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Garry J. Schinasi and Pedro Gustavo Teixeira[1]

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Abstract

The paper examines challenges in effectively implementing the lender-of-last-resort function in the EU single financial market. Briefly highlighted are features of the EU financial landscape that could increase EU systemic financial risk. Briefly described are the complexities of the EU's financial-stability architecture for preventing and resolving financial problems, including lender-of-last-resort operations. The paper examines how the lender-of-last-resort function might materialize during a systemic financial disturbance affecting more than one EU Member State. The paper identifies challenges and possible ways of enhancing the effectiveness of the existing architecture.

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I. Introduction

Financial crisis management in the single financial market of the European Union (EU) is a subject attracting increased attention. As one of the key objectives of the political, economic, monetary, and legal integration of the EU's 25 Member States, the single financial market is becoming a reality with the progressive expansion of cross-border financial services and the increased integration of national financial systems. While EU market liquidity and efficiency are no doubt improving, financial disturbances are now more likely to affect more than one Member State. Moreover, while European national financial systems are becoming systemically integrated, the EU's financial-stability architecture is still based primarily on the exercise of national responsibilities. The extent to which the EU architecture of purely national responsibilities and tasks is also capable of addressing cross-border (and perhaps pan-European) financial disturbances is often discussed and questioned, in part because it has not yet been tested.

In this context, the particular question addressed in this paper is how might the lender-of-last-resort function materialize during a systemic financial disturbance affecting more than one EU Member State. The paper is organized as follows. Section II sets out the key features of the European financial landscape that might have increased the likelihood that cross-border, if not systemic, financial disturbances would, if they occur, affect the EU. Section III very briefly describes the EU's architecture for financial crisis management. Section IV runs through the fundamental issues that are likely to arise in implementing the lender-of-last-resort function in the EU context. Section V discusses the main challenges. Section VI identifies ways forward for enhancing the effectiveness of the existing architecture.[2]

II. Systemic risk in the single financial market

The European financial landscape is in an increasing state of flux. The process of financial integration accelerated as a result of the efforts—particularly in the past 5 years—to remove barriers to cross-border business, of the resulting higher competition which is also leading to concentration, and the introduction of the euro in 1999. At the same time, integration is also leading to broader and deeper systemic inter-linkages across the EU, which increasingly represents in this respect the features of a single financial market. In particular, the following represent the transmission channels that may increase the scope for systemic risk in the EU.

Integrated financial markets and market infrastructures

Wholesale financial markets are closely and in some cases fully integrated in the EU. This applies in particular to euro-denominated unsecured money and government bond markets.

[2] In this paper, "lender of last resort" and "emergency liquidity assistance" are used interchangeably.

Bank financing remains predominant in financial intermediation. Cross-border activity takes place mainly in high-volume markets for commonly tradable financial assets, including money market instruments, corporate bonds, or in the areas of investment banking and provision of financial services. Direct cross-border provision of financial services remains very limited in the retail sector; notably, traditional lending/deposit activities are very rarely conducted across borders. Market infrastructures are also becoming increasingly integrated. The TARGET payments system, operated by the Eurosystem, represents around 90 percent of large-value payments in euros. In securities and derivatives trading, regional and EU-wide mergers and alliances, such as Euronext, are moving towards reducing the existing fragmentation. In post-trading activities, there are now established pan-European providers of clearing and settlement services, such as Euroclear and Clearstream.

Banking concentration at the domestic level

Mergers and acquisitions in the banking sector in the past decade, mostly domestic, reduced the number of credit institutions in the EU and led to high concentration ratios in many Member States, particularly the small and medium-sized ones. For instance, in Belgium, Finland, and the Netherlands, the concentration ratio of the five largest banks exceeded 80 percent (ECB 2004). More generally, the stability of the financial system in most Member States is increasingly dependent on a small number of systemically-important institutions whose size may range from half of GDP (France/Germany) to one-and-a-half of GDP (Belgium/Netherlands) (Praet 2005). Cross-border mergers and acquisitions are less significant, but are increasing since 1999 vis-à-vis a slowdown in domestic operations. Financial integration, competition, and limits to domestic concentration, as well as the introduction of the euro are the possible explanations (ECB 2005).

The emergence of pan-European banking groups with complex structures

Pan-European banking groups are emerging through cross-border mergers and acquisitions and the increasing provision of wholesale services in other Member States. Although the direct provision of services across Member States is the most cost-efficient mode of market entry, the EU's single passport for banking services has been infrequently utilized. The indirect provision of services through the establishment of subsidiaries has been the preferred mode for several reasons, ranging from the need to adapt business activities to specific national features, taxation, insulation of liability, or legal and supervisory constraints (Dermine 2003). The main implication is that the major banking groups have complex financial and institutional structures. There are around 40 major banking groups which, on average, are present in probably more than six of the 25 Member States, with some having establishments almost across the whole EU (Padoa-Schioppa 2004). The expansion of complex banking structures presents a number of inconveniences, particularly in terms of structural, capital, and compliance costs.

Centralization of business functions in banking groups

Financial integration is also providing incentives for banking groups to re-organise and centralize certain key business functions at the group and EU levels. This allows banking groups to enhance operational efficiency and rationalize costs with regard to, for instance,

back-office and strategic activities relating to financial markets. Liquidity and risk management are areas that are becoming increasingly centralized. One of the possibilities for re-organization is the merging of banks within a group into a single legal entity, which can then conduct cross-border business through the direct provision of services. As an example, the Nordea group has recently announced the adoption of the European Company Statute, which facilitates the merger of foreign entities into one. The re-organization of banking groups from complex structures into more simplified ones has a number of advantages linked to the unification of management and other internal systems, regulatory simplification, capital savings, and integrated risk management. At the same time, this will change the distribution of responsibilities between national authorities: while before all supervisors that licensed banks within a group were involved in its supervision, a unified group will be under the full jurisdiction and responsibility of a single national supervisor.

The emergence of large and complex financial institutions

Cross-sector financial activities are also intensifying in the single financial market. Major financial groups are engaging in a broad spectrum of financial services. These financial conglomerates, while for the most part combining banking and insurance services, are also involved in investment services and asset management. They are increasingly systemically significant within Europe. As a weighted average, financial conglomerates account for approximately 30 percent of the deposits and 20 percent of premium income in 15 EU Member States. In relation to assets, financial conglomerates have a considerably higher market share (European Commission 2004).

Increased foreign ownership of financial assets

The accession in May 2004 of the ten new Member States in the EU accentuated another potential transmission channel: systemic linkages between countries through cross-border ownership of financial assets. While certain regions, such as the Benelux and the Nordic countries, already presented a high degree of interdependence, the enlargement to the new Member States gave rise to considerably higher levels of linkages between banking systems. This is due to the strong presence of EU-based foreign ownership of the capital and assets of the banking systems of the new Member States, in many cases in excess of 70 percent and, in the case of Slovakia and Estonia, around 90 percent of banks' share capital (European Commission 2004). This compares with the previous EU average of 30 percent foreign ownership of banking assets/capital.

Table 1 summarizes the key transmission channels that could increase the potential that a shock affecting a financial market or banking group would be transmitted and amplified across the EU.

Table 1. Major Transmission Channels in the Single Financial Market

Integrated money markets and other financial markets
Integrated financial market infrastructures: • Payment systems • Securities clearing and settlement systems and other market infrastructures (trading systems, OTC markets)
Major banks in concentrated domestic markets
Emergence of pan-European banking groups with systemic relevance in several Member States (contagion through intragroup linkages and exposures among network of counterparties)
Centralization of business functions in banking groups
Emergence of large and complex financial institutions with systemic relevance in several Member States
Increased foreign ownership of financial institutions and assets (as intensified by the recent EU enlargement)

III. The architecture for financial crisis management

The EU's institutional architecture for financial crisis management reflects three principles: *decentralization, segmentation, and cooperation* (see Table 2).[3]

First, it is based on decentralization, since the performance of financial stability functions relevant for crisis management is based in large part on the exercise of national responsibilities by banking supervisors, central banks, treasuries and deposit insurance schemes. The European Central Bank (ECB) and the national central banks of the Eurosystem[4] have financial-stability-related responsibilities, notably in the field of oversight of payment systems and contribution to national policies on financial stability and supervision. The performance of the lender-of-last-resort function is likewise a national responsibility. This is also the case in the euro area, where the provision of emergency liquidity assistance (ELA) is under the responsibility and liability of national central banks. It is a unique circumstance in which a central bank may be providing ELA but has no monetary-policy (as opposed to monetary-operations) responsibilities. There are arrangements for an adequate flow of information within the Eurosystem in order that the

[3] Lastra (2003) uses this triad to describe financial supervision in the EU.

[4] The Eurosystem comprises the European Central Bank (ECB) and the national central banks (NCBs) of those countries that have adopted the euro. This contrasts with the European System of Central Banks (ESCB) comprised of the ECB and the NCBs of all EU Member States whether they have adopted the euro or not.

potential liquidity impact of ELA operations can be managed in the context of the single monetary policy (ECB 2000).

Table 2. The Institutional Architecture of the Single Financial Market

Levels	FUNCTIONS	DECISION-MAKERS	COOPERATION STRUCTURES
EU (25 Member States)	• EU legislation (minimum harmonization) • Policy-coordination • Policy-shaping • State aid control	• ECOFIN Council • European Parliament • European Commission: i) legislative proposals/ ii) competition authority	• Economic and Financial Committee • Financial Services Committee • Regulatory committees
EMU (12 Member States)	• Single monetary policy • Payment systems' oversight • Contribution to financial stability and supervision	• ECB's Governing Council	• Eurosystem committees
National	• National legislation • Use of public funds	• 25 finance ministries • 25 national parliaments	• At the EU level
	• Banking supervision • Insurance supervision • Securities regulation • Supervision of financial conglomerates	• 13 national central banks • 13 single (cross-sectoral) supervisory agencies • 1 banking supervisor • ca. 12 insurance and pensions supervisors • ca. 12 securities regulators	• Home- /host-country relationships • Consolidated supervision of banking groups • Supplementary supervision of financial conglomerates • Supervisory committees • Bilateral, banking groups', regional and EU-wide MoU
	• Central banking functions (Member States outside euro area) • Lender of last resort (emergency liquidity assistance)	• 25 national central banks	• ECB's Governing Council (euro area) and General Council (EU) • Eurosystem committees (euro area or EU) • EU-wide and regional MoU
	• Deposit insurance	• Ca. 35 schemes (with diverse features)	• Informal
Legal framework: EU Treaty + directly applicable national laws and regulations (minimum harmonization through EU legislation) enforced by national authorities and courts			

Second, the financial stability functions are segmented across sectors and Member States. Banking supervision is exercised by single (cross-sectoral) supervisory authorities and national central banks and, in some cases, is shared between the central bank and the

supervisor.[5] The prudential framework followed by supervisors is largely harmonized by EU legislation, however, although its practical application may vary given the decentralized setting. Supervision of banking groups and financial conglomerates is conducted separately by each of the supervisors that licensed each entity of the group. Coordination between supervisors is achieved by "consolidating" and "coordinator" supervisors, which have limited powers to override decisions by individual authorities. In the single monetary jurisdiction of the euro governed by the ECB, banking supervision and ELA are under the responsibility and liability of the national authorities. Lastly, although some elements of deposit guarantee schemes are harmonized at the EU level, they have broadly developed in different ways in each Member State.

Third, a number of cooperation structures are in place for bridging the potential gaps of coverage between national responsibilities and the several functions. These structures range from legal provisions (e.g., consolidated supervision) to committees and memoranda of understanding.

Cooperation between functions through committee-structures

Given the decentralization and segmentation of financial stability functions, a number of committees organize cooperation at the EU level between authorities (see Table 3). These include supervisory, treasury, and central banking functions. In the supervisory field, there are sectoral committees in the areas of banking, securities, and insurance. The role of these committees is to provide technical advice to the European Commission on regulation and pursue the convergence of supervisory practices. Cooperation between treasuries takes place at the highest level through the Council of the EU, consisting of the Economics and Finance Ministers (Ecofin Council), which decides the EU policy on financial markets. The Economic and Financial Committee (EFC)—comprising finance ministries and central banks—provides advice to the Ecofin, also on financial stability issues, including crisis management.[6] In central banking, the existing committees are established under the Eurosystem/ESCB to advise the decision-making bodies of the ECB.

[5] National central banks perform supervisory functions in 13 of the 25 Member States: Austria (in part), Cyprus, the Czech Republic, Germany (in part), Greece, Italy, Lithuania, the Netherlands, Poland, Portugal, Slovakia, Slovenia, and Spain.

[6] Economic Paper No. 156, European Commission, July 2001, (available at http://www.europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers156_en.htm).

Table 3. The Committee-Structures of the Single Financial Market

Decision-making	ECOFIN Council	European Parliament	ECB's Governing Council (euro area of 12 Member States)	
Finance Ministries (policy-making)	ECOFIN Council (Informal Eurogroup)	Economic and Financial Committee	Financial Services Committee	
Commission and Finance Ministries (regulatory)	European Banking Committee	European Insurance and Occupational Pensions Committee	European Securities Committee	Financial Conglomerates Committee
Supervisors (operational)	Committee of European Banking Supervisors (London)	Committee of European Insurance and Occupational Pension Supervisors (Frankfurt)	Committee of European Securities Regulators (Paris)	
Central banks (operational)	Committees of the Eurosystem/ESCB—in euro area or EU-wide compositions (market operations, payment and settlement systems, banking supervision and financial stability)			

Cooperation agreements at the EU level

The architecture also comprises EU-wide cooperation agreements between authorities—Memoranda of Understanding (MoU)—in crisis situations. The general aim of the MoU is to set out basic principles and procedures for disseminating information once disturbances are apparent and support the performance of financial stability tasks in the single financial market. This, however, is without prejudice to the discretionary exercise of responsibilities by national authorities, particularly since the MoU are non-legally binding and have thus a voluntary nature.

There are two MoUs currently in place on financial crisis management.[7] The first MoU was adopted in 2003 between EU banking supervisors and central banks under the aegis of the Banking Supervision Committee of the Eurosystem/ESCB. It should apply in crises with a possible cross-border impact involving individual banks or banking groups, or relating to disturbances in money and financial markets and/or market infrastructures with potential common implications for Member States. The MoU is designed to facilitate the interaction between central banking and supervisory functions in terms of assessing the systemic scope of a crisis and taking actions. Its provisions include principles and procedures on identifying the authorities responsible and on the cross-border flow of information.[8] The second MoU was adopted in May 2005 between the EU banking supervisors, central banks, and finance ministries.[9] The explicit objective is to preserve the stability of the financial systems of both

[7] In addition to these MoU, the EU banking supervisors and central banks also adopted in 2001 the MoU on cooperation between payment systems overseers and banking supervisors in stage three of economic and monetary union, which sets out arrangements for co-operation and information in relation to large-value payment systems. Press release available at http://www.ecb.int/press/pr/date/2001/html/pr010402.en.html.

[8] Press release available at http://www.ecb.int/press/pr/date/2003/html/pr030310_3.en.html.

[9] Press release available at http://www.ecb.int/press/pr/date/2005/html/pr050518_1.en.html.

individual Member States and of the EU as a whole, thus acknowledging the need to consider how to balance the different dimensions of systemic risk. The MoU aims in particular at providing initial conditions for policy coordination between all these authorities in the case of systemic crisis with spillovers in several countries.

Conclusion

The potential effectiveness of the lender of last resort function in the single financial market needs to be assessed in the context of the other components of the EU and national architecture for crisis management. In other words, the provision or not of ELA, and the conditions under which it will be considered, might be determined to a large extent by the outcomes of the domestic, cross-border, and cross-functional interplay between the different authorities involved.

IV. The Lender of Last Resort Function in Practice

What would happen if a pan-European banking group—with banks licensed and operating in several Member States—would suddenly experience a liquidity shock? Banking groups play an important role in European money markets, often acting as providers of liquidity in the interbank markets—acting thus as "money-centers"—to smaller banks (Cabral et al 2002). They are also counterparts to other large European and global financial institutions spanning a large set of markets. And they are key participants in the main payment systems as well as clearing and settlement systems. Therefore, a shock affecting such banking groups could potentially lead to systemic implications in both national markets and the European financial system as whole, notably in terms of impact on the liquidity distribution channels.

Detection of a liquidity shock

Central banks would likely be the first authorities to detect disturbances at the level of liquidity in money markets, payment systems, and common market infrastructures. Disturbances would be first detected at the national level, also in the euro area given the decentralized setting for the conduct of operational tasks by the central banks of the Eurosystem. Central banks could detect warning signs such as intra-day or overnight liquidity shortages in individual banks; delays or failures to settle interbank transactions or collateral in monetary policy operations; settlement delays; or the failure of a central counterparty, clearing house, or securities-settlement systems to process securities transfers, which could spillover to payment systems.

Given the systemic inter-linkages described above, the local knowledge gathered by central banks would need to be considered at the EU level. In the case of the euro area, the existing infrastructure of the ECB/Eurosystem would certainly play a major role. In particular, the Eurosystem committees would have an operational role in collecting local information and thus in detecting and assessing the extent of the disturbances for the euro money markets and market infrastructures. In the case of the central banks outside the euro area, more bilateral or regional cooperation could be expected, although the Eurosystem/ESCB committees could also be involved.

Assessment of systemic risk

Central banks are also the authorities in an advantageous (and perhaps the best) position to assess the potential implications for systemic stability. They have a clear mandate for preserving financial stability and have the competences required to assess the possible systemic implications of a financial problem or crisis both on the real economy and in terms of spillovers to other financial institutions and/or markets.

Understanding the potential systemic extent of disturbances affecting a banking group present in more than one Member State would involve a complex mapping of the relevant transmission channels. This may include intra-group (across jurisdictions) and inter-group relations (interbank/intercountry), market exposures, infrastructures, and any combination of these. In addition, central banks would have recourse to sources of information beyond their tasks, notably supervisors, foreign central banks, or market participants. Depending on the magnitude of the shock, this exercise could be quite challenging to coordinate.

Furthermore, the potential for systemic risk can be considered in different dimensions. It may be considered in terms of the impact on other banks, markets, and infrastructures wherever they are located in Europe or globally; or it may be considered in terms of the components of the national financial system. The national scope of systemic risk would likely diverge across countries, given, for instance, the importance of the banking group's activities in each national market, its counterparty relationships, or participation in payment or settlement systems. Some central banks could therefore have different perceptions on systemic risk, which may have a bearing on the process leading to the provision of ELA (if systemic risk is indeed a criterion for providing it).

Jurisdiction of the lender of last resort

With regard to the banking group affected directly by the liquidity shock, if it is not able to obtain collateralized funding from the markets—in spite of the central banks' supply of aggregate liquidity—it could warrant or expressly request ELA from a central bank.

The preliminary issue is jurisdiction. Which national central bank would be the lender of last resort vis-à-vis a banking group, and on what terms? There are two alternatives. The first is that the lender of last resort operates with regard to the group as a whole, thus meeting its total liquidity needs. Considering factors such as national brands, consolidated supervision, or the trend of centralisation of liquidity management, the banking group could request ELA from the central bank of the jurisdiction of the parent or main bank. The liquidity provided could then be channelled intragroup to the banks in other countries. The other alternative is that each of the banks of the group requests separate ELA from the national central bank of the jurisdiction where they are licensed, on the basis of each bank's specific liquidity needs and assets.

These jurisdictional possibilities would represent different criteria for providing emergency-liquidity assistance and different forms of credit risk-sharing among central banks. Centralized ELA without limiting the supply of liquidity to its jurisdiction would mean that one national central bank would bear the full credit risk with regard to a banking group that

could be present in more than 6 and up to 19 countries (Schoenmaker and Osterloo, 2005). The backing of cross-border externalities by a national central bank would correspond to a sort of exercise of "federal" responsibilities. In the decentralized option, differences in criteria for providing ELA could entail a misalignment of objectives in providing ELA that would need to be considered and coordinated. There would be some degree of risk-sharing among the central banks, which would be not straightforward in case the group has centralized liquidity management: liquidity needs would relate to the group as a whole and not to individual banks, and collateral could be also centralized and may not be easily transferable.

Assessing the solvency position of a pan-European banking group

A national central bank considering ELA would also need to assess the solvency position of the banking group and/or of the individual banks of the group. While central banks have direct access to information from their operational tasks, they would need to enhance their understanding of the banking group's problem, notably by requesting information from the group itself and more crucially from supervisors. How this would be organized in practice would probably very much depend on the specific features of the situation. Obtaining a comprehensive set of information on a pan-European banking group would, however, require good coordination between the central banks and supervisors.

On the central banking side, the trend towards centralization of liquidity and risk management by banking groups suggests that the central bank of the jurisdiction where such centralization takes place would have an informational and logistical advantage. On the supervisory side, as analyzed above, there are EU coordination rules that provide that relevant information should be gathered by the consolidating supervisor, normally at the level of the parent bank. In turn, this supervisor has the duty to disseminate such information in emergency situations to all the supervisors and the central banks concerned. Cooperation structures, such as committees or MoUs may facilitate the interaction between authorities, but they may also add a layer of complexity.

National central banks would therefore rely to a large extent on banking supervisory information and related assessments on the financial condition of the banks. This might be a challenge because the pursuit of the respective mandates of central banks and supervisors might not be perfectly aligned, given the different nature of such mandates. In particular, central banks will be concerned about assessing rapidly the degree of credit risk that might be involved in providing liquidity to individual banks. Supervisors, on the other hand, might have constraints in terms of the supervisory process and timing in providing their assessment to central banks.

Interaction with treasuries

Credit to individual banks can only, in principle, be provided against adequate collateral and at market rates or higher penalty rates. A credit operation below market rates would represent an injection of public funds, which is not a function of central banks but rather of the state. Moreover, the EU Treaty provides that state aid may only be provided if it complies with certain conditions and after a process of approval by the European Commission; in addition,

the Treaty's prohibition of monetary financing also prevents central banks from incurring financial costs to be borne by the state.

As a lender of last resort, central banks may incur greater credit risk—on an exceptional basis in order to ease liquidity constraints—by accepting collateral below the standards required for monetary policy operations. The exact degree of credit risk incurred may be difficult to assess in practice given the nature of banks' assets (e.g., loans which may not be disposed of swiftly enough without loosing value). If the ELA operation results in losses, national budgets will bear such losses either by the need to compensate central banks or via the lower return on dividends.

Therefore, the provision of ELA in situations of significant credit risk may warrant some degree of interaction with treasuries, given that public funds might ultimately be put at risk. For instance, in the UK it is explicitly stated that the Chancellor would be given the option of refusing a financial-support operation proposed by the Bank of England or the Financial Services Authority.[10] In other countries with less explicit terms, this understanding is probably implicit. This interaction could potentially lead to national biases in assessing the degree of the threat to the financial system, given that national budgets will ultimately cover losses. In a cross-border systemic crisis, cooperation between treasuries—along the lines of the 2005 MoU—may thus be warranted to dispel such a bias.

Conclusion: pressure points of the lender of last resort

Several pressure-points (summarized in Table 4) can be identified in the performance of the lender of last resort function. The common denominator to these pressure points is that in stress situations the potential cross-border externalities will need to be adequately considered by all the authorities involved, in particular with regard to major players, such as pan-EU banking groups.

[10] Memorandum of Understanding (MoU) between HM Treasury, the Bank of England and the Financial Services Authority, 1997, available at http://www.bankofengland.co.uk.

Table 4. Pressure Points of the Lender of Last Resort Function

Detection of disturbances at the European level (sharing of local knowledge)
Jurisdiction of the lender of last resort for banking groups: • Centralization vs. decentralization • Misalignment of objectives of and criteria for providing emergency-liquidity assistance • Terms of providing assistance
Assessment of systemic risk at the European level: • Complexity in mapping propagation channels • Multiplicity of sources of information • Uneven systemic implications across countries
Assessment of the solvency position of pan-European banking groups: • Coordination in gathering information (from the banking group, market participants, supervisors) • Access and reliance on supervisory information
Interaction between central banking and supervisory functions—mandates may not be perfectly aligned
Interaction with treasuries

V. Challenges

Given that the expansion of cross-border banking activities is also observed in other regions and globally, what is distinct about the challenges to the EU's financial stability architecture? The answer is that the single financial market is a declared objective of the EU. A framework comprising rules, tools, and incentives (such as the single passport) is specifically set up for cross-border financial services. The pursuit of financial stability should be one of its basic components. In addition, there are supranational mechanisms available for dealing with coordination problems between authorities. Such mechanisms include EU legislation and, at the limit, may involve the performance of financial stability functions at the EU level.

This section identifies the challenges that may arise in implementing the EU lender of last resort function and also for the EU's financial stability architecture more generally. A final section concludes with a brief discussion of the possibilities for enhancing the effectiveness of the existing architecture.

Institutional coordination issues

Safeguarding financial stability generally, and an effective lender of last resort more specifically, require the assessment and containment of financial problems before they become systemic and have the potential to adversely affect the real economy.[11] Within the current EU architecture, this necessarily must be seen as a joint objective of the authorities responsible for financial stability, including central banks, supervisors, and treasuries to varying degrees. As elsewhere, within Europe a number of pre-conditions seem necessary to support this objective: (i) a clear assignment of responsibilities to the various authorities

[11] See Schinasi (2005), in particular Chapter VI.

within the architecture; (ii) the effective collection, dissemination, and sharing of information in crisis situations; and (iii) the coordination of decisions by different authorities to the extent necessary and possible, so that the pursuit of their respective mandates can be aligned for safeguarding stability across the single financial market.

The credibility of the public-policy architecture for assessing and containing systemic risk relates to its effectiveness in a real crisis. The pre-conditions mentioned above may be decisive, for instance, in terms of supporting private sector solutions, preventing the breakdown of liquidity distribution channels, avoiding bank-runs, or facilitating the orderly winding down of institutions in difficulties. Moreover, transparency of the architecture is also linked to its credibility. Constructive ambiguity regarding the predisposition of authorities to intervene is not ambiguity about the allocation of responsibilities or the mechanisms in place for crisis situations; instead, it relates to the conditions in which public support may be given to institutions in difficulties.

Against this background, the pressure points identified above for the lender of last resort suggest three main challenges for institutional coordination among authorities.

First, the lender of last resort is a function performed at the national level by central banks. This means that central banks' decisions will be guided by their national mandates (circumscribed to their jurisdiction) and institutional frameworks. In the case of the potential provision of ELA to a pan-European banking group, they may have to deal with significant cross-border externalities. In particular, the decision of one central bank to perform or not the function of the lender of last resort will necessarily affect the other central banks' jurisdictions. Coordination between the central banks involved may not be straightforward, however. More precisely, the assessments of the credit risk and systemic risk involved in the ELA may differ among central banks from their respective national perspectives. For instance, the systemic risk of the banking group in a certain Member State may not be deemed important, although it might be systemically relevant in the other countries involved. The potential contagion to national systems may be uneven, or there might be different macroeconomic considerations in each system. The credit risk may be considered too high. Or a central bank may not deem itself lender of last resort to the group. This balancing act of central banks as potential lenders of last resort will involve careful assessments of their responsibilities for cross-border externalities, which may require close coordination between them.

Second, the responsible authorities—banking supervisors, central banks, and treasuries, separately or collectively—would need to effectively process the available information into a cohesive assessment of the systemic ramifications of a crisis situation throughout the EU. The distribution of responsibilities is based on the home-country principle for supervisors, while central banks perform their tasks in their respective jurisdictions. In the case of a banking group, the consolidating supervisor is expected to gather and disseminate micro-prudential information, while macro-prudential information will be gathered by the central banks with jurisdiction over the markets and infrastructures in which the banking group is a key player. The mismatch between home-country control of supervision and host-country (central bank) operational conduct of financial market surveillance, may potentially give rise to a gap between micro- and macro-prudential controls. Overcoming this mismatch would be

essential for effectively dealing with a crisis since home- and host-country cooperation would be required for mapping and understanding the relevant transmission channels. In addition, treasuries would also need to obtain both national and EU-wide assessments of the systemic scope of a crisis situation. The existing MoUs are designed to facilitate the assessment of systemic risk for the EU as a whole, which could also be supported by the EU committees and the Eurosystem/ESCB arrangements. A formal mechanism at the EU level for assessing systemic risk as such is however not yet in place.

Third, it follows that the actual decisions of central banks and supervisors (and eventually treasuries) involved vis-à-vis a European banking group or its components may need to be coordinated at the cross-border level in order to be aligned towards common objectives (or at least for facilitating instead of cancelling each other's out). In particular, the macroprudential responsibilities of central banks may need to be coordinated with the microprudential responsibilities of supervisors. This may prove a challenge to the extent that responsibility for a bank or a particular market at the national level may not translate well to cross-border spillovers. The more diffuse the responsibility (with a number of different authorities in several countries) the harder it could be to achieve cross-border coordination of decisions.

Coordination models

Given the coordination issues identified above, there are alternative models of coordination for the performance of the lender-of-last-resort function vis-à-vis a banking group.

The first relies on detailed ex ante arrangements and may be designated as the "Nordic model." It is set out in the MoU between the Nordic central banks[12] which will apply in the event of a crisis of a bank with operations in two or more Nordic countries.[13] It consists of the establishment, once a crisis is detected, of a coordination structure—a "crisis management group"—among the central banks involved. Under the leadership of the central bank where the management of the banking group is domiciled, this crisis management group centralizes the gathering and analysis of information regarding the financial condition of the banking group and the potential systemic implications. In addition, it centralizes the contacts with the banking group's management. It will also be responsible for briefing the decision-making bodies of each central bank. The briefing will include information on the systemic relevance of the crisis, the solvency position of the bank(s) affected, and, most importantly, clarify any differences of opinion between the central banks. The aim is that each central bank takes informed and possibly coordinated decisions. The main advantage of this model is that it attempts to minimize informational and analytical asymmetries among central banks and thus mitigate prisoners' dilemma type situations. On the other hand, the extent to which

[12] MoU available at http://www.riksbank.com/upload/Dokument_riksbank/Kat_AFS/samradsdok_kris_eng.pdf.

[13] The main example is Nordea, as the largest Nordic banking group with approximately EUR 250 billion in assets. Its market shares in domestic markets range between 15 percent and 40 percent. The holding company, established in Sweden, owns Nordea Bank in Finland, as well as Nordea's securities, asset management and insurance arms established in Sweden and Denmark. In turn, the Nordea Bank (Finland) owns banks in Sweden, Denmark, and Norway. Very recently, Nordea decided to move into a single company with a cross-border branching structure.

an effective coordination structure could be set-up for all EU banking groups can be questioned, if not disputed. The Nordic context is characterized by strong systemic (but also cultural and linguistic) inter-linkages. This is not applicable to other regional markets or the EU as a whole, where the systemic impact would probably differ considerably among countries.

The second model of coordination may be designated as the "supervisory model". Because the EU implementation of Basel II will lead to a reinforcement of the coordination tasks of the consolidating supervisor (vis-à-vis the other supervisors of the group), it can be argued that the national central bank of the jurisdiction of the consolidating supervisor could also assume coordinating tasks vis-à-vis the other central banks concerned. A supporting argument is that this model would be consistent not only with the supervisory framework but also with the centralization of liquidity management in banking groups. However, this would imply that one central bank would take a higher degree of responsibility for the banking group with regard to the other central banks. It would, for instance, have to consider with greater intensity the group- and EU-wide—vis-à-vis the domestic—perspective in terms of solvency and systemic risk. It would attribute to the national central bank to some extent—as it does to the consolidating supervisor—limited EU "federal" tasks with regard to the banking groups under its jurisdiction.

Lastly, there is the possibility of no ex ante coordination arrangements in terms of risk sharing, but the commitment of the central banks involved to exchange information and coordinate their policy measures on the basis of the existing cooperation structures, as described above.

VI. Ways Forward: Coordination vs. Centralization of Policy-Making

One of the conclusions of this paper is that the lender-of-last-resort function in Europe cannot be disentangled from the overall architecture for financial stability. The efficient operation of the lender of last resort in a systemic crisis will crucially depend on the effectiveness of the other financial stability functions, notably supervision and potentially the treasuries. In an optimal setting, the authorities' mandates should be aligned in the pursuit of the stability of the single financial market. Thus, short of reforming the existing architecture, the overall challenge is its effective implementation. Two options are apparent for optimizing the current framework.

First, coordination between authorities—central banks, supervisors, and treasuries—could be ensured. The expansion of cross-border business increases the likelihood of conflicts of interest between the pursuit of national mandates and the need to consider the wider cross-border systemic implications in decision-making. It might be illusory to believe that conflicts of interest may be resolved ex ante or optimally during a crisis in view of the present architecture. Even if the authorities had the benefit of complete and perfect information, reliance on the pursuit of national mandates may still leave gaps in the consideration of the systemic impact of a crisis. A possible means to help manage conflicts is to make clear the possible cross-border systemic implications of the crisis to all authorities involved. This may

help avoid the most serious and costly outcomes. Mechanisms may include—following the "Nordic" model—pooling of information on systemic risk, joint assessments of systemic implications associated with the failure of a large institution, procedures for consideration of EU-wide systemic threats, and regular stress-testing and simulation exercises. The implementation of Basel II is also an opportunity to enhance coordination, because a consolidating supervisor will be nominated for each banking group, and the supervisors involved will adopt written coordination agreements.

More generally, as markets become more integrated and pan-European, the nature of systemic risk will continue to change, because markets can act as both vehicles of contagion as well as stabilizing forces. In the case of the near collapse of Long Term Capital Management, there was a simultaneous crisis of markets and institutions very much driven by the strong inter-linkages between participants in derivatives and other markets. Greater coordination at the EU level could also aim at providing an effective multilateral surveillance mechanism over pan-European markets as well as the institutions within them. Given their vital role in ensuring both financial and monetary stability, central banks have a natural, if not central role to play in this effort. This applies in particular to the ECB and the national central banks of the Eurosystem, which comprise a supranational network that is well placed to assess the systemic nature of a liquidity shock and generalized financial market disturbances.

All in all, a coordination model should make the most of the advantages of a decentralized approach to preserving financial stability, in particular the local knowledge on the features of the components of the financial system. Therefore, the wealth of knowledge associated with the EU decentralized approach can be seen as particularly valuable, provided that effective coordination procedures and mechanisms are in place to tackle the systemic implications of a crisis. Accordingly, banking supervisors, central banks, and finance ministries are working towards enhancing substantially their coordination arrangements, which include the 2005 MoU, a crisis simulation exercise to test the MoU and to assess how cooperation might work in practice,[14] and agreements on best practices in crisis management.

The second option for enhancement is the centralization, or rather the federalization, of financial stability functions. This option might emerge if coordination issues are not adequately resolved. As noted before, given the decentralized banking supervision and financial market surveillance, it may prove difficult to work out responsibilities on an ad-hoc basis in the midst of a crisis. This may be particularly valid in view of the potentially increasing number of European banking groups. In terms of business functions, banking groups are increasingly integrated—notably in terms of liquidity management—and also may establish themselves under a single legal entity. The question is whether financial stability functions should mirror such an environment and thus be federalized. This could happen either at the national level, with the extension of the home-country control to all the

[14] See *Financial Times* news article, "EU agrees financial crisis plan," May 16, 2005, p.15: "The memorandum of understanding, agreed by the 25 EU members, will be tested next year with a full-scale simulation of a financial crisis. The most likely scenario to be tested would involve a collapse by a big bank operating across EU borders."

components of a banking group, or at the EU level, with a transfer of competence to supranational authority(ies). The analysis in this paper suggests that such an institutional move, if ever required by potential coordination issues, would need to involve all financial stability functions. That is, if the option for “federalization” of the lender-of-last-resort function—at the national or EU level—would be elected, it should involve similar arrangements for supervision of banking groups, which, in turn, could involve some degree of mutualization among Member States of the contingency public funds to be potentially employed in a systemic crisis.

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