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A Lender of Last Resort for Europe

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SUMMARY

Prudential policy in Europe has strong national traditions jealous of their peculiarities. The Maastricht Treaty has enshrined them, making a comprehensive prudential system for the EMU-wide area all the more problematic. The multiple and very costly banking crises of the 90's have shattered the wisdom of an arrangement whereby the word «subsidiarity» is a recipe for staying put. Therefore we are left with disparate supervisory agencies, piecemeal and ad hoc bilateral cooperation between these supervisory agencies, uncertainty at the identity of the lender of last resort against Euroland-wide systemic risk. It amounts more to destructive than to constructive ambiguity.

The development of capital markets and the subsequent hazardous restructuring of banks are likely to emphasize the shortcomings in prudential policy and to bring forth macro-prudential issues at the European level. Euro markets will become more alike Dollar markets. They will become vulnerable to types of instability stemming from market finance whereas Continental European countries have shaped their prudential policies to deal with risks proceeding from bank finance. Market finance is prone to multiple equilibria, sudden discontinuities in value, high leverage and extreme dependence of credit risk on market risk, high speed contagious processes spurred by brutal changes in the correlation of market risks. Systemic risk is inherent to market dynamics and can trigger liquidity crises which know no borders and no national sanctuaries.

What that means is the following : *the development of financial markets in Europe requires a European lender of last resort*. The principle for this requirement is clearcut : overall financial stability pertains to an enlarged view of monetary policy because asset price dynamics drives the business cycle. Furthermore, to keep moral hazard in check, the lender of last resort should be supported by a powerful system of prevention and surveillance with multiple lines of defense. In Europe the lender of last resort must be the ESCB as a whole, the ECB Council the ultimate authority. This design will evolve through the experience of crises and find its ways to fill the ambiguities of the Treaty.

Organizing supervision to meet the challenge of EMU-wide area systemic risk is subtle. On the one hand, national supervisors should work in close contact with market participants. Decentralization is of the essence but under harmonized criteria, including deposit insurance schemes. On the other hand, decentralization should not cristallize in national power centers. National supervisors should work as part of a network headed by the Banking Supervision Committee and in conformity with a single doctrine elaborated by the European lender of last resort. It means that the channel and content of information flows should be multilateral and aggregated in a coordinating unit whose purpose is to prepare the ingredients for the best diagnosis of eventual systemic risk situations. Moreover the lender of last resort in its final decision would greatly benefit from the work of an observatory of systemic risk endowed with the mission of making indepth studies of the channels of contagion and developing early warning signals from the use of market data.

With a strengthened financial safety net, the lender of last resort will be able to concentrate on its own function : thwarting liquidity crises at their most appropriate points and overseeing the resolution of major failures.

RÉSUMÉ

La politique prudentielle en Europe a des traditions nationales jalouses de leurs spécificités. Le traité de Maastricht les a cristallisées. La formation d'un système prudentiel cohérent et couvrant toute l'union monétaire est d'autant plus difficile. Pourtant les crises bancaires répétées et très coûteuses des années quatre vingt dix ont ébranlé la sagesse d'une attitude qui fait de la subsidiarité un prétexte à l'immobilisme. Les agences de supervision sont disparates, leur coopération est fragmentaire et au mieux bilatérale, l'identité du prêteur en dernier ressort pour combattre le risque systémique à l'échelle de l'Euroland est incertaine. C'est une ambiguïté plus constructive que destructive.

Le développement des marchés de capitaux et la restructuration périlleuse des banques qui en découle vont probablement souligner les insuffisances de la politique prudentielle et mettre en évidence les enjeux systémiques au niveau européen. Les marchés de l'euro vont ressembler de plus en plus aux marchés du dollar. Ils vont devenir vulnérables aux facteurs d'instabilité qui proviennent de la finance de marché, alors que les pays d'Europe continentale ont modelé leurs politiques prudentielles sur les risques qui résultent de l'intermédiation bancaire. La finance de marché est vulnérable aux équilibres multiples, aux discontinuités soudaines de prix, aux leviers d'endettement élevés, à la dépendance étroite du risque de crédit vis à vis du risque de marché, aux effets de contagion fulgurants déclenchés par des changements brusques dans la corrélation des risques entre les marchés. La dynamique des marchés secrète le risque de système et déclenche des crises de liquidité qui se moquent des frontières et des sanctuaires nationaux.

Cela veut dire qu'il faut soutenir sans ambage l'idée suivante: *le développement des marchés financiers en Europe exige un prêteur en dernier ressort européen*. La justification en est claire. La stabilité financière d'ensemble appartient à la politique monétaire élargie parce que la dynamique du prix des actifs donne son impulsion au cycle économique. En outre, pour contenir l'aléa moral, le prêteur en dernier ressort doit être soutenu par un dispositif puissant de prévention et de surveillance comportant plusieurs lignes de défense. En Europe le prêteur en dernier ressort doit être le SEBC dans son ensemble, l'autorité ultime le conseil de la banque centrale européenne. Ce dispositif va se mettre en place avec l'expérience des crises et va finir par effacer les ambiguïtés du traité.

L'organisation de la supervision capable de faire obstacle au risque systémique à l'échelle de l'union monétaire est subtile. D'un côté les superviseurs nationaux doivent travailler au contact étroit des opérateurs de marché. La décentralisation est essentielle, mais conformément à des lignes de conduite harmonisées, y compris l'assurance des dépôts. D'un autre côté la décentralisation ne doit pas donner prétexte à la formation de féodalités nationales. Les superviseurs nationaux doivent être les composantes d'un réseau dirigé par le comité de supervision bancaire et doivent œuvrer de manière à préparer au mieux les diagnostics et les décisions du prêteur en dernier ressort européen. Aussi les circuits d'information doivent-ils être multilatéraux et leur contenu synthétisé par une unité de coordination chargée de préparer le meilleur diagnostic possible des situations porteuses de risque de système. Pour parvenir à ce diagnostic, les informations transmises et mises en forme auraient avantage à être exploitées par un observatoire du risque de système, chargé faire des analyses concrètes sur les processus de la contagion.

S'il peut compter sur un filet de sécurité financière renforcé, le prêteur en dernier ressort européen pourra se concentrer sur sa fonction propre: étouffer les crises de liquidité en leurs points les plus pertinents et surveiller la résolution des faillites à implications plurinationales.

A Lender of Last Resort for Europe

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1. INTRODUCTION

A lively debate has taken grounds on the appropriate degree of centralisation or decentralisation of prudential policy in Europe. The debate has been fed by the peculiar arrangements which are the offsprings of the Maastricht Treaty. They are inspired by a double separation which is unique in the industrial world. Not only is the ECB separated from bank supervision, but she is for all practical purposes severed from the lender of last resort (LLR) function.

Prominent scholars and institutions, like the CEPR and the IMF in its 1998 report on capital markets, have pointed out that the European design for prudential policy is not comprehensive and is potentially dangerous because it lacks an effective crisis management capacity. This feature is a recipe for trouble ahead insofar as the rise of financial markets in EMU will raise the likelihood of Europeanwide financial crises.

National central bankers and bank supervisors vehemently object to this reasoning. They advocate a narrow view of subsidiarity, which permits them to retain as many income-producing activities as possible beyond the ESCB profit sharing system. They notice that the Treaty does not preclude any further development but that the present arrangements work well.

However this assertion is not warranted. The performance of prudential policy in several countries in the 1990's should not be a motive for complacency. Bank credit problems have ridden high as much as banks have become heavily committed to the financing of asset positions. The high social cost of bank failures is a clue that supervision has not been entirely appropriate and that profligate bank bailouts have taken their toll on the tax payers.

Therefore the debate is not just a matter of interpreting subsidiarity. It should go much deeper into the sources of systemic risk in the wake of powerful trends of financial liberalisation and globalisation, which are going to be accelerated in EMU. The proper degree of centralisation is part of a broader understanding on the relations between bank supervision and crisis management in financial systems where liquidity is increasingly supplied by asset markets. Following this approach, it can be argued that the types of financial crises and the scope for EMU-wide area systemic risk are decisively shaped by the changing sources of liquidity. The

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prudential design for financial stability in Europe should take into account this crucial feature which was largely underestimated while the Maastricht Treaty was negotiated.

Section II will investigate the changing pattern of risks within EMU. It will conclude that it is likely that systemic risk will be rising with the development of financial markets and the hazardous restructuring of already fragile banks. Section III will assess the current arrangements for financial stability against the background of systemic risk. It will depict flaws at several levels of the financial safety net: lack of prompt corrective action in national bank supervision; a pattern of information flows that precludes the existence of a unit capable of aggregating piecemeal data and diagnosing a potential systemic event with a reasonable degree of accuracy; an ambiguity on the identity of the LLR which might be more destructive than constructive. Section IV will build on the preceding sections to step into the current debate on whether present-day arrangements need to be reformed. It will plead for a more comprehensive framework including redundant lines of defence for containing systemic risk: organising lenders of penultimate resort; setting an European-wide coordination unit of multilateral information flows and an European observatory of systemic risk; establishing the ECB as the ultimate decision body in any crisis situation.

2. THE CHANGING PATTERN OF RISK WITHIN EMU

Financial markets in Europe are undergoing a structural change and becoming alike the U.S. In 1997, the share of bonds in the external financing of non-financial corporations was 10% in the Euro zone against 60% in the US. The broadening and deepening of bond markets will have the most significant impact. A single yield curve in Euroland for private paper in euro is expected, with EURIBOR forward contracts on the shorter end and the fixed leg of interest rate swaps on the longer end [ECB 1999]. The euro market for private debt securities will attract international investors on the one hand and a large range of issuers on the other hand. Because a single yield curve enables investors to diversify their portfolios according to the issuers' idiosyncratic credit risks, more risky borrowers including non-investment grades will be in the market to capture a lower cost of capital and tighter spreads under tougher competition [Mac Cauley and White, 1997].

Highly developed financial markets are working smoothly most of the time, but are liable to acute market-wide shortages of liquidity. Moreover the changing pattern of financing toward securities markets is inducing a drastic restructuring among less than profitable banks, already shackled with overcapacities. Banking strategies in an adverse environment might well increase their risks instead of diminishing them; at least for a transitory period while they get heavily involved in volatile financial markets. The combination of market liquidity shocks and shaky financial situations among banks entails a mounting potential for systemic risk.

2.1. Global financial markets and liquidity risk

In financially sophisticated countries, all the salient episodes of disruption from the Stock market crash of October 1987 to the LTCM crisis of September 1998 and its aftermath in private debt markets, were provoked by abrupt, unexpected and extreme changes in asset prices coupled with heavy leverage. The real estate slump in 1990-91, the multiple EMS crises in 1992-93, the bond market crash in 1994, the downturn of the Nikkei triggering the Barings crisis in Singapore in 1995, all exhibited the same evidence. In most episodes the crisis started with or was magnified by fast-growing losses on asset values or derivatives exposure which fostered large liquidity needs (table 1).

One can advance cautiously an hypothesis which is at odds with conventional wisdom about global markets, but which is in sympathy with financial history [Kindleberger 1978] and with a few recent contributions [Delargy and Goodhart 1999]. Crises pertain to the dynamics of market finance. They come from multiple equilibria. They encompass discontinuous changes in prices resulting from the break-up of a conjectural market equilibrium and the search for another one. Why is it so that multiple equilibria are linked to liquidity problems?

In a narrow view of financial crises, it is asserted that there is a need for concern only if banks are affected [Schwartz 1998]. In financial systems run primarily by banks, the dilemma between the funding of productive investment and the need for liquidity against uncertainty is met by the transformation of maturities performed by banks. Contagious runs on deposits and settlement failures in interbank payments systems are the ways aggregate liquidity can be affected.

This viewpoint seriously underrates how liquidity is generated in present-day debt markets which are likely to become prominent in Europe. The tension between frozen capital and liquidity needs is met by secondary markets trading claims on productive assets. It follows that securities markets are increasingly relied on as repositories for liquidity. Higher-yielding securities are substituted for lower-yielding cash or demand deposits [Davis 1994]. OTC derivatives on the underlying securities markets supplement the more traditional interbank market as the central feature of money markets.

Liquidity is singled out as the most prominent factor capable of propagating local financial disturbances into full-fledged financial crises, because a shortfall of liquidity alters decisively the budget constraint of individual economic agents [Minsky 1982]. It entails forced sales of assets and makes it more difficult to roll over liabilities. It induces profitable transactions to be deferred and denies expected cash flows to others, giving rise to cumulative income contraction. But, while liquidity has been provided by money markets, through the sale of assets, liquidity stringency depends on the opinion of each market participant about the average opinion in the immediate future which is going to impinge upon the market price.

Table 1: Characteristics of selected recent financial crises

Episodes	Sources of disturbance	Nature of risks	Implication of derivatives	Potential for contagion	Prudential shortcomings
EMS (1992-1993)	<ul style="list-style-type: none"> • Exchange rate misalignments • German shock • Uncertainty about EMU 	<ul style="list-style-type: none"> • Exchange rate risk • Credit risk in some countries 	<ul style="list-style-type: none"> • Put options on currencies under speculative attacks 	<ul style="list-style-type: none"> • Dynamic hedging • Self-fulfilling speculation 	<ul style="list-style-type: none"> • Market illiquidity • Lack of international support within ERM
Bond market (1994)	<ul style="list-style-type: none"> • Extensive positions on the expectation of lower long run rates • Abrupt tightening of US monetary policy 	<ul style="list-style-type: none"> • Interest rate risk 	<ul style="list-style-type: none"> • Interest rate swaps and futures 	<ul style="list-style-type: none"> • Huge increase in volatility Generalized international spillover • One-way selling pressure on a wide range of bond markets 	<ul style="list-style-type: none"> • Heavy losses entail acute liquidity problems for international firms
Barings (1995)	<ul style="list-style-type: none"> • Unexpected downturn of the Nikkei 	<ul style="list-style-type: none"> • Asset price risk magnified by sensitivity of derivatives 	<ul style="list-style-type: none"> • Futures and options contracts on Nikkei 225 index 	<ul style="list-style-type: none"> • Spillover between Singapore and Osaka exchanges • Uncertainty about the payment of margin calls at SIMEX 	<ul style="list-style-type: none"> • Risk management inefficient within the firm • Lack of co-ordination between Exchanges. Lack of proper separation between customer and proprietary trading
Mexico (1994-1995)	<ul style="list-style-type: none"> • Cumulative macro imbalances • Deterioration of political situation • Exchange rate peg 	<ul style="list-style-type: none"> • Exchange rate credit and liquidity risk 	<ul style="list-style-type: none"> • Swaps of Tesobonos between American investment banks and Mexican banks 	<ul style="list-style-type: none"> • Substantial in Latin America, especially dramatic in Argentina 	<ul style="list-style-type: none"> • Massive deficiency of oversight of sovereign risk with financial liberalization
Asia (1997)	<ul style="list-style-type: none"> • Ill-conceived financial liberalization • Excessive Short-term credit • Exchange rate peg 	<ul style="list-style-type: none"> • Credit risk (short-term overindebtedness) • Exchange rate risk • Extreme volatility of asset prices 	<ul style="list-style-type: none"> • Offshore trading to conceal true magnitude of exposure 	<ul style="list-style-type: none"> • Widespread in Asia : cascade of withdrawals of short-term funds and one-way selling pressure on domestic asset and foreign exchange markets 	<ul style="list-style-type: none"> • Non-existent domestic supervision and implicit guarantees • IMF delay in assessing the severe liquidity problems and the seriousness of the credit crunch

Therefore the dual character of asset prices, both claims on future value-generating processes and repositories for liquidity, translates into a dual logic of valuation. One is the fundamental value; the other is the speculative value. The former probes into the future real determinants of profit; the latter is self-centred on the market. The former pretends that the yield on the asset does not depend on the behaviour of market participants; the latter equates the financial value of an asset as a potential claim for immediate cash. Yet liquidity is a pure artefact, an outcome of market rules and reflexive behaviour of market participants. Since value-generating assets are necessarily linked to production capacity, the market as a whole cannot sell for cash. Liquidity is not an exogenous characteristic of any asset; it is a strategic relationship between market participants. Market liquidity holds as long as market participants believe others believe it is available.

It ensues that the fundamental value rules the market if and only if market liquidity can be held as perfect. This hypothesis underlines most internal models of risk management by financial institutions. It is analytically modelled assuming a multidimensional Gaussian probability distribution for the yield of portfolios. The stochastic world underlying such VaR models is the world of Brownian motion where large instantaneous price changes are extremely rare. Because the continuity of price changes holds, it is always possible for market participants to build up successful hedging strategies. Even in cases where complex portfolios encapsulate option like instruments, a linear or a second order approximation is possible, making delta or gamma hedging effective. The structure of portfolios adapting continuously to the changes in market risk, systemic risk cannot arise. Hence the contention that a lender of last resort is required against market disorder is irrelevant.

But extreme variations in prices are much less rare than warranted by the Gaussian law. They point out to discontinuities which lead to multiple equilibria and which cannot be understood save in the context of a break-up of the previously sustained market sentiment on liquidity. When confidence on liquidity wanes, making market participants eager to test it, liquidity becomes elusive. A one-way selling pressure occurs, which gives rise to a coordination failure. When this dynamics has been gaining momentum, the relevance of fundamental value vanishes. As market participants are rushing to liquidate their assets, uncertainty overwhelms the market because no one can see what the floor price will be. While prices have been collapsing, liquidity is being sought for by new participants, feeding new rounds of selling. It can thus be said that system risk is linked to the paradox of liquidity. A market collapse is a brutal drying up of liquidity. It is a permanent threat in financial markets because liquidity preference is self-contradictory: source of opportunity for individuals, it can be destructive collectively. This externality is consubstantial to financial markets in a monetary economy.

2.2. The risks involved in bank restructuring

Bank consolidation to discard excess capacity has been steadily going on for years. The number of credit institutions declined about 30% between 1985 and 1997; the number of branches per 1000 capita was reduced by 7.5% in the same period [ECB 1999]. But

disintermediation forces a more demanding challenge. It is a shock of unprecedented magnitude for banking systems in Continental Europe, chiefly because it arises on already fragile structures. In more than one country, profitability of many banks has not yet fully recovered from the real estate slump in the early 1990's. In other countries, banks had been long sheltered from financial liberalisation. Since 1995, to catch new opportunities of profit or to circumvent increased competition at home, European banks have been busy lending to emerging countries. They have a much higher stake in emerging markets plagued with widespread insolvencies than their Japanese and American competitors, being much more exposed in all non-industrial countries (table 2). Hidden losses in their financial structure, on top of other weaknesses like overcapacities, may impair their response to the shock of disintermediation.

Table 2: Distribution of the exposures of industrialised country banks towards emerging, transitional and developing countries, as at June 1998 (in proportion of grand total)

	E.U Banks	Japanese Banks	US Banks	Other Banks	All banks
All emerging transitional and developing countries in Bis Statistics	0,57	0,13	0,12	0,18	1,00
of which:					
Eastern Europe	0,12	-	0,015	0,015	0,15
Latin America	0,195	0,01	0,07	0,055	0,33
Asia	0,18	0,12	0,03	0,03	0,36

Source: BIS International banking statistics (November 1998).

In response to the shock of deregulation and competition of non-banks and outside banks with more expertise in financial services, European banks may experiment threefold strategies. The first ones focus on internal control systems to improve risk management in a marked-to-market world. The second ones shift their product ranges to financial services generating trading profits and non-interest income. The third ones are runaway escapes into gigantism by way of national then transnational mergers and financial conglomerates. Mergers and acquisitions are currently in fashion, justified more by the mystic of size than by dubious industrial projects. These moves to concentration entail serious risk and might undermine long overdue efforts to cut costs and rationalise product lines. In any case, current trends in banking raise big questions for banking supervision, which is still conceived as if banks operated in national segmented markets on traditional banking lines.

The strategies of entering capital markets alter the risk profile of bank portfolios. The relative weight of the trading portfolio rises as banks become market intermediaries, providing liquidity

with contingent credit lines against commercial paper, credit on collateral, OTC derivatives contracts. Since a fast-increasing component of on-balance sheet and off-balance sheet items has become exposed to mark-to-market valuation, banks are subjected to interdependencies between credit risk and market risk. They have been trying to develop an integrated tool for assessing their global risk on the net value of the mark-to-market portfolio under the Value-at-Risk (VaR) methodology. There are many good reasons for adopting a common approach to credit risk and market risk. But there are horrendous pitfalls too, as the Asian crisis demonstrated. Not only is market risk subject to abrupt price changes which make VaR models less than reliable, but credit risk profiles are highly asymmetric. The deterioration of credit risk comes from discontinuous events, making the probability density function in the yield of credit instruments biased toward large losses. Then correlation between market and credit risk is unstable, becoming very high under conditions of stress, when the collapse of some asset price undermines the solvency of leveraged asset holders. It is why a shift in market belief or deterioration in credit risk can feed on one another, creating conditions whereby standard risk management procedures seriously underestimate the overall risk exposure.

Financial conglomerates are composed of entities which respond to different supervisory authorities both operationally and geographically. Some activities may even entirely escape supervision. Because of the disparities in regulation about financial non-bank activities (leasing, reinsurance, consumer credit, etc.), conglomerates have powerful incentives to rely on regulatory arbitrage. Admittedly they are well-equipped to diversify away some risks due to concentration and excessive dependence with regard to particular markets. Nonetheless they create other risks stemming from their structure. If the resulting overall risk originating from their internal cohesion is greater than the reduction in risk arising from improved diversification, conglomerates are net risk generators liable to turn into systemic risk.

In normal conditions the balance of risks and opportunities may be favourable and improve the allocation of capital. But under conditions of stress, which ought to be of particular concern to supervisors, conglomerates can become a source of systemic risk by themselves. When some entities of a conglomerate have become financially fragile, they may drag into bankruptcy entities that would have remained sound had they been autonomous. Internal relations between component entities magnify risk in many ways: opacity of multiple accounting, excessive exposure between group members and intra-group contagion from credit lines, guarantees, swaps, etc.... Outside counterparts of particular entities are entitled to considering the conglomerate as a whole for risk assessment purposes. The entire financial group is vulnerable to the failure of its least regulated subsidiary. Because managerial strategies in conglomerates are designed to escape controls, the feared vulnerability is not exogenous but due to moral hazard induced by deliberate behaviour. The attitude of Exchange market authorities who tolerate prudential dumping in order to attract more business under their jurisdiction enhance a hidden fragility, which is only revealed in stress conditions where prices are abnormally unstable.

2.3. The potential for systemic risk

Liquidity is the focus of systemic risk in financial markets. Doubts over liquidity destroys confidence which holds the structure of financial liabilities together. The fear of a liquidity shortage has crucial market makers stuck into involuntary positions and precipitates the demand for debt settlement instead of rolling over routine liabilities. Market liquidity risk may launch spillover effects from one segment to the next of an integrated financial market without any concern for national borders.

Systemic contagion results from coordination failure in an environment where the continuity of prices fails to rule the market. Stabilising adjustments induced by a single rationally expected equilibrium are no longer working. Multiple market equilibria unknown to market participants foster cognitive processes under conditions of endogenous uncertainty. They resort to behavioural patterns which proceed from the hypothesis of intrinsic myopia [Guttentag and Herring 1986]. Deprived of a common external benchmark, the so-called fundamental value which has no relevance in a situation of liquidity fear, market participants are left to the corrosive influence of their mimetic interactions. They at the same time try to avoid the radical indeterminateness of the market price which goes along with an exclusive mimetic structure of interactions. They thus attempt to coordinate their expectations on conventional focal points, i.e. stereotypes, rumours, interpretative scenarios, ... everything capable of self-generating a common belief, a renewed market sentiment which will become the new market equilibrium for some time, however far from economic balance it may be, as Japan is teaching us. This is the outcome of systemic risk and, a contrario, the legitimacy of the public action to fight it.

With financial integration and monetary unification in Europe, a whole range of market segments are going to blossom. They are expected to broaden the means of liquidity and risk management, making European market finance competitive with the US. It can be argued that deeper and more complete markets make risk dissemination more effective and liquidity needs satisfied at lower costs. But in the meantime they hugely enlarge the number of participants who use the market for hedging and expectations arbitrage, incentives which are dependent on the speculative value rather than on the fundamental value assuming that the latter exists [Genotte and Leland 1990]. A wider set of heterogeneous participants increases the weight of non-fundamental behaviour when the market is under stress (chartists, trend followers, contrarians and the like). Interactions between conflicting viewpoints about immediate future price changes are what make a market suddenly more volatile and indeterminate as to the new convention which will emerge. Therefore European financial markets will be increasingly prone to multiple equilibria US type. The host of disturbances, which have arisen in various financial and derivative markets world wide in the 1990's, can propagate more intensely the more developed and integrated the markets are. Episodes of large increases in volatility and severe liquidity problems are likely to be with us in the years to come. Because market-induced systemic risk will be the main source of financial turmoil, understanding contagion in the wholesale market for liquidity is a prerequisite for a comprehensive framework on macro-prudential issues which will surely have to replace the piecemeal arrangements brought about by the Maastricht Treaty.

Before investigating the channels of contagion, an objection must be answered. Assuming that the impact on banks is the ultimate preoccupation of central banks, are today's wholesale markets for liquidity more or less prone to systemic risk than traditional interbank markets? It can be argued that the overhaul of money markets has resulted from the multiplication of bank failures, first in the US in the late 1980's, then in Europe in the early 1990's. A contraction of deposits in the international interbank market spurred the growth of negotiable instruments bought by institutional investors. In bringing forward liquidity by buying short-term debt instruments, international investors have to hedge against the interest rate and eventually the currency risk. OTC derivatives are the tailor-made instruments to do so. These customer products are written by large banks. Are banks just dealers who keep orderly conditions in OTC markets, or are they the ultimate providers of liquidity? Market makers do not want to be stuck with a forced exposure in a particular market because they have to be unwilling counterparts of an unbalanced market. Their jobs are to smooth daily market conditions not to stand alone against the market. In a low interest environment, dealers can hedge in their own markets, buying contracts sold by the investing community itself. Then the pool of liquidity is enlarged; the market risk taken by banks is effectively diversified. Because OTC markets attract a much larger pool of short term investors, the overall level of risk is less than in the interbank market. No dynamic externality leading to systemic risk can occur. However it is extremely unlikely, as the LTCM episode demonstrated, that such an optimal pattern of risk diversifying can hold in a volatile financial environment or in uncertain macroeconomic conditions. When the sentiment of investors is changing abruptly and collectively in response to shocks, liquidity from their source is fast drying up in critical OTC markets [Aglietta, 1996]. In such circumstances systemic risk takes root and propagates along dynamic linkages between markets. From this episode and earlier ones, a few lessons can be drawn.

When uncertainty for whatever reason makes price volatility jump unexpectedly, as occurred in the bond market slump, margin and collateral calls on derivatives exacerbate the need for liquidity. To fulfil their commitments, market participants resort to dynamic hedging, thus liquidating their underlying assets and aggravating price movements. End-users who have bought derivative instruments to hedge the price risk of their investment, all hedge in the same direction. Therefore the unintentional aggregate exposure of market dealers can rise unexpectedly. Huge losses can occur, as demonstrated by many cases including Barings, Daiwa, Sumitomo, Natwest. When aggregate risk cannot be redistributed according to the particular risk profile of each intermediary on a derivatives market segment, there is no price at which the market can balance. Intermediaries have to use dynamic hedging to rid themselves of dangerous involuntary positions. It means that they have to cover their involuntary long position in a falling derivatives market by selling the underlying securities. The selling pressures spillover to the underlying markets where one-way selling causes further losses to a new range of participants. The new round of losses might be too large with respect to capital or credit might be too risky for market makers in the underlying markets to finance the accumulation of depreciating assets. They give up sustaining market prices at any predetermined level [Bingham 1992]. It is how contagion can spread with the attempt of individual financial firms to reduce their risk exposure. The externalities which make a large number of portfolios worse off by the

adjustment of each one trying to get better off is a market failure. Because matrices of correlation between price and yield volatility in a cluster of markets are embodied into risk control models, the same response to common signals can spread the selling pressure from one market to another, as long as no outside agent provides the necessary liquidity [Garber 1998].

One can conclude that large individual losses among market intermediaries can preclude them from absorbing price shocks. The resulting liquidity shortfall in a particular market spreads local financial disturbances. Therefore market liquidity risk should be a major concern for institutional cooperation among functionally and geographically separated supervisors. The current arrangements in Europe are far from this state of the art.

3. HOW DO CURRENT ARRANGEMENTS FOR FINANCIAL STABILITY STAND AGAINST EMU-WIDE SYSTEMIC RISK?

The second section of the paper argued that financial systems in Continental Europe are undergoing an overhaul. The advent of global financial markets and the drive to giant and multipurpose financial entities entail risks which have a higher potential than beforehand to spread into the whole Euro-markets. The upcoming financial setting is likely to be both more efficient to manage individual risks in normal conditions and more vulnerable to systemic risk under stress.

Can the prudential doctrine in Europe cope with ongoing structural changes? It has been shaped by several trends: the EC directives issued for adapting to the single market in financial services, the Maastricht Treaty which stood for a separation between monetary and prudential policies, the partial embodying of prudential regulation elaborated in Basle (ex. the anti-BCCI directive in force since June 1995).

This piecemeal approach mixes common rules, national supervisory practices lagging behind financial innovations, a strong parochial attitude toward supervisory responsibilities, rationalized under the auspices of the so-called subsidiarity principle. It amounts to a double separation between monetary and supervisory institutions on the one hand, between national supervisors on the other hand [Padoa-Schioppa 1999]. The divorce between institutional arrangements and EMU-wide externalities is striking. As a result, the lender of last resort function cannot be clearly identified. This is a dubious use of the principle of constructive ambiguity which leads to the impression that the foundations of macro-prudential lines of defence are shaky.

3.1. Separation between monetary policy and banking supervision

The quality and the scope of bank supervision and of market liquidity surveillance are the underpinnings of an effective lender of last resort assistance if needed. In view of these requirements, what is the rationale behind the assignment of banking supervision to institutions separated from central banks, reversing most of XXth century trend?

The usual argument which endlessly emphasizes the potential conflict between monetary and

banking policies is not that convincing. It is in the nature of systemic risk to disturb micro-behaviour which impinges upon money demand and money supply, making monetary policy all the more difficult to perform (Goodhart and Haizhou Huang 1999). Since a robust banking system is a predicament for channelling monetary impulses to the economy, a cautious and vigilant banking policy is a strong support for monetary policy. The relationship goes also the other way round. Because a bank's financial situation depends more and more heavily on market-to-market items; the impact of market interest rates can be devastating if their moves are unexpected. As several episodes in the US plainly showed in this decade, monetary policy cannot ignore the objective of financial stability and leave it to banking policy alone. It follows that monetary policy and banking supervision are closely interdependent. The central bank is involved in both domains. Therefore the current fashion for separation cannot be sustained on a macroeconomic level alone.

More insight is shed at the microeconomic level when current practices of risk management in large financial institutions, very active on a host of financial markets, are put into the picture.

Current development in European financial systems is an advanced stage of financial globalization. Since this manifold process has been in motion for some time, its impact on risk management can be assessed. It has given rise to three prudential principles which stand markedly aside former practices: internal control systems implemented by financial institutions; consolidated supervision of multi-activity financial groupings; prompt corrective action imposed on deviant financial firms by the relevant supervisory authority. The three principles make together a consistent approach to prudential policy. They are far from being implemented yet. But they aim at a far-reaching renewal of doctrine. It changes drastically the nature of relationships between supervisors and supervisees [Aglietta, Scialom and Sessin 1999].

In bank-led financial systems, prudential control was hierarchical: banks monitored borrowers in long-run customer relationships; a supervisor (the central bank or the government in most countries) controlled the banks with prudential and liquidity ratios or with direct credit limits. In market-led financial systems, the bilateral supervisor-supervisee relationship no longer works. As pointed out in section II, risk measurement has become statistical and it has still to integrate market risk and credit risk under a single Value-at-Risk metrics. Furthermore, because frontiers between banking and finance have been blurred, supervisors of different types of institutions (banks, insurance companies, and securities houses) cannot ignore one another. Two organizational principles proceed from these changes. The first is a delegated supervision to the financial firms themselves. The second is a meta-level of supervision whereby functional supervisors have to communicate in order to oversee the quality of the auto-control performed by financial firms, be they banks or non-banks, in their credit supplier or market maker capacities. The meta-level of supervision can be encompassed into a single multi-functional supervisory institution like in the UK, or be organized along a network of well-defined communication lines and procedures between autonomous functional supervisors under the coordination of a lead supervisor.

Either configuration separates logically supervision of individual entities and macro-prudential issues. Since liquidity problems come as much from markets as from individual banks, the

central bank has to draw information from the whole network of supervisors or from the multi-functional supervisor. In Europe the most widespread disparities exist on the two main issues: interdependence between monetary and banking policy on the one hand, recognition of the need to organize a meta-level of supervision on the other hand.

As far as banking supervision is concerned, there is no dominant pattern in Europe according to the involvement of central banks in banking supervision (table 3). Since banking crises have occurred almost everywhere, no lesson can be drawn either on the more robust pattern according to financial safety. The issue goes deeper into the quality of surveillance when the control system has shifted to delegated supervision. One has also to estimate the informal prudential activity of the central bank whenever no role or a limited role has formally been reported. One has then to conjecture if and how cooperation between national supervisors may be degraded with disparate national patterns.

Table 3: Qualitative assessment of the role played by the central bank in bank supervision

Countries	Prominent Role	Limited Role	No Role
Belgium			X
Denmark			X
Germany		X	
Spain	X		
France		X	
Ireland	X		
Italy	X		
Netherlands	X		
Austria		X	
Portugal	X		
Finland		X	
Sweden			X
United Kingdom		X	

Source : D. Plihon and G. Amouriaux, French Banking Commission, June 1999.

The French case can be used as a benchmark. In 1984 a banking law created an independent banking commission to supervise credit firms. But the «Secretariat Général» of the commission, its executive mechanism, pertains to the central bank and is run by bank officials. The performance of the banking commission in dealing with bank crises has been mixed. When big banks failed, the Ministry of Finance stepped in, violating the Commission's independence. Moreover it does not have the human resources to run temporarily a failed bank and enforce a clearcut industrial solution. The result of those shortcomings was excessive forbearance and muddling through, which widened the social cost to the taxpayer.

In other countries, the central bank can be more involved than implied by its status. This is the case in Germany. The Länder central banks monitor the financial situation of credit institutions in their jurisdiction. By combining the reporting of each district central bank, the Bundesbank

can monitor the solvency of major banks on the basis of their consolidated balance sheet. But an independent agency (the B.A.K) is responsible of making the decisions called for by individual bankruptcies.

The separation between functional supervisors which is still prevalent in most countries makes it difficult to organise the meta-level of supervision, albeit a logical response to financial integration. Here above we advocated two possible solutions: a single institution encompassing the supervision of all financial activities; separated supervisory authorities making allowance for the peculiarities of banks in creating systemic risk. Better than by types of institutions or functions, they can be structured by objectives [Goodhart and alii 1997]. A formal and permanent coordination between the separate entities, not an ad hoc and episodic cooperation, should be devised.

An example of the former solution is the British Financial Services Authority established in October 1997. Avoiding the overlapping of controls and the dilution of responsibilities, enhancing the reputation of London as a leading financial centre after Barings and other accidents, tightening consumer protection, are some of the reasons. But the most important consequence is the definition of the missions of the Bank of England. Losing banking supervision, she has been entitled with the twin responsibilities of monetary policy and overall financial stability.

The latter solution has been experimented in the international arena with the creation in 1996 of the Joint Forum in Basle. Organizing a permanent dialogue between supervisors of banks, securities houses and insurance companies, the Joint Forum is the proper structure to supervise financial conglomerates.

It must be acknowledged that member countries of EMU have adopted none of these solutions. The diversity of institutional structures is largely a matter of inertia and vested interests. Because in some countries bank supervision is separated from the national central bank, it is not legally possible for the ECB to be part of an EMU-wide network of bank supervisors. However this is not the relevant issue. What is at stake is the structure of cooperation in Europe capable of performing European-wide bank supervision and market surveillance to permit the ECB to be the ultimate guardian of financial stability.

3.2. Weakness in cooperation between national supervisors and exposure to systemic risk

For the last twenty-five years the Basle Committee has been very active in setting minimal prudential standards for all international banks. It has also issued general principles to delineate the responsibilities for the supervision of transnational banks and financial conglomerates.

In Europe the Commission has issued directives which endeavour to be compatible with Basle regulations. The Ecofin Council has adopted the common norms and the European Parliament has enshrined them.

Beyond this basic level, multilateral coordination is very weak. The Memoranda of Understanding between bank supervisors are only bilateral. Multilaterally, cooperation has

taken the form of a Contact Group which meets periodically to examine problems of common interest. This Contact Group was created as early as 1972 between supervisory authorities of the EC. Its episodic and informal meetings are unconscious after 1980 the EC Commission has joined the group, which is concerned by the adaptation of the regulatory directive, issued by the Commission rather than by the shortcomings of supervision. It is a far outcry from the extensive and daily exchange of information, which is necessary to detect tensions in financial markets that have a potential for contagion. Furthermore no serious transnational cooperation has ever taken place in Europe between supervisors of different types of financial institutions. Therefore it can be feared that the macro-prudential issues lack the micro background to be properly handled at the European level.

Developing the multilateral mode of cooperation is not entirely precluded however by existing institutions. But it is severely hampered by the very limited macro-prudential role of the ECB and by the narrow interpretation of subsidiarity held by some national central bankers. Indeed Europe wide spreading of risk is the motivation to organise supervision on the same footing as risk occurs. Supervision of individual institutions is best carried out at the level closest to the financial intermediaries concerned. But the propagation of risk urges for a level of consolidation and global observation to provide the LLR with the needed information to do its job. If one denies that systemic risk exists or if one thinks that it can be subdued without the availability of the proper information at the right time, one cannot see any need to lay out a European level of supervision at all. Such is the attitude of some national central bankers. Fostering their vested interests, they plead for keeping LLR responsibilities as strictly decentralized and separate from the ESCB.

To refute the accusation of blindness before the experience of unstable financial market dynamics, a new institution is pinpointed. Advocates of the existing state of the art argue that the Banking Supervision Committee is the key forum which can overcome the weakness of the Maastricht Treaty as regards the role of the ECB in financial stability [Padoa-Schioppa 1999]. The origin of the Committee can be traced back to the Sub-Committee of Banking supervision created in 1994 in the European Monetary Institute to study some macroprudential issues connected to the future monetary policy in EMU. When the EMI was transformed into the ECB in July 1998, the need of a specific structure was confirmed. The Subcommittee has thus become the Banking Supervision Committee since October 1, 1998. But this Committee, whose members are national bank supervisors, meets four times a year! Furthermore it gathers people who are not central bankers. It is thus obvious that this Committee cannot handle emergency situations, nor is it able to make decisions of emergency liquidity assistance. The Committee is dedicated to studying long-run macro prudential questions.

It is clear that, for the time being, the ECB is deprived of the detailed knowledge of market exposure and spillover effects in real time that should be available to make an informed diagnosis on a systemic event originating in a particular market.

Had the LTCM crisis occurred in Europe, the proper decision mechanism would simply not have been available. Only a central bank as continuously listening to market participants as the

FRBNY could foresee the potential dislocations associated with the extraordinary widening of spreads on corporate and emerging-market sovereign debt. New York Fed officials continuously talk to, and receive calls from, market participants including LTCM partners. New York Fed officials were aware on the hour of the unsuccessful talks between LTCM and investment banks to raise new capital. Knowing that and watching the deterioration of market conditions, the New York Fed President was able to confer with chairman Greenspan and Secretary Rubin on September 18th 1998, so that a strategic move was decided.

Here are the prerequisites to engineer a successful lender-of-penultimate resort operation within a consortium approach under the Fed's watchful vigilance. Only the accumulated knowledge drawn from a timely network of personal relations with market participants can stem instantly a liquidity crisis that would have swept many money market segments and unsettle monetary conditions for weeks, may be for months. None of those mechanisms exists in Europe where even the identity of the lender of last resort able to meet a market liquidity crisis is in doubt.

3.3. Constructive and destructive ambiguity

Everyone agree that the Treaty gives a very limited role to the ECB, as far as macro-prudential issues are concerned. Under article 105 (5) the contribution of the ECB to financial stability is mentioned. But policies toward this goal are made by «competent authorities», which are not defined. If it means something, it is that the ECB is not responsible for the containment of systemic risk in the monetary area where she is the central bank. The responsibility is diffuse and the «competent authorities» are not named. Undoubtedly the draft is ambiguous. But is this type of ambiguity constructive?

To arrive at a proper decision when systemic risk may be feared, exchanges of information between the central bank and supervisory agencies are of the essence. In the Treaty these exchanges are defined in an extravagantly restricted manner. In case of a banking crisis, bank supervisors stand ready to transmit information to the ECB. But they can decide themselves the time and the content of what they transmit!

These crippling restrictions might be overcome via the Banking Supervision Committee which has the capacity to mediate the flow of information between the ESCB on the one hand, the network of supervisors assuming they are structured in a meta-level of supervision on the other hand. However to carry on this role, the Banking Supervision Committee must form the core of this meta-level of supervision. Its activities should be substantially extended. A permanent staff should pool information continuously, develop databases, make in-depth studies on the channels of contagion, on the variation in market liquidity, on the vulnerability of market intermediaries to abrupt changes in market prices, etc. In short the Banking Supervision Committee should house the activities of an observatory of systemic risk.

But the institutional changes to improve the knowledge on financial instability and to deepen the multilateral coordination between supervisory bodies depend on the assignment of the LLR function to the ESCB.

The official doctrine for the time being seems to be quite at odds with what is commonly understood as «constructive» ambiguity. This notion refers to the conditions in which the discretionary act of monetary sovereignty labelled «lending in last resort» is exercised. Constructive ambiguity means that the LLR acts in such a way that private financial firms cannot deduce whether it will intervene or not in a future situation from its past conduct. But there is no ambiguity at all as regards which institution plays that part. In Europe, on listening to official statements, one is puzzled by quite another meaning of ambiguity, which bears on the identity of the LLR.

Let us introduce the metaphor of a community of religious believers to better understand the argument. Salvation opening the realm of bliss is the stamina of their credo. Their common belonging depends crucially on the unanimous belief that God is in all certainty the saviour of the community as a whole. Yet they know that all individuals will not be saved. Salvation depends on their moral behaviour, but there is no a priori criterion, which can make each individual, sure that he or she will be saved. The choice is God's sovereignty. Believers are induced to behave rightly and never to loosen their moral standard because God's ultimate choice does not respond to a predetermined rule. It is constructive ambiguity. But suppose that a doubt seeps into the community about God's existence. The cohesion between believers will degrade and might dissolve altogether. Behaviour will be altered because opportunistic attitude takes the lead as soon as the promise of salvation has got uncertain. It is destructive ambiguity.

It is not disputable that constructive ambiguity is of the essence of LLR intervention. If supported with prompt corrective action, full and instant knowledge of the relevant conditions supplied by supervisory bodies, the LLR can effectively curb moral hazard if it keeps ambiguous whether it will intervene or not and at which terms. Intervention in last resort is based upon a careful case-by-case diagnosis of the likely threat of systemic risk [Giannini 1998].

Systemic risk in EMU can come from the operations of large value payment and settlement systems, from abrupt and huge losses in a component of a global financial group, from a liquidity stringency in a particular financial market. Any of these disruptions has the momentum to spread regardless borders and jurisdictions. Nevertheless the institution competent to step in, the information it will be able to draw upon, is not designed in the present institutional setting.

When the rescue of a specific financial firm pertaining to a larger financial group has to be decided upon, the home and host country central banks might have contradictory views as regards the social costs of alternative attitudes. When a market liquidity risk can arise as the result of disorderly fluctuations in asset prices, we are left with the explanation that the ECB council of governors «might» decide a concerted intervention of the NCBs under the leadership of the ECB.

What seems to be at stake is the denying that in market-led finance the LLR function is part of an extended conception of monetary policy whereby financial stability concurs with price stability to the wellbeing of the whole economy. What has been taken for granted for long in the US is still not well understood in Europe. The reason might be the experience of closed and

segmented banking systems and unimportant financial markets. Even while the Single Market policy had been undertaken and the design of EMU had been negotiated, the change in the logics of finance that would be brought upon by such drastic structural reforms had not been foreseen.

The conflict of objective argument has been time and again repeated, denying that financial instability deteriorates the working of monetary policy. Even the assimilation of macroprudential issues in Europe with German experience is not convincing. It is true that everything in Europe has been made on the German model. However responsibilities and cooperation between the Bundesbank and the Federal Banking Supervisory Office are much better designed than the relations between the wide number of disparate supervisory bodies and doctrines in EMU.

Another objection against the ECB's involvement in lending in last resort is the cost of irretrievable losses in case of insolvency of a financial firm which has first been rescued by LLR assistance and has finally to be bailed out by public money. It is argued that there would be an incentive for the national supervisors to conceal a state of insolvency to pass the cost to the European LLR. To avoid this externality, losses have to be borne nationally instead of being shared. Hence it would be inconsistent to claim for a European LLR and stick to national bail-outs.

However the argument goes both ways. It leaves open the dealing with disseminated losses in an international financial group conducting a global business too large to be rescued by the authorities of the home country alone. If the lender of last resort should be European-wide for reasons already explained and if it should not be involved in bailing-out operations, it means that a policy authority should be entrusted with the responsibility of organising lifeboat operations at the European level [Bini Smaghi 1999]. Far from keeping a narrow view of subsidiarity, the way out of the dilemma is to organise the network of supervisors so that national supervisors contribute to an European-wide bank supervision [CEPR 1999]. Such a network should keep information open to the EMU-wide lender of last resort.

The discussion over ambiguity has led to the conclusion that constructive ambiguity is inherent to the nature of the function of lending in last resort defined as an act of monetary sovereignty for the sake of overall financial stability. Because it pertains to monetary policy, this function is strictly separated from bank insolvency resolution. Organizing this separation makes the difference between constructive and destructive ambiguity. First and foremost, the right level for performing LLR assistance must be identified depending upon market dynamics which delineates the scope for systemic risk. The conditions in which the LLR operates determine the channels and content of information transmission from supervisory bodies. Constructive ambiguity bears also upon supervisors. Only a much strengthened supervision, adopting the principle of prompt corrective action in a common mandate, will enforce systematic cooperation between national supervisors to face the concentration of financial institutions and the integration of financial markets.

4. A COMPREHENSIVE FRAMEWORK FOR CONTAINING SYSTEMIC RISK IN EUROPE

There is a dilemma in international monetary economics attributed to Robert Mundell. This dilemma which has become famous in the field arises out of financial market integration. It states that it is impossible to combine fixed exchange rates, full capital mobility and autonomy in national policy objectives. At least one of the three features has to give way. Europe has solved it in making EMU, i.e. in forsaking national monetary sovereignty. Were financial markets perfect, the dilemma would not extend to prudential policy. National central bankers could claim with reason for the best of all worlds, which in their structure of preference is made of:

- Prudential national sovereignty
- Financial systems sheltered from excessive risk taking by effective supervision at the national level
- Efficient allocation of capital via competition in global markets.

Because financial markets are plagued with multiple equilibria, systemic risk arises out of various types of market imperfections: asymmetric information in credit markets, reflexivity in the valuation of assets, market liquidity scares. Systemic risk entails an inescapable trade-off between national autonomy of prudential policy, safety of the overall financial system and minimum cost of capital. This trade-off is the dual of Mundell's dilemma. It extends to the financial sphere while the other applies to the monetary sphere.

Three types of prudential policy can be designed to solve the trade-off by renouncing to one of the incompatible features (table 4).

Table 4: Types of prudential policy in Europe

Type 1 Autonomy + Safety	Type 2 Autonomy + Efficiency	Type 3 Safety + Efficiency
Financial systems prior to the Single Market	Financial liberalization and integration since the launching of the Single Market to EMU	Monetary and Financial Integration in EMU
Ways and Means of prudential regulation: <ul style="list-style-type: none"> • Capital controls • National supervision and LLR • Minimal coordination on cross-border payment systems 	Ways and Means of prudential regulation: <ul style="list-style-type: none"> • Partial harmonization of prudential standards • Heterogenous models for the supervision of banks and other financial institutions • Bilateral episodic cooperation structured in Memoranda of Understanding 	Ways and Means of prudential regulation: <ul style="list-style-type: none"> • Network of national supervisors coordinated in the Banking Supervision Committee • A Pan-European observatory of systemic risk • The ECBS as the lender of last resort

With the dismantling of capital controls and the advance of financial liberalization from the mid-80's onwards, prudential regulation has lagged behind. Type 2 fragile financial systems

originated in the late 80's. In the early 90's, asset market-induced banking crises erupted in nearly every European country. Inadequate monitoring of banks, excessive forbearance and muddling through in solving bank insolvency problems, were symptoms of inadequate prudential policy which sacrificed financial safety at high social costs. In speeding up the development of integrated financial markets and the market involvement of banks, the advent of EMU makes financial safety even more at bay. A move to type 3 prudential regulation is on the agenda, whatever the plea for doing nothing which is upheld by national supervisors and central bankers who defend their stronghold. Full-fledged crisis management being the paramount question, the ways lender of last resort function can be performed in EMU will be examined first. The conditions to be met for the LLR to make the best decisions and preserve constructive ambiguity will be considered next.

4.1. Lender of last resort operations in EMU

Drawing from previous sections, financial crisis management is called for in various situations:

- A general deterioration in financial conditions conducive to a massive shift to liquidity, as occurred on dollar markets in 1998 after the Russian bankruptcy.
- A large bank failure or multiple failures in the banking sector, which trigger externalities through payment systems or securities markets and create endemic financial fragility.
- A crash in a securities or derivatives market which spurs the need for liquidity and deteriorates bank balance sheets via margin calls, capital requirements, collapses in collateral values.

The LLR must make a decision to intervene or not and how to operate at short notice with the knowledge provided by all available information gathered by supervisors. The quality of the diagnosis about the presence of systemic risk in a peculiar situation is crucial to strike the best compromise between the cost of letting the crisis burn out on the one hand, the cost of moral hazard on the other hand. Constructive ambiguity cannot be preserved if these conditions are not met.

To preclude destructive ambiguity, LLR policy for containing systemic risk should adopt an euro area-wide horizon. Therefore the responsibility of the ESCB as the lender of last resort for EMU should be acknowledged and never be in doubt. On the contrary, decentralizing LLR function to national central banks, on their own responsibility and an ad hoc basis, is utterly inappropriate in view of the close implications of LLR function for monetary policy. Whoever technically performs the emergency liquidity injection and the technique used, the ESCB as a whole should always retain the final decision. Therefore the ultimate decision-making body is the council of the ECB which should have the capacity to activate the facilities needed to take decisions in emergency.

Depending upon the type of financial crisis, the initiation of the process can come from a particular country, a financial centre or be detected in the worsening of overall financial conditions. In the first two instances, the Council should be able to draw upon well-run

information lines and be entitled to ask supervisory institutions for whatever piece of information may be relevant for its diagnosis. As speed of reaction is of the essence in a successful LLR intervention, ECB managers should be informed of anomalies creeping in financial systems from the start. In the last instance, unsettling monetary conditions can be ascertained in the course of monetary policy.

As far as operational responsibilities are concerned, the intervention in liquidity can be either carried out by the ECB or by one or several national central banks after the decision to intervene has been decided upon by the ECB's council and the procedure has been agreed upon in detail.

A widespread occurrence of systemic risk, upsetting a large range of markets and deteriorating macroeconomic conditions may entail full centralization, because the ECB alone can restore confidence shaken by an adverse shift in beliefs.

A severe disruption on a specific securities or derivatives market, with a potential for spillover through portfolio management by investors and dynamic hedging by market intermediaries, is a threat which can be better contained in the disturbed market. If the market is located in a financial centre or if well-identified market makers have to be supported, the situation eventually points out to a national central bank better equipped than others to operate. Depending on the market in disarray, the central bank can intervene with direct open market operations, lending to market makers or providing guarantees to banks which extend credit lines to the market makers. The central bank, operating on behalf of the ESCB and under instruction issued by the Council, may eventually broaden the range of collateral acceptable to secure her lending.

An emergency liquidity assistance to an individual financial institution, justified by its critical position vis-à-vis others, can be dealt with by the central bank of the home country of this institution, or by the central bank of the country where the institution is in trouble. Whatever the decision, it pertains to the ECB council to take it. Being a non routine lending, the intervention can use the tool kit of standing facilities: marginal lending facility fitted for emergency lending or discount window US style.

In any case, the EMU area-wide externalities inherent to systemic risk in a single monetary area can only be internalised by a systemic regulator which is the ESCB as a whole.

4.2. A supportive environment for the European lender of last resort

On facing the development of a crisis situation, a macroprudential institution must be able to resort to a reliable framework to implement the lender-of-last-resort function according to the principle of constructive ambiguity. The ingredients of such a framework are: substantive, mandatory and timely information transmitted by decentralised supervisory agencies; a coordinating unit under the authority of the Bank Supervision Committee to regulate multilateral information flows and to aggregate the data; an expertise in the assessment of market price instability, the measurement of market liquidity, the analysis of contagion processes; the provision of lenders of penultimate resort making multiple lines of defence to be activated according to the type of crisis ; guarantees of the LLR against the risk of losses provided by

national fiscal authorities, who will have the incentive to make bank supervisors accountable for keeping moral hazard in check via prompt corrective action.

A most significant innovation would be the setting of an *observatory of systemic risk* at the European level. It could operate under the authority of the Bank Supervision Committee. Most importantly it should be endowed with a permanent staff to make the best of the data gathered and processed by the coordinating unit of information flows provided by national supervisors.

An observatory of systemic risk would be all the more useful than we know very little of the details of contagion processes, weak links in financial conglomerates, forerunning indicators of market liquidity stringency, of turnaround in market sentiment. Therefore it should be self-evident that the ECB Council would greatly benefit from relying on an agency capable of following, understanding and interpreting European wide market development. Any diagnosis about a systemic event in the making would be more reliable and laid on firmer ground.

With access to information generated in financial centres and transmitted to national central banks and supervisors, the observatory would be in a position to assess the consolidated exposure of the main market makers operating in several intertwined markets. In normal time, the observatory would work as a warning agency and a research centre on the effect of the development of financial markets in Europe on systemic risk. In times of crisis, the observatory would operate as a task force for the ECB board and council of governors to arrive at a diagnosis and conceive a mode of intervention to thwart a liquidity crisis at the most appropriate impact point. It could also help the Council guide the resolution of major bank failures involving more than one central bank.

The overall framework combines the institutional separation between prudential supervision and central bank functions, their decentralisation at the national level, the vertical coordination at the European level by the Banking Supervision Committee for the prudential functions, by the ECB for the monetary functions. The ECB council is the sovereign authority in EMU, as such the ultimate decision-making power as regards LLR interventions. The observatory of systemic risk is the functional agency dedicated to the study and forewarning of systemic risk. Figure 1 sketches the design which reflects the findings of this paper.

To keep in check moral hazard, the action of the European LLR could be supplemented by several lines of defense.

The first simple recommendation is the complete homogenisation of prudential rules. The more harmonized are prudential systems within Europe, the less likely are disturbances provoked by regulatory arbitrage to make profit from disparities. It is the case of deposit insurance schemes which are distinct among countries. Deposit insurance is the recognition of the social nature of bank deposits. It transforms a claim on a private debtor into a claim on the banking system as a whole and ultimately on the nation when the scheme is public and benefits explicitly or implicitly from the guarantee of the State. Deposit insurance is what makes money fungible on a contractual basis, the LLR being the ultimate guarantor of fungibility for the part of bank money not covered by deposit insurance. In principle, credible deposit insurance lessens the incentive for bank runs. Because EMU makes the Euro the single currency, it should be fungible in the

same degree all over Europe. Disparities in deposit insurance schemes violate a basic principle and expose the ESCB to undue disturbances.

Organizing lenders of penultimate resort under the authority of the central bank can save central bank money, while enrolling private financial institutions in the rescue of their business partners. It can be conceived as a kind of club solidarity. Different mechanisms already exist in some European countries reflecting different traditions. Their survival in integrated European capital markets are far from certain and the extension to Europe of one of those patterns still less sure.

In France, article 52 of the 1984 Banking Law stipulates that banks can be solicited by the Governor of the Bank of France to the rescue of a failed bank. This line of defence limits moral hazard but works on moral suasion. Its effectiveness depends on the acknowledgement of a community of interests among market participants which cannot be but weakened with intense competition in highly contestable markets. It means that the consultation of bank consortia needs a stronger impetus from the central bank than demonstrated in France to coordinate the participation of financial firms of different nationalities and market culture.

Germany offers the model of a liquidity consortium bank. How could it be generalized to manage the cross-border consequences of a liquidity shortage in a large multinational financial group is an open question? In Germany, the consortium bank supplements deposit insurance to hamper the negative impact of an individual bank default. If this consortium can be trusted for its capacity to intervene timely and successfully, it keeps non-insured deposits stable, while at the same time making the holders of interbank deposits responsible for systemic externalities proceeding from their network of liabilities. But the German mechanism, like the French one, is dependent on the solidarity of the main national financial institutions in underdeveloped capital markets where a crisis arises slowly.

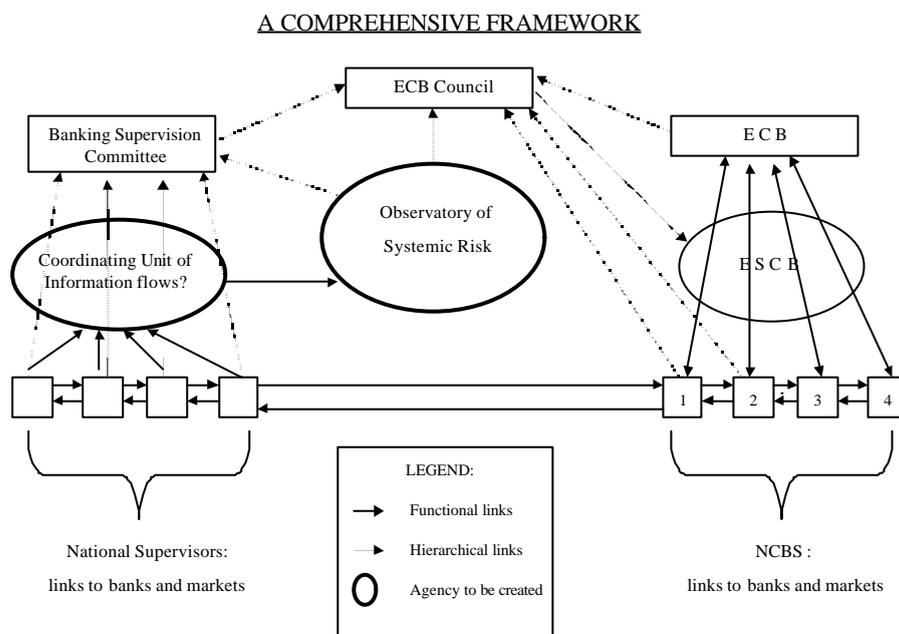
In fast-expanding capital markets encompassing the EMU-wide area and well beyond into global markets, liquidity consortia cannot be predefined and institutionalised. They should be assembled on the US model activated for the rescue of LTCM. The crucial participants are the market makers on the segments of the wholesale liquidity markets most affected by the particular problem to be treated. They are detected thanks to the intimate knowledge of the central bank on the systemic implications and channels of propagation originating in the difficulties of a specific firm.

The last possible aspect of a supportive environment leads back to supervision. It draws from the British tradition of moral codes which encourage self-discipline by virtue of peer pressure. It is obviously a club mentality whereby reputation is the outcome of a common elite culture. As such it is irrelevant in a fierce competitive climate among cosmopolite financial firms operating in a host of open markets. If market discipline were to embody professional codes of conduct, the codes could only be enforced if they were part of a much more strengthened supervisory mechanism than the lax and diverse practices currently at work in Europe. For private auto-regulation mechanisms to play a larger role in risk prevention, a strong and harmonized code of conducts should apply to internal and external auditors alike at the European level, hand in hand with normalized accounting standards and methods of consolidated supervision. Transparency

in over-the-counter markets means nothing if it is not enforced by a day-to-day surveillance of individual behaviour of trading agents that only internal auditors can do.

Even worse is the present state of affair concerning rating agencies. They escape any control or oversight while their performance has been appalling in recent crisis episodes. Since their rating is interacting more and more with the process of supervision, they contribute to a public judgement on the creditworthiness of banks. Their evaluation has acquired the same importance as the regulatory solvency ratios. Therefore rating agencies should be pre-qualified by a market regulatory institution, like the SEC in the US and a similar body in Europe. An accreditation system should set up qualifying arrangements to encourage rating agencies to develop more expertise designed to assess the quality of bank internal control systems.

Figure 1:



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