the basis of equitable and balanced criteria, which take into account the economic impact of the crisis in the countries affected and the framework of Home and Host countries' supervisory powers. A preliminary framework for addressing this issue is included at Annex A. The Parties note, however, that any arrangements to share the costs of the crisis are the task and responsibility of Finance Ministries or other Ministries signing this agreement, and not the task or responsibility of the other Parties.

14. The Parties agree that, if any public costs are shared as a consequence of a financial crisis, such costs will be shared when incurred. Any benefits accruing from subsequent asset sales or similar resolution actions will also be shared accordingly.

NORDIC-BALTIC CROSS-BORDER COOPERATION STRUCTURE

15. The Parties will establish a cooperation structure to handle common stability issues and with the aim to resolve financial crisis and potential financial crisis situations efficiently.

16. The Parties will establish a Nordic-Baltic **Cross-Border Stability Group (NBSG)**, composed of one representative of sufficient seniority from each of the Parties. The representatives should be members of, or at least liaise with, their Domestic Standing Groups (DSG). The functions and tasks of the NBSG complement those of other cooperative structures.

17. The Chair of the NBSG will be chosen among the Finance Ministry representatives of the Home Countries.

18. In normal times, the NBSG will meet regularly, at least once a year. Extraordinary meetings may be requested by any of the Parties giving a specific reason and having consulted the respective DSG. The Chair will arrange meetings without delay. The Chair will organize the practical procedures for the work of the NBSG.

19. The NBSG may establish permanent or ad hoc Sub-Groups to deal with specific stability and financial crisis management issues or with issues relating to a Relevant Financial Group. The NBSG may invite representatives from third countries, committed to the principles of this agreement, to

participate to the work of a Sub-Group on a regular or ad hoc basis. The Sub-Groups will report to the NBSG.

20. The main tasks of the full NBSG are to implement and efficiently apply the provisions of this agreement, with the aim of fostering an efficient and sufficiently detailed process for cooperation in the financial crisis management and resolution. More specifically the NBSG will be responsible for:

    a. updating and agreeing on a list of Relevant Financial Groups, as well as how these groups are present in the Signatory Countries and other countries concerned;

    b. keeping up-to-date the necessary database for financial and other relevant information regarding the Relevant Financial Groups (at Annex B);

    c. identifying perceived legal and other possible obstacles for coordinated decision making and joint solutions and encouraging authorities to work on removing them;

    d. considering, to the extent agreed, alternative workable joint crisis management tools and crisis resolution mechanisms;

    e. adopting the suggested information sharing templates and assessment procedures (at Annex C);

    f. developing rules and procedures for external communication, for press, EU institutions, and for third countries;

    g. establishing procedures for cooperation of the NBSG with third countries, where the Relevant Financial Groups have significant activities. This may have to be done on the institutional basis;

    h. developing and updating criteria and models for possible sharing of net budgetary resolution costs;

    i. initiating and evaluating stress tests and crisis simulations;

    j. agreeing on the tasks of the NBSG Sub-Groups and monitoring how the NBSG Sub-Groups take part and assist in preventing and managing financial crisis situations.

COOPERATION IN CRISIS SITUATIONS

21. The Party that first identifies a potential cross-border crisis shall:

    a. inform the Relevant Parties of the situation; and

    b. request a meeting of the NBSG or a NBSG Sub-Group including the Relevant Parties. The Party will, in parallel, activate the respective DSG, with the purpose of information sharing and, inter alia, to reach a joint assessment of the impact of the crisis on the domestic financial system.

22. Once requested by one of the members of the NBSG, the Chair of the NBSG shall organise a meeting of the NBSG, or in case of Sub-Group the meeting shall be organised by the Chair of the Sub-Group.

23. In the event of a financial crisis or emerging financial crisis, the NBSG and the relevant Sub-Group will, as far as practical:

    a. ensure that the Relevant Parties use the assessment framework attached to this agreement (at Annex C) with the aim of producing a joint assessment or a common view on the Relevant Financial Group and situation;

    b. ensure that the Relevant Parties aim at a coordinated response to the financial crisis;

c. ensure that the Relevant Parties inform and consult each other before taking any significant policy action;

d. fulfil any other functions deemed proper by the Relevant Parties.

24. In the event of a financial crisis or an emerging financial crisis, the NBSG and any possible Sub-Group may furthermore have an advisory and supportive function to the extent deemed appropriate by an individual Relevant Party. Specifically, the NBSG may, at the request of the Relevant Party concerned:

a. be instrumental in the fulfilment of the tasks in paragraph 20;

b. prepare the crisis resolution discussions between the Relevant Parties;

c. assist in the implementation of the outcome of any financial crisis resolution discussions;

d. assist the Relevant Parties in any other way as requested.

The responsibility for the management and resolution of any financial crisis as well as for any decisions taken, however, rests with the individual Relevant Parties.

PUBLIC COMMUNICATION

25. The Relevant Parties are committed to inform each other, as early and fully as possible, before issuing any public statements related to this agreement or on issues covered by it. If the communication relates to any public support to a Relevant Financial Group, the Relevant Parties also agree to coordinate such communication with the Financial Group.

26. The Relevant Parties are committed to jointly draft public statements even in cases where only one Party makes the statement. Only in cases of overriding and sudden public need any Party may issue separate statements before consulting all other Parties.

CONFIDENTIALITY

27. The Parties agree that any information exchanged and received by virtue of the application of the provisions of this agreement is subject to conditions of confidentiality and professional secrecy as provided in Community and national legislation. The Parties will ensure that all persons dealing with, or having access to, such information are bound by the obligation of professional secrecy.

28. The Parties will maintain, vis-à-vis third parties, the confidentiality of any request for information made under this agreement, the contents of such requests, the information received, and the matters arising in the course of cooperation without prejudice to relevant Community and national provisions.

EXTENDING THE SCOPE OF AGREEMENT

29. The Parties agree that the scope of this agreement may need to be extended. If the activities of the Relevant Financial Groups become significant in any third country the Parties may invite the relevant Authorities of that country to participate in the work of a possible institution-specific NBSG Sub-Group.

ENTRY INTO EFFECT

30. This agreement shall enter into effect upon signature.

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Signatories

Finance Ministries:

Finansministeriet, Denmark

Økonomi- og Erhvervsministeriet, Denmark

Rahandusministeerium, Estonia

Valtiovarainministeriö, Finland

Ministry of Finance, Iceland

Ministry of Economic Affairs, Iceland

Finanšu Ministrija, Latvia

Lietuvos Respublikos Finansų Ministerija, Lithuania

Finansdepartementet, Norway

Finansdepartementet, Sweden

Central Banks:

Danmarks Nationalbank, Denmark

Eesti Pank, Estonia

Suomen Pankki, Finland

Central Bank of Iceland

Latvijas Banka, Latvia

Lietuvos Bankas, Lithuania

Norges Bank, Norway

Sveriges Riksbank, Sweden

Financial Supervisory Authorities:

Finanstilsynet, Denmark

Finantsinspektsioon, Estonia

Finanssivalvonta, Finland

Financial Supervisory Authority, Iceland

Finanšu un Kapitāla Tirgus Komisija, Latvia

Lietuvos Respublikos Vertybinių Popierių Komisija, Lithuania

Lietuvos Respublikos Draudimo Priežiūros Komisija, Lithuania

Finanstilsynet, Norway

Finansinspektionen, Sweden

ANNEX A TO THE NORDIC-BALTIC AGREEMENT

PRELIMENARY FRAMEWORK FOR BURDEN SHARING

1. The Parties, having a common interest in financial stability, agree to discuss various possible methods for the sharing of costs relating to the management of a cross-border financial crisis, which may be used as a starting point if the Finance Ministries or parties designated by them agree to discuss a joint solution and cost sharing.

2. Costs to be shared include only costs that relate to jointly agreed and implemented crisis management actions by the Relevant Parties. Costs relating to unilaterally taken measures may be included only if Relevant Parties agree. Any sharing shall not constitute a prejudice for future possible decisions on cost sharing.

3. Costs incurred as part of broader crisis prevention programs shall not be included unless explicitly agreed. Prevention programmes include any unilateral measures decided by the Signatory Countries where the Signatory Countries assume the full right for the proceeds from these measures as well as the sole responsibility for any costs incurred.

4. Provided that crisis prevention and management measures are jointly agreed by the Relevant Parties with the understanding that the provisions of this agreement will apply to these measures, the costs to be shared will include the following, unless otherwise agreed by the Relevant Parties:
   - direct support provided from the government budget, for instance, in form of capital injection;
   - direct support provided by any special vehicle mandated by the government;
   - guarantees and other risks accepted by the government or such a vehicle;
   - asset relief measures or transfers of assets from an institution implemented by the government;
   - less eventual repayments and recoveries as well as payments for guarantees and risks eventually transferred to the government.

   Macro-financial loans or any type of budget assistance between the Signatory Countries or interest subsidies on such loans will not be counted as support.

5. When evaluating the cost, Parties will take account of the underlying nature of any cost and its impact on government budget streams rather than its formal or judicial nature.

6. Unless otherwise agreed, the cost sharing calculation (the “Model”) is based on two factors:

   a) the relative importance of the Relevant Financial Group (either parent, subsidiary or branch) in the countries as measured by asset shares (summing to 100%), and

   b) the supervisory responsibilities for the same institution in the same countries (summing to 100%).

7. Relative importance is calculated on the basis of the amounts of assets located in the countries concerned. These assets will be risk weighted in order to take account of their possible impact in a crisis situation. Other relevant factors may be included on a case by case basis when calculating the relative importance of an institution using the process in paragraph 20.h.

8. The assets used in the Model are calculated using the latest official balance sheet figures of at least 12 months earlier. Only the elements of credit risk that can be easily attached to customers in various countries are taken into account. The other risk factors, such as market and operational risks are borne by the parent institution in the Home country.

9. Supervisory responsibility depends on the factual supervisory responsibilities and powers and the weights will be jointly suggested by the Supervisors concerned. A Home country status, with full and exclusive powers to act and influence Host (branch) country activities is given a full 100% weight in the Model. If a college structure is in operation (subsidiary), the relative Home country weight will be less than 100%. The NBSG will regularly review the extent of supervisory cooperation – on the basis of number of college meetings and/or tasks delegated - and from that derive the possible need to change weighting shares.

10. The two above factors in paragraph 6 are each given an equal weight, the sum of these shares providing each country with a cost reference weight. Costs are distributed among countries according to the relative size of these reference weights. Alternative weightings may be agreed using the process in paragraph 20.h.

11. Qualitative exacerbating and mitigating factors, which may change with time, will be assessed by the Parties and may be used to amend the mechanical outcome from the Model calculation:

    Exacerbating qualitative factors, which increase the share of costs to be carried by a country, are:

    - the systemic importance of the institution in the country describe, for instance, by market shares or importance in payment systems;

    - the share of problem assets of the institution associated with the country;

    Mitigating qualitative factors, which reduce the share of costs to be carried by a country, are:

    - superior general crisis preparedness in the country concerned;

    - proven early detection and communication of emerging problems by the country's authorities;

    - proven efforts to explicitly prevent problems from becoming cross-border;

    - the proven role of different Parties in adequately preventing the emerging crisis; and

    - exceptional consequences for government fiscal balances and credibility.

12. Agreed final cost shares, after the agreed amendments, are applied for distributing budgetary costs as well as any payments, repayments, recoveries or other return of shared public funds expended. Such returns will be distributed when received using the same calculations as for the initial costs.

13. The NBSG will, on a regular basis and as soon as possible, establish preliminary cost shares as envisaged in the Model for the Relevant Financial Groups. The existence and impact of exacerbating and mitigating factors will be documented. In a crisis situation, the NBSG will, as a matter of priority, assess and modify the preliminary shares in view of the particulars of that crisis.

14. Any cost shares established by the NBSG will be strictly preliminary in nature and do not prejudge any final decisions to be possibly made by the responsible decision-making Authorities in participating countries. Such calculated shares should, however, be jointly presented to these Authorities when agreed, together with careful documentation and argumentation, in order to facilitate discussions and assessment of shares between them.

ANNEX B TO THE NORDIC-BALTIC AGREEMENT

CONTENT OF THE COMMON DATABASE

According to paragraph 20.b one of the tasks of the NBSG is to create a **common database** structured in two parts, one with publicly available actual data and one part for confidential data in the form of a template database:

1. The NBSG shall ensure that the database with **publicly available** data is updated in a timely fashion at least yearly with the most recent and reliable information available, and including at least the following items:

    a. a concise description of ownership, legal structure, management structure and key business areas of,

    b. a list of all the relevant major payment, clearing and settlement systems for,

    c. the financial position (including income statement and balance sheet) of at least the last five years of,

    the Relevant Financial Group and subsidiaries and branches in the Signatory Countries.

2 A **template** for crisis data (but which does not necessarily contain any actual data in normal times), would include at least the following items:

    a. the relevant supervisor’s assessment of the projections of revenues and costs,

    b. the relevant supervisor’s assessment of the quality of the assets and liabilities,

    c. the liquidity position, including relevant cash flow projections, funding structure, collateral buffers and intra-group lending,

    d. the size of the large exposures, at least according to region, collateral used, type of customer and currency,

    e. the size, nature and extent of the problem at hand, e.g. bad loans etc., and

    f. the legal domicile of the major assets and off-balance sheet items

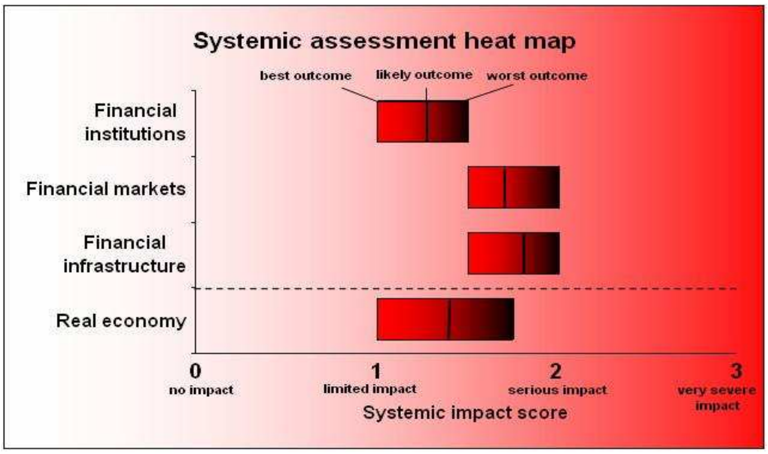
    of the Relevant Financial Group and all its different parts.

The required data should, where appropriate, be in line with the data reporting under the Capital Requirements Directive.

ANNEX C TO THE NORDIC-BALTIC AGREEMENT

TEMPLATE FOR A SYSTEMIC ASSESSMENT FRAMEWORK

Section 1: Summary assessment



Note: The colour shading in the chart indicates the degree of impact (light=low; dark=high).

The **heat map** and its **key underlying assumptions** (e.g. assessment time frame, with/without intervention)

Overall assessment of the impact on the domestic financial system and the domestic real economy

Uncertainty relating to the assessment; **"worst case"** assessment

Most relevant policy issues if the overall disturbance is serious

Key supporting elements for the assessment (discussed in greater detail in the following sections)

Main cross border contagion channels (discussed in greater detail in Section 6)

Section 2: Summary of events

Characteristics of the crisis: (i) size and nature (idiosyncratic or general) of the shock, (ii) expected pace (fast-moving or slow-moving) of the crisis, (iii) affected financial systems and their constituent components (institutions, markets, infrastructure)

Present state of the financial system and the real economy

Measures already taken or under consideration by: (i) the private sector, (ii) domestic authorities, (iii) foreign authorities

Section 3: Financial institutions

Most relevant **policy issues** if the disturbance is serious

Supporting elements for the assessment of the **critical nature** of the affected parts (see the table "*Examples of indicators for assessing the critical nature of the financial system's parts*" – hereafter "*Table*"); their **extent of disturbance** (possible indicators: shortage in liquidity, loss of capital, fall in future profits, market sentiment/depositor confidence); and risk mitigants of a financial (e.g. capital buffers), legal (e.g. collateral, netting) or institutional nature (e.g. deposit insurance, shareholder structure)

Section 4: Financial markets

Most relevant **policy issues** if the disturbance is serious

Supporting elements for the assessment of the **critical nature** of the affected parts (see *Table*); their **extent of disturbance** (possible indicators: bid-ask spreads, market turnover, price volatility, price information, liquidity risk premiums, market sentiment); and risk mitigants of a legal (e.g. collateral, netting) or institutional nature (e.g. central counterparties, regulation/supervision)

Section 5: Financial infrastructure

Most relevant **policy issues** if the disturbance is serious

Supporting elements for the assessment of the **critical nature** of the affected parts (see *Table*); their **extent of disturbance** (possible indicators: recovery time, pending transactions, critical dependency transactions); and risk mitigants of a technical (e.g. back-up systems), legal (e.g. collateral, netting) or institutional nature (e.g. central counterparties, oversight)

Section 6: Contagion channels

[Brings together the contagion elements discussed in Sections 3 to 5; see the overview table in the user guide for the main possible channels]

Overall assessment of the contagion effects

Main **financial institutions, markets and infrastructures affected** through real/exposure-based or information-based contagion channels and their vulnerability

Cross-border dimension in the contagion channels

Section 7: Real economy

Most relevant **policy issues** if the disturbance is serious

Supporting elements for the assessment of the **financial losses of non-financial economic agents** (possible indicators: losses on uninsured deposits, market losses on assets) and the **restricted access of non-financial economic agents to financial services** (possible indicators: pay-out time for insured deposits, sector/regional lending concentrations for banks, market share of non-financial corporations in affected financial markets)

User guide

Policy background. In a crisis authorities will be confronted with two basic questions: *whether to intervene*, and if so *how to intervene* (e.g. through facilitating a private sector solution, public statements, liquidity support and recapitalisation). As a rule, the handling of a crisis and its resolution are primarily the responsibility of the institution(s) involved. *Public intervention, in particular when public money is at risk, should only occur when there is a clear systemic risk*, i.e. when there is a serious disturbance of the financial system that, as a result, may have a major impact on the real economy. The purpose of the template is to provide a *common language* to authorities when they discuss such systemic assessments and the possible effects of related policy measures in a cross-border context. In this way, it enables them to address more clearly any differences in their views on the impact of the crisis and reduces the risk that under the pressure of circumstances they might start discussing how to resolve a crisis before assessing its potential impact. A formal assessment, backed-up by supporting material, further enhances the authorities' accountability for any recommendations made.

Scope assessment. The assessment should be made from the perspective of the *domestic financial system*, composed of financial institutions, markets and infrastructure, and the *domestic real economy*. The domestic financial system needs to be defined with reference to those parts that have the potential to disturb the domestic real economy. In defining the financial system's three components, one should be wary of possible overlaps (resulting in double counting) and gaps. The real economy assessment should only include the effects of the crisis intermediated via the domestic financial system and via foreign financial systems (e.g. direct lending from abroad). In principle, *all foreseeable effects* should be taken into account, although the further away in time the effects are, the greater the uncertainty. Hence, it might be useful to differentiate between short-term and long-term effects.

Prioritisation in the assessment. In the case of a rapidly unfolding crisis, one may need to focus the assessment on the most critical parts of the financial system. These are likely to be the *(major) banks*, the *markets they use for their daily funding and active balance sheet management*, and the *related infrastructure* (e.g. large value payment systems). In such a situation, one may also need to place more reliance on qualitative judgements rather than on up-to-date quantitative information.

Factors influencing the assessment. The assessment of the *financial system's* components should reflect the *critical nature* of their affected parts and their *extent of disturbance*. For both factors, a number of possible indicators can be used. The *extent of disturbance* will be influenced by the presence of *risk mitigants*. Two main criteria are relevant for a part's *critical nature*: (i) its role in performing the *key financial functions* (executing payments, matching savings to investments, managing financial risks) and (ii) its *main users*. Three additional criteria can be used to further differentiate the affected parts: (i) the part's *activity level* ("size"), (ii) the *availability of alternatives* ("substitutability") within a reasonable time/at a reasonable cost and (iii) its *linkages* with other parts. For the *real economy*, relevant factors are the *reduction in the financial wealth* of non-financial economic agents and their *restricted access to financial services*.

Systemic impact score. The score is a decimal number that *reflects the assessment of the impact* of the crisis on the components of the financial system and the real economy relative to four base cases: 0 (no impact), 1 (limited impact), 2 (serious impact), 3 (very severe impact). The score should take into account both the state of the financial system and the real economy before the crisis and the additional impact of the crisis. For example, when the financial system is already in a weak shape, the effect of a crisis is likely to be bigger (higher score) than if the financial system is robust (lower score). The score should be supported as much as possible by quantitative information. The four separate scores are graphically represented in a "*heat map*". The heat map is a snapshot in time and one may need to construct a series of maps over the life of a crisis. Moreover, an initial assessment that is relatively benign can quickly change if vulnerabilities are present in the financial system or the real economy. Authorities should therefore be careful not to overlook elements that are not fully captured by the map.

Range of the score. The score is a reflection of an assessment which involves a significant degree of uncertainty and discretion. A range can be defined for each score *reflecting the uncertainty relating to the assessment*, with the lower boundary corresponding to a "best case" scenario and the upper boundary to a "worst case" scenario. Authorities may try to attach a qualitative likelihood (e.g. "most likely", "very unlikely") to the scenarios. Given the large potential costs associated with a systemic *financial crisis*, authorities should pay particular attention to the *worst case scenario*.

Contagion channels. These are the *real/exposure-based or information-based* channels through which shocks can be transmitted between various parts of the financial system. They should be explicitly considered in the assessment, in particular their *cross-border dimension*, as they are often crucial in times of crisis. The following table might be helpful in identifying the main channels.

		Main possible contagion channels		
		T O		
		Institutions	Markets	Infrastructure
		- Shareholder links	**- Core market participant**	**- System operator**
		- Credit risk exposures		**- Participant/access provider**
	Institutions	**- Revenue/service channel**		**- User for own/customer business**
F		**- Information channel**		
		- Deposit insurance		
R		**- Liquidity management**	**- Arbitrage/hedging between markets**	**- Covering counterparty exposures with collateral**
O	Markets	**- Trading and investment portfolio management**	**- Information channel**	
		- Credit risk management		
M		**- Revenue/service channel**		
	Infrastructure	**- Executing transactions for own or customers' account**	**- Trading facility**	**- Technical links**
		- Liquidity management	**- Trading execution**	**- Supporting services channel**
		- Counterparty and systemic risk management	**- Clearing and settlement**	**- Collateral channel**
		- Revenue/service channel	**- Risk management (e.g. margins for market risk in central counterparties)**	

Note: This list of contagion channels is for illustrative purposes and is not exhaustive.

EXAMPLES OF INDICATORS FOR ASSESSING THE CRITICAL NATURE OF THE FINANANCIAL SYSTEM'S PARTS

Criterion	Key questions	Financial institutions	Financial markets	Financial infrastructure
Functions	*Is access crucial for certain economic agents to carry out their business?*	Market share in payment transactions Market share in retail deposits Market share in the lending market Market share in the branch network	Market's share of total savings/asset management Market's share of total funding Frequency of transactions Time between initiating and executing a transaction	Share of transactions executed via the system Average value of transactions executed via the system Nature of institutions/markets supported by the system
Main users	*Which economic agents are the main users?*	Sectoral breakdown of deposits and lending Volume interbank activity Volume correspondent banking Volume custodial business	Breakdown by turnover/outstanding positions according to main market participants Main market makers and their relative rankings	Breakdown by value/volume of transactions of the main types of system users Breakdown by value/volume of the own and third party transactions of the main participants
Size	*What is the level of activity?*	Total assets as a percentage of domestic GDP Market share in retail deposits and lending Market share in payment transactions Market share in the branch network	Turnover and outstanding positions, possibly as a percentage of domestic GDP	Total value (possibly as a percentage of domestic GDP)/volume transactions
Substitutability	*Are there alternatives available within a reasonable time and at a reasonable cost?*	Degree of concentration of various markets where the institution is active	Standardised/bespoke nature of instruments; relationship-intensity of instruments Volatility in the rankings of the main market makers Frequency of transactions Time between initiating and executing a transaction	Share of transactions executed via the system Volatility in rankings of the main participants Frequency of transactions Time required between initiating and executing transaction
Linkages	*Are there links with other parts and if so, how important are these links?*	Interbank exposures Intra-group exposures Exposures to countries under stress Exposures through shareholdings Ranking in markets in which the institution is a significant player Systems in which the institution participates and its share in transaction volumes Withdrawals of deposit/credit lines in other institutions	Main market makers and their ranking Breakdown by turnover/outstanding positions of main market participants Volume of derivatives market vs. underlying cash market Correlation between market shares in different markets of large financial institutions	Nature and size of markets/institutions supported by the system Technical links with other systems Type and volume of instruments (possibly as percentage of total transactions) used to mitigate counterparty risk in the system

Note: The indicators are for illustrative purposes only and may change depending on the type of financial institutions, markets, infrastructure and crisis under consideration.