

---

# **Bailing out the Banks: Reconciling Stability and Competition**

**An analysis of state-supported schemes for  
financial institutions**

## **Centre for Economic Policy Research (CEPR)**

Centre for Economic Policy Research  
2nd Floor  
53-56 Great Sutton Street  
London EC1V 0DG  
UK

Tel: +44 (0)20 7183 8801  
Fax: +44 (0)20 7183 8820  
Email: [cepr@cepr.org](mailto:cepr@cepr.org)  
Website: [www.cepr.org](http://www.cepr.org)

© Centre for Economic Policy Research 2010

ISBN: 978-1-907142-03-1

---

# Bailing out the Banks: Reconciling Stability and Competition

## An analysis of state-supported schemes for financial institutions

**Thorsten Beck** (Tilburg University and CEPR)

**Diane Coyle** (Enlightenment Economics, University of Manchester and CEPR)

**Mathias Dewatripont** (Universite Libre de Bruxelles, Solvay Brussels School, ECARES and CEPR)

**Xavier Freixas** (Universitat Pompeu Fabra and CEPR)

**Paul Seabright** (Toulouse School of Economics and CEPR)



## **Centre for Economic Policy Research (CEPR)**

The Centre for Economic Policy Research is a network of over 700 Research Fellows and Affiliates, based primarily in European universities. The Centre coordinates the research activities of its Fellows and Affiliates and communicates the results to the public and private sectors. CEPR is an entrepreneur, developing research initiatives with the producers, consumers and sponsors of research. Established in 1983, CEPR is a European economics research organization with uniquely wide-ranging scope and activities.

The Centre is pluralist and non-partisan, bringing economic research to bear on the analysis of medium- and long-run policy questions. CEPR research may include views on policy, but the Executive Committee of the Centre does not give prior review to its publications, and the Centre takes no institutional policy positions. The opinions expressed in this report are those of the authors and not those of the Centre for Economic Policy Research.

CEPR is a registered charity (No. 287287) and a company limited by guarantee and registered in England (No. 1727026).

Chair of the Board	Guillermo de la Dehesa
President	Richard Portes
Chief Executive Officer	Stephen Yeo
Research Director	Mathias Dewatripont
Policy Director	Richard Baldwin

---

# Contents

<i>About the authors</i>	<i>vi</i>
<i>Acknowledgements</i>	<i>viii</i>
<i>Glossary</i>	<i>ix</i>
<b>Introduction</b>	<b>1</b>
<b>1. Why are banks special?</b>	<b>9</b>
1.1 The high social cost of banks' bankruptcy	10
1.2 Contagion in times of financial instability	12
1.3 The regulatory safety net	13
1.4 The differences between banking and non-banking entities	14
<b>2. Bank competition and financial stability</b>	<b>17</b>
2.1. Bank competition and stability: what does theory predict?	17
2.2. Bank competition and stability: what do the data tell us?	19
2.3. Universal banking and stability	23
<b>3. Origins and initial impact of the banking crisis</b>	<b>25</b>
3.1 The systemic crisis	25
3.2 The channels of contagion	26
3.3 The subprime crisis	29
3.4 Bank bankruptcies	31
3.5 Impact of the crisis on bank activity	32
3.6 Experience of bank rescue packages in member states	35
<b>4. Bank bailouts: their purpose, risks and implications for burden sharing</b>	<b>37</b>
4.1 What problems are bailouts supposed to solve?	37
4.2 How can bailouts resolve these problems?	43
4.3 How bailouts can go wrong	46
4.4 'Good bank/bad bank' schemes	48
4.5 Desirable principles for rescue plans	49
<b>5. Competition implications of bailouts</b>	<b>51</b>
5.1 Behavioural solutions	52
5.2 Governance solutions	56
5.3 Principles for the competition policy evaluation of bank rescue plans	57
<b>6. An evaluation of DG Competition's strategy</b>	<b>59</b>
6.1 European Commission state aid communications	59
6.2 The European Commission's actions in individual bank rescues	63
<b>7. Preventing future crises: reforming prudential regulation</b>	<b>67</b>
7.1 Introduction	67
7.2 Globalisation and the new challenges in the current crisis	68
7.3 Requirements for effective harmonisation	71
7.4 Harmonisation in the European Union	71
7.5 The de Larosière report and its follow-up	74
7.6 Beyond the de Larosière report – the new financial supervision structure	74
<b>8. Conclusions</b>	<b>85</b>
<i>References</i>	<i>86</i>

---

## About the authors

**Thorsten Beck** is Professor of Economics and Chairman of the European Banking Center at Tilburg University. Before joining Tilburg University in 2008, he worked at the Development Research Group of the World Bank. His research and policy work has focused on international banking and corporate finance and has been published in *Journal of Finance*, *Journal of Financial Economics*, *Journal of Monetary Economics* and *Journal of Economic Growth*. His operational and policy work has focused on Sub-Saharan Africa and Latin America. He is also Research Fellow in the Centre for Economic Policy Research (CEPR) in London and a Fellow in the Center for Financial Studies in Frankfurt. He studied at Tübingen University, Universidad de Costa Rica, University of Kansas and University of Virginia.

**Diane Coyle** runs the consultancy Enlightenment Economics. She is a BBC Trustee and member of the Migration Advisory Committee and of the independent Higher Education Funding Review panel, and was for eight years a member of the Competition Commission (until September 2009). She is also visiting professor at the University of Manchester. She has a PhD from Harvard. She specialises in the economics of new technologies, including extensive work on the impacts of mobile telephony in developing countries. Recent projects include work for NESTA on the wider conditions for innovation, and a study on the effects of mobiles in India. She is the author of several books, has published numerous book chapters, reports and articles, and was formerly a regular presenter on BBC Radio 4's *Analysis*. Her next book is to be published by Princeton University Press in 2010. Diane has acted as a member of the advisory board of ING Direct UK and of the stakeholder advisory panel of EDF Energy, and is a member of the advisory council of the think tank Demos. She was previously Economics Editor of *The Independent*, and earlier worked at the UK Treasury and in the private sector as an economist. Diane was awarded the OBE in January 2009.

**Mathias Dewatripont** holds a Ph.D. in Economics from Harvard University, 1986. He is professor of economics at ULB and currently the President of its Solvay Brussels School of Economics and Management. He is laureate of the 1998 Francqui Prize and of the 2003 Jahnsson Medal. He was Managing Editor of the *Review of Economic Studies* (1990-94) and one of the three Programme co-chairs of the 2000 World Congress of the Econometric Society (Seattle), of which he is Fellow and Council Member. In 2005, he was President of the European Economic Association. He has been Research Director of CEPR as well as Annual Visiting Professor at MIT since 1998. He is a

member of European Commission DG-Competition's Economic Advisory Group on Competition Policy and of European Commission President J.M. Barroso's Group of Economic Policy Analysis. His general research area is the theory of incentives and organizations, with applications to banking, corporate finance and the theory of organizations. He has published many articles in international journals (including *Quarterly Journal of Economics*, *American Economic Review*, *Journal of Political Economy*, *Review of Economic Studies*, and *Econometrica*); moreover, his books include *The Prudential Regulation of Banks* with Jean Tirole (MIT Press, 1994) and *Balancing the Banks: Global Lessons from the Financial Crisis* with Jean-Charles Rochet and Jean Tirole (Princeton University Press, due to appear in May 2010).

**Xavier Freixas**, (Ph D. Toulouse 1978) is Professor at the Universitat Pompeu Fabra in Barcelona (Spain) and Research Fellow at CEPR. He is also Chairman of the Risk Based Regulation Program of the Global Association of Risk Professionals (GARP). He is past president of the European Finance Association and has previously been Deutsche Bank Professor of European Financial Integration at Oxford University, Houlblon Norman Senior Fellow of the Bank of England and Joint Executive Director Fundación de Estudios de Economía Aplicada FEDEA), 1989-1991, Professor at Montpellier and Toulouse Universities. He has published a number of papers in the main economic and finance journals (*Journal of Financial Economics*, *Review of Financial Studies*, *Econometrica*, *Journal of Political Economy*,...). He has been a consultant for the European Investment Bank, the New York Fed, the European Central Bank, the World Bank, the Interamerican Development Bank, MEFF and the European Investment Bank. He is Associate Editor of *Journal of Financial Intermediation*, *Review of Finance*, *Journal of Banking and Finance* and *Journal of Financial Services Research*. His research contributions deal with the issues of payment systems risk, contagion and the lender of last resort and the He is well known for his research work in the banking area, that has been published in the main journals in the field, as well as for his book *Microeconomics of banking* (MIT Press, 1997), co-authored with Jean-Charles Rochet.

**Paul Seabright** is Professor of Economics at the Toulouse School of Economics. He was formerly a Fellow of All Souls College, Oxford and of Churchill College, Cambridge, and Reader in Economics at the University of Cambridge. He has published research in a wide range of areas of both theoretical and applied microeconomics, with a particular focus on industrial organization and competition policy. He is the author of several books, including *The Company of Strangers: A Natural History of Economic Life* (Princeton 2004), which was shortlisted for the 2005 British Academy Book Prize and will appear in a second edition in May 2010 with a new chapter on the financial crisis. He is a member of European Commission DG-Competition's Economic Advisory Group on Competition Policy and a Council Member of the European Economic Association.

---

# Acknowledgements

We would like to thank Hans Degryse and Jean-Charles Rochet for their comments. We are grateful to many individuals within the European Commission who gave us valuable advice and information, and in particular Damien Neven and his team members, Georges Siotis and Stan Maes. More generally, we thank Damien Neven for encouraging our work and Philip Lowe for his support and his readiness to allow us to publish this study. This report draws on research the authors carried out for DG Competition during the first months of 2009, but it reflects the views of the authors and not of DG Competition or of CEPR.



---

# Glossary

ABS	Asset Backed Security
AMC	Asset Management Corporation
BCM	Bank Crisis Management
BIS	Bank for International Settlements
CDO	Collateralised Debt Obligation
CDS	Credit Default Swap
EBA	European Banking Authority
EDIC	European Deposit Insurance Corporation
ECB	European Central Bank
EFC	Economic and Financial Committee
ESA	European Supervisory Authorities
ESFS	European System of Financial Supervisors
ESRB	European Systemic Risk Board
ESRC	European Systemic Risk Council
FDIC	Federal Deposit Insurance Corporation
FDICIA	Federal Deposit Insurance Corporation Improvement Act
LCFI	Large Complex Financial Institution
MoU	Memorandum of Understanding
OTC	Over the Counter
OFT	Office of Fair Trading
PCA	Prompt Corrective Action
RBS	Royal Bank of Scotland
SIV	Special Investment Vehicle / Structured Investment Vehicle



---

# Introduction

The continuing crisis has been exceptional in its intensity and global reach. It began as a financial crisis and it became an all-out economic crisis, requiring a wide range of globally-coordinated policy responses: monetary and fiscal as well as regulatory responses, not to mention steps to avoid the trap of protectionism.

Much has already been written on the subject,<sup>1</sup> and this report will not try to address the current crisis in its entirety. Since its main focus is on bank bailout plans, we will not discuss trade and macroeconomic aspects (except to emphasise that bailout plans should not threaten the sustainability of public finances).

This report will concentrate on two specific aspects of policy: financial regulation and competition policy. These are inevitably intertwined. Since the Great Depression policymakers have struggled to define the right mix of competition rules and regulations specific to the banking sector. The Great Depression led to the discontinuation of most standard competition policies in banking in order to foster financial stability. This objective was clearly achieved, but at the cost, over succeeding decades, of stifling innovation and imposing a high burden on consumers. This led in turn, from the 1970s, to a swing of the pendulum towards deregulation, with more competition and innovation but also with many banking crises (e.g. in the US in the 1980s and in Scandinavia and Japan in the 1990s, in addition to the many emerging-market crises). Each time, regulation did try and adapt, in a global fashion, leading in particular to the Basel I and II regulatory frameworks.

Obviously, this has not prevented the massive crisis that exploded in 2008, leading to the two unavoidable questions that accompany every such episode: (1) how to deal with the current crisis; and (2) what lessons the experience offers for reducing the likelihood of another crisis and mitigating its impact? This report will address these two questions, with special emphasis on competition policy, and in particular on state aid control. It is important, furthermore, to put these policy responses in the context of the overarching architecture of regulatory policies, because the question of the link between competition and stability in the banking industry depends on the ability of the various levers of prudential regulation to prevent excessively risky behaviour by bank managers and shareholders.

The crisis has provoked two common but quite different reactions concerning the role of competition policy in the banking sector. One reaction has been to consider

---

1 Just to focus on CEPR/VoxEU outputs, see for example the recent ebooks edited by Baldwin (2009), Dewatripont et al. (2009) and by Baldwin and Evenett (2009), as well as the two ebooks collecting Vox columns on the crisis edited by Felton and Reinhart (2008, 2009). VoxEU.org has published two other relevant ebooks, both edited by Baldwin and Eichengreen (2008a, b).

that financial stability should take priority over all other concerns, including those of traditional competition policy; and therefore, that the 'business as usual' preoccupations of competition regulators should be put on hold, and the normal rules suspended for the duration. Another reaction has been to fear that intervention to restore financial stability will lead to massive distortions of competition in the banking sector, and therefore to conclude that competition rules should be applied even more vigorously than usual, with the receipt of state aid being considered presumptive grounds for suspecting the bank in question of anti-competitive behaviour. As will be seen, in this report we endorse neither of these points of view. We reject the idea that the crisis requires the suspension of normal competition policy rules; in times of crisis they are more important than ever. However, we also believe that the competition rules appropriate to the banking sector are not the same as those that should apply to most other sectors. The reasons are set out in detail below, and result from the fact that bailing out one bank in an episode of crisis helps its competitors. State-aided banks have a different relation to the rest of the economy than state-aided firms in other sectors, and the rules of state aid policy should reflect these differences. However, this is not equivalent to saying that competition policy in banking does not matter in a crisis. On the contrary, there should be a thorough competitive assessment of the banking sector following the bailouts.

This report focuses on general economic principles that should be kept in mind when facing crisis-induced bank bailouts. It then discusses the reaction by competition authorities to the current crisis. It is fair to say in this respect that they tried to strike a balance between the insistence on competition concerns and the need for urgent action to respond to the financial crisis. Nevertheless, the specific characteristics of banking need to be acknowledged more explicitly, in particular because the crisis has had sector-wide competition implications which measures targeting the individual recipients of aid are not well suited to address.

## **Main conclusions of the report**

The various methods of helping banks, such as purchasing toxic assets (perhaps to be put in a bad bank), recapitalisation or providing guarantees, should have three objectives in mind: (i) the need to stabilise the financial system; (ii) the need to restart lending; and (iii) the need to avoid distortions of competition. Although in some respects there is a balance to be struck between these objectives, there is no fundamental trade-off between the aims of financial stability and competition: in our view, reformed prudential regulation should take care of potentially excessive risk-taking, which means competition policy rules can then apply in banking as in other sectors of the economy, once the crisis has subsided.

Our conclusions on *general economic principles* fall under three main headings.

- **State aid principles *are* different for banks**

### *Bank bailouts can help competitors*

It is important to recognise that in the banking industry, in times of crisis, the fact that one firm is being helped could well imply a positive externality for its

competitors, either because it prevents systemic problems, or because these competitors are themselves its creditors, and so are indirectly also bailout recipients. This means that bank bailouts do not necessarily require 'compensation' for competitors, in contrast to the normal assessment of state assistance in other industries. This does not detract from the fact that in the medium- to long-term, the survival of less efficient banks can hurt their competitors and the whole banking system.

*New lending needs to be supported*

In periods of generalised bailouts, remedies that will tend to contract new lending must be avoided, although the economic crisis means the desired amount of lending will decline and the credit-worthiness of some borrowers will have declined.

- **Competition policy should apply, but conditions on bailouts must reflect the specifics of banking**

*Standard competition policy should apply to banks*

There is no case for applying weaker competition policy criteria to banks, because competition and stability are not incompatible. The data show that the share of profits of financial institutions, in GDP, had been growing steadily over time until 2008. Even if some of this was an unsustainable bubble, it was not a situation in which trouble would have been unavoidable whatever the design of regulation. The problem was clearly not one of competition leading inevitably to banking fragility. Proper prudential regulation should therefore be sufficient to allow standard competition policy principles (Articles 81 and 82 and merger regulations) to be applied: there is no need to weaken standard competition policy for banks. Nor should competition policy be applied more strictly in a crisis; it should be applied with sensitivity to the circumstances that distinguish banks from other kinds of state-aided firms.

*Behavioural restrictions may distort competition*

Standard competition policy imposes both structural and behavioural restrictions on firms, and there are no grounds for applying these less vigorously to banks in a crisis: leniency in merger approval or greater tolerance of predatory behaviour are no more justified for weak banks than for any other financial or non-financial firm. However, the opposite tendency also needs to be avoided: in particular, there is no case for specific behavioural restrictions following bailouts that would put the rescued bank at a competitive disadvantage with respect to competitors, such as caps on the compensation of new hires (when banks need fresh talent to clean up the mess created by previous executives), or limitations on their pricing strategies relative to competitors.

Moreover, in periods where many banks have received bailouts, there are good reasons to avoid imposing conditions on the receipt of state aid that require generalised balance sheet reductions. These are sometimes justified by analogy with other sectors (such as manufacturing), where the crisis conditions that lead to bailouts are often an indicator of structural overcapacity in the sector. In banking, by contrast, bailouts have been provided due to the fear of a credit crunch – that is, of

inadequate activity in the sector due to the efforts of weak banks to recapitalise. Imposing balance sheet reductions as an automatic condition of state aid therefore does not have the rationale that it often has in other sectors of the economy.

This does not imply that concerns about balance sheet growth are unjustified: on the contrary, limiting growth through acquisitions does make sense as a way to prevent the recipients of a bailout gaining an unfair advantage. And, in fact, there is a case for requiring balance sheet reduction in the case of banks whose prior overexpansion was the reason for their needing a bailout. This being said, a lot of restructuring in the sector will be desirable following the crisis, and there is no reason to prevent acquisitions which are compensated by divestitures and therefore avoid net growth of balance sheets. This should, however, be accompanied by an assessment of the competitive situation in the sector taken as a whole.

*Bailouts should not favour banks' domestic assets*

Bailouts should not be permitted to lead to any move away from the single market, either through national governments directing their own banks towards domestic lending, or through the imposition of remedies that would lead banks to spin off foreign rather than domestic activities.

- **The need for stability justifies 'real' but not over-generous aid**

*Accounting changes are dangerous*

In cases of bank insolvency, such as those we are experiencing in current conditions, 'real' bailouts are needed. Changing accounting rules in order to pretend things are fine is inappropriate: this just means allowing insolvent banks to go on rather than cleaning them up, which would result in inefficient lending – ie, leading either to a credit crunch (as in Japan in the 1990s), or to 'zombie lending' (as in the US Savings and Loans Crisis in the 1980s).

*The amount of the bailout should be the minimum necessary*

While 'real' bailouts are needed, Governments must avoid being 'overly generous' in bank rescues; they should avoid plans that give such banks extra funds that would, for example as discussed above, allow them to start buying other financial institutions that are in trouble.

*Equity holders must bear as much of the bailout burden as possible*

Minimising aid means in particular that, to the extent possible, bailout plans should wipe out initial equity holders, in order to reduce potential moral hazard. However, this can be overstated, as the regulatory environment will clearly change after the crisis, and as there is a danger of negative externalities (including between member states) if a government treats shareholders too harshly. The key criterion for European authorities should be to insist that the sustainability of public finances is not threatened.

*More of the burden should be placed on 'junior creditors'*

Moral hazard and fiscal considerations also point to imposing losses on junior creditors, something which has been too much overlooked in the 2008-2009

bailouts.<sup>2</sup> This may be because of the fear of causing panic among creditors – but this fear is overrated: separating out the claims of junior creditors from those of senior ones may well encourage the latter to lend more, rather than less freely. Of course, one should be careful about second-round effects: if junior creditors are financial institutions too, such liability re-evaluations may simply transfer the problem; and European authorities may want to give careful attention to this argument in the case of foreign junior creditors, whose interests would naturally be neglected by member states.

*Sunset clauses/exit strategies are needed*

The difficulty of monitoring and enforcing behavioural restrictions on the assisted banks, and of designing restrictions which do not distort competition, make it imperative to include an end date or exit strategy in bailout plans.

*Governance of banks needs strengthening*

For the same reason, certainly for the duration of the state aid and in many cases permanently, stricter governance of the banks rescued is needed. The prior standard corporate governance framework proved inadequate.

## **Other implications for regulation**

We also make a number of recommendations in terms of the over-arching regulatory architecture:

*Regulation is needed for non-deposit-taking institutions*

While it is true that deposit-taking institutions deserve special attention, other types of institutions also need regulation if they are 'too big to fail' or 'too interconnected to fail'. Otherwise, this can quickly lead to the rapid development of more lightly regulated entities, leading to distortions of competition and inefficiencies. In this respect, the tax treatment of financial institutions has important prudential and competition implications, and dangerous loopholes that currently favour the shadow banking sector, encouraging leverage and risk taking, must be closed. There should also be a review of the capital charges that apply to lending by banks to the shadow banking sector.

*No need to prevent universal banking*

There is no need to try to prevent universal banking, but the right capital charges are needed for various business lines or products. What is dangerous is not financial innovation *per se*, but 'excessively' risky uses of such innovation. This means higher capital charges are needed on structured finance products and other off-balance-sheet transactions, and these should no longer be linked to the ratings they receive (since ratings are particularly inflated for non-transparent products). Further consideration

---

2 Note that we use the generic term 'junior creditors' here to include the various financial instruments that are 'in-between' equity and senior debt in terms of priority were the bank to go bankrupt, from 'hybrids' until subordinated debt.

should be given to the idea of having very high charges beyond some threshold volume for each bank offering new financial products, at least until their properties are understood.

*No direct limits on bank size needed – but growth should be made more costly*

There are risks associated with big banks, in particular the danger that they are too big to fail, and the moral hazard to which this gives rise. This is all the stronger because bigger banks have more lobbying muscle. However, there is value in having a single market in banking just as in other sectors. Of course, this should be accompanied by proper centralised regulatory, supervisory and burden-sharing arrangements. The way to deal with the risks of size is not to impose arbitrary limits, but to apply deposit insurance premia or capital charges that increase in percentage terms when banks get bigger.

*Macro-prudential regulation should supplement the current Basel regulatory system.*

It is crucial to limit the procyclical effect of the current regulation, for example by introducing procyclical capital ratios, in order to limit the need for banks to deleverage during recessions. This could take the form of dynamic provisioning (as already done in Spain), capital ratios indexed on macroeconomic variables (see Repullo et al. (2009) for an example using GDP), or capital insurance (along the lines of Kashyap et al. (2008)). Using the options provided by Pillar 2 of Basel II, which leaves it to each country to set an additional layer of capital, has proved inadequate, due to competition amongst regulators limiting this additional capital.

*Simpler fixed rules are needed to protect regulators*

Regulation should seriously and explicitly take into account the gaming between regulators and private actors, which takes place either through potential lobbying and capture, or through financial innovation that aims at regulatory arbitrage.

*More centralised supervision and resolution capacity is needed in Europe*

To address cross-border bank failures, there is a need for more centralised regulation and supervision and in particular ex ante burden-sharing agreements in Europe.

## **Assessment of the policy responses so far**

*State aid control*

DG Competition has been very active since the Autumn of 2008. As stressed earlier, it has struck a balance between the insistence on competition concerns and the acknowledgement of the specificities of banking. We agree with its general approach, in particular, its general 'permissiveness' towards broad-based plans (as of December 17, 2009, it had adopted without objections all 66 of the 67 temporary sector-wide aid schemes), and its focus on only those banks that received significant individual help. (As of December 17, 2009, it had adopted 81 decisions on individual cases related to the financial crisis, of which 75 raised no objections to the aid). It does not mean, however, that its potential concerns, detailed in its Communications, did not



have an impact on the many plans and cases being put forward. In particular, it was very useful for DG Competition to insist on avoiding overgenerous help, and on encouraging exit strategies.

As far as those cases where remedies were imposed, we understand the desire to counter moral hazard by insisting on balance sheet reductions. This being said, we want to stress again the fact that the implications of bailouts on competitors can be quite ambiguous in the banking sector. Our feeling is that the key concern of competition authorities should be the restoration of a 'level playing field' among banking competitors, with sufficiently dynamic competition. In this respect, it is important that the insistence on minimum aid and on exit strategies do not lead to undercapitalised banks. Similarly, it is important that balance sheet reductions do not lead to a retreat of banks within their national borders, thereby contradicting the goal of a single market in this sector. Finally, our biggest worry concerns behavioural restrictions imposed on bailout recipients. While it makes sense to avoid the unfair advantages that public money would give to such recipients, 'tying their hands', for example by preventing them from being 'price leaders', seems to us to be both hard to enforce and misguided: it is much better to ensure that these banks are adequately capitalised and then enforce competition on all players in the market.

Of course, this criticism has to be mitigated by the fact that competition authorities do not live in a first-best world: while we strongly feel that financial stability, and in particular the prevention of moral hazard, is mainly the job of prudential regulation and not of competition authorities, the latter have to live with whatever prudential regulation exists at present times. Erring to some extent in the direction of moral-hazard prevention in competition policy can therefore be justified partially (but not fully) by the excessively slow reform of prudential regulation, a topic we now turn to.

### *Prudential regulation reform*

Let us start with a note of caution here. Regulatory reform is currently only 'work in progress', some of which requires complicated international negotiations – that is, for example, as far as macro-prudential regulation, accounting conventions, or the treatment of the shadow banking sector, are concerned. Our assessment can therefore only be partial.

This being said, the recent European Banking Authority (EBA) proposal and Bank Crisis Management (BCM) Communication constitute a step forward in the design of a post-crisis financial regulatory regime that better coordinates supervision in Europe, a key requirement to preserve a single market in banking. Still, the loss of supervisory authority will presumably be aggressively opposed by some countries, such as the UK, for which the financial industry is a strategic one. This could lead to weak European regulation dominated by national regulators. So, although moving in the right direction, there are some reasons for concern. First, the key issue in terms of efficiency is the need to define a European bankruptcy regime, which is only vaguely invoked at the end of the BCM Communication. Second, the issue of burden sharing, also mentioned in the BCM Communication, will be a permanent source of disagreements among countries, precisely because the European bankruptcy regime has not been harmonised. Indeed, why would one country's taxpayers provide capital for an institution in another country that has been badly managed, badly supervised and

badly regulated, especially if the main beneficiaries are the distressed institution's shareholders, or even subordinated debt holders? Third, the EBA proposal pursues two objectives at the same time: European consistency and integration on the one hand, and the creation of a new post-crisis financial regulation on the other. Although they are not incompatible, there is a risk that, as the European economies emerge from the crisis, the first objective ends up dominating the second, and regulatory reform is postponed until the next crisis.

## **Structure of the report**

This report falls into four parts. The first (in sections 1-2) will set the stage by discussing why banks are special and how competition interacts with bank stability. The report will then discuss (in sections 3-4) the characteristics of the crisis and outline European bank rescue plans and the European Commission response so far (as summarised by the Communications which are meant to set the stage for its planned evaluation, according to state aid control rules, of the bank bailouts that have taken place since autumn 2008). Sections 5 and 6 turn to two key aspects of resolving the current crisis, namely burden sharing and competition issues. Finally, section 7 will discuss the necessary changes to prudential regulation in order to minimise the danger of future crises.

---

# 1. Why are banks special?

The first question we address is what characteristics make banks special, and why competition and other regulatory issues differ so much when it comes to banking.

Banks have three basic functions in their role as financial intermediaries:

- They provide economic agents with the means of payment, a more efficient way to transfer property rights, and decrease transactions costs;
- They transform assets to match the short-term supply of funds in small amounts (from their depositors) and the long-term demand in large amounts from their borrowers; and
- They screen potential borrowers, monitor their activity and enforce repayments.

These three functions are related, as there are economies of scope in linking deposits to the payment system and using the funds collected through deposits for monitored lending.

The identification of these functions helps us to understand why banks are different from other firms that transform inputs into outputs through a production function. Regarding their first role, i.e. reducing transaction costs, this is possible only if banks belong to a network which connects the different economic agents' external and internal means of payments and, therefore, the whole payment system. The obvious implication is that depositors are the banks' clients, not as financial investors, but as users of the payment system. Consequently, it is reasonable to assume (following the 'representation hypothesis' of Dewatripont and Tirole (1994)) that banking regulation exists to protect small, uninformed depositors and to limit the cost to them of a bank's bankruptcy.

A second implication is that the maturity transformation function requires that banks manage their liquidity risk. This, in turn, entails the existence of mechanisms for individual banks to manage their liquidity shocks through markets for liquidity, whose proper working requires preserving financial stability, which is an attribution of the Central Bank.

The third implication is that a safety net for banks is necessary to protect banks' clients from the effects of bank bankruptcy and to preserve financial stability. So the basic functions of banks have strong implications for the operation and regulation of the whole banking industry.

Consequently, banks are different from other types of firms for two fundamental reasons: first, because their bankruptcy has a high social cost and negatively affects other competing banks, as well as financial stability and the payment system; and, second, because of the existence of banking regulation, which consequently implies

the existence of a safety net for banks. We turn next to the implications of these two features.

## **1.1 The high social cost of banks' bankruptcy**

The social cost of a bank's bankruptcy is larger than its private cost, for three reasons. First, it affects uninformed depositors who do not have the incentives or the means to assess the risk they face. Second, the bank's knowledge of its customers, and especially of small corporations, is an asset that would be lost in a bankruptcy. Finally, the bankruptcy of one bank may generate a negative externality for all other banks through a contagion effect. Yet bank executives maximising shareholder value will take into account only the private cost of their bankruptcy, so the market will be characterised by excessive risk taking. We consider each element of the social cost of bank bankruptcy.

### **1.1.1 Small depositors are uninformed**

As the role of banks is to provide payment services to their depositors, small depositors do not consider their deposit as a financial investment made after computing risk and return, and will make deposits without having any information about the riskiness of their bank. So the reduction of transaction costs by the generalised use of the payment systems can only be attained if depositors are confident that their deposits are safe in any bank. This means that banking regulation should provide guarantees that create sufficient incentives for potential depositors to open a bank account and to access the payment system.

### **1.1.2 Loss of sunk investment**

An unrelated discrepancy between the private and social cost of a bank bankruptcy is the existence of relationship banking. As evidenced by the recent empirical banking literature on this topic (see Ongena and Smith (2000) for a survey), both banks and their corporate customers invest in a relationship, with the result that banks provide easier access to credit to those customers with whom it has a relationship. This is justified by the existence of private 'soft' information that the customer credibly conveys to its banker. Consequently, a bank's bankruptcy implies the loss of this privileged access to credit for its corporate customers.<sup>3</sup>

---

3 Several papers have described how borrowers suffered after their institution failed. Specifically, Bernanke (1983), Calomiris and Mason (2003), and Kupiec and Ramirez (2009) have shown the negative economic repercussions of bank failures in the 1920s and 1930s and the consequent loss of lending relationships, while Ashcraft (2005) links the decline in lending following the closure of a large (solvent) affiliate in a regional bank holding company in Texas in the 1990s to a decline in local GDP. Slovin, et al. (1993) documented this phenomenon, using the failure of Continental Illinois as a specific event; they showed that firms which were the main customers of Continental Illinois saw their share prices negatively affected by its bankruptcy. Ferri, Kang and Kim (2001) demonstrate the importance of lending relationships in a sample of Korean firms that worked with either failed or surviving banks after the East Asian crisis, while Djankov, Jindra and Klapper (2005) illustrate the negative effect of bank insolvency announcements during the East Asian crisis on the market values of the banks' borrowers.

### **1.1.3 Direct contagion**

A bank's bankruptcy has a negative impact on the whole banking industry through a contagion effect. There are two classic types of direct contagion.

First, contagion may occur through changes in the expectations of banks' customers. These correspond to a pure information contagion effect. Short-term liability holders observing one bank's bankruptcy may infer that their own bank is not immune to bankruptcy, and may choose to immediately withdraw their deposits. This decision may affect banks with similar characteristics (as happened in the UK's early 1990s small bank crisis), banks investing in the same type of assets, or it may simply be the effect of a panic leading to indiscriminate withdrawals. A contagion of this kind may affect banks in a whole country, or banks with the same structure or business model. So, at least partially for this reason, contagion has wiped out the whole investment banking industry in the US. In the same way, the demise of Glitnir led to the collapse of Landsbanki and Kaupthing. Landsbanki and Kaupthing themselves had made high-risk investments and generated huge losses, so were not necessarily in a better condition than Glitnir. Nevertheless, when Glitnir went under, there was a reappraisal of Icelandic bank risk in general. While, historically, contagion originated in small depositors' runs on the bank, contemporary contagion comes from large withdrawals by well-informed liability holders in the wholesale market. Indeed, from this perspective, contagion is a special case of market discipline.

Secondly, contagion may occur because banks hold claims on other banks, that is, because of banks' connectivity. This complex web of reciprocal obligations stems from the very important role played by the interbank market in the efficient management of liquidity, as well as from the size and critical role of OTC operations. Allen and Gale (2000) show how the optimal liquidity management decisions of each individual bank may generate systemic risk through the interconnection of banks' reciprocal deposits. In a similar vein, Freixas et al. (2000) emphasise how the connectivity of banks may lead to a multiplicity of equilibria, including a gridlock equilibrium where banks stop lending to each other. This means that cautious decisions at the level of one bank turn out to be risky for the whole banking industry. This type of direct contagion has been extensively analysed in different types of simulations, although from the data available prior to the current crisis there is evidence of only a limited impact on the banking industry (see for example, Upper and Worms (2004)).

Note that, as is apparent in the current crisis, contagion through the web of reciprocal obligations is not limited to the banking industry. In fact, a number of innovations have led to the sale of risks to non-banking institutions, generating a 'shadow banking' sector. The implication is that the bankruptcy of some financial institutions outside the perimeter of banking regulation may also have systemic effects, as demonstrated by the systemic effects of the Lehman Brothers bankruptcy in September 2008.

These are the classical sources of direct contagion in a normal financial stability environment. They combine with an indirect source of contagion, namely, contagion through the whole financial system, which occurs when financial stability is threatened. We turn to this next.

## **1.2 Contagion in times of financial instability**

The structure of a bank's balance sheet, with short-term demand deposits and long-term assets is, by construction, subject to vulnerability, even though there is optimal contracting (Calomiris and Kahn (1991), Diamond and Dybvig (1983), Diamond and Rajan (2001)). This vulnerability is the reason why banking regulation is devoted to safeguarding financial stability. Yet financial stability is a public good, so that no individual bank has strong incentives to preserve it, while each one free-rides on the collective reputation of a sound and safe banking industry subject to the strict rules of banking regulation. The financial intermediary role in asset transformation, in particular its maturity transformation, depends heavily on the existence of a sound banking industry that allows banks to cope with individual liquidity shocks. When financial stability is questioned by market participants, a number of mechanisms that are taken for granted become impaired and new mechanisms of indirect contagion appear.

To begin with, bank runs may develop, triggered by the overall fragility of the banking system and the distrust regarding the real value of the banks' assets and their ability to cope with probable financial difficulties. Northern Rock has been a recent illustration of this phenomenon.

Secondly, the general distrust regarding the creditworthiness of counterparts leads to a halt in the uncollateralised interbank markets (with the exception of the overnight market), just as in Akerlof's (1970) classic 'market for lemons'. This implies that liquidity is at a premium. The maturity transformation function of banks becomes, therefore, more intricate. Banks' reserve strategies adjust to the new environment by increasing their liquid assets.

Thirdly, as an effect of the liquidity squeeze, banks are forced to sell some of their assets in the market, which puts downward pressure on the price of financial assets. This has two effects: banks consequently have losses that increase their financial fragility; and the amount that can be borrowed against a given financial asset is reduced (Brunnermeier and Pedersen, 2008).

Fourthly, as prices of financial assets decrease and losses accumulate, banks start to deleverage so as to limit the impact on their capital ratio. This phenomenon, the counterpart of the progressive build-up of leverage during the expansionary phase of the business cycle, reverts dramatically at the beginning of a downturn and, in turn, reinforces the impact of banks' behaviour on financial market prices (Adrian and Shin, 2008).

Finally, a similar source of contagion, put forward by Irving Fisher (1933), is contagion through the effect on credit supply. The argument is that the amount of credit supplied to the economy depends upon real (rather than financial) collateral prices. Yet the equilibrium price of collateral itself depends upon the supply of credit. Consequently, a downward spiral emerges, which will only stop when the prices of financial assets used as collateral reach a floor. Kyotaki and Moore (1997) have formally modelled this phenomenon and showed how it accentuates the business cycle.

### 1.3 The regulatory safety net

As this discussion makes clear, the market will fail to provide an adequate level of safety and to preserve financial stability, so a number of banking regulatory rules are implemented. Together they constitute the so-called 'safety net', intended to reduce both the probability of banks' failure and the impact of failure on uninformed depositors. Although with differences from one country to another, the safety net consists of:

- Banking supervision
- Deposit insurance (explicit or implicit)
- Capital requirements
- Lender of last resort
- Bank crisis resolution (private solutions, bailouts and bank closure policies)

The existence of the safety net constitutes an important difference between banks and non-financial firms, because of its impact on both bank customers' behaviour and banks' management decisions.

The existence of a safety net is, in effect, a guarantee for every depositor, and this reduces even further depositors' incentives to acquire information regarding the creditworthiness of their bank.<sup>4</sup> The safety net also gives every claimholder of the bank, whether an insured or uninsured depositor, the perception that the bank is safe. This has a cost, because in the case of a bank in distress, uninsured claimholders will make the banking regulatory authorities responsible for their losses and will object to any restructuring plan that deprives them of their nominal rights. Their bargaining position is a strong one, because the formal declaration of bankruptcy has a high social cost, which is more harmful for the regulator than for the uninsured depositors. Uninsured claimholders have a good chance of also being rescued in the case of a bank's bankruptcy.

The reason for this is that when a bank is in distress it is inherently difficult to assess the exact value of its losses:

1. First, banks' assets are opaque, as argued by Morgan (2002), who showed that banks are more opaque than ordinary firms by comparing discrepancies between rating agencies' assessments at the time of the issue of a new bond. Although this view is not universally held, the current crisis seems to confirm that the value of banks' assets is difficult to estimate. This makes it difficult for the regulator to value the extent to which existing provisions are sufficient to cover future expected losses, and extent to which existing equity is sufficient to cover future unexpected losses.
2. The value of a bank's equity changes very rapidly, as financial distress implies a higher cost of borrowing and rapidly increases the bank's losses.
3. Banks' leverage can change very easily, making it difficult to compute their equity.

---

<sup>4</sup> In principle features such as limits on deposit insurance and the existence of junior creditors should preserve market discipline; but in reality as we have seen the safety net guarantee has been total.

4. Finally, off-balance sheet operations may increase the bank's difficulties. Therefore the regulator is faced with a bank in distress that might be solvent, and has to choose either to facilitate funds to the bank or to declare its bankruptcy. Yet, in most bankruptcy codes, if it chooses to inject funds into the bank, it will have to repay fully the uninsured claimholders. In particular, banking regulators are forced to rescue any bank whose bankruptcy would create a systemic crisis. This is clearly the case for banks that are *too-large-to-fail*. It is also the case for banks that are money centres, and therefore *too-interconnected-to-fail*. It has been also argued that banks could be *too-many-to-fail* if they all share the same characteristics, thus promoting herding.

Turning to banks' management decisions, the existence of a safety net implies that, to some extent, the cost of banks' funds does not depend upon the risks they take, contrary to what happens with other types of firms. There is therefore a temptation for banks, in particular if the deposit insurance premium they pay is not risk sensitive, to invest in high-risk projects and to use a high leverage ratio.

## **1.4 The differences between banking and non-banking entities**

We are now in a position to set out the key differences between banks and non-financial firms:

1. A bank bankruptcy generates a negative externality affecting the whole banking industry, the reputation of its competitors and the reputation of banking regulators through the different channels of contagion discussed above. This is quite the opposite of an industrial firm bankruptcy, which has positive effects and provides an opportunity for its competitors to increase their market share. Even if this effect does operate in the case of banks, the negative impacts will dominate, especially in a context of a systemic crisis.
2. In order to provide payment services to their clients, the banks themselves must have access to markets (interbank, repo and financial markets) in order to borrow the liquidity they need or to invest their excess liquidity. This implies that banks can change their leverage quite rapidly, which contrasts with the stable leverage of non-banking firms. It also implies that banks are interconnected, so that when one bank has liquidity or solvency problems, this negatively affects all other banks.
3. Bank assets are opaque and their cash flows are risky, so the value of a bank's provisions and non-performing loans may be difficult to assess, making it difficult to identify insolvent banks. Simultaneously, because of their role in maturity transformation, with long-term assets and short-term liabilities, banks are subject to the risk of a liquidity shortage. So it may not be possible to distinguish solvency problems from temporary liquidity problems, even long after the shock occurs, as for example with Northern Rock.
4. Banks react to adverse liquidity shocks by selling financial assets, while non-banking firms have limited investment in financial assets and so little capacity to sell them.
5. Banks' leverage ratios are always higher than those of non-banks. Furthermore, banks react to an increase in asset prices by increasing their leverage and react to a decrease in asset prices by deleveraging, while non-banking firms can



seldom use this strategy. The implication is that when asset prices reach their business cycle maximum, banks have their maximum level of leverage, which makes them particularly vulnerable at this point.

6. Banks can use financial markets for risk transfer and regulatory arbitrage purposes, as occurs with the transfer of securitised assets to SIVs and the acquisition and sale of CDSs. But whether this risk transfer is real, or only apparent, depends upon strict monitoring by regulators of the aggregate level of claims on non-banking financial markets and the credit-worthiness of the counterparts (as in the AIG case). If we exclude cases of fraud, like Enron, non-banking firms do not transfer their risks in the same way, except for limited hedging purposes.



---

## 2. Bank competition and financial stability

The distinctive characteristics of banks compared to non-financial firms, discussed in the previous section, mean that the competition issues in the banking sector are also distinctive. This section considers the relationship between competition in banking and financial stability.

The economic literature has not achieved a consensus on the relationship between competition and stability in the banking market. Theoretical models derive conflicting results, depending on the modelling of banks' decisions and their relationship with depositors and borrowers. The empirical literature has faced the challenge of accurately measuring competition, and different findings have often been driven by the use of different indicators. Critically, however, both the theoretical and the empirical literature have shown that there is an important interaction between competition and the regulatory framework for banks.

One important caveat to keep in mind, however, when inferring lessons from both the theoretical and empirical literature, is that many of the results were obtained for 'normal' times; existing empirical studies refer to pre-2007, and sometimes the sample period is precisely the period of the Great Moderation, which, in hindsight, encompassed only part of a long-term economic cycle. The current crisis has shown new mechanisms and channels through which market structure can affect fragility.

### 2.1 Bank competition and stability: what does theory predict?

Theoretical models have made contrasting predictions concerning the relationship between bank concentration, competition and stability.<sup>5</sup> One basic difference between models is whether competition is modelled exclusively on the deposit side or also on the asset side of banks' balance sheets, and whether banks' decision space is limited to a portfolio maximisation problem or also includes a contract optimisation problem. Unlike the empirical literature, most theoretical models assume that a particular market structure corresponds to a particular degree of competitive intensity. In the following, we will summarise the theoretical literature under two headings, depending upon whether the model predicts a positive or negative relationship between competition and stability.

---

5 See Carletti and Hartmann (2003) for an in-depth literature survey and Allen and Gale (2004) for an excellent exposition on the different theoretical mechanisms that can lead to contrasting relationships between competition and stability.

### **2.1.1 Competition reduces stability**

The traditional 'charter' or 'franchise' value view of banking predicts that more concentrated and less competitive banking systems are more stable, as profits provide a buffer against fragility and provide incentives against excessive risk taking. Models by Marcus (1984), Chan, Greenbaum and Thakor (1986), and Keeley (1990), see banks as choosing the risk profile of their asset portfolio while competing for deposits. As discussed above, bank owners have incentives to shift risks to depositors, as in a world of limited liability they only participate in the upside part of this risk taking. When there is tougher competition for depositors, putting pressure on profits, banks have greater incentives to take excessive risks, resulting in greater fragility. In systems with restricted entry and therefore limited competition, on the other hand, banks have better profit opportunities, bigger capital cushions and as a result fewer incentives to take aggressive risks, with positive repercussions for financial stability. In addition, in more competitive environments, banks earn lower informational rents from their relationship with borrowers, reducing their incentives to properly screen borrowers, again increasing the risk of fragility (Boot and Greenbaum, (1993); Allen and Gale, (2000, 2004)). These models thus predict that deregulation resulting in more entry and competition, such as in the US in the 1970s and 1980s, would lead to more fragility.

Another channel through which competition can negatively affect stability is the interbank market and payment system. As shown by Allen and Gale (2000), perfect competition can prevent banks from providing liquidity to a peer hit by a temporary liquidity shortage. If all banks are price-takers in a competitive market, no bank has an incentive to provide liquidity to the troubled bank, with the result that this bank will eventually fail, with negative repercussions for the whole sector.

A somewhat different argument is that more concentrated banking systems have larger banks, which in turn allows them to diversify their portfolios better. Models by Diamond (1984), Ramakrishnan and Thakor (1984), Boyd and Prescott (1986), Williamson (1986), Allen (1990), and others, predict economies of scale in intermediation. While the 'large-bank' argument does not rely directly on competition, it is an important side-effect of market structure. Recent theoretical work, however, has shown that while enhancing individual banks' stability, such diversification can have negative systemic stability repercussions if banks become too interconnected and start looking too similar to each other (Wagner, 2008).<sup>6</sup> This can also have repercussions for banks' risk behaviour and tendency towards herding behaviour (Acharya and Yorulmazer, 2006).

A final argument refers to the number of banks to be supervised by the authorities. If a more concentrated banking system implies a smaller number of banks, this might reduce the supervisory burden and thus enhance overall banking system stability. According to Allen and Gale (2000), the US, with its large number of banks, supports this particular argument, since it has had a history of much greater financial instability than the UK or Canada, where the banking sector is dominated by fewer larger banks. As in the case of bank size, this argument is about the market structure in banking, not the competition that this implies.

---

6 Such diversification can refer to investments in specific sectors or regions or specific activities, such as subprime mortgages or derivative products.

### **2.1.2 Competition increases stability**

The opposing view is that, on the contrary, a more concentrated banking structure results in more bank fragility. Boyd and De Nicoló (2005) argue that the standard argument about market power in banking boosting profits and hence bank stability ignores the potential impact of banks' market power on their borrowers' behaviour. Rather than banks choosing the riskiness of their assets, it is the borrowers who choose the riskiness of their investments undertaken with bank loans. In addition to an asset allocation problem – choosing borrowers – banks thus face a contracting problem, with the interest rates they charge influencing borrowers' behaviour. Boyd and De Nicoló note that concentrated banking systems enhance market power, which allows banks to raise the interest rate they charge to firms. Their theoretical model shows that these higher interest rates may induce firms to assume greater risk, which results in a higher probability that loans turn non-performing. Similarly, higher interest rates might attract riskier borrowers through the adverse selection effect. Thus, in contrast to the charter-value hypothesis, Boyd, and De Nicoló (2005) predict that banks' actions will result in more risk-taking and ultimately greater fragility in more concentrated and less competitive banking systems.<sup>7</sup>

Even if more competition induces banks to take greater risks, competition can still increase stability overall if banks increase their equity capital to compensate for the higher risk-taking or take other risk-mitigating measures (Berger, Klapper and Turk-Ariss, 2008).

Furthermore, advocates of the 'competition-stability' view argue that: (i) relative to diffuse banking systems, concentrated banking systems generally have fewer banks; and (ii) policymakers are more concerned about bank failures when there are only a few banks. Banks in concentrated systems will tend to receive larger subsidies through implicit 'too big' or 'too important to fail' policies that intensify risk-taking incentives and hence increase banking system fragility (e.g. Mishkin, 1999). Having larger banks in a concentrated banking system could also increase the contagion risk, resulting in a positive link between concentration and systemic fragility. The current crisis seems to provide quite strong evidence for this.

Proponents of the 'competition-stability' view would also disagree with the proposition that a concentrated banking system characterised by a few banks is easier to monitor than a less concentrated banking system with many banks. Their countervailing argument is that bank size is positively correlated with complexity, so that large banks are harder to monitor than small banks. This too can be seen in the current crisis. What's more, the recent trend towards consolidation has also led to financial conglomerates offering a whole array of financial services, previously offered by specialised institutions, which is another complicating factor for bank supervisors.

---

<sup>7</sup> Martinez-Miera and Repullo (2008), however, shows that higher interest rates also imply higher interest revenues for banks, which might result in a U-shaped relationship between competition and bank fragility.

## **2.2 Bank competition and stability: what do the data tell us?**

Like the theoretical literature, the empirical literature studying the relationship between competition and stability has not reached a firm conclusion.

However, there is tentative evidence that: (i) bank competition does not hurt stability; (ii) market structure indicators, such as bank concentration, are not good indicators of bank competition; and (iii) there is an important interaction between the regulatory framework and competition.

### **2.2.1 Measuring bank competition**

The literature has used a variety of measures, which can be broadly classified into three groups. First, there are market-structure measures such as concentration ratios, number of banks, or Herfindahl indices. These indicators measure the actual market shares without allowing direct inferences about the competitive behaviour of banks. Thus they are rather crude measures that do not take into account that banks with different ownership behave differently and that banks might not compete directly with each other in the same line of business. Most importantly, the literature has not come to a conclusion on whether market structure determines bank behaviour (structure-conduct-performance hypothesis) or market structure is the result of performance (efficient structure hypothesis).<sup>8</sup> This distinction is critical for assessing the competition-stability relationship, as the theoretical models discussed above build on the structure-conduct-performance hypothesis, while the efficient-structure hypothesis would imply reverse causation from more efficient (and possibly sounder) banks, to a more concentrated banking system.

Secondly, competition measures such as the H-Statistic, which measures the reaction of output to input prices, gauge the competitive behaviour of banks, but impose certain restrictive assumptions on banks' cost function. Specifically, under perfect competition, increases in input prices cause total revenue and marginal cost to move together, while in imperfect competition they do not. However, the inference from this measure derived from the profit-maximising condition is only valid if the market in question is in equilibrium. Estimates of the H-Statistics vary widely, as the studies by Claessens and Laeven (2004) and Bikker and Spierdijk (2007) show. Similarly, the Lerner index indicates a bank's market power by considering the ratio between marginal cost and price, which should be equal in perfect competition, but will diverge in less competitive environments. Specifically, the ratio of price to marginal cost decreases in the degree of competitiveness. Importantly, the price has to be properly adjusted for lending risk.<sup>9</sup>

Thirdly, indicators of the regulatory framework can provide indications of the contestability of the banking system. Such measures include entry requirements, formal and informal barriers to entry for domestic and foreign banks, activity

---

<sup>8</sup> See Berger et al. (2004) for a discussion of this literature.

<sup>9</sup> Other performance measures such as interest rate spreads and margins are not necessarily good indicators of the competitiveness of a banking system as they are driven by other bank- and country-specific factors, such as bank size and business, contractual framework, taxation and macro performance. See Beck (2007) for a discussion.

restrictions and other regulatory requirements, which might prevent new entrants from challenging incumbents.

An additional challenge in measuring competition is to define the relevant geographic market. Cross-country studies typically define a national economy as the relevant market – which is not necessarily a correct assumption. Studies focusing on European countries also typically treat one country as one market. Studies for the US, on the other hand, have typically focused on the Metropolitan Statistical Areas (MSAs) as the relevant market. Furthermore, market structure and competition indicators are typically measured at the institutional level, rather than the product level; i.e. competition is assumed to be the same across different product lines, such as deposit, lending and payment services. This is especially relevant in the context of Europe, where markets for some financial products (wholesale financing) have increasingly been integrated, while markets for retail lending products are still mostly national, if not sub-national. On the other hand, internet banking has helped bring down national barriers, at least on the retail deposit side, as was shown – for better or worse – by the shockwaves that the recent failure of several Icelandic banks has sent throughout Europe.

### **2.2.2 The evidence**

In a seminal paper, Keeley (1990) provides evidence that increased competition following the relaxation of state branching restrictions in the 1980s reduced banks' capital cushions and increased risk premiums, reflected in higher interest rates on certificates of deposit. Overall, this suggests that higher competition in the US eroded charter values and resulted in greater bank fragility in the 1980s. This is consistent with Dick (2006), who finds evidence of increased charge-off losses and loan loss provisions following deregulation in the 1990s. But it contradicts findings by Jayaratne and Strahan (1998), who find that branch deregulation resulted in a sharp decrease in loan losses. Jiménez, Lopez, and Saurina (2007) find, for a sample of Spanish banks for the period 1988 to 2003, that banks with higher market power, as measured by the Lerner index, have lower non-performing loans, thus providing evidence for the charter value hypothesis. Notably, they do not find any significant relationship between market structure, as measured by concentration ratios, and non-performing loan ratios.

As discussed by Calomiris (2000) and Calomiris and Mason (2000), an extensive literature finds an inverse relationship between banks' scale and bank failure in the United States. Boyd and Runkle (1993), examining 122 US bank holding companies, find that there is an inverse relationship between size and the volatility of asset returns, but no evidence that large banks are less likely to fail. Boyd and Graham (1991, 1996) find that large banks were more likely to fail in the US during the period 1971 to 1986, but less likely in the period 1987 to 1994. De Nicoló (2000), on the other hand, finds a positive and significant relationship between bank size and the probability of failure for banks in the US, Japan and several European countries.

An extensive strand of literature infers the effect of market structure and competition on bank fragility by assessing the effect of mergers creating larger banks and increasing market concentration. Paroush (1995) points to greater bank stability caused by increases in market power stemming from diversification gains after

mergers. Benston, Hunter and Wall (1995) and Craig and Santos (1997) also point to positive diversification and thus stability gains from bank mergers in the US. However, empirical work by Chong (1991) and Hughes and Mester (1998) indicates that bank consolidation tends to increase the riskiness of bank portfolios.

De Nicoló and Kwast (2001) assess the direct and indirect interdependencies of large complex US financial institutions (LCFIs) arising from interbank on- and off-balance sheet exposures, including linkages through the payment and settlement systems) by considering the correlation of their stock returns. They find that these correlations increased between 1988 and 1999, as did the market share for these LCFIs, interpreting this as evidence for an increase in systemic risk in the US banking system, partly as a consequence of consolidation.

The recent availability of large cross-country, time-series datasets has initiated a new wave of literature assessing the validity of the different theoretical models. Beck, Demirgüç-Kunt and Levine (2006 a,b) find that, for a large sample of developed and developing countries, more concentrated banking systems are less likely to suffer systemic banking crises, as well as tentative evidence that more concentrated banking systems offer more possibilities for banks to diversify risk.<sup>10</sup> On the other hand, they do not find any evidence either that it is easier for bank supervisors to monitor more concentrated banking systems, or that the higher stability results from the market power and consequent franchise value of banks in more concentrated banking systems. Bank concentration is thus not an indicator of the lack of competition. Rather, more competitive banking systems are also less likely to suffer systemic banking distress. This finding is confirmed by Schaeck, Cihak and Wolfe (2006), who find a negative relationship between bank competition and systemic bank fragility using a more refined measure of competition in the banking market – the H-statistic. Schaeck and Cihak (2007) identify bank capitalisation as one of the channels through which competition fosters stability. Using data for more than 2,600 European banks, they show that banks have higher capital ratios in more competitive environments. This is consistent with Berger, Klapper and Turk-Ariss (2008), who find that banks in more competitive banking systems take greater lending risks, but compensate with a higher capital-asset ratio, resulting in an overall lower level of bank risk, as measured by the z-score.

Finally, there is cross-country evidence that regulatory policies that restrict entry and banks' activities are negatively associated with bank stability. Specifically, Barth, Caprio and Levine (2004) and Beck et al. (2006 a,b) find that banking systems with more restrictions on banks' activities and barriers to bank entry are more likely to suffer systemic banking distress, while capital regulations are not significantly associated with the likelihood of suffering a crisis. Limiting contestability of the

---

10 Boyd, de Nicoló and Jalal (2006) arrive at a different conclusion using bank-individual fragility data. Rather than focusing on systemic bank distress, they use the z-score, a bank-level measure of distance from insolvency as fragility indicator. Unlike Beck et al. (2006a,b), they find banks are closer to insolvency, i.e. more likely to fail, in countries with more concentrated banking systems. Cross-country results on the effect of concentration thus vary depending on whether one considers individual bank fragility or systemic banking distress. It is important to note, however, the different concepts these studies consider – actual systemic banking distress vs. the probability of individual bank fragility; the latter might not necessarily result in the former.



banking sector thus seems to undermine rather than to strengthen bank stability, a result contradicting the charter-value hypothesis.

Using empirical research to inform policy makers during the current turmoil has the shortcoming that some of the relationships found previously might be: (i) driven by an overall trend towards consolidation during the Great Moderation; and/or (ii) might hold during normal times, but not during times of systemic global distress.

Take first the issue of size. While larger banks might be better able to diversify risks and even exploit scale or scope economies, thus explaining a positive relationship between size and stability in normal times, this relationship might be reversed during tail events like those occurring recently. First, as shown by de Nicoló and Kwast (2001) and discussed above, correlations of the stock returns of large US financial conglomerates increased between 1988 and 1999, as did the market share for these LCFIs. On the theoretical level, Wagner (2008) shows that diversification can make large financial institutions look alike, which will hurt in times of crisis. Secondly, growth in bank size increases the moral-hazard risk of becoming too-big-to-fail, a risk which will only become obvious in times of crisis. The transition to Basel II allowed banks to reduce their capital cushions, which seemed adequate in normal times but have proven too small in the current global distress.

Take next the issue of competition. More competitive and contestable financial systems allow financial innovation and reduce the risk of regulatory capture, thus fostering stability during normal times. However, they might also contribute to the build-up of bubbles and herding behaviour, which are not taken into account in the banks' cost of funds (for instance because of flat deposit insurance) and that ultimately results in a too-many-to-fail situation, as we observe in the current crisis. Again, the second effect will only be observed during a tail event. Critically, however, this also underlines the interaction of competition and macroeconomic circumstances and the regulatory framework. One could argue (as discussed later in this report), that it is the global liquidity glut due to global imbalances, as well as the transition to Basel II, which encouraged aggressive risk taking, not necessarily the degree of competition in the marketplace.

### **2.3 Universal banking and stability**

One specific question that has arisen during the current crisis is whether universal banking, i.e. the mixing of commercial and investment bank activities, contributes to fragility. Recent cross-country evidence suggests that there are diversification benefits from combining these activities, while banks with a high share of non-interest income, i.e. banks that focus on fee-based income, are, on average, riskier (Demirgüç-Kunt and Huizinga, 2008). Similarly, Baele, De Jonghe and Vander Vennet (2007), find for a sample of European banks over the period 1989 to 2004, that a bank's share of non-interest income is positively associated with systemic risk, as measured by the market beta, while related in a non-linear manner with idiosyncratic risk. Further, De Jonghe (2008) finds that non-interest generating bank activities increase banks' sensitivity to market movements, especially in volatile times. This might also explain why banks that diversify across interest-generating and non-interest activities trade at a discount (Laeven and Levine, 2007). On the funding side, Huang and Ratnovski

(2008) show that wholesale financiers might have an incentive to withdraw on the basis of cheap and noisy signals of bank solvency, thereby causing solvent banks to fail. Demirguc-Kunt and Huizinga (2008) confirm, for a broad cross-section of banks, that high wholesale funding is associated with higher returns but also greater bank fragility.

It is in this context that restrictions on banks' activities have often been imposed in order to prevent financial conglomerates from emerging. While theoretically attractive, these restrictions are difficult to implement, monitor and enforce, and might prevent banks from reaping diversification and scale benefits. Critically, they can easily serve as cover for rent-seeking activities, allowing incumbent banks to protect their rent, and can result in political regulatory capture. Not surprisingly, Kroszner and Strahan (1999) find that the strength of lobby groups related to small banks and insurance companies – segments of the financial sector standing to lose from branch deregulation in the US – determined the speed with which states abandoned branching restrictions in the 1970s and 1980s.<sup>11</sup>

The observation that the pursuit of fee-based business might increase banks' risk and fragility does not necessarily imply, however, that restrictions imposed on banks to prevent them from taking on such a risk profile will be risk-reducing. On the contrary, as discussed above, greater restrictions are associated with greater bank fragility. Furthermore, the regulatory framework might interact with the governance structure of banks. Laeven and Levine (2008) find, for a sample of 250 banks across 48 countries, that banks with concentrated ownership take more risks in countries with more restrictions on banks' activities, possibly to compensate for the inability to branch out into new areas.

It is therefore not clear that a specific business model bears special responsibility for the current crisis. Not only universal banks in Germany, but also investment banks in the US have been at the centre of the crisis. Rather, business practices across different bank types have contributed to the build-up of the bubble and helped exacerbate the subsequent bust, such as the herding trend towards derivative products.

It is hard to predict future trends in banking business models, whether in Europe or at a global level. However, the experience in this crisis and observation of banks' announcements over the past few months suggests a return to a focus on basic banking, i.e. retail banking and the classical financial intermediation of deposit funds into loan funds. Many exotic derivative products seem likely to disappear for the time being, as their value added, both for financial institutions and for the economy, has not been proven and – if indeed there is any value added – has been more than outweighed by the risk. While there does seem to be a trend towards commercial banking and a reduction in trading activity on own account, we cannot observe a trend yet away from universal banking. Given the evidence cited above, it would be a mistake to enforce a specific new business model on European banking. It is preferable to influence banks' business decisions through regulatory taxes, as we discuss further below.

---

11 See Haber and Perotti (2008) for a recent survey on the relationship between politics and finance.

---

## 3. Origins and initial impact of the banking crisis

As the survey of the existing theoretical and empirical literature in Section 2 has shown, the competition policy considerations relevant to the banking sector are not straightforward even in 'normal' times. The current context of systemic instability creates additional complexity because of the need to restore stability. We turn next to the origins of the current crisis and its unprecedented characteristics, before going on in the following sections to discuss the policy response to date and our assessment of the policy questions that arise from the specific current circumstances.

### 3.1 The systemic crisis

As the crisis has developed, it has become common to think of it as a new type of crisis. Yet it has the three characteristic ingredients of a systemic crisis: macroeconomic fragility, contagion and a trigger. Nevertheless, in the specifics of these three characteristic elements, and in particular in the mechanisms of contagion and the subprime crisis, we find surprising phenomena that challenge traditional views about the nature of financial crises.

#### 3.1.1 The macroeconomic environment and its impact on asset prices

If we try to point to a unique factor, the current crisis is primarily about asset valuation. Real estate and financial asset bubbles, defined as sustained upward deviations from fundamental asset values, led to the increase in uncertainty and the lack of confidence that we witnessed with the bubbles bursting.

##### *Origin of the bubbles*

Paradoxically, these bubbles built up because of the success of monetary policy in channelling liquidity to the markets and stimulating growth through low nominal interest rates, while keeping inflation at bay over a long period. Low interest rates and a lax liquidity policy, jointly with exuberant expectations about an ever-increasing price of housing, led to excessive growth of credit, an effective increase in real estate prices and overpriced financial assets.

The bubble has been particularly notable in real estate, where government subsidies all over the world made financing easier, in particular in the US, where federal agencies (Freddie Mac, Fannie Mae, and the Federal Home Loan Bank) played a key role in facilitating the expansion of the housing market (Ashcraft et al., 2009).

### *The bubble bursting*

In the same way a policy of easy credit generates a bubble, it is clear that the end of the credit supply growth and a lower rate of growth in economic activity prompts its sudden bursting. Several elements come into play here.

First, competition among banks may generate herding: when some banks invest in one type of product (say in subprime loans) that generates high profits, other banks are forced to imitate them, as otherwise their shareholders will hold them responsible for the lower profitability of the institution.

Secondly, a number of regulatory mechanisms are clearly procyclical. These mechanisms are related to fair-value accounting rules, to capital regulation and to risk management. They introduce a strong connection between the banks' valuation of their own assets and their supply of credit, so that the bubble bursting cannot be disentangled from contagion from one institution to another through asset valuations. We examine these three dimensions below in discussing the contagion mechanisms.

Thirdly, while credit standards become more relaxed in the boom (Dell'Arriccia, Laeven, and Igun, 2007), they become stricter at the very beginning of a downturn (Morgan, 2006).

## **3.2 The channels of contagion**

As mentioned above, the failure of one bank generates a negative externality affecting the solvency (whether perceived or actual is often immaterial) of others. One of the particularities of the current crisis is that contagion has been aggravated, as it has led to the distress of non-bank financial institutions, with a boomerang effect on commercial banks.

### **3.2.1 Contagion through expectations revisions**

Bank runs have been a classical contagion mechanism since the 19th century. The reason for bank runs is the change in depositors' perceptions of their bank's solvency, triggered by the financial distress of another bank. This may occur either because depositors anticipate other debt holders will run (a speculative bank run), or because they assume a correlation between the value of the assets at the distressed bank and the value of their own bank assets (a fundamental bank run).

In today's financial environment, the mechanism of bank runs has changed. Retail depositors' bank runs are the exception, while wholesale debt holders' bank runs have become prevalent. Although theory has focussed on depositors' runs, following the classical Diamond-Dybvig model, the major runs of recent decades have originated in the interbank market. The reason is that the extension of deposit insurance, combined with the fact that other banks have a better and quicker access to relevant information about a bank's possible distress (which is precisely the objective of

market discipline), makes it difficult for depositors to engage in a run before the bank has been restructured.<sup>12</sup>

### **3.2.2 Liquidity-driven fire sales**

Contrary to expectations, rather than developing through the banks' web of interbank assets and liabilities, it has been the sudden illiquidity in asset markets that has led to contagion. The interconnected web of banks' claims on each other had been well studied and Central Banks had simulated the impact of a major bank bankruptcy or liquidity default on the other banks' balance sheets, with the reassuring result that this had only a minor impact. What was unexpected in the current crisis was the effect of bank runs on non-banking institutions, including mutual funds, and how dramatically this could feed back to banking liquidity and solvency. As a consequence, as financial markets are global, even if cross-country banking among developed countries is limited, there was a worldwide contagion.

The liquidity drought came as a further surprise, particularly the freeze in the interbank deposit markets for maturities beyond one day, while the overnight market activity increased as it became the only available substitute for the whole range of maturities. This was startling because although spreads between the interbank market and government debt rates were expected to increase, the switch from a perfect market to a market with no transactions occurring was unforeseen. From that point on, contagion to other markets was unstoppable. Institutions in search of liquidity had to sell other assets quickly in fire sales and consequently this made liquidity-hoarding a reasonable strategy (see Acharya and Merrouche, 2009 for evidence for UK banks).

Banks' liquidity shortage generates contagion as it affects prices. Two mechanisms have been put forward to explain the contagion. In 'cash in the market' models the available liquidity is taken as exogenous. To obtain a given amount of liquidity, lower prices will force the banks to increase the quantity they want to sell in the market. In other words, the banks' demand for liquidity generates a backwards bending supply curve. This can be aggravated by the use of mark to market accounting rules, which mean that a decrease in the price of an asset leads immediately to acknowledged losses in all banks, even if they were not initially affected by a liquidity shock. These banks, in turn, might be forced to sell. A further amplifying effect comes into play because, as put forward by Adrian and Shin (2007), when the prices of assets decrease, banks' balance sheets shrink and they deleverage by selling assets, which increases the downward pressure on the price of financial assets.

The second mechanism that leads to contagion through liquidity is the margin/haircut mechanism described by Brunnermeier and Pedersen (2009). They argue that a liquidity shortage and lower prices may lead to an increase in the equilibrium level of margins on loans. This implies that institutions in need of

---

12 The one recent exception, Northern Rock, has shown that limited insurance and co-responsibility, jointly with the possible risk of non-convertibility of the deposits during the time required for the deposit insurance to handle the payments, is enough to trigger a bank run. Yet it may be argued that it was the liquidity problems at Northern Rock that triggered the retail depositors' run. From that perspective, even for Northern Rock the liquidity channel of contagion was stronger than the classical bank run.

liquidity which would have normally been obtained through a repo operation cannot be entirely funded in this way, and they are forced to sell assets in order to obtain the residual liquidity. An increase in the risk of an asset, as occurred in the case of CDOs, leads to the illiquidity of the asset and makes the special purpose vehicles liquidity-short, with the originating banks having to fulfil their commitment to provide liquidity in case the market dries up (see Gorton, 2008).

### **3.2.3 Procyclical regulation**

The procyclical character of banking regulation has also been a contributory factor to the crisis for some banks. Two regulatory mechanisms in particular have amplified the crisis: capital regulation and mark to market accounting.

#### *Capital regulation*

One of the striking anecdotes in the crisis is that six months before needing government support, Northern Rock concluded that under the current Basel II requirements it was overcapitalised, and proceeded to reduce its capital accordingly, so as to increase leverage.<sup>13</sup> The risk model yielding this result was overseen by the Financial Services Authority. It indicates that Basel II capital regulation may be excessively procyclical.

To understand why, note that financial institutions will react to a capital shortage not by raising additional capital, but by reducing investment in risky assets and favouring safer investments. This process of reduction in the supply of credit was observed first in the US in the early 1990s and later in the aftermath of the 1997 Asian Crisis. Any risk-sensitive capital regulation, such as Basel II, will be potentially procyclical, inducing a reduction of the credit supply that will hurt firms and consumers and reduce domestic demand. In fact, Basel II is even more procyclical than this implies, as shown by Repullo and Suarez (2008).

#### *Marking to market*

Valuing an asset on the basis of its amortised cost is known to introduce a bias, especially when the asset is actively traded in the market, so that the accounting procedure is not taking into account the actual revaluation or devaluation of the asset. But even when the asset is not actively traded, its value is clearly related to assets that do trade in the market. In a financial institution, valuing at amortised cost implies that provisions have to be made once losses are acknowledged, while valuing assets at their fair value directly reflects forward-looking losses. For this reason, switching to a fair-value accounting system is considered to provide a more accurate assessment of an institution's assets and liabilities.

A drawback of fair-value accounting, however, is the increase of volatility in assets and liabilities valuation. This increases the volatility of banks' profits and losses. The volatility of assets impacts directly upon the volatility of capital and amplifies the procyclicality of capital regulation.

---

13 In June 2007, Northern Rock had total assets of £113bn and capital of £2.2bn. The value of risk weighted assets, using Basel II was £19bn (16.7% of the assets), much less than the £34bn computed under Basel I (30% of assets), so its new regulatory capital was £1.52bn.

*Procyclical regulation and the business cycle*

Even in the absence of any financial market imperfections, the amount of credit contracts during a recession because of: (i) lower demand from firms cutting their investment projects and households reducing or postponing their demand for real estate and durables; and (2) reductions in creditworthiness of potential borrowers whose financial situation deteriorates in a downturn. Introducing financial market imperfections makes the analysis more involved. Indeed, taking the analysis of Holmstrom and Tirole (1997) as a starting point, we may consider three different types of shocks affecting the supply of credit:

1. a credit crunch (the capital of the banking industry decreases)
2. a collateral squeeze (a negative shock affecting firms' assets)
3. a savings squeeze

These three types of shocks may or may not be present, but they may come into sight one after the other. Consequently, these three possible bottlenecks are to be added on top of the normal reduction in the amount of credit (whether demand-driven or supply-driven). Recapitalising the banking industry is therefore no guarantee of banks starting to lend under conditions similar to the pre-crisis ones.

In sum, the question of whether banking regulation is procyclical may depend on which of these bottlenecks is the relevant one at a particular point in time. In a mild recession the procyclicality of banking regulation is of no consequence. In today's context, as the main bottleneck appears to be the banks' capital shortage, it emerges as a critical issue.

### **3.2.4 Contagion and the wider financial system**

We have already discussed the impact of banks' portfolio rebalancing strategies on the prices of financial assets. We will now consider, in addition to these indirect effects through prices, the direct contagion effects that come from reciprocal obligations between banks and non-bank financial intermediaries.<sup>14</sup>

The web of reciprocal obligations existing between banks and non-bank financial institutions has made a number of non-bank institutions systemic. The cases of Lehman Brothers and AIG are the most spectacular ones. The contagion, real (Lehman) or potential (AIG), comes from the fact that such institutions' assets are heavily devalued and become illiquid. The spectacular impact of the Lehman Brothers default on money market mutual funds shows that the contagion can go further still. The run on money market funds was stopped by Fed guarantees, but such a run, had it continued, would have impacted the liquidity of banks that were financed by the issue of short-term debt and certificates of deposits bought by those funds.

---

14 The present crisis has shown that the distinction between banking and financial markets is blurred. The term 'shadow banking' has been coined to express the fact that thanks to financial innovation a number of functions traditionally attributed to banks have been developed outside banking institutions.

### **3.3 The subprime crisis**

The subprime crisis has been so spectacular that it has overshadowed the other dimensions of banking distress, and this has introduced a bias into some of the analysis of the crisis. Yet it is clear that the subprime segment, although not negligible, represents a very limited fraction of the total US credit market. That it has led to an unprecedented crisis can only be explained if it has an effect as a trigger or a catalyst, rather than a root cause. It is true that the subprime crisis has played a key role in international contagion, as German banks and Norwegian pension funds had invested in these *ex ante* attractive assets combining good credit ratings and high spreads. Yet, as discussed above, the main issue has been the combination of assets' overvaluation with the underestimation of risk. The subprime crisis has been the result of an aggressive high-risk lending policy combined with the extensive use of the 'originate and distribute' model.

#### **3.3.1 Subprime lending**

Competitive pressure on the margins earned from traditional mortgages led to the search for new credit products. Subprime lending was based on credit to borrowers who did not meet the usual standards and therefore for whom competition was not so fierce. The profitability on these marginal borrowers was based on expectations of a further increase in the price of real estate combined with a stable proportion of non-performing loans. The loans were structured in such a way that they required small instalment payments during the first two years, followed by a longer-term variable rate loan with a high margin. The lending practices, sometimes from non-bank institutions, went from lax credit policy through to outright fraud. Changing macroeconomic conditions, combined with decreasing house prices and increased interest rates, meant delinquencies on these loans increased sharply during 2006 and 2007. The repossession process generated a forced supply of real estate to the market, which added to the downward trend in the price of housing. In addition, the US market is in some states *de jure* and in others *de facto* a market where mortgage contracts are non-recourse. The moment the price of a house is lower than the mortgage, the borrower is better off by calling off the mortgage and leaving the house to the bank.

#### **3.3.2 Structured products**

During the initial period of fixed or low interest rates, the proportion of arrears and non-performing loans was in line with expectations. So on the basis of the available statistics, the excessive risk could not be identified. Because of this underestimation of the potential risk, the risk-return calculation was quite attractive, and therefore led to a boom in this segment of the market. This was helped by the 'originate and distribute' banking model, and an unprecedented level of securitisation. Subprime loans were therefore securitised in special investment vehicles (SIVs) that sold their structured liabilities in the market, where, in turn, they could be restructured and



combined with other types of securitised obligations. This was possible because of the expansion of the market for CDSs and CDOs that 'both contributed to and has been supported by a strengthening of the originate-and-distribute business model.' (Stark (2008)). It was also possible because of the certification role of credit rating agencies that provided the market with estimates of the risk of the underlying cash flows.

### **3.4 Bank bankruptcies**

When confronted with a crisis of such magnitude, economists have come up with a number of different and complementary explanations. Four of these should be included for a comprehensive understanding of the current events.

#### **3.4.1 Lack of capital**

First, as discussed by Calomiris (2008), the origin of the banking crisis can be traced back to financial intermediaries' lack of capital. This is because banks had engaged in the securitisation of assets through their sale to SIVs. Initially, both regulators and academics saw this as improving the safety of the financial industry because it meant banking risks were held by agents with well-diversified portfolios that could withstand a drop in the price of certain assets. However, banks did keep some off-balance sheet obligations regarding SIVs, so they were not completely isolated from the SIV risks. In fact, SIVs were often funded by the issue of short-term debt, with banks offering a liquidity facility as a guarantee to investors in the supposedly improbable case that the market would not fund the SIV notes any longer. As it happened, once liquidity dried up, the banks had to repatriate the SIVs, and this implied not only that they needed more capital, but also that they had to take the SIV losses on their accounts, thus depleting their existing equity.

#### **3.4.2 Complexity of financial assets**

Secondly, a completely different perspective would be, based on the observation of Gorton (2008), that the financial assets have become extremely complex because of the cascading securitisation process. This exacerbated the asymmetric information between borrowers and lenders. The securitisation process has led to the creation of opaque assets that institutions could not value. As long as liquidity flowed in the financial markets, financial institutions relied on the credit rating agencies to price the instruments derived from securitisation, the different tranches of the SIVs, CDOs, ABSs or other instruments. Yet once liquidity disappeared, the complexity of the securitised assets made it impossible for financial institutions to go back to the fundamentals, analyse the underlying cash flows and assess their actual risk and return. Consequently the market froze and, subsequently, whenever a transaction occurred it involved spectacular discounts.

### **3.4.3 High degree of securitisation**

Thirdly, although affecting mainly investment banks, the development of securitisation has also led to business models for banks that rely fully on liquid markets and therefore lack flexibility. So while standard retail banking is not primarily affected by this phenomenon, any bank that borrows wholesale to fund its credit operations is in danger of becoming extinct. This is so because, first, this business model implies working with high leverage and low margins, and secondly, the wholesale funding depends crucially on liquidity being freely available at a low cost. Once the joint reputation of the banking industry is at all in doubt, the bank either cannot find funding or has to face a huge increase in its funding costs. In either case, the bank is forced to default. This is the characteristic that Northern Rock, US investment banks and the Icelandic banks have in common.

### **3.4.4 Ponzi expectations**

Fourthly, we should not discard the possibility that banks through competition and/or herding have played a pyramid scheme or Ponzi game based on their expectations of ever increasing asset and real estate prices. Based on such an assumption, both banks and buyers of real estate are rational in their behaviour, provided their expectation of rising prices is correct: banks increase their lending and this very increase in the credit supply justifies their expectations, as it triggers an increase in prices. Of course, at a certain point in time the exponential increase is disrupted, and prices collapse. A simpler version of this phenomenon is referred to as the 'search for yield'. Although this may be a distorted image of bank managers – caricaturising them as oblivious to risk – if we see under the search for yield the need to obtain the same level of profitability their peers were obtaining by investing in, say, subprime loans, then 'search for yield' is a consistent view of the market. If, in addition, the main players in the banking sector, especially those that are too-big-to-fail and the LCFIs, expect to have the full support of the government in case of distress, then it is clearly the case that it will be difficult for a bank not to adopt the investment strategy of its peers, even if its measure of the effective risk is more accurate than the one used by its peers.

These four complementary assessments of the crisis point out to an unprecedented level of complexity in this current crisis and the novelty of some of its main factors, making the policy response especially challenging.

## **3.5 Impact of the crisis on bank activity**

The IMF's *Global Financial Stability Review* (October 2009) documented the extent of the credit crunch, but also the first signs of recovery. The first issue is the extent of the reduction in bank lending and to what degree this reflects 'credit crunch', as opposed to desired reductions in borrowing in the real economy or reduced creditworthiness of potential borrowers (as discussed above). One measure is the size of credit market spreads, including spreads on non-financial corporate bonds. The IMF concludes, as the table illustrates, that indicators of credit conditions have improved significantly over the past months, although spreads are still far away from returning to pre-crisis levels.

Table 3.1

	Current 8/31/2009	April 2009 GFSR 2/28/2009	Pre-Lehman 9/12/08	Pre-Crisis 6/30/2007
Residential mortgage ABS				
United Kingdom	190	315	215	10
United States	1,328	1,195	875	26
Commercial mortgage ABS				
Europe	975	850	330	20
United States	650	1,100	290	30
Consumer ABS				
United Kingdom	465	650	255	12
United States	55-90	250-350	130-200	0-10
Corporate cash bonds				
Europe high-grade	205	422	209	51
Financial	262	526	242	50
Nonfinancial	142	301	159	52
U.S. high-grade	253	548	344	100
Financial	352	753	432	93
Nonfinancial	203	442	282	106
Europe high-yield	1,116	2,103	900	226
U.S. high-yield	912	1,738	854	298

Source: IMF October 2009

The IMF's *Global Financial Stability Review* notes an easing of banks' liquidity and funding constraints. The risk of bank failure has receded significantly following the massive government intervention in 2008 and 2009. According to the IMF's October 2009 estimates, policy measures (mainly the provision of liquidity by central banks) provided \$8.9 trillion in funding to banks, as of Q1 2009. Banks are increasingly using interbank markets again, and central banks around the globe are starting to plan for exit strategies from loose monetary policies.

In spite of these more optimistic signs, the IMF still predicts further declines in bank credit, partly due to the persistent problems in the securitisation markets. The amount of securitised loans has declined across the world, from almost \$5 trillion in 2006 to only \$2.5 trillion in 2008, with further declines projected for 2009. The need for further write-downs is an additional problem. The IMF noted in its October *Financial Stability Review*:

'Securities writedowns by financials have begun to taper, but credit deterioration will continue to lead to higher loan losses over the next few years. Bank writedowns on holdings of loans and securities realized between mid-2007 and mid-2009 have amounted to \$1.3 trillion. We estimate that \$1.5 trillion of actual and potential writedowns through end-2010 has yet to be recognized. While the capital positions and outlook for banks have improved significantly since the last GFSR, earnings are not expected to fully offset forthcoming writedowns. Banks have enough capital to survive, but they remain under deleveraging pressure. With steady-state earnings likely to be lower in the post-crisis environment, stronger action is needed to bolster bank capital and earnings capacity to support lending.'

Another indicator relevant to the scope for lending to resume, is the degree of bank undercapitalisation. Although European banks have raised more than 400 billion in Tier 1 capital over the past months, this has been mostly in the form of preferred shares and subordinated debt, and less in the form of core capital. The IMF still projects significant capital shortfalls in European banks, more than in other regions of the world, as banks in Europe have been slower in recognising losses and estimates (on the assumptions set out in Table 3.2) that European banks as a whole will require at least \$300bn in additional equity to reduce leverage by a plausible minimum.

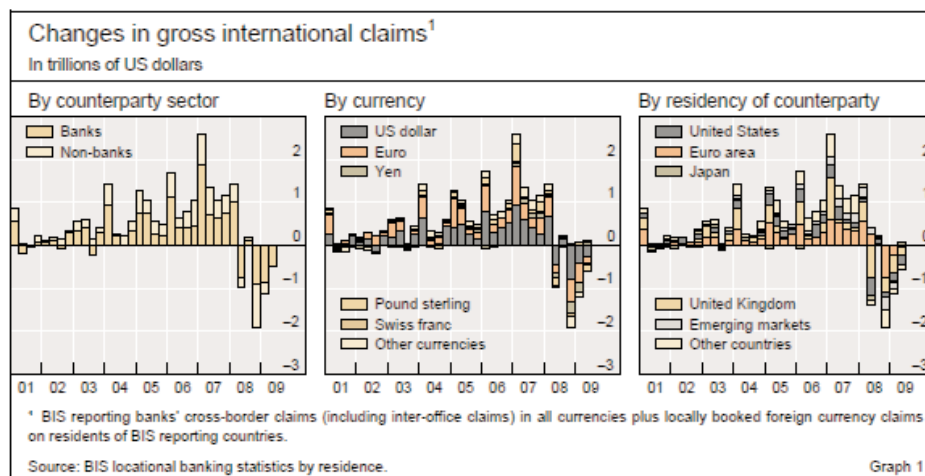
Specific indicators of the impact of the crisis on cross-border lending are given by Bank for International Settlements (BIS) figures on cross-border lending through the second quarter of 2009. The last quarter of 2008 saw the biggest-ever decline in total outstanding stocks of banks' external claims, i.e. a 5.4% (\$1.8 trillion at constant

**Table 3.2** Bank capital, earnings and writedowns (in US\$ billions, unless shown)

	United States (ex-GSEs)	Euro Area	United Kingdom	Other Mature Europe
Estimated Capital Positions at end-2009:Q2				
Total reported writedowns to end-2009:Q2	610	350	260	80
Total capital raised to end-2009:Q2	500	220	160	50
Tier 1/RWA capital ratios, in percent at end-2009:Q2 (change from end-2008 in parentheses)	11.5 (+1.1)	8.5 (+1.2)	10.4 (+1.2)	8.9 (+1.6)
Scenario Bringing Forward Expected Earnings and Writedowns				
Expected writedowns 2009:Q3 to end-2010:Q4 (1)	420	470	140	120
Expected net retained earnings 2009:Q3 to end-2010:Q4 (2) (after taxes and dividends)	310	360	110	60
Net drain on equity (retained earnings) (3) = (1) – (2)	110	110	30	60
Capital Needs (to reach target ratio at end-2010:Q4)				
6 percent Tier 1/RWA	0	0	0	0
8 percent Tier 1/RWA	0	150	0	30
10 percent Tier 1/RWA	90	380	0	60
4 percent TCE/TA (2.5 times leverage)	130	310	120	110

Source: IMF 2009

**Figure 3.1**



exchange rates) decline to \$31 trillion. The decline was concentrated amongst short-term claims. The geographical impact is shown in the BIS chart below; Euro area banks account for just under half the reduction in cross-border claims in the quarter, and adding the UK, takes that proportion to about 60%. The first two quarters of 2009 have seen a substantial slowing of the pace of reduction in cross-border lending, but no recovery yet. The \$477 billion decline in the total gross international claims of BIS reporting banks in the second quarter of 2009 was much smaller than the reductions in the previous two quarters, but was still the fourth largest in the past decade. The shrinkage in international balance sheets was entirely driven by a contraction in interbank claims, which fell by \$481 billion, according to the BIS (BIS 2009).

Against this background, we turn next to an overview of the bank rescues in member states to date, in the face of the characteristics of the crisis described in the previous section, and then outline the main questions with regard to competition policy raised by the Commission's communications.

**Table 3.3** Summary of the interventions that received an early state aid assessment

Member state	Guarantees (€ billion)	Recapitalisation max permitted (€ billion/% of GDP)	Real economy support
Belgium*	€150.00	€5.00	yes
Denmark	€580.00	€13.50/6.03%	
Germany**	€400.00	€80.00/3.26%	yes
Ireland	(1)	€5.00	
Greece	€15.00	€5.00/2.19%	
Spain	€200.00	€30-50/2.91-4.85%	yes
France	€265.00	€21.50/1/15%	yes
Italy	(2)	€15-20/1.0-1.33%	
Latvia	€4.24	€0.2	yes
Lithuania			
Luxembourg			yes
Hungary	€4.95	€1.04/1.07%	yes
Malta			
Netherlands	€200.00	€14.00	
Austria	€90.00	€15/5.55%	yes
Portugal	€20.00		yes
Romania			
Slovenia	€12.00	€12.00/20.67%	
Finland	€50.00		
Sweden	€150.00	€4.80/1.48%	
UK***	€294.26	€63.00/3.37%	yes

\* Excludes Dexia and Fortis (Belgium/France/Luxembourg) Dexia guarantees €166.9bn, Fortis €150bn guarantees and €7bn recapitalisation.

\*\* Plans currently under assessment for WestLB, Hypo Real Estate

\*\*\* Plans currently under assessment for Northern Rock and Bradford & Bingley

(1) Cannot be estimated but time-limited to 29/9/10

(2) Cannot be estimated but time-limited to 31/12/09

Source: European Commission, State Aid Scoreboard Spring 2009, various tables

### **3.6 Experience of bank rescue packages in member states**

Table 3.3 gives a summary of the interventions that received an early state aid assessment.

By the end of March 2009, the volume of member state guarantees to banks approved by the European Commission had reached about €2,300 billion (some major restructurings remain under investigation and the Commission estimates that the total amount of support to the end of March amounted to €3,000 billion). In addition, a number of member states have also proposed recapitalisation schemes that have resulted in governments owning significant shares of some banks. By the end of March 2009, the Commission had approved recapitalisation measures amounting to about €275 billion, excluding a number of ad hoc schemes supporting a number of individual financial institutions, including Dexia, Fortis, Nord/LB, ING, Aegon and others.

In order to investigate how effective these bailouts have been, we first have to address the question of what objectives bank bailouts are intended to advance. This is the aim of section 4.

---

## 4. Bank bailouts: their purpose, risks and implications for burden sharing

In this section we turn to the question of how bank bailouts treat the bank liability holders' rights, referred to as 'burden sharing'. We begin by describing the problems that bailouts are designed to correct, and ways in which bailouts can go wrong. This leads to a discussion of the undesirable characteristics of some bank bailouts before setting out the principles of a good bailout. The next section will turn to the competition policy aspects of bailouts. We then go on to evaluate DG Competition's statements and actions and, in the final section, other aspects of the regulatory response.

The reason we start by addressing burden sharing is because it has a crucial impact on banks' marginal cost of funds, on banks' risk-taking incentives and, at the macroeconomic level, on countries' budget deficits and long-term outlook. There are therefore competition implications in the choices made about burden sharing, even though the bailouts are directed at restoring financial and macroeconomic stability.

### 4.1 What problems are bailouts supposed to solve?

As we have seen (in Section 1), bank failure resolution has three goals *ex post*: to protect depositors, and avoid disruptive bank runs; to allow the continuation of borrower-lender relationships and prevent disruption to the economy; and to avoid any disruption of the payment and clearing systems. The first and third goals, in particular, call for rapid intervention, preferably over a weekend, when financial institutions and markets are closed for business.

However, bank failure resolution also has *ex ante* goals, in order to minimise moral hazard. If bankers know that they face immediate exit combined with the immediate and complete loss of all equity in the case of insolvency, they are less willing to take aggressive risks. If depositors and creditors know that they will suffer losses in the case of bank failure, they will be more willing to exert market discipline. If, on the other hand, the authorities give shareholders and creditors the opportunity to shift risk to the taxpayer, by providing for generous bailouts and delayed intervention and closure, this increases banks' incentives for aggressive risk taking and increases the probability and extent of financial fragility. The goal of avoiding moral hazard risk thus calls for rapid intervention and resolution. However, it also calls for losses to be imposed on equity shareholders, insiders and junior creditors of banks. In addition, it calls for the minimisation of any bailout expectations, including the threat of job loss for the takers of risky decisions.

Avoiding moral hazard is also of immediate and pressing concern when the first signs of fragility arise. As set out in Section 1, banks are not ordinary firms: partly thanks to deposit insurance, even under extreme solvency problems, their shareholders and managers still have considerable scope for 'gambling for resurrection'.<sup>15</sup> In the absence of timely supervisory action, shareholders and managers still have an interest in continuing the bank's activity, typically increasing the ultimate damage to the deposit insurance fund and to the financial system as a whole.

Therefore, as put eloquently by Goodhart (2008, page 353):

'A key feature of any bank insolvency regime must involve some expropriation of shareholder rights, and, whatever the compensation arrangement for shareholders it is bound to generate...a claim that they were robbed of their property.... (T)he treatment of shareholders is a central issue.'

This phenomenon would be decisive in reducing the capital of banks, precisely at the time when their solvency is most critical, as with Northern Rock. The impact will be mitigated, however, by two factors: first, because reduced private investment in a systemic crisis will decrease the demand for credit; secondly, as credit standards strengthen at the beginning of a downturn, fewer firms demanding credit will be considered creditworthy. So the procyclicality of capital regulation on the one hand tends to reduce banks' capital at the moment when the demand for loans is decreased, which could make it less severe, but on the other hand at a time when capital is vital for solvency reasons and is required by potential liability holders to stay in business.

We are currently in a situation where many banks have made investments (either loans or purchases of securities) that now appear to have a realisable value that falls well short of their face value. As described in Section 3, this is for two main types of reason:

- The investments were made on the basis of projections about the future path of real economic variables, including the prices of assets, such as certain real estate assets, that have proved substantially over optimistic;
- The investments were made to borrowers whose ability or willingness to repay them has proved much weaker than was forecast by the lenders.

It is important to bear in mind that these two causes have interacted in important ways during the crisis. It is often because the path of real economic variables has been disappointing to the extent that many borrowers, who on the basis of past records would normally have been considered a safe credit risk, have defaulted. Such instances include employed homeowners who have walked away from mortgages because falling house prices have left them with negative equity, banks unable to honour obligations in the interbank market, and firms technically in breach of covenants due to the decline in the value of their balance sheet assets, even when they have no difficulty servicing their loans. Conversely, it is sometimes because borrowers have defaulted that asset prices have fallen further than expected –

---

15 This has been well-documented for example in the case of the US Savings and Loan crisis of the 1980's; see for example Dewatripont and Tirole (1994) for an overview of this episode.



deleveraging by banks reacting to expected loan losses has reduced some asset prices to levels well below those on which the investments were assessed.

This situation, prior to any intervention, can result in four main types of undesirable outcome, which we describe in turn as follows:

1. Financial instability;
2. The asset management problem;
3. The loanfreeze problem;
4. The 'zombie lending' problem.

#### **4.1.1. Financial instability**

We will refer to financial instability as the generalised systemic crisis that leads to an impaired banking system, dwarfing its usual functions of transfer of property rights through the payment system, of managing liquidity risk, and of assets' transformation. Such events have occurred in many emerging countries, but they also occurred in the US in the aftermath of the Lehman bankruptcy, forcing the Fed to act quickly. This kind of crisis forces the government to replace the intermediation functions of the banking system. The probability of financial instability may be low, but the cost of a partial or total freeze in banking activities is so high that the government will provide a generalised bailout in order to avoid the disintegration of the banking industry.

In so doing, the government will first play for time through the provision of temporary measures, usually guaranteeing some, or all, of banks' liabilities. Next, the government will determine where to set the limit of the bailout, so as to make bailouts' cost-benefit efficient. Clearly large banks' short-term liability holders will be bailed out, and small banks might be liquidated or forced into mergers, but the precise limit depends upon:

1. The seriousness of the threat. Is it true that the perception of banks' customers is such that they are ready to bypass the banking system, liquidate their deposits and hold government bonds? This clearly depends on their expectations. The more alarmist the bank customers' perception of the situation the more generous the bailout will have to be.
2. The cost of increasing the budget deficit. This, in turn, is related to the current budget deficit or surplus, the amount of the debt previously issued, and the spread the government has to pay over the ECB interest rate. It is related also to the cost of raising taxes in the future. Finally, and in our view most important, it is related to the political cost of the bailout. As has been made clear in the Fortis case, the issue may not be about a cost-benefit analysis, but rather about how tax payers and voters in one country view the bailout operation.
3. The bargaining power of liability holders will be a critical issue. While the government is aiming at a speedy bailout and reorganisation of the whole banking industry, both debt holders and even shareholders may bide their time and use all legal recourses and loopholes to maintain the option, favourable to them, of a larger cash injection to the bank. This holds especially in countries where the law prohibits expropriation of shareholders even if their claims are

effectively zero. The case of Fortis (discussed below in Section 7), where the shareholders tried to block the sale of some Belgian assets to BNP Paribas, shows that, because the government could not declare Fortis bankrupt without threatening financial stability, it had trouble implementing the solution it had initially designed and had to try and renegotiate with shareholders and with the acquiring party, BNP.

So the issue of the extent of the bailout may be, in part, an issue of cost-benefit analysis, but may also involve practical questions of political economy. What is the voters' and taxpayers' perspective on the bailout? Do they see it as unavoidable? Will they demand conditions or the expropriation of the shareholders? The US bailout procedures, with successive plans needed, seems to indicate that the political economy dimension of the crisis may be more relevant than its technical efficiency analysis in predicting the way it will be solved. The UK and Dutch resolution of the Icelandic banks' collapse also tells us how sensitive the government can be to the taxpayers' viewpoint when it comes to rescuing a foreign bank. The political debate about bonus payments in bailed-out banks also falls into this category.

An important element to keep in mind more generally for the European Commission, is that member states will tend to neglect the potential harmful effect of costs imposed on bank creditors if these are foreigners. This is reminiscent of the example of the AIG bailout by US taxpayers, which benefited Goldman Sachs but also European banks, like Société Générale and Deutsche Bank. *Mutatis mutandis*, letting Lehman Brothers go under was very bad news for European banks (beyond the fact that it led to the paralysis of financial markets).

#### **4.1.2 The asset management problem**

The asset management problem arises when investments that have already proven ill-judged will turn out to yield even less than if they were efficiently managed ex post. It may be, for instance, that some houses have been built that should not have been. However, given that they have been, it is clearly efficient that someone should live in them, and if those who hold mortgages on them have defaulted because of negative equity, the result is likely to be that many houses are left empty and declining in value because of lack of maintenance. Whatever else happens, it is therefore clearly desirable that these investments should pass into the hands of those who can best manage them in the future, and that these acquirers have the right incentives to manage them efficiently. Often this may require no transfer of ownership but simply a change in the incentives of an existing owner: for instance, write-downs of the principal of certain loans may improve the incentives of debtors to service the loans, but may threaten to push the creditor towards insolvency. It would clearly be desirable to ensure that the fear of insolvency does not prevent incentive-improving write-downs.<sup>16</sup>

---

16 See the proposal by Martin Feldstein 2009.

### **4.1.3 The loan freeze problem**

The loan freeze problem is that banks may fail to continue with the basic functions of intermediation that are vital to the operation of a modern industrial economy. (This is compatible with the widely-discussed danger of ‘zombie lending’ discussed below.) As we described in section 3.2.3, this could occur for at least three different types of reason: a credit crunch (due to inadequate bank capitalisation); a collateral squeeze (due to a decline in the value of collateral assets combined with an increase in the severity of credit standards applied by loan officers); and a savings squeeze (due in current circumstances to a flight to liquidity by banks’ creditors, including their depositors).

The loan freeze problem is, potentially, massively costly to ordinary economic life. Almost all firms need working capital for their day-to-day activities. The return on such working capital is extremely high, but it is never normally noticed because most firms do not have difficulty raising it; only once it becomes impossible to raise does its true marginal productivity become clear. In such a situation the inability of creditors to trust even apparently sound debtors (due to the fact that the crisis has seen defaults by debtors who seemed previously beyond reproach) can result in massively inefficient allocations of savings. Some agents hoard savings in low-yielding but liquid form, while others suffer or cease trading altogether because of their inability to finance high-yielding, indeed vital, day-to-day operations.

A bank bailout can deal directly with the loan freeze problem only to the extent that it is due to the first of the three main causes (namely a credit crunch), although to the extent that the bailout may increase the prices of some assets it may indirectly help to deal with the second (the collateral squeeze). However, a flight to liquidity caused by a general increase in risk aversion and a re-evaluation of the economic environment as a result of recent dramatic events, can reduce the effectiveness of a bailout.

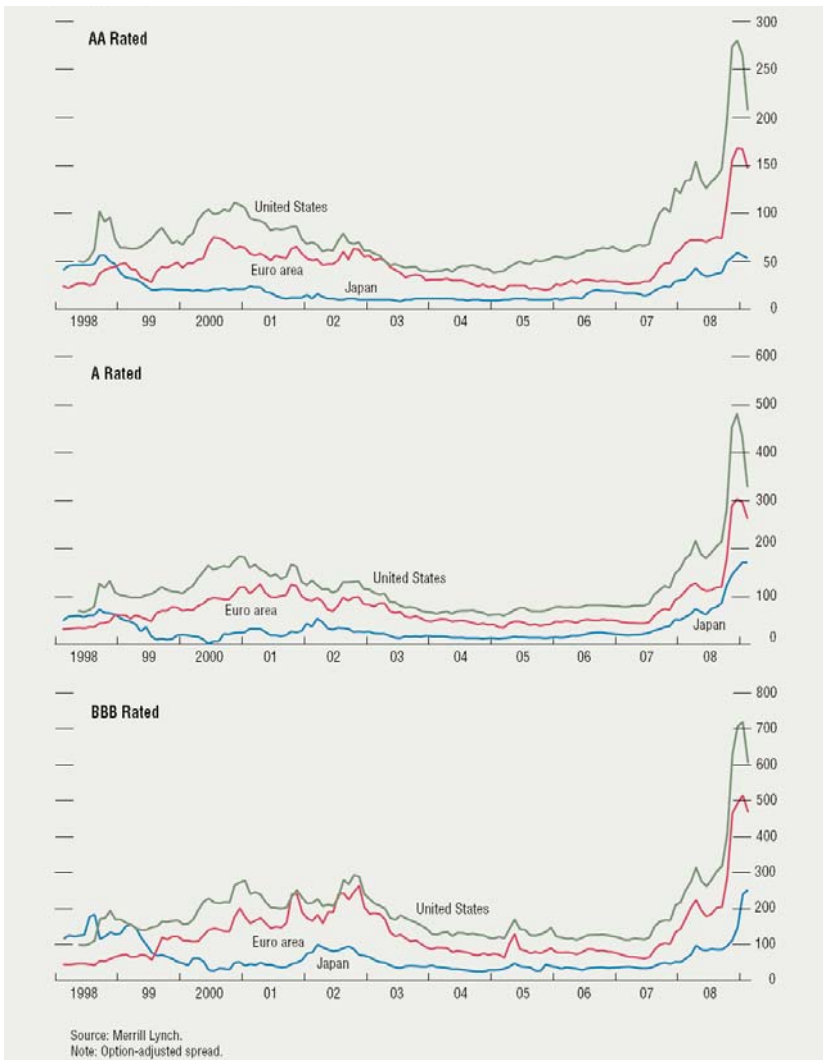
It is therefore important to bear in mind that bailouts, even if substantial and effective in restoring bank capitalisation, may not necessarily re-start bank lending, as we seem to have observed as the crisis has unfolded. In addition, the loan freeze problem describes a decline in the supply of bank lending, and it is quite possible that even if supply conditions are restored to normal, bank lending may remain well below previous levels due to a decline in loan demand. Households and firms are, after all, adjusting their own balance sheets, which had become badly over-leveraged in recent years.

Nevertheless, the figure below, drawn from the April 2009 IMF *Global Financial Stability Review*, indicates that even if a credit crunch was not the only source of difficulty for lending at the height of the crisis, it was a very important one. Non-financial corporate borrowers are paying historically unprecedented spreads on bonds, which strongly implies that they are unable to borrow from banks on significantly better terms. And although these spreads have declined slightly since their peak, the decline is small in percentage terms, indicating that the large amounts of liquidity injected into the banking system have not, so far, had much effect. While not establishing conclusively that there is no liquidity bottleneck, these figures, like those given in Section 3, make it probable that the credit crunch has indeed had a major impact on overall lending levels.

#### 4.1.4 The 'zombie lending' problem

The third type of undesirable outcome is commonly known as the 'zombie lending' problem. This is when banks continue lending to borrowers of doubtful creditworthiness because continuing to lend enables the borrower to continue to make debt service payments, and thus the bank avoids having to write down the loan, a process that might trigger the insolvency of both the borrower and the bank.<sup>17</sup> This issue has been addressed in a theoretical framework by Mitchell (2001) and Aghion, Bolton and Fries (1999), with the quite intuitive result that the harsher the regulator, the higher the tendency for banks to roll over bank loans instead of writing

Figure 4.1 Nonfinancial corporate credit spreads (in basis points, monthly data)



17 A more extreme form of such behaviour is 'gambling for resurrection', whereby banks target new, very risky projects, rather than investing in the risky activities of existing borrowers.

them down or restructuring them. Even if such lending does not completely crowd out other lending (and thereby cause a loan freeze) it may channel resources towards borrowers of doubtful quality at the expense of better projects.

## **4.2 How can bailouts resolve these problems?**

A credit crunch requires for its resolution that banks regain adequate levels of capitalisation. Banks will not lend if they are trying to build up their capital to avoid being deemed insolvent by financial regulators. The authorities can of course change the rules (including mark to market rules) determining when banks are deemed insolvent by regulators, or what they are then required by regulators to do. However, such *ad hoc* rule changes do not deal with the credit crunch or zombie lending problems and, moreover, have highly undesirable effects on the credibility of the regulatory framework in the future, as they signal that the rules for judging a bank insolvent can be waived at will once a bank appears likely to breach them. Bank recapitalisation in some form is therefore necessary.

Recapitalisation can be accomplished unilaterally by the banks themselves, through one of three means: by issuing new equity; by liquidating assets to pay off current liabilities; or by negotiating with debtholders to convert some debt into equity. However, in the current climate the first of these means was, at least initially, extremely difficult, and the second risks worsening the situation, both by freezing new lending in the interim and by forcing the distress sale of assets at prices below their hold-to-maturity value (the latter already significantly lower than it was until recently thought to be). The third means (debt-equity conversion without public intervention) is often difficult too, because debtholders have an incentive to hold out in the hope of receiving the full value of their claim, and in doing so do not internalise the costs their resistance imposes on other stakeholders in the same bank and on other banks.

If policymakers wish to bring about a different outcome, without allowing automatic insolvency procedures to run their course, some public intervention for recapitalisation may be unavoidable. This does not of course imply that all under-capitalised banks should be recapitalised; indeed, it is likely that the cost of recapitalisation will exceed the benefits for some banks, which should therefore be closed. Sometimes this may need to take place via prompt corrective action in order to avoid any risk of systemic panic brought about by a messy procedure for closing a bank that, in itself, does not have a good claim for recapitalisation.

Public intervention for recapitalisation of any given bank can take place in two ways:

1. By increasing or revaluing upward the asset side of the balance sheet, through some combination of (a) guarantees and outright purchases for existing assets, and (b) direct cash injections;
2. By revaluing downwards the debt side of the balance sheet.

In practice most bank recapitalisation plans involve some combination of these, though most plans so far have placed the emphasis on the first. But different

combinations have very different implications for who bears the cost. They also have very different implications for transparency, as we now describe.

#### **4.2.1 Asset revaluation**

Asset revaluation through public intervention could, in theory, take place in a completely transparent way, through a cash injection financed by the government budget. This would make it clear that the first-round beneficiaries are to some extent the shareholders of the bank (if it continues to remain solvent and existing shareholders keep a positive equity stake),<sup>18</sup> while those who bear the cost are taxpayers. For precisely this reason recapitalisation is rarely proposed in this fashion, even if a justification can, in principle, be found for shareholders to benefit if the bank is to resume its normal and necessary lending activity. Note that such a cash injection may introduce a distortion in the bank's cost of capital, as the bank's bankruptcy is not a credible option any longer and it is given a right to issue debt with the implicit guarantee of the government.

Asset purchases and price guarantees by the state also involve a cost to taxpayers and a benefit to shareholders. The difference is that both the cost and the benefit are much less easy to predict in advance. The shareholders clearly benefit from receiving prices (or obtaining guarantees) that private markets would not currently provide, but because it is typically not clear at what price well-functioning private markets would provide such prices and guarantees, both the real value of the shareholder benefit and the real cost to taxpayers cannot easily be calculated. Governments (especially but not only the US government) have been claiming that these costs are lower than they appear on paper because asset prices are artificially depressed. This means that price guarantees may not need to be called, and asset purchases may involve the possibility of future upside gains for the taxpayer if prices rebound. But there are very strong incentives for politicians to exaggerate the likelihood of this outcome.

Asset purchases can also be made by other private sector institutions, which can be given incentives to do so, either by price guarantees in turn (which raise the same concerns as above) or by other inducements, such as a likely increase in market power (which would raise the value of assets, for example, by raising the fees and interest rates the bank could charge or lower the rates it would have to pay on deposits). In the latter case those who bear the costs would not be taxpayers but consumers (borrowers and depositors).<sup>19</sup> Unless some such inducements are offered, other private sector institutions will participate only under political pressure, which would imply some transfer from the shareholders of the banks buying assets to the banks selling them (and would evidently do nothing for the capitalisation of the sector as a whole). Asset purchases by other private sector institutions are therefore typically very non-transparent, as the purchase of HBOS by Lloyds TSB in the UK suggests: it seems likely that both consumers and the shareholders of the purchasing bank bore more of the

---

18 If the bank nevertheless eventually becomes insolvent the beneficiaries of the cash injection are those junior creditors who are repaid but would not have been repaid without the cash injection.

19 Consumers are of course usually taxpayers too; the issue is whether the costs are borne by them in proportion to their (marginal) tax rate or in proportion to their use of banking services.

burden than any of them realised at the time the transactions were announced. In spite of this, the benefit of a general asset purchase is that the asset purchase is credibly made once and for all and does not discriminate among banks. Consequently, the distortion in terms of the marginal cost of funds is theoretically non-existent.

As well as raising issues of equity accountability, this lack of transparency in burden sharing raises two types of efficiency concern. First, there is the standard moral hazard issue: if shareholders and managers of the bailed-out banks are more aware of the benefits than the counterparties are aware of the costs, future behaviour may be riskier than is envisaged by the safeguards set up to restrain it. Secondly, a desire to minimise transparency may lead to recapitalisation being insufficient: a reluctance to admit the poor quality of assets may encourage bank management to lobby for repeated piecemeal recapitalisations for the purpose of protecting shareholders without leading to recapitalisation adequate to re-start efficient levels of new lending.

#### **4.2.2 Revaluation of liabilities**

The simplest and most transparent form of revaluation of liabilities is the transformation of some, or all, unsecured liabilities into equity (one variant of such a scheme is urged by Zingales, 2008). The burden of recapitalisation is then borne by those who had made the unsecured loans to the banks in question. This has the merit of being highly transparent as far as the first-round effects are concerned. To the extent that some banks would still be undercapitalised (because they have very few unsecured liabilities) it would force the authorities to be transparent as to the sharing of the remaining burden through the mechanisms for the securing of those liabilities (e.g. via deposit insurance). It would strengthen the presumption that at least some of the junior creditors would be expected to share responsibility for monitoring banks in the future, thereby alleviating the moral hazard problem, though probably also making it more expensive for banks to raise unsecured finance in the future.<sup>20</sup>

However, there are second-round issues. A significant proportion of the liabilities of banks have their counterpart in assets of other banks. It is likely, therefore, that a recapitalisation by this method of those banks that initially require recapitalisation may threaten the solvency of other banks that initially did not require it. In practice it is not clear how serious a problem this is: if regulators are doing their job, loans to currently seriously undercapitalised banks should already be marked down on the balance sheets of the creditors in question. However, if it is a problem, other methods of revaluing liabilities may therefore be preferred in some circumstances (such as corralling the liabilities in a 'bad bank' and therefore leaving open their ultimate status and value).

Finally, some liability restructuring methods change the rules of precedence for existing creditors without formally revaluing their claims (for instance by issuing preferred equity or various convertible instruments). These are typically less transparent than forced debt-to-equity conversions, but may have the advantage,

---

20 This is not necessarily undesirable if the new higher cost of raising finance represents the true opportunity cost to the economy of those resources.

when combined with asset re-valuations, of mitigating some of the costs if banking fortunes improve by more than is implied by current asset valuations on unchanged policies.

In terms of distortion to the marginal cost of funding, downward liability revaluations will leave the marginal cost of funds unchanged. It could be argued that the creditors' perception of the risk of their claim being swapped against equity may increase the marginal cost of a banks' funds, but this is an increase only in comparison with the expectation of a full bailout. Compared with the standard perception of bankruptcy, debt downward revaluation should be neutral.

### **4.2.3 Summary**

To sum up, the recapitalisation of insolvent banks benefits shareholders (to the extent they are not completely wiped out), as well as those who gain from re-starting the flow of intermediation. Liability restructuring (such as the issuing of preference shares) may sometimes offset some of those benefits to shareholders, but the general point remains that some benefits to shareholders are an unavoidable part of recapitalisation.

The more complex issue is who bears the costs, and how transparent those costs are. Programmes that concentrate primarily on asset revaluation place the costs on taxpayers, but there is a large variation in the transparency with which those costs can be valued and acknowledged. Cash injections are highly transparent, but for that reason are rarely proposed. There are clearly strong incentives for bank management and shareholders to lobby for relatively non-transparent methods, and for politicians to accommodate their wishes. Liability revaluations typically place more of the burden on creditors, and tend to be more transparent for that reason, though interbank liabilities may create some difficulties due to second-round effects. In terms of distortion to marginal costs and to risk-taking incentives, liability revaluation would be the preferred option. Still, it is unclear to what extent liability holders can use the legal system to oppose such an option, and to what extent they can lobby effectively or point to threats to financial stability to obtain a better deal for themselves.

## **4.3 How bailouts can go wrong**

How could interventions of any of the above kinds go wrong? There are four main ways.

First, they might not go far enough. Assets could continue to be managed inefficiently *ex post* (for instance, houses to remain vacant). The loan freeze could continue because capital levels, though improved relative to what would have occurred without the intervention, have not improved enough. Zombie lending might likewise continue because banks' capital is too weak to allow them to recognise that certain borrowers will never repay unless they continue to receive credit from the same source. It is worth noting that the scale of the intervention required to go 'far enough' might be very large, due to the high valuation uncertainty currently surrounding many assets on bank balance sheets.



Secondly, interventions might unwittingly exacerbate the problem. For instance, asset disposals might place them in the hands of owners who will manage them even less efficiently (for instance by evicting house owners who might otherwise have remained in their houses under mortgage workouts). Or liability reduction might make future creditors even less willing to lend than they were before. It is also possible that interventions that help to solve one problem may worsen a second, pre-existing problem: for instance, guaranteeing mortgages held by banks may discourage them from writing down the principal and thereby encourage default by borrowers with negative equity.

Thirdly, interventions might resolve the loan freeze problem by encouraging new inefficient lending rather than new efficient lending (or more probably, by encouraging some new efficient lending at the price of far more new inefficient lending than is necessary). This could be for one of two reasons. The first is that the bailout has convinced managers that future bailouts are likely and has therefore insured them to at least some of the consequences of taking risk. This is the moral hazard problem, and public discussion of bank bailouts has regularly confused this with the superficially similar, but distinct, issue of whether those responsible for past inefficient lending have been adequately held to account. The second reason is that the terms of the intervention may have provided banks with subsidised funding, thus providing incentives to develop their intermediation activities in areas where it would not otherwise have been efficient for them to do so – for instance, failing to close as many branches as they need to, or making acquisitions. These issues will be discussed in the next section.

Fourthly, interventions might simply cost the taxpayer far more than they need to. This may depend, of course, on the legal system and on the possibilities it gives the shareholders to blackmail the government into the solution that benefits them, as illustrated by the Fortis' shareholders attempts to reject the BNP Paribas deal. When policymakers have to take rapid decisions involving commitments to many billions of dollars there is scope for the bill to mount up very rapidly indeed.

All four of these ways in which interventions could go wrong are subject to significant international externalities. National authorities may intervene too little because they are afraid they cannot justify to their taxpayers the bailout of foreign banks. They may exacerbate the problem because their own banks' behaviour post-bailout worsens the situation of foreign banks. They may encourage moral hazard on the part of foreign banks whose behaviour they influence but cannot regulate. Most importantly, they can encourage moral hazard on the part of banks they bail out, promoting aggressive lending triggered by a low expected cost of funds, with consequences for the banking systems of other countries. Further, by ill-considered actions the authorities can destabilise banks operating in other countries, thereby substantially increasing the cost to taxpayers in those countries.

The mechanisms of state aid control are designed to offset some of the risks that arise when national bank bailouts fail to take account of international externalities, and also to reinforce the determination of national authorities to avoid moral hazard in the face of strong political pressures to ease the loan freeze problem unconditionally. However, it is important to see how different bailout proposals imply different risks of going wrong in the four ways outlined above.

Most asset re-evaluations do not address the moral hazard problem directly – indeed, by augmenting bank assets they precisely signal that future inefficient lending may be subject to similar bailouts. When they do address the moral hazard problem they therefore do so indirectly, by coupling asset augmentation proposals with additional proposals for regulatory intervention – nationalisation at one extreme, increased supervision at another. Liability revaluations, by contrast, would address the moral hazard problem directly since they would make some junior creditors bear the costs.

#### **The Swedish 'good bank/bad bank' experience**

The evaluation of the cost of any financial crisis has to be treated with caution, as this appraisal is quite complex. Still, the cost estimates of the Swedish crisis appear to be particularly low (of the order of 4% of GDP compared with the 29% of GDP for the Chilean crisis according to Frydl (1999)). Obviously, this is not only due to good crisis management or of the use of 'good bank/bad bank' approach, but also of the state of the world business cycle, which perhaps provided a favourable environment for an economic upturn. This dimension is absent from the current global crisis.

In spite of important differences between the current crisis and the Scandinavian one, regarding the nature of the financial sectors and the assets involved, as well as the economic background, there are lessons we can derive from the Sweden rescue plan. The general principle is to remove uncertainty by ring-fencing the bad assets.

The Swedish good bank/bad bank scheme was used in combination with the extensive use of Asset Management Corporations (AMCs). The 'bad bank' part of the bank was transferred to the AMC at carefully assessed market values. The AMC proceeded then to regroup the assets and offer them to potential buyers. Because all the pressure associated with the preservation of banking stability and the functioning of the payment system had vanished, a fire sale of the assets was avoided. Still, because the government issued an unlimited guarantee to all depositors and counterparties to Swedish credit institutions (later confirmed by Parliament), the creditors' claims could not be renegotiated, which did come at a cost to the tax payers. From that perspective, it could be argued that all the potential benefits of a good bank/bad bank scheme were not obtained.

The Bank Support Authority was in charge of deciding which banks to reconstruct and which to liquidate, and its functions were explained to the general taxpaying public. The measures were designed to minimise costs for taxpayers and, due to the risk of moral hazard, shareholders were not covered by the government guarantee.

The process consisted of: (1) Write-down the bank's bad loans; (2) 'Test' the bank in micro- and macroeconomic models; (3) Give support to the banks that pass the tests and close, merge or restructure in an orderly manner those that fail.

Hence, the procedure operated on a case-by-case basis according to clear and transparent rules. Compared with the current crisis, the appraisal of the value of loans and securities was simplified because of a lower level of uncertainty and the absence of complex securitised packages. The implication for the current crisis is that a bad bank, or the AMC, may have to hold assets for much longer. Still, the flexibility of the good bank/bad bank separation and the possibility of applying a case-by-case approach make it a powerful tool in a banking crisis.

## **4.4 'Good bank/bad bank' schemes**

Most bank bailouts that have been undertaken in recent months have involved keeping a troubled bank intact. There have been a number of proposals, however, for splitting troubled banks into two or more component parts, dividing their balance sheet so as to create 'good banks' capable of continued functioning and 'bad banks' as a residual.

Without entering here into the intrinsic merits of such 'good bank/bad bank' schemes, four points are worth making. First, the principles governing division of the assets and division of the liabilities are quite different: assets need to be divided according to valuation uncertainty, and liabilities according to seniority. Secondly, it may be appropriate, therefore, for the regulatory authorities in each country to take care of the separation of assets while the government/treasury defines the separation of liabilities. This reflects the fact that asset valuation is more of a technical matter while separation of liabilities is more a matter of burden sharing and therefore a more appropriately political issue. Thirdly, different forms of division into a good and bad bank have different implications for who bears the cost of past mistakes, and therefore for both perceived equity and moral hazard. Finally, the only point of such a division is to ensure that the 'good bank' can function without being inhibited by the uncertainty over the status of the assets and liabilities in the bad bank. It is therefore essential that the legal framework for such a division does not permit the stakeholders in the bad bank to pursue claims on the good bank. This principle does not appear to have been borne in mind in the recent German bailout.

Perhaps a better classification would be 'good banks' and 'uncertain banks'; the idea is to try to confine the valuation uncertainty, which currently pollutes the entire banking system, to a subset of the institutions concerned. In principle, the division of the bank can take place on the asset side of the balance sheet, with 'troubled assets' being separated from the rest. It can also take place on the liability side, with the existing assets (or a subset) being grouped with a subset of the most senior liabilities, and the remaining junior liabilities being placed in a 'bad bank'. We discuss in the box the experience of such measures in Sweden during its 1990s banking crisis.

## **4.5 Desirable principles for rescue plans**

We end this section with some principles for bank rescue plans, paying special attention to burden sharing, based on the above considerations.

1. *In cases of insolvency, 'real bailouts' are needed.* Changing accounting rules in order to pretend things are fine is dangerous, because it means allowing insolvent banks to go on rather than cleaning them up. They will not lend efficiently, leading to a credit crunch and/or to zombie lending.
2. *Nevertheless, bank rescues should not be overly generous.* Specifically, they should not give such banks extra funds (over the level of capital required by prudential regulation) that would imply an extra cost for taxpayers and also be problematic as far as competition is concerned, as discussed in the next section.

3. Moral hazard considerations indicate that *bailouts should as much as possible wipe out the initial equity holders*.<sup>21</sup> Even if it is true that banks have partly been hit by a systemic shock, it is also clear that they had taken excessive risks, to varying degrees. The various methods to bring insolvent banks back to the required capital ratios differ in terms of the burdens imposed on shareholders, junior creditors and taxpayers.
4. *Imposing significant losses on at least some junior debtholders* would also be useful as far as moral hazard and fiscal considerations are concerned. Such liability revaluations deserve more attention than they have so far been given. One reason they have not been tried yet is perhaps the fear of causing panic among creditors. This fear may well be overrated: separating out the claims to junior creditors from those of senior ones may well encourage the latter to lend more freely. Of course, one should be careful about second-round effects: if junior creditors are financial institutions too, such liability re-evaluations may simply transfer the problem. The European Commission may want to give special attention to this argument in the case of foreign junior creditors, whose interests would naturally be neglected by member states.
5. Note that some recent *voluntary burden-sharing* developments are positive and worth encouraging: a number of banks have been boosting (or are about to boost) their capital by making exchange offers of junior against senior debt at a price which is inbetween the face value of this junior debt and its market price (they also managed in some circumstances to convert junior debt into equity). These exchange offers mean junior creditors are ready to accept a haircut, thereby reducing the taxpayer burden. A resolve by governments not to be 'too generous' should encourage such exchange offers. Note, however, that they are potentially worrisome as far as transparency is concerned: they take place because market-value accounting does not apply for liabilities, otherwise a buyback which happens at above-market-price would mean a loss and a reduction in the value of the bank's capital. Instead, with historical-cost accounting, it becomes a gain because the price is below the face value of the debt. It may even involve 'double counting' for bank capital in the aggregate, if the holder of the junior debt is a bank which had to value the asset at market prices.

---

21 From a moral hazard perspective, whether this should include holders of various forms of hybrid equity is a secondary point; in principle, holders of common equity (who have voting rights) are the ones whose moral hazard is of greatest concern. Still, the expected bailout of debt holders provides banks with access to subsidised funding, and this may lead them to an excessive supply of credit.

---

## 5. Competition implications of bailouts

The impact of state aid on competition in the banking system is more complex and ambiguous than in most other sectors of the economy. When a car firm is given state support this generally makes life more difficult for its competitors, but when the recipient of the aid is a bank the picture is not so clear.

On the one hand, the failure of one bank can actually have negative repercussions for its competitors through direct contagion effects (depositor run, market run, interbank claims, payment system etc.) and also indirect effects through effects on financial and collateral markets. State aid for insolvent banks can therefore have positive repercussions for their competitors by stemming contagion and reversing adverse price trends on financial and collateral markets.

On the other hand, state aid can have negative repercussions for competition, both by distorting aggregate banking activity in inefficient ways and by distorting the allocation of activity across banks, to the extent that some banks receive more aid than others. Such distorting effects can come about in two main ways:

1. By reducing the private marginal costs of certain banking activities below their true social cost;
2. By encouraging socially undesirable, excessive risk-taking.

We illustrate these two channels with regard to two types of state aid on the asset side: bank recapitalisation and loan guarantees; and blanket insurance for liability holders.

Consider first the effect of recapitalisation on marginal costs. Theoretically, a one-time capital injection by the government should not affect marginal costs. However, the government will often be unable to commit to give no further aid in the future, given that taxpayers' money is now at stake and because such aid has established the bank as too-big or too-interconnected-to-fail (this is exactly what has been seen in the US, Belgium, and previously in many emerging market crises, where multiple rounds of recapitalisation have occurred). This expectation of 'further state aid if needed' will thus reduce marginal costs for the recipient bank. To the extent that this encourages activities whose real costs are higher than their perceived costs, this may be inefficient in itself (that is, even if all banks are treated alike). And to the extent that such recapitalisations are rarely provided on equal terms to all banks, it will also give recipient banks a competitive advantage over banks that have not received such aid.

Consider next the effect of loan guarantees on both marginal costs and risk taking. While recapitalisation creates a permanent reduction in marginal costs through its effect on expectations, loan guarantees have an immediate and perverse effect on lending risk management and thus distort lending markets. Whereas recapitalisation

may create a climate in which banks are less careful about risk because it raises the likelihood of future recapitalisations if risk-taking goes wrong, loan guarantees directly signal to banks that, for the loans in question, they need not take risk into account at all. By providing incentives for less thorough screening and monitoring, and thus higher risk-return trade-offs, banks benefiting from loan guarantees will have a competitive advantage *vis-à-vis* their competitors without access to those loan guarantees. Even if all banks were to benefit equally from such guarantees the aggregate impact on risk taking could be highly damaging.

While it is possible to design both recapitalisation and loan guarantee schemes with characteristics that could reduce these effects on marginal costs and risk taking, in practice this seems to be easier to undertake for recapitalisation than for state loan guarantees. Specifically, the effect of recapitalisation on incentives to take aggressive lending risk is indirect and could be countered with governance prescriptions. In addition, recapitalisation gives incentives for new lending, not necessarily for reckless lending; even though there might be an expectation of repeated bailouts, careful public monitoring might help reduce the risk of reckless lending. Loan guarantees, on the other hand, will provide direct perverse incentives to reduce screening and monitoring efforts.

Finally, blanket liability guarantees (such as those issued early in the crisis by the Irish and Danish governments), going beyond existing deposit insurance schemes, can have important moral hazard risks and implications for competition across countries of the European Union, as recognised by DG Competition. As discussed in Section 1, generous deposit insurance, especially if extended to large and sophisticated creditors, undermines further the already scarce market discipline on banks, creating incentives for banks to take aggressive risks. This effect becomes stronger in a crisis as capital cushions are slim and banks therefore have steep incentives to ‘bet the bank.’ In addition to these dynamic effects, there are also competition implications across countries with, and without, such blanket guarantees, as depositors (especially large depositors) might shift funds across different banking systems in search of the most generous guarantees. So an uncoordinated approach to extending such guarantees, as we saw in the autumn of 2008, will in fact further undermine banking stability, rather than fostering it as governments had intended.

## **5.1 Behavioural solutions**

Although there is clearly some awareness among policymakers of the risks we have just described, a number of proposed measures seek to address them by compensating provisions whose effectiveness must be open to serious doubt. For example, it has been suggested that banks receiving state aid should not be permitted to be price leaders, to engage in aggressive advertising or pay salaries and bonuses above a certain cap. For example, one of the commitments made by Northern Rock in return for its rescue was that it would not rank in the top three of 15 defined categories of retail deposit products in the widely-used *Moneyfacts* rankings (OFT 2009, p13). There are numerous difficulties with both of these types of provision, however.

First, imposing restrictions on being a price leader will be hard to enforce in a

meaningful way. Even standard deposit products are characterised, not only by an interest rate, but often also by certain fees and charges that can vary across products and across banks. They may even vary across customers depending on whether they have one or several products from this bank. So, properly measuring and comparing prices for specific products across banks is very cost-intensive and impractical.<sup>22</sup>

Next, consider advertising. There have reportedly been incidents where banks have advertised their state guarantees as a means of attracting additional deposit funding. At face value, this seems a clear violation of competition principles, and a prohibition on such advertising seems also reasonably easy to enforce (as was indeed the case with Northern Rock). However, the banks in question have most likely suffered from much heavier deposit outflows during the crisis and before receiving state aid, so that such advertising may be no more than a means of redressing the previous adverse balance. Granting guarantees only on condition that the recipients keep quiet about them might seem to defeat the purpose of the exercise. This does not mean that the use of guarantees as a positive marketing tool is desirable, only that it is hard to draw a clear line between recipients that use guarantees to restore desirable confidence in the soundness of their deposits, and those that abuse them to gain unfair and inefficient market share.

Not surprisingly, there have been complaints against bailed-out banks by banks that have not benefited from state aid. There are, however, significant risks in using the state aid control mechanism as a 'fast-track' procedure for complainants who might have greater difficulty making a case against the allegedly anti-competitive behaviour through the normal complaint procedures, especially given the difficulties of evaluating prices, mentioned above. In our view, it is clearly desirable to apply standard competition policy tools, including standard complaint procedures, to address these complaints. This can ensure that a systematic assessment of the competitive situation is made.

Finally, imposing restrictions on salaries and bonuses can prevent restructured banks from keeping or hiring people with the skills the bank needs in order to recover. Even if imposed only on new hires, it would force the bank to keep the management that had got it into trouble in the first place rather than hiring fresh talent. However, this issue clearly also falls into the category of political economy considerations, as mentioned earlier.

Imposing behavioural restrictions on banks receiving state aid might even have a perverse dynamic effect. Where governments offer such plans for voluntary sign-up, banks that are marginally capitalised, but not under immediate threat, may not sign up, in the hope of future plans that will be less restrictive. This might have the perverse effect that it is the banks not receiving state aid, and thus escaping restrictions, which gamble for resurrection, thus deepening systemic banking fragility.

What if any restrictions on growth should be imposed on banks that receive state aid? There should certainly not be a restriction imposed on organic growth, i.e.

---

22 For example, in 2008, the Office of Fair Trading said in its review of personal banking in the UK: 'A significant number of customers do not know how much they actually pay in bank charges, either before or after they are incurred. Over three-quarters do not know the credit interest rate of their current account, and even those that do lack the means to calculate the interest they forgo.'

growth of the loan book, as this is exactly what is needed in the current crisis.<sup>23</sup> Of course, some of the new lending might be inefficient given the agency problems associated with state aid discussed above; but rather than counterbalancing such effects through loan growth restrictions, such perverse effects should be addressed directly. However, to the extent that state aid may create artificial competitive advantages for its recipients compared to non-recipients, it may make sense to require that such aid not be used to grow through acquisition. In order to ensure that such a restriction does not prevent efficiency-enhancing reorganisations of banking assets, it would be reasonable to impose it on the net composition of the balance sheet: acquisitions could be permitted by recipients of state aid provided these were offset by sales of similar magnitude. The restriction should also not be interpreted so as to prevent bringing off-balance sheet vehicles back on the balance sheet, which will increase transparency; thus the limit on net balance-sheet growth through acquisition should be interpreted using the same accounting, before and after the receipt of state aid.

Limiting the extent to which banks receiving aid can grow through acquisition is one thing; forcing them to shrink their balance sheets by divestiture is quite another. It may certainly make sense to close some banks that are not viable; but forcing banks that are still solvent and have received state aid to sell assets to 'compensate' for the state aid risks creating further downward pressure on some very fragile markets for banking assets.<sup>24</sup> The main exception one might consider to this principle concerns banks that have engaged in very rapid expansion in recent times, apparently as a direct result of an implicit state guarantee; then the balance sheet reduction might be considered an appropriate return to a *status quo ante* before the question of state aid had ever been considered. Identifying such cases is not easy, however, and it would be a mistake to use the argument as a general justification for imposing balance sheet reductions on *all* state-aided banks.

Similarly, trying to use the state aid vetting process as a tool to turn back the clock on bailout decisions and force certain banks to downsize, or even liquidate, in the belief that they should not really have been aided in the first place, would not only be inefficient, but also very risky. First, it might undermine economic recovery. Second, it would lead to regulatory uncertainty, especially if negotiations on such downsizing are prolonged. Third, as a result of this regulatory uncertainty, such forced downsizing could result in a new round of contagion, with negative repercussions for financial stability. While moral hazard arguments are important, they have to be addressed at the right moment, which is not during a crisis. The legitimate concern for limiting moral hazard in the future is best addressed through regulatory reform, as we set out in the final section.

The message is, therefore, that state aid to banks has to be managed carefully so as to avoid allowing recipients to grow in anti-competitive ways, while not achieving this by imposing distortionary restrictions. State aid plans should allow for the

---

23 The UK government opted for this approach indirectly by capping the amount of retail deposits which can be accepted by Northern Rock. But an initial requirement that it shrink its mortgage book was reversed.

24 This point evidently applies with greater force to assets that are securitised than to stand-alone subsidiary activities, but distress sales even of the latter can have a knock-on effect in prices in asset markets more generally.



creation of new large banks only under very exceptional circumstances, but this does not mean that all recipients should be forced to become small, particularly not if this involves divestiture requirements that are arbitrary or discriminatory among banks' activities on national or other lines.

In this context, it is also important to assess the effect of mergers aiming at rescuing unviable banks on competition. Where failing banks are merged with healthy banks, this can create new large banks. While this is consistent with the idea by Perotti and Suarez (2003) that bank failure policies that aim for mergers of failing banks with healthy banks increase the incentives of banks to take prudent risks, as the 'last bank standing' increases its charter value, the effects of charter value on risk-taking are potentially ambiguous, as discussed above, (see Boyd and De Nicolo, 2005 and Martinez Miera and Repullo, 2009) and it would be unwise to rely on prudence increasing with size. It is also important to ensure contestability and to foster new entry to counter the negative effect that such a merger can have on competition.<sup>25</sup> In addition there are evident dangers that the merger might do more to contaminate the balance sheet of the sound bank than to clean up the balance sheet of the unsound one.

Overall, there is a clear case for caution before mechanically applying to bailed-out banks the standard approach to state aid policy that has been developed for other sectors. Whereas in most other sectors of the economy, firms that need bailing out are usually over-producing relative to demand and need to reduce their capacity to become viable, in banking many of the weak firms are lending less than is needed because they are trying to rebuild their capital. Forced divestitures can therefore have a negative impact on the necessary activities of banks and are not advisable as a general rule.<sup>26</sup> Yet, at the same time it is essential that competition policy limits the inefficient expansion of a bank's activities due to taxpayer-funded state aid, beyond the point at which state aid simply redresses the undersupply of credit due to weak capitalisation.

However, identifying cases of such inefficient expansion is not easy. Indeed, competitors have a vested interest in complaining against rival banks that have received state aid (as in the absence of state aid they would not have survived). They can point out that their expansion is due precisely to their benefiting from the state support. The key point is, therefore, for competition authorities to identify and limit business practices that are based on short-term subsidised funding. This is difficult, but should be implemented on the basis of the principles for the competition policy evaluation of bank rescue plans that we set out in section 5.3 (below) of this report (especially Principle 4), as well as with the help of clear sunset or exit clauses: state-aided banks should have, as an objective, the speedy repayment of the state loan,

---

25 The restrictions that the European Commission has imposed on the German Commerzbank receiving state aid to complete the pre-crisis planned merger with Dresdner Bank may be justifiable along these lines, although whether that was their purpose in the mind of the Commission is another matter. We discuss these points further in section 6.2 below.

26 That does not mean they are never advisable. One example of special circumstances in which forced divestitures may be appropriate is the Lloyds-HBOS merger, in which the granting of state aid was combined with leniency in the application of merger control. Forced divestiture might therefore be considered an appropriate response, not to the granting of state aid per se, but to the growth in the balance sheet of the merged firm that accompanied the grant of state aid.

rather than the aggressive expansion of the bank's lending by use of cheaper access to funding that the state aid indirectly provides.

Finally, it is worth emphasising that the principle we advocate here is not one of opposition to behavioural restrictions *per se*. It is better understood as an opposition to those behavioural restrictions that, once a bank has been bailed out, prevent it from competing on an equal basis with others. No reasonable view of regulation would rule out all behavioural restrictions whatsoever: for instance, prompt corrective action is a policy that imposes behavioural restrictions on under-capitalised banks to prevent them from undertaking certain risky actions to which under-capitalised banks are known to be particularly prone. Such interventions are not undertaken lightly, and they need to be justified by a clear, probable and well understood danger in the absence of intervention. The behavioural restrictions we discuss here are instead ones that require some banks to behave differently from others whose current capitalisation is identical, on the grounds that the banks subject to restriction have been bailed out in the past. Even restrictions such as 'no price leadership' involve different treatment, since in normal conditions any bank is free to try to be a market leader. Banks that are prevented from trying to be a market leader just become passive followers exerting no real competitive discipline on their rivals, as though in some publicly-sponsored cartel.

In short, it is important that bank bailouts be allowed to produce banks that can behave as full competitors, not ones that are restricted to behave as timid followers of others; that way lies covert cartelisation and long-run damage to the interests of savers and borrowers alike.

## **5.2 Governance solutions**

Rather than focusing on behavioural restrictions, it might alternatively be more useful to address underlying governance problems that have led certain banks to end up with relatively more toxic assets and a weaker balance sheet than others. As discussed above, herding has pushed many banks into taking similarly aggressive risks. On the other hand, there are differential effects within countries and certain governance deficiencies have pushed banks into excessive risk-taking. Unless these deficiencies are addressed, the same problems might resurface again. One example is the case of the government-owned Landesbanken in Germany, which might be the main group of banks willing (and having) to sign up for a recapitalisation plan sponsored by the federal government. However, it is governance problems in these banks – that is, only limited supervision by their owners, state governments and the saving banks association, as well as by bank supervisors – that can explain their relatively larger need for recapitalisation in the first place. Addressing governance deficiencies in these institutions, and assessing their long-term viability at the same time as providing them with new resources, should be a critical element of any state aid plan.

An important feature that can limit the negative repercussions of state aid plans for healthy competitor banks, is the existence of sunset clauses or exit plans. By providing credible signals (possibly supported by EU restrictions, including provisions to make the cost of state aid increase over time) that any recapitalisation

will be a one-time shot, and that the government aims to exit these banks as soon as possible and that any loan guarantee scheme has a limited lifetime, governments can reduce the negative repercussions for competition described above.

### 5.3 Principles for the competition policy evaluation of bank rescue plans

The fundamental rationale for oversight of the process of bank bailouts by DG Competition is that, for reasons related to the divergent interests of member states, uncoordinated bank bailouts might be more likely to go wrong in one of the ways discussed above. That member states might make mistaken choices in undertaking bailouts – for example, by spending more fiscal resources than necessary in the process – is not in itself necessarily a reason for intervention by DG Competition in the decisions of member states.<sup>27</sup> Nor is the fact, in and of itself, that one member state has recapitalised banks with a different sharing of the burden between shareholders, creditors and taxpayers than another member state. However, that member states may be more willing to take the risk of making such mistakes because of international spillovers is indeed a reason for intervention. That they may benefit from a common framework to prevent inefficient lending in the future (for moral hazard reasons, for example) is also a reason for intervention.

We summarise here by setting out some questions that should be posed of any member state bank bailout plan:

1. *Does the bailout process in one member state affect the capitalisation of banks in another member state, either positively or negatively? If it affects that capitalisation positively, there are no grounds for intervention by DG Competition, unless this reflects reduced competition, for example through increased concentration. If it affects it negatively, there would indeed be grounds for intervention by DG Competition, especially if differential effects across borders arise due to: (i) discriminating among junior creditors according to nationality; (ii) forcing divestment from subsidiaries in other EU countries.*
2. *Does the recapitalisation of a bank significantly increase its incentives for future 'inefficient' lending, either through excessive moral hazard (e.g. by not addressing governance failures that led to insolvency) or by giving it access to resources at artificially low marginal cost, that is, at prices significantly below market prices?<sup>28</sup>*
3. *Do the terms of the bailout require the bank to discriminate on grounds unrelated to efficiency considerations between one type of banking activity and another (eg by disposing of assets preferentially in some national markets rather than others)?*
4. *Are the recapitalisation plans connected to eliminating distortions that have contributed to bailed-out banks getting into trouble in the first place (e.g. Landesbanken in Germany)?*

---

27 Of course, this argument has its limitations, as overstretching fiscal capacity in one member country can have negative spill-over effects for the whole EU.

28 Market prices may be inefficiently or temporarily low, but that is a difficult judgment to make, and one evidently prone to distortion for political and other motives.

5. *Is the bailed-out bank viable?* For example, were there indicators of problems even before 2007, for reasons not related to systemic fragility?
6. *Are there sunset clauses included in the plan, or otherwise a clear exit strategy for the government?*

With these principles in mind we turn to an examination of DG Competition's strategy, as set out both by its statements of policy and by its actions.

---

## 6. An evaluation of DG Competition's strategy

In this section we review both the declared and the implemented policies of DG Competition since the beginning of the financial crisis. We begin with the communications issued by the European Commission on policy questions.

### 6.1 European Commission state aid communications

The Commission has issued several communications concerning aspects of the crisis: the application of state aid rules to the banking sector; the treatment of banks' impaired assets; the recapitalisation of financial institutions; and the provision of restructuring aid to banks. The first document, the Banking Communication, was adopted on 13 October 2008 (EC2008a). The Recapitalisation Communication followed on 5 December 2008 (EC2008b) and the Impaired Assets Communication on 25 February 2009 (EC2009). A set of Guidelines on Restructuring Aid to Banks was issued on 23rd July 2009.

On 17 December 2008 the Commission also issued the 'Temporary Community Framework for State Aid Matters To Support Access To Finance In The Current Financial And Economic Crisis' (EC2008c). This addresses the issue of unlocking bank lending to companies, in order to ensure they can finance investment. The specifics include lump sum aid, state guarantees for loans, and subsidised loans for 'green' products. The car industry has been a specific target for support. Also relevant are the existing state aid guidelines on rescuing and restructuring firms in difficulty (EC2004), which in July 2009 had their validity extended until 2012.

The Commission's recent documents affirm the fundamental principle that in order to support the banks without distorting competition, the assistance provided to banks in difficulty should be the minimum necessary – in this context the minimum consistent with financial stability. While recognising, of course, that this is a delicate trade-off, the Commission identifies dangers for long-run viability and competition in the provision of 'too much' government assistance. Furthermore, it argues strongly that the bailout plans ought to allow for inefficient firms to exit the market, whatever form that might take in the context of a systemic banking crisis.

Alongside this basic principle, the Commission sets out in the sequence of documents a number of consequential aims:

- that state assistance should target the identified market failures in order to return rescued institutions to long-term competitive viability;

- that negative spillovers between competing banks should be avoided, in order to avoid either endangering stability or distorting competition between financial institutions, especially across borders;
- that incumbents should not be subsidised in their ongoing operations by bailout plans, to the disadvantage of their competitors;
- that bailout plans should avoid moral hazard and dynamic inefficiency, and hence should pave the way for exits from the market and potentially for the break-up of institutions which can be deemed 'too big to fail';
- that there should be plans for government exit in due course.

The initial 'Banking Communication' (EC2008a) sets out the following conditions for state aid compliance:

- Non-discriminatory access, i.e. eligibility not based on nationality;
- Time-limited state support;
- Clear limits on the scale and scope of state support;
- Appropriate contributions by the private sector to the costs
- Adequate rules to control the behaviour of recipients and prevent abuse of state aid, e.g. to limit aggressive market strategies;
- Restructuring either for the financial sector as a whole, or individual institutions.

In the case of assistance which recapitalises banks, the Commission's main concern is that government-supported banks in one member state should not gain access to capital at rates significantly lower than their competitors, including those in other member states (appropriately adjusted for sovereign risk premia). Similarly, government recapitalisation should not disadvantage banks which are not helped, but instead are raising new capital in the market, otherwise the return to normal market functioning will be delayed. Furthermore, recapitalisation schemes should differentiate between banks appropriately, according to their risk profiles and underlying efficiency of operation, or less well-performing banks will gain an undue advantage. (EC2008b).

Conditions for recapitalisation schemes:

- The price of capital should be close to market prices for the relevant type of capital chosen, and reflecting the individual risk profile of the bank;
- The incentive should be to keep state involvement as short in duration as possible;
- The capital injection should be kept to the minimum necessary in order to prevent the expansion by recipient banks at the expense of other banks, and claw-back mechanisms should also be considered;
- Recapitalisation measures should be reviewed after six months.

Turning to asset relief programmes, the Commission's paper notes:

'If asset-relief measures are not carried out in such a way as to ring-fence the danger of serious distortions of competition amongst banks (both within member states and on a cross-border basis) in compliance with the state aid rules of the EC treaty, including where necessary the restructuring of beneficiaries, the outcome will be a structurally weaker Community banking sector with negative implications for productive potential in the broader economy.' (EC2009, p3)

It adds that there is a danger of the need for recurring state relief without a restructuring which ensures the long-run competitive viability of the banks. The Commission therefore seeks consistency across the EU in order to ensure a level playing field between financial institutions, and in order to prevent a subsidy race between member states. The paper identifies the danger of 'a drift towards financial protectionism and fragmentation of the internal market.' Behind these comments lies the risk that some member states could use their intervention in the banking sector in a strategic manner, to secure a future competitive advantage for their own institutions (EC2009, p5).

The Impaired Assets Communication (EC2009) also outlines a more detailed assessment of which assets should be eligible for these schemes and the principles of valuation. Both types of principle speak to the concern to avoid subsidy races between member states. The considerations relevant to the state aid assessment are: an *ex ante* and transparent assessment of the scale of the asset impairment to be addressed, with a full review of the affected bank, in order to reduce the risk of a repeated need for intervention; full burden-sharing by the bank's shareholders, to be achieved retrospectively, even if impossible *ex ante* because of the need to ensure financial stability; the alignment of assisted banks' incentives with public policy objectives (including competition policy aims); and an appropriate balance in determining the eligibility of assets for relief between restoring stability and returning the market to normal functioning. On the latter point, this implies restricting the range of qualifying assets (consistent with the need for stability). In addition, a coordinated Community approach is needed to limit banks' incentives to arbitrage between different national relief schemes, and to make easier the comparison of banks' risk profiles and exposures across the EU. The appropriate valuation of assets is clearly another area where there is potential for distortion and the danger of subsidy races between member states, and a common methodology based on an assessment of 'real economic value' is needed.

If valuation of assets is too complex to be done swiftly, given their nature, a division into a 'good bank' and 'bad bank' may be a better route to managing the required asset relief measures, in preference to schemes that leave the institutional structure unchanged and offer insurance to banks that are retaining the impaired assets on their balance sheets. There are several possible approaches. The impaired assets can be transferred to a separate legal entity. Alternatively, the government can establish a new institution to purchase the impaired assets of a number of banks, allowing the individual banks to return to normal operations. Different allocations of losses are possible, and nationalisation can also be part of this approach. While the creation of 'good' and 'bad' banks may be more difficult to achieve institutionally, depending partly on the political economy context, it is an approach with some

Conditions attached to asset relief programmes for consistency with state aid rules:

- Impairments should be fully disclosed, prior to government intervention;
- The identification of eligible assets should be coordinated;
- There should be common valuation principles;
- The Commission should validate the valuation of assets, within the framework of its state aid assessments;
- There should be 'adequate' burden sharing of the costs between shareholders, creditors and the state, through claw-back clauses if needed;
- There should be adequate remuneration to the state in the structure of the scheme, and clear plans for redeeming state capital received;
- The beneficiary banks should cover losses incurred from the valuation of assets at real economic value;
- Participating banks should face incentives to act in alignment with public policy objectives;
- There should be appropriate restructuring plans to minimise the distortion of competition and with a view to the long-term viability and functioning of the European banking industry. This includes orderly winding-up of insolvent institutions when possible, or the minimum possible asset guarantee or purchases until winding-up is possible;
- Safeguards or constraints are needed to ensure assisted banks subsequently operate according to normal commercial criteria, and in particular do not use the assistance to finance a growth strategy, including the purchase of other banks.

advantages. Apart from removing the need for complex valuation exercises, it is easier to manage when impaired assets are spread over a large number of banks, removes some potentially serious conflicts of interest for banks' executives, and contributes usefully to a reduction in uncertainty by clearly separating the good bank from 'toxic assets'. We discussed these issues in Section 4.

The European Commission's *Guidelines on Restructuring Aid to Banks* is based on three fundamental principles: i) aided banks must be made viable in the long term without further state support; ii) aided banks and their owners must carry a fair burden of the restructuring costs; and iii) measures must be taken to limit distortions of competition in the single market. The first of these requirements implies not just the need (standard in state aid cases) for a comprehensive restructuring plan for the aided institutions, but specifically for stress tests to assess their viability under a range of assumptions about both macroeconomic conditions and institution-specific shocks. The second requires burden sharing by bank shareholders though not by depositors. The guidelines are vague as regards what level of burden sharing is adequate. Indeed, the document explicitly says that: 'the Commission considers that it is not appropriate to fix thresholds concerning burden-sharing *ex ante* in the context of the current systemic crisis, having regard to the objective of facilitating access to private capital and a return to normal market conditions.'

The stipulations regarding competition are explicitly linked to the nature of the aid received. The document states that: 'Measures limiting distortions will vary



significantly according to the amount of the aid as well as the degree of burden sharing and the level of pricing.' In the light of our comments in Section 5, this might seem strange: whether an aided bank is likely to behave anti-competitively will depend on its current incentives, not on the amount of aid it has received in the past. However, an important clue to the motivation for such a provision comes where the Commission states that: 'Generally speaking, where there is greater burden sharing and the own contribution is higher, there are fewer negative consequences resulting from moral hazard. Therefore, the need for further measures is reduced.' In other words, it is the Commission's view that the extent of the bailouts will influence the banks' current incentives to behave anti-competitively, independently of the banks' current state of capitalisation, because the bailouts themselves will induce an insensitivity to future risk.

While it is certainly an open question to what extent past bailouts influence current incentives, a policy that limits certain kinds of behaviour directly because of past bailouts has the potential consequences we outlined in Section 5 – namely, that of weakening the bailed-out banks as competitors and transforming them into meek followers of the other market incumbents. Such a consequence is one that market incumbents would find highly convenient, so we would expect them to lobby very actively for such behavioural restrictions. As we indicated, imposing such restrictions in this way is much less desirable than applying competition law directly (including the law on predatory behaviour) and subject to the normal standards of proof.

Indeed, the Commission itself seems at times to recognise that such behavioural restrictions could be anti-competitive rather than pro-competitive. For instance, it states that: 'A limit on the bank's expansion in certain business or geographical areas may also be required, for instance via market-oriented remedies such as specific capital requirements, where competition in the market would be weakened by direct restrictions on expansion or to limit moral hazard.' It remains unclear why market-oriented remedies (such as capital requirements on particularly risky activities, requirements that would apply to all banks undertaking them without discrimination on grounds of prior bailout status) should not always be preferred to the kinds of discriminatory behavioural restriction to which the guidelines open the door.

We now turn to an assessment of the Commission's actions with respect to particular examples of national bailouts.

## **6.2 The European Commission's actions in individual bank rescues**

Since the crisis began, the European Commission has issued a great many decisions on individual cases. As of 17th December 2009 the Commission had adopted 81 decisions on cases related to the financial crisis in 2008/9, of which 75 raised no objections to the aid. A further 66 decisions had been adopted (without objections) for cases falling under the Temporary Framework (essentially for schemes of temporary sector-wide aid). Eight cases were still under assessment under the formal investigation procedure and 1 case under assessment under the Temporary Framework.<sup>29</sup>

---

<sup>29</sup> *State aid: overview of national measures adopted as a response to the financial/economic crisis*, DG-Competition, 17th December 2009.

As these figures show, the Commission has been extremely active during the crisis and has also been broadly supportive of the measures taken by member states. Given the massive scale of public support, six decisions to impose conditions out of 81 cases does not appear to suggest a very heavy hand of state aid control. It is true that in some other cases – notably Lloyds and the Royal Bank of Scotland (RBS) – the aid packages finally submitted to the European Commission contained provisions clearly designed to pre-empt possible Commission objections, including large asset disposals by RBS. ING had also announced, unilaterally, a large set of disposals that were not formally included in the conditions of its approval, but which were probably undertaken with at least some pre-emptive intent. However, the intervention of the Commission has hardly displayed an obsession with the 'rules for the sake of the rules' that some critics clearly feared at the start of the crisis. On the contrary, DG Competition has acted expeditiously and in a way that has proved sensitive to the urgency and the importance of the challenges posed by the financial crisis.

Nevertheless, the nature of the interventions that have taken place is instructive in the light of the previous discussion. In several cases – Commerzbank, WestLandesbank and Royal Bank of Scotland – large balance sheet reductions were imposed on the banks concerned. As noted above, ING has unilaterally undertaken a similarly large reduction by disposing of its insurance business, and the Commission's decision approving the restructuring of Northern Rock noted as a positive factor the large reduction in the size of the 'good bank' created by the restructuring, compared to the size of the original parent bank.

It is unclear in the Commission's discussion of the cases to what extent these disposals were motivated by a wish to address competition concerns and to what extent they were conceived simply as a means of countering moral hazard by 'punishing' a bank that had grown too large through risky practices. Indeed, it is notable that the Commission's press release of 14 December 2009, on the RBS case, describes in detail a divestment package in the UK SME and mid-corporate banking sector, 'which is a concentrated market where RBS is the leading bank', and explains why the divestment will be likely to increase competition in that sector. In contrast, it notes of the divestment of RBS' insurance, transaction management and commodity trading operations, merely that these sales will 'limit moral hazard...and distortions of competition', without giving any detail about the distortions of competition that might have been feared in these markets, or about why the divestitures might be expected to improve matters.

In the WestLandesbank case, DG Competition also imposed major divestitures, including the bank's proprietary trading activities. It also imposed conditions requiring the bank to undertake not to engage in activities outside the three 'core' areas of transaction banking, loans to medium-sized companies and various large-scale corporate activities. These conditions, while not necessarily falling into the category of 'punishment', do not seem particularly to have been motivated by competition concerns, but rather by a view as to the likely health of a particular business model. While they seem broadly sensible, viewed purely as management strategies in the light of the previous history of the bank's activities, they do raise the question of on what basis DG Competition is imposing its view on the member state about these issues where a threat to competition, as such, is not clearly established.

Of course, 'punishment' is not necessarily an inappropriate aim if the presence of

moral hazard on the part of bailed-out firms is a potential threat to competition in the future. That moral hazard may have been encouraged by the bailouts seems undeniable: anyone who doubts this might note that Citigroup lent \$8 billion to Dubai World on 14th December 2008, well after the unsustainability of the Dubai real estate boom had become evident to most observers and, importantly, after it had received tens of billions of dollars in taxpayer funds via the TARP program.<sup>30</sup> However, Citigroup was not the only bank that went on lending to Dubai World, and it seems that bailouts may have encouraged moral hazard on the part of all large banks that thought themselves 'too big to fail', and not simply those that had already been bailed out. If so, dealing with moral hazard is likely to need far more serious and systematic regulatory responses in the future than simply imposing asset disposal conditions on bailouts that have occurred in the present.

DG Competition has also imposed some detailed behavioural restrictions on banks' activities (in particular where there was no divestment in the home market) that, we suggested in the previous section, might be of doubtful effectiveness, notably a requirement for ING not to exercise price leadership, whatever that may mean in practice. It is unclear whether these are intended to become a regular feature of bailout conditionality.

Overall, the decisions taken by the Commission in respect of state aid in the financial sector bear the hallmarks of a predicament that has always been present in state aid policy. It is not a predicament of the Commission's own making, but the financial crisis has brought it into stark relief. This is that the Commission can make interventions to impose conditions on the aid to an individual recipient, but it must use these interventions with an eye to maintaining or restoring competition in a sector as a whole. A healthy state of competition is a property of economic sectors, not of the individual firms within them, but the Commission is obliged to ensure such healthy competition by means of interventions that are limited to conditions on the aid to individual recipient firms.

In many sectors of the economy this is rarely a problem. In most sectors, when an individual firm is in difficulty this is likely to be because it has been badly managed, or because there is overcapacity in the sector as a whole. In either case, the aid is normally a reasonably reliable indicator that vigorous competition in the sector will require an eventual reduction in the activities of the bailed-out firm. But as we have stressed repeatedly throughout this report, banking really is different. The banking bailouts during the financial crisis of 2007-8 were a response to the perception that there was a danger of too little banking activity, not too much, as individual institutions reduced their lending activity in response to the catastrophic deterioration in their balance sheets. Many of the institutions that were bailed out were not necessarily ones whose activities needed to be scaled back in the medium term. And many of the institutions that were not bailed out have benefited from the crisis in ways that increase their market share and market power, posing potentially as much threat to competition as the continued presence in the market of the bailed-out firms. In short, a banking crisis signals potential threats to competition across the entire banking sector, and not just on the part of the firms that have been rescued. Conditions imposed on individual bailouts are a necessarily blunt instrument for dealing with this problem.

---

30 See Andrew Sorkin: 'A Financial Mirage in the Desert', *New York Times*, November 30th 2009.

Other ways may exist, notably sector enquiries, which could in principle be conducted by DG Competition itself, or by some of the national authorities. It is unfortunate that the Commission's last sectoral enquiry into retail banking was completed shortly before the financial crisis erupted, making its conclusions outdated almost as soon as they were published. The banking landscape has far from settled down since the crisis, but it is already clear that its features will need to be examined as a whole, without presuming that the only, or even the main threats to competition in the new landscape, come from the 'unfair' benefits that have been enjoyed by bailed-out banks.

---

## 7. Preventing future crises: reforming prudential regulation

### 7.1 Introduction

The arguments we have advanced so far suggest that preventing future moral hazard is a serious concern, and that ill-designed bailout policies run the risk of perpetuating the kind of behaviour that required the bailouts in the first place. Nevertheless, we have suggested that using the rules of state aid control is likely to be less effective as a means of avoiding moral hazard than is paying attention to the regulation of future banking activity. In this section, therefore, we draw the threads of our argument together by considering the necessary reforms of prudential regulation in response to the existing crisis. There has already been much written on this subject. In the EU, the de Larosière report offers a broad set of proposals to address these issues. Since this report is concerned with bank bailout plans, we will focus in this section on the *ex post treatment of insolvent banks*, presenting our views first and then comparing them with the de Larosière report, the European proposal for a new financial supervision architecture that was published in September 2009, and the consultation document on Bank Crisis Management, published in October 2009. A key element will concern the issue of international cooperation, which is crucial given the development of cross-border banks. But before doing that, we briefly discuss crisis prevention mechanisms that can be classified around three broad types of issues: macro-prudential; strategic (as regulatory capture and regulatory arbitrage); and 'too-big-to-fail'.

The first regulatory change that is necessary (and for which there is broad agreement) is the introduction of macro-prudential regulation, which should supplement the current Basel regulatory system. It is crucial to limit the procyclical effect of the current regulation, which was detailed in Section 3. Rather than doing it through accounting changes (which would reduce transparency), we need to have pro-cyclical capital ratios in order to limit the need for banks to deleverage in recessions. This could take the form of dynamic provisioning (as already done in Spain), capital ratios indexed on macroeconomic variables (see Repullo et al. (2009) for an example using GDP), or capital insurance (along the lines of Kashyap et al. (2008)).

The second change comes from the fact that regulation should seriously and explicitly take into account the 'gaming' between regulators and private actors, which takes place either through potential lobbying/capture, or through financial innovation that aims at regulatory arbitrage. This has various implications:

1. To reduce the lag between international regulatory agreements and market evolution, regulation should include procedures for 'rapid-response

adjustments' in the face of unexpected developments.

2. This should go beyond Basel II's Pillar 2, which is too discretionary, allowing for excessively permissive oversight by regulators subject to pressure from banks and politicians and plagued by insufficient resources or expertise for monitoring a very complex system. Instead, we need independent, well-funded and highly expert regulators endowed with sufficiently simple and rigid rules to protect them against lobbying. Of course, there is a trade-off between rigidity and flexibility, but Basel II clearly erred in the direction of flexibility/permissiveness.
3. In contrast to Basel II's reliance on credit-rating agencies and on big banks' internal risk models, which ignored the serious conflicts of interest, we need more 'mechanical', i.e. less manipulable, capital ratios.
4. Rather than trying to have capital ratios that pretend to measure risk 'precisely' (which is not possible), we need instead a set of simple and robust minima that have a low chance of being quickly and significantly violated (see Dewatripont and Rochet (2009) for details).

A third important change will be to expand the regulatory umbrella to systemically non-bank financial institutions. While it is true that deposit-taking institutions deserve special attention, other types of institutions also need regulation if they are 'too big to fail' or 'too interconnected to fail', such as investment banks in the US, or insurance companies with critical roles in financial markets such as AIG. Otherwise, this can quickly lead to the rapid development of more lightly regulated entities, leading to distortions of competition and inefficiencies. In this respect, the tax treatment of financial institutions has important prudential and competition implications, and dangerous loopholes, which currently favour of the shadow banking sector, encouraging leverage and of risk taking, must be closed. There should also be a review of the capital charges that apply to lending by banks to the shadow banking sector.

These measures would limit the risk of aggregate crises, but would not eliminate them: as history teaches us, banking crises are to some extent unavoidable in the capitalist system, unless one completely rigidifies banking, as was done in the period 1935-1970. This had its own costs, and our view is that it is not a good idea to go back to such an extreme. This means, however, that ex post crisis management has to be significantly improved.

## **7.2 Globalisation and the new challenges in the current crisis**

Globalisation has underlined both the current limits of, and need for, improvements in international cooperation in banking regulation and supervision. There is indeed a tension between the tendency to favour the growth of international banks (through global or regional pro-trade and pro-capital-mobility policies) and the reliance on national (whether 'home' or 'host' country) supervisors. Critically, the current crisis and the way intervention in fragile and failing institutions came from national regulatory authorities, have shown the deficiencies in the financial safety net in many EU member states – and also raise the question of whether the EU needs a European structure for dealing with failing banks that corresponds to the pan-

European character of the large bank segment within Europe.

Of course, the regulatory/supervisory systems of most G-20 countries have been strongly influenced by the Basel process, initiated in the 1980s by the Basel Committee on Banking Supervision. The aims of this process were essentially two-fold: promoting the safety and soundness of the international banking system; and guaranteeing a 'level playing field' by eliminating competitive distortions due to the implicit support provided by some governments to their domestic banks. The Basel process has clearly contributed to the harmonisation both of risk management practices by banks and regulatory requirements across countries, and it was still undergoing important reforms (Basel II) when the crisis hit.<sup>31</sup>

The Basel process suffers from two drawbacks:

1. its definition of capital ratios has proven inadequate, and has to be reformed in depth. However, the idea that we need harmonised capital ratios is a sound one;
2. harmonisation should be extended to the treatment of distressed banks, something which has been absent so far.

Indeed, as Asser (2001, page 3) stresses:

'To protect banks and banking systems against the risk of international financial contagion, bank regulators around the world have embarked on an extensive program of harmonizing prudential banking standards among countries and fostering closer cooperation between national bank regulators. ...It is fair to say that, as a result, the principal licensing and prudential requirements written into national banking laws have reached a high degree of uniformity. One of the reasons for this success is that it has been comparatively easy to identify best practices for these requirements. In contrast, little international uniformity of law or practice exists in the area of banking regulation governing the treatment of banks in distress.'

The absence of harmonisation concerning the treatment of banks in distress can lead to several problems, especially since crisis management has to take place under great time pressure. The time pressure is exacerbated by the fact that, in the context of large cross-border banks, the resolution is complicated by the involvement of a multiple of stakeholders across national borders. This does not only imply varying safety net arrangements, but also complicates burden-sharing agreements (an example is the impossibility of agreeing for Barclays to acquire Lehman Brothers, as the burden sharing could not be agreed during the time available between Friday evening and Monday morning). Most importantly, it can distort incentive structures of national regulatory authorities who are accountable to national governments and taxpayers but – as home country supervisors – have to take decisions on banks with large shares of their assets and liabilities outside the home country supervisor's direct jurisdiction.

We discuss in turn here two general issues: the timing of intervention and the available public intervention powers; and the issue of depositor/creditor protection.

---

31 The Basel accords were initially designed for internationally active banks, but they have been adopted, after some modifications, by the domestic regulators of many countries.

### **7.2.1 Intervention: timing and regulatory powers**

Several episodes of the crisis have revealed that banking authorities of many countries did not have sufficient legal powers to treat banking distress in a timely and efficient way. Moreover, the discretion given to domestic supervisors by Basel II's Pillar 2 proved counterproductive in the management of the crisis, since it exposed them to political pressure and threats of judicial recourse by the shareholders of distressed banks. Generally speaking, it is not really useful to harmonise regulatory requirements for banks if enforcement of these requirements is left to the discretion of domestic supervisors, who act under political and legal constraints that differ greatly between countries.

In fact, a first priority for restoring a level playing field for international banking, and avoiding a race to the bottom in terms of enforcement of prudential policy, is reforming and harmonising bankruptcy laws for banks. A good place to start harmonising bank insolvency procedures would be the US system put in place in 1991 under FDICIA, which is centred around the important notion of PCA, or 'prompt corrective action'. This system has the advantage of starting to address a crisis gradually, classifying banks into five categories depending on (various measures of) capital ratios: well capitalised (capital ratio > 10%); adequately capitalised (> 8%); undercapitalised (< 8%); significantly undercapitalised (< 6%); and critically undercapitalised (< 2%). The first two categories face no restrictions, but the bottom three categories face more and more severe restrictions on actions (e.g. dividend payments, asset growth, acquisitions, and, in the extreme, receivership). The key idea is to allow the supervisor to intervene before things become too bad.

There is broad agreement that PCA has had a beneficial effect (see for example Benston and Kaufman, 1997, and Aggarwal and Jacques, 2001), and there are also theoretical analyses in its favour (see for example Freixas and Parigi, 2008).

### **7.2.2. Depositor protection**

Another key issue concerns depositor protection. Note that banks, when setting up operations in a foreign country, can go for subsidiaries – which then have legal personality in that country and become national firms – or simply branches, which remain an integral part of the bank. However, as stated for example by Krimminger (2008, page 384), even for branches, deposit insurance rarely extends beyond a country's borders:

'Under most national deposit insurance systems, deposits of domestic branches are insured by the domestic deposit insurance system and deposits in a host country are insured, if at all, by the host country's deposit insurance scheme. Under US law, depositors in foreign branches of a US bank are not insured under the FDIC's deposit insurance and are subordinated to uninsured depositors of the US branches in the distribution of the proceeds from the sale of the bank's assets. Depositors in foreign branches of US banks are covered by FDIC deposit insurance only if the deposit is payable in the US in addition to the foreign branch.'

There are, therefore, clear potential incentive problems facing the home supervisor in terms of consolidated supervision, with the risk of being pressured to 'limit damages' and leaving part of the mess to foreign countries. This can be really dangerous in terms of contagion, so that harmonisation of deposit protection rules is crucial. It



seems that some national supervisory authorities already favour moving from branches to subsidiaries, to step around this complication and ensure that deposits held in the country are covered by the national deposit protection scheme. In the UK the Turner Review expressed it thus:

'The FSA will in future be more willing to use its powers to require major international banks to operate as subsidiaries in the UK, to increase capital requirements on local subsidiaries, and to impose other restrictions on business operation. The extent to which such measures can ring fence the local operations of a global bank from the failure of the parent must not be overstated. Even well-capitalized local bank subsidiaries are likely to face liquidity crises if the whole group is perceived to be in trouble. But even if these arrangements cannot guarantee the survival of a subsidiary if its parent collapses, they can provide better for the orderly run down of the local subsidiary and improve the position of local creditors.'

### **7.3 Requirements for effective harmonisation**

What do the above points imply in terms of harmonisation of supervision and crisis management for cross-border banks? It depends on the types of banks we consider.

If we consider intercontinental relations involving large economies (be they rich or only emerging), the need for coordination is comparatively weaker because: (i) each country has its own 'ammunition' to tackle crises; and (ii) cross-banking relations are comparatively limited, although these have been growing over time, especially with the opening up of banking markets and the spread of risks through securitisation. Where American and European banks are dominant in some emerging economies, there will be coordination challenges.

Moreover, a global supervisor and deposit insurer is most probably beyond reach. Strengthened coordination has to be considered seriously, however, if further integration of the world banking market is desired. Concretely, one could give real powers to a supranational authority like the Basel Committee on Banking Supervision.

If centralisation is considered either impossible or undesirable, one should at least get serious about joint crisis management. The two goals of avoiding contagion and avoiding regulatory arbitrage by banks should be kept in mind. This means harmonising intervention thresholds, as in PCA. Moreover, if domestic deposit insurance is to prevail, whatever the legal form of cross-border banking relationships, it is crucial to think of a more even-handed approach between home-country and host-country supervision. Indeed, the decision of whether to 'save' the bank, and therefore fully protect all its depositors, and under which conditions, should in fact be taken jointly by the various authorities. More generally, in the absence of a supranational supervisor, what is required is an *ex ante* credible agreement, or MoU, between the various countries about how to share supervisory and deposit-insurance responsibilities. Such a MoU should be as explicit as possible in order to have a chance of functioning in times of crisis (see the difficulties with MoUs in the EU below, however). Once again, there should be standardisation of such MoUs to spread best practices.

## 7.4 Harmonisation in the European Union

In the European Union, the tension between the prevalence of national regulators and the emergence of cross-border banks, which has been encouraged by the single market initiative, is very significant.<sup>32</sup> This is particularly problematic because there have been two competing policy rationales over recent years: the first saying that the potential of the single market, and its associated productivity gains, could only be realised through synergies resulting from cross-border mergers; and the second stressing that it is important for member states to retain national ownership of their big banks, for 'strategic control' reasons, or simply national pride motives. This second rationale has also extended to member states keeping sovereignty in bank regulation and supervision.

This conflict had important negative repercussions in the context of the current crisis. Rather than resolving problems at large pan-European banks on the supra-national level, resolution has had to be undertaken on the national level, due as much to the lack of *ex ante* burden-sharing agreements as to the lack of any institutional structure to deal with the failure and resolution of large, systemically important cross-border banks. Resolving large banks in a national context also reduces the possibility of private solutions, where the whole or part of the failing bank is sold off to another large healthy bank. Concentrating the resolution on the national banking market makes such a solution almost impossible, and certainly undesirable.

In this respect, what happened recently to the banking and insurance group Fortis is very instructive (see the box below for details).<sup>33</sup> The 2007 takeover battle over ABN-Amro, which was ultimately 'won' by the trio RBS, Santander and Fortis, was hostile and controversial (and, with hindsight, much too expensive for the acquirers); but it was very much in line with the single market programme, since it accelerated cross-border banking ties. However, by breaking up a 'Dutch jewel', it was definitely not popular in the Netherlands. And the question of who should be the lead supervisor of the Belgian-Dutch Fortis was a subject of debate between the two countries. This did not facilitate cooperation between public authorities when the crisis came in September 2008; a crisis which, it is fair to say, the Dutch authorities did take advantage of in order to reassert control over 'their' share of the bank.

---

32 Beyond the European Union, whose economic integration is very strong, there is also the case of the many emerging economies that face very significant foreign bank presences. There too, the need for coordination in times of crisis – and in particular 'who takes care of depositors' – is crucial, especially since these emerging countries have more limited means of effectively guaranteeing deposits. A crisis in one such country where depositors would fail to be protected could have devastating effects, by triggering bank runs on other, 'similar' countries!

33 Also instructive is the case of Icelandic banks and the relation between Iceland (a member of the European Economic Area, even though not of the EU) and UK authorities, for example.

**The Fortis case: limits to international cooperation in rescue efforts** <sup>34</sup>

In May 2007, together with RBS and Santander, the Belgo-Dutch banking and insurance group Fortis bought ABN-Amro for a record amount (mostly in cash) after a hostile takeover battle against ABN-Amro-top-management-supported Barclays Bank. This offer involved the splitting of ABN-Amro's activities between the three banks, which 'disappointed' the Dutch public authorities. In terms of oversight, Belgium was, and remained, lead regulator of Fortis, despite the importance of the growth in Dutch activities that the acquisition of the ABN-Amro business implied.

For Fortis, the deal was risky, since it involved a price of 24 billion Euros, i.e. more than half its 2007 market capitalisation. It was, however, together with a massive equity issue, overwhelmingly approved by its shareholders in August 2007. Difficulties surfaced openly in June 2008, with the announcement of a new equity issue and the cancellation of dividend payments, both in contradiction with earlier promises, leading to a sharp drop of the stock price and to the resignation of Fortis' CEO in July 2008.

Fortis' weakness proved fatal after the Lehman Brothers failure and subsequent market meltdown. By September 24, interbank lending to Fortis had collapsed and significant deposit withdrawals were starting to take place, prompting the Governments of Belgium, Luxembourg and the Netherlands to agree to a concerted recapitalisation (against equity stakes) on September 28, (amounting respectively to 4.7, 2.9 and 4.0 billion Euros in Fortis Belgium, Fortis Luxembourg and Fortis Netherlands). This agreement failed however to calm the markets, obliging the National Bank of Belgium to keep providing massive emergency liquidity assistance to Fortis in the next days. A second round of negotiations then followed, with the Dutch side buying, on October 3, the Dutch activities of Fortis as well as its ABN-Amro activities, for a combined total of 16.8 billion Euros. The Dutch Finance Minister, Wouter Bos, went on Dutch TV boasting that 'they had managed to buy the better part of Fortis, leaving the worse one to the Belgians'. It was also revealed later on that the Dutch side had never paid the 4.0 billion Euros they had promised on September 28.

After the departure of the Dutch part of Fortis, the Belgian Government managed, after a six-month court battle with small shareholders, to sell most of the remainder of Fortis banking activities to BNP-Paribas.

Just as with protectionism in general, such adverse asymmetric reactions have to be kept under control through a credible set of legal provisions. These should take as a starting point the fact that national supervisors can be expected to be pressured to pursue national objectives, just like public supervisors can be expected to face lobbying by national industry.

However, the current practices are not reassuring in this respect. Indeed, relying on national supervisors (which is currently the case, with consolidated oversight by the home country supervisor supplemented by domestic oversight by the host country supervisor) requires coordination and cooperation that is going to be tested in times of crisis, as the Fortis example demonstrates. Note that the Fortis crisis happened just after the introduction of the European Memorandum of Understanding, which was

---

<sup>34</sup> See van de Woestyne and van Caloen (2009) and Dewatripont and Rochet (2009).

meant to promote cooperation in financial stability and crisis management. While this MoU is full of good intentions (on information exchanges, involvement of all interested parties, the pursuit of the interests of the banking group as a whole, 'equity', ...), its problem is that it is 'a flexible tool that is, however, not enforceable,' as stressed by Praet and Nguyen (2008, page 371; this is a view also shared by the CEPS Task Force Report, 2008).

## **7.5 The de Larosière report and its follow-up**

These issues have of course been discussed at length in the recent de Larosière report (2009). The report acknowledges the need for better coordination among member states, in order to allow for a well-functioning single market in banking. The report, however, falls short of recommending full centralisation of EU regulation and supervision.

The report discusses many issues linked to the financial crisis. We focus here on those that are relevant for the treatment of distressed cross-border banks:

1. The report calls for harmonising crisis prevention and crisis intervention tools (recommendation 13).
2. The report calls for harmonised, pre-funded deposit guarantee schemes that provide high, equal protection to all bank customers throughout the EU, and notes that host-country depositors have not always been protected adequately in the recent crisis (recommendation 14).
3. The report calls for improved MoUs in terms of burden sharing (recommendation 15).
4. The report calls for increased coordination through a European System of Financial Supervision, meant in particular to upgrade the quality of national supervision and harmonise enforcement. It provides a detailed roadmap to achieve these goals.

The report thus recognises the need to harmonise crisis management, as discussed earlier, and recommends steps that will clearly help towards going in this direction. By sticking to national supervisors, albeit increasingly coordinated, the report clearly internalises existing EU political constraints but, however, also begs the question of systemic cross-border crisis management: when deposit insurance funds are exhausted and taxpayers have to come to the rescue of banks, how will one share the fiscal burden among member states in these circumstances? Can we really hope that MoUs will provide credible ways to do this? This remains an open question. One can only hope that vigorous crisis prevention, coupled with substantial deposit insurance premia, would make this an infrequently tested matter.

## **7.6 Beyond the de Larosière report – the new financial supervision structure**

There are two dimensions to what a new structure needs to achieve: ongoing supervision and preparations for crisis management. These have been addressed by

two documents, new supervisory proposals issued in September 2009, and a consultation document on Bank Crisis Management issued in October 2009.

Implementing the recommendations of the de Larosière report implies concrete changes in the different European committees, their objectives, their powers and their accountability. This is the objective of the proposals of the European Commission that constitute a clear step forward in its aim to design a new efficient regulatory and supervisory framework. The proposal institutes a microprudential and a macroprudential structure. The European Banking Authority (EBA) proposal is concerned with micro regulation issues, while a complementary text takes into account the creation of a European System Risk Board (ESRB) in charge of macroprudential issues.<sup>35</sup> The Bank Crisis Management (BCM) Communication of 20 October 2009 is a consultation document concerned with the way the European framework copes with financial institutions in distress, and points at key issues and opens a consultation on a number of critical questions directly related to the treatment of financially fragile institutions in the light of the recent multinational banks' bankruptcies (such as Fortis, the Icelandic banks).

The EBA proposal is a key document that institutes a European System of Financial Supervisors (ESFS), consisting of a network of national financial supervisors working in tandem with three newly created European Supervisory Authorities that would replace the three pre-existing European coordinating committees. These were the Committee of European Banking Supervisors, replaced by the European Banking Authority (EBA), the Committee of European Insurance and Occupational Pensions Supervisors, replaced by a European Insurance and Occupational Pensions Authority, and the Committee of European Securities Regulators, replaced by a European Securities and Markets Authority. The Bank Crisis Management Communication complements it by adopting a completely different approach addressing the issues that appear understated in the EBA proposal. Still, the difference between a proposal and a communication for consultation should not be underestimated, so it is likely that only a fraction of the consultation ideas will be finally implemented as effective EU legislation.

At the macroprudential level, the ESRB proposal is also a complete break with the past and will allow the monitoring and prevention of systemic risk, thus avoiding the worst effects of a banking crisis to come. In our view, coordination costs between national regulators, both in terms of resources, but perhaps in the context of a systemic crisis more importantly in terms of time, call for a coordinated or centralised intervention and resolution authority at the European level and the new proposals go in the right direction.

As the Pittsburgh G-20 meeting and the de Larosière report pointed out, the recent financial crisis has brought to light the EU's need to build a banks' resolution regime that would create the appropriate tools for intervention and for their effective

---

35 In September 2009 the proposal for a 'Regulation of the European Parliament and Council Establishing a European banking authority' (COM 2009/0142) that we will refer to as the 'EBA proposal', was published by the Commission of the European communities. The EU communication entitled 'An EU framework for Cross-Border Crisis Management and the Banking Sector', which we will refer to as the 'Bank Crisis Management communication', complements it by considering an overall framework to cope with the financial distress of European banks.

coordination. The objective of the BCM communication is precisely to start a consultation process that would pave the way towards the production of an efficient European resolution regime. It addresses three types of interventions:

1. 'Early intervention' to cope with financial distress at the initial stage, thus limiting its cost and preventing contagion;
2. 'Resolution' covering the managing of a banking crisis; and
3. 'Insolvency' addressing the issue of liquidation and assets' sale of an insolvent financial institution.

The document poses some of the main questions that need addressing. First, within the current framework neither the tools for intervention nor the responsibilities for the decision are clearly defined, particularly for cross-border banks. Second, the objectives (i.e. the elements of a cost-benefit analysis) of a bank resolution are not clear. Third, the scope of a bank resolution framework should be clarified, not only in view of the role of non-banking institutions in the development of the US crisis, but also because European banks are often structured as cross-border groups with subsidiaries located in the different member states. Fourth, how will the stakeholders' rights be protected in case of a bank intervention? Fifth, should Europe be endowed with a specific European banks' bankruptcy regime? Answering these questions implies that new institutions should be created, in particular to cope with cross-border banks' resolution.

It is worth adding that there has been much less international convergence towards consensus on crisis management than on supervision in recent years, so it is perhaps unsurprising that the Commission's thinking on this aspect seems less advanced than on supervisory issues at this stage.

### **7.6.1 The new financial architecture**

#### *The microprudential structure*

The creation of the three European Supervisory Authorities (ESAs) is the direct implementation of Recommendations 18, 21 and 22 of the de Larosière report, urging the creation of a European System of Financial Supervisors (ESFS) as 'a decentralised network' and 'an immediate step-change in the working of the level 3 committees' that should therefore benefit from additional resources, upgrade the quality and impact of their peer review processes, and prepare the ground for the regulation of all major cross-border financial firms in the EU. Eventually, level 3 committees are to be transformed into three European Authorities: a European Banking Authority, a European Insurance Authority and a European Securities Authority. By explicitly stating it, the new proposal is therefore ahead of the de Larosière schedule.

The three ESAs are expected to be independent institutions accountable only to European constituencies, never to the member states, and their decisions will be based exclusively on an overall European view. They are expected to play a key role in generating new regulation, thus continuing and improving the successful procedure developed under the Financial Services Action Plan to adapt European regulation to the lessons of the crisis. With this objective the ESAs will:

1. Contribute to ensuring consistent application of Community rules – to ensure incorrect or inconsistent application is dealt with quickly and effectively;
2. Develop draft proposals for technical standards – to help to ensure more consistent rules within the EU, working towards a common rulebook;
3. Facilitate agreement between national supervisory authorities, where necessary settling any disagreements, including within colleges of supervisors, to ensure supervisors take a more coordinated approach; also facilitating exchange of information among national supervisors. It is important to emphasise that, contrary to the system of level three committees in place up to now, in the case of a persistent disagreement the European Supervisory Authorities should, through a decision, be able to settle the matter, taking into account the views of all supervisors involved. In certain situations the authorities will be able to take decisions directly applicable to financial institutions, (article 9(6) and 11(4) in the absence of consistent application of community rules, 10(3) in emergency situations);
4. In addition, ESAs will have direct supervisory power over credit rating agencies and will have coordination and some decision-making in emergency situations.

The ESAs will also liaise with two other regulatory bodies, the ESRB and the Joint Committee of European Supervisory Authorities

The new structure guarantees the rights of the member states in two ways: first, by the existence of a board of appeal and second by prohibiting ESAs from taking any decisions that impinge on the fiscal responsibilities of member states.

#### *The macroprudential structure*

The creation of the ESRB corresponds to recommendations 16 and 17 of the de Larosière report.<sup>36</sup> The European Systemic Risk Board's objective is to identify systemic risks, monitor how financial institutions and regulators intend to cope with systemic risks and to declare the emergence of a crisis if deemed necessary. The mandate of the ESRB is to assess and prevent potential risks to financial stability in the EU, thus enhancing the soundness of the whole financial system. The Central Banks will have a key role in providing the adequate resources and support to the ESRB.

The articulation between the ESRB and the other financial actors is a complex issue. A full disclosure of warnings and recommendations to financial markets is a highly sensitive issue as it could trigger panics in financial markets, and consequently the decision of whether or not to publish will require a case-by-case decision. Consequently, the ESRB announcements and warnings will have to be taken into account by the ESAs and by national supervisors in their supervisory processes: a high probability of an overshooting in the mortgage market by the ESRB should immediately pass down to the national supervisors risk models. Still, the power of the ESRB is of the 'comply or explain' type: the ESRB makes recommendations to the countries concerned. If the countries choose not to act on the recommendation, they have to explain why.

---

<sup>36</sup> Recommendation 16 states the creation of 'A new body called the European Systemic Risk Council (ESRC), to be chaired by the ECB President, should be set up under the auspices and with the logistical support of the ECB.', and recommendation 17 complements it by stating that 'an effective risk warning system shall be put in place under the auspices of the ESRC and of the Economic and Financial Committee (EFC).'

## **7.6.2 A step forward**

While the de Larosière report is a comprehensive document, starting from the crisis' diagnosis and going all the way to the necessary changes for European regulation, as carved in its 31 recommendations, its implementation has to distinguish between structural and institutional changes to be implemented in the short run and longer-term objectives to be achieved by these institutions. It is not surprising that recommendations setting the ground for a fundamental review of financial regulation, including key issues such as a complete review of Basel II, a correction of accounting standards, a reconsideration of provisioning rules, and a revision of capital and liquidity regulation, have to be delegated to some more technical bodies, precisely the ones that are created in the proposal. Consequently, the implementation creates a number of independent powerful regulatory bodies with sufficient resources that will be in charge of the longer-term design of financial regulation.

One of the key aspects of the proposal is that it provides the European Supervisory Authorities with the power to settle in case of persisting disagreements among member states. Although, exceptionally, it also allows to intervene directly at the level of an individual financial institution, that will constitute a radical change in European financial regulation. Provided the proposal is not diluted or suppressed in the legislative procedure, in order to protect the interest of some member states, it will be a major change.

The creation of the ESRB is clearly one of the outcomes of the financial crisis. Typically, central banks have financial stability as part of their mandate. Still, with the increasing complexities of a developed financial environment, the task of measuring, monitoring and preventing systemic risks is beyond the typical functions of central banks and requires accurate, reliable, timely information on both the business cycle and the financial system resilience. So there has been a firm consensus on the need for such an institution. Whether a systemic risk committee or board should be part of the Federal Reserve or not, has been discussed in the US as a possible Armageddon between a too powerful central bank and financial institutions chained to their yoke, and has taken the politicians' and media's fancy. In our view, as the ESRB will have access to the same culture, the same information base and the same human capital as the central bank, it has to be part of it. If the resulting institution is then 'too powerful', the problem is about its governance, not about its structure, as that results from obvious economies of scope.

The only related relevant question is whether the decisions of the ECB and of the ESRB are taken by different bodies. This depends upon two considerations: first, how close are the objective functions; second, whether it is best to have monetary and prudential policy in the hands of a unique institution or in several. Extant evidence seems to point out the benefits of having separated institutions in normal times. Thus, for example Goodhart and Schoenmaker (1995) point out the conflict of interest between a countercyclical monetary policy and a procyclical prudential policy: as lender of last resort the central bank may feel compelled to bail out banks with low interest rates if this is necessary to prevent a systemic crisis, even if the business cycle calls for a more restrictive monetary policy. Still, the central bank's role as lender of last resort since the beginning of the crisis, and in particular since the Lehmann crisis, has shown that there are important benefits in a coordinated



aggressive quick response from central banks, so that the ESRB and the ECB should be ready to intervene jointly in case of crisis.

### **7.6.3. Snags along the way**

There is a clear consensus on the objectives of the regulatory reform, namely the creation of a resilient, efficient, sound financial system. Consequently there are three issues we have to consider: (i) Are the priorities the right ones? In other words, when there are trade-offs to be considered, are the choices made the most consistent ones; (ii) is the institutional setup created well suited to meet the objectives?; and (iii) are the benefits to member states sufficient to make up for their loss of power, so that they will not block the legislative procedure or fight its implementation and enforcement?

#### *Setting priorities*

A preliminary caveat is that the new financial architecture reflects more a natural sequencing (the creation of ESAs and the ESRB should come first) than priorities. Still, there are some reasons for concern. Our report has identified three critical areas of financial regulation to be redesigned (macro-prudential, strategic and LCFI), and three priorities (an EU deposit scheme, bank-specific bankruptcy procedures and cross-border bailouts). Our overall concern is the same as stated in the de Larosière report in its Avant-Propos 'Towards effective crisis management procedures' (p.4). Also, the bank-specific bankruptcy procedures and cross-border bailouts we advocate, correspond to Recommendation 13 and 15 of the de Larosière report.<sup>37</sup> Coping with these issues requires different levels of coordination.

As these objectives seem to be indisputable, it is disappointing, and even a source of concern, to see that the words 'bankruptcy', 'too big to fail' or 'LCFI' do not appear in the text of the EBA proposal. The lack of a different treatment, as between LCFIs and small non-systemic banks, which is one of the lessons of the crisis, is not acknowledged. It seems clear that the difference among systemic and non-systemic financial institutions should in fact be acknowledged and that the two types of financial institutions should be treated differently from the outset, as in case of trouble, the large ones will be bailed out while the small ones will be liquidated or taken over. Yet, at this stage, all financial institutions, whether purely national or cross-border, systemic or not, are treated under the 'one size fits all' principle. Of course, it could be argued that the Bank Crisis Management Communication is intended precisely to solve these issues. Indeed, these are at the core of the consultation. Yet the consultation is quite a preliminary step in the process of

---

<sup>37</sup> Recommendation 13 states '*without pre-judging the intervention in future individual cases of distressed financial institutions, a transparent and clear framework for managing crises should be developed;*

*- all relevant authorities in the EU should be equipped with appropriate and equivalent crisis prevention and crisis intervention tools;*

*- legal obstacles which stand in the way of using these tools in a cross-border context should be removed, with adequate measures to be adopted at EU level.'*

Recommendation 15 states '*In view of the absence of an EU-level mechanisms for financing cross-border crisis resolution efforts, member states should agree on more detailed criteria for burden sharing than those contained in the existing Memorandum of Understanding (MoU) and amend the MoU accordingly'*.

generating a European agreement that will actually be implemented.

In fact, the newly established committees are born with two objectives: European consistency and integration on the one hand and the creation of a new post-crisis financial regulation on the other. The two objectives are not incompatible, but the priority could be dangerously biased towards European financial integration, as the ESAs are the continuation of level 3 committees and, in any case, pursuing financial integration will dilute the enhanced regulation and supervision objective. Of course, once these committees are in place we may expect they will swiftly and efficiently produce a new framework for financial regulation. Yet, this may be too optimistic a view, and the respect of every single national specificity may put a damper on the process.

The proposal is also vague on the supervision and coordination of colleges of supervisors, and while 'building a common European supervisory culture' goes in the right direction to avoid conflicts, the resolution of conflicts among national supervisors, that will doubtless arise, is not addressed.

Finally, regarding the effective power of intervention in individual financial institutions, this will only occur at the end of a long bargaining procedure with national supervisors, and, as any bank rescue or liquidation has important fiscal implications, the theoretical power of intervention may be in fact watered down.

Regarding the Bank Crisis Management consultation, although it is both speculative and premature to predict how it will turn out in terms of specific legislation, there are a number of issues that raise some concern.

1. First, the distinction it is based upon considers three stages for a distressed financial institution: early stage; bank resolution; and insolvency. When confronted with actual bank crisis management situations, this distinction should be questioned. Indeed, once a financial institution is in distress, the information it provides to the supervisor is often incomplete, biased or even simply inaccurate. Consequently, the supervisory authorities cannot distinguish clearly between the three stages. Consider, as an example, the Fortis case: in our view there was no 'early stage' and the distinction between bank resolution and insolvency depends upon how much capital the treasuries of the involved countries stood ready to inject. So a much better distinction would be simply to consider two stages: contingency planning stage; and financial distress. This would then allow the understanding that the living will is not something to be prepared once an institution reaches the 'early stage', but a contingency planning exercise to be regularly updated.
2. The communication is correct in emphasising the fact that: *'In their responses to this crisis, member state authorities have tended to ring-fence national assets of a cross-border group and apply national resolution tools at the level of each entity rather than seek a group-wide solution.'* (p.8). This is indeed a key issue that the EU and, more generally, any cross-border banking regulation has to address: in case of bankruptcy should all assets and liabilities be considered jointly (universality of the bankruptcy), or should they be considered on a country-by-country case (territoriality)? Of course, if the EU wants to foster an integrated market for financial services, universality has to be implemented and ring-fencing of national assets should be abolished. Otherwise the definition of the claims on a bank will be different depending on the country of residence, as foreign stakeholders will be discriminated in case of restructuring. This point is

considered in a very timid way in the consultation document ('Burden Sharing', p.15) when it asks the question: 'Is establishing ex-ante crisis funding arrangements practical?' In our view, if one is to take the financial integration objective seriously, the question should not be whether we need an ex-ante arrangement for burden-sharing, but rather how it should be structured. 'Living wills' have an important role in this context. Not only should they make it possible, where necessary, for financial institutions to fail in an orderly manner, thereby posing less of a threat to the stability of the financial system, but they should also make possible burden-sharing arrangements that are less discriminatory and less anti-competitive than in the case of those that are introduced in a hurry, mid-crisis, thereby leaving a less adverse post-crisis legacy.

3. A third query regarding the Bank Crisis Management consultation is whether it considers the efficiency dimension of crisis management. We have reviewed the issues involved in a bank bankruptcy in Section 4 and, in particular, have argued in 4.2.2 that a revaluation of liabilities was the efficient way to go. The Bank Crisis Management proposal considers rather that 'living wills' constitute an interesting proposal, but this restructuring of assets is not considered in a context of a contingent redefinition of liabilities' holders rights that would encompass a richer class of contracts, where living wills, reverse convertibles, debt equity swaps, bridge banks and good bank/bad bank are jointly considered (although the BCM consultation does indeed consider the issue of a '*harmonized EU insolvency regime for banks*'). The efficiency gains will come from such a restructuring. So, from an efficiency point of view the issue is: first define a consistent European bank bankruptcy code (something that may be implicit in the consultation question '*Is integrated resolution through a European Resolution Authority for banking groups desirable and feasible?*' (p. 14)). Then, once the efficient bankruptcy code is agreed upon so that the expected recourse to taxpayers' funds is minimised, the issue of burden sharing can be easily addressed. It is unfortunate that these two questions are not prioritised, because then it is clear that foreign taxpayers' money cannot be used to substitute private domestic funds, as would happen if a bank's bailout benefits its shareholders.

*Is the institutional set up the right one?*

The ESFS is a decentralised network, implying two possibilities:

1. The ESAs could be the key institutions, in which case, the ESFS is weak and supervision and regulation do not encompass the whole financial activity of an institution (i.e. shadow banking). In this case, regulatory arbitrage using the next wave of financial innovations could bring in regulatory arbitrage. Because of the existence of ESAs in the past as independent committees, the proposal seems to emphasise the role of each of the three ESAs rather than, as suggested by the de Larosière report Recommendation 18, that considers the ESFS as 'a decentralised network'. As the network dimension is vague, there is a concern that the lessons of the crisis about the importance of shadow banking and overarching banking regulation might be lost.
2. The ESAs themselves are weak, as national supervisors dominate the decisions. As national regulators have to take care of the interests of national institutions,

there is, to some degree, the risk of regulatory capture.

Regarding the role of the ESRB and its reliance on the 'comply or explain' principle, a clear concern is that it may only work in a context where the objective function of all national regulators is the same and conflicts are a minor issue. Prior to the crisis there were clear signs of excessive credit growth that were picked up by central banks, but these did not translate into the supervisors' credit risk models, even within a given state. So, when adding the complexities of multi-state games one may ask: why would it be different? In our view the ESRB should have more authority over the regulators/supervisors so that its warnings are immediately taken into account, whether in the risk models or in the loan loss provisions of any single financial institution.

In addition, the principle of 'comply or explain' is not a very strict one. The 'comply or explain' principle limits the power of the ESRB, as the explanation need not be satisfactory to the regulatory authorities. As mentioned, its enforcement implies that some third party fully accepts the explanation as a legitimate one, so that enforcement is difficult whenever there are conflicting, zero-sum game type of positions, as it will be 'strategic' explanations that will be provided. If this is the case, the ESRB will inform the Council of Ministers. Still, this will delay and possibly dilute the intervention of the ESRB. A more radical approach is the 'in or out' approach where every institution, not the state, chooses whether to comply with a highly restrictive level of uniform regulation and supervision or a lower level of the national idiosyncratic one. This is how the concept of 'internationally active bank' in Basel II is used as a self-selection mechanism by countries and financial institutions. It implies *ex ante* equal treatment and different levels *ex post*. As of now this is unfortunately not considered, and its European implementation may be difficult.

#### *The political economy of centralised regulation*

As the mandate of each of the national supervisors is to develop efficient financial markets in its own country, reaching a European agreement concerning financial regulation will be possible only when it does not threaten each country's financial market and institutions. Whenever some countries are to lose from a change in financial regulation, we have to expect the outcome to be the result of conflict resolution, not of efficiency considerations. This is how, according to the *Financial Times*: 'Britain has been anxious to protect the City of London's dominant role in financial services and was reluctant to cede oversight of financial services to Europe.'<sup>38</sup> Applied to cross-border financial institutions, this means that colleges of supervisors will be trapped into inaction and as each national supervisor depends upon its own country resources, this may lead to the politicisation of any bank crisis resolution, as recently proven by the Fortis case. So, it is hardly surprising that on December 11th, Mr Trichet told the European Parliament that he did not see the new European Union system as the 'first-best' solution.

Regarding the Bank Crisis Management consultation, it will be even more controversial than the EBA proposal. Indeed, the former implies a commitment to use part of one country's taxpayers' money to rescue another country's financial institution. Consequently, reaching a compromise on burden sharing will definitely

---

38 'EU strikes deal on new financial sector watchdogs', *Financial Times*, Dec. 3rd 2009.

be much more difficult.

The alternative of a European-level regulatory and supervisory authority for large pan-European banks, such as hinted at in the Bank Crisis Management consultation (p.17) would have the advantage of minimising coordination costs and enabling rapid intervention. The institutional framework suggested by the Larosière report seems to address some of the coordination failures and incentive distortions discussed above. It thus addresses the lack of an institutional structure for resolution of large Pan-European banks. However, this alone does not address *ex ante* the burden-sharing challenges in case of a large pan-European institution. Further, it is not guaranteed that such a coordinating institution can ensure proper information exchange and rapid decision taking in times of crisis. So, there is the risk that what is economically efficient and meaningful may not be politically feasible. However, it is important to stress the crucial need for much stronger coordinated mechanisms of enforcement than exist now whenever two territories face significant cross-border banking relationships.

This need for a stronger regulatory structure is also apparent at the level of deposit insurance, a point that is not mentioned in the proposal. A more radical solution would be to move towards an EDIC (European Deposit Insurance Corporation) model, similar to the FDIC in the US, which does not only have the regulatory and supervisory authority, but also the necessary resources to intervene and resolve large failing institutions. Such a European-level regulatory authority would be financed with levies on the large pan-European banks it regulates and supervises. Being at the supra-national level, its political independence might be more easily guaranteed than that of national supervisors. One shortcoming might be that supranational supervisors are more distant from the supervised banks and have more limited access to 'soft' information about them.

One concern on the funding side might be that by taking large banks out of national deposit insurance schemes, these schemes would lose valuable funding sources. This problem can be circumvented by forcing large pan-European banks to contribute to both national and the EDIC deposit insurance funds, with certain *ex ante* agreements on pay-out sharing between both schemes. Such a construction would also have the advantage of taxing banks for becoming pan-European and too-big-to-fail.

Another issue is whether the ECB should take on the responsibility for the EDIC, or whether it rather should be an independent institution. There are both incentive and political economy considerations to be taken into account here. First, combining responsibility for monetary and financial stability in one institution might lead to well-documented incentive conflicts (Kahn and Santos, 2005). Secondly, there are political concerns about a too-powerful ECB. The decision to keep bank regulation and supervision on the national level was partly driven by the political intention to keep the ECB's power limited. Establishing a separate EDIC, however, might not be possible without changes to the EU treaty, an almost impossible undertaking in the current political environment.



---

## 8. Conclusions

The main lessons of our Report were summarised in the Introduction. Let us end by stressing what lies ahead at the time of writing.

First, as far as competition policy is concerned, authorities had to 'put out fires', that is, try to protect competition while allowing for the need for urgent action to respond to the financial crisis. We see two key tasks ahead:

1. Many changes have taken place in a very short time, with significant sector-wide competition implications in some cases. These cannot be seen solely through the lenses of state aid control. It would therefore be extremely useful to conduct a thorough sector enquiry, led by DG Competition itself and/or by some of the national authorities. Indeed, the European Commission's last sectoral enquiry into retail banking was completed shortly before the financial crisis erupted, making its conclusions outdated almost as soon as they were published.
2. This first task assumes that banking crises will not return in the near future, so that a 'normal' sector enquiry can be performed. We cannot hope, however, that crises will never come back again at all. Preparing bank-specific state aid control guidelines for these circumstances is therefore necessary. We hope that the principles developed in this report can be useful in this respect.

Second, there is of course a lot of work ahead concerning prudential regulation:

1. Some of the issues apply in every country in the world and require broad coordination to ensure an international level playing field. Given, moreover, the highly technical nature of this matter (think of business-cycle-specific capital ratios or accounting rules, for example), reform cannot happen overnight. It is, however, extremely important not to let the momentum for reform fade and bank lobbyists block attempts to make the system safer just because they might reduce bank profits.
2. This latter problem is present too as far as EU-specific issues are concerned. The follow-up to the de Larosière report is promising. But we have stressed a number of remaining weaknesses. Policymakers are aware of many of those. It will nonetheless require work, and political resolve (with respect to both bank lobbies and national self-interest), to make European banking safer and better able to deliver sustainable growth for Europe.
3. Reforming bank resolution frameworks should top the agenda for regulatory reform; within Europe it is critical in order to maintain a single financial market. Reform efforts at the level of the European Commission should therefore focus on creating the necessary institutions and burden-sharing arrangements.

## References

- Acharya, Viral and Ouarda Merrouche (2009) 'Precautionary Hoarding of Liquidity and Inter-Bank Markets: Evidence from the Sub-prime Crisis.' NYU Stern mimeo.
- Acharya, Viral and Tanju Yorulmazer (2007) 'Too Many to Fail-An Analysis of Time-inconsistency in Bank Closure Policies.' *Journal of Financial Intermediation* 16,1-31.
- Adrian Tobias, and Hyun Shin (2008) 'Liquidity and Financial Cycles', BIS Working Paper No. 256.
- Aghion, P., P. Bolton and S. Fries (1999) 'Optimal design of Bank Bailouts: The Case of Transition Economies,' *Journal of Institutional and Theoretical Economics* 155: 51-70.
- Aggarwal, R. and K.T. Jacques (2001) 'The Impact of FDICIA and Prompt Corrective Action on Bank Capital and Risk: Estimates Using a Simultaneous Equations Model,' *Journal of Banking and Finance* 25: 1139-1160.
- Akerlof, G. (1970) 'The Market for "Lemons": Quality Uncertainty and the Market Mechanism', *Quarterly Journal of Economics*. 84 (3) 488-500.
- Allen, F. (1990) 'The market for information and the origin of financial intermediation', *Journal of Financial Intermediation* 1, 3-30.
- Allen, F. and Gale, D. (2000) 'Financial Contagion', *Journal of Political Economy*, 108, 1-33.
- Allen, F. and Gale, D. (2000) *Comparing financial systems*. Cambridge, MA: MIT Press.
- Allen, F. and Gale, D. (2004) 'Competition and financial stability', *Journal of Money, Credit, and Banking* 36:3 Pt.2, 433-80.
- Ashcraft, Adam B. 2005. 'Are Bank Really Special? New Evidence from the FDIC-induced Failure of Healthy Banks', *American Economic Review* 95, 1712-1730.
- Ashcraft, A., M. Bech and S. Frame, (2009) 'The Federal Home Loan Bank System: Lender of Next-to-Last-Resort?' mimeo Federal Reserve Bank of New York.
- Asser, T.M.C. (2001) *Legal Aspects of Regulatory Treatment of Banks in Distress*, Washington, D.C.: International Monetary Fund.
- Baele, L., O. De Jonghe and R. Vander Venet (2007) 'Does the Stock Market Value Diversification?' *Journal of Banking and Finance* 32, 1820-35.
- Baldwin, R. (2009) *The Great Trade Collapse: Causes, Consequences and Prospects*, CEPR-VoxEU ebook.
- Baldwin, R. and B. Eichengreen (2008) *What G20 Leaders Must Do to Stabilize our Economy and Fix the Financial System*, CEPR-VoxEU ebook.
- Baldwin, R. and B. Eichengreen (2008) *Rescuing our Jobs and Savings: What G7/8 Leaders Can Do to Solve the Global Credit Crisis*, CEPR-VoxEU ebook.
- Baldwin, R. and S. Evenett (2009) *The Collapse of Global Trade, Murky Protectionism and the Crisis: Recommendations for the G20*, CEPR-VoxEU ebook.



- Barth, J.R., Caprio, Jr., G., and Levine, R. (2004) 'Bank supervision and Regulation: What Works Best?' *Journal of Financial Intermediation* 13:2, 205-48.
- Beck, T. (2007) 'Efficiency in financial intermediation: Theory and empirical measurement', In: Bernd Balkenhol (ed) *Microfinance and public policy: Outreach, performance and efficiency*. Palgrave, MacMillan
- Beck, T., Demirgüç-Kunt, A., and Levine, R. (2006a) 'Bank concentration, competition, and crises: First results', *Journal of Banking and Finance* 30, 1581-603.
- Beck, T., Demirgüç-Kunt, A., and Levine, R. (2006b) 'Bank concentration and fragility: Impact and mechanics', In: Stulz, R., and Carey, M. (eds) *The Risks of Financial Institutions*. National Bureau of Economic Research.
- Becker, B., and Milbourn, T. (2008) 'Reputation and competition: evidence from the credit rating industry', mimeo, Harvard Business School.
- Benston, G., Hunter, C., and Wall, L. (1995) 'Motivations for bank mergers and acquisitions: Enhancing the deposit insurance put option versus earnings diversification', *Journal of Money, Credit and Banking* 27, 777-88.
- Benston, J.G. and G.J. Kaufman (1997) 'FDICIA After Five Years,' *Journal of Economic Perspectives* 11: 139-158.
- Berger, A.N., L. Klapper and R. Turk-Ariss (2009) 'Bank Competition and Financial Stability', World Bank mimeo.
- Bernanke, Ben S. 1983. 'Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression', *American Economic Review* 73, 257-276.
- Bikker, J., and Spierdijk, L. (2007) 'How banking competition changed over time', DNB mimeo.
- Bank for International Settlements, *Quarterly Review*, December 2009.
- Boot, A.W., and Greenbaum, S. (1993) 'Bank regulation, reputation, and rents: Theory and policy implications', In: Mayer, C., and Vives, X. (eds) *Capital markets and financial intermediation*. Cambridge, UK: Cambridge University Press, 292-318.
- Boyd, J.H., and De Nicoló, G. (2005) 'The theory of bank risk-taking and competition revisited', *Journal of Finance* 60, 1329-343.
- Boyd, J.H., De Nicoló, G., and Jalal, A. (2006) 'Bank risk taking and competition: New theory, new empirics', IMF Working Paper 06/297.
- Boyd, J.H., and Graham, S. (1991) 'Investigating the banking consolidation trend', Federal Reserve Bank of Minneapolis *Quarterly Review* Spring, 1-15.
- Boyd, J.H., and Graham, S. (1998) 'Consolidation in US banking', In: Amihud, Y., and Miller, G. (eds) *Bank mergers and acquisitions*. Norwell, MA. Kluwer, 113-35.
- Boyd, J.H., and Runkle, D.E. (1993) 'Size and performance of banking firms: Testing the predictions of theory', *Journal of Monetary Economics* 31, 47-67.
- Boyd, J.H., and Prescott, E.C. (1986) 'Financial intermediary-coalitions', *Journal of Economic Theory* 38, 211-32.
- Brown, C. and S. Dinc (2009) 'Too Many to Fail? Evidence of Regulatory Reluctance in Bank Failures when the Banking Sector is Weak', *Review of Financial Studies*, forthcoming.
- Brunnermeier, M. and L. Pedersen (2008) 'Market Liquidity and Funding Liquidity', forthcoming *Review of Financial Studies*.
- Brunnermeier, M., A. Crockett, C. Goodhart, A. D. Persaud and H. Shin 'The Fundamental Principles of Financial Regulation' *Geneva Reports on the World Economy* 11, ICMB; January 2009

- Bulow, J. and P. Klemperer, 'Reorganising the banks: Focus on the liabilities, not the assets', <http://www.voxeu.org/index.php?q=node/3320>
- Calomiris, C. W. (2008) 'The Subprime Turmoil: What's Old, What's New and What's Next' Mimeo Columbia University.
- Calomiris, C.W. (2000) *U.S. bank deregulation in historical perspective*. Cambridge University Press.
- Calomiris, C.W. and Kahn, C.M. (1991) 'The Role of Demandable Debt in Structuring Optimal Banking Arrangements', *American Economic Review* 81, 497-513
- Calomiris, C.W., and. Mason, J.R. (2000) Causes of bank distress during the great depression. NBER Working Paper 7919.
- Carletti, E., and Hartmann, P. (2003) Competition and stability: What's special about banking? In: Mizen, P. (ed) *Monetary history, exchange rates and financial markets: Essays in honor of Charles Goodhart*. Edward Elgar.
- Cassola, N., M. Drehmann, P. Hartmann, M. Lo Duca and M. Scheicher 'A research perspective on the propagation of the credit market turmoil', ECB Research Bulletin 07 2008
- CEPS Task Force Report (2008) *Concrete Steps Towards More Integrated Financial Oversight – The EU's Policy Response to the Crisis*.
- Chan, Y.-S., Greenbaum, S., and Thakor, A. (1986) 'Information reusability, competition and bank asset quality', *Journal of Banking and Finance* 10, 243-53.
- Chong, B.S. (1991) 'Effects of interstate banking on commercial banks' risk and profitability', *Review of Economics and Statistics* 73, 78-84.
- Claessens, S., and Laeven, L. (2004) 'What drives bank competition? Some international evidence', *Journal of Money, Credit, and Banking* 36:3 Pt.2, 563-83.
- Commission of the European Communities, Communication from the Commission – The application of the State aid rules to measures taken in relation to financial institutions in the context of the current global financial crisis, OJ C 270, 5.10.2008, p. 8-14. (EC2008a)
- Commission of the European Communities, Communication from the Commission- The recapitalisation of financial institutions in the current financial crisis: limitation of the aid to the minimum necessary and safeguards against undue distortions of competition, OJ C 10, 15.1.2009, p. 2-10. (EC2008b)
- Commission of the European Communities, Temporary Community Framework for State aid matters to support access to finance in the current financial and economic crisis. (EC2008c)
- Commission of the European Communities, Communication from the Commission on the Treatment of Impaired Assets in the Community banking sector, of 25 February 2009, OJ C 72, 26.3.2009, p. 1. (EC2009)
- Commission of the European Communities, State Aid Scoreboard, Spring 2009.
- Community Guidelines on State aid for rescuing and restructuring firms in difficulty, OJ C 244.1.01.2004 (2004)
- Craig, B., and Santos, J. (1997) 'The risk effect of bank acquisitions', Federal Reserve Bank of Cleveland *Economic Review* Q II, 25-35.
- Davies, H. (2008) 'Panel Comments,' *Journal of Financial Stability* 4: 364-367.
- de Larosière et al. (2009) *Report from the High-Level Group on Financial Supervision in the EU*.

- Dell'Ariccia, G., Igun, D., and Laeven, L. (2008) 'Credit booms and lending standards: Evidence from the subprime mortgage market', IMF Working Paper 08/106.
- De Jonghe (2008) 'The Impact of Revenue Diversity on Banking System Stability', Mimeo.
- Demirguc-Kunt, A. and H. Huizinga (2009) 'Bank Activity and Funding Strategies', CentER Working Paper.
- De Nicoló, G. (2000) 'Size, charter value and risk in banking: An international perspective', International Finance Discussion Paper #689, Board of Governors of the Federal Reserve System.
- De Nicoló, G. and Kwast, M. (2002) 'Financial risk and consolidation: Are they related?' *Journal of Banking and Finance* 26, 861-80.
- Dewatripont M., X. Freixas and R. Portes (2009) *Macroeconomic Stability and Financial Regulation*, CEPR and VoxEU.
- Dewatripont, M. and J.-C. Rochet (2009) 'The Treatment of Insolvent Banks,' in M. Dewatripont, X. Freixas and R. Portes (eds) *Macroeconomic Stability and Financial Regulation*, CEPR and VoxEU.
- Dewatripont, M. and J. Tirole (1994) *The Prudential Regulation of Banks*, Cambridge, MA: MIT Press.
- Diamond, D. and Dybvig, P. (1983) 'Bank Runs, Deposit Insurance, and Liquidity', *Journal of Political Economy*, 91, 401-19
- Diamond, D. and Rajan, R. (2001) 'Liquidity risk, liquidity creation and financial fragility: a theory of banking', *Journal of Political Economy*, 109, 287-327
- Diamond, D.W. (1984) 'Financial intermediation and delegated monitoring', *Review of Economic Studies* 51, 393-414.
- Dick, A. (2006) 'Nationwide branching and its impact on market structure, quality and bank performance.' *Journal of Business* 79:2, 567-92.
- Djankov, Simeon, Jan Jindra and Leora Klapper. 2005. 'Corporate valuation and the resolution of bank insolvency in East Asia', *Journal of Banking and Finance* 29, 2095-2118.
- Feldstein, M. (2009) 'How to stop the mortgage crisis', op-ed in *Wall Street Journal*, March 7th 2009.
- Felton, A. and C. Reinhart (2008) *The First Global Crisis of the 21st Century*, CEPR-VoxEU ebook.
- Felton, A. and C. Reinhart (2009) *The First Global Crisis of the 21st Century: Vol. II*, CEPR-VoxEU ebook.
- Ferri, Giovanni, Tae Soo Kang and In-June Kim. 2001. 'The Value of Relationship Banking during Financial Crises: Evidence from the Republic of Korea', World Bank Policy Research Working Paper 2553.
- Financial Services Authority, *The Turner Review: A Regulatory Response to the Global Financial Crisis*, March 2009.
- Fisher, I. (1933) 'Debt Deflation theory of the great depression', *Econometrica*, 4, 337-357.
- Freixas, X., Parigi, B.M. and Rochet, J.-C. (2000) 'Systemic Risk, Interbank Relations and Liquidity Provision by the Central Bank', *Journal of Money, Credit and Banking* August, 32, Part 2

- Freixas, X. and C. Holthausen 'Interbank Market Integration under Asymmetric Information', *Review of Financial Studies*, 2005 18(2)459-490
- Freixas, X. and B.M. Parigi (2008) 'Banking Regulation and Prompt Corrective Action,' mimeo.
- Frydl, E. (1999) 'The Length and Cost of Banking Crises', IMF Working paper WP/99/30
- Goodhart, C.A.E. (2008) 'The Regulatory Response to the Financial Crisis,' *Journal of Financial Stability* 4: 351-358.
- Goodhart C. and Shoenmaker D., 1995, 'Should the functions of monetary policy and banking supervision be separated?', *Oxford Economic Papers*, p. 539-560.
- Gorton, G. (2008) 'The Panic of 2007' Mimeo, Yale School of Management.
- Haber, S., and Perotti, E. (2008) 'The political economy of finance', *Journal of Economic Literature*, forthcoming.
- Holmstrom, B. (2008) ' Discussion of the Panic of 2007 ' by Gary Gorton, Jackson Hole 2008 meeting.
- Holmstrom, B., and J. Tirole (1998) ' Private and Public Supply of Liquidity ', *Journal of Political Economy*, 106(1) 1-40.
- Huang, R. and L. Ratnovski (2008) 'The Dark Side of Bank Wholesale Funding', IMF mimeo.
- Hughes, J.P., and Mester, L. (1998) 'Bank capitalization and cost: Evidence of scale economies in risk management and signaling', *Review of Economics and Statistics* 80, 314-25.
- International Monetary Fund, *Global Financial Stability Review*, April 2009.
- International Monetary Fund (2008) 'Global Financial Stability Report: Financial Stress and Deleveraging, Macro-Financial Implications and Policy', October.
- Jayaratne, J., and Strahan, P. (1998) 'Entry restrictions, industry evolution, and dynamic efficiency: Evidence from commercial banking', *Journal of Law and Economics* 41, 239-75.
- Jimenez, G., Lopez, J., and Saurina, J. (2007) 'How does competition impact Bank Risk-Taking?' Federal Reserve Bank of San Francisco Working Paper Series 2007-23.
- Kahn, C.M., and Santos, J.A.C. (2005) 'Allocating bank regulatory powers: Lender of last resort, deposit insurance and supervision', *European Economic Review* 49 (November) 2107-136.
- Kashyap, A., R.G. Rajan and J.C. Stein (2008) 'Rethinking Capital Regulation,' mimeo.
- Keeley, M.C. (1990) 'Deposit insurance, risk and market power in banking', *American Economic Review* 80, 1183-200.
- Krimminger, M.H. (2008) 'The Resolution of Cross-Border Banks: Issues for Deposit Insurers and Proposals for Cooperation,' *Journal of Financial Stability* 4: 376-390.
- Kroszner, R., and Strahan, P. (1999) 'What drives deregulation? Economics and politics of the relaxation of bank branching deregulation', *Quarterly Journal of Economics* 114, 1437-67.
- Kupiec, Paul and Ramirez, Carlos D. 2008. 'Bank Failures and the Cost of Systemic Risk: Evidence from 1900-1930', FDIC Center for Financial Research Working Paper 2008-09.
- Kyotaki, N. and Moore, J. (1997) 'Credit Cycles', *Journal of Political Economy*, 105, 211-248.

- Laeven, L. and R. Levine (2009) 'Bank Governance, Regulation, and Risk Taking', *Journal of Financial Economics*, forthcoming.
- Marcus, A.J. (1984) 'Deregulation and bank financial policy', *Journal of Banking and Finance* 8, 557-565.
- Martinez Miera, D. & R. Repullo (2008) 'Does competition reduce the risk of bank failure?' CEMFI mimeo.
- Mishkin, F.S. (1999) 'Financial consolidation: Dangers and opportunities', *Journal of Banking and Finance* 23, 675-91.
- Mitchell, J. (2001) 'Bad Debts and the Cleaning of Banks' Balance Sheets: An Application to Economies in Transition,' *Journal of Financial Intermediation*, 10:1-27.
- Morgan, Don, (2006) 'The Credit Cycle and the Business Cycle: New Findings from the Loan Officer Opinion Survey', *Journal of Money, Credit, and Banking*, vol. 38(6) pages 1575-1597, September.
- Morgan, Don, (2002) 'Rating Banks: Risk and Uncertainty in an Opaque Industry', *American Economic Review* 92, Sept. pp 874-888
- Office of Fair Trading, 'Northern Rock: The impact of public support on competition', March 2009
- Ongena, S., and D. C. Smith, (2000) 'Bank Relationships: a Survey', in P. Harker, and S. A. Zenios, eds.: *The Performance of Financial Institutions* (Cambridge University Press, London)
- Paroush, J. (1995) 'The effect of merger and acquisition activity on the safety and soundness of a banking system', *Review of Industrial Organization* 10, 53-67.
- Perotti, E., and Suarez, J. (2003) 'Last bank standing: What do I gain if you fail?' *European Economic Review* 46, 1599-622.
- Praet, P. and G. Nguyen (2008) 'Overview of Recent Policy Initiatives in Response to the Crisis,' *Journal of Financial Stability* 4: 368-375.
- Ramakrishnan, R., and Thakor, A.V. (1984) 'Information reliability and a theory of financial intermediation', *Review of Economic Studies* 51, 415-32.
- Repullo, R., J. Saurina and C. Trucharte (2009) 'Mitigating the Procyclicality of Basel II,' in M. Dewatripont, X. Freixas and R. Portes (eds) *Macroeconomic Stability and Financial Regulation*, CEPR and VoxEU.
- Repullo, R. and J. Suarez (2008) 'The Procyclical Effects of Basel II', CEMFI.
- Schaeck, K. and Cihak, M. (2007) 'Banking competition and capital ratios', IMF Working Paper 07/216.
- Schaeck, K., Cihak, M., and Wolfe, S. (2006) 'Are more competitive banking systems more stable?' IMF Working Paper 06/143.
- Slovin, M.B., M.E. Sushka, and J.A. Polonchek. 1993. 'The value of bank durability: borrowers as bank stakeholders', *Journal of Finance* 48:289-302.
- Stark, J: 'Issues paper for the conference "The financial Crisis and its consequences for the world economy', 10 Dec. 2008.
- Tirole, J. ' Leçons d'une crise ', Toulouse School of Economics Notes, N°1-12/2008
- Upper, C. and Worms, A. (2004) 'Estimating Bilateral exposures in the German interbank market: Is there a danger of contagion?', *European Economic Review*, 48, 827-849
- van de Woestyne, F. and A. van Caloen (2009) *Fortis, Dexia ... Le Séisme*, Brussels: Ed. Luc Pire.

- Wagner, W. (2008) 'Diversification at Financial Institutions and Systemic Crises', Tilburg University mimeo.
- Williamson, S.D. (1986) 'Costly monitoring, loan contracts and equilibrium credit rationing', *Quarterly Journal of Economics* 102, 135-46.
- Zingales, L. (2008) 'Plan B', University of Chicago, mimeo, downloadable from [http://faculty.chicagobooth.edu/luigi.zingales/research/PSpapers/plan\\_b.pdf](http://faculty.chicagobooth.edu/luigi.zingales/research/PSpapers/plan_b.pdf).