Discussion Paper

09/2

Financial Services Authority

A regulatory response to the global banking crisis

March 2009

FSA®
Financial Services Authority

Contents

The Financial Services Authority (FSA) invites comments on this Discussion Paper (DP). Comments should be submitted by 18 June 2009. This DP contains a number of questions for respondents, which can be submitted using an electronic response form. The FSA would prefer you to use this electronic form when sending your responses. Comments should be sent by electronic submission using the form on the FSA's website at (www.fsa.gov.uk/Pages/Library/Policy/DP/2009/dp09_02_response.shtml).

Alternatively, please send comments in writing to:

David Cook
Financial Services Authority
25 The North Colonnade
Canary Wharf
London E14 5HS

Telephone: 020 7066 5470
Fax: 020 7066 5471
E-mail: dp09_02@fsa.gov.uk

It is the FSA's policy to make all responses to formal consultation available for public inspection unless the respondent requests otherwise. A standard confidentiality statement in an e-mail message will not be regarded as a request for non-disclosure.

A confidential response may be requested from the FSA under the Freedom of Information Act 2000. The FSA may consult you if it receives such a request. Any decision the FSA makes not to disclose the response is reviewable by the Information Commissioner and the Information Tribunal.

Copies of this DP are available to download from the FSA's website – www.fsa.gov.uk. Alternatively, paper copies can be obtained by calling the FSA order line: 0845 608 2372.

Who should read this DP

Although the focus on this DP is on banking and investment banking activities, elements of the DP are much broader in their potential application and will be of interest to other types of regulated firms, including insurance firms. Section 11, concerning the FSA's supervisory approach is relevant to all regulated firms. The proposals set out in this DP, once implemented, will result in a significantly stronger global regulatory framework and global banking system. This outcome is clearly highly relevant to consumers.

1 Introduction and overview

Why is the FSA issuing this Discussion Paper?

1.1 This FSA Discussion Paper (DP) underpins *The Turner Review*, which is being published simultaneously. This DP covers the issues set out in Chapter 2 of *The Turner Review* and the associated actions, providing further analysis and background material. Both documents have a common analysis of the main causes of the current financial crisis. This overview concludes with the list of actions required to create a stable and effective banking system set out in *The Turner Review*. This DP contains no further actions or recommendations. Instead, it discusses options for the policy choices that need to be made to enable supervisory authorities around the world both to deal decisively with the current problems and to equip them to react swiftly and effectively to any future developments that may, once the current crisis is over, again threaten to undermine financial stability.

1.2 Feedback on any issues raised by *The Turner Review* should be provided as part of the feedback to this DP, following the procedures set out on page 3.

Background

1.3 At this stage of the crisis many reports have already been written about its causes and what the responses should be. However, while some changes to the international regulatory and supervisory framework have already been made and further work is under way, conclusions as to the scope of the fundamental reforms that are clearly needed have yet to be reached. Work to this end is currently under way within the G20, the Financial Stability Forum (FSF) and the three main global regulatory standard-setting bodies – the Basel Committee on Banking Supervision (BCBS), the International Organization of Securities Commissions (IOSCO) and the International Association of Insurance Supervisors (IAIS). In addition, similar work is under way in various fora within the EU. There is clear consensus that the outcome must be a significantly stronger global regulatory and supervisory framework.

1.4 The new regulatory framework that emerges in the medium term must support a sound and sustainable international banking system that engenders competition and will be capable of delivering the essential intermediation services that economies and

consumers need. The transition from here to the 'new normal' will be immensely complex and challenging. The issues involved go well beyond the international regulatory framework and are not covered in this DP.

Outcomes this DP is seeking

1.5 In putting forward this DP, the FSA is seeking to achieve five outcomes for the global banking regulatory and supervisory framework:

i) the global banking system is better capitalised and more resilient to liquidity shocks throughout the business cycle;

ii) the regulatory framework in general, and its capital component in particular, are explicitly counter-cyclical;

iii) supervisory, crisis management and resolution arrangements for cross-border financial services groups are effective and reflect the interests of host countries as well as those of the home state;

iv) any material risks to financial stability posed by unregulated activities or firms are identified and controlled to the extent possible; and

v) macro-prudential and other risks to financial stability are identified at both the international and national levels and effective action is taken to mitigate them.

1.6 This DP is intended to stimulate debate, not to pre-empt the outcome of decisions by the international regulatory standard setters on the new regulatory framework. Although the FSA strongly believes that these are the issues that need to be tackled, the precise solutions will inevitably differ in some respect from those set out in this DP. What matters is that the solutions deliver the right regulatory outcomes.

1.7 Achieving these outcomes will deal with the significant shortcomings in regulation and supervision that have been exposed by the current crisis. However, it is clear that these shortcomings were not the sole cause of the current crisis. Despite the essential safeguards that regulation and supervision provide, they also have to operate in the right overall framework. The other constituents of this framework include: monetary and fiscal policy (including, in the very short term, the policy responses to the current recession); the provision of liquidity by central banks to the banking system; the responsibilities of boards and senior management of regulated firms; the resolution framework, including deposit guarantee schemes (DGS); and the market discipline provided by, among others, shareholders and institutional investors. Although these constituents all have a significant bearing on overall financial stability, they are not the subject of this DP.

1.8 Against this background, this DP concentrates on the main issues on the international regulatory agenda, recognising that matters such as capital, liquidity, the regulation of credit rating agencies (CRAs), market structure and transparency and the scope of regulation are most effectively addressed at the global level. The absence of new internationally agreed standards in these areas may lead to regulatory arbitrage and competitive distortions, as well as sowing the seeds of the next crisis. In view of the importance of this work, in the unlikely event that international standards cannot be

agreed, the FSA may decide to take unilateral action in some of these areas. However, any such step would be subject to full consultation and cost benefit analysis in the usual way, and would take full account of the impact of the timing of implementing any new measures.

1.9 Notwithstanding this focus on the international agenda, the DP also includes a number of important issues that are immediately and directly relevant to the FSA's own priorities. Principal among these is Section 11, which sets out the FSA's regulatory philosophy and approach.

What went wrong?

1.10 Section 2 reproduces the analysis of the causes of the crisis that is set out in *The Turner Review*. It also has two boxes that highlight issues relating to Lehman Brothers and AIG, all of which have had far-reaching impacts and have informed the FSA's thinking on the issues considered in this DP.

The role of inadequate capital and liquidity

1.11 The first phase of the crisis was characterised by extreme illiquidity in financial markets, affecting both funding and market liquidity. However, in the course of 2008 serious concerns about the adequacy of banks' capital emerged, and while liquidity concerns remain acute, there is no doubt that the current priority is capital. Some of the concerns about capital clearly relate to the very short term and the need for banks around the world to have capital both to absorb losses and support lending into the real economy to avoid exacerbating the current downturn.

1.12 The main focus of this DP is on the revisions to the international capital adequacy framework for banks, which are needed to restore market and consumer confidence in both regulation and, crucially, in banks themselves. The proposals in this DP set out how the FSA would like to see the international capital framework operate in the medium term, across the whole business cycle. The FSA will not seek to impose changes on the firms it regulates until the current crisis is over and confidence has been restored. It will continue to urge its international counterparts to take the same approach. That said, there is every sign that this point is universally recognised. Moreover, there will need to be a lengthy transitional period following the date on which any changes to the capital framework take place.

1.13 The evidence from various stages of the crisis indicates significant shortcomings in the international framework for bank capital adequacy. In particular, it is clear that even though banks, both in the UK and elsewhere, held capital above and, in many cases, well above the 8% Basel minimum before the onset of the crisis, this was rapidly depleted to levels that required recapitalisation or government support. In particular, there was not enough high quality capital, such as Core Tier 1,[1] to absorb the losses the banks were facing while allowing them to continue as a going concern.

1 For the purposes of this DP a working definition of core capital – based on going concern loss absorbency – includes ordinary shares and reserves, adjusted for deductions and prudential filters which would be allocated in whole or in part to Tier 1 under the current framework. There is no international agreement on a definition of Core Tier 1 although this is being examined in some international working groups.

1.14 It is clear that the amount of capital held against risks in the trading book was too low, caused in large part by shortcomings in model-based approaches to market risk. The absence of any counter-cyclical capital requirement, coupled with rising leverage and the dilution in capital standards, contributed to the significant shortfalls in capital currently being faced by banks around the world. Although less directly linked to issues of capital, the absence of minimum standards on funding liquidity and rising levels of asset encumbrance, as banks have had to resort to greater use of the secured funding market, have added to the overall vulnerability of the global banking system.

1.15 The solutions to the capital and related funding issues set out above come in two forms:

- micro-prudential proposals designed to strengthen the capital framework at the level of the individual bank; and
- macro-prudential proposals designed to strengthen the resilience of the banking system as a whole.

Micro-prudential policy

1.16 The FSA believes that the BCBS and the EU need to agree to a material strengthening of the international micro-prudential capital framework for banks:

- banks must hold more high-quality capital with loss-absorbing ability, principally Core Tier 1 capital, within their overall mix of capital. In many jurisdictions, including the UK, the current effective regulatory minimum for Core Tier 1 is 2% of Risk Weighted Assets (RWAs). It may be difficult for an internationally active bank to operate credibly at this level;
- although 'non-core' capital (both other Tier 1 instruments and Tiers 2 and 3) should continue to have a role, it needs to be subject to a thorough review to ensure that only those elements that are capable of supporting a firm on a going-concern basis are treated as eligible capital. There is also potentially, within non-core capital, a role for contingent capital that can convert into Core Tier 1 capital at an early stage when the latter begins to be depleted. This review should consider the extent to which, for the largest internationally active banks, any form of capital other than Core Tier 1 is relevant given that – as is evident from experience in the current crisis – it is very unlikely that national governments will allow such banks to become a 'gone concern';
- the adoption and use by banks on the Internal Ratings Based (IRB) approach of 'variable scalars' or equivalent measures, when calculating their credit risk related capital requirements. The effect of this should be to reduce significantly the cyclicality of credit-risk related capital requirements;
- the forthcoming strengthening of trading book capital requirements by the BCBS will go some way to reducing the limitations of trading book capital and deliver significantly higher capital in the trading book. However, it is clear that the current crisis has exposed fundamental flaws with the approach taken to market risk generally. So a fundamental review of the trading book regime is needed, both to ensure that appropriate capital standards are developed and that only assets and

allocated positions that meet stringent qualifying conditions are allowed into the trading book in the first place;

- adequate minimum standards on funding liquidity. The FSA has recently consulted on a significantly strengthened liquidity framework for banks operating in the UK.[2] The importance of effective liquidity management during the recent crisis has been demonstrated by the fact that in some cases it has been pivotal in determining whether or not a bank has been able to survive as a going concern;

- the current crisis has shown how leverage, if left unchecked, can seriously undermine financial stability. Equally, experience in some of those countries that already have a leverage ratio has made it clear that it is not a panacea, although it may well have had a role in keeping capital in the system. The FSA's analysis indicates that there is a role for a leverage ratio to complement a revised and strengthened framework for risk-based capital. Such a ratio would provide a regulatory backstop that would reduce the incentive to economise on capital, undermining minimum capital standards over time. Information about leverage at the individual bank level will also give insights into the growth of leverage across the system as a whole.

Macro-prudential policy

1.17 The proposed strengthening of the micro-prudential framework needs to be accompanied by a series of measures to enhance the resilience of the banking and wider financial system as a whole. One of the key deficiencies of the past approach, both in the UK and elsewhere, was that it was not designed to reflect the fact that many of the most important challenges in banking regulation and supervision are systemic rather than idiosyncratic. This needs to change. Consistent with this, the FSA considers that:

- the international capital framework should be amended so that it includes a strong counter-cyclical mechanism, going well beyond those elements of the current Basel II framework that seek to address procyclicality. This mechanism should ideally be formula-based, requiring banks to build up buffers while the cycle is in the upswing so that they may be drawn down in the downturn;[3]

- there is a clear need for a discretionary macro-prudential framework at the global, regional and national levels. In the UK, the FSA proposes to implement a macro-prudential framework in partnership with the Bank of England. This will require close cooperation and joint analysis to identify emerging system-wide risks. Decisions need to be taken as to how best to mitigate those risks; once taken, the decisions in relation to individual firms need to be implemented by FSA supervisors. In principle there are attractions to a joint decision-making structure that considers financial stability risks and what action needs to be taken to reduce those risks;

- the adoption of a core funding ratio to help ensure that banks' asset growth is supported by stable funding sources, such as retail deposits and long-term

2 Strengthening liquidity requirements (CP08/22): www.fsa.gov.uk/pubs/cp/cp08_22.pdf – these proposals are consistent with recently produced BCBS and Committee of European Banking Supervisors' (CEBS) guidelines on liquidity.

3 It may be necessary to use different measures for the trading book and the banking book, due to differences in the capital requirements and the appropriate metric that would have to be used to capture the size of the trading book.

borrowing. The potential macro-prudential benefits would include more stable and sustainable funding of banks' asset growth and a brake on excessive credit supply.

Accounting treatment

1.18 Much attention has been focused on the extent to which fair value accounting and the adoption of International Financial Reporting Standards (IFRS) have contributed to procyclicality. The FSA's view is that, at the current time, for both conceptual and practical reasons, fair value accounting should continue to be used for derivatives and for instruments held for trading purposes. In both cases, a mark-to-market approach is the correct one. For those assets held for the longer term the 'cost less impairment' approach should be applied and valuations only changed once there is clear evidence that the relevant asset's value has changed. The FSA does not believe that it would be appropriate to extend the use of fair value (in particular applying it on a mandatory basis to bank loans) for the foreseeable future. Items currently accounted for at cost are generally not traded in active markets, so there would be serious challenges in obtaining reliable fair values.

1.19 Although both approaches have well-understood drawbacks, the FSA's conclusion is that both remain fit for purpose, especially in the absence of credible and practicable alternative approaches. The drawbacks in both approaches could be dealt with by the combination of the counter-cyclical measures set out in this DP and the continuing application by supervisors of prudential filters in the limited number of areas where accounting values need to be adjusted for prudential and financial stability purposes. It is also, of course, important for different market participants to look at the accounts, given that their interest and concerns will differ.

Overall impact

1.20 The outcome that the FSA is seeking is a global banking system that is sufficiently well capitalised to withstand the stresses to which it may become subject. At this stage in the debate it is difficult to assess what the impact of a potentially complex package of changes will be on the resulting minimum regulatory capital ratios. RWAs and therefore the amount of capital will have to change to reflect risk, especially in the trading book. The balance of capital will also have to change, so that more weight is placed on capital that is fully loss absorbent in all circumstances. The economic impact of these changes will need careful analysis to inform the new international framework, although it is already clear that the levels of regulatory capital (including the minimum) need to rise significantly. In order to give some indication of the possible outcome, the minimum Core Tier 1 ratio might be 4% of RWAs throughout the cycle (which is consistent with the approach that the FSA has adopted) and the Tier 1 ratio 8%. The dynamic capital mechanism is expected to generate an additional buffer equivalent to Core Tier 1 capital of 2-3% of RWAs at the top of the cycle. It should remain open to supervisors to require a further discretionary buffer above this.

Scope of regulation

1.21 Some financial institutions, activities and products are regulated, while others are not. This results in what is often termed the regulatory boundary issue. Typically the boundary is determined by risks to consumer protection and financial stability. If an entity, activity or product poses risks to these two objectives that cannot be controlled other than by direct authorisation and supervision, the boundary should be drawn to include them, or other steps should be taken to reduce their impact on market stability. However, and particularly in relation to risks to financial stability, the boundary needs to be drawn internationally as well as nationally, given the linkages between the individual national markets that form the global financial system.

1.22 The current crisis has exposed a number of boundary issues, with both maturity transformation and leveraging being undertaken on significant scale by entities outside the regulatory boundary as well as by those within it. Moreover, the regulatory tightening that is both needed and already under way will create new incentives to try to put certain activities outside the boundary.

1.23 Any response to boundary issues has to be internationally coordinated to be effective. In the first instance supervisors must ensure that their solo and group supervisory approaches to regulated firms give them full visibility of any relationship, whether financial, reputational or governance-related, to an associated unregulated party. Supervisors should also understand how regulated firms and the group (including holding companies) manage these relationships, and set appropriate capital, liquidity, stress testing requirements and, if needed, prohibitions on certain types of relationships at solo and group levels. This will assist in identifying and monitoring risks and mitigating any future risks from unregulated parts of the group and structures, such as asset-backed commercial paper (ABCP) conduits and structured investment vehicles (SIVs).

1.24 In relation to other types of unregulated activity, the FSA believes that the response should be in the form of a series of rapidly escalating steps that would need to be taken by the international regulatory community:

(i) supervisors must understand regulated firms' on and off-balance sheet exposures to, and relationships with, unregulated entities engaging in financial services activity, how these are managed by the firm at group and solo level and set appropriate requirements and limits on such exposures, which could at the limit involve a prohibition on dealing with unregulated entities. This provides the basis for an 'indirect' approach to dealing with unregulated firms, in effect by limiting the damage that they can inflict on the regulated sector. A number of jurisdictions, have pursued this approach in relation to hedge funds;[4]

(ii) for the indirect approach to be effective there must be strong surveillance and other early warning systems (EWS) at the global level so that concerns and concentrations can be identified at an early stage and turned into concrete steps and action. This points to enhancing the role of the IMF and FSF;

4 The FSA does, of course, regulate hedge fund mangers operating in the UK, as do some other jurisdictions. But this should not be confused with the regulation of the underlying funds, which are typically domiciled elsewhere.

(iii) in situations where there are insufficient financial or other connections between regulated and unregulated entities to make the indirect approach work, supervisors need powers to request information directly from unregulated entities whose activities present risks to financial stability or consumers. This information, once collated, needs to be shared with other supervisors to enable the full scope of these unregulated activities to be monitored;

(iv) ultimately it would be desirable for authorities to have reserve powers to bring new types of activities inside the regulatory boundary or to impose other requirements when the risks that they pose to financial stability or to consumers cannot be controlled effectively by other means. These powers will need to be capable of being deployed quickly and internationally.

Systemically important firms

1.25 In the current crisis, much of the focus has been on a relatively small number of very large, internationally active financial services groups. The case of Lehman Brothers illustrates that it is very difficult to subject such firms to normal bankruptcy proceedings without severely adverse repercussions across global markets. Consequently, governments around the world have increased their interventions into the banking system to ensure that similar situations do not arise, providing very extensive recapitalisation and liquidity support. There is therefore an argument that in steady state such firms should be subject to higher capital and other requirements to reduce further their probability of failure. Such additional requirements would reflect the fact that such firms are, in certain respects, too big to be allowed to fail.

1.26 The FSA has given careful consideration to the case for setting higher, across-the-board requirements for systemically important firms. Such requirements might be in the form of higher capital and liquidity. Work to date suggests that a number of practical issues and difficulties would arise in applying a set of across-the-board requirements to a pre-determined list of systemically important firms. However, these issues are worth considering further. In the first instance, the FSA will continue to use its risk-based approach to determine, on a case-by-case basis, whether any additional supervisory requirements need to be imposed on particular firms, paying particular attention – as it does now – to the largest firms.

1.27 The FSA has also considered whether the range of activities that systemically important banks are allowed to undertake should be restricted, specifically whether they should be prohibited from undertaking higher risk activities. The FSA is not convinced that there is a case for this, provided that the international regulatory framework is strengthened along the lines set out in this DP. And even if 'narrow banks' were to be created, it is not clear that they could be insulated from the higher risk activities that will continue to be carried out somewhere in the system. However, it is clear that banks undertaking substantial higher risk activities will be subject to more intensive and intrusive risk mitigation measures imposed by supervisors as well as new capital and liquidity requirements that better reflect the risks. At the margin, this may encourage some banks to focus more on traditional banking activities.

1.28 One of the consequences of the current crisis is that banking markets around the world have become more concentrated as weaker firms have either exited the market entirely or have been acquired by larger firms. This process of consolidation is a necessary part of reducing any further threats to financial stability and restoring confidence in the financial system. However, looking to the medium term and beyond, the net effect of this process is likely to reduce competition in the market for various banking services (as well as potentially creating increasingly large and complex groups which present particular challenges in terms of their supervision – as set out below). This subject goes well beyond the scope of this DP and it is important that the tools available to supervisors are not thought of or used as substitutes for the tools and remedies available to the competition authorities. That said, supervisors need to be mindful of the risk that reduced competition may further blunt market discipline and recognise that the competition authorities and competition regulation may play an increasingly important role.

Groups

1.29 The crisis has highlighted a number of the risks and issues that can arise from large, international group operating structures, particularly where these span a number of jurisdictions. Clearly there are significant benefits and efficiencies that flow from such structures, such as centralised management functions and group capital and liquidity planning.

1.30 Such structures pose a number of challenges for supervisors. The crisis has also demonstrated the complex issues that arise when large, international groups with highly integrated organisational structures get into difficulty and, in some cases, ultimately collapse. In these circumstances, it is likely to be very difficult to achieve the orderly resolution or sale of one (national) business because it will be so integrated into the wider group, often in ways that span different jurisdictions.

1.31 The FSA believes the right response is to balance scrutiny of the integrated business-line management structure adopted by such groups with a clear focus on the integrity of legal entities that form part of the group. At the limit, supervisors may require changes to groups' financial, management and operating structure where they pose unacceptable risks to financial stability or consumers, or impose other restrictions.

1.32 A key element to effecting these changes is the ability to ensure that appropriate action can be taken at the appropriate level within a group. Groups often contain a number of different entities and/or a parent that may or may not operate in the regulated sector and may also be located in different geographical jurisdictions. The focus should be on increasing understanding between supervisors of the risks posed by intra-group relationships. Supervisors must have the relevant information to enable them to coordinate their action at the appropriate level within the group to address risks posed to individual firms by intra-group relationships (including decisions made by a parent or operation of an entity outside the regulated sector). This may require an extension of supervisors' powers over specific strategic entities within a group (including parent holding companies).

1.33 As part of this, it is vital to establish an appropriate regulatory treatment for on and off-balance sheet assets (including special purpose vehicles (SPVs), SIVs and conduits) that are set up, sponsored or managed by entities in the group to establish their impact on the group's consolidated financial position and the position of the regulated entities that may have relationships (financial or reputational) with these entities. Supervisors must therefore ensure that group supervisory approaches to regulated firms give them full visibility of any exposure to unregulated parties and off-balance sheet assets.

International architecture

1.34 The current crisis, reflecting the developments in the world economy, has been truly global in its nature and has highlighted significant shortcomings in international regulatory arrangements. Growing risks were not properly identified and monitored, standard-setting bodies (and the implementation of their standards), as well as regulatory authorities, varied in their effectiveness and cross-border crisis management arrangements did not work well. The FSA (along with HM Treasury and the Bank of England) is therefore committed to working internationally to devise global solutions and reshape the international architecture. Work should be concentrated on four discrete, but interrelated, areas: EWS and how to act on the risks identified; implementation of internationally agreed regulatory standards; regulatory cooperation (including colleges of supervisors); and crisis management. Much relevant work is already under way as part of the G20, FSF and EU processes.

Early warning and challenge

1.35 More effective identification of emerging risks to financial stability is clearly needed and the FSA believes that a new EWS should be developed. This needs to be able to call on sound analysis, to provide 'apolitical' challenge to national authorities and counterbalance excessive 'group-thinking' or herd behaviour. This would need to be provided by a global institution with a strong macroeconomic capability. The IMF (with some changes in its focus and staffing) and the FSF would be best placed to provide such an EWS function, perhaps in combination with greater peer review of national regulators' macro-prudential tools. When such an EWS does issue warnings, there needs to be a mechanism to ensure that powerful countries, and not just less influential developing countries potentially dependent on support from the international system, are under an obligation to respond.

1.36 The international regulatory standard setters, such as the BCBS, the IAIS and IOSCO, have all reviewed the vulnerabilities brought to light by recent events. They have reprioritised existing work streams, as well as instigating new ones in the light of these (examples include the work of the BCBS on capital and liquidity, the IAIS's work on internationally active insurance groups and IOSCO's work on unregulated markets, products and entities). This has aligned their work programmes with the priorities of the FSF and the G20.

Implementation of standards

1.37 The FSA believes that, in addition to strengthening policy frameworks, there needs to be an increased focus on how agreed standards are implemented by national authorities in practice. A natural starting point for this is the standard-setting bodies themselves. In this regard the creation of the Standards Implementation Group in the BCBS[5] is a very positive development. The IMF's FSAP programme also currently plays an important role in assessing the effectiveness of implementation. The FSA sees a strong case for continuing with a cross-sectoral approach to the assessment of standards' implementation and would wish to see more thought given to the best approach to this, specifically whether it is something on which the IMF should continue to lead or whether a form of peer review, probably reporting to the FSF, would be more effective.

Supervisory cooperation

1.38 There has been a relatively long tradition of international cooperation in supervisory colleges for the largest groups. Colleges supplement the very important bilateral working contacts between supervisors. The FSA is supporting moves to improve the effectiveness of colleges, to facilitate better coordination of risk assessment work, cooperation and information sharing. The FSF's work in this area is very useful. In particular colleges should provide a forum for the key regulatory authorities involved in the supervision of an internationally active group to exchange views on the totality of risks to which the group is exposed, their implications for the regulated entities within the group and to consider the management's ability to manage and mitigate those risks.

1.39 The EU has also recently embraced the use of colleges in the development of its legislation. It is essential to ensure that any future EU colleges complement and mesh with global colleges for the largest firms. Colleges which are unwieldy, because (for largely political reasons) they bring together more parties than are necessary for the supervision of the group will add little. Similarly, if flexibility is lost because colleges' operating methods are enshrined in inflexible detailed operating guidelines, effective supervision will be made more difficult.

1.40 Colleges will form part of an interlocking system – they will concentrate on the micro-prudential issues, and so will both need input from the EWS and be able and willing to provide information to the EWS about emerging macro-prudential risks.

Crisis management arrangements

1.41 The current crisis has also demonstrated a clear and pressing need for significantly improved arrangements for the management of crises involving cross-border financial groups. These will involve the creation of crisis management groups. Work in this very important area is being taken forward by the FSF. Recent events highlight the need for focused but flexible groups that can react quickly, aided by having access to high-quality information. The lessons of the current crisis will need to be learnt and incorporated into any EU arrangements, which, though regional by nature, will need to complement global arrangements.

5 www.bis.org/press/p090108.htm.

1.42 One key function for crisis management groups in non-crisis times could be the development and maintenance of a firm- or group-specific winding-up plan, which would be put into operation in the event of failure. This would help provide some clarity around a likely course of action to national authorities when problems arise and also allow potential obstacles to the orderly management and resolution of a cross-border group to be highlighted and addressed when time is available. Such obstacles could include clashes between differing insolvency regimes or situations where the group or firm's failure would create significant costs (contagion, spillovers). In some cases, supervisors might require changes to be made to the operating structure of the group if this is the only way to contain the costs and wider impacts to an acceptable level.

Branching and passporting

1.43 The treatment of global groups and their foreign branches has caused particular problems in the UK during the current crisis. Although most branches of third-country banks have operated without problems, having branches of foreign banks operating in another jurisdiction (known as the host) means placing significant reliance on the home country supervisor to perform adequate prudential supervision of the firm and (in the case of EEA banks) protect consumers through their DGS. In the case of EEA branches, host supervisors also currently have very little oversight of the activities of the local foreign branch, let alone the risks facing the firm as a whole. The insolvency of Landsbanki illustrates a weakness in the current European approach to a single market in retail banking and the FSA believes the approach to bank branch passporting rights, at least as they apply to branches conducting retail business, requires urgent review.

1.44 For financial institutions entering the UK market from outside the EEA, the UK assesses the home authority's regulation (including whether it has met the BCBS Core Principles for effective banking supervision) and decides whether to allow the branch (in which case, the FSA places reliance on the home state's supervision of the firm) or insist that the incoming entity take the form of a subsidiary (which has a separate legal personality from the parent and over which the FSA can more effectively exercise direct prudential control). However, recent events have highlighted some problems even after the UK's assessment process. If branching by non-EEA banks is to continue the FSA must be in a position where it is confident about the quality of supervision in the home country. It will also be important to ensure the host supervisor is able to gain access to timely and complete information about the parent and the risks it is facing. Without such arrangements the FSA will consider whether it should insist that the UK presence of a non-EEA bank always take the form of a subsidiary (with local capital to safeguard the interests of UK depositors and other creditors in the event that the group collapses).

1.45 Within the EEA, formal 'passporting' arrangements exist that give banks incorporated in one EEA Member State the right to establish branches in any other. These powers, which derive from the EU treaties, allow banks in one country to operate as branches in another, with the supervision of solvency and of whole bank liquidity resting with the home country supervisor. Host country supervisors have only limited powers

relating to the supervision of local liquidity in cooperation with the home supervisor, conduct of investment business and financial crime.

1.46 This system led to a number of EEA banks being able to increase rapidly their business in the UK, and increase the deposits held from UK consumers, with comparatively little control by the FSA. Under the Deposit Guarantee Schemes Directive, host country deposits are protected by the home country's DGS, with the host country's own scheme potentially providing a higher level of protection if the home country's scheme provides less cover, and the bank has asked to 'top up' into the host country's scheme. Events during the crisis led to serious concerns about the quality of the supervision of some of these banks and, in the case of Iceland, the ability of the DGS (and ultimately the sovereign state) to provide adequate protection to UK consumers. In practice, the FSA could do little about this situation and considers it unacceptable given the risks posed to UK depositors.

1.47 Measures that aim to improve this situation are in train, particularly strengthening the 'host' supervisor access to information and increasing the minimum compensation limit for EU DGS to €50,000, with a further increase to a maximum harmonised limit of €100,000 likely from the end of 2010.[6] However, the FSA does not believe these are sufficient. In particular increasing the maximum limit without any assurance that the home state DGS will be able to fund any necessary payout gives only limited comfort. The FSA would like to see serious consideration given to introducing a rigorous system within the EU arrangements of peer review to ensure effective home country supervisory regimes and deposit guarantee arrangements, together with increased formal powers for host supervisors in their dealings with the home state (for example host country power to have more direct oversight of branches and to be entitled to greater engagement with the home country supervisor on whole firm issues).

1.48 In the event that satisfactory arrangements cannot be implemented effectively, more radical options need to be examined, including EU-wide solutions. Although the FSA does not at this stage advocate it, one option that could be explored is the establishment of an EU framework (which at one extreme could be a pre-funded EU-wide deposit guarantee scheme) which could potentially cover all EU banks or, more likely, those EU banks which use the 'passport' to branch elsewhere in the EU.

1.49 If no satisfactory solutions along the lines of those set out above can be achieved, restrictions could be placed on passporting to prevent retail deposit-taking by EEA banks on a branch basis or that the passport should be withdrawn entirely for banking business. All relevant entities would then take the form of subsidiaries, which does not overcome every problem, but would enable host supervisors to deploy their full array of supervisory tools and the domestic DGS would apply.

Oversight of regulation at a European level

1.50 In addition to the foregoing, the FSA proposes the establishment of an EU body for the oversight of regulation at the European level. A key feature of any such institution is that it would recognise that supervisory authority is inextricably linked

6 Subject to a report by the European Commission to establish that such an increase and such harmonisation are appropriate and financially viable for all Member States.

with fiscal responsibility and political accountability. For as long as the latter remain national, responsibility for supervising financial services firms would remain with national supervisors, familiar with national markets, financial systems and consumers. However, creating a new institution would mean that the oversight of regulation, including rule-making, would be centralised.

1.51 Such an EU body would be a radical development of the existing Lamfalussy Committees. It would take on their dual functions of assisting with the development of EU legislation and bringing about convergence in supervisory practice. It would be operationally independent of the EU institutions, have a full-time staff and effective rule-making powers. The body would oversee the peer review of supervisory practice in the EU (which could assist in improving the oversight of branches as mentioned above) and issue non-binding guidance on the interpretation of the rules it had made. It could also oversee the operation of colleges of supervisors and cross-border stability groups (the EU's proposed crisis management groups) for the larger EU financial services conglomerates. In order to ensure adequate consideration of the macroeconomic and macro-prudential risks and mitigating actions, this institution should liaise with the European System of Central Banks (ESCB).

Markets issues – remuneration

1.52 Concern is widespread that remuneration policies, particularly those adopted by the large, globally active banks and investment banks have contributed to the market crisis. The tendency to reward the achievement of short-term revenue and profit targets gave staff incentives to pursue high-risk activities that provided higher income in the short-term despite exposing the institution to higher potential losses in the longer run. The FSA has been working in close cooperation with other overseas regulators under the auspices of the FSF to agree an approach to remuneration, recognising that this is an area in which an international framework is needed.

1.53 The FSA has recently set out a Code of good practice for remuneration policies and it is now publishing a document alongside this DP which explains further FSA policy in this area and how this work will be taken forward.[7] This Code is fully consistent with the FSF's work and emerging conclusions. A key consideration will be how widely the Code should be applied and whether it should be enforceable as part of the Handbook. Whatever final decision is made about the Code, firms should expect a significant increase in supervisory attention on remuneration polices from the FSA and other supervisors.

Markets issues – credit rating agencies (CRAs)

1.54 The current crisis has raised a number of serious concerns about the role of CRAs, particularly in relation to their rating of structured products and how these ratings were used by investors and counterparties. The FSA supports the work already under way in the EU and IOSCO to promote more effective oversight and supervision of CRAs through the implementation of an appropriate EU registration scheme for CRAs alongside greater consistency, cooperation and information sharing, with respect to CRAs, between regulators at the global level.

7 www.fsa.gov.uk/Pages/Library/Other_publications/Miscellaneous/2009/cop_remun.shtml.

1.55 This work will help address weaknesses in the credit rating process. It should lead to improved governance and oversight by senior management of the rating process to promote its quality, mitigate conflicts of interest and ensure appropriate resources are available to review and update ratings in a timely manner. CRAs should also put in place appropriate processes to disclose information to the market regarding their ratings methodologies and performance. Given the global nature of CRAs' business, the FSA considers it essential for there to be international consistency in the oversight of the conduct of CRAs' business to avoid overlap, confusion and dislocation in global capital markets.

1.56 These improvements are necessary but will not address the shortcomings in the use of ratings by the financial industry. It remains the responsibility of investors and counterparties to do their own due diligence and research when making financing decisions and to use credit ratings responsibly.

1.57 The regulatory framework places significant reliance on external ratings as part of the calculation of capital requirements under the Capital Requirements Directive (CRD). Although recent evidence suggests that ratings for corporate, financial institutions and sovereign issues have continued to perform broadly as expected, there is evidence that the ratings of structured finance products have proved less reliable. As a consequence, the FSA believes that there needs to be a fundamental review of the use of structured finance ratings within the Basel II framework.

1.58 The use of ratings 'triggers' in financial products and contracts may, if ratings change rapidly, present significant challenges to a firm in managing its risks and obligations. It is essential that firms take full account of the existence of such triggers in their stress testing and contingency funding plans. Equally, the FSA will work with the investor community to raise awareness that the inclusion of such triggers in contract documentation, while intended to protect their interests, may perversely undermine them by precipitating the rapid collapse of the entire firm. This is another area in which action by individual entities can have significant system-wide consequences. As such it is a further example of the type of issue that will need to be tracked as part of macro-prudential surveillance.

Markets issues – market policies

1.59 Markets need to be appropriately transparent and resilient in order to underpin financial stability, as well as promote efficiency and investor protection. UK markets are particularly international in their nature and participation. Strong and effective arrangements in the UK will help underpin the resilience of global markets. Poor understanding of the risk associated with certain capital market products, such as RMBS and CDOs, has contributed to the current crisis and significantly damaged market confidence. The FSA is supporting efforts in IOSCO and CESR to review and enhance initial and ongoing disclosure requirements as well as conduct of business principles. Improving the effectiveness of CRAs' ratings of securitised products will also be an important step. The UK also introduced legislation on covered bonds in 2008, with the subsequent registration of relevant covered bond issues, which among other outcomes, is designed to improve confidence in domestic covered bond markets.

1.60 A lack of transparency around trading activity in over-the-counter (OTC) instruments was not, in the FSA's view, a cause of the crisis. However such transparency may need to be enhanced in order to strengthen markets for the future, and the FSA is working with counterparts in IOSCO and CESR to that end. It is essential that enhancements are fully tailored to the characteristics of each particular OTC product. The FSA is engaging with industry to help inform thinking as to what a sensibly calibrated post-trade transparency regime might look like. The DP sets out a high-level overview of the framework.

1.61 Although market infrastructure performed broadly as expected during the current crisis, the FSA is promoting improvements to OTC arrangements which aim to reduce systemic risk and enhance efficiency. As part of these efforts, the FSA is supporting the introduction of centralised clearing of standardised credit default swap (CDS) transactions. Working with counterpart regulators, the FSA will aim to ensure robust and internationally consistent risk management standards are applied to any CCP which clears these products, and to develop appropriate sharing of information between regulators. Given the global nature of these markets, the FSA will also be pressing for international arrangements which enable optimal risk management by firms across jurisdictions, including between the EU and the US, and which would not prevent CCPs from interoperating with each other.

1.62 Particularly in the light of the experience around the collapse of Lehman Brothers, the FSA is reviewing whether there could be arrangements which more effectively support the holding and protection of client positions at clearing houses, and also whether the arrangements for settling defaulted OTC equity transactions could be improved. The DP sets out options for consideration.

FSA supervisory approach and resourcing

1.63 The FSA has reviewed and refined its regulatory philosophy in the light of the events of the last 18 months. The FSA's regulatory responsibilities cover both policy formulation, where the FSA is a participant in largely international process, and supervision, where the FSA recognises that it is fully accountable for its effective delivery.

1.64 The FSA has always considered itself to be principles-based in carrying out its supervisory work, preferring, where appropriate, a high-level articulation of what is expected of regulated firms over prescriptive rules. This enables firms to decide how to align their business objectives with the specified regulatory outcomes. The focus is not on the principles themselves but on judging the results of the actions of the firms and the individuals that the FSA supervises. In this way, a better articulation of the FSA's philosophy is that it is an outcomes-focused regulator, firmly committed to a risk-based and proportionate approach.

1.65 It is important to recognise that such an approach (as with any regulatory approach) is not without risk. No supervisor can seek to prevent firms taking risks, given that risk is a key driver of competition and innovation, and a firm's senior management must always carry responsibility for their actions.

1.66 The FSA has extensively reviewed its supervisory process over the last 18 months and has implemented changes through its 'Supervisory Enhancement Programme' resulting in an enhanced process that delivers 'Intensive Supervision'. These changes represent a significant shift in the FSA's supervisory approach. Part of this shift is a move away from a supervisory focus on firms' systems and controls to one in which supervisors will make judgements of the judgements of firms' senior management and require action if, in their view, the latter pose risks to the FSA's objectives. This is a fundamental change.

1.67 The two key aspects of the Intensive Supervision model that support the FSA's philosophy are an effective risk-identification process, which includes business model risk and interacts with macro-prudential analysis, and a focus on testing whether firms have delivered the right regulatory outcomes. It is essential that supervisors have a detailed understanding of a firm's business model and the risks it poses. The focus on testing for outcomes will be reinforced by the FSA's 'credible deterrence' enforcement philosophy to ensure that firms adhere to the FSA's principles.

1.68 The Intensive Supervision model requires a significant increase in the FSA's supervisory resources. As part of the work leading to the production of this DP the FSA has compared its approach with those adopted in Canada, Spain and the US – the last two of which adopt a 'Bank Examiner' approach to supervision. The results of this review are set out in the DP, in Section 11. Reaching conclusions about the effectiveness of one model over the other is very difficult. However, it seems clear that flexibility to adjust to changing risk and the quality of supervisory resources are key. The FSA's approach will therefore remain one that is based firmly on the quality not quantity of supervisory resource. But the FSA will keep under review the case for moving to a Bank Examiner approach and is prepared to move in that direction if the new model does not deliver the right outcomes.

Implementation and transition

1.69 Section 12 reproduces *The Turner Review* text summarising the recommendations and discussing implementation and timing. Policy today needs to focus on the pragmatic management of the current macroeconomic challenge, while planning for a gradual transition to a better, more stable system for the future. Once international agreements are reached, there will be a transition period, which for some aspects, particularly a new long-term capital regime, is likely to be lengthy and dependent on macroeconomic developments.

ACTIONS REQUIRED TO CREATE A STABLE AND EFFECTIVE BANKING SYSTEM

Capital adequacy, accounting and liquidity

1. The quality and quantity of overall capital in the global banking system should be increased, resulting in minimum regulatory requirements significantly above existing Basel rules. The transition to future rules should be carefully phased given the importance of maintaining bank lending in the current macroeconomic climate.
2. Capital required against trading book activities should be increased significantly (e.g. several times) and a fundamental review of the market risk capital regime (e.g. reliance on VAR measures for regulatory purposes) should be launched.
3. Regulators should take immediate action to ensure that the implementation of the current Basel II capital regime does not create unnecessary procyclicality; this can be achieved by using 'through the cycle' rather than 'point in time' measures of probabilities of default.
4. A counter-cyclical capital adequacy regime should be introduced, with capital buffers which increase in economic upswings and decrease in recessions.
5. Published accounts should also include buffers which anticipate potential future losses, through, for instance, the creation of an 'Economic Cycle Reserve'.
6. A maximum gross leverage ratio should be introduced as a backstop discipline against excessive growth in absolute balance sheet size.
7. Liquidity regulation and supervision should be recognised as of equal importance to capital regulation.
   - More intense and dedicated supervision of individual banks' liquidity positions should be introduced, including the use of stress tests defined by regulators and covering system-wide risks.
   - Introduction of a 'core funding ratio' to ensure sustainable funding of balance sheet growth should be considered.

Institutional and geographic coverage of regulation

8. Regulatory and supervisory coverage should follow the principle of economic substance not legal form.
9. Authorities should have the power to gather information on all significant unregulated financial institutions (e.g. hedge funds) to allow assessment of overall system-wide risks. Regulators should have the power to extend prudential regulation of capital and liquidity or impose other restrictions if any institution or group of institutions develops bank-like features that threaten financial stability and/or otherwise become systemically significant.
10. Offshore financial centres should be covered by global agreements on regulatory standards.

Deposit insurance

11. Retail deposit insurance should be sufficiently generous to ensure that the vast majority of retail depositors are protected against the impact of bank failure (note: already implemented in the UK).
12. Clear communication should be put in place to ensure that retail depositors understand the extent of deposit insurance cover.

UK Bank Resolution

13. A resolution regime which facilitates the orderly wind down of failed banks should be in place (already done via Banking Act 2009).

Credit rating agencies

14. Credit rating agencies should be subject to registration and supervision to ensure good governance and management of conflicts of interest and to ensure that credit ratings are only applied to securities for which a consistent rating is possible.

15. Rating agencies and regulators should ensure that communication to investors about the appropriate use of ratings makes clear that they are designed to carry inference for credit risk, not liquidity or market price.

16. There should be a fundamental review of the use of structured finance ratings in the Basel II framework.

Remuneration

17. Remuneration policies should be designed to avoid incentives for undue risk taking; risk management considerations should be closely integrated into remuneration decisions. This should be achieved through the development and enforcement of UK and global codes.

Credit Default Swap (CDS) market infrastructure

18. Clearing and central counterparty systems should be developed to cover the standardised contracts which account for the majority of CDS trading.

Macro-prudential analysis

19. Both the Bank of England and the FSA should be extensively and collaboratively involved in macro-prudential analysis and the identification of policy measures. Measures such as counter-cyclical capital and liquidity requirements should be used to offset these risks.

20. Institutions such as the IMF must have the resources and robust independence to do high quality macro-prudential analysis and if necessary to challenge conventional intellectual wisdoms and national policies.

FSA supervisory approach

21. The FSA should complete the implementation of its Supervisory Enhancement Program (SEP) which entails a major shift in its supervisory approach with:
    - Increase in resources devoted to high impact firms and in particular to large complex banks.
    - Focus on business models, strategies, risks and outcomes, rather than primarily on systems and processes.
    - Focus on technical skills as well as probity of approved persons.
    - Increased analysis of sectors and comparative analysis of firm performance.
    - Investment in specialist prudential skills.
    - More intensive information requirements on key risks (e.g. liquidity)
    - A focus on remuneration policies

22. The SEP changes should be further reinforced by
    - Development of capabilities in macro-prudential analysis
    - A major intensification of the role the FSA plays in bank balance sheet analysis and in the oversight of accounting judgements.

Firm risk management and governance

23. The Walker Review should consider in particular:

- Whether changes in governance structure are required to increase the independence of risk management functions.
- The skill level and time commitment required for non-executive directors of large complex banks to perform effective oversight of risks and provide challenge to executive strategies.

Utility banking versus investment banking

24. New capital and liquidity requirements should be designed to constrain commercial banks' role in risky proprietary trading activities. A more formal and complete legal distinction of 'narrow banking' from market making activities is not feasible.

Global cross-border banks

25. International coordination of bank supervision should be enhanced by
    - The establishment and effective operation of colleges of supervisors for the largest complex and cross-border financial institutions.
    - The pre-emptive development of crisis coordination mechanisms and contingency plans between supervisors, central banks and finance ministries.
26. The FSA should be prepared more actively to use its powers to require strongly capitalised local subsidiaries, local liquidity and limits to firm activity, if needed to complement improved international coordination.

European cross-border banks

27. A new European institution should be created which will be an independent authority with regulatory powers, a standard setter and overseer in the area of supervision, and will be significantly involved in macro-prudential analysis. This body should replace the Lamfalussy Committees. Supervision of individual firms should continue to be performed at national level.
28. The untenable present arrangements in relation to cross-border branch pass-porting rights should be changed through some combination of:
    - Increased national powers to require subsidiarisation or to limit retail deposit taking
    - Reforms to European deposit insurance rules which ensure the existence of pre-funded resources to support deposits in the event of a bank failure.

List of questions

Section 3: The role of inadequate capital and liquidity in causing instability

Q1: Are there shortcomings in the international prudential framework not already identified in the DP that are relevant to the analysis?

Q2: What are the measures supervisors should take to mitigate the risks to depositors and other unsecured senior creditors of secured funding, taking account of the benefits of such funding where used to an appropriate degree?

Section 4: Solutions through micro-prudential measures

Q3: Do you agree with the proposals to redefine what counts as capital with a stronger emphasis on going concern loss absorbency?

Q4: Should IRB banks be required to use a system such as variable scalars, or equivalent, whose effect is to limit the potential for procyclicality in capital requirements to a level that would be produced by a TTC ratings system?

Q5: Are there any other key issues that the review of trading book capital should cover?

Q6: How should the leverage ratio capture (i) off-balance sheet exposures and (ii) derivatives?

Q7: Should the numerator of the leverage ratio be Core Tier 1 capital or should a broader measure of capital be used?

Section 5: Macro-prudential policy

Q8: Should these reforms be applied to smaller and domestic banks, building societies and investment firms? If so, how can this be achieved in a proportionate manner?

Q9: Do you agree with the FSA's reasons for favouring a range of policy measures to deal with macro-prudential policy issues rather than adjusting the Basel II risk-based capital requirement?

Q10: What should be the focus of the FSA's initiatives on valuation and disclosure in UK banks' accounts so as to maximise their impact on market confidence?

Q11: Do you agree with the FSA's analysis of the implications of accounting standards for procyclicality?

Q12: How best should prudential regulators address the problem of procyclicality through counter-cyclical reserves/buffers?

Q13: Do you agree that serious consideration needs to be given to establishing some form of global supervisory architecture for international audit firms?

Q14: What macro-prudential policy tools should be considered other than those mentioned in this DP?

Q15: What are your views on the effectiveness of a core-funding ratio as a measure to constrain excessive asset growth?

Q16: What types of institutions should be exempt from such a core funding ratio? How would any exemptions limit the effectiveness of the measure?

Q17: To what extent would market discipline and the convergence of supervisory practices be improved by the disclosure of information relating to Pillar 2 assessment? What information would be most useful?

Section 6: Scope of regulation

Q18: Are there other considerations that are relevant to the assessment of the issues and risks posed by the boundary question?

Q19: Is the escalating response set out here the right way to deal with the threats to financial stability and consumer protection posed by unregulated financial activities and institutions? Or should the FSA, along with other regulators, develop an alternative approach?

Q20: What are the implications of subjecting parent holding companies for financial services groups to direct powers to comply with the requirements of the prudential framework?

Section 7: Systemically important firms

Q21: Are there other issues which regulators should take into account when assessing their response to the evidence from the current crisis that some financial institutions have been deemed too big to fail fully? If so, what are they?

Q22: What are your views on the balance between varying the intensity of supervision according to the impact and risk that an individual firm poses, and having policy frameworks and approaches that differentiate across-the-board according to a firm's systemic significance?

Section 8: Groups and intra-group exposures

Q23: Are there other aspects of group structures that the FSA should be taking into account?

Q24: Is the increased focus on group structures and intra-group relationships and increased supervisory cooperation the right way to deal with the threats to financial stability and consumer protection posed by large, international group structures? In what circumstances would a greater focus on individual legal entities be warranted?

Section 9: Responding to events – international architecture

Q25: How can the international architecture be arranged to provide the most effective early warning of threats to financial stability and challenge to national authorities and in an apolitical way?

Q26: Is this the most effective way of organising colleges on the one hand and crisis management groups on the other?

Q27: Do these options represent the right approach to the problems posed by EEA branching?

Q28: Are the functions of rule-making capability and supervisory oversight the right ones to be given to a European institution that has the characteristics described here?

Section 10: Market issues

Q29: Does the DP highlight the correct issues concerning the role of CRAs and the use of their ratings?

Q30: Are the approaches outlined to address these issues appropriate and proportionate?

Q31: What options should a review of the use of structured finance ratings in the regulatory framework consider?

Q32: Is this the most appropriate framework for post-trade transparency or are there other aspects we should be considering?

Q33: Are there other measures which the FSA should be considering or promoting in international fora?

Q34: What other considerations should the FSA take into account with respect to OTC derivatives infrastructure?

Q35: Are any (other) changes to clearing arrangements needed? If so, what should they be?

Q36: Are any changes to settlement arrangements needed? If so, what should they be?

Section 13: Implications for other regulated sectors

Q37: Which of the issues set out for discussion in this DP are most relevant to other regulated sectors?

Q38: Are there any lessons which have been learned in other sectors which could be applied to banking?

2 What went wrong?

The text of this section of the DP reproduces the relevant text from *The Turner Review*

It is important to root decisions about the required regulatory response in a clear analysis of the causes of the crisis. This section presents that analysis in three sections:

- **The global story: macro-imbalances meet financial innovation.**
- **The UK specific story: rapid credit growth, significant wholesale and overseas funding.**
- **Global finance without global government: fault lines in the regulation of cross-border banks.**

2.1: The global story: macro trends meet financial innovation

At the core of the crisis lay an interplay between macro-imbalances which had grown rapidly in the last ten years, and financial market developments and innovations which have been underway for about 30 years but which accelerated over the last ten to 15, partly under the stimulus of the macro-imbalances.

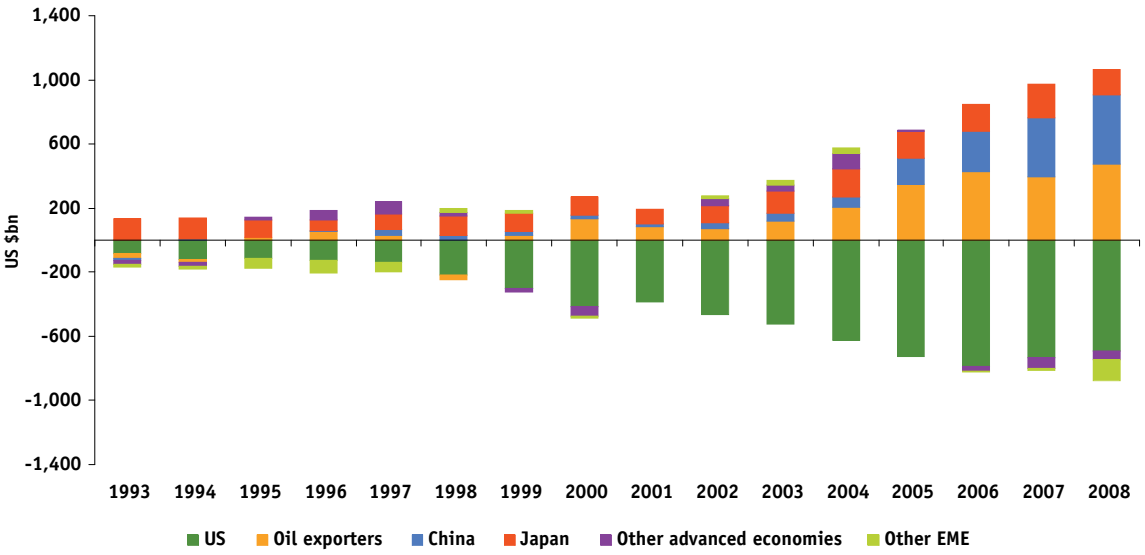
Macro-imbalances

The last decade has seen an explosion of world macro-imbalances (Exhibit 2.1). Oil exporting countries, Japan, China, and some other east Asian emerging developing nations have accumulated large current account surpluses, while large current account deficits have emerged in the USA, but also in the UK, in Ireland, Spain and some other countries.

A key driver of those imbalances has been very high savings rates in countries like China; since these high savings exceed domestic investment, China and other countries must accumulate claims on the rest of the world. But since, in addition, China and several other surplus countries are committed to fixed or significantly managed exchange rates, these rising claims take the form of central bank reserves. These are typically invested not in a wide array of equity, property or fixed income assets – but almost exclusively in apparently risk-free or close to risk-free government bonds or government guaranteed bonds (Exhibit 2.2).

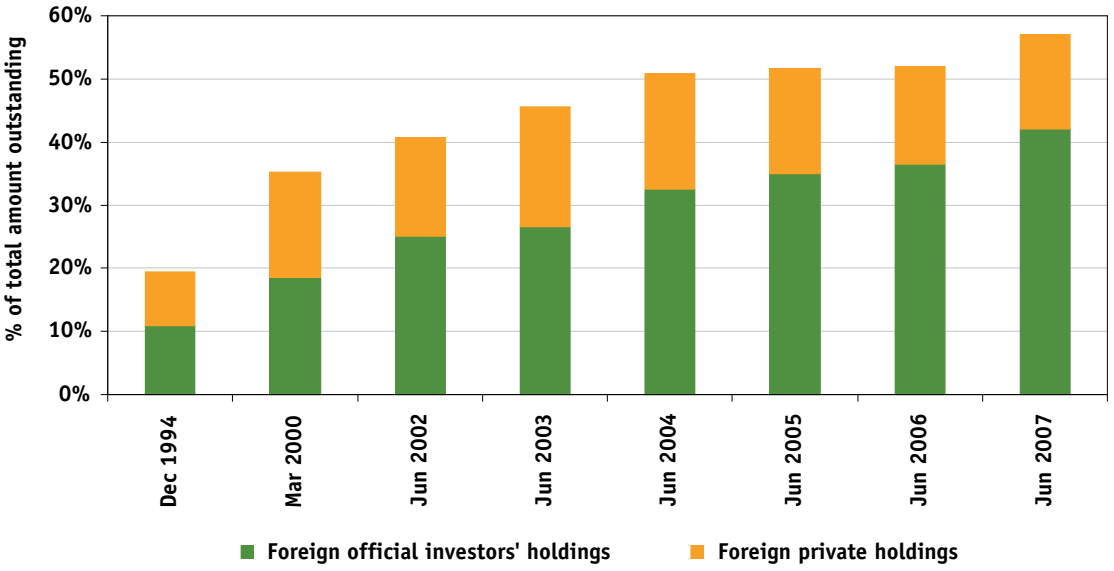
This in turn has driven a reduction in real risk-free rates of interest to historically low levels (Exhibit 2.3). In 1990 an investor could invest in the UK or the US in risk-free

Exhibit 2.1: Global current account balances



Source: IMF, FSA calculations

Exhibit 2.2: Foreign-ownership of marketable US Treasury bonds as percentage of total amounts outstanding



Source: IMF, US Treasury

index-linked government bonds at a yield to maturity of over 3% real; for the last five years the yield has been less than 2% and at times as low as 1%.

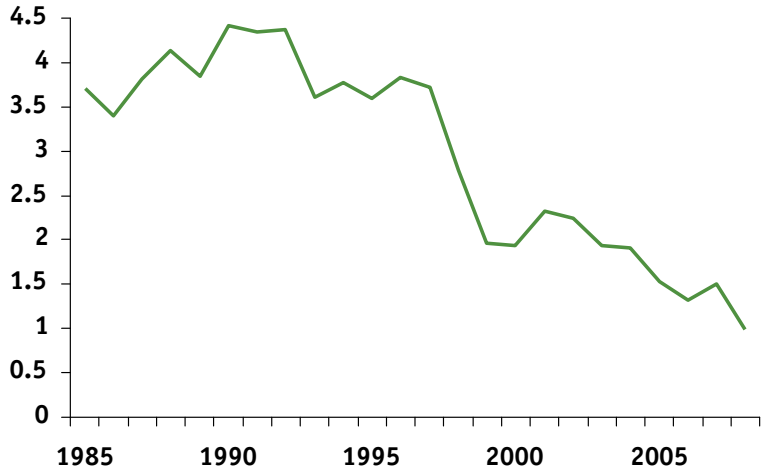
These very low medium- and long-term real interest rates have in turn driven two effects:

- Firstly, they have helped drive rapid growth of credit extension in some developed countries, particularly in the US and the UK – and particularly but not exclusively for residential mortgages (Exhibit 2.4) – with this growth accompanied by a

degradation of credit standards, and fuelling property price booms which for a time made those lower credit standards appear costless.

- And secondly, they have driven among investors a ferocious search for yield – a desire among investors who wish to invest in bond-like instruments to gain as much as possible spread above the risk-free rate, to offset at least partially the declining risk-free rate. Twenty years ago a pension fund or insurance company selling annuities could invest at 3.5% real yield to maturity on an entirely risk-free basis; now it would be only 1.5%. So any products which appear to add 10, 20 or 30 basis points to that yield, without adding too much risk, have looked very attractive.

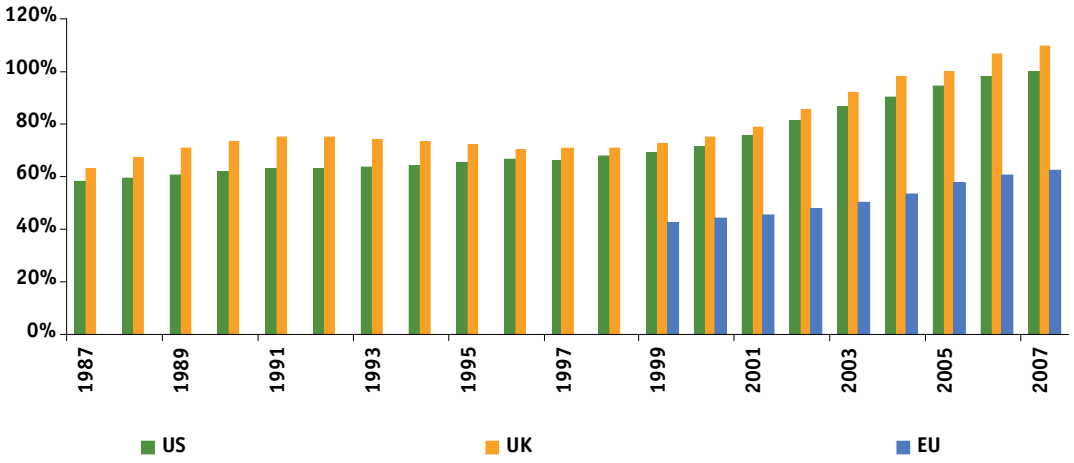
Exhibit 2.3: UK real interest rates (20 year bonds, yield at May 25 or nearest week day)



Note: For the years 1985, 86, 89, 90 and 91 no 20-year-yield is precisely available; the longest available yield (in range 16-19 years) is shown

Source: Bank of England Real Yield curve calculations

Exhibit 2.4: Household debt as proportion of the GDP



Source: ONS, Federal Reserve, Eurodata, Bureau of Economic Analysis, FSA calculations

Financial market innovation

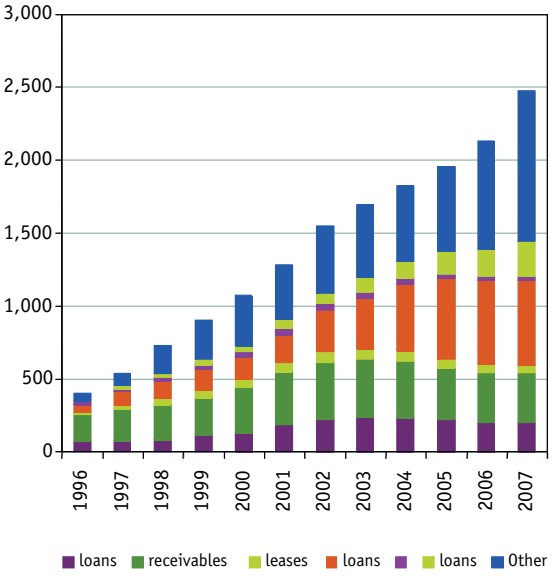
The demand for yield uplift, stimulated by macro-imbalances, has been met by a wave of financial innovation, focused on the origination, packaging, trading and distribution of securitised credit instruments. Simple forms of securitised credit – corporate bonds – have existed for almost as long as modern banking. In the US, securitised credit has played a major role in mortgage lending since the creation of Fannie Mae in the 1930s and had been playing a steadily increasing role in the global financial system and in particular in the American financial system for a decade and a half before the mid-1990s. But from the mid-1990s the system entered explosive growth in both scale and complexity:

- with huge growth in the value of the total stock of credit securities (Exhibit 2.5);
- an explosion in the complexity of the securities sold, with the growth of the alphabet soup of structured credit products; and
- with the related explosion of the volume of credit derivatives, enabling investors and traders to hedge underlying credit exposures, or to create synthetic credit exposures (Exhibit 2.6).

This financial innovation sought to satisfy the demand for yield uplift. It was predicated on the belief that by slicing, structuring and hedging, it was possible to 'create value', offering investors combinations of risk, return, and liquidity which were more attractive than those available from the direct purchase of the underlying credit exposures. It resulted not only in massive growth in the importance of securitised credit, but also in a profound change in the nature of the securitised credit model.

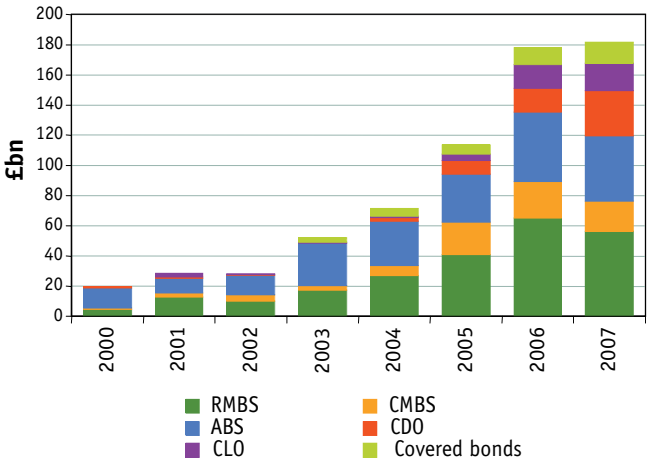
Exhibit 2.5: The growth of securitised credit

ABS – volumes outstanding, US



Source: SIFMA

Securitisation issuance trends in the UK

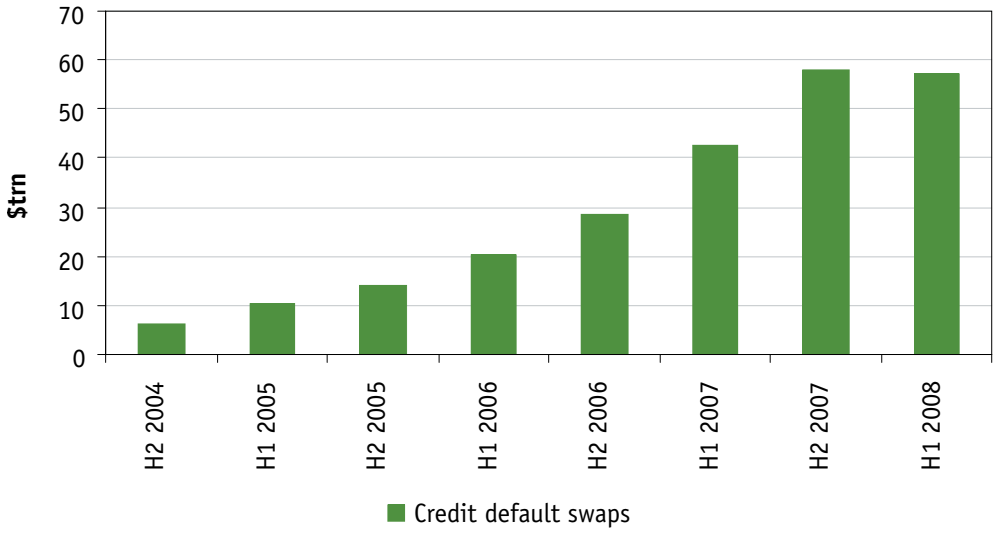


Source: Oliver Wyman

Structured credit: initial proposition and subsequent evolution

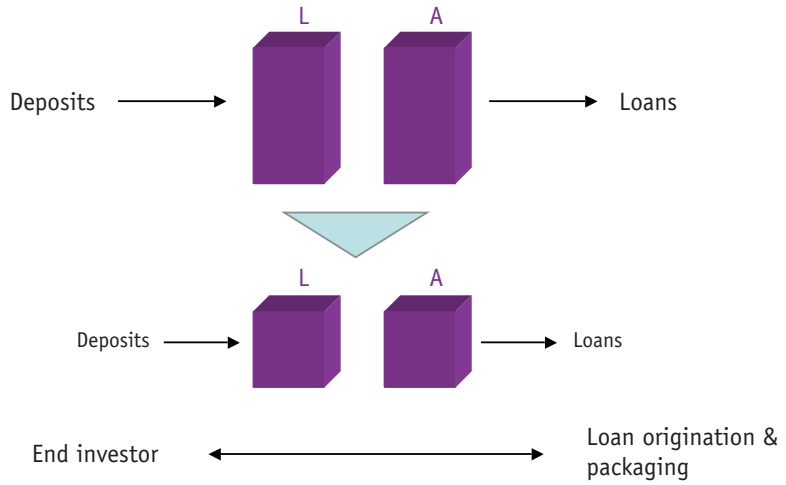
As securitisation grew in importance from the 1980s on, its development was lauded by many industry commentators as a means to reduce banking system risks and to cut the total costs of credit intermediation, with credit risk passed through to end investors, reducing the need for unnecessary and expensive bank capital[1] (Exhibit 2.7). Rather than, for instance, a regional bank in the US holding a dangerously undiversified holding of credit exposures in its own region, which created the danger of a self-reinforcing cycle between decline in a regional economy and decline in the capital capacity of regional banks, securitisation allowed loans to be packaged up and sold to a diversified set of end investors. Securitised credit intermediation would reduce risks for the whole banking system. Credit losses would be less likely to produce banking system failure.

Exhibit 2.6: Growth in oustanding credit default swaps



Source: BIS Quarterly Review, December 2008

Exhibit 2.7: Securitisation: the initial vision
Taking risks off balance sheets



1 See e.g. Lowell Bryan Breaking up the bank (1988) which describes how securitised credit technology will deliver 'better economics, better credit underwriting, better credit risk diversification'.

But when the crisis broke it became apparent that this diversification of risk holding had not actually been achieved. Instead most of the holdings of the securitised credit, and the vast majority of the losses which arose, were not in the books of end investors intending to hold the assets to maturity, but on the books of highly leveraged banks and bank-like institutions (Exhibit 2.8).

This reflected an evolution of the securitised credit model away from the initial descriptions. To an increasing extent, credit securitised and taken off one bank's balance sheet, was not simply sold through to an end investor, but:

- bought by the propriety trading desk of another bank; and /or
- sold by the first bank but with part of the risk retained via the use of credit derivatives; and/or
- 'resecuritised' into increasingly complex and opaque instruments (e.g. CDOs and CDO-squareds); and/or
- used as collateral to raise short-term liquidity.

In total, this created a complex chain of multiple relationships between multiple institutions (Exhibit 2.9), each performing a different small slice of the credit intermediation and maturity transformation process, and each with a leveraged balance sheet requiring a small slice of capital to support that function.

Some banks were truly doing 'originate and distribute', but the trading operations of other banks (and sometimes of the same bank) were doing 'acquire and arbitrage'.[2] The new model left most of the risk still somewhere on the balance sheets of banks and bank-like institutions but in a much more complex and less transparent fashion.

Five key features of this new model played a crucial role in increasing systemic risks, contributing to the credit boom in the upswing and exacerbating the self-reinforcing nature of the subsequent downswing:

(i) The growing size of the financial sector.

(ii) Increasing leverage – in many forms.

(iii) Changing forms of maturity transformation.

(iv) A misplaced reliance on sophisticated maths.

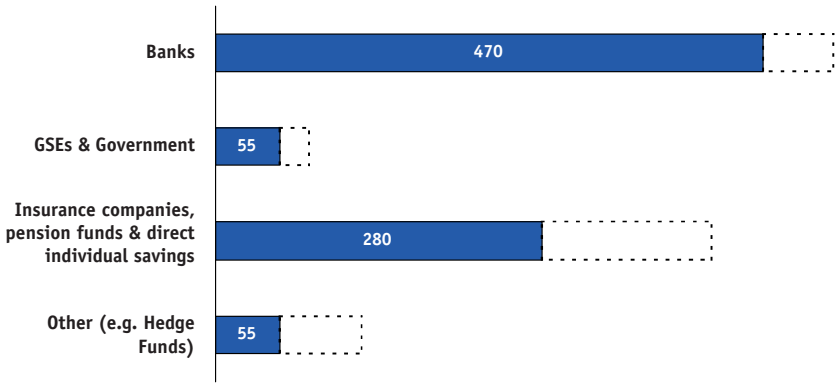
(v) Hard-wired procyclicality.

2.1 (i) The growth of the financial sector

The evolution of the securitised credit model was accompanied by a remarkable growth in the relative size of wholesale financial services within the overall economy, with activities internal to the banking system growing far more rapidly than end services to the real economy.

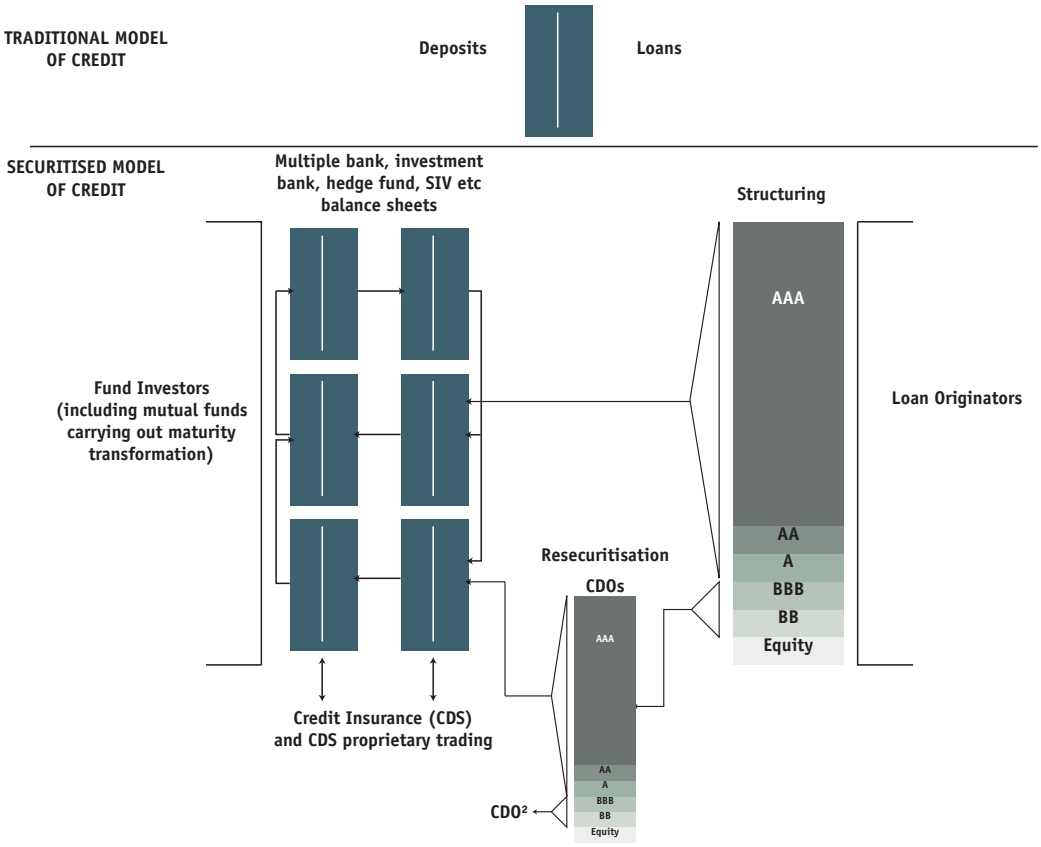
2 However, even the banks which were largely doing 'originate and distribute' would often have to warehouse significant quantities on balance sheet before packaging and distributing, and could be left with liquidity strains and future potential losses if liquidity suddenly dried up (e.g. Northern Rock).

Exhibit 2.8: Estimates of mark to market losses on US credit securities: at April 2008



Source: IMF Global Financial Stability Report, October 2008

Exhibit 2.9: Increasing complexity of securitised credit model

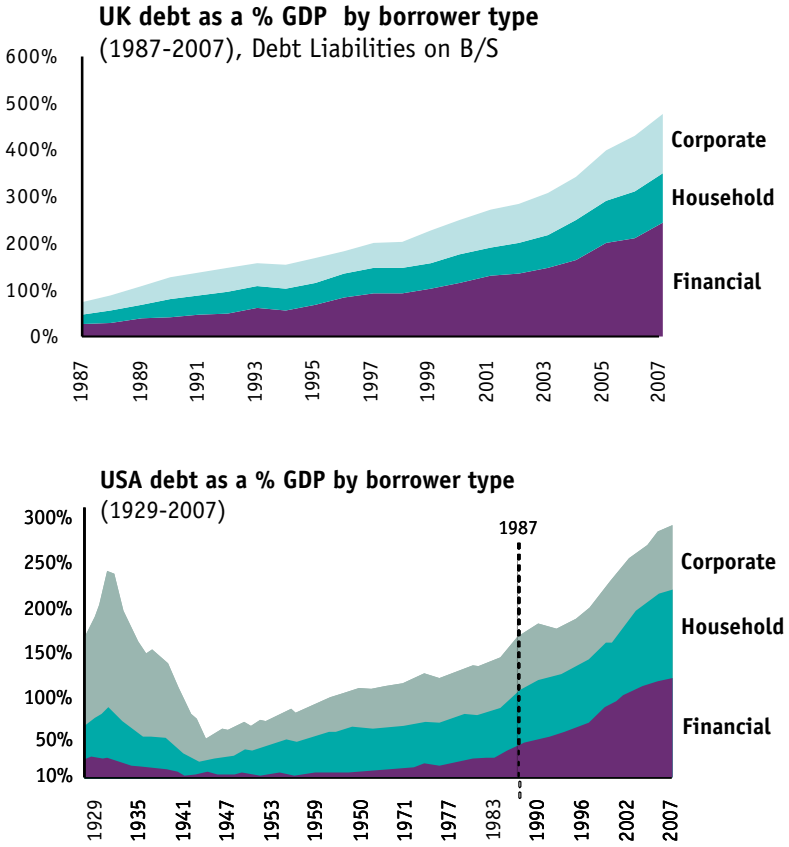


- Looking at total debt claims across the economy, we see some growth of household debt as a % of GDP and a slightly smaller growth of corporate debt as a % of GDP, but what is striking is the extent to which the debt of financial companies has grown, both in the US and in the UK (Exhibit 2.10).
- On a consolidated basis – stripping out claims between financial institutions – financial sector assets and liabilities can only grow in line with non-financial sector liabilities and assets.

- What this disproportionate growth of financial sector debt represents therefore, is an explosion of claims *within* the financial system, between banks and investment banks and hedge funds, i.e. the multiplication of balance sheets involved in the credit intermediation process illustrated in Exhibit 2.9.

This growth of the relative size of the financial sector, and in particular of securitised credit activities, increased the potential impact of financial system instability on the real economy.[3] The reasons for its occurrence also raise fundamental theoretical issues about the efficiency of financial markets and the value of financial innovation, which are considered in 1.4 (v) of *The Turner Review*.

Exhibit 2.10: The growth of the financial sector



Source: Oliver Wyman

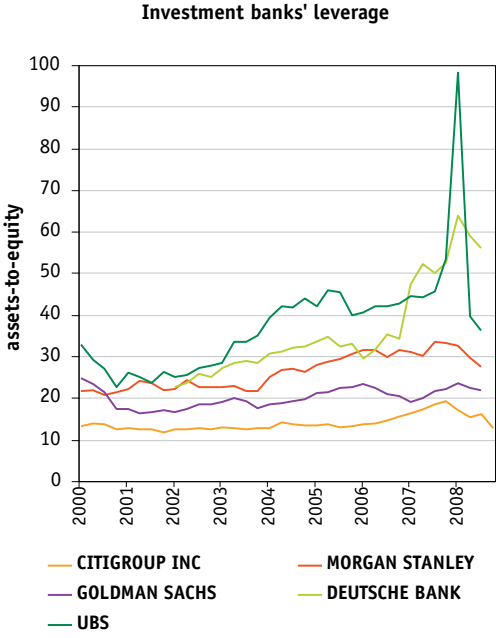
3 The huge size of intra-financial system claims also has relevance to the urgent issue of short-term macroeconomic management. The more that bank deleveraging takes the form of the stripping out of inter trader complexity, and the less it takes the form of deleveraging vis-a-vis the non-bank real economy, the less harmful its economic impact.

2.1 (ii) Increasing leverage – in several forms

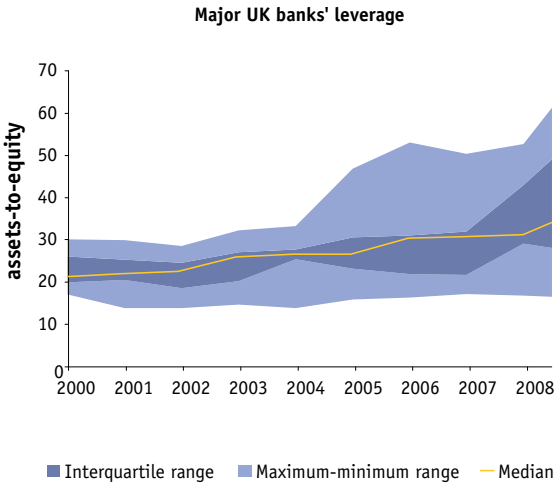
This growing size of the financial sector was accompanied by an increase in total system leverage[4] which – considered in all its forms – played an important role in driving the boom and in creating vulnerabilities that have increased the severity of the crisis.

- From about 2003 onwards, there were significant increases in the measured on-balance sheet leverage of many commercial and investment banks, driven in some cases by dramatic increases in gross assets and derivative positions (Exhibit 2.11). This was despite the fact that 'risk adjusted' measures of leverage (e.g. weighted risk assets divided by tier one capital, or Value at Risk (VAR) relative to equity) showed no such rise. This divergence reflected the fact that capital requirements against trading books, where the asset growth was concentrated, were extremely light compared with those for banking books (Exhibit 2.12) and that VAR measures of the risk involved in taking propriety trading positions, in general suggested that risk relative to the gross market value of positions had declined. It is clear in retrospect that the VAR measures of risk were faulty and that required trading book capital was inadequate (See Sections 2.1 (iv) of this DP and 1.4 (iii) and 2.2 (ii) of *The Turner Review*).

Exhibit 2.11



Source: Bloomberg



Source: Bank of England

4 The growing size of the financial sector did not in itself necessarily imply a rise in capital leverage (assets to capital). If an asset growth is accompanied by matching increases in capital resources, leverage remains stable. Over the last two decades, indeed, there has not been a general continuous increase in the measured on-balance sheet leverage of banks and investment banks. Total system leverage (included off-balance sheet and embedded leverage) was, however, almost certainly increasing over a longer period than the measured on balance sheet figures suggest.

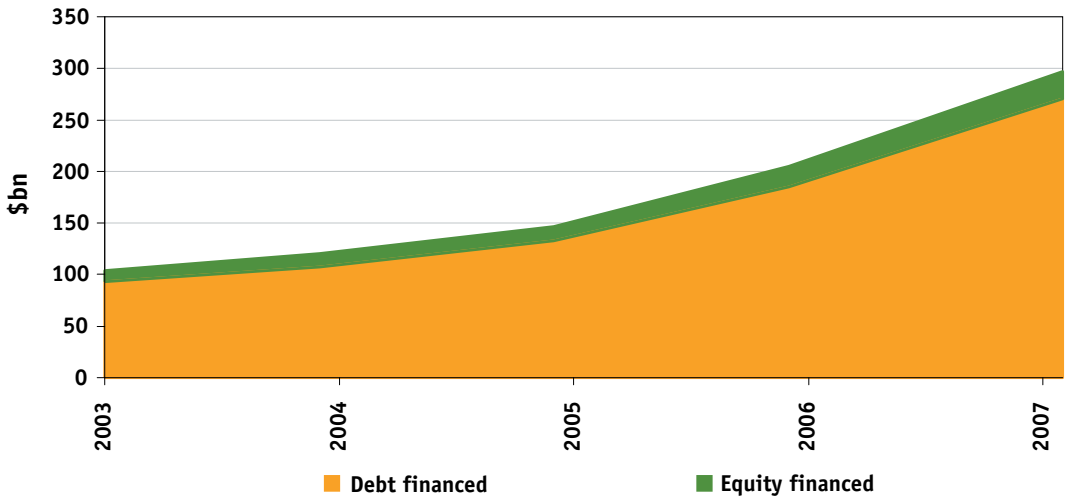
Exhibit 2.12: Trading book assets & capital 2007: examples

	Market risk capital requirement as % trading assets	Trading assets as % of total assets	Trading / market risk capital as % total capital requirements
Bank 1	0.4%	34%	11%
Bank 2	0.4%	28%	7%
Bank 3	0.1%	57%	4%
Bank 4	1.1%	27%	7%

Source: BIS Estimates from Bank Annual Reports

- In addition, however, the years running up to the crisis saw the rapid growth of off-balance sheet vehicles – structured investment vehicles (SIVs) and conduits – which were highly leveraged but which were not included in standard measures of either gross or risk adjusted leverage (Exhibit 2.13) At the individual bank level, the classification of these as off-balance sheet proved inaccurate as a reflection of the true economic risk, with liquidity provision commitments and reputational concerns requiring many banks to take the assets back on balance sheet as the crisis grew, driving a significant one-off increase in measured leverage. But even if this had not been the case, the contribution of SIVs and conduits to total system leverage (combined with their maturity transformation characteristics considered in subsection (iii) below) would still have increased total system vulnerability.
- Finally, the financial innovations of structured credit resulted in the creation of products – e.g. the lower credit tranches of CDOs or even more so of CDO-squareds – which had very high and imperfectly understood embedded leverage, creating positions in the trading books of banks which were hugely vulnerable to shifts in confidence and liquidity.

Exhibit 2.13: Growth of SIVs: total assets



Source: Standard & Poor's

2.1 (iii) Changing forms of maturity transformation: the growth of 'shadow banking'

The increasing complexity of securitised credit, increasing scale of banking and investment banking activities, and increases in total system leverage, were accompanied by changes in the pattern of maturity transformation which created huge and inadequately appreciated risks.

One of the key functions of the banking system is maturity transformation, holding longer term assets than liabilities and thus enabling the non-bank sector to hold shorter term assets than liabilities. This absorbs the risks arising from uncertainties in the cash flows of households and corporates, and results in a term structure of interest rates more favourable to long-term capital investment than would pertain if banks did not perform maturity transformation.

It is a crucial function delivering major social and economic value, but it creates risk. If everybody wanted their money back on the contractual date, no bank could repay them all. To manage this risk a complex and interrelated set of risk management devices have been developed – liquidity policies to measure and limit the extent of maturity transformation, insurance via committed lines from other banks, and 'lender of last resort' facilities provided by central banks.

But one of the striking developments of the last several decades has been that a growing proportion of aggregate maturity transformation has been occurring not on the banking books of regulated banks with central bank access, but in other forms of 'shadow banking':

- SIVs and conduits have performed large-scale maturity transformation between short-term promises to noteholders and much longer term instruments held on the asset side.
- Investment banks increasingly funded holdings of long-term to maturity assets with much shorter term liabilities: the value of outstanding Repurchase Agreements (repos) tripled between 2001 and 2007, with particularly rapid growth of overnight repos.
- And, particularly in the US, mutual funds increasingly performed a bank-like form of maturity transformation. They have held long-term credit assets against liabilities to investors which promise immediate redemption. And in many cases they have made implicit or explicit promises not to 'break the buck' i.e. not to allow capital value to fall below the initial investment value. As a result, their behaviour in a liquidity crisis – selling assets rapidly to meet redemptions – has become bank like in nature, contributing to systemic liquidity strains.

It is therefore highly likely that the aggregate maturity transformation being performed by the financial system in total increased substantially over the last two decades.[5] And it is certainly the case that a wide range of institutions – both banks and near banks – developed an increasing reliance on 'liquidity through marketability', believing it safe to hold long term to maturity assets funded by short-term liabilities on the grounds that the assets could be sold rapidly in liquid markets if needed. This assumption was valid at the level of firms individually in non-crisis conditions, but became rapidly invalid in mid 2007, as many firms attempted simultaneous liquidation of positions.

The appropriate measurement and management of liquidity risk is therefore essential and must reflect its inherently system-wide character. It is addressed in Section 2.2 of *The Turner Review.*

2.1 (iv) Misplaced reliance on sophisticated maths

The increasing scale and complexity of the securitised credit market was obvious to individual participants, to regulators and to academic observers. But the predominant assumption was that increased complexity had been matched by the evolution of mathematically sophisticated and effective techniques for measuring and managing the resulting risks. Central to many of the techniques was the concept of Value-at-Risk (VAR), enabling inferences about forward-looking risk to be drawn from the observation of past patterns of price movement. This technique, developed in the early 1990s, was not only accepted as standard across the industry, but adopted by regulators as the basis for calculating trading risk and required capital, (being incorporated for instance within the European Capital Adequacy Directive).

There are, however, fundamental questions about the validity of VAR as a measure of risk (see Section 1.4 (ii) of *The Turner Review*). And the use of VAR measures based on relatively short periods of historical observation (e.g. 12 months) introduced dangerous procyclicality into the assessment of trading book risk for the reasons set out in Box 2A (deficiencies of VAR).

The very complexity of the mathematics used to measure and manage risk, moreover, made it increasingly difficult for top management and boards to assess and exercise judgement over the risks being taken. Mathematical sophistication ended up not containing risk, but providing false assurance that other prima facie indicators of increasing risk (e.g. rapid credit extension and balance sheet growth) could be safely ignored.

5 The aggregate maturity transformation achieved by the financial system could be calculated if we could produce a consolidated financial system balance sheet (stripping out all intra financial system assets and liabilities) and observe the maturity mismatch between the consolidated assets and liabilities. This is an impossibly difficult task. The large increase in long-term mortgage debts, however, makes it almost certain that a large increase in aggregate maturity transformation has occurred: only if this increase had been matched by an increase in long-term assets held by the nonfinancial sector (e.g. individual holdings of long-term bonds) could this growth in long-term non-financial sector have failed to imply an increase in aggregate maturity transformation. Analysis as best possible of aggregate maturity transformation trends should be a key element of macro-prudential analysis (see Section 2.6 of *The Turner Review*).

2.1 (v) Hard-wired procyclicality: ratings, triggers, margins and haircuts

The use of VAR to measure risk and to guide trading strategies was, however, only one factor among many which created the dangers of strongly procyclical market interactions. More generally the shift to an increasingly securitised form of credit intermediation and the increased complexity of securitised credit relied upon market practices which, while rational from the point of view of individual participants, increased the extent to which procyclicality was hard-wired into the system. In particular:

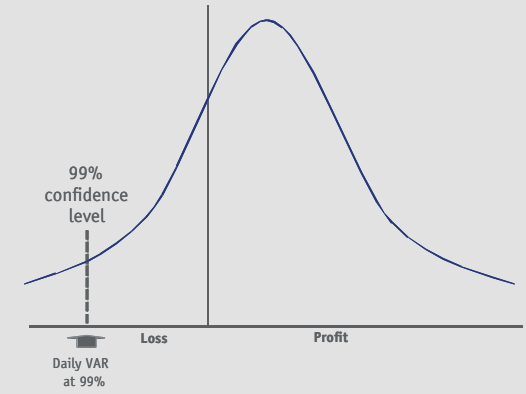
- More securitisation meant that a greater proportion of credit assets were held by investors seeking reassurance from credit ratings, and thus increased the potential aggregate effects of forced selling by institutions using predefined investment rules based on ratings (e.g. only hold bonds with rating A or above). In addition, the increasing complexity of securitised credit required that credit rating techniques were applied to new varieties of structured security, where no historic record existed. These ratings proved highly imperfect predictors of risk and were subject to rapid rating downgrades once the crisis broke (see Section 2.5 (i) of *The Turner Review*).
- Market value or rating-based triggers, meanwhile, were increasingly used in an attempt to improve investor/creditor protection. Senior notes of SIVs, for instance, were often awarded high credit ratings on the basis of the protection that if the asset value fell below defined triggers, the SIV would be wound up before senior noteholders were at risk. At the system level, however, this resulted in attempted simultaneous asset sales by multiple SIVs, and the rapid disappearance of liquidity (both for asset sales and for new funding) as market value limits were triggered and ratings were cut.
- Arrangements which related the level of collateral posted in derivative contracts to the credit ratings of counterparties also had a significant procyclical effect. Credit default swaps (CDS) and other OTC derivative contracts entered into by AIG, for instance, required it to post more collateral if its own credit rating fell. When this occurred in September 2008, a downward spiral of increased liquidity stress and falling perceived credit worthiness rapidly ensued.

BOX 2A: DEFICIENCIES IN VAR BASED ESTIMATES OF RISK

Basic concept

- Observe over a past period (e.g. last year) the distribution of profits / loss resulting over a defined time period (e.g. day, 10 days) from a given gross position.
- Hold capital sufficient to cover some multiple of this 'Value at Risk'.

Frequency distribution of observed daily trading Profit/Loss

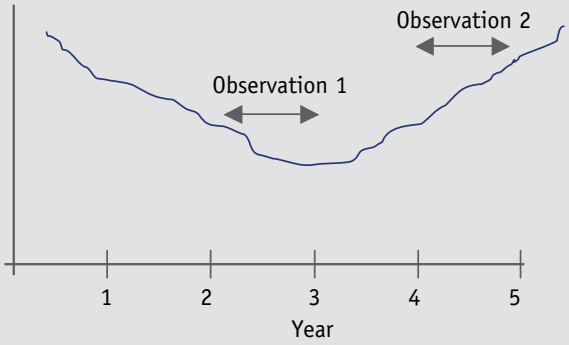


Procyclicality

Short-term observation periods (e.g. one year) can result in significant procyclicality.

- Observation 1 reflects low volatility and thus low apparent risk; capital is attracted to position taking, reinforcing market liquidity
- Observation 2 reflects high volatility following fall in confidence; liquidity dries up, exacerbating increase in volatility

Volatility in specific market (see exhibit 1.17 for real example)



Failure to capture fat-tail risks

- Short-term observation periods plus assumption of normal distribution can lead to large underestimation of probability of extreme loss events.

Failure to capture systemic risk

- Methodology assumes each institution is individual agent whose actions do not themselves affect the market.
- Interconnected market events ('network externalities') can produce self-reinforcing cycles which models do not capture.
- Systemic risk may be highest when measured risk is lowest, since low measured risk encourages behaviour which creates increased systemic risks.

- Finally haircuts on secured financing transactions (including central bank operations to provide liquidity) and initial margins on OTC derivatives, have typically been based on estimates of risk derived from a combination of ratings and VAR-based measures of price volatility. These vary in a procyclical fashion, making it easier to secure finance when risks are perceived as low, and thus potentially driving further speculation which itself reduces derived measures of risk. In the downswing conversely, these arrangements can dramatically increase the cost of secured finance, reinforcing illiquidity, depressing asset values and increasing the price for risk absorption. Exhibit 2.14 illustrates the significant increase in typical haircuts or initial margins required in August 2008 compared with April 2007.[6]

Exhibit 2.14

Typical haircut or initial margin
In per cent

	April 2007	August 2008
US Treasuries	0.25	3
Investment grade bonds	0–3	8–12
High-yield bonds	10–15	25–40
Investment grade corporate CDS	1	5
Senior leveraged loans	10–12	15–20
Mezzanine leveraged loans	18–25	35+
ABS CDOs		
AAA	2–4	95[1]
AA	4–7	95[1]
A	8–15	95[1]
BBB	10–20	95[1]
Equity	50	100[1]
AAA CLO	4	10–20
Prime MBS	2–4	10–20
ABS	3–5	50–60

ABS = asset-backed security; CDO = collateralised debt obligation; CDS = credit default swap; CLO = collateralised loan obligation; MBS = mortgage-backed security; RMBS = residential mortgage-backed security. [1] Theoretical haircuts as CDOs are no longer accepted as collateral.

Source: IMF

Self-reinforcing irrational exuberance followed by confidence collapse

The five features of the securitised credit model described above, operating within the context of a sustained period of strong global growth, low inflation and reduced macroeconomic volatility, played a major role in stimulating a self-reinforcing cycle of falling risk aversion and rising irrational exuberance of the sort to which all liquid traded markets are at times susceptible. They also created a system which, when

6 Note that haircuts required in derivatives contracts and secured financing transactions define the extent of leverage in bedded-in contracts rather than present at the institutional level.

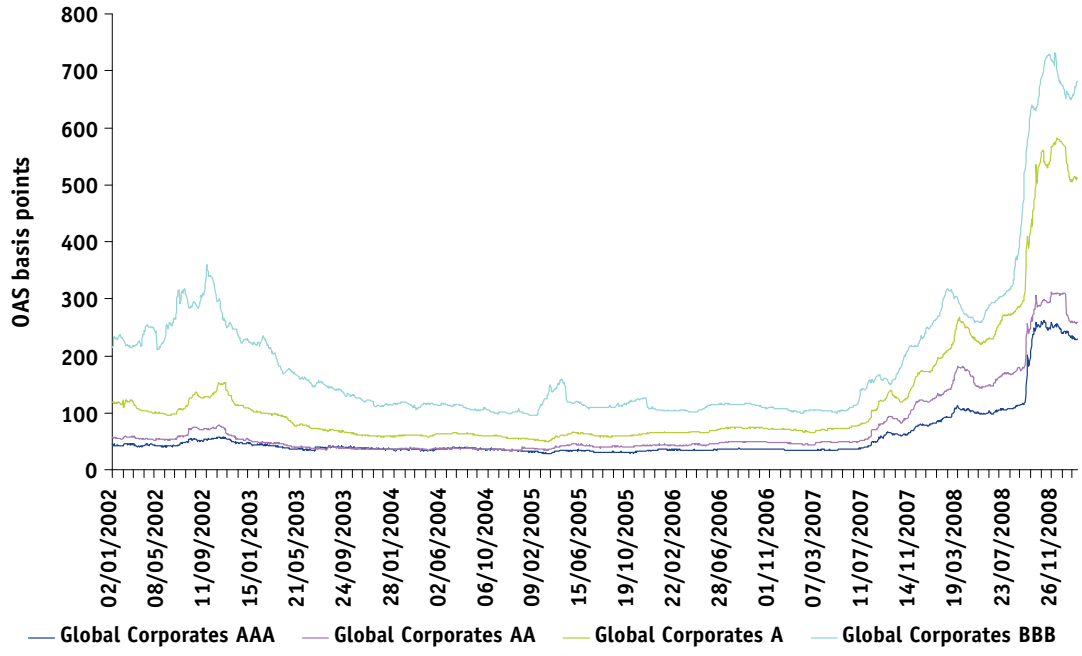
confidence broke and risk aversion rose, was highly susceptible to a self-reinforcing cycle of deleveraging, falling asset prices and collapsing liquidity.

The upswing was characterised by:

- credit spreads on a wide range of securities and loans falling to clearly inadequate levels (Exhibit 2.15);
- the price charged for the absorption of volatility risk falling because volatility seemed to have declined (Exhibit 2.16);
- falling spreads and volatility prices driving up the current value of a range of instruments, marked to market value on the books of banks, investment banks and hedge funds. This in turn produced higher apparent profits and higher bonuses, and as a result reinforced management and traders' certainty that they were pursuing sensible strategies.

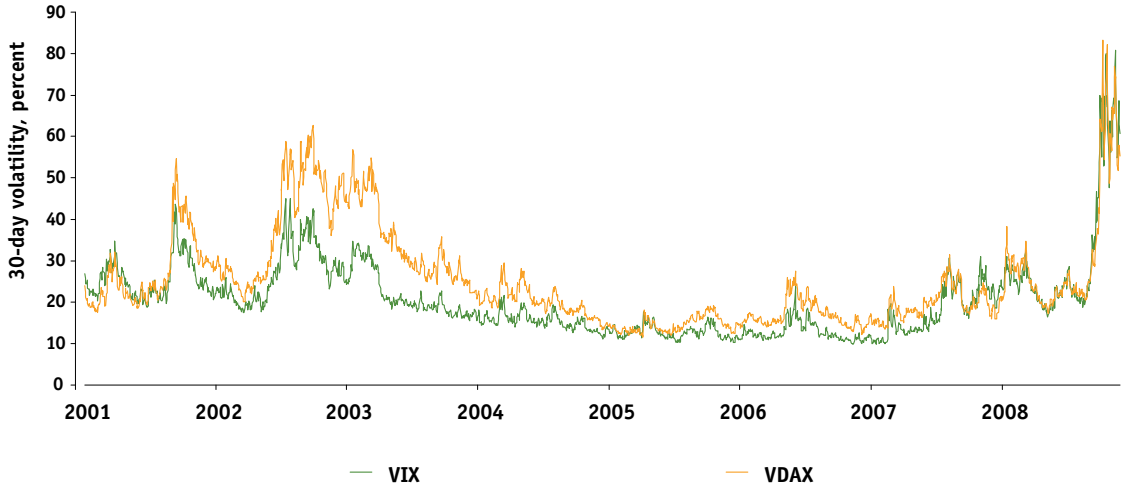
In mid 2007, however, these trends ceased and then went sharply into reverse. The origins of the reverse lay in the US housing market, with growing evidence that excessive credit extension and weak credit standards had resulted in rapidly rising credit losses, with implications for the price of many asset backed securities. This initial stimulus then triggered a self-reinforcing set of effects, progressing through the stages outlined in Box 2B.

Exhibit 2.15: Corporate spreads



Source: Bloomberg

Exhibit 2.16: Implied volatility of the S&P 500 and DAX



Note: VIX and VDAX are indices of implied volatility for stock option prices on the S&P 500 and DAX respectively.

BOX 2B: STAGES OF THE CRISIS: 2006 – 2009

2006 – Summer 2007 Localised credit concerns	Rising defaults in US subprime and Alt-A loans. Falling prices of lower credit tiers of some credit securities. Expectations of property prices fall.
Summer – Autumn 2007 Initial crack in confidence and collapse of liquidity	Failure of 2 large hedge funds. Spreads in inter-bank funding and other credit products rise sharply. RMBS funding and inter-bank funding for second tier banks dries up. Northern Rock faces retail run.
Autumn 2007 – early Summer 2008 Accumulation of losses and continuation of liquidity strains	Severe mark-to-market losses in trading books. Collapse of commercial paper markets: SIVs brought back on balance sheet. Funding strains in the secured financing market. Worries about liquidity of major institutions Government assisted rescue of Bear Stearns.
Summer 2008 Intensification of losses and liquidity strains	Mark-to-market losses and liquidity strains continue to escalate. Housing market problems recognised as widespread in UK, US and other countries, as house prices fall and supply of credit dries up. Fannie Mae and Freddie Mac increasingly reliant on US government support. Funding problems of UK mortgage banks intensify.
September 2008 Massive loss of confidence	Bankruptcy of Lehman Brothers breaks confidence that major institutions are too big to fail. Credit downgrade of AIG triggers rising collateral calls, requiring government rescue. Mix of credit problems, wholesale deposit runs and incipient retail deposit runs lead to collapse of Washington Mutual, Bradford & Bingley, and Icelandic banks. Almost total seizure of interbank money markets; major banks significantly reliant on central bank support.
October 2008 Government recapitalisation, funding guarantees and central bank support	Exceptional government measures to prevent collapse of major banks; explicit commitments that systemically important banks will not be allowed to fail.
November 2008 → Feedback loops between banking system and economy. Further government measures to offset feedback loop risk.	Impaired bank ability to extend credit to real economy produces major globally synchronised economic downturn. Recession threatens further credit losses which might further impair bank capital. Tail risk insurance – Asset Protection Scheme.

The financial system and the real economy: implications for the regulatory reform agenda

So, the essence of what has occurred is that:

- Characteristics of the new global financial system, combining with macroeconomic imbalances, helped create an unsustainable credit boom and asset price inflation.
- Those characteristics then played a crucial role in reinforcing the severity of the financial crisis and in transmitting financial system problems into real economy effects.
- The shock to the banking system has been so great that its impaired ability to extend credit to the real economy has played and is still playing a major role in exacerbating the economic downturn, which in turn undermines banking system strength in a self-reinforcing feedback loop.

The agenda for regulatory reform (set out in Chapter 2 of *The Turner Review*) therefore needs to address both the factors which drove the initial over-extension of credit, and the factors which have played a crucial role in increasing the length and severity of the crisis.

These include:

- **The massive growth and increasing complexity of the securitised credit model,** underpinned by inadequate capital requirements against trading books, which facilitated unsustainable growth in credit extension to households and to some parts of the corporate sector.
- **Extensive commercial bank involvement in trading activities,** which meant that falling asset prices have had a large and rapid effect on bank profitability, and in turn on perceptions of their credit worthiness, creating a collapse in bank funding liquidity.
- **High leverage in multiple forms,** which helped drive the rapid growth in credit extension and asset prices, and which increased the vulnerability of the system, since asset price falls had an amplified impact on system capital adequacy.
- **Expanded maturity transformation dependent on the marketability of assets,** which made the system hugely more vulnerable to a loss of confidence and disappearance of liquidity.
- **The complexity and opacity of the structured credit and derivatives system,** built upon a misplaced reliance on sophisticated mathematics, which, once irrational exuberance disappeared, contributed to a collapse in confidence in credit ratings, huge uncertainty about appropriate prices, and a lack of trust that published accounting figures captured the reality of emerging problems.
- **Hard-wired procyclicality,** which exacerbated the scale of the downturn, with credit ratings, margin calls, CDS spreads and general market confidence, interacting to create self-reinforcing feedback loops.
- **Lack of adequate capital buffers,** as a result of which commercial banks losses have driven falling confidence in the banking system, impairing the ability of the banking system to extend credit, and creating a powerful feedback loop between banking system stress and downturn in the real economy.

2.2 UK specific developments

The financial crisis has been global and its origins and development are best understood in terms of the overall global analysis presented in Section 2.1 above. But it is also useful to highlight specific UK features of the crisis, both those arising from UK bank participation in global securitised credit markets, and developments within UK markets for credit and funding.

As a leading centre for the trading activity (whether by UK or foreign owned banks), which underpinned the securitised credit model, and as the home country of several leading global banks, the UK was bound to be affected by the developments described in Section 2.1. Some specific factors were less relevant to the UK market or UK owned institutions than in the US, but the UK was significantly influenced both by the growth of the securitised credit model and shadow banking activities and therefore highly vulnerable to their collapse.

- The development of mutual-fund based maturity transformation was much less important in the UK than in the US: UK consumers do not to a significant extent hold mutual-fund investments as bank deposit substitutes. And while several UK banks set up SIVs and conduits, the scale was in general smaller than those of the big US banks. But US mutual funds and SIVs were very significant buyers of UK securitised credit: when they stopped buying, a large source of funding for UK credit extension disappeared.

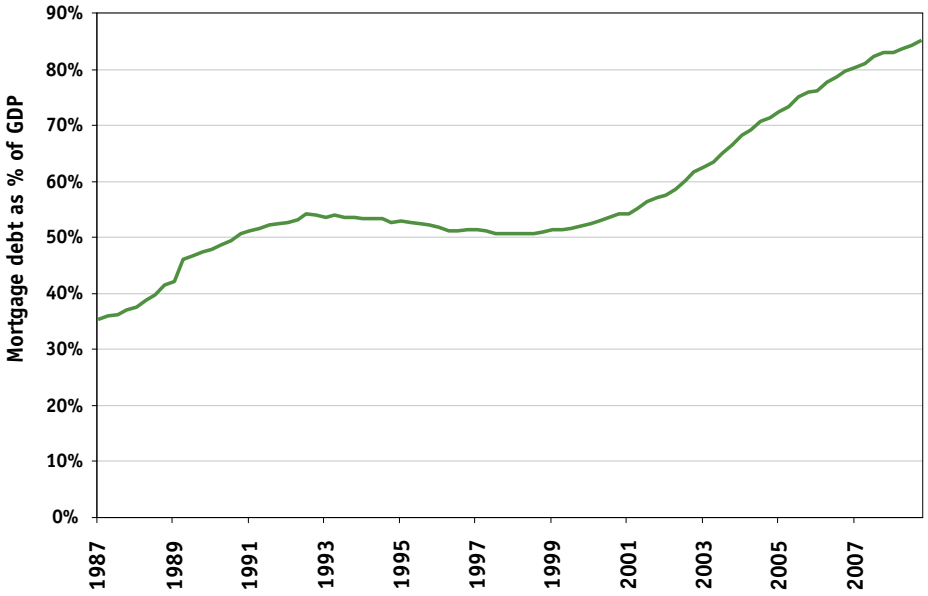
- And several of the UK's largest banks were major players in the 'acquire and arbitrage' model of credit intermediation in the UK, US and other international operations. UK bank leverage increased significantly as trading books expanded (see Exhibit 2.11): in those trading books, UK banks, like US commercial and investment banks, were on average placing increased reliance on 'liquidity through marketability' and they were deeply involved in the growing and intricate web of intra-financial system assets and liabilities illustrated in Exhibit 2.12. They were therefore as exposed as US banks and investment
  banks to the loss of confidence, disappearance of liquidity, and fall of assets prices which gradually gathered pace from summer 2007 but which became catastrophic after the collapse of Lehman Brothers in September, 2008.

In addition, the UK experienced a credit and property price cycle similar to that seen in the US, but with some specific features which played a crucial role in determining the particular form of the crisis in the UK.

- In the UK, as in the US, the decade running up to 2007 was a period of rapid credit growth in the household sector. House prices grew rapidly with very strong demand for houses relative to physical supply. Total mortgage debt to GDP increased from 50% to over 80% (Exhibit 2.17): measures of income leverage also increased (Exhibit 2.18): and an increasing supply of mortgages was available at very high initial loan-to-value ratios as borrowers and lenders assumed that debt burdens were likely to fall with continuous property price appreciation which delivered large increases in the value of household assets. Though not to the same extent as in the US subprime market, mortgage credit was extended to social

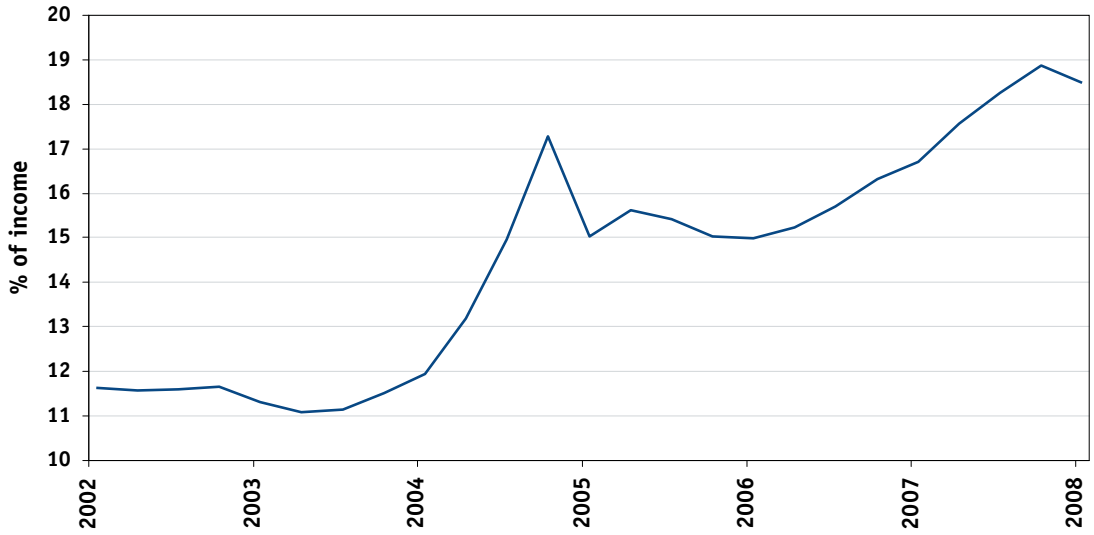
categories which would not previously have enjoyed access (Exhibit 2.19). The buy-to-let sector grew from trivial to significant proportions (Exhibit 2.20).[7]

Exhibit 2.17: Mortgage debt outstanding (UK)



Source: Bank of England

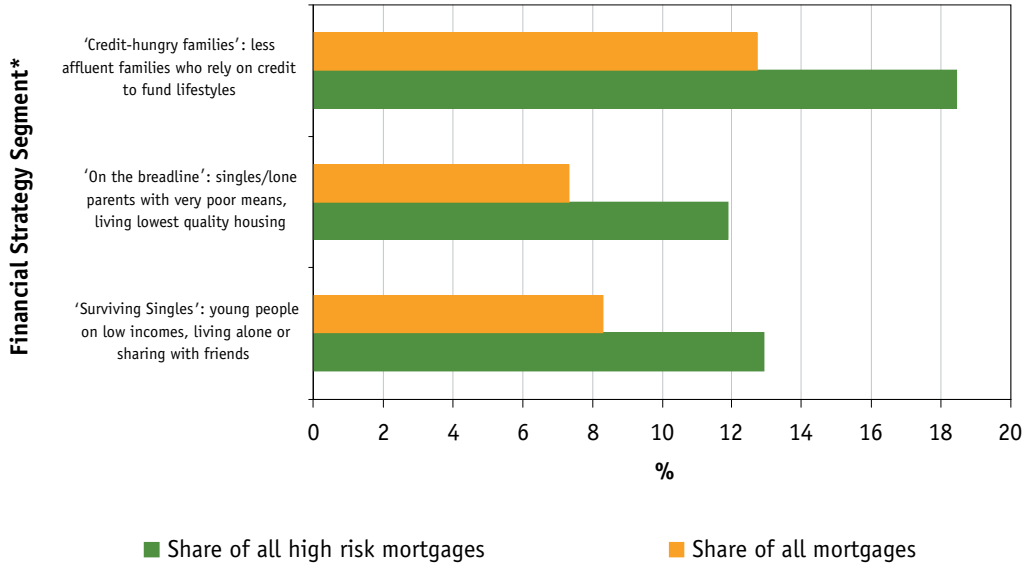
Exhibit 2.18: Median mortgage payments as a percentage of income



Source: Regulated Mortgage Survey

7 During this period the government extended the scope of the FSA's responsibilities to include the regulation of first charge residential mortgage lending, administration, arranging and advising. FSA regulation of these activities commenced on 31 October 2004.

Exhibit 2.19: Mortgage lending to lower-income social categories, 2005-2008

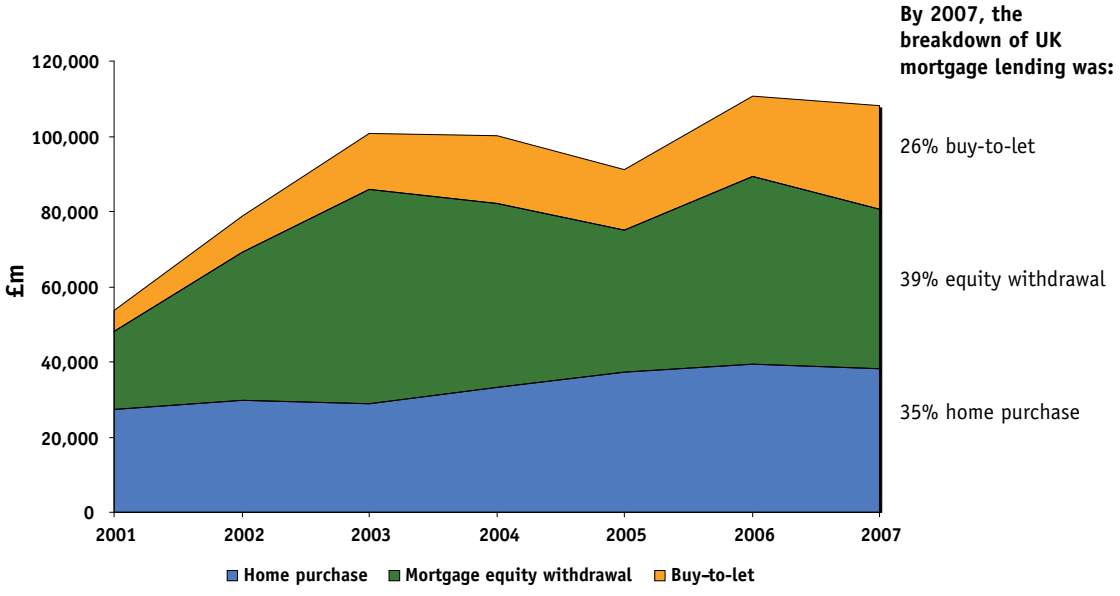


"High risk" defined as >95% loan-to-value ratio, >25 year terms and/or >3x income multiples.

* See Experian 'Financial Strategy Segments: The consumer classification of financial behaviour in the UK' for more detailed definitions.

Source: Product Sales Database, Experian

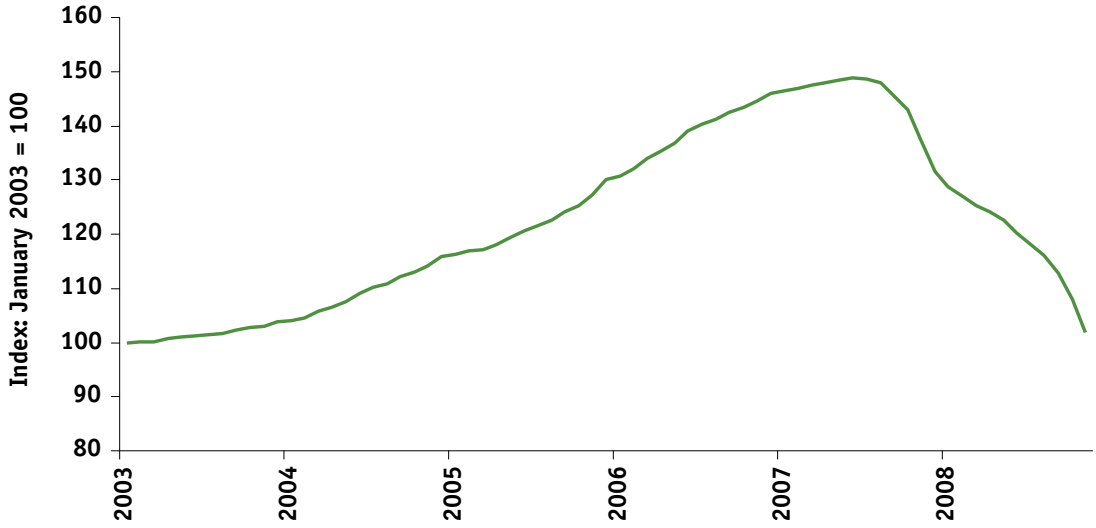
Exhibit 2.20: Mortgage lending by purpose 2001-2007



Source: Bank of England, CML, FSA calculations

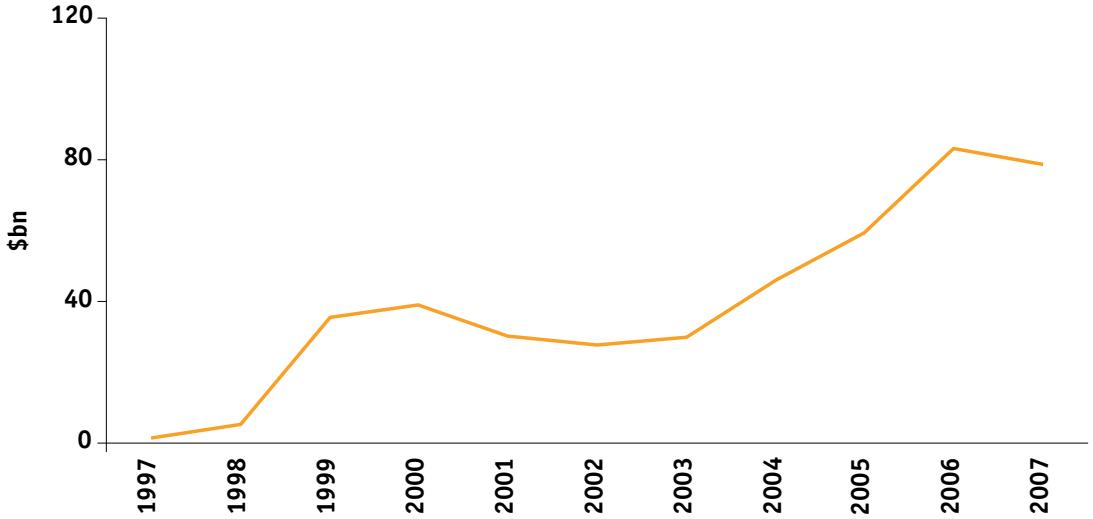
- The story on corporate lending growth was more varied: some major listed companies actually deleveraged; but as in the US there was rapid growth of the leveraged buyouts market. Commercial real estate lending grew rapidly and commercial property prices increased 51% in five years to June 2007 (Exhibit 2.21). The average income leverage (debt to gross operating surplus) of non-financial corporates grew from 4.9 in 2002 to 6.0 in 2007.
- As in the US too, this rapid credit extension was underpinned by major and continued macro-imbalances, with the UK – like the US – running a large current account deficit (Exhibit 2.22) and with domestic credit expansion thus financed at the aggregate level by the willingness of overseas investors to extend credit to UK counterparties. Unlike in the US, the crucial form of this credit extension was not the purchase of government and government agency securities by foreign central banks, but private sector inflows, including from the US. One of the distinctive features of growing global imbalances indeed, was that the US was simultaneously a large importer and exporter of capital (Exhibit 2.23).
- The import of capital into the UK, funding the rapid growth of credit, in part took the form of foreign purchases of UK credit securities, in particular retail mortgage-backed securities (RMBS). Before 2000, unlike in the US, securitised credit had played a small role in the UK mortgage market but by 2007, 18% of UK mortgage credit was funded through securitisation (Exhibit 2.24). But the UK also saw the rapid growth of on-balance sheet mortgage lending, with UK banks expanding their loan books more rapidly than deposit bases, placing increasing reliance on wholesale funding (Exhibit 2.25). At the aggregate level, this implied a significant increase in overseas bank financing of the UK current account deficit (Exhibit 2.26).

Exhibit 2.21: Commercial property prices in the UK



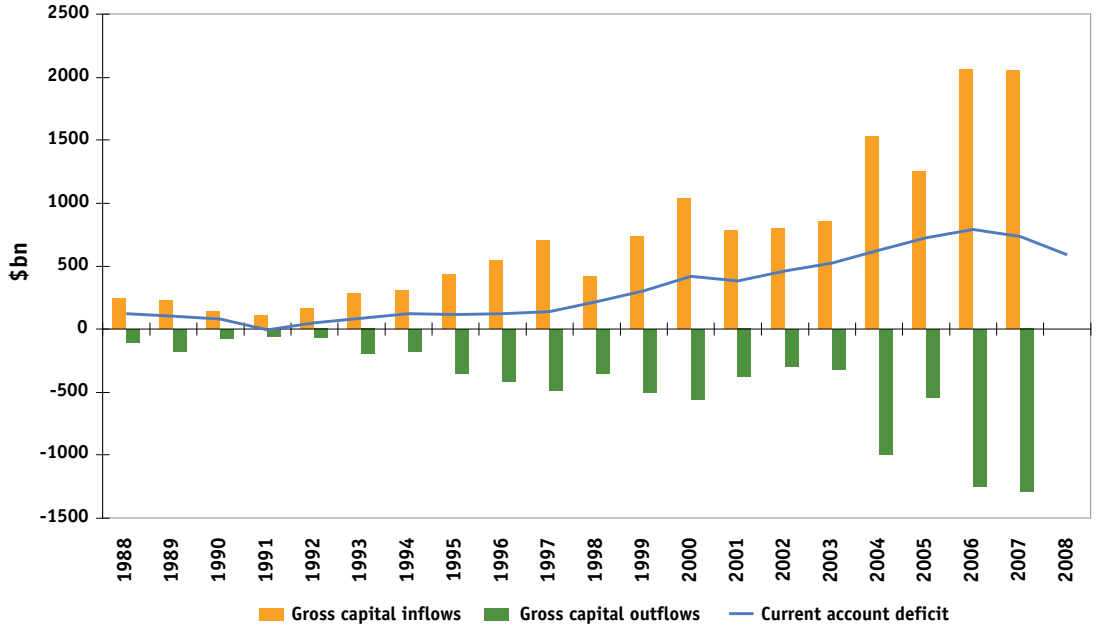
Source: IPD, Nationwide, HBOS, FSA calculations

Exhibit 2.22: UK current account deficit



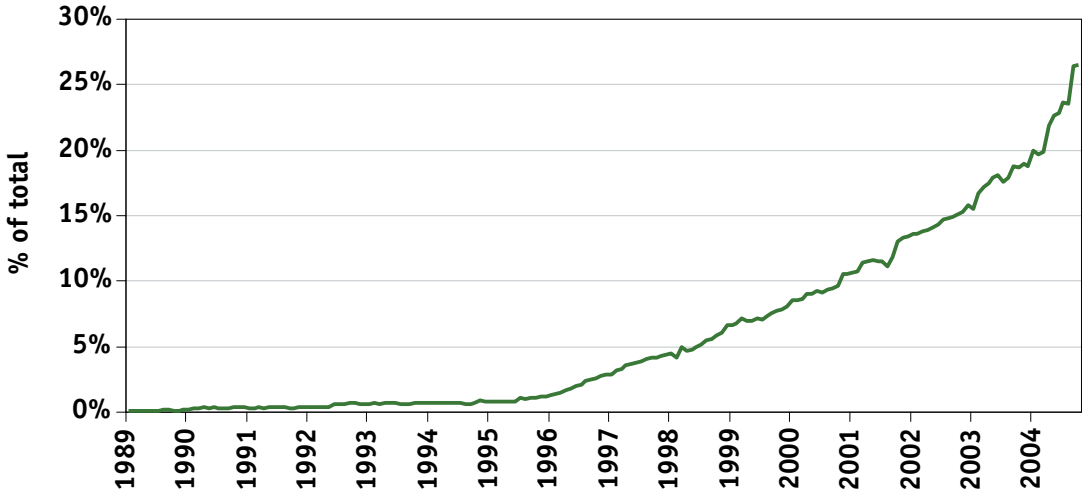
Source: IMF

Exhibit 2.23: US current account deficit and gross capital flows



Source: IMF

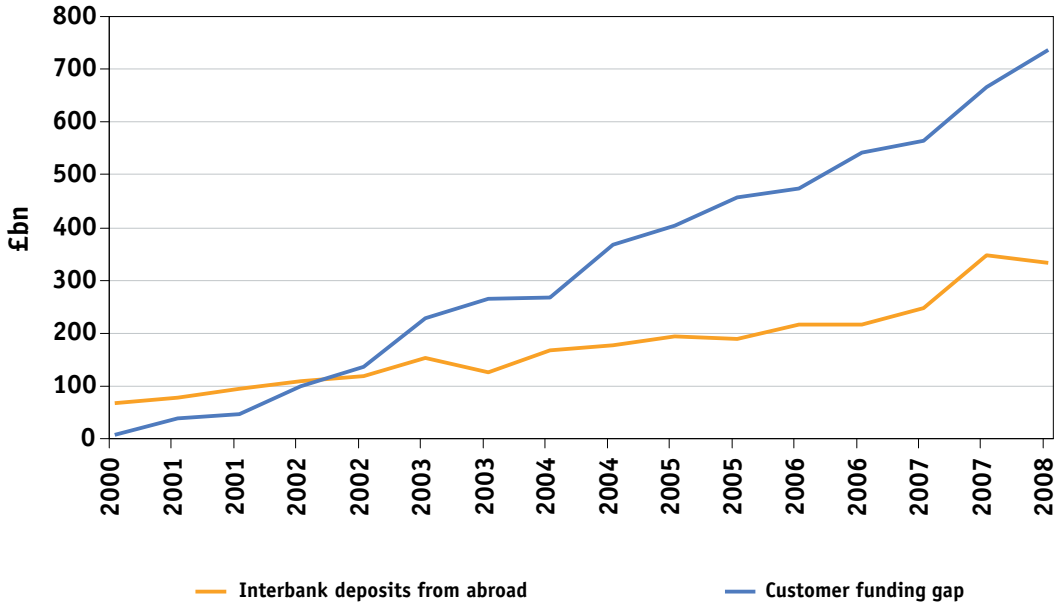
Exhibit 2.24: Estimated share of securitised loans in UK mortgage lending (includes covered bonds)



Securitised loans can take the form of those used as collateral in covered bonds and those which are securitised and taken off balance sheet. This data includes both. The percentage of total mortgages securitised and sold off balance sheet is estimated to have reached 18% by 2007.

Source: Bank of England, ONS, FSA calculations

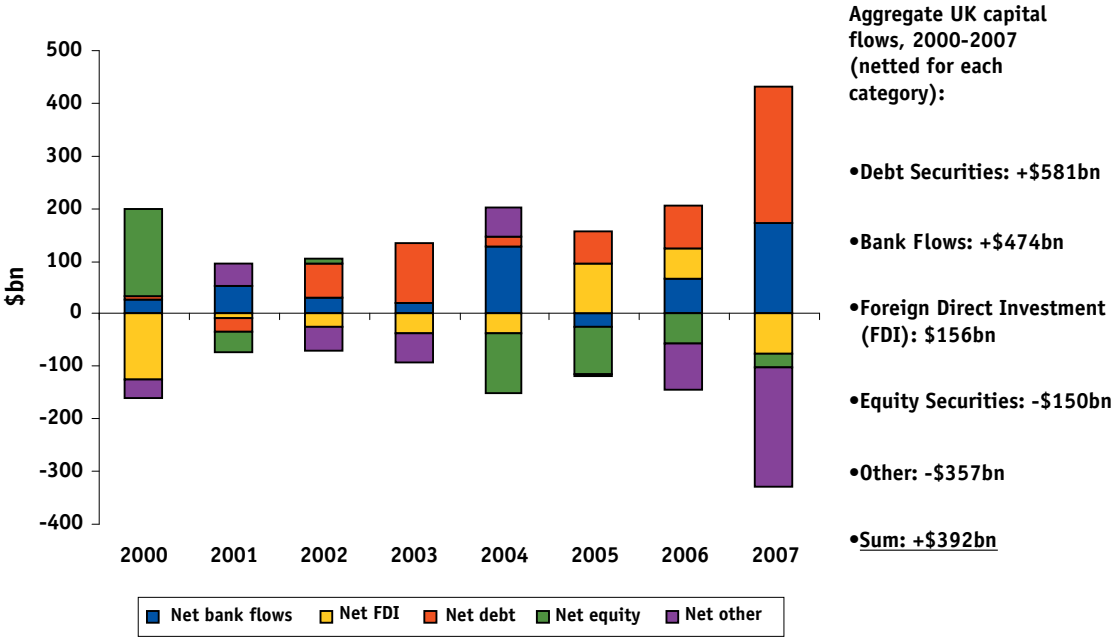
Exhibit 2.25: Major UK banks' customer funding gap and foreign interbank deposits



The customer funding gap is customer lending less customer funding, where customer refers to all non-bank borrowers and depositors.

Source: Bank of England, Dealogic, ONS, published accounts and Bank of England calculations

Exhibit 2.26: Composition of UK capital flows, 2000-2007



N.B. Positive numbers represent inflows, negative numbers represent outflows.

Source: IMF, FSA calculations

A crucial feature of the UK system in the run-up to the crisis, was therefore the rapid growth of a number of specific banks – Northern Rock, Bradford & Bingley, Alliance and Leicester and HBOS – which were increasingly reliant on the permanent availability of a large-scale interbank funding and/or on their continuous ability to securitise and sell down rapidly accumulating credit assets, particularly in the mortgage market.

The combination of factors common with the US and global story, and factors specific to the UK, resulted in the evolution of the crisis in the UK having the following features:

- An initial focus on funding problems, with the failure of Northern Rock caused not by immediately evident solvency/credit quality problems, but by the drying up of the market for both securitised credit assets and wholesale funding availability. Such funding issues were also critical to the problems of Bradford & Bingley and HBOS in September/October 2008.
- The emergence of major trading book losses on the balance sheets of those UK banks which had been extensively involved in the 'acquire and arbitrage' model of securitised credit intermediation
- The subsequent emergence of a wider set of credit problems – in mortgages and in corporate lending, and in particular in commercial real estate – as the financial crisis in itself generated credit capacity constraints and economic slowdown. This slowdown in turn exposed the risky nature of some credit extension in the boom years and is now generating credit quality deterioration even among previously credit worthy customers.

2.3: Global finance without global government: faultlines in regulatory approach

The developments described above raise important questions about appropriate future approaches to regulating capital, liquidity, bank-like institutions, credit rating agencies and remuneration, which are relevant to all banks across the world – irrespective of whether they operate entirely within national markets or on a cross-border basis. But they also raise issues specific to the operation of cross-border banks.

The origins of the crisis were to a significant degree global. Some of them (e.g. rapid mortgage credit extension and property price bubbles) were more prevalent in the English-speaking countries, but there were also other property markets, such as Spain which showed similar rapid growth. And the purchase of securitised credit assets was widely spread across the world, with some German banks big purchasers, for instance.

But the crisis also followed a period of significant globalisation of banking activities, both wholesale and retail. Major European investment banks, such as UBS and Deutsche bank, expanded extensively in both London and New York, and major US investment banks developed much larger London operations and extensive networks throughout the world. UK banks like Barclays, RBS and HSBC significantly expanded their US operations. In addition there was a significant extension of cross-border retail activity, particularly in Europe – with, for instance, the Icelandic and Irish banks and ING being active gatherers of retail deposits in the UK, either through physical branches or online.

The crisis revealed fault lines in the global regulation and supervision of some of these cross-border firms, which raise fundamental issues about the appropriate future approach. The essence of the problem – as the Governor of the Bank of England, Mervyn King has put it – is that global banking institutions are global in life, but national in death. That is, when crises occur, it is national central banks which have to provide lender-of-last-resort (LOLR) support and national governments that provide fiscal support, and that if there is a failure, bankruptcy procedures are national and it matters with which specific legal entity a creditor has their claim.

The failures of Lehman Brothers and Landsbanki threw these fault lines into sharp relief:

2.3(i) Lehman Brothers and the future approach to global wholesale banks

Lehman Brothers collapsed in September 2008, following a loss of market confidence in the firm's solvency, arising from its overexposure to troubled asset classes – in particular, mortgage-backed securities and commercial real estate.

In the past the FSA's regulatory approach to large cross-border wholesale banks and investment banks, in line with that of most other regulators, assumed that primary responsibility for ensuring prudential soundness lies with the home country supervisor (though with extensive information sharing between home and host supervisors). It also assumed that it is appropriate for firms to gain efficiency benefits from global approaches to managing liquidity, allowing significant flexibility in the use of legal entities to book transactions across border, and to move liquidity between legal entities.

The failure of Lehman Brothers demonstrated, however, that decisions about fiscal and central bank support for the rescue of a major bank are ultimately made by home country national authorities focusing on national rather than global considerations. It also illustrated that separate legal entities and nationally specific bankruptcy procedures have major implications for creditors.

To address these problems in the future requires some combination of:

- More international cooperation in ongoing supervision through, for instance, colleges of supervisors. And more intense international cooperation and coordination in crisis management.
- An increased use of host country powers to require strongly capitalised local subsidiaries, ring-fenced liquidity and restrictions on intra-group exposures and flows.

The balance between these options, the inherent limits to what can be achieved, and the possible implications for cost efficiency and international capital flows, are discussed in Section 2.2 (vii) and 2.10 (i) of *The Turner Review*.

2.3(ii) Landsbanki and the European single market: the need for major reform

The lessons arising from the Icelandic banking crisis are summarised in the box overleaf (Box 1C). The essential points are that:

- European Union single market rules require that banks which are recognised by their home country supervisors as sound have a right to operate as branches in other member states; and
- that, as a result depositors in one country (or the government) can be vulnerable to the failure of banks in another country if the home country concerned lacks the supervisory resources to ensure bank solvency, or the fiscal resources to fund bank rescue, and if the deposit insurance cover is low and unfunded.

These current rules and arrangements are untenable for the future and must be changed through some combination of:

- more European coordination in regulation, supervision and deposit insurance; and
- more host country national powers in regulating and supervising the branches of banks based in other member states.

Section 2.10 (ii) of *The Turner Review* discusses these alternative ways forward.

BOX 2C: LESSONS FROM THE ICELANDIC BANKING CRISIS

The collapse of Landsbanki HF in October 2008 raises important issues relating to the appropriate regulation of bank branches within the European single market and appropriate approaches to deposit insurance.

Landsbanki operated in the UK as a branch, raising retail internet deposits under the Icesave brand. It had around £4.5 billion of retail deposits outstanding at the time of failure. These deposits were legally covered by the Icelandic deposit insurance scheme up to a value of €20,887. In addition, they were covered on a top-up basis by the UK Financial Services Compensation Scheme (FSCS), to which Landsbanki had chosen to opt in. As a top-up member, Landsbanki would have been liable to meet a share of the costs in the event of the default of another bank covered by the UK scheme.

The Icelandic government indicated that it would not be in a position to meet the liabilities of the Icelandic deposit insurance scheme immediately, and is currently discussing the terms of a loan from the UK to allow it to meet those liabilities. In addition, there were £800 million of retail deposits which, because above £50,000, were covered neither by the Icelandic scheme nor by the FSCS top up. The UK government concluded that these deposits should be protected to underpin depositor confidence in the banking system. The total initial costs of retail depositor protection arising from the collapse of Landsbanki's UK branch have therefore been met by a combination of the UK government and the FSCS.

Landsbanki's UK branch was not subject to full prudential supervision by the FSA. This is because European Union single market rules – which cover Iceland as a member of the European Economic Area (EEA) – allow banks in one country to operate as branches in another, with the supervision of solvency and of whole bank liquidity resting with the home country supervisor (this right is known as 'pass-porting'). The FSA, as host country supervisor, had only limited powers relating to the supervision of local liquidity.

The insolvency of Landsbanki therefore illustrates a weakness in the current European approach to a single market in retail banking. Depositors in one country (or their government) are vulnerable to the failure of banks in another country if the home country concerned lacks the supervisory resources to ensure bank solvency, or the fiscal resources or willingness to fund bank rescue, and if the deposit insurance cover is low and unfunded.

The approach to bank branch passporting rights, at least as they apply to branches conducting retail business, therefore requires review. Options for change could include:

Increased home country power:

- The restriction of branch passporting rights and the requirement that retail deposit gathering be conducted through fully capitalised subsidiaries supervised by the host country regulator.
- Host countries' supervisory powers to conduct a whole bank assessment and to refuse local branches the right to operate if not satisfied.

Increased European coordination:

- European-wide processes to assess the effectiveness of home country supervision of those banks wanting to conduct retail business in other member countries.
- Cross-European requirements for pre-funded and ring-fenced deposit insurance, combined with more overt warnings to customers of the limits of deposit insurance.

The relative merits of these different approaches are discussed in Section 2.10 of *The Turner Review*

BOX 2D: CASE STUDY – AIG

AIG Inc, although widely regarded as one of the world's largest insurance companies, is a conglomerate whose activities go well beyond insurance. Below the top holding company there are four business units, each made up of a complex structure of subsidiary companies: Property and Casualty, Life and Retirement, Asset Management and Financial Products (FP). While the trigger for AIG Inc's bailout by the US authorities was the FP business, its liquidity problems have since worsened as a result of investment activities using (but not on) the balance sheets of the insurance companies.

Primary problem

FP was a largely unregulated part of the AIG corporate structure (although it was part of the group-level consolidated supervision carried out by the Office of Thrift Supervision (OTS)). It undertook a number of over the counter (OTC)derivative activities including 'insurance' on the credit risk attached to collateralised debt obligations or credit default swaps (CDS). At the end of 2007, the nominal outstanding on FP's CDS portfolio was estimated at $500bn. As credit spreads began to widen, FP incurred losses (and also recognised further mark-to-market losses after some adjustments to their accounting) on this portfolio. As the losses developed and the broader perception of FP's exposures deteriorated, a credit rating downgrade of the group became inevitable. This downgrade triggered collateral requirements on the very contracts that caused the problems, and AIG Inc could not find the liquidity to meet the collateral calls.

Negotiations over the days leading up to 16 September 2008 to release liquidity from insurance subsidiaries proved unsuccessful (as regulators of the individual entities sought to protect their own positions in accordance with their remits), and the US authorities decided to step in and provide the necessary liquidity (initially $85bn), on very onerous terms.

The insurance subsidiaries effectively became collateral against the loan from the Federal Reserve Bank of New York (FRBNY). AIG Inc's current management is now trying to realise the value of some of those subsidiaries to repay the loan and leave sufficient liquidity to cover the collateral it needs to post. Whether or not this leaves enough cash at holding company level to meet the eventual losses on the CDS portfolio is still unclear, something Edward Liddy (AIG's CEO) has admitted publicly.

Secondary problem

As these events were unfolding, a second liquidity problem developed quite quickly. AIG Inc also conducted a securities lending programme, using the assets of some of its insurance companies to raise cash collateral from repo counterparties, and then reinvesting this cash in asset-backed securities (ABS). As the credit crunch developed, the repo counterparties needed liquidity themselves and therefore started unwinding their positions. This left AIG Inc needing to find about $60bn of cash to repay the collateral they had taken. However by that time there was no market for the ABS that AIG held.

As concern mounted about the level of the CDS losses, the rate and price at which subsidiaries could be liquidated, and the prospect of rolling the securities lending programme, the total liquidity line required extended from the initial $85bn to $150bn and the terms on which the initial liquidity was provided was renegotiated to be less

onerous and better suited to remaining in place for a number of years. There have since been further transactions in attempts to ring-fence both the securities lending liabilities and the remaining losses from the CDS portfolio.

BOX 2E: CASE STUDY – LEHMAN BROTHERS

Lehman Brothers, a leading US investment bank, filed for bankruptcy proceedings on 15 September 2008. The filing came after a year of difficulties caused by the financial crisis that began in July 2007. Lehman Brothers had been a predominantly fixed-income house, and through this had been a major participant in many of the credit markets that later became central to the financial meltdown. It had engaged not only in securitisation activities for clients, but had also acquired and developed a range of mortgage origination businesses specialising in subprime mortgages in the US and nonconforming mortgages in the UK. These origination businesses had been a powerful source of earnings prior to 2007, providing assets that could be securitised and sold on into the international capital markets. Simultaneously, Lehman Brothers had also been a major lender against commercial real estate and investor in real estate, using the securitisation market as a source of funding for its lending business.

Lehman Brothers had also expanded, with other investment banks, the scale of its leveraged loan business; as competition in this area grew, covenants across the market became weaker, leverage multiples higher, and the quality of due diligence poorer.

When the credit crisis began, the firm still held large amounts of assets from each of these businesses. At 31 August 2007, shortly after the beginning of the credit crisis, the firm had $88bn of mortgage and mortgage-backed assets on its balance sheet, and commitments to extend an additional $12bn in mortgages. At the same time, it also had $38bn of corporate lending commitments, $31bn of acquisition finance commitments (the majority of this non-investment grade), $6bn of private equity and principal investment commitments, and $20bn of real estate held for sale. While some hedges were held against these exposures, the gross total of these investments was $195bn, which was approximately 29% of the firm's total assets and approximately nine times the value of the firm's stockholder's equity.

With considerable exposure to asset classes that became more illiquid and troubled over time, the firm was relatively slow to respond. It scaled back its US mortgage lending in January 2008 and its UK nonconforming lending in April 2008. Although it sought to offload troubled assets, the pace of this did not pick up until the second quarter of 2008, by which time mismatches between the firm's positions and its hedging positions had caused significant losses for the firm.

During the third quarter of 2008, the firm continued to experience considerable difficulties with respect to its legacy assets, producing a net loss for the quarter of $3.9bn. With questions over its business model, and with a weakened capital position, speculation about the firm's survival became more intense. Management actions to deal with the problems were seen as too little and too late, and its share price suffered heavy falls. In the final week of the firm's existence, its share price fell by 72%. Finally, the loss of confidence in the equity market spilled over into the debt markets, with counterparties withdrawing support for the firm. The firm's stock of liquid assets was largely used up through loss of

unsecured debt instruments, loss of repo facilities, pledges of collateral for intraday risk to clearing banks, and loss of liquidity through timing differences on the unwinding of prime brokerage positions. Although other sources of liquidity were available to the firm in principle, the catastrophic collapse in confidence was such that it made it difficult for the firm to re-open for business, given the unwillingness of counterparties to trade with the firm. Discussions for a possible takeover of the firm collapsed over the weekend of 13-14 September, and the parent company, and many of its subsidiaries, filed for bankruptcy on 15 September 2008.

3 The role of inadequate capital and liquidity in causing instability

Key issues in this section

A range of shortcomings in the current international prudential framework permitted the accumulation of system-wide risk that has crystallised in the current financial crisis. These include: insufficient minimum levels and quality of capital; dilution in the quality of capital resources banks hold; over-reliance on model-based approaches to capital requirements; insufficient mitigants to procyclicality; excessive balance sheet leverage; inadequate risk capture by the capital framework for market risk; and, rapid accumulation of funding liquidity risk. Finally, issues bridging capital and liquidity, such as asset encumbrance, have emerged as an important regulatory gap.

FSA position and objectives

Following the outbreak of a severe systemic financial crisis, it is appropriate that the level of capital required by the Basel II framework should be reviewed. Further, the share of going concern capital in a bank's total capital resources is paramount. For systemic banks there is little or no role for dated subordinated debt as eligible regulatory capital. Procyclicality in risk-based capital requirements, in both the banking and trading books, is a key macro-prudential issue. The current mitigants, including stress testing under Pillar 2, are necessary but not sufficient – further measures to address procyclicality are needed. The costs and benefits of additional regulatory capital should be analysed and the FSA proposes to publish further work quantifying these.

Fundamental reforms of the international prudential framework for banks are urgently needed, including rebalancing it to focus on minimum liquidity as well as minimum capital standards. The Basel II framework should be enhanced, and crucially a wider range of policy measures are needed to achieve the macro-prudential objective of overall financial system stability.

3.1 This section sets out the background to the current prudential framework for the banking sector and how its shortcomings allowed systemic risk to build up in the financial system, leading to the current financial crisis. Following an introduction reviewing the role of regulatory capital, and the development of Basel II, this section sets out the key sources of shortcomings in prudential standards. These shortcomings are:

(i) insufficient quantity and quality of capital;

(ii) over-reliance on model-based approaches to regulatory capital;

(iii) inadequate mitigation of procyclicality through Pillar 2 or other measures;

(iv) excessive leverage and dilution in capital standards over time;

(v) insufficient capital required in model-based approaches to market risk;

(vi) the absence of minimum standards for funding liquidity; and

(vii) regulatory gaps on issues such as asset encumbrance which bridge capital and liquidity.

3.2 The two following sections set out appropriate policy responses to these shortcomings. The first set of responses deals with micro-prudential measures, i.e. policy steps which should be taken to ensure that each individual bank achieves prudential standards sufficient to provide its depositors with adequate protection. The second sets out how the prudential framework should be reformed to address the risks in the banking sector as a whole.

Insufficient quantity and quality of capital

3.3 The increasing strains under which banking systems around the world are currently operating have underscored the vital role of having sufficient levels of capital and liquidity both for banks individually and at the system-wide level. A weak banking sector leads to banks that are unable to provide the funds necessary for the growth of productive capacity in the real economy and inadequate liquidity in financial markets. The first part of this section sets out the rationale for regulatory capital requirements, why the quality of capital matters as much as the quantity, and considers the implications of the comparatively recent trend for regulatory capital measures to converge with economic capital. Annex 1 provides an analysis of the benefits and costs of imposing capital requirements.

The role of regulatory capital

3.4 The role of regulatory capital needs to be understood in the context of prudential regulation generally, which in turn relates to the economics of the banking sector. One key economic function of the sector is to channel loanable funds from net savers to net borrowers. This necessarily involves maturity and liquidity transformation because net savers prefer liquid short-term assets while net borrowers seek finance which is long-term and is illiquid in the sense that the bank does not have an option to require early repayment. In order to perform their economic role, banks must

therefore accept and manage liquidity risk, interest rate risk (in both cases due to the maturity mismatch) and credit risk, due to uncertainty about individual borrowers' idiosyncratic creditworthiness, as well as systematic changes in credit risk flowing from the business cycle.

3.5 Like any other company a bank needs an adequate level of capital to support its activities and prosper. However, banks' capital resources are particularly important because the closure of a bank can cause considerable consequential damage beyond its owners, employees and creditors due to its role in the payments system and as a provider of financing to business and consumers. This establishes the case for minimum regulatory capital requirements, which have a number of benefits. First, they provide a degree of cost internalisation, limiting the negative externalities inherent in bank failure. Second, by ensuring a minimum level of positive net worth, they can discourage excessive risk-taking, especially the so-called 'gamble for resurrection', as owners have a larger investment at stake and hence have more to lose. Furthermore, capital buffers over and above the regulatory minima can allow a bank to continue as a going concern after having experienced unexpected losses, contributing to overall financial stability.

3.6 Prudential capital requirements also have an important role in the context of DGSs. Given that banks in general have more liquid liabilities than assets, if depositors believe the solvency of the bank to be threatened, it is rational for them to remove their deposits. By doing so they force a bank either to find alternative finance very quickly or to sell assets earlier than expected, but finance may not be available or only at penal rates of interest, and assets may not be liquid enough to permit rapid sales without significant value loss. This presents the possibility of an acute market failure where rational self-interested action can cause widespread economic losses.

3.7 A key objective of a DGS is to reduce the risk of depositor-led bank runs.[1] However, the very existence of such a scheme may create moral hazard by removing incentives for depositors to monitor bank solvency since large downside losses will in part be transferred to the DGS and therefore to other financial firms or the taxpayer. So regulatory capital requirements mitigate this form of moral hazard, namely that deposit insurance induces bank management to take on excessive risk.

3.8 Finally, an important purpose of regulatory capital is to promote confidence in the firm, on the part of its customers and investors, its market counterparties, as well as the broader market and the public more generally. This may be more marked at times of generalised financial stress, as financial firms have higher levels of leverage (to varying degrees) than are typical in other industries, as well as assets whose fundamental value may be more difficult for third parties to assess, and which may be more than usually subject to the economic cycle.

1 However, the risk cannot be eliminated entirely and a bank's liabilities to depositors will always have some degree of risk attached to them. Even with deposit protection there are reasons why a depositor run might be rational, in particular the depositor might be concerned about lacking access to funds during the time between bank failure and the protection scheme paying out. The classic reference on the economics of bank runs is Diamond, D.V. and Dybvig, P. (1983), 'Bank Runs, Deposit Insurance, and Liquidity', *Journal of Political Economy* 91, pp. 401-419. The possibility of contagious bank runs is analysed in Bhattacharya, S. and Thakor, A.V. (1993), 'Contemporary Banking Theory', *Journal of Financial Intermediation*.

Basel I and the absolute level of capital

3.9 Basel I, the first global minimum capital adequacy standard for the banking sector, was agreed in the late 1980s, and adopted in most regulatory regimes across the world – including in the EU through the Capital Adequacy Directives.[2] The historical context was a perception among central banks and banking supervisors that bank capital levels had fallen to dangerously low levels, particularly against the background of the Latin American debt crisis. In addition there were concerns that the absence of an international standard permitted an un-level playing field for internationally active banks.

3.10 Basel I required capital to be at least 8% of a bank's RWAs, and that at least half of this should be higher quality Tier 1 capital. The calibration, notably the choice of the 8% figure, was not the result of detailed quantitative analysis as to the optimal level of capital, but was based on judgement of the level of capital deemed appropriate and realistic, including with regard to the position of banks that were generally considered to be well-capitalised at that time.

3.11 The calibration of Basel II was intended to keep the overall amount of capital required for the banking system as a whole broadly unchanged, while giving firms a modest incentive to incur the costs of building satisfactory models enabling them to adopt more advanced risk-sensitive approaches. So the calibration of the current capital requirements for banks is pragmatic. In the light of the current severe financial crisis, and the fundamental changes in the nature of the financial sector, it is appropriate that policymakers revisit the issue of the overall calibration of capital requirements under Basel II.

3.12 However, because of the greater complexity of Basel II, estimating the overall amount of required capital for the banking system as a whole is more uncertain than under its predecessor. The use of advanced approaches to risk measurement, their responsiveness to the economic cycle, and the possibility of substituting banking book risks for trading book risks all increase the potential variability in the overall capital requirement, for any given set of underlying economic conditions. The consequences of widespread use of model-based approaches to derive regulatory capital requirements are discussed later in the section.

The path to Basel II

3.13 Since the Basel I Accord was agreed in 1988, changes in the nature and scope of banking activities, the globalisation of the financial sector, developments in financial risk management and resulting financial innovation have occurred at an extraordinary pace, and in some areas accelerated even further in the last decade. These changes have brought benefits in the form of a wider range of, and more efficient financial

2 Directive 89/299/EEC on own funds and Directive 89/647/EEC on a solvency ratio, which were subsequently consolidated in Directive 2000/12/EC relating to the taking up and pursuit of the business of credit institutions. The scope of application of the Basel I and II accords is internationally active banks. The EU legislation which imposes the Basel accords on Member States has a wider scope; in the UK it includes, but is not limited to, banks and building societies. In this and subsequent sections the word 'bank' is used as short-hand and refers also to building societies and non deposit-taking banks, i.e. investment banks, where appropriate in the particular context.

services, better serving the needs of individual consumers and business. However, they have also created immense challenges for policymakers in balancing the objectives of maintaining financial stability and protecting consumers of financial services with allowing the financial sector to operate efficiently and innovate.

3.14 Over the same period the approach to prudential regulation has significantly increased in complexity due to the increasing sophistication of financial instruments and wider adoption of model-based approaches to regulatory capital, among other factors. This may partly have come at the expense of a narrower focus on solvency requirements, resulting in insufficient emphasis on liquidity compared with more traditional regulatory approaches to the banking sector. The market risk capital requirements of 1996[3] were the first major initiative in this regard, and this has also been the major thrust of Basel II, which introduces risk-sensitive capital requirements for credit risk and operational risk. The key change was the introduction of the Internal Ratings Based (IRB) approach to capital requirements for credit risk, which is described in the box below.

Box 3.1: The IRB approach

In essence, the IRB approach to credit risk capital requirements is based on a formula representing a stylised 'economic capital' model which extends Merton's 1974 model for pricing credit risk to a portfolio of credit risky assets. According to Merton's model, borrowers default if they cannot meet their obligations at a fixed horizon (e.g. one year) because the value of their assets is lower than the due amount. Merton modelled the value of the assets of a borrower as a variable whose value can change over time. He described the change in value of the borrower's assets with a normally distributed random variable.

Vasicek[4] extended Merton's model to a portfolio of credit-risky exposures to obligors whose asset values are linked by a correlation with a single common factor – the state of the economy. A key feature of the 'single factor' model is that in the limiting case of a perfectly granular portfolio it allows the required capital for a given exposure to be independent of the rest of the (theoretical) portfolio. This is clearly a desirable characteristic when calculating regulatory capital, as the capital required for different transactions can simply be added together.

The BCBS then effectively 'parameterized' the resulting stylised model by introducing asset class specific values for correlations (e.g. 15% for mortgages), the use of downturn parameters for Exposure at Default (EAD) and Loss Given Default (LGD), as opposed to average measures of these parameters which were a feature of pre-existing economic capital models, floors on default probabilities and a 'maturity adjustment' for corporate exposures. The overall calibration is then adjusted, most notably through a final scaling factor (currently 1.06) with the aim that Basel II produces capital requirements, for banks as a whole, broadly similar to that delivered by Basel I.

3 Amendment to the Capital Accord to incorporate market risks, January 1996. www.bis.org/publ/bcbs24.pdf.

4 Vasicek, O. (2002) Loan portfolio value. RISK, December 2002.

The minimum capital delivered by IRB consists of two components. Expected Loss (EL), comprising both the losses that are expected to be incurred on already defaulted assets and an estimate of the losses that might be expected over a one-year period in stylised stress circumstances on the performing book, is deducted from a IRB firm's regulatory capital. However, this deduction is reduced by credit risk provisions raised by the firm. Hence, within limits, a firm's provisions effectively count as part of its capital.

The major component of the capital needed by an IRB firm is, however, the requirement which represents potential volatility around EL, and which is known as Unexpected Loss (UL). In the case of the performing book, this is derived from the stylised model described above and thus represents the credit risk losses that might be incurred in a severe downturn.

3.15 Having set out the key role of capital requirements in prudential regulation, there are three fundamental issues which have to be addressed by any prudential framework:

- the primary characteristics of capital which is eligible to meet regulatory requirements;
- the extent to which regulatory capital requirements should converge with the measures of economic capital that banks use for internal capital management purposes; and
- procyclicality in capital requirements.

3.16 Subsequently this section discusses key factors which led to the current crisis: excessive leverage; insufficient capital in trading books; and the absence of robust regulatory standards on funding liquidity. In each case the current financial turmoil has led the FSA to the conclusion that a re-examination of policy is necessary, in particular in the light of the shift in emphasis towards macro-prudential objectives. The implications of this shift are discussed in Section 5.

Insufficient capital quality

3.17 Firms hold a mixture of equity and debt capital to satisfy their regulatory requirements and the risk and reward preferences of equity shareholders and debt investors. A firm's capitalisation and gearing are important market indicators for potential investors as well as rating agencies and other interested parties. Its choices are constrained by the requirements on the composition of eligible capital for regulatory purposes. Eligible capital can be divided into two fundamental categories:

(i) going concern capital, which is able to absorb losses while a firm is a going concern, both when the firm is in a state of financial health and during periods of financial stress; and

(ii) gone concern capital, which is able to absorb losses in a gone concern scenario, protecting depositors in a winding up, or in the event of insolvency.

3.18 The Basel II framework adopts a tiered approach in order to maintain minimum standards in the overall quality of banks' eligible capital, as well as to achieve an appropriate mix of going and gone concern capital.[5] For regulatory purposes, the quality of a capital instrument and hence its place in the tiering hierarchy is determined by the extent to which it has the following characteristics:

- loss absorbency, including but not exclusively through the ability to defer coupon payments;
- availability or permanence: capital should be fully paid up and be available so as to absorb losses when needed; and
- subordination under a gone concern: in the event of a winding up or insolvency or similar procedure, the rights of capital holders should be subordinate to the rights of senior creditors.

3.19 'Core Tier 1' has become a widely used term to describe a measure of the highest quality capital; although it does not have an internationally agreed precise definition, it refers to capital items which absorb the first losses on a going concern basis (generally ordinary shares and reserves). Reserves[6] will generally account for most of a firm's core capital; they typically arise from earnings retained within the business, as well as the share premium account. The other elements of Tier 1 capital include perpetual non-cumulative preference shares and hybrid capital instruments, which have features of both equity and debt and are intended to provide at least partial loss absorbency in a going concern while being treated as debt for tax purposes.

3.20 In practice, the majority of Tier 2 and Tier 3 capital can only absorb losses, protecting depositors and other senior creditors, in liquidation.[7] To meet this objective, capital need only have a subordinated claim in insolvency and not be repayable before insolvency.

3.21 The Basel framework also imposes a series of limits on the proportions of capital requirements that can be met by lower quality capital instruments. A bank must meet at least 50% of its Pillar 1 banking book requirements with Tier 1 capital and at least 50% of this capital must be composed of core capital. The remaining capital requirement can be met by Tier 2 instruments. Finally, when the Basel Accord was amended to take account of market risk, it introduced a third tier of capital, eligible to meet part of the market risk-related capital requirements. Tier 3 includes short-term subordinated debt which is similar to Tier 2 (although typically of shorter duration) and absorbs losses on a gone, rather than a going, concern basis.[8]

5 The positive components of capital resources are also adjusted through prudential filters and deductions. The current FSA rules specify certain deductions that must be made from specific components of regulatory capital. Deductions are usually made because the item does not help the firm absorb losses as a going concern. The FSA set out its current approach and also its forward thinking on deductions in Discussion Paper 07/6, Definition of Capital (December 2007).

6 Excluding revaluation reserves.

7 The exception is upper tier 2 capital which has some capability to absorb losses on a going concern basis.

8 But unlike dated Tier 2 subordinated debt, Tier 3 subordinated debt must have lock-in features so that payments are not made if a firm is in breach of its capital requirements.

3.22 The result is a complex set of requirements whose overall rationale and even, in some areas, internal consistency could reasonably have been re-examined internationally even before the events of the past 18 months.[9] In the light of the financial crisis the FSA's view is that a thorough review must move forward quickly. The next part of this section supports this by considering how a range of capital instruments have performed during the crisis and the box below briefly sketches some of the key differences between the approaches taken respectively by Credit Rating Agencies (CRAs) and regulators in assessing the quality of eligible capital.

Box 3.2: CRA views of capital

CRAs analyse capital adequacy to determine the credit ratings of financial institutions and of the securities they issue, to evaluate the risk of default to senior creditors. Notably, CRAs' approach to assessing overall financial strength is eclectic: alongside available capital and a range of capital ratios other indicators such as profitability and liquidity factor in the agencies' overall analysis. With regard to particular securities there are a number of significant similarities and contrasts between the approaches of regulators and CRAs:

- Similar to the regulatory approach of ordering capital instruments into tiers, the CRAs use a notching system to assess the likelihood of default of a capital security based on its level of subordination;
- To order capital instruments by quality, both the regulator and the CRAs consider similar criteria, for example, flexibility of payments, permanence and loss absorbency;
- Some agencies assign a percentage of 'equity' credit to hybrid instruments, depending on their ability to meet certain criteria. This is typically more stringent than the regulatory approach which provides full recognition in Tier 1 or Tier 2 provided the instruments satisfy the required eligibility criteria;[10] and
- CRAs do not generally give any equity credit for dated subordinated debt that issuers may hold, which supervisors recognise as Tier 2 or Tier 3 capital subject to the instrument meeting eligibility criteria.

Capital quality in the financial turmoil

3.23 During the current financial turmoil, UK banks' unexpected losses have generally been absorbed by core capital (specifically, retained earnings). There have also been several cases of firms cancelling dividend payments on ordinary shares (but not preference shares).

3.24 By contrast, in general, hybrid capital instruments (including preference shares and innovative Tier 1 in particular) have not absorbed losses, either through coupon deferral or cancellation.[11] This calls into question the quality of the instruments to

9 The FSA issued a Discussion Paper on these issues in 2007 (DP07/6 – Definition of Capital).

10 Although, rating agencies give full equity credit to mandatory convertible securities which are not recognised as core capital in the FSA rules until after conversion.

11 Issuers have strong economic incentives not to defer or cancel coupons, since doing so could send adverse signals, lowering shareholder value and impinging on their ability to raise additional capital. Such actions could also detrimentally affect liquidity.

absorb losses on a going concern basis. The FSA's experience is that firms have been required to recapitalise with Core Tier 1 capital following losses that have resulted from marking down positions in trading books.[12] Moreover, because of the illiquidity of some positions, it is not always possible to reduce the trading book size on a shorter timescale than the duration of the Tier 3 instruments. This suggests that the different types of capital allocated against market risk capital requirements have not absorbed losses when these risks have crystallised.

3.25 Further, because of the limits imposed on lower tiers of capital and the impact of gearing, a firm is unlikely to have sufficient regulatory capital to meet its overall capital requirements once core capital is depleted by losses, especially if highly geared in capital terms. Non-core capital would not be sufficient in those circumstances (unless it had converted or could convert into core capital at an appropriate point in time).

3.26 In theory a bank could become insolvent without imposing losses on its depositors or wider economic losses, even if a significant proportion of its capital were in the form of subordinated debt. The debtholders would suffer capital losses which serve to protect depositors and the DGS. However, if a bank is sufficiently important to the payments system, to the provision of credit to the real economy, or to its counterparties in the rest of the financial sector, it may well be that the benefits of maintaining the bank as a going concern far outweigh the costs of supporting it, including where this entails placing taxpayer funds at risk.

3.27 This leads to the key conclusion that the financial crisis has validated the CRAs' view of dated subordinated debt; these instruments are in fact of little or no value in terms of maintaining confidence in a firm in times of stress, particularly for systemically significant banks. The regulatory approach to hybrid instruments also merits re-examination. In both cases this reflects in part a shift in regulatory perspective towards a macro-prudential approach focused on the ongoing stability of the financial system.

Trends in issuing capital instruments

3.28 Since the original Basel Accord was agreed in 1988, one of the most significant changes for many financial institutions is in the composition of capital resources, brought about by increased issuance of subordinated debt and hybrid capital. Innovation in the capital markets in the late 1990s saw firms structuring subordinated debt instruments that mirrored the features of preference shares but were deductible for tax purposes. Perpetual instruments were also structured with features that signalled a redemption date and therefore appealed to fixed income investors. These instruments have been termed hybrid capital instruments because of their mixed equity and debt characteristics.

12 As noted in FS08/5, Definition of Capital Feedback on DP07/6.

3.29 In response to this the BCBS published in 1998 the Sydney Press Release[13] on Tier 1 capital. This provided a framework for capital instruments with incentives to redeem issued either directly or via Special Purpose Vehicles (SPVs) and concluded that such instruments should be limited to 15% of Tier 1 in order to preserve the overall quality of Tier 1 capital. The BCBS also stated that common equity and reserves should make up the predominant portion of banks' Tier 1 capital to mitigate the risk that the highest quality forms of Tier 1 capital, e.g. ordinary shares and reserves, would be replaced with lower quality capital instruments.

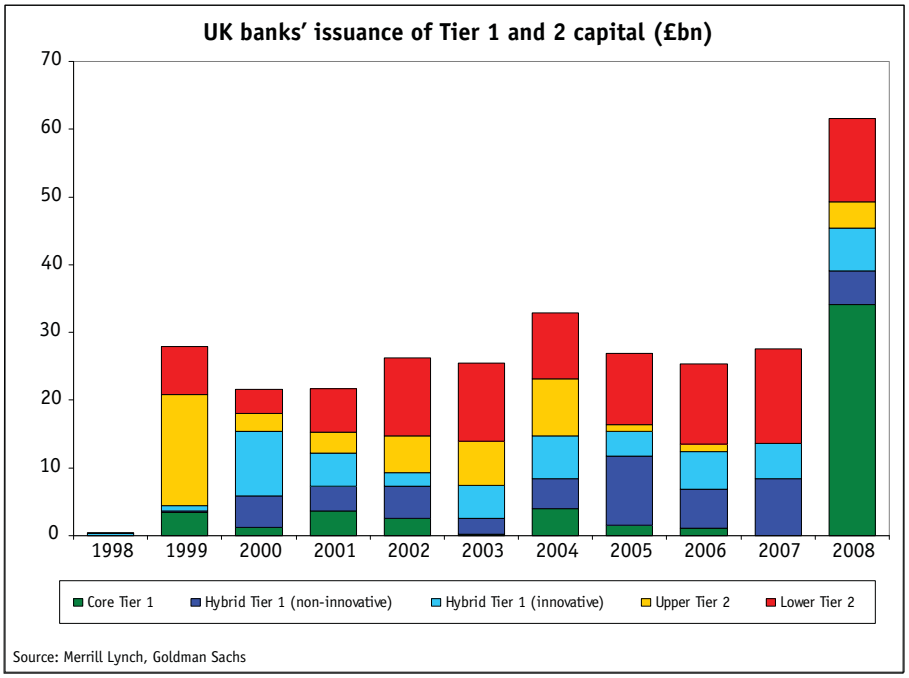
3.30 Since the emergence of hybrid capital instruments the investor base has expanded considerably and spreads on hybrid capital tightened during the upswing years to the extent that hybrid Tier 1 (non step-up) reached pricing lows in the region of 75 basis points over senior debt. Consequently, these instruments became increasingly attractive to issuers and now make up a significant (although capped) proportion of Tier 1 capital. They were also attractive to investors who gained extra yield but still had protection from the company's true equity capital. This type of capital has been used to expand balance sheets, finance acquisitions, absorb regulatory deductions and bolster published Tier 1 ratios. It has also supported further gearing by increasing the capacity to issue Tier 2 capital.

3.31 The growth in Tier 1 hybrid capital issuance is illustrated by chart 3.1 below which show the amount of Tier 1 capital issuance in the UK since 1998 and the growing amount of innovative and non-innovative (hybrid) capital that has been issued since this date. While limits on hybrid capital vary across EU Member States, this growth is representative of the growth in hybrid capital in the EU more generally. Since 1998 UK banks have issued approximately £100bn of hybrid Tier 1 capital which accounts for approximately 66% of external Tier 1 capital raised.

3.32 The increase in hybrid issuance has been coupled with further innovation which has weakened the permanence and loss absorbency of capital instruments through mechanisms such as step-ups and stock cumulative coupon mechanisms. It has also become apparent that in some cases investors may not have adequately analysed the terms of the instrument they were investing in and have as a result mispriced the risk. The market turmoil has exposed the inadequacies of these instruments in terms of their inability to absorb losses in times of stress and has led to a renewed focus on the importance of the highest quality core capital.

13 The Sydney Press Release of 27 October 1998 http://www.bis.org/press/pg981027.htm

Chart 3.1



Source: Merrill Lynch, Goldman Sachs

Over-reliance on model-based approaches to regulatory capital

3.33 A key area where micro- and macro-prudential policy perspectives may diverge is the priority they attach to economic and regulatory measures of risk-based capital. Basel II is based in large part on the premise that it would be desirable for the methodologies of banks' own economic capital models and regulatory models to converge.[14]

3.34 Reducing the divergence between regulatory and economic capital methodologies can yield many benefits, in terms of delivering economically valid relative risk weights for different assets, capturing risk and limiting arbitrage opportunities. In principle a valid economic model of the capital a bank requires for each of its exposures would promote efficient allocation of capital across the economy and imply that for any given total quantity of capital required, distortionary costs are minimised, helping to reduce the overall costs of regulatory intervention.

3.35 Further, linking regulatory capital with banks' own capital allocation methodologies helps ensure that it is not merely an adjunct to a bank's own risk management and capital planning but at least partly integrated with these processes. In theory, this should allow regulators better to understand the drivers behind risks the bank is taking and ensure that the estimation of regulatory capital requirements benefits from the same resources, including data sources and models, as are used by the bank for its own decision making.[15]

14 The new framework has ushered in a new wave of model-based approaches to estimating regulatory capital. Value at Risk (VaR) models in the trading book pre-date Basel II, so the main innovations were IRB models for credit risk and Internal Model Method (IMM) models for counterparty credit risk, as well as Advanced Measurement Approach (AMA) models for operational risk.

15 The process by which regulators satisfy themselves that the inputs to the regulatory capital calculation are actually used by the firm, rather than being an artificial construct for the purposes of satisfying regulatory requirements, is known as the 'use test' and is a key part of approving IRB and other modelling approaches.

3.36 However, this does not mean that the calibration or key elements in the structure of regulatory capital models should converge with economic capital models. Although the IRB model implementation is still in its early days there is significant evidence to suggest that, in many cases, firms' own economic capital models underestimate the capital required to achieve prudential objectives. This may result from less conservative choices for particular variables and from a different level of correlation within and across asset portfolios due to higher measured diversification effects. For example, regulators may use internal benchmarks which reflect an industry-wide view of longer-term experience whereas firms' own models may be based on shorter data series and reflect the firm's idiosyncratic loss history. Further, when firms calculate overall required capital, there is a tendency to assume some arbitrary level of diversification between risks.[16] The overall result is that typically internal assessments of required capital can be significantly below Pillar 1 requirements.[17]

3.37 There are further reasons to doubt whether economic capital models alone are fully adequate for micro-prudential purposes, let alone to achieve macro-prudential policy objectives. While these models can be effective at identifying and ranking risk, it is not clear that either banks' senior management, investors or market analysts and rating agencies find the outputs of such models entirely persuasive. For example, it is clear from banks' capital plans that the model outputs inform capital planning but do not typically set the level of capital held.

3.38 The implication for policymakers is that wider adoption of capital modelling which is based fundamentally on economic models – beyond the current regimes set out in Basel II – should not proceed until the systemic impacts of this kind of approach to regulatory capital are better understood. In some areas (such as the use of VaR models in the trading book) there may be a case for a more prescriptive approach than is currently applied.

Increasing complexity

3.39 As described above, Basel I was risk-sensitive only on a very broad basis, and addressed what were seen as clear deficiencies at that time – that the level of capital held by many banks was too low and that there was inadequate risk capture of off-balance sheet obligations. Through a process of evolution since 1988 the regime now contains a menu of options of varying risk-sensitivity available for each risk. In part these changes addressed clear shortcomings in Basel I whose rule-based definitional boundaries generated considerable variation in required capital where there was relatively little variation in economic risk, and little variation in required capital where there was considerable variation in economic risk.

16 Sometimes this is a simple 'top down' approach, e.g. a 50% correlation between risks or a variance-covariance matrix approach. These parameters are often arbitrary, with little empirical evidence used to justify them. More sophisticated idiosyncratic approaches using copulas based on firm-level data are used but such developments are at a very early stage.

17 A recent survey of a small number of major UK banks' models indicated a figure of 30-50% below the Pillar 1 minimum for credit risk would be typical.

3.40 One drawback of greater risk sensitivity of capital requirements is that the capital regime has necessarily become more complex as more rules and guidance are needed to identify the relevant treatment of a burgeoning variety of risk exposures. And firms have substantial choice to adopt the approaches which reduce their overall regulatory capital requirements. One of the features associated with this development is that industry interests have themselves contributed to this increasing complexity, both through the general promotion of approaches based on firms' internal estimates and through lobbying for special treatment for certain types of transactions. Inevitably there is more scope for such lobbying in an optional regime which allows firms to choose among a range of approaches for modelling their risks.

3.41 The resulting complexity of the regime is unwelcome and could be reduced, at least as regards the larger firms, if supervisors were able to rely completely on their internal models. However the FSA's experience with those aspects of internal models that already form part of the regime indicates that this is not a realistic goal in the short-term and may, for the reasons set out earlier (about the inherent differences between economic and regulatory capital models) never be completely achievable.

3.42 The key criterion for safe use of models is that they are validated as opposed to just representing a hypothesis. Even where VaR, IRB, IMM and AMA models are properly validated, the range of factors involved mean that there is only a limited degree of comfort that can be taken from a prudential perspective. Further, supervisors can draw practically no comfort from validation of full economic capital models, which introduce a much more complex correlation/calibration structure, and assumptions on diversification within and between risk types. The challenges of model validation for IRB models of credit risk are described in more detail in the box below.

Box 3.3: IRB model validation

For the large banks the main component of their capital requirements derives from the use of the IRB approach to credit risk, which is based upon banks' own estimates of Probability of Default (PD) and usually EAD and LGD. No framework for modelling risk will ever provide complete assurance of adequate risk capture and it will always be the case that banks' modelling capabilities can be improved. The result is a wide range of plausible estimates as opposed to an obviously accurate one. This means that it is not clear (to the banks, supervisors or third parties) to what extent differences in the PD, LGD and EAD estimates among a group of banks are due to genuine differences in the actual risk, or discrepancies in the risk measure estimates for what is the same risk.

On an interim basis, the key safeguards are the transitional capital floors which are determined as a percentage of the Basel I requirement,[18] conditions imposed by the FSA on the use of these models, and the incorporation of 'conservatism' into the models (effectively to require more capital than would otherwise be necessary).

18 Imposed in the EU in accordance with Article 152 of the Banking Consolidation Directive, 2006/48/EC. (The transitional floors are due to expire at the end of 2009). http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:177:0001:0200:EN:PDF.

Inadequate mitigation of procyclicality through Pillar 2 or other measures

3.43 In 2006 the FSA and the Bank of England designed an EWS to monitor the level and procyclicality of capital requirements under the IRB approach using FSA capital adequacy returns and lending data.[19] Procyclicality is assessed by examining the changes in required capital per exposure (risk weight per exposure). Based on firms' capital return data there is only limited evidence as yet that capital requirements under Basel II are cyclical; however, this likely reflects the fact that the downturn in the real economy only began in earnest towards the second half of 2008. Notably, the academic literature on the impact of Basel II which was stimulated by the development of the new capital framework consistently argues that the framework will have procyclical effects; its key findings are set out in Box 3.4.

Box 3.4: Analysis of Basel II's potential procyclical effects

The impact of introducing risk-sensitive estimates of capital requirements for credit risk was extensively debated during the development of the Basel II framework.[20] Analysis of the potential effects of the new framework typically estimated the cyclicality of capital requirements by modelling the effects of a downturn in the economy on loan portfolios.

To isolate the incremental impact of Basel II on the cyclicality of capital requirements, the capital resources consumed by provisioning for defaulted loans should be excluded – because these also occurred under Basel I. In addition, to focus on the economic effects of cyclicality in capital requirements, changes in required capital should be measured for a fixed portfolio, otherwise management actions to reduce lending to less creditworthy borrowers is counted as off-setting the cyclicality in the underlying formula for the regulatory capital requirement. The key qualitative empirical findings from this literature are as follows:

- the model based approaches allowed by Basel II significantly increase the cyclicality of capital requirements *relative* to Basel I;
- however, capital consumed by provisioning for defaulted loans is a major contributor to cumulative demands on bank capital through a downturn so that Basel I did have significant cyclical effects in its own right;
- banks may respond to more cyclically-sensitive capital requirements by varying the size of capital buffers they hold above the regulatory minimum. However the behavioural change may not be large enough to prevent significant reductions in credit supply;

19 Most UK banks with permission to adopt the IRB approach did so in January 2008 so the FSA has capital adequacy data for 2008.

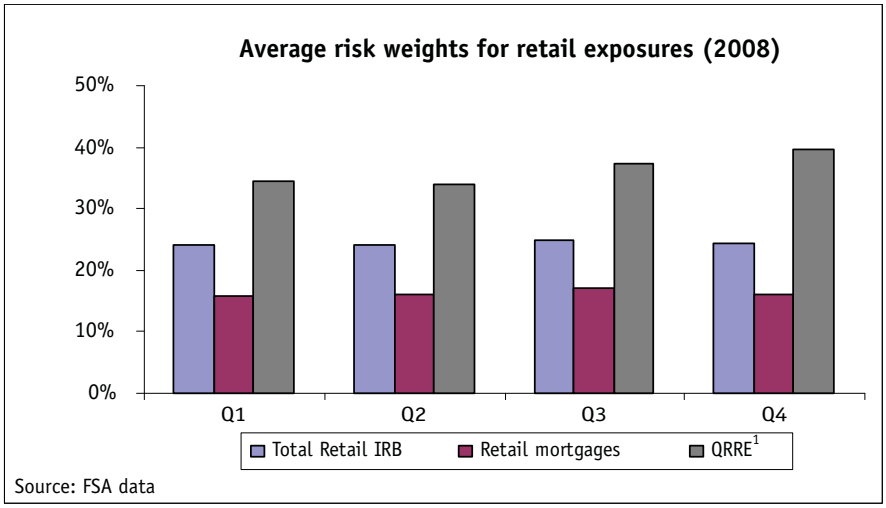
20 Key references include: Procyclicality in Basel II: 'Can We Treat the Disease Without Killing the Patient?' Michael B. Gordy and Bradley Howells, May 2004 www.bis.org/bcbs/events/rtf04gordy_howells.pdf; 'Cyclical Implications of the Basel-II Capital Standards', Anil K Kashyap and Jeremy C. Stein, November 2003 http://faculty.chicagobooth.edu/anil.kashyap/research/basel-final.pdf; 'Procyclicality and the new Basel Accord – banks' choice of loan rating system', Eva Catarineu-Rabell, Patricia Jackson and Dimitrios P Tsomocos, Bank of England Working Paper no. 181, 2003 www.bankofengland.co.uk/publications/workingpapers/wp181.pdf.

- 'Point in Time' (PiT) rating systems typically generate capital requirements which are far more sensitive to a downturn than 'Through The Cycle' (TTC) rating systems, especially for higher quality borrowers. This reflects the greater sensitivity of the formula underlying the Basel II requirements to changes in their ratings, combined with the volatility of PiT ratings; and
- although evidence is more limited, the realised cyclicality for an actively managed portfolio is likely to be much lower than for a fixed portfolio of loans because portfolio management enables a bank to reduce its exposures to higher risk borrowers.

3.44 Data for the UK banks which use the IRB approach to calculate their credit risk-related capital requirements show that aggregate capital requirements fell 5% quarter-on-quarter in Q2 2008, increased in Q3 but fell again in Q4. Higher capital requirements can be attributed to a rise in total exposure amounts rather than an increase in capital per exposure (riskiness). Chart 3.2 shows that average risk weights for secured retail exposures were relatively stable in 2008, but increased for unsecured. Underlying the aggregate exposure figure there is some variation. For instance, the volume of unsecured retail exposures declined on a quarterly basis in Q3 and Q4 but exposures to retail small and medium enterprises (SMEs) rose in both quarters. Retail mortgage exposure volumes rose 2.9% quarter-on-quarter in Q3 and 2.6% in Q4.

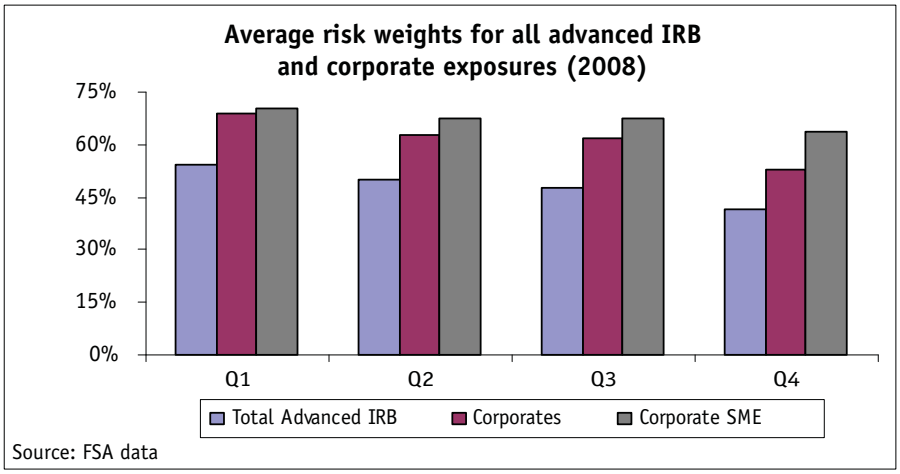
3.45 In addition to the lags between changes in the real economy and their effects on risk weights, a further likely explanation of the relative stability in risk weights seen in 2008 is that firms' incremental lending is shifting towards more creditworthy borrowers to prevent the overall level of risk rising, but even if this were the case there should still be some increase in the riskiness of existing exposures. Further, it is possible that some of the increase in lending reported is due to the drawing down of credit facilities in the corporate sector which would typically not trigger a reassessment of risk per exposure. In general this is more likely for corporate sector exposures than for retail.

Chart 3.2



[1] Qualifying Revolving Retail Exposures; typically credit cards and personal overdrafts

Chart 3.3



Source: FSA data

3.46 Average risk weights in a number of exposure classes (corporate and corporate SME) fell in 2008 Q1-4 as shown in chart 3.3. This can be attributed to refinements in banks' internal models, rather than a decline in the riskiness of firms' exposures to this sector. It may also be the case that there is a lag of several quarters between a slowdown or decline in the rate of GDP growth and the effects of this feeding through to banks' assessment of the riskiness of corporate exposures. This would be consistent with the academic literature on procyclicality. To reduce the risk that as the economic downturn progresses, banks' capital requirements for credit risk are substantially increased, the FSA is introducing a method to smooth out the capital requirement over the cycle, known as 'variable scalars'. This is one way of implementing the longer assessment horizon for risk measurement in IRB models which is clearly emphasised in the Basel II framework.[21] The key elements of this approach are explained in the next section.

3.47 The data in charts 3.2 and 3.3 only report changes in average risk weights and therefore capital held for future unexpected losses. Procyclicality can be the result of losses crystallising during the downturn of the economic cycle, as well as changes in capital requirements. This is illustrated by the data firms report on their expected losses which are deducted from provisions with any provisioning short-fall deducted from capital. If the resulting capital deduction is treated as a requirement (i.e. risk weighted at 1250%)[22] it increases the overall average risk weight by up to 10% in some instances.

21 Paragraphs 414-416 of the Basel II framework document, www.bis.org/publ/bcbs128.pdf.

22 Since the Basel II framework requires capital of 8% of Risk Weighted Assets, items which are deducted from capital can be represented as a capital requirement by applying a risk weight of 1/0.08, or 1250%.

Addressing procyclicality through Pillar 2

3.48 Much effort during the development of Basel II was devoted to considering the potential effects of cyclicality in the capital requirements.[23] In terms of the framework itself one output of these deliberations[24] was a requirement that under Pillar 2 banks perform stress-testing of their capital requirements, including to reflect the impact of a material deterioration in the economy. The key excerpt from the Basel II framework text is:

'*In addition to the more general tests described above, the bank must perform a credit risk stress test to assess the effect of certain specific conditions on its IRB regulatory capital requirements. The test to be employed would be one chosen by the bank, subject to supervisory review…. [the] stress test in this context should, however, consider at least the effect of mild recession scenarios. In this case, one example might be to use two consecutive quarters of zero growth to assess the effect on the bank's PDs, LGDs and EADs, taking account – on a conservative basis – of the bank's international diversification*'.[25]

3.49 In the FSA's implementation a stress test reflecting an economic downturn such as might be experienced once in 25 years is employed, which is likely to be more stringent than that required by the Basel framework. More broadly, there are several key points to the additional capital required under Pillar 2:

- the capital add-ons vary according to the idiosyncratic risk of the firm with add-ons varying in the range of around 10% of the Pillar 1 requirement for some firms to around 100% in particular cases;
- the capital held against the stress testing element of the Pillar 2 capital add-on can and should be absorbed during a severe downturn; and
- at present these additional requirements are not published and there is very limited information available, even on an anonymised basis, of the use of Pillar 2 capital add-ons by supervisors in different countries.

Refining the FSA's stress-testing approach

3.50 The FSA has taken steps to make clearer to firms its expectations of stress testing practices,[26] in particular expectations on the appropriate severity of scenarios. A severe economic downturn, such as might be experienced once in 25 years, should be included, together with analysis as to the likely confluence of events that can affect a firm, such as a sudden market shock followed by a severe economic downturn.

3.51 Nevertheless, recent experience of firms' stress testing has been quite negative. Indeed, in many cases firms were over-optimistic about their ability to manage their capital effectively through a downturn. Although firms' assumptions for the

23 See e.g. 'Procyclicality in Basel II: Can We Treat the Disease without Killing the Patient?' (Michael B. Gordy and Bradley Howells, 2004). www.bis.org/bcbs/events/rtf04gordy_howells.pdf.

24 Other key decisions made by the BCBS to address the issue of pro-cyclicality include setting the LGD parameter to a downturn value and recalibrating the capital requirement to reduce its sensitivity to changes in PD.

25 Paragraph 435 of the Basel II framework document, www.bis.org/publ/bcbs128.pdf?noframes=1.

26 The FSA's proposed approach is set out in *Stress and scenario testing*, Consultation Paper 08/24.

downturn can sometimes appear quite severe, the process of translating an economic scenario into a capital effect is very complicated, and the net additional capital estimated has in some cases been very modest. In large part this reflects the consequences of behavioural assumptions, including assumed high levels of retained earnings and projected management actions such as capital raising and asset sales which are over optimistic, or simply unrealistic where they are clearly not available to all firms simultaneously, or at least not without significant value destruction.

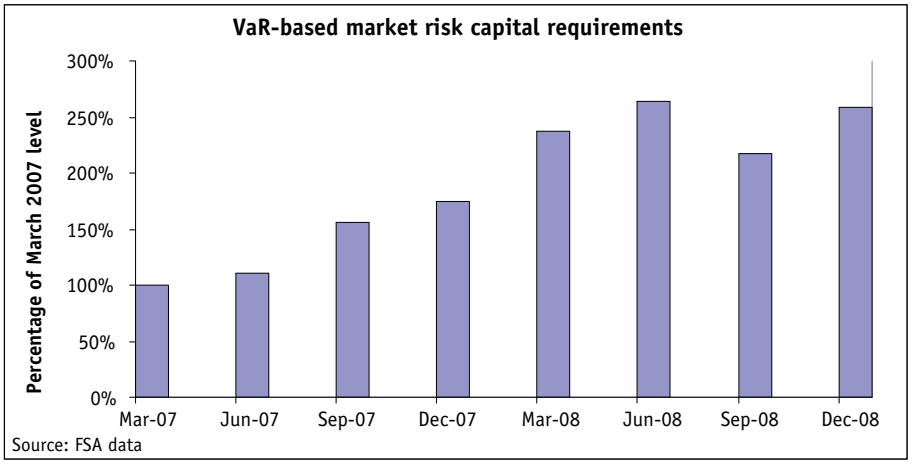
3.52 The FSA continues to regard stress-testing as a critical part of its regulatory architecture and expects improvements in banks' stress testing, and as a result it will continue to feature heavily in the ongoing supervision and Pillar 2 regime.

Procyclicality in the trading book

3.53 Much of the discussion of procyclicality has focussed on credit risk. However there is an important comparable phenomenon in market risk. The current formulation of VaR-based capital requirements in the trading book tends to introduce a significant element of procyclicality into the market risk requirements. The VaR models used are based on recent market data which is regularly updated and as a result, in periods of benign financial market conditions, the market risk capital charge will tend to be lower than across an economic cycle.

3.54 During periods of financial stress, the higher market volatility feeds into VaR measures and tends to increase regulatory requirements. Chart 3.4 shows the percentage increases in VaR-based capital requirements for market risk in aggregate for a number of London-based investment banks.[27] In the 15 months from March 2007 the VaR-based capital requirement increased by a factor of more than 2.5 times – a degree of procyclicality which far exceeds what has been witnessed in relation to credit risk.

Chart 3.4



27 It should be noted that the chart only includes data on the capital requirements derived from VaR models, and not on those resulting from the standardised method of calculating market risk capital requirements which contribute a substantial share of the total capital requirement for market risk.

3.55 In the FSA's view, a key merit of the BCBS proposals on the trading book is the additional requirement of 'stressed VaR', which will be significantly less procyclical than the current VaR-based approach. Nevertheless, a fundamental review of the trading book is needed and must include consideration of the procyclicality of market risk capital requirements. The FSA's views on other elements of a fundamental review are included in the next section.

Excessive leverage and dilution in capital standards over time

3.56 The focus of this section is on complexity, especially in modelling of capital requirements and the forces leading to declining standards in minimum required capital.

3.57 Basel I was agreed in 1988 and Basel II followed 16 years later. At the time of its introduction, Basel I originally represented a higher standard of protection for depositors than it did when Basel II came into force. This is because firms devoted significant effort to finding means of more capital efficient operation within the Basel I framework. Further, by calibrating Basel II to this reduced effective standard, regulators implicitly accepted and consolidated the decline in solvency standards.

3.58 There is a wide range of examples of activities which had the effect of reducing the regulatory calibration. In addition to the trading book arbitrage which is discussed later in this section and the dilution of capital quality outlined above, the major ones include:

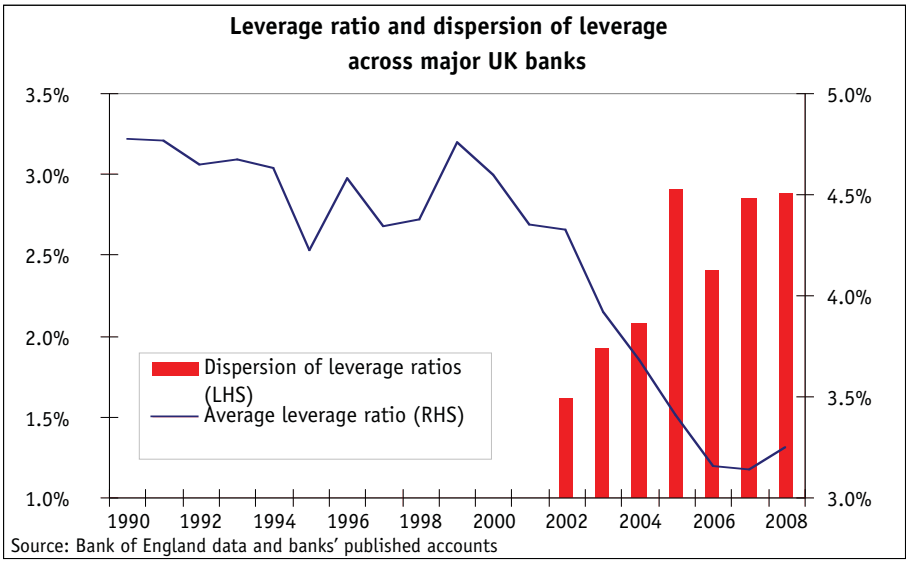
- **Securitisation**. The original Basel Accord allowed banks to re-package underlying assets which had the effect of significantly reducing capital requirements while retaining significant risk. Most national authorities did take steps to ameliorate the most conspicuous manifestations of this process prior to the implementation of Basel II (e.g. requiring deduction from available capital of the 'first-loss' piece retained by the bank) but the problem nevertheless remained to some degree.
- **Ongoing requests for concessions**. Most supervisors are familiar with industry requests for some or other concession; whether it be a reduced risk-weighting for specific classes of exposures, reduction in capital requirements to reflect tax benefits, or the ability to risk-weight certain holdings which would otherwise be deducted (i.e. given the maximum risk-weight of 1250%). While individually these concessions can often be rationalised as proportionate or appropriate in their specific context, across institutions and over time their cumulative impact is a reduction in the solvency standard.
- **'Covenant light' and reduced lending standards**. Although the enhanced risk capture of Basel II should better reflect the risk of lending activity, it is certainly the case that during the upswing years, lending standards were in many cases relaxed with the effect that under Basel I, banks were taking on higher risk business without a corresponding increase in the capital required for the higher-risk exposures.

3.59 To assess the magnitude of changes in required capital over time, the BCBS 'Capital Monitoring Group' has been performing analysis on the ex post results coming out of Basel II implementation which will in due course identify how successful the BCBS has been in maintaining the overall calibration of the regulatory capital minimum. Given the unavoidable time lags in fundamental reviews of prudential standards, there is a good case for supervisors being more structured in their efforts to identify incremental weakening in the capital requirements at a system wide level, and taking specific steps to counteract this on an ongoing or periodic basis.

Excessive leverage

3.60 Related to the problem of capital drain, banks have extended their capital/asset leverage significantly in recent years. Capital resources have not kept pace with balance sheet growth and while this can be reconciled for an individual bank by changing asset quality mix and especially the use of risk mitigation tools, the fact that many major banks exhibited a secular increase in their leverage over a period of five to ten years was a warning signal of increasing systemic vulnerability in the banking sector as a whole. This risk has now crystallised; to illustrate this point, Chart 3.5 below shows the falling leverage ratios (i.e. rising leverage), measured by total capital as a percentage of balance sheet total assets, of major UK commercial banks' domestic banking activities.[28] Only if supervisors have a high degree of confidence that such a trend across the sector as a whole reflects a transfer of risk to counterparties which are outside of the banking sector and not significantly dependent on it for funding, could it be reasonably regarded as sustainable.

Chart 3.5



Source: Bank of England data and banks' published accounts

28 The chart also shows, against the left hand scale, the increase in the dispersion of leverage ratios across the major UK commercial banks in the five years prior to the start of the financial crisis. So, not only did average leverage across the banking system increase, but particular banks became highly leveraged and the divergence across the sector rose substantially.

Insufficient capital required in model-based approaches to market risk

3.61 The fundamental premise behind a regulatory trading book is that where positions are generally liquid and are subject to mark-to-market accounting, capital need only be held to cover market movements over a horizon sufficient to facilitate liquidation. Indeed, after Basel I was modified to allow modelling of specific risks in the trading book, the BCBS noted that:

'The easy availability of market prices, the daily marking-to-market process, and the ability to trade instruments and to hedge using liquid instruments readily distinguishes specific risk modelling of trading book positions from modelling of banking book positions'.[29]

3.62 As a result, capital requirements for positions in the trading book have generally been lower than the corresponding banking book requirements.

3.63 Trading book positions must be held with a trading intent and the firms are required to have heightened control processes to allow daily mark-to-market. However, over time firms have sought to include more credit-risky positions in the trading book. There was not always significant turnover in the positions that firms held and it has transpired that any liquidity that existed was temporal and highly correlated with benign economic conditions. The trading book capital standards were not intended to deal with this illiquidity; indeed, a basic premise of VaR-based capital requirements is that the positions are liquid and can be liquidated or hedged within a short period. This has not held true in the recent past and this raises the question of whether such positions should be in the trading book as currently defined by Basel II.

3.64 While institutions have historically had the benefit of lower capital requirements in the trading book, the recent volatility in financial markets has significantly increased trading book capital requirements and, in some cases, the banking book has produced lower requirements for certain asset classes (a long-standing example of this is certain government bonds which are 0% risk-weighted in the banking book but attract a capital charge in the trading book). Many banks have again used the argument of trading intent (i.e. that there is no longer an intention to trade), combined with an acceptance that daily mark-to-market is not possible, to facilitate a movement of positions to the banking book.

3.65 The forthcoming strengthening of trading book capital requirements should go some way to reduce the current deficiencies in trading book capital, and better align capital to the risks of complex and illiquid products held 'with trading intent'. However, more robust application of the prudent valuation principles for illiquid products, combined with a fundamental review of trading book requirements will be necessary to prevent arbitrage from continuing. The FSA's views on the approach to the trading book are set out in the next section.

3.66 Along with the technical challenges of illiquidity in the trading book on the asset side of banks' balance sheets, the problems encountered by numerous banks on the funding liquidity problems banks have encountered during the current financial turmoil on the liability side of their balance sheets also require policymakers' attention.

29 BIS press release 'Modification of the Basel Capital Accord of July 1988, as amended in January 1996' 19 September 1997.

The absence of minimum standards for funding liquidity

3.67 The activity of financial intermediation results in bank balance sheets necessarily being more liquid on the liability side than on the asset side, so banks are intrinsically vulnerable to a loss of counterparty and investor confidence, regardless of their true solvency position. A bank will remain liquid only as long as creditors have confidence in it, and believe other creditors share that confidence. The recent generalised market stress highlights that firms underestimated the extent to which a reduction in confidence could lead to a sustained deterioration in a bank's liquidity position.

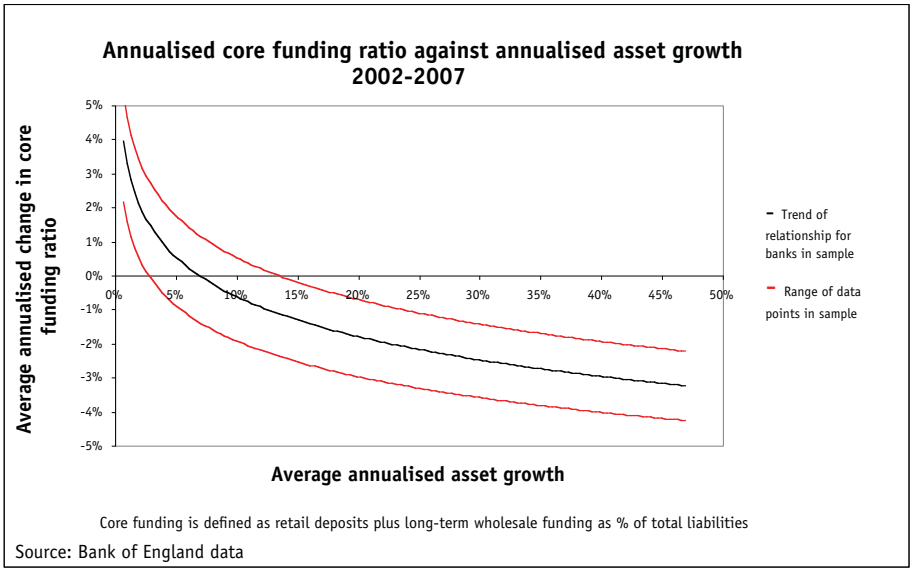
3.68 The focus of Basel I and Basel II is strongly on banks' need for adequate capital. However, the current global financial turmoil has demonstrated beyond any doubt that an adequate prudential regime for the banking sector must encompass funding liquidity adequacy as well as capital adequacy. At the international level the BCBS has responding to this by developing a set of principles for managing and supervising liquidity risk[30] and the FSA's consultation on the future of liquidity regulation in the UK closed earlier this month.[31] The consultation focuses on individual banks' ability to survive given a loss of confidence in the institution. However the FSA believes that there is also a role for a macro-prudential liquidity measure, in particular a core funding ratio. This is discussed further in the next section.

3.69 The FSA has responded to the problems of banks' inadequate funding liquidity resources and that response is briefly outlined in the next section. The potential role of liquidity requirements in macro-prudential policy, in particular a core funding ratio, is then described in the subsequent section. Chart 3.6 below illustrates the relationship between core funding (defined, for these purposes, as retail deposits plus wholesale funding with an original maturity of more than five years) and asset growth for the major UK banks, in the five years prior to the beginning of the current financial crisis. The chart indicates that banks with stronger asset growth typically experienced more significant reductions in the share of core funding in total funding. For confidentiality reasons, data points relating to individual institutions are suppressed and instead the red lines spanning the central trend line give an indication of the variability in the relationship across different banks.

30 In June 2008 the BCBS published *Principles for Sound Liquidity Risk Management and Supervision*, http://www.bis.org/publ/bcbs138.pdf.

31 CP08/22 Strengthening Liquidity Standards, December 2008. www.fsa.gov.uk/pubs/cp/cp08_22.pdf.

Chart 3.6



Regulatory gaps on issues such as asset encumbrance which bridge capital and liquidity

3.70 The absence of minimum liquidity standards from both the Basel I and II frameworks has created some scope for banks to seek ever higher risk funding profiles. It has also allowed the extensive use of asset pledging to deliver higher funding liquidity but without recognising the downside of encumbering a large share of a bank's assets.

3.71 During the current, acutely stressed conditions in world financial markets, secured funding has increasingly become the only funding available to firms, and firms have become highly reliant on pledging the assets on their balance sheets to acquire liquidity from central banks. This exposes a significant shortcoming in the current capital framework, namely that the current Pillar I capital requirements do not capture the risks of asset encumbrance due to secured funding, in particular that:

- on insolvency, secured funding transactions can lead to losses to depositors, unsecured creditors and taxpayers because their interests are subordinated to those benefiting from the secured funding arrangement; and
- the increasing presence of secured financing can impact the ability of a firm to access additional unsecured funding and, in the current market conditions, potentially increase dependency on central bank liquidity provision.

3.72 As part of its Pillar 2 framework the FSA has mechanisms to deal with excessive asset encumbrance and has limited the use of covered bonds for precisely this reason. The FSA now intends to enhance this approach by developing a comprehensive policy response to the risks posed by asset encumbrance. Given that secured funding is also prevalent in other jurisdictions, the FSA will also seek an internationally agreed approach.

Q1: Are there shortcomings in the international prudential framework not already identified in the DP that are relevant to the analysis?

Q2: What are the measures supervisors should take to mitigate the risks to depositors and other unsecured senior creditors of secured funding, taking account of the benefits of such funding where used to an appropriate degree?

4 Micro-prudential policy

Key issues

The necessary reforms to the prudential framework at a micro-prudential level are set out in this section. These include reforms to the Basel II framework to ensure the adequacy of capital requirements, in particular in the trading book, and to address the procyclicality of capital requirements. Above all, the minimum quantity and quality of capital resources banks are required to hold need to be increased to provide confidence that banks are robustly capitalised at all times and to ensure that the capital a bank holds is loss absorbing on a going concern basis. Adequate minimum standards on funding liquidity are a key micro-prudential issue.

FSA position and objectives

The FSA is promoting a 'variable scalar' approach to dampening the cyclicality of credit-risk related capital requirements, which allows the correlation between exposures and the economic cycle to be adjusted at a portfolio level rather than for a bank as a whole. The FSA is pushing forward with its current proposals on prudential standards for liquidity risk, which are consistent with internationally agreed principles of best practice.

An increase in the minimum level of required capital for banks and substantially higher requirements on eligible capital quality should be adopted at the international level. The BCBS should follow up its current proposals for short-term reform of trading book capital with a fundamental review, to include the role of VaR measures and the boundary between the trading and banking books. The BCBS should also progress work on capital measures complementary to the Basel II framework, including an asset-based leverage ratio, which acts as a regulatory back-stop to risk-based capital. All banks should be subject to robust minimum funding liquidity standards to ensure individual firm resilience to liquidity shocks.

4.1 The focus in this section is on specific measures to reduce the risk of failure of an individual bank. The measures summarised in the box above are, with the partial exception of the asset-based leverage ratio, all focused on creating a sound micro-prudential regulatory framework. The leverage ratio is a bridge element which has both micro-prudential and macro-prudential objectives.

4.2 The previous section set out how the current prudential framework failed to act as an effective barrier to the financial instability across the global banking system that took hold in 2007, and worsened especially in the second half of 2008. It showed that prudential regulation was too weak at a micro-prudential level, and almost completely lacking at a macro-prudential level. This section and the one that follows seek to address these shortcomings by proposing policies to reduce both the risk and severity of future periods of financial instability.

An overall increase in the minimum level of required capital

4.3 There is a widespread view among many supervisors and other stakeholders that the current regulatory capital minima set by the Basel II framework are too low. Capital and especially Core Tier 1 capital is essential to maintaining confidence in the banking system during periods of financial stress and protecting against risks taken for private gain being transferred to the public sector's balance sheet and, ultimately, to taxpayers.

4.4 The previous section set out how the calibration of Basel II was determined; essentially this was a pragmatic choice whose main driver was the desire to maintain the minimum requirements at a level similar to Basel I. Following a severe systemic financial crisis, it is appropriate that the calibration be reviewed. Among other factors this review will need to take into account is evidence on the extent to which banking supervisors have succeeded in the goal of delivering capital minima under the new framework which at an industry-wide level are in line with those under Basel I. However, this does not imply that an equivalent standard to Basel I is necessarily sufficient today. The BCBS began its work on capital adequacy in the 1980s[1] well before many of the innovations in finance and changes in the global economy had begun which determine the economic context in which internationally active banks operate today.

4.5 It is worth being careful to distinguish between the role of minimum capital levels and the role of buffers above the minimum. There are several arguments in favour of higher minima:

(i) to provide a sufficient minimum level of protection for creditors (including taxpayers and DGS as creditors);

(ii) by ensuring a minimum level of equity, the asymmetrical incentives whereby equity holders enjoy only upside but no downside are limited. This reduces the incentives for excessive risk-taking in both good times and bad (discouraging in bad times the textbook 'gamble for resurrection');

1 The BCBS was set up at the end of 1974, in response to volatility in foreign exchange and international banking markets, including the failure of Bankhaus Hersttatt. For a short history of the BCBS see www.bis.org/bcbs/history.pdf

(iii) during periods of generalised financial stress, banks with a minimum equity cushion are better able to recapitalise privately, e.g. by calling on their existing equity holders via a rights issue. This is because rational equity holders will seek to protect their investment if they feel it has significant positive net value.

4.6 In addition to the theoretical arguments, there are also significant arguments based on reasonable judgement, given the evidence of recent years. Prior to the events of 2007/08 few analysts envisaged the extreme financial instability that took hold as anything more than a theoretical possibility. It is clear that the likelihood of such events was significantly underestimated and as a result, a review of the appropriate minimum level of capital is required. Careful consideration of both the costs and benefits of higher capital requirements is needed but there is a strong case for an increase in the level of overall capital in the banking system that will reduce the risk of future crises and their severity. The FSA believes that to achieve this a significant increase in required minimum capital is appropriate, and that the magnitude of that increase should be around a factor of two times the current level. This would imply that, all else equal, the Core Tier 1 requirement would rise to 4% of RWAs and the Tier 1 requirement to 8%.

Substantially higher requirements on eligible capital quality

4.7 There is a compelling case for a wide-ranging review of the required quality of eligible capital instruments and work to this end is under way in the BCBS and in the EU. In the FSA's view requirements on the quality of eligible capital should reflect the following:

(i) ordinary shares and retained earnings are the components of core capital which are most clearly capable of absorbing losses to allow a bank to remain a going concern. They should therefore represent the positive items of Core Tier 1;

(ii) Core Tier 1 capital should be net of adjustments (whether deductions or prudential filters) which represent amounts which would not be available to absorb losses. Further consideration will need to be given in order to develop a framework to determine which deductions and filters should be part of the 'subset' which will make up the negative adjustments to core capital (and under what circumstances any adjustments could alternatively be made from non-core capital);

(iii) any supplementary or 'non-core' capital must be capable of cancelling or deferring coupons or dividends on a fully discretionary basis. It must also have no obligation to be redeemed. The FSA would expect the features of supplementary capital to be used to absorb unexpected losses; that is, coupons should be cancelled or deferred and calls should be seen as providing flexibility to the issuer without leading to a presumption that the instrument will automatically be redeemed;

(iv) within non-core capital there is a potential role for contingent capital which can convert into core capital at an early enough trigger, but it should not be regarded as a substitute for core capital under benign economic conditions; and

(v) there may be a role for gone concern capital (e.g. dated subordinated debt) in regulatory capital, for example, for smaller deposit-taking institutions.

4.8 The FSA would propose that any new definition of capital should be used to meet all types of risk, including market risk. This would mean that short-term subordinated debt would no longer be permitted to meet market risk requirements. Grandfathering arrangements or other arrangements may well be needed to allow a smooth transition to the new regime.

4.9 Together these propositions on the quality of eligible capital represent a substantial step forward from the current position. At present globally active banks whose failure would cause profound impacts across many jurisdictions rely on a large share of their capital being composed of instruments which have not demonstrated their loss absorbency on a going concern basis despite the severity of the current financial crisis. This is a simple inconsistency with the fact that the set of circumstances under which such banks could be wound up in an orderly fashion is very narrow and may possibly be empty.

Q3: Do you agree with the proposals to redefine what counts as capital with a stronger emphasis on going concern loss absorbency?

Reducing the cyclicality in credit risk related capital requirements

4.10 The Basel II framework was only introduced last year and while there are good reasons to examine it critically in the light of the financial crisis, it would be inappropriate to reject a framework which provides the best means available of ensuring that banks across the world capture the risks they take on a broadly consistent basis. However, it is reasonable to make some incremental and some more substantial changes to the framework, in particular to address the potential for procyclicality and to ensure appropriate risk capture in the trading book.

4.11 The FSA proposes to address procyclicality in two stages by:

(i) moving to a more cycle-neutral approach for banking book exposures; and

(ii) creating a system of capital buffers or reserves which build up during periods of benign economic conditions and which are drawn down when losses occur in an economic downturn, whether those losses result from banking book or trading book exposures.

4.12 In this section only the first stage is discussed and the role and structure of capital buffers/reserves is left to the following one, as part of the broader discussion of macro-prudential policy.

4.13 The FSA has promoted a 'variable scalar' approach to ratings systems used by IRB banks to calculate their credit risk related capital requirements. The essence of the effect of variable scalars is that they transform ratings systems, which are at least partly based on PiT risk measures, to a TTC approach. This is intended to reduce significantly the cyclicality of credit-risk related capital requirements, which are the great majority of required capital for most retail and commercial banks. The approach is set out in Box 4.1.

Box 4.1: Variable scalars

The IRB framework aims to set credit risk regulatory capital at the amount needed to cover the losses that might be incurred in a severe economic downturn. However, particularly as regards the PD parameter, the design of a bank's rating system has a significant impact on the level and volatility of capital required. More specifically regulators have coined the phrase 'rating philosophy' to describe where a borrower rating system lies between the stylised extremes of PiT and TTC.

Under a PiT system the PDs input into the IRB formula will in effect be heavily dependent on recent data and therefore produce an overall capital requirement which can be highly cyclical. At a more technical level this occurs because of migration of borrowers through rating grades in a way that varies systematically with the cycle. Whereas under a TTC system the PDs will be oriented towards an average of experience across the cycle, resulting in no systematic migration. A TTC approach therefore has the desired characteristic of cyclical volatility in actual default rates being interpreted as reflecting the trend that the IRB approach anticipates, and should not result in changes in capital requirements. Whereas a PiT approach continually rebases the capital requirement in line with recent experience even if this is cyclically driven.

In general firms have not developed TTC rating systems whose technical challenges are typically greater than those of PiT approaches. Consequently, supervisors have allowed IRB firms to use more PiT approaches, relying on stress testing and linked additional capital requirements to cover the consequent cyclical volatility. Firms had been confident that they would be able to manage this greater level of cyclicality. However, some firms did recognise the damaging effects of cyclicality in their regulatory and economic capital requirements, and the FSA has been working with the industry since 2006 on how to develop a quasi-TTC rating approach. This is based on the firm's underlying borrower rating system but achieves relatively stable capital requirements by adjusting the PD to be input depending on the position in the economic cycle by the use of what the FSA describes as a variable scaling factor.

Accurate estimation of such a scalar does however require both a considerable history of data and, most crucially, the ability to differentiate changes in default experience that are due entirely to the economic cycle from those that are due to a changing level of non-cyclical risk in the portfolio. It would undermine the basis of the IRB approach if capital requirements were not adjusted in response to the latter.

Although the mechanics of implementation will vary from case to case, the common theme is that it should be based on segmenting a portfolio by its underlying drivers of default risk and estimating separate long run default rates for each of these segmented pools, while making adjustments for changes in non-cyclical risk that are not captured by the segmentation process.

4.14 Reducing the cyclicality of the capital requirements can be achieved in ways other than through the use of 'variable scalars' and, as long as the different methods used are transparent and effective, the FSA is open to other approaches being agreed at an international level. The key test is that they deliver a capital requirement with reduced cyclicality, in line with the effects of deploying a TTC ratings philosophy.

Q4: Should IRB banks be required to use a system such as variable scalars, or equivalent, whose effect is to limit the potential for procyclicality in capital requirements to a level that would be produced by a TTC ratings system?

Adoption of the BCBS reforms of market risk capital requirements and a longer-term fundamental review

4.15 The second area where the FSA, in common with many other banking supervisors and central banks, believes the Basel II framework requires further scrutiny is the trading book. The BCBS took the decision, in January 2009, to increase the Pillar 1 capital requirements for the trading book to start to improve the risk capture of the market risk framework. The new requirements, currently out for consultation, will be effective from 31 December 2010 and consist of three main strands:

- the Incremental Risk Charge (IRC), which addresses default and migration risk in the trading book. The IRC is intended to complement additional standards being applied to the VaR modelling framework;
- a stressed calibration of the VaR-based capital requirement, based on the stressed market conditions during 2007/08. This measure seeks to permanently capture the volatility of this period and will be added to the existing 10 day, 99% VaR;
- application of standardised charges for all securitised products. It was recognised that existing methodologies used by banks cannot adequately capture incremental risks of securitised products and they will effectively be excluded from internal models until appropriate methodologies have been developed.

Fundamental review of market risk capital

4.16 This does not mean that the work of regulators is complete with respect to trading book risks. Although these reforms go some way to reducing the limitations of trading book capital, and will deliver significantly more capital in line with the risks of complex and illiquid products held with trading intent, it is clear that the current crisis has exposed fundamental flaws with the approach taken to market risk generally. The FSA believes that a wide-ranging review is essential to ensure that appropriate capital standards are developed for the trading book. The FSA's view of the key issues in reviewing the approach to the trading book is set out in Box 4.2.

Box 4.2: Key issues in a fundamental review of trading book capital

The trading book/banking book boundary

The right starting point is the fundamental question of what positions should be included in the trading book. A wide range of related regulatory issues need to be addressed, including whether:

- there should be more clearly defined criteria around the inclusion of positions;
- it is reasonable for the same positions to be treated differently in the banking book and the trading book with regard to minimum capital requirements and acceptable capital quality; and
- changes in accounting standards that have taken place in recent years should be reflected in revised regulatory classifications.

The role of the VaR modelling framework for setting regulatory capital in the trading book

VaR is clearly an important risk management tool, but an assessment of whether VaR is an appropriate measure of risk for regulatory capital purposes in the trading book is now needed. In particular, the FSA's position is that the burden of proof at this point is on industry to convince regulators that continued regulatory recognition of VaR models to set capital requirements in the trading book is appropriate, should that remain the industry view.

The capital requirements for structured finance positions

Structured finance positions in the trading book present particular challenges when it come to setting capital standards, and this is reflected in the BCBS proposal to remove the entitlement to model risk on these positions. However, there is also room for further debate as to whether the current banking book standards for securitisation positions, which are calibrated only to deal with the credit risk, are adequate. There are additional risks such as valuation, correlations and over reliance on ratings that are not covered by the banking book requirements. The FSA envisages that the BCBS should review the regulatory treatment of these products; the issues are explored in Section 10, on CRAs.

Q5: Are there any other key issues that the review of trading book capital should cover?

Adequate minimum standards on funding liquidity

4.17 Going beyond reforms to the Basel II framework itself, there is a clear need for other regulatory changes. Enhancing the resilience of banks to liquidity shocks is perhaps the single most important area where robust regulatory standards are needed. The previous section set out the problems that arose in 2007 due to many major banks' reliance on continued access to wholesale markets for a large share of their funding requirements. The financial crisis has led to unprecedented liquidity support being provided by central banks to the banking system. While banks will always remain vulnerable to a liquidity shortage because their economic function of maturity transformation requires them to provide more liquid liabilities than their assets, nevertheless there is a key role for self-insurance in mitigating liquidity risk. There is a directly analogous argument to the one

developed earlier in this section on higher minimum regulatory capital requirements: if banks are obliged to hold adequate minimum liquidity buffers the risk of their becoming dependent on the central bank is substantially reduced. Clearly, the quantity of required liquidity resources is a function of the central bank's liquidity policy among other factors. Alongside stronger prudential requirements on funding liquidity, systemic vulnerability to liquidity stress could also be addressed through central bank policy.

4.18 The FSA has set out a comprehensive framework for increasing the resilience of individual financial institutions to liquidity shocks;[2] it focuses on idiosyncratic and market-wide shocks and their impact on individual institutions.[3] The FSA believes that any sound liquidity risk management standards should require firms to hold larger liquidity buffers where they are exposed to a higher likelihood of liquidity difficulties.

4.19 This buffer is best held in the most liquid assets which are either reserves at central banks or government bonds, where there are deep and developed markets. These instruments also typically benefit from the flight to quality which supports their value during times of financial stress.

4.20 The importance of effective liquidity management during the recent crisis has been demonstrated by the fact that in some cases it has been a key factor determining whether or not a firm has survived as a going concern. It is clear that an effective course of action, including a coordinated contingency funding plan, has ensured that several firms which at different times were facing extreme liquidity difficulties were nevertheless able to survive long enough to put in place effective private sector solutions.

4.21 The FSA's consultation on appropriate standards for liquidity resources and liquidity risk management closed earlier this month. The next phase will proceed with the development and implementation of specific policy measures, taking into account the consultation responses received. There is a case for considering liquidity measures in a wider context, as a potential macro-prudential policy tool; this possibility is outlined in the next section.

An asset-based leverage ratio

4.22 The final proposal on capital and liquidity measures for the banking sector which is advanced in this DP is an asset-based leverage ratio. The FSA believes that, when applied in conjunction with the risk-based capital framework of Basel II, a leverage-based regulatory capital floor (leverage ratio) can address some of the shortcomings of a risk-based solvency regime identified in the previous section. Such a ratio has an important role as a regulatory back-stop in two senses. First, it is a mitigant to reliance on an individual bank's modelling (and the related weaknesses that were highlighted in the previous section) and therefore a useful complementary tool at the micro-prudential level. Second, for the banking sector as a whole, it is a means of ensuring that a minimum quantity of high quality capital is retained within the system, even if financial innovation, competitive pressures or other forces were over time to reduce the overall capital required under risk-sensitive, and especially model-

2 Consultation Paper 08/22 *Strengthening liquidity standards*.

3 The market-wide stress scenario also has a macro-prudential benefit as it strengthens the banking system's resilience generally to adverse market liquidity conditions.

based, measures of required capital. A leverage ratio will therefore also act as a constraint on excessive balance sheet growth.

4.23 The argument has been made that a leverage ratio has been in use in some countries for many years but did not prevent the financial crisis, although it may have had a role keeping capital in the system. The FSA recognises that a leverage ratio is not a panacea, and therefore it should be implemented only as part of a broader prudential framework, including Basel II. Further, any leverage ratio has to be carefully constructed to be effective. There are three principal issues that have to be settled to specify a leverage ratio: (i) the scope of assets, (ii) definition of capital and (iii) the minimum permissible ratio.

4.24 A leverage ratio applied to a measure of assets based on accounting data is potentially vulnerable to the distortions caused by off-balance sheet assets. The FSA's preferred approach is for a more inclusive asset measure, better aligned with the regulatory balance sheet, which consolidates off-balance sheet assets unless it is clear that the firm will not be obliged to bring the assets back on-balance sheet or absorb losses relating to the assets for reputational reasons.[4] The issue of capturing derivative exposures is crucial. The regulatory treatment of trading book exposures, with particular reference to derivatives, can be very different from the balance sheet value. The balance sheet value is based on accounting rules, while the regulatory value will in general take different factors into account including the notional value, hedging and the underlying characteristic of the position to determine a value that is aligned to the corresponding capital requirements. So regulators will need to agree how best to capture these exposures.

Q6: How should the leverage ratio capture (i) off-balance sheet exposures and (ii) derivatives?

4.25 Whether the definition of capital used for the numerator of a leverage ratio should include only Core Tier 1 capital, or also non-core capital, is a matter on which the FSA view remains open; clearly the calibration of the minimum acceptable ratio needs to be determined in tandem with the capital definition. Finally, with regard to calibration, it is important that the ratio is set in such a way that it does not normally over-ride the Basel II capital requirement for most firms and during most phases of the economic cycle. Ideally the leverage ratio should constrain firms which are outliers in seeking to economise on risk-based capital, and act as a wider constraint during periods of sustained economic growth when the likelihood of model-based underestimation of risk is at its highest.

Q7: Should the numerator of the leverage ratio be Core Tier 1 capital or should a broader measure of capital be used?

4 It may be that some assets, such as central bank reserves and highly-rated government liabilities should be excluded from the asset scope in the leverage ratio, but this has to be approached carefully as it is liable to encourage a race to the bottom with ever wider exclusions sought and risks resulting in an ineffective and incoherent policy tool.

4.26 Together the proposals in this section constitute a comprehensive and fundamental reform of the prudential standards imposed on the banking sector. They will entail significant costs but off-set against these it is reasonable to expect that together they would have a material impact on the likelihood and severity of future financial crises. But developments to prudential standards are not in themselves a sufficient response to the extraordinary events across the global financial system of the last 18 months and their effects on the real economy. The next section discusses the natural complement to these reforms – a framework for macro-prudential policy.

5 Macro-prudential policy

Key issues

The financial crisis presents a fundamental challenge to the current international prudential framework, which is substantially based on the assessment of an individual institution's risk profile and not sufficiently on the risk across the financial system. A sound micro-prudential framework is necessary but not sufficient to achieve the macro-prudential objective of overall systemic stability. A framework for macro-prudential policy is needed and this, in turn, requires creating effective arrangements to coordinate macro-prudential policy between the central bank and banking supervisor.

FSA position and objectives

To achieve macro-prudential objectives, a set of complementary tools is needed to strengthen the regulatory framework, operating alongside the Basel II capital requirements. This set should include a leverage ratio and, within the possible range of macro-prudential measures, a core funding ratio can play an important role. In addition, counter-cyclical buffers/reserves should be built into the prudential framework. The accounting treatment of a counter-cyclical reserve needs to be considered carefully to avoid losing information that is valuable to stakeholders in banks and to the wider market, while also recognising exposure to loss over the long-term.

Further, a framework for implementing discretionary macro-prudential policy measures is also necessary, which makes best use of the different contributions the banking supervisor and the central bank can make. This should move forward in the UK with the establishment of a joint decision-making body which brings together the FSA and the Bank of England.

5.1 The current financial crisis has led to a debate on the balance between micro-prudential and macro-prudential approaches to banking regulation and supervision. It is clear from recent experience that the current prudential framework is far too focused on the micro-prudential objective of ensuring that each individual bank is adequately capitalised and manages its risk effectively, and has failed to address the systemic risk that has accumulated across the financial system as a whole.

5.2 This section sets out a framework for macro-prudential policy and argues that this kind of policy approach, which sits in between aggregate demand management and micro-prudential regulation, is necessary to achieving financial stability. This section sets out the scope and structure of macro-prudential policy, the key elements of a framework to deliver an effective policy and possible institutional arrangements in the UK context. Further, with regard to the current Pillar 2 processes within the Basel II framework, it also sets out how macro-prudential policy is both informed by, and relates back to, supervisors' analysis of individual firms' risks.

The concept of macro-prudential policy

5.3 The Basel II framework sets capital requirements which are intended to be applicable at all times and in all economic conditions. Given the difficulties involved, it does not attempt to provide formula-based capital requirements which vary with the economic cycle and financial sector innovation; as a result the potential gaps in risk capture are left for the discretionary Pillar 2 processes.

5.4 Pillar 2 is crucial in identifying and mitigating risks which are idiosyncratic to particular firms; in this sense it can be interpreted as a test of how well the Pillar 1 capital requirement fits the risk profile of the firm. The role of macro-prudential policy is analogous to this – in effect it is an assessment of how well the statutory Pillar 1 capital requirements provide effective risk capture across the banking sector, given prevailing economic conditions, and structural changes in the economy and the financial sector. The key dimensions of this assessment are:

- **the economic cycle:** individual institutions are *currently* assessed as sound but in fact their capital resources and planning, and their risk mitigation strategies, are not robust to severe downside outcomes in the economy. For example, in the UK large rises in residential and commercial property prices increased the likely size of losses in the event of a downturn;
- **structural trends and imbalances:** the interaction of underlying macroeconomic trends and imbalances with financial sector activity changes the risks faced by individual institutions in ways which are not fully captured by regulation. An illustration is the secular decline in nominal yields on risk-free debt instruments across the world in the years following the bursting of the IT bubble; and
- **fallacies of composition:** the interactions within the financial sector and between it and the real economy may increase systemic risk, which is not captured by the aggregate of individual institutions' capital and other prudential requirements. The systemic effects of the inter-relation of major financial institutions was demonstrated during October 2008, above all by the collapse of Lehman Brothers. However, beyond limits on large exposures the regulatory framework has few tools to mitigate the risk of the system-wide effects of a major bank's failure.

5.5 The FSA's view is that policymakers need to find ways to incorporate a greater emphasis on macro-prudential policy, while recognising that it cannot provide a guarantee of financial stability. This is supported by analysis undertaken in a number of working papers by economists at the Bank for International Settlements (BIS)

which advance the case that the recent evolution of the global economy and global financial markets has changed the relationship between monetary policy and financial stability.[1] The hypothesis is a complex one and readers are referred to the relevant BIS papers but its essence, as stated in those papers, is repeated here:

'Financial liberalisation may have made it more likely that financial factors in general, and upswings and downturns in credit and asset prices in particular, act as drivers of economic fluctuations. The establishment of a regime yielding low and stable inflation, underpinned by central bank credibility, may have made it less likely that signs of unsustainable economic expansion show up first in rising inflation and more likely that they emerge first as excessive increases in credit and asset prices (the 'paradox of credibility'). And the globalisation of the real economy may have represented a sequence of pervasive supply side 'shocks', raising world growth potential and helping to keep inflation down while at the same time encouraging the asset price upswings on the back of liquidity expansion.

As a result, the current environment may be more vulnerable to the occasional build-up of financial imbalances, i.e. overextensions in (private sector) balance sheets. These imbalances herald economic weakness and unwelcome disinflation down the road, as they unwind. The unwinding may occur either because inflation eventually does emerge and the central bank is forced to tighten or because the upswing falters under its own weight.'[2]

5.6 It is not the purpose of this document to evaluate the empirical evidence in favour of or against this hypothesis. However, given the severity of the current financial turmoil and the repercussions for the real economy, the proposition that monetary stability (defined as low and stable inflation) combined with risk-based capital requirements (as set out in the Basel II framework) are together fully sufficient to deliver financial stability is now open to question.[3] As a result, the policy challenge the next section seeks to address is to outline a prudential framework which facilitates effective macro-prudential policy. The FSA's view is that the burden of delivering macro-prudential policy should be shared across several sets of policy measures.

A framework for macro-prudential policy

5.7 Giving effect to macro-prudential policy will require policy changes in a number of different areas:

(i) a robust micro-prudential framework;

(ii) an asset-based leverage ratio acting as a regulatory back-stop to the Basel II risk-based capital requirements;

1 See for example: Monetary and prudential policies at a crossroads? New challenges in the new Century, BIS Working Papers No 216, September 2006 www.bis.org/publ/work216.pdf; What can macro-prudential policy do to support monetary policy? BIS Working Papers, No 242, December 2007, www.bis.org/repofficepubl/arpresearch_fs_200712.01.pdf.

2 Monetary and prudential policies at a crossroads? New challenges in the new Century, BIS Working Papers No 216.

3 It may be objected that Basel II has not had the opportunity to be embedded in firms or its potential fully applied by supervisors. This point has some weight but the contention in this section is that even a fully implemented Basel II would not be sufficient to address the depth and severity of the crisis that is unfolding – precisely because so much of the burden of achieving macro-prudential objectives falls on Pillar 2.

(iii) automatic capital buffers/reserves to absorb the effects of the economic cycle;

(iv) a framework for discretionary macro-prudential policy, employing a core funding ratio and potentially other measures; and

(v) a stronger, more transparent Pillar 2 process, which includes robust stress testing of banks' balance sheets.

5.8 The components of the first element were set out in the previous section; a sound prudential framework from a micro-prudential perspective is the foundation for an effective macro-prudential framework. It was also noted that an asset-based leverage ratio does dual service, acting as a regulatory back-stop at the macro-prudential level while at the level of the individual bank it also provides a back-stop against modelling uncertainty.

5.9 The focus of this section is therefore on the last three elements of the framework set out above. It looks at each in turn, beginning with a discussion of the role of the accounting framework in procyclicality before analysing the role of counter-cyclical buffers or reserves. Before these three core elements of a macro prudential framework are discussed, the scope of application of macro-prudential policy is considered and the way in which complementary measures, such as a leverage ratio or requirements on funding liquidity, should relate to the Basel II risk-based capital requirement.

Macro-prudential policy: scope and structure

5.10 The banking sector is still in the early days of operating under the Basel II regime, and it is essential that financial market conditions normalise before any major supplementary measures are introduced to the prudential framework.[4] Further, there will also need to be transitional provisions, so that the new framework is phased in at a pace which the sector can accommodate and takes account of potential macroeconomic impacts. In addition, the FSA's strong preference is that any significant change to the prudential framework is agreed at the international level, to maximise effectiveness of the reforms and achieve consistency in standards across jurisdictions.

Scope of application

5.11 The ultimate goal of the policy proposals is to reduce the risk of a systemic financial crisis occurring, and limit the damage it would cause. To achieve this it is essential that the largest banks, which individually are systemically significant even under benign economic conditions, are subject to prudential regulation which is robust and in particular deals with the problems of the economic cycle and with liquidity risk.

4 This is not to say that there should be any unnecessary delay in seeking international agreement to policy changes; indeed, clarity on the key elements of the new capital framework may contribute to confidence, assisting a return to normality in financial markets.

5.12 However, there is currently no generally accepted definition of a systemically significant bank and it is likely that the systemic impact of the failure of a particular bank may vary, depending on the financial and economic conditions. Further, the explicit use of any such definition raises potentially significant moral hazard problems through ex ante identification of banks which are too large to fail. At the same time it may well not be appropriate to impose the same prudential regulatory framework on every deposit taker and investment firm, irrespective of its size and the scope and nature of its activities. These considerations are explored further in Section 7.

5.13 The Basel Accord[5] is designed for, and intended to strengthen the stability of, the international financial system, and it applies to internationally active banks. The reforms to the prudential framework proposed here[6] should apply to these banks and to other deposit takers and investment firms if the size and scope of their activities justifies its application. Whether the reforms should apply more widely would be for individual jurisdictions, and the EU, to determine. The FSA's position on this would be guided by an assessment of the costs and benefits.

5.14 Inevitably a differential approach to the prudential regulation of deposit takers and investment firms will create some challenging boundary issues, and potentially have some impacts on competition, at the margin.[7] However, a differential approach is necessary to rebalance the regulatory framework towards macro-prudential objectives. This inevitably leads to a focus on financial conditions across the larger banks, and the interaction of their capital position with the economic cycle.

Q8: Should these reforms be applied to smaller and domestic banks, building societies and investment firms? If so, how can this be achieved in a proportionate manner?

5 See the 1998 Accord (updated to 1998); paragraph 3: 'Two fundamental objectives lie at the heart of the Committee's work on regulatory convergence. These are, firstly, that the new framework should serve to strengthen the soundness and stability of the international banking system; and, secondly, that the framework should be fair and have a high degree of consistency in its application to banks in different countries with a view to diminishing an existing source of competitive inequality among international banks'. See: www.bis.org/publ/bcbsc111.pdf for full document.

6 The reforms set out in the previous section are generally applicable to the banking sector. However in some cases they will mainly apply to larger institutions, for example, variable scalars are not relevant for banks using the standardised approach to credit risk, which is typical for smaller banks.

7 However the precedent for such an approach already exists in many forms; for example, in the UK credit unions are not subject to the Directives which implement Basel II in the EU and many other Member States exempt some deposit taking institutions (see Article 2 of Directive 2006/48/EC). In other jurisdictions, notably the US, the scope of application of Basel II is much narrower. Further, while the optional model-based approaches to calculating capital requirements, notably the IRB approach to credit risk, are in principle open to any bank, in practice it is typically the larger banks which are most likely to adopt them and derive the greatest benefit, as the costs are to a considerable degree fixed, while the benefits at least partly scale to the size of the bank's lending volumes.

Policy structure

5.15 In considering the architecture of a new prudential framework, policymakers face a fundamental decision of how the policy measures should relate to one another. A number of proposals for reform of the prudential capital standards for banks retain a single policy instrument, while others argue for applying a set of complementary instruments applying in parallel. Examples of the first approach are the proposals to adjust the Basel II risk-based capital requirement by a factor which may be a function of (i) the position in the economic cycle (ii) financial market conditions (iii) the leverage of the bank (iv) the liquidity profile of the bank or (v) some combination of these.[8] These approaches have some clear attractions but the use of a single policy instrument is not the policy structure favoured by the FSA and so it is important to set out why a different approach is advocated here.

5.16 First, given the analysis in Section 3 there is a strong case that the problems that have emerged in the banking sector, although they interact and compound their damaging effects, are fundamentally diverse. This argues for a set of complementary measures rather than a single policy tool. For example, the systemic weaknesses that arose due to the extensive reliance on short-term wholesale funding are distinct from the problems banks have faced where the overall quality of their capital base has proved inadequate, and again from the procyclical effects of buoyant asset markets and sustained real economic growth, suppressing financial risk premia.

5.17 Second, the severity of the global financial crisis has led to increased uncertainty about the effectiveness of model-based approaches to capital requirements for exposures which are strongly correlated with the economic cycle and it therefore seems prudent to avoid reliance on a single policy tool. While adjusting the Basel II capital requirement according to the economic cycle, or a bank's leverage or liquidity profile seems to offer a solution in principle, this approach presents a number of practical problems. Leverage, liquidity and exposure to the economic cycle will certainly all affect a bank's overall risk profile but knowing this is not enough to produce a single capital requirement which captures all these dimensions in a consistent and economically meaningful way. The FSA's conclusion is that this kind of approach may place more weight on a single variable than it is able to carry, given the shortcomings in our understanding of the true underlying risks any given bank faces.

5.18 Finally, the Basel II capital requirements oblige banks to risk-weight their (non-trading book) assets so that, approximately at least, they hold an equal amount of capital per unit of risk exposure. Ultimately this reflects the idea that financial risk can be expressed as a given number of units of a universal 'currency' of risk and therefore can be mitigated to any chosen level of confidence by holding the requisite amount of capital.[9] While this may hold good at the level of idiosyncratic risk of an individual bank, it need not also be valid for systemic risk arising from the interaction of large financial institutions and their interaction with financial markets and the real economy.

8 A further set of proposals advocates that the Basel II requirement is modified to become a weighted average of the current and previous capital minima, which is intended to smooth out the required capital over the economic cycle.

9 In turn this is a foundational concept underpinning the innovations of recent years in securitisation and especially in structured products and credit derivatives.

5.19 These considerations lead to a key conclusion about the policy proposals advocated in this section – the new capital framework should introduce measures which operate to supplement the revised Basel II risk-based capital requirement. Of the two measures the FSA favours, the asset based leverage ratio was discussed in the last section and a core funding ratio is set out later in this section. Before turning to the core funding ratio, two other key areas of macro-prudential policy are discussed. The first is the need to introduce explicitly counter-cyclical capital buffers, and the issues this raises, especially the accounting dimension. The second is the institutional framework for macro-prudential policy.

Q9: Do you agree with the FSA's reasons for favouring a range of policy measures to deal with macro-prudential policy issues rather than adjusting the Basel II risk-based capital requirement?

The accounting framework

5.20 There have been important changes in accounting standards for financial instruments in recent years, partly in response to innovation in the financial sector. For example, modern accounting standards require all derivatives to be measured at fair value. This is essential in order that they 'show up' on the balance sheet, because the initial cost of instruments such as swaps, forwards and options is generally low in relation to the potential economic exposure (indeed, often zero). More broadly, the accounting framework plays a key role in the implementation of regulatory capital standards as it provides the basis for determining regulatory measures of available capital. This creates the potential for linkages between accounting standards and financial stability outcomes; in particular many commentators have linked accounting valuations, especially fair value, with the problem of procyclicality in the regulatory framework.

5.21 At present, throughout the world accounting valuation of financial instruments is approached through a so-called mixed attribute model. In this framework, some instruments are measured at fair value (broadly, marked to market), while others are valued (after initial recognition)[10] at cost less impairment. For example, trading book items are always measured at fair value, whereas traditional bank loans are generally accounted for at cost.[11]

5.22 Both measurement approaches have their strengths and weaknesses, and each may be preferable for particular types of financial instrument. This inevitably raises important issues concerning where the boundary should be drawn. Fair value accounting seeks to measure the value which market participants currently assign to an instrument. The key advantage of this approach is that it takes account of all economic factors which affect how much participants would be prepared to pay for an asset, and fair values change in line with changes in market conditions. For these reasons, it is generally agreed that instruments held for trading purposes should be marked to market.

5.23 However, it is not clear that fair value accounting is appropriate for instruments which are likely to be held over the longer term, especially if they are not managed

10 International Financial Reporting Standards require all financial instruments to be measured at fair value at initial recognition.

11 Banking book assets classified for accounting purposes as 'available-for-sale' are measured at fair value.

on a fair value basis and/or there is little market activity in the instruments concerned. For example, bank lending is generally managed on the basis of generating an interest margin (over funding costs), and movements in the fair value of loans may be of only limited interest to management and investors – especially if (as is the case for loans in most countries) there are not active secondary markets, so the fair value could not be readily realised.

5.24 In addition, there are various challenges associated with fair value accounting which would be particularly significant were its use to be extended. These include conceptual issues surrounding 'own credit risk' (apparent gains arising from reduced creditworthiness as this causes the value of liabilities to fall where these are measured at fair value), and how to present income (profit and loss) statements – unrealised gains and losses are very different to actual cash flows. As a result, 'cost less impairment' is also used as a measurement basis. The key feature of this approach is that values are adjusted after initial recognition only to take account of credit events which cause reductions in future cash flows – and only once such events have occurred. A significant feature is that it does not take account of market factors, for example shifts in the yield curve.

5.25 Before turning to the question of how the accounting framework relates to the problem of procyclicality. The box below highlights a general accounting issue for the banking sector – whether financial statements provide transparency about a bank's financial position at a sufficient level of granularity, given the size of the balance sheets of the larger banks and the complexity of large quantities of their assets.

Box 5.1: Valuation and disclosures in UK banks' accounts

Publication by banks of financial information which is reliable, and sufficiently granular to allow the economic exposures in their business to be analysed meaningfully, is an important factor in fostering market confidence in banking institutions and the banking system as a whole. The FSA is planning two initiatives in this regard.

First, the FSA is aware that the valuation procedures and assumptions used for some complex asset classes where not all inputs can be observed from markets differ quite significantly across UK banks. In the FSA's view, this is one factor which is currently undermining market confidence in the financial position of UK banks.

While accounting and auditing standards are clear that some degree of dispersion of valuations – where these cannot be observed from markets – is inevitable and appropriate, the FSA is concerned about the extent of dispersion. The FSA therefore intends to engage in an intensive dialogue on this subject with banks and their auditors, at both top management and technical levels.

Second, the FSA's view is that more granular disclosures, for example relating to high risk asset classes (ABS tranches, CDOs etc), can play an important part in increasing market confidence. Hitherto, official sector views on what additional disclosures would be helpful have often taken the form of non-binding recommendations – for example, those of the Senior Supervisors' Group published in April 2008[12] – and there has been diversity in the extent to which such recommendations have been implemented. The FSA is considering

12 See www.newyorkfed.org/newsevents/news/banking/2008/SSG_Lending_Practice_Disclosures.pdf

whether it would be appropriate to make a set of enhanced disclosures of this kind mandatory, with a view to all UK banks making disclosures fully in line with international best practice.

In carrying out this work the FSA will liaise closely with the UK Financial Reporting Council and be mindful of the responsibilities of directors and external auditors in the preparation of accounts – though conflicts are not anticipated, as the FSA's initiatives are designed to increase the usefulness and reliability of accounts to users, including banks' shareholders.

Q10: What should be the focus of the FSA's initiatives on valuation and disclosure in UK banks' accounts so as to maximise their impact on market confidence?

Role of the accounting framework in procyclicality

5.26 It is likely that the mixed attribute model of accounting – especially the use of fair value embodied within it – has a procyclical impact, as in practice fair value is applied to a higher proportion of assets than liabilities. In cyclical upswings, the value of assets measured at fair value tends to rise while the value of banks' liabilities will remain largely unaffected, due to the application of the cost approach. Where this is reflected in accounting values, it is likely to lead to a boost to the capital base of banks and similar institutions, which in turn increases their capacity to provide finance and/or distribute 'surplus' through higher dividends or share buy-backs, and thus amplifies the cycle.

5.27 Many commentators see 'cost less impairment' accounting – as currently implemented – as also being procyclical, and possibly as having contributed to the current financial crisis. Since impairment provisions are made only once a 'loss event' has occurred and there is objective evidence that this event is likely to lead to reduced cash flows being received, it is often argued that the cycle is amplified because loan loss provisioning will generally be significantly higher in downswings than upturns, thus contributing to strong bank capitalisation in upswings, and pressure on bank capital in recessions.

5.28 However, this does not mean that the mixed attribute model of accounting – including fair value as a measurement basis – should not be used where this is conceptually the most relevant to users of accounts, because there are various ways in which procyclical impacts can be mitigated. First, there is already an established process in place to adjust accounting values for prudential and financial stability purposes. This is done through 'prudential filters'. The filters currently used in most countries are designed to adjust accounting data so that regulatory capital better reflects its capacity to absorb losses. For example, prudential regulators set aside the impact of 'own credit risk', and unrealised gains on assets such as 'available for sale' equities are admitted only to Tier 2 capital. Second, it would be possible to introduce additional reserves into bank accounting, which would be integrated into published financial reports, that would mitigate procyclical effects stemming from aspects of the mixed attribute model.

5.29 Thus, if considered necessary for financial stability reasons, it would be possible to make substantially greater use of filters, so that there was less direct feed-through of

changes in accounting reserves to regulatory capital. In addition, banks could be required to carry capital buffers which increase during the up-turn of the economic cycle and are released in the down-turn. That could be used to address the procyclicality of fair values in the trading book and 'cost less impairment' accounting standards in the banking book. In the case of the latter, such an option would have common elements with the system of dynamic provisioning which the Banco de España has employed in recent years, which is discussed in the box below.

Q11: Do you agree with the FSA's analysis of the implications of accounting standards for procyclicality?

Box 5.2: Dynamic provisioning

'Dynamic provisioning' is a regulatory tool designed to mitigate the procyclicality of the banking system and its damaging consequences. A 'dynamic provisioning' system uses a statistical method to take into account those losses inherent in the loan portfolio which have not yet materialised. During periods of above trend economic expansion (when credit is growing and underwriting standards may relax) and when provisions would otherwise be low, the dynamic provisioning acts to build up a fund, or buffer. During an economic downturn (when credit is contracting and credit standards tend to be more stringent), some losses can be met using the accumulated buffer.

In this way, the aggregate cost of the total provisions is smoothed to a level approximating to a long run rate for the bank's book. In a typical approach to dynamic provisioning, the provisions a bank must charge to P&L, or deduct from regulatory capital resources, in each period depends on three factors: the size of the balance sheet; the long-term risk-profile of the portfolio; and the point in the cycle. The longer the upturn has continued, the higher the required provisioning per unit of loan granted. In this way, provided the accumulated reserve is sufficient, the dynamic provision should cover the losses of the non-impaired portfolio expected to be incurred over the cycle and, therefore, counter the cyclical impact of provisioning for specific loans as they become impaired.

In June 2000 the Banco de España introduced a dynamic (also described as 'statistical') provision for Spanish credit institutions. The calculation established in the regulation produced an aggregate annual gross provisioning charge that, in relative terms, should equal the average annual net losses suffered by the Spanish banking system in the last decade. The parameters used in this calculation implied that the combined provisions charge was almost constant over the cycle.

In Spain the current (i.e. post 2005) dynamic provision has two components:

$$\text{Dynamic provisioning charge}_t = \alpha * \Delta C_t + (\beta - (\Delta \text{Specific provisioning} / C_t)) * C_t$$

Where C_t is the stock of loans, α covers the inherent loss in each unit over the cycle and β is the average specific provisions over a long estimation period. The first parameter accounts for the expected losses of a homogeneous portfolio and, in a similar way to a classic general provision, in effect provides a growth component; and the latter for the cyclical pattern of the institution's credit losses. The deduction for the specific provisioning charge stabilises the overall level of provisioning through time.

Counter-cyclical capital reserves/buffers

5.30 The idea of counter-cyclical capital reserves/buffers, obliging banks to build up additional capital resources which can absorb losses in the downturn of the economic cycle is now widely accepted by regulators and central banks. The FSA strongly supports the concept that banks should be required by an automatic or formula-based policy[13] to build up buffers of capital resources when the economy is growing strongly and robust bank profitability provides the potential for additional buffers or dynamic reserves to be provided through internally generated capital. To be effective the capital buffer or dynamic reserve must be composed of fully loss absorbing capital on a going concern basis.

5.31 While implementing a regime of dynamic capital buffers or reserves requires further debate in the relevant international fora, the FSA's view is that the size of the buffer or reserve should be in the range of 2 to 3% of RWAs at the top of the cycle. This will allow banks to sustain significant losses without breaching the regulatory minimum and therefore support confidence in the banking system. Of course any buffer, however large, will eventually be depleted by a sufficiently severe economic shock.

5.32 Whether the additional capital should take the form of extra capital on top of the regulatory minimum or should be a reserve which does not count towards capital is a matter where the FSA's view is open. The first option, a capital buffer, is arguably somewhat more transparent but its effectiveness crucially depends on banks being permitted to draw down the buffer when appropriate. There is a risk that market reaction could induce banks to treat the additional accumulated buffer as the de facto regulatory minimum. This would defeat the purpose of having a buffer. Although the difference in approach is to a considerable degree presentational, a benefit of a reserve held separately from eligible capital is that banks' reported capital ratios will remain more stable through the cycle and this may help to avoid the problem of the capital buffer being built into the minimum standard by the market's own procyclical responses. If this option is chosen it is essential that the reserve does not count towards capital otherwise it simply boosts the bank's available capital resources and can be used for leveraging up and are distributable to shareholders.

A stylised example showing how a dynamic provision/reserve could be calculated

5.33 Table 5.1 shows a stylised example of how a dynamic approach would operate to build up a buffer in the good part of the cycle, and which could then be used up when the downturn materialises. It is based upon the existing Spanish approach described in the box above; however, there is no separate 'α' factor covering growth in the stock of loans.

5.34 Key assumptions in the example are a ten-year economic cycle, an average long-run loss rate of 0.8% of loans, an unchanged mix of loans within the portfolio, and an average risk weight of 60% for the loans. It is also assumed that, mainly through the application of a variable scalar approach to PDs, this risk weight does not itself

13 There should also be scope for supervisors to increase the buffer on a discretionary basis. This would likely form part of the Pillar 2 process which is discussed at the end of this section.

vary with the cycle. The example below starts with a loan book of 100 currency units (CU) during the downturn, but before a dynamic provisioning approach has been implemented.

Table 5.1

Year	1	2	3	4	5	6	7	8	9	10	11	12
Loans (CU)	100	100	105	110	120	135	150	170	190	200	200	200
Losses (%)	1.60	1.60	1.00	0.40	0.60	0.60	0.50	0.50	0.40	0.80	1.60	1.60
Losses (CU)	1.60	1.60	1.05	0.44	0.72	0.81	0.75	0.85	0.76	1.60	3.20	3.20
Long term losses (CU)	0.80	0.80	0.84	0.88	0.96	1.08	1.20	1.36	1.52	1.60	1.60	1.60
Δ Dynamic reserve (CU)	0.00	0.00	0.00	0.44	0.24	0.27	0.45	0.51	0.76	0.00	(1.60)	(1.07)
Dynamic reserve (CU)	0.00	0.00	0.00	0.44	0.68	0.95	1.40	1.91	2.67	2.67	1.07	0.00
RWAs (CU)	60	60	63	66	72	81	90	102	114	120	120	120
DP Reserve/ RWAs (%)	0.00	0.00	0.00	0.70	0.90	1.20	1.60	1.90	2.30	2.20	0.90	0.00

5.35 In the early years of the scenario the dynamic provisioning reserve has no impact. Because it had not been set up in the good part of the cycle, prior to the downturn, there is no balance that may be run down in those years when actual credit losses exceed the long-run average.

5.36 As the economy reverts to more normal conditions growth starts to return and credit losses fall. During years four to nine the latter are less than the long run average, and this allows a dynamic provisioning reserve to be built up. This can then be automatically reduced in years 11 and 12 in order to provide substantial coverage of the above average losses of the next downturn.

5.37 In the example shown the dynamic provisioning reserve rises to an amount in excess of 2% of RWAs. However, this is a function of the assumptions in the stylised example and would not necessarily be replicated in practice. It might be noted that the use of a more cyclical approach to setting capital requirements, e.g. without variable scalars, would produce a higher peak ratio of the dynamic provisioning reserve to RWAs, but without producing a buffer that was any different in substance.

5.38 Several key considerations should be highlighted from the example:

- the need for accurate measurement of the long run default rates. In practice this will require granular measurement of credit risk within each of a bank's sub-portfolios. However, this is the type of process that underlies IRB modelling, and should be reasonably familiar to such banks and their supervisors;

- although implementing a dynamic approach does not require the relevant parties to agree on when a cycle will turn, the quantum of the dynamic provisioning reserve that has been built up will depend upon the length of the 'good' part of the cycle. If, in the example shown, the particular cycle were to turn down after year six, then the buffer built up would be only half of that assumed. Similarly a more prolonged 'good' part of the cycle would produce a higher buffer; and
- an extended period of lower losses will encourage the tendency for arguments that there has been a structural as opposed to cyclical decrease in credit risk, and that consequently, inter alia, the dynamic provisioning reserve should be reduced by either capping it or revising downwards the long run average assumptions. If such arguments are accepted but prove not to be well-founded, the degree of coverage provided by the dynamic buffer will be reduced and it will prove less powerful than intended.

The accounting treatment of a dynamic reserve

5.39 A fundamental question in considering how a dynamic reserve should be implemented is the accounting treatment of such a reserve, and especially whether net inflows into it and outflows from it would impact the income statement in banks' financial accounts. This issue is analysed below using some stylised numerical examples.

5.40 A dynamic reserve on top of regulatory capital is referred to here as an 'Economic Cycle Reserve' (ECR). There are various ways in which it could be treated for accounting purposes. The two ends of the spectrum of possibilities are illustrated in Examples 1 and 2. The examples are intended to do no more than highlight the key principles, and they simplify by ignoring both tax and distributions to shareholders.

5.41 One approach – economic cycle *reserving* – would be to treat the ECR as an appropriation of retained earnings. That is, increases and reductions in the reserve would be taken from (or added back to) retained earnings as shown in the reserves section of the balance sheet. These transfers matter since – in contrast to retained earnings – the ECR would be non-distributable. This approach is illustrated in Example 1. The key feature to note is that although the bank made a profit of 10 CU during 2012, retained earnings fall by 100 CU. This is the counterpart to a rise in the ECR of 110 CU (from 110 CU at end-2011 to 220 CU at end-2012 – it is assumed that there are no drawings from the ECR reserve during 2012). This approach to the ECR would have no impact on published accounts other than the transfers just described between categories of reserve. These transfers would, of course, be visible to the readers of the accounts.

5.42 At the other end of the spectrum in terms of impact on published accounting data lies economic cycle *provisioning*. That would treat contributions to the ECR on the same basis as 'traditional' accounting provisions. Thus, contributions to build up provisions would be treated as an expense, and the stock of accumulated provisions shown on the balance sheet as a liability. This is illustrated in Example 2. Here the contribution to the reserve of 110 CU in 2012 is shown as an expense before 'bottom line' profit

and loss is calculated (so instead of showing a profit of 10 CUs in Example 1 it reports a loss of 100 CUs). Correspondingly, the economic cycle provision on the balance sheet rises from 110 to 220 CU (again, it is assumed that there are no drawings from the ECR provision during 2012).

5.43 Both approaches deliver exactly the same figures for retained earnings: it makes no difference whether the ECR is taken directly from retained earnings, or indirectly through lower recorded P&L. However, other accounting figures differ between the two examples. In particular, the effect of treating the ECR as a balance sheet provision is to lower P&L, and the value of the entity's net assets. On the assumption that the ECR would build up during good times, and be run down in less buoyant circumstances, economic cycle provisioning (Example 2) would tend to deliver a smoother pattern of measured profitability (and balance sheet net worth) than the appropriation of reserves approach (Example 1).

5.44 Overall, either approach would deliver a non-distributable reserve available to absorb losses. Economic cycle provisioning (Example 2) might deliver a greater behavioural effect, as it would moderate the buoyancy of bottom-line P&L figures in strong economic conditions – but that approach requires significantly greater change to the calculation of published accounting figures. One way forward in balancing these considerations would be to adopt the approach in Example 1, but in addition show the annual appropriation to, or release from, the ECR at the bottom of the income statement. That would allow measures of P&L and Earnings per Share to be displayed both before and after movements in the ECR.

Q12: How best should prudential regulators address the problem of procyclicality through counter-cyclical reserves/buffers?

Example 1: Economic cycle reserving

	31 December 2012	31 December 2011
Income statement		
Total operating income[14]	300	
Loan loss provisions	(100)	
Expenses	(190)	
Profit or loss	10	
Balance sheet		
Assets		
Cash	400	300
Loans	3,100	3,000
Total assets	3,500	3,300
Liabilities		
Deposits	1,110	1,020
Provisions	120	20
Total liabilities	1,230	1,040
Net assets	**2,270**	**2,260**
Capital and reserves		
Ordinary shares	250	250
Share premium	1,000	1,000
Economic cycle reserve	220	110
Total non-distributable capital and reserves	1,470	1,360
Retained earnings	800	900
Total distributable reserves	800	900
Total owners' equity	**2,270**	**2,260**

14 Before operating expenses and provisioning.

Example 2: Economic cycle provisioning

	31 December 2012	31 December 2011
Income statement		
Total operating income[15]	300	
Loan loss provisions	(100)	
Expenses	(190)	
Economic cycle provision	(110)	
Profit or loss	(100)	
Balance sheet		
Assets		
Cash	400	300
Loans	3,100	3,000
Total assets	3,500	3,300
Liabilities		
Deposits	1,110	1,020
Economic cycle provision	220	110
Other provisions	120	20
Total liabilities	1,450	1,150
Net assets	**2,050**	**2,150**
Capital and reserves		
Ordinary shares	250	250
Share premium	1,000	1,000
Total non-distributable capital and reserves	1,250	1,250
Retained earnings	800	900
Total distributable reserves	800	900
Total owners' equity	**2,050**	**2,150**

15 Before operating expenses and provisioning.

5.45 The technical challenges of determining the level of capital buffers/reserves and how this should be displayed in published accounts should ideally be addressed by the BCBS and the IASB respectively, leading to an internationally agreed approach. However, even once that is achieved there still remains the wider question of macro-prudential policy, in particular the discretionary use of policy tools to reduce the risk of a systemic financial crisis. The FSA's view is that there needs to be scope for further discretionary interventions, both in the UK and elsewhere.

5.46 The practicalities of how this could be done are considered in the next part of the section but before moving on from the questions of accounting standards and related matters a final issue is raised, relating to the institutional framework for audit firms at the global level. Just as many internationally active banks are now key players in the economies of many countries, the largest global accounting firms are now a lynchpin in the provision of reliable financial information about those banks and companies across all industrial sectors. Box 5.3 sets out the FSA's views on this issue with the aim of stimulating further debate.

Box 5.3: Global oversight of international audit firms

Reliable financial reporting, especially by companies – including banks – of public interest, is a critical factor in underpinning market confidence. A key element in this is the continued availability of high-quality audit services. In most jurisdictions the 'Big 4'[16] accounting firms have a combined market share of audits of major companies in excess of 90%. Thus, it is important that everything possible is done to mitigate the risk of circumstances arising which might lead to one of the 'Big 4' having to exit the market for audit services.

Following Enron and other scandals, governments have increasingly introduced independent regulation of audit services. However, this arguably leaves two gaps in the regulatory architecture:

- the major accountancy firms operate globally, but audit regulation is implemented on a national basis. This means that, in contrast (say) to consolidated supervision of internationally-active banks, there are no regulators in a position to take an overview of each major accounting firm;
- there is no regulation of non-audit services. Yet the major accountancy firms derive substantial income from non-audit services, such as tax advice, and the provision of such services may pose financial and reputational threats to the firms.

For these reasons, serious consideration should be given to establishing some form of global supervisory architecture for all significant activities of the major accountancy firms. Such a regime could consider firms' risk management systems, and their ability to meet financial claims (whether through capital or insurance).

16 Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers.

Global supervision would be challenging to deliver because, in contrast to internationally active banks, the accountancy firms are primarily networks of nationally-based partnerships, and accordingly do not have a unified global management and financial structure. The best way forward might be a progressive strengthening over time of the role of the International Forum of Independent Audit Regulators (IFIAR), together with a framework of effective oversight that captures the parent entities of international networks.

Q13: Do you agree that serious consideration needs to be given to establishing some form of global supervisory architecture for international audit firms?

A framework for discretionary macro-prudential policy

5.47 Although in normal economic conditions central banks typically employ a short-term nominal interest rate to achieve their macroeconomic policy objectives, subject to the government's approval, the range of policy tools is potentially far wider. The policies employed by the Bank of England,[17] and similar ones currently being contemplated by a number of central banks, to intervene in a wider range of asset markets, is one example. Clearly these policies are being employed in exceptional economic and financial conditions and, in their absence, the use of this wider range of policy tools would not be contemplated.

5.48 However, this does not imply that, a priori, additional policy tools should not be employed during periods of sustained above trend growth and buoyant asset markets. There are precedents for the use of such policy tools. Without implying that these would necessarily be appropriate in the UK context, policy tools such as additional capital requirements, liquidity requirements, maximum loan to value ratios and reserve requirements have been used in a variety of countries. The proposal for a core funding ratio that is set out in greater detail later in this section is an example of a potentially effective macro-prudential policy tool. Each of these policies would have an impact on banks' risk profiles and/or their capital or liquidity positions and therefore would carry implications for the work of banking supervisors. There would also, at the margin, be an impact on wider economic conditions. So the central bank and the banking supervisor would need a high degree of coordination. The following section considers how can this coordination can be achieved.

Q14: What macro-prudential policy tools should be considered other than those mentioned in this DP?

Coordination between the central bank and the banking supervisor

5.49 Implementing macro-prudential policy on a discretionary basis could be coordinated through one of three broad frameworks:

- the creation of a joint Bank of England and FSA decision-making structure that considers (a) financial stability risks and (b) what action is taken to reduce them. The FSA would then implement (b), having been fully involved in the decision;

17 As set out in the recent letter from the Governor of the Bank of England to the Chancellor of the Exchequer, see www.bankofengland.co.uk/monetarypolicy/pdf/govletter090305.pdf.

- the Bank of England, through its Financial Stability Committee, identifies the financial stability risks. The FSA then decides, using the levers available to it, what the right way is to mitigate the risk. There would have to be mechanisms through which the Bank of England would inform the FSA of the risks and judge the effectiveness of any action. This could happen, for instance, through an open letter system;
- the Bank of England could be given powers to require the FSA to take action for specific macro-prudential reasons.

5.50 In all three possible frameworks there is a clear role for the Bank of England to take the lead in determining the macroeconomic conditions under which a macro-prudential policy response would be warranted. Further, the Bank's assessment of the current conjuncture would be a key input into framing the policy response and calibrating it, but not the only one and clearly any such policy response will have impacts across the financial sector, and individual firms.

5.51 Both the Bank of England and the FSA have a particular set of information and analysis they can bring to the debate. The Bank will have a system- and economy-wide perspective derived from its extensive analytical capabilities and reinforced by information gathered from its contacts with financial institutions, both in the UK and elsewhere. The FSA will bring information and analysis from its supervision of individual firms and groups, together with its view of industry-wide and business model risks prepared by its sector teams. Both sets of information and both perspectives are essential to forming a complete view of macro-prudential developments and emerging risks.

5.52 It is essential that the Bank of England and the FSA come together to debate their respective analyses. It is this comprehensive review that will produce the best insights into macro-prudential risks. Once a decision has been made, it will then be for the FSA to give effect to the resulting risk mitigation activity in its work with individual firms. The aggregate effect of this mitigation work will be assessed, jointly by the Bank of England and the FSA, in subsequent rounds of macro-prudential analysis.

5.53 At present, there is no decision-making body that brings together the Bank of England and the FSA to take such decisions. Such a body could be created, either by the Bank of England and the FSA agreeing to establish one, or the government creating one, for example by building on the Bank of England's Financial Stability Committee and establishing suitable coordination arrangements with the FSA so that it is properly involved in decision-making.[18] In principle, there are attractions to a joint decision-making approach. The FSA believes that whatever structure is established at the global and EU levels for macro-prudential decision making[19] should observe similar principles. In particular, these structures must recognise the particular insights that supervisors bring to the macro-prudential debate, as well as the macroeconomic perspective where central banks have the natural comparative advantage due to their role as monetary policymaker.

18 Part 7 of the Banking Act 2009 establishes the Financial Stability Committee. See www.opsi.gov.uk/acts/acts2009/pdf/ukpga_20090001_en.pdf.

19 The report of the high level group on financial supervision in the EU can be found at: http://ec.europa.eu/commission_barroso/president/pdf/statement_20090225_en.pdf. The government's thinking on the issues raised is set out in the Chancellor of the Exchequer's letter which can be found at www.hm-treasury.gov.uk/d/chxletter_ecofin030309.pdf.

5.54 Having outlined possible institutional arrangements for effective macro-prudential policymaking, the next section considers in particular one option that the FSA believes would be an effective macro-prudential policy tool.

A core funding ratio

5.55 The FSA has set out a comprehensive framework for increasing the resilience of individual financial institutions to liquidity shocks.[20] A further goal is to ensure that the overall macro-prudential objective of achieving acceptably stable funding in relationship to asset growth is met. Beyond this, there is also a key macroeconomic dimension to the shifts in banks' funding profiles. Globalisation in international capital and money markets, combined with an ever more intensive search for yield on fixed income assets over the past decade, led to fundamental changes in individual banks' funding profiles and as a result created acute systemic risk.

5.56 One way of dealing with the far greater cross-border flows in liquidity and shifts in funding is a core funding ratio which could be imposed across the banking system. The aim would be to reduce the risk that incremental asset growth is financed by funding of deteriorating quality, or that high quality funding is swapped-out over time. A core funding ratio would impose a minimum acceptable proportion on the share of core funding in total funding.

5.57 The precise definition of core funding would need extensive analysis and consultation but the concept is relatively straightforward. Core funding would comprise of funding sources that are sustainable through the economic cycle. This includes established retail deposits and long-term wholesale funding, for example medium term notes and covered bonds. Core funding would not include short-term money market instruments (including certificates of deposits and commercial paper), credit sensitive short-term deposits (including inter-bank, money market funds or deposits from large corporations), or other funding sources perceived to be unreliable during economic crises.

5.58 In an environment of robust real economic growth and credit demand a core funding ratio would act as a powerful inhibitor of excessive credit supply, as it would constrain commercial banks' ability to grow rapidly using unsustainable, non-core funding sources. This would have a powerful counter-cyclical effect and would therefore be a potentially highly effective macro-prudential policy tool.

5.59 The effectiveness of a core funding ratio on bank balance sheet growth would likely strongly incentivise alternative funding solutions including non-bank lending; at one level the boundary problem created reflects the strength of the behavioural impact. However, it also implies a challenging calibration task in judging the appropriate level/increment of core funding. One way of dealing with this may be to consider an incremental capital requirement in response to a bank's shortfall against the core funding ratio. This would incentivise sufficient core funding and allow for a greater diversity of funding strategies whilst maintaining the effectiveness of the policy tool.

20 Consultation Paper 08/22 Strengthening liquidity standards.

5.60 The scope of a core funding ratio could have impacts on the future shape of the banking system. Applying a core funding ratio to all credit institutions and investment firms could require significant structural changes to the funding profiles of many institutions and could make many institutions unviable. However, applying such a ratio to only the largest credit institutions would result in the measure being less effective.

5.61 Any core funding ratio would be an additional supplementary measure, alongside the leverage ratio. The two measures are delivering very different outcomes: the leverage ratio is a regulatory back-stop ensuring that under-estimation of asset risk is constrained by an absolute limit. The core funding ratio imposes a constraint on the overall quality of liabilities which can be varied to inhibit excessive balance sheet growth in periods of robust economic growth. While the possibility of a combined leverage and core funding ratio appears superficially attractive, the two policies are targeting very different objectives and it is doubtful that an unified view of asset and liability risk which would be needed to underpin a combined ratio could be delivered.

5.62 A core funding ratio could be more effective than a leverage ratio in suppressing excessive credit growth in particular because in benign economic conditions longer-term savers who can supply core funds will be attracted to higher returns available on investments which entail some risk so that inducing them to provide deposits or long-term funding to banks requires a commensurately large increase in interest rates/yields, and this flows through to borrowing costs and hence credit demand.

Q15: What are your views on the effectiveness of a core-funding ratio as a measure to constrain excessive asset growth?

Q16: What types of institutions should be exempt from such a core funding ratio? How would any exemptions limit the effectiveness of the measure?

5.63 The core funding ratio is an example of one possible macro-prudential tool and, in the FSA's view, it is potentially highly effective. However, it is clear that there is a range of other macro-prudential tools. These could include some of the tools (such as limits on LTVs) discussed in Section 3 of *The Turner Review*. The range could also include tools such as concentration limits, floors under risk weights for particular asset classes, public pronouncements (e.g. 'Dear CEO' letters) followed up by supervisory review and so forth.

The link between macro-prudential policy and Pillar 2

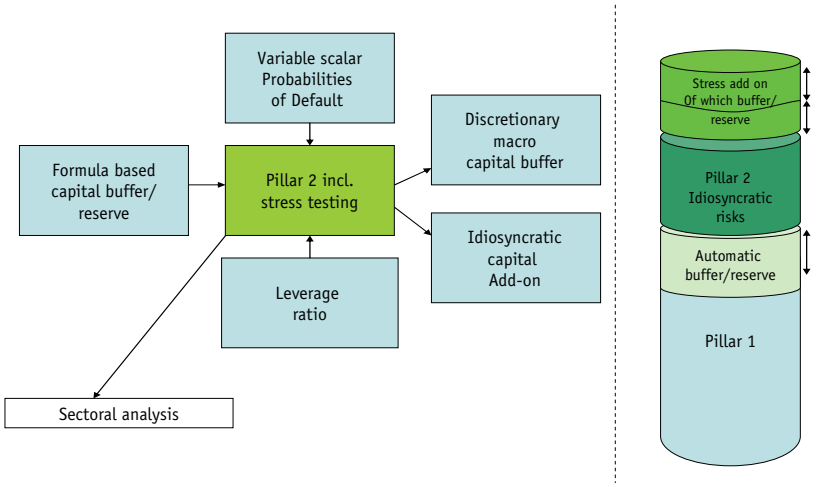
5.64 This section concludes with a discussion of how the Pillar 2 supervisory review processes, in particular its requirements for stress-testing, relate to macro-prudential policy tools. The purpose is to set out how the macro-prudential framework, and capital measures in particular, might interact with the Pillar 2 process. It also suggest some ways in which Pillar 2 might be enhanced to maximise its potential contribution to a new prudential framework.

5.65 Pillar 2, the supervisory review of banks' capital needs, is the FSA's key tool for an individual assessment of the prudential risks of a firm to the extent that these are not (fully) captured, under the Pillar 1 credit, market and operational risk charges. Section 4 noted that the implementation of Pillar 2 assessment and stress testing is not itself a sufficient condition to achieve the macro-prudential objective of maintaining overall financial system stability. However, the Pillar 2 processes are a core element of the prudential framework and closely linked to macro-prudential policy measures because they permit analysis of the impact of an economic downturn or generalised financial stress on a bank, through stress testing. This section examines the interaction between the Pillar 2 analysis and the various potential macro-prudential tools.

Pillar 2 analysis and macro-prudential tools

5.66 The figure below provides a diagrammatic illustration of how Pillar 2 may interact with the various macro-prudential tools in addition to its current key functions. The focus for this stylised example is Pillar 2 stress testing, under which an analysis of the firm's total risks in a severe economic stress[19] is required along with the associated impact on its capital resources and requirements. However, the analysis of any of the risk elements under Pillar 2, for example interest rate risk in the banking book or concentration risk, may well inform sectoral and macro-prudential analysis.

Complementary capital measures and Pillar 2



5.67 In summary, the key links between Pillar 2 and the macro-prudential measures are as follows:

- **TTC Probability of Default.** The Pillar 2 holistic stress test is expected to identify individual risk drivers and is heavily informed by the IRB stress test which includes an analysis of ratings migrations. From a macro-prudential perspective this analysis facilitates an understanding of the extent to which PDs are truly TTC, and thus the extent to which discretionary measures are required in countering the potential procyclicality of the regulatory capital requirements, in addition to the automatic capital buffer/reserve.

- **Leverage ratio.** Stress-testing analysis undertaken in Pillar 2 will help identify the risk that a leverage ratio is breached under various economic scenarios and business strategies. This will inform the discussion between supervisors and the firm in the supervisory review, in relation to strategic and business risk in particular. Results across the banking sector will also inform the FSA's analysis as to what the impact of the leverage ratio is at a system-wide level.

- **Formula-based dynamic provisioning and capital buffers.** Stress-testing analysis under Pillar 2 would identify the impact of formula-based dynamic reserving/provisioning or capital buffers on a firm's balance sheet and behaviour. Such analysis would inform the Supervisory Review and Evaluation Process (SREP) discussion at the individual firm level but would also inform the FSA's view at a sectoral level. The system-wide level and impact of the reserve/buffer would be better understood along with the associated aggregate impact on firms' behaviour and the related macroeconomic impact.

- **Idiosyncratic capital add-ons** and discretionary macroeconomic capital buffers. The individual capital buffer that a firm would be required to hold currently under Pillar 2 should take into account system-wide capital requirements in setting the appropriate firm-specific buffer.

Pillar 2 transparency

5.68 Pillar 2 can have a role as part of the macro-prudential policy framework through a coordinated supervisory review process across the complementary, macro-prudential measures, as well as assessing the Basel II Pillar 1 risk-based capital requirements. However, at present Pillar 2 is a matter for the individual firm and its supervisor; there is no public disclosure. This has several consequences, particularly depriving market participants of information they would otherwise use to impose market discipline on banks[21] and inhibiting external scrutiny of a national supervisor's use of its discretion under Pillar 2. This, in turn, means that there is little pressure for convergence in supervisory approaches across jurisdictions since no third party can assess the relative effectiveness of any two supervisors' approaches to Pillar 2.

5.69 Pillar 2 could be much more effective if it were conducted in a more transparent way. There is also a strong case that any resulting additional capital requirements that are imposed should be published. This would allow not just market participants but other official sector bodies (such as the IMF, the FSF, and the BCBS) to assess the credibility of the assumptions used and the resilience of the major banks to a range of downside scenarios. This will create external pressures on supervisors to deliver robust and consistent Pillar 2 outcomes.

21 In general Pillar 3 of the Basel framework provides for public disclosures to enable market participants to assess, among other elements, the capital adequacy of the firm. However, with Pillar 2 process and outcomes remaining undisclosed there is an information gap.

5.70 Such an approach is not without drawbacks. It would change the nature of the Pillar 2 process as firms and supervisors would operate in the knowledge that the outcome would be published. Moreover, as is argued in *The Turner Review* and elsewhere in this DP, the current crisis has clearly exposed deficiencies in the way market discipline has operated. It is not clear to what extent relaying Pillar 2 information would therefore increase market discipline, and the disclosures themselves would have to involve significant contextual information to ensure they were properly interpreted.

Q17: To what extent would market discipline and the convergence of supervisory practices be improved by the disclosure of information relating to Pillar 2 assessment? What information would be most useful?

6 Scope of regulation

Key issues in this section

Although many of the causes of the current crisis originated within the regulated sector, the crisis also exposed risks that elements of the unregulated financial sector pose to financial stability because of their connections, financial and reputational, to regulated firms and the impact on market pricing of asset sales and other activity by the unregulated.

The unregulated sector, for the purposes of this discussion, includes – but is not confined to – SIVs, conduits, and hedge funds. It should be noted that hedge fund managers are, however, regulated for certain aspects of their business in various jurisdictions (including the UK).

One effect of the strengthened regulatory framework that emerges from the current debate will be to increase the incentives to move activities outside the new regulatory boundary. Regulators need to anticipate this by taking appropriate powers now.

FSA position and objectives

Supervisors must fully understand unregulated activities within otherwise regulated groups and regulated firms' exposures to unregulated entities, and take appropriate actions in line with the risks.

There should be strong surveillance at a global level to identify risks from the unregulated sector to financial stability and the regulated sector.

Supervisors should be able to request information from the unregulated sector to be shared with other supervisors.

National authorities should have reserve powers to bring quickly new activities and entities into the regulatory perimeter.

6.1 Any financial market will contain a divide – a boundary – between what is and what is not regulated. The boundary can take a variety of forms:

- some activities (e.g. taking retail deposits, investment advice, holding client assets) are regulated, whereas others (lending, maturity transformation, certain proprietary position-taking) are not;
- an activity which is regulated in one country may not be in another (e.g. hedge fund managers are regulated in the UK, but are not in some other countries);
- although some aspects of a firm's business may be regulated, others are not (e.g. although UK hedge fund managers are authorised and regulated by the FSA, the associated fund on behalf of which they perform these activities – which is almost always domiciled off-shore – is not regulated by the FSA, although it may be regulated in its domicile).

6.2 These considerations introduce a number of complexities:

- a regulated firm may use the same balance sheet to engage in activities, some of which are regulated in certain respects, others not. This is particularly true of the consolidated balance sheet of a financial services group where some group companies, possibly operating in different jurisdictions, will be regulated, others not;
- although the notion of a boundary suggests a clear divide, in practice this is not the case. There can be significant financial inter-connectedness and reputational exposure between the regulated and unregulated sectors, in both directions.

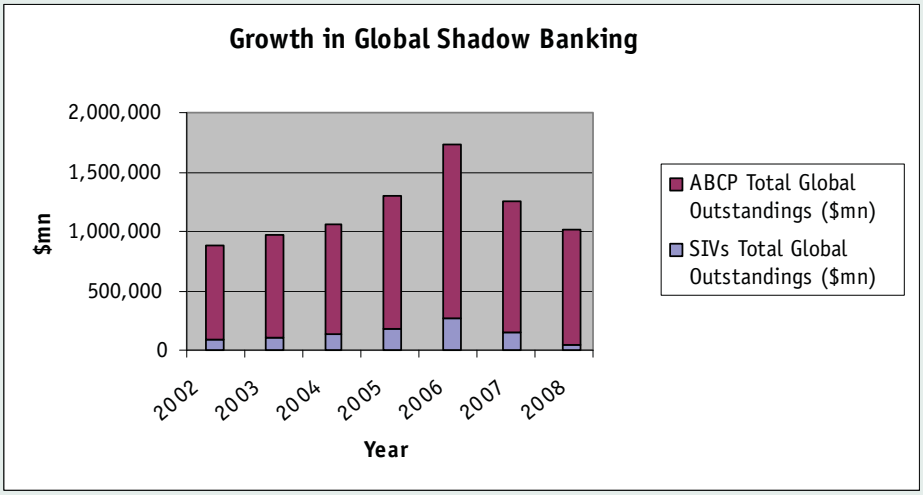
6.3 The decision as to where to place the boundary is tied to the objectives of regulation. Clearly, these will vary from country to country, but in general terms these objectives relate to protecting (retail) consumers of financial services and maintaining financial stability and confidence, recognising in the latter case that the social costs of failure tend to exceed the private costs, particularly in systemic situations. It follows that institutions undertaking activities that are relevant to these objectives will tend to fall within the boundary of regulation, others outside it. It also follows that the boundary will constantly need to evolve. New unregulated activities, and the entities that undertake them, tend to start small and may pose few, if any, risks to retail consumers or to financial stability. However, how they evolve may change the picture very quickly. Surveillance and other early warning systems to spot new business activities and monitor their development are key. But in practice this can be very challenging to achieve.

Box 6.1: SIVs and conduits

As legal entities, both asset backed commercial paper (ABCP) conduits and SIVs are unregulated. However, the inflow of funding through investments in these found its way into the regulated banking sector in a number of ways:

- multi-seller ABCP conduits provided funding that allowed banks to maintain client lending relationships. In 2008, 20% of the assets held in Europe, the Middle East and Africa (EMEA) multi-seller conduits were trade receivables (Source: S&P);
- credit arbitrage ABCP conduits provided funding which allowed sponsor banks to take investment positions. In addition, many of the investments within these conduits were in securitisation paper, which provided direct funding to other banks. In 2008, RMBS accounted for 33% of the assets held by EMEA credit arbitrage conduits. In total, 96% of assets held by the vehicles were ABS (Source: S&P);
- SIVs were significant purchasers of securitisation paper, but also were significant investors directly in banks themselves; 29% of assets held by EMEA SIVs in 2008 were direct investments in commercial banks (Source: Moody's).

In the years prior to 2007, activity in the SIV and ABCP conduit market was significant, and growing, such that the inflow of funds into the banking sector from these activities was also growing. The graph below shows that the total funding for these activities increased by almost $1 trillion between 2002 and 2006 (Source: S&P).



Firm-specific considerations

Regulators have already put in place measures to strengthen the prudential framework to help deal with the potential risks arising from these activities on individual regulated entities. It is essential that these measures are implemented effectively across jurisdictions to help insulate the regulated sector from the crystallisation of risks in this area.

ABCP Conduits

The funding of these vehicles is mainly short term in nature (i.e. through the commercial paper and medium term note (MTN) markets) in order to attract funding from investors looking for highly-rated short-term paper. This leaves such vehicles exposed to liquidity risk, as a result of which many UK and international banks provided significant sponsorship functions to such conduit vehicles; for instance, ABCP conduits generally tend to have a full 100% liquidity line from a sponsor bank, exposing the bank to liquidity risk to the full value of the assets held within the conduit. The assessment of this liquidity risk will be included in the FSA's assessment of the liquidity risks of the sponsoring firm.

If a bank provides liquidity to such a vehicle, that liquidity line will often also mean taking on some or all of the credit risk of the assets being financed. Therefore, in addition to liquidity risk, our approach to risk-weighting the sponsor bank's potential credit exposure to the underlying assets is also important.

A significant weakness of the Basel I approach was that liquidity facilities with an original maturity of less than one year attracted a 0% credit conversion factor. This meant that no capital needed to be held against such facilities. Prior to 2007, many of the liquidity lines were structured to be eligible for a 0% credit conversion factor. Therefore the sponsoring banks would have been holding no capital against the credit risk of the assets held within the conduit.

The introduction of Basel II has led to a better identification of the risks in securitisation (and particularly conduit) liquidity facilities. Banks using the IRB approach which provide these facilities must apply a 100% conversion factor to these exposures recognising that, were the assets to default, in all likelihood it would be the provider of liquidity which would experience the loss.

SIVs

SIVs have traditionally been different to bank-sponsored conduits, in that the market value and market liquidity of the assets held within the vehicle are significantly more important. Rather than having full back-stop liquidity provided by a bank sponsor, most SIVs relied upon trigger mechanisms, often based on the market value of the assets, to allow for liquidation of the underlying portfolio when the trigger was breached.

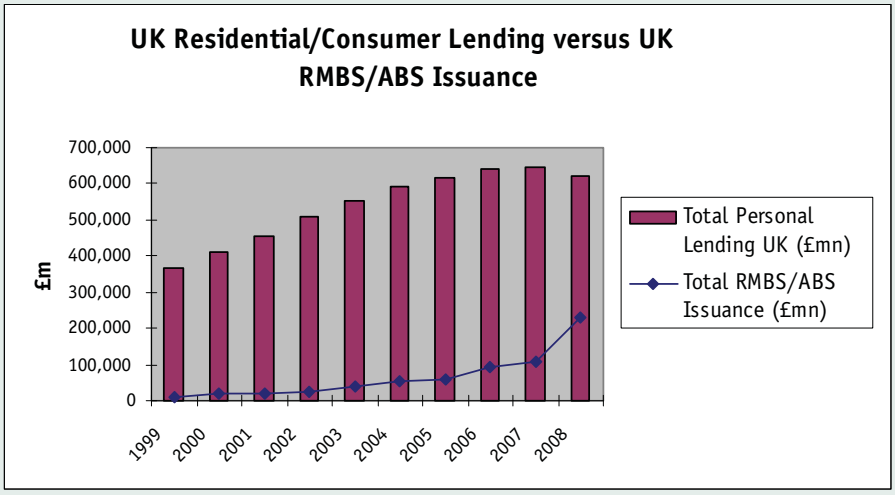
This means that SIV sponsors, even under Basel II, are not generally holding much capital against the assets in the SIV because the provision of liquidity is small. In addition, most SIVs included subordinated notes which took a significant proportion of the credit risk in the underlying assets.

Despite this lack of contractual liquidity support, there has been evidence to suggest that the reputational impact of the failure of a sponsored vehicle would lead to significant incentives for a sponsor to prevent that failure occurring, whether by providing liquidity or credit support. In January 2009, the BCBS consulted on enhanced Pillar 2 guidance that will strengthen supervisory expectations for capturing the potential implications that non-contractual support to securitisations can have on a firm's risk exposures.

System-wide considerations

Despite the micro-prudential steps already taken, supervisors must be more acutely aware of the macro-prudential risks that can develop when unregulated entities impact so heavily on the financial system. Funding provided through non-bank conduits could be seen as a significant driver in the growth of structured finance, which in turn had a direct impact on the provision of consumer lending and the overall degree of leverage in the economy.

The graph below, while not necessarily representing a causal link, shows that parallels can be drawn between the growth in UK ABS (including residential mortgage-backed security (RMBS)) issuance up to 2007 and the increasing levels of consumer lending in the economy (Sources: Bloomberg, SIFMA).



The FSA's and other supervisors' understanding and surveillance of these and equivalent activities need to be greatly improved to assess the risks across the financial landscape. For example, the reliance on SIV and conduit structures to finance RMBS issuance in the UK was a significant – and underestimated – concentration risk in the UK residential mortgage market. Furthermore, the extensive inclusion of market value triggers within SIV structures meant they were a precarious funding source for consumer and residential lending, as hitting such triggers could simultaneously terminate the further purchase of new assets and initiate the sale of existing assets, thus exacerbating cyclicality in lending patterns. Even if each individual firm was adequately capturing the risks to which it was exposed, the increasing importance of these vehicles within the system was not taken into account.

6.4 The boundary issue is relevant to this DP for two reasons. First, there is no doubt that the growth of activities, such as maturity transformation and leverage within unregulated vehicles such as ABCP conduits and SIVs contributed significantly to the credit expansion that sowed the seeds of the current crisis. At the same time, it is much less clear that hedge funds, which tend to dominate any discussion of the boundary issue, have so far directly contributed significantly to the causes of this crisis.

6.5 The second aspect that is relevant to this DP is that effective regulation constrains the regulated and creates incentives to develop business outside the boundary of regulation in the 'unregulated' sphere as illustrated below in the case of AIG there will always be an 'unregulated' sector as any attempt to capture all forms of financial activity risks stifling enterprise and competition. The tightening of regulation that has already taken place, and is set to continue, will create further incentives. For example, adopting an explicitly counter-cyclical approach within the regulated sector will likely create strong incentives for some activities which are constrained by this to move beyond the boundary. What form this will take is currently unknowable, but regulators need now to have the right toolkit both to identify it when it starts to happen and deal with it proportionately and swiftly. It is therefore essential that regulators establish now a systematic framework for anticipating and dealing with future problems, rather than wait for evidence of them emerging, by which time it may be too late. These issues are explored in further detail below.

Box 6.2: Case Study – AIG Financial Products

Although the OTC derivatives activities of AIG's Financial Products (FP) division were largely unregulated, most of its counterparties were regulated firms. Indeed, a substantial proportion of the FP products would have had the effect of reducing the minimum capital requirements for regulated firms. In particular, firms had a significant incentive to transfer those risks that attracted the highest capital charges under Basel I. This could be achieved by the bank on Basel I buying credit protection from FP (usually through a CDS contract). Under the banking book, this would have reduced the bank's risk-weighted assets (RWA) by substituting one form of credit risk (the exposure to the original borrower) by another (the counterparty credit risk to FP).

This meant that the failure of the AIG Group would not only have been damaging for the US and indeed the global insurance industry, but would also have had a huge impact on large segments of the global banking industry. Any unregulated entity that acts as a counterparty in such a large proportion of international derivatives markets should be subject to additional regulatory oversight. It is possible for the supervisors of such a counterparty's clients to estimate total exposures via their own regulated firms and where the counterparty is part of a financial services group, it may be possible for supervisors of regulated entities within the group to estimate total exposures via the regulated entities. However, this provides only a partial picture of the systemic impact of such a counterparty and is very much a second best solution.

6.6 Experience suggests that boundary issues fall into two broad but distinct, categories. The first concerns the assessment of unregulated entities and activities conducted within a regulated financial services group, where the risks and issues are best dealt with utilising and developing the framework of group consolidated supervision. The second concerns how to address the wider impact of unregulated activities conducted by unregulated entities which have no direct connection through ownership or sponsorship with regulated firms. Each category is important in its own right, but needs to be dealt with by quite different approaches. Each is considered further below.

Unregulated activities within regulated groups

6.7 There are two dimensions to this issue: unregulated group parent holding companies and the unregulated firms or activities that exist within groups subject to group supervision. In both cases it is an absolute pre requisite for effective supervision of the group that the supervisors understand the totality of risk that a financial services group is running, including the contribution to overall risk of any unregulated entity that is part of the group or associated with it. It is essential that supervisors have both the resources and powers to do this.

6.8 Most regulated firms, and almost all large, cross-border financial institutions are part of, or create, groups. In some cases, the company at the top of the group will be unregulated, with its main business being to hold shares in, and control, its investments in the entities that comprise the group. It is often the case that such holding companies exercise a very powerful influence over the group and the regulated firms. The holding companies will usually set the strategic direction for the group, raise finance, maintain and establish the risk appetite and management of the group, and maximise the benefits from diversification of risks and economies of scale through effective capital, liquidity and operational risk management.

6.9 At present, unless the holding company of a financial services group is itself carrying out a regulated activity, the FSA has limited direct powers over the holding company. This is despite the fact the holding company plays a pivotal role in the group and is within the scope of the framework for supervision of financial services groups, as set out in the existing prudential directive framework. The same is generally true in other jurisdictions.[1] This situation creates a number of risks, principally because the FSA's (and other supervisors') influence over the regulated subsidiaries may not be sufficient to effect necessary changes in the behaviour of the unregulated parent holding company to protect consumers and financial stability.

6.10 The limitations of this approach can take a number of forms:

- if the supervisor has to work through a regulated subsidiary, it has little ability to prevent or control any activities of unregulated holding companies that increase the complexity of the group and the risks it poses to regulated subsidiaries; and
- in the case of multi-jurisdictional groups, there can be mismatches between the global outlook of the holding company's board and senior management and the local focus of the regulated entities (and supervisor) in the jurisdiction in which the top holding company is incorporated. This is particularly true where a regulated subsidiary is a relatively small part of a group and will only be able to exercise limited influence over the top holding company.

6.11 The FSA therefore sees a strong case for legislative change in the UK and elsewhere to ensure that parent holding companies for financial services groups are subject to direct powers to comply with the requirements of the prudential framework. The aim of this being to provide clarity of the supervisor's authority and power over these

1 For example paragraph 74, page 24, Advice to the European Commission on aspects of the Framework Directive Proposal related to Insurance Groups (CEIOPS-DOC-25/08) issued by CEIOPS on May 2008.

unregulated holding companies in financial services groups when assessing the totality of risk a group is running. Clearly, before reaching any final view on this issue, further work needs to be done to identify the costs and benefits of such an approach, both in the UK and with the international standard setting bodies.

6.12 The second, related dimension, concerns unregulated activities and entities that exist elsewhere within a financial services group, which are within the scope of the framework for supervision of a financial services group. As discussed in Section 8, it is essential that the supervisors of the regulated entities in the group have the information necessary to have full visibility of the solo and group level implications of any relationship (whether financial or governance-related, between a regulated entity and a related unregulated entity) and the aggregate exposures of the group to particular unregulated activities.

6.13 This visibility, achieved through regulatory reporting or the provision of management information, is needed in order to be able to determine the appropriate regulatory treatment for addressing these types of unregulated activity and the risks they pose to the group. In some cases capital (either in Pillar 1 or Pillar 2 or both) and liquidity will need to be held to mitigate the risk of these relationship and exposures. This could be complemented by stringent restrictions or prohibitions on certain types of relationship, for example on connected, intra-group lending, particularly if it is not on an arm's length basis, or requirements on management to establish clear protocols to justify and monitor the reliance and implications of certain relationships. In other cases, a more appropriate treatment may be to take into account possible contingent exposures (such as may arise from providing non-contractual support to sponsored vehicles) in capital management planning and stress testing and in liquidity stress testing.[2]

Wider impact of unregulated entities

6.14 The measures outlined above, if implemented, would enable supervisors to assess the risks posed by unregulated activities that are conducted within a regulated financial services group (or closely associated with one). The policy response in relation to developments in the wider group of unregulated entities where there is no ownership or sponsorship connection with an otherwise regulated group needs to be very nimble, taking the form of a series of rapidly escalating steps. The steps will only be effective if they are implemented globally and consistently. If not, the sorts of boundary complexities set out above will emerge.

6.15 The first step is to ensure firms are monitoring and assessing the implications of their exposures (whether on or off-balance sheet) to, other relationships with, unregulated financial entities. This information will be evaluated by the supervisor. Although historically the focus has been on credit exposure, recent experience shows that firms and supervisors also need to be alive to situations in which unregulated entities either provide funding (e.g. through purchases of bank commercial paper or longer-term debt) or buy assets which regulated firms have originated. If unregulated entities find themselves

2 The FSA's recent Consultation Paper *Strengthening Liquidity Standards* (CP08/22 issued in December 2008) makes it clear that firms should identify sources of liquidity risk, including when a firm 'will choose to provide liquidity support to sponsored and third structured vehicles beyond its contractual obligations'.

unable to continue in those roles, there will be immediate funding consequences for regulated firms.

6.16 It is possible for supervisors to use this information, gathered in the first instance for micro-prudential purposes, for macro-prudential ends. In particular, such information can provide a basis for indirect 'regulation' of unregulated entities or sectors. This is the approach that the FSA and others have adopted in relation to hedge funds (in addition to the direct regulation of hedge fund managers). The focus here has been on the regulated prime brokers that provide financing and other services to the hedge fund community. The rationale underpinning this approach is that, provided supervision of the prime brokers (or equivalent) is carried out effectively, and hence their vulnerability to problems in the hedge fund sector (or equivalent) limited, the risk of problems in the unregulated sector flowing back into the regulated system is reduced.

6.17 Another advantage of this approach is that indirect regulation via regulated entities in a relatively small number of key financial jurisdictions can restrict the impact of unregulated activities (that could be located in any of a wide range of jurisdictions) and increase the possibility of a rapid reaction to emerging problems. This approach could be developed further so as to restrict the type, amount or concentration of business that the regulated firms undertake with unregulated entities or the specific unregulated activities. Regulated firms could also provide information to establish the growth of the relevant unregulated sectors. This could constrain the growth of unregulated sectors and activities. The FSA believes that the effectiveness of such an approach should be investigated further.

6.18 Such an approach will be much more effective if it is pursued by all (major) supervisors around the world as part of a sophisticated and comprehensive approach to macro-prudential surveillance. Only in that way can there be something approaching complete coverage of the regulated sector's exposure to an unregulated sector. Without it there will be gaps in the boundary wall through which risks can flow back into the regulated system. However, the indirect approach requires two prior conditions to have been met:

(i) supervisors are aware that there are unregulated entities or sectors which are sufficiently important to require increased monitoring and vigilance; and

(ii) there is sufficient 'connection' between regulated firms and the unregulated entities to enable supervisors to monitor (and potentially affect) the activities of the latter through information submitted by the former.

6.19 In order to satisfy the first condition, supervisors require access to information gathered through a framework for surveillance, as part of their supervision of the financial services groups and their own central banks' market surveillance activities. In addition to gathering this information at a national level, it is essential that full use is made of bodies such as the FSF and BCBS to pool such information in order to generate a composite picture of new developments and trends so as to enable early and effective action to be taken in response to it.

6.20 As far as the second condition is concerned, although it is difficult to imagine unregulated entities and their activities becoming significant in financial markets

and/or to the real economy without in some way either being financed by, or having some other financial connection to, regulated entities, it must be theoretically possible. For example, it might be possible for vehicles to finance their activities through corporate bond markets and use the proceeds to engage in maturity transforming activities, effectively by-passing the regulated sector (bank and investment banks).

6.21 It follows from this that there may be:

(i) limits to the indirect approach to regulation, beyond which it will no longer be possible to safeguard financial stability or consumers' interests without direct regulation of the activities or entities concerned;[3] and/or

(ii) the activities of unregulated entities integrate into the financial system in such a way that an indirect approach to monitoring or controlling their activities through their connections with the regulated sector simply cannot work.

6.22 This means that regulators, or other authorities, need to be ready and able quickly to bring what may start as unregulated business in unregulated entities within the regulatory boundary or to impose direct restrictions on such activities that fall short of direct regulation. As noted above, in order to be effective, such a response needs to be coordinated globally. As part of this, regulators need – as a first step – to have information gathering powers to enable them to collect information from unregulated financial firms when their activities present risk to financial stability. In addition, national authorities will need some form of reserve powers that can be deployed quickly to bring new activities and entities into the regulatory perimeter.

6.23 This conclusion begs the question as to what the right triggers are for moving from a state of no (direct) regulation to one of direct regulation or indirect restrictions, i.e. requiring entities that undertake certain unregulated activities to be authorised. Defining a set of triggers ex ante will never be straightforward, given that the risks posed by certain activities will to some extent be state-dependent. However, the following indicators could form a set of triggers:

- scale of activities undertaken within a 'class' of unregulated entities, either in absolute terms or relative to a particular market segment;
- potential market or real economy impact of a disorderly unwind of positions held within unregulated entities (often referred to as the 'market dynamics' argument); and
- potential consumer detriment, where relevant.

6.24 One alternative approach to that set out above would be to establish, in advance, those activities which – if undertaken by unregulated firms – would be most likely to give rise to system-wide risks, define them in national legislation and require any entity carrying out such activities to seek authorisation. These entities and their

3 This point can be illustrated by reference to hedge funds. Indirect regulation works here: it is proportionate for the particular risks, especially in the absence of any significant retail investor protection argument, and the alternatives continue to look challenging, given the complex offshore structure involved. This may not always be the case and there may in other instances be a sound and practicable case for direct regulation.

activities would then become subject to prudential and other appropriate supervision in their own right.

6.25 The activities carried out by unregulated entities which have created the most significant risks in the current crisis are maturity transformation (where liabilities are of a much shorter duration than assets) and leverage (where relatively small amounts of capital are used to support very substantial risk-taking activities). These activities can rightly be described as 'bank-like' in substance. It would be possible to define maturity transformation and leverage in such a way that they could be included in legislation and any firms carrying them out be subject to regulation.

6.26 There are, however, a number of practical problems with this approach:

(i) if the definition were framed tightly, this would in itself create boundary issues and loopholes that could be exploited;

(ii) if, on the other hand, the legislation were framed broadly, this would potentially draw in a very large number of companies, whose primary business may have little connection with financial services (many commercial and industrial companies are leveraged to some extent, and some clearly undertake forms of maturity transformation);

(iii) a broad definition would therefore need to be accompanied by a series of exclusions and filters to remove from the regulatory net those companies whose activities or size would not justify their being subject to regulation. This would result in a complex system to administer which would in turn create its own loopholes.

6.27 All that said, it is difficult to conclude that such an approach is unworkable. Indeed, most of the current regulatory framework has had to deal with similar challenges. Its main drawback, relative to the escalation approach outlined above, is that it pre-supposes that regulators know in advance precisely which sorts of unregulated activities are likely to pose systemic risks. In the absence of this perfect foresight, regulation would still need to have an effective surveillance mechanism, as set out above and with information gathering and indirect regulation or reserve powers for direct authorisation or restrictions to deal with those new activities whose significance had not been identified in advance.

Q18: Are there other considerations that are relevant to the assessment of the issues and risks posed by the boundary question?

Q19: Is the escalating response set out here the right way to deal with the threats to financial stability and consumer protection posed by unregulated financial activities and institutions? Or should the FSA, along with other regulators, develop an alternative approach?

Q20: What are the implications of subjecting parent holding companies for financial services groups to direct powers to comply with the requirements of the prudential framework?

7 Systemically important firms

Key issues in this section

A number of large financial firms have failed in the current crisis (in the sense that without publicly financed support they would no longer be going concerns). The fact that governments have supported the largest, systemically important firms to maintain financial stability indicates that some firms are too big to be allowed to fail, or at least to fail fully.

As a consequence, supervisors need to consider whether and if so how to respond to the resulting increase in moral hazard.

FSA position and objectives

The FSA will continue to use its existing impact and risk-based approaches to vary the intensity with which supervisors apply the supervisory framework to individual institutions.

There is a range of further measures that could be adopted which include subjecting the largest, systemically important firms, particularly banks, to higher capital and liquidity requirements or restricting their activities in such a way as to limit the extent to which they can undertake higher risk business. In both cases, the objective would be to lower the probability of failure of such banks. Further analysis of these options is needed.

7.1 In the course of the last 18 months governments around the world have intervened on an unprecedented scale to support banks and in some cases other systemically important financial institutions. The main objectives of these policy measures are:

(i) to support confidence in the financial system and avoid further financial instability;

(ii) to protect depositors' savings and to maintain access to (transactional) banking services; and

(iii) to avoid contagion from the collapse of one firm to other banks or financial institutions.

7.2 The range of support operations includes the extension of central bank open market operations, government capital injections, government guarantees, loss-sharing arrangements, asset protection schemes, asset purchase programmes and governments taking partial or full ownership. Where governments have provided support to undercapitalised banks, and however this support has been delivered, it has the effect of at least temporarily transferring risks that were originally taken for private gain onto the public sector's balance sheet.

7.3 There is a widespread consensus that these actions were not merely justified but absolutely necessary to prevent the collapse of the financial system, the economic consequences and other effects of which would have been calamitous in many countries across the world. However, the provision of unprecedented publicly financed support, above all to systemically significant banks, has crystallised the concern that many banks are indeed too big to be allowed to fail.[1]

7.4 The policy consequences of recognising this reality require substantial further analysis and ideally this should be undertaken in the relevant international fora. This section presents the FSA's initial thinking in this area.

7.5 First, it is important to be clear on what is meant by 'too big to be allowed to fail'. While in some highly concentrated banking systems it may be obvious which banks and other financial institutions are in this category, it is not in other, more diversified systems. Moreover, any list of systemically important firms would inevitably change over time as individual banks evolve through organic growth, merger and acquisition. Perhaps more fundamentally, whether an institution is systemically significant is dependent on the economic and financial context as much as the size and nature of the activities of the institution itself. In otherwise benign conditions it may be possible to allow a large firm to fail, while in other circumstances the correct response may well be to support a firm whose activities appear relatively modest in the context of a country's financial system.

7.6 Further, one of the key lessons of the current financial crisis is that it resulted from a build up of risk across the financial system; clearly the outcomes across different banks vary widely but among those which failed are common patterns which were identified in Section 3, including excessive leverage, reliance on volatile funding sources and insufficient capital both in terms of quantity and quality, (given the risks taken). This suggests that identifying systemically significant institutions per se may be

1 It is important to reflect on the notion of 'failure'. Where governments have intervened, through nationalisation or to facilitate restructuring, subordinated creditors have sometimes seen the terms of their instruments changed or suffered losses, while shareholders have seen the value of their shares fall towards zero, either through nationalisation or extreme dilution. So for certain classes of investor, the economic effect has been tantamount to that of a failure. Moreover, in many cases even though the institution itself has survived, key members of its board and senior management team have not remained in post.

less meaningful than first appears. Instead the focus needs to be on how resilient larger firms are to periods of financial stress, the inter-relationships between the major financial institutions and how these will transmit stress during a financial crisis.

7.7 At present the FSA's prudential policy framework does not, in the main, differentiate by size. There is, however, a very different supervisory approach applied to firms depending on their impact on the FSA's objectives. The FSA has an explicit minimum level of supervisory resource for high impact firms, and, as set out in Section 11, adopts a much more intensive supervisory approach towards them. This minimum resource level will be supplemented as the FSA's risk-based assessment identifies issues and risks that need to be addressed.

7.8 The current financial crisis confirms the FSA's view that a risk-based approach to supervision is key to mitigating the additional risks which systemic firms present. The question that remains is whether, in addition to the policies proposed in Sections 4 and 5 to strengthen the prudential framework, and taking account of an enhanced supervisory approach for high impact firms, there is still a need to adopt a further particular set of policies. This depends first on how extensive are the effects of the current publicly financed support on bank management's incentives.

7.9 At this stage, given that the crisis has not yet fully played out, it is difficult to assess what the aggregate effect of these support actions has been on the incentive structures of various types of creditors or investors in financial institutions, and indeed on current and future boards and management of financial institutions. Unsurprisingly there are currently signs of great caution on the part of investors and some creditors; equally current managements have become very risk averse. No doubt these extreme initial reactions will not last, nor should they do given that they will delay the point at which markets can start functioning properly again. However, the question remains as to whether investors' and some creditors' experiences will have been sufficiently adverse to off-set the moral hazard that has arisen from the clear evidence that some financial institutions are too big to be allowed to fail. If this is not the case, additional policy responses may be necessary.

7.10 Clearly, governments and regulators are not looking to market discipline alone to ensure that a crisis of the current scale does not recur. The weaknesses of market discipline in the years before the current crisis suggest that such an approach would, in any case be misplaced. A wide range of policy changes is already under intensive discussion, both domestically and internationally, and this DP puts forward for debate a comprehensive set of proposals to strengthen the regulatory framework. Nevertheless, the FSA thinks it important to consider whether any further steps are needed, to ensure that boards and management take better account of the external costs of failure and reduce the likelihood of failure, and hence possible future claims on public finances.

7.11 Such steps could take a number of forms:

(i) subjecting the largest, systemically important financial institutions to higher capital and liquidity requirements, larger capital buffers/reserves and possibly tighter restrictions on leverage. The aim here would be to reduce the probability of such a firm getting to the point of failure and requiring public support. At the margin higher capital and liquidity buffers would also reduce the impact of failure;

(ii) restricting the range of activities that the largest financial institutions can engage in, or the extent to which they can engage in higher risk activities. This would be on the basis that in the current crisis the main source of many institutional difficulties has been over-expansion into activities that are well beyond their 'core' business and the range of experience of their boards and senior managements. A further step on this path could include consideration of the creation of 'narrow banks' whose function would be to provide liquidity and payment services and whose activities would be limited to investing in 'safe' assets. This would be intended to create a clear barrier between utility banking and riskier, highly leveraged trading activities. Such approaches would again be intended to reduce the probability of failure of the banks at the core of any country's financial system;

(iii) restricting the size of financial institutions, either in absolute terms or in relation to the size of the particular market or markets in which they are active. This might be achieved through regulatory or competition policy or some combination of the two. Such an approach would seek to avoid any institution becoming 'too big' in the first place, thereby allowing its failure to be absorbed in an orderly way.

7.12 This list is not intended to be exhaustive, but rather to illustrate the types of approach that could be adopted to reduce either the probability of the largest financial institutions failing, or making the impact of their failure manageable.

7.13 However, each is subject to a number of drawbacks. First, there is a difficult boundary issue – where does the regulator draw the line between those financial institutions that are to be subject to these requirements and those that are not? As noted above this may be obvious in some highly concentrated banking systems, but it is not in other, more diversified banking systems. Moreover, it is difficult to envisage how such a 'list' could be drawn up for all time. While it may be felt appropriate, in certain circumstances, to allow a relatively large firm to fail, in other circumstances the correct response may well be to support a small firm. This illustrates the point that authorities need to have regard to the systemic nature of the situation as well as of the individual firm. The former cannot be predicted. That said, it may be misleading to think of the divide between 'systemic' and 'non-systemic' as being hard. It may be possible to develop a sliding scale approach, where supervisory requirements of a firm increase with the consequences of the spillovers from its failure.

7.14 Second, it is unclear whether the 'price' extracted ex ante (e.g. through higher capital or liquidity requirements) will be sufficient to offset the impacts on incentives (particularly on the part of management) that will come from knowledge that the institution falls into the category of too big too fail. That said, boards and senior management of the largest firms – as well as their counterparties, rating agencies etc – may well have already concluded that they fall into this category. Hence any incentives effects may be marginal.

7.15 Third, setting higher requirements determined solely by a financial institution's size risks blunting the incentive for management to strengthen controls and risk management.

7.16 Fourth, as discussed in Chapter 2.9 of *The Turner Review*, restrictions on the size of a financial institution or the range of activities it undertakes, while attractive in some respects, are difficult in practice to implement. As the current crisis demonstrates, today's markets are global, as are many of the customers of major financial institutions. Those customers need large, global banks capable of offering a broad range of services. Restrictions on banks' activities would reduce economies of scale and scope and limit diversification benefits for both banks and to some extent their customers. In addition, it is far from clear that specialisation in a relatively narrow field (e.g. mortgage lending) helped avoid problems during the current crisis. Banks' high-risk activities are not confined to their trading books. Finally, although theoretically attractive it is difficult to see how any split between utility banking and investment banking could be implemented so as to avoid the risk of contagion between the two types of bank. However, the combination of higher capital requirements for trading risks, coupled with increased supervisory scrutiny of these risks, may well mean that some banks decide to reduce their activities in this area.

7.17 At this stage, on the balance of the argument, it does not appear that there is a compelling case in favour of imposing higher, across-the-board requirements on systemically important firms. However it is clear from the FSA's views on the importance of fully loss absorbent capital for the larger banks (set out in Section 4) and the proposed macro-prudential approach (Section 5), that some differentiation in the policy approach for the largest banks is appropriate. Consequently the FSA would be interested in further views on this topic.

Q21: Are there other issues which regulators should take into account when assessing their response to the evidence from the current crisis that some financial institutions have been deemed too big to fail fully? If so, what are they?

Q22: What are your views on the balance between varying the intensity of supervision according to the impact and risk that an individual firm poses, and having policy frameworks and approaches that differentiate across-the-board according to a firm's systemic significance?

8 Groups and intra-group exposures

Key issues in this section

The current crisis has seen the failure or near failure of a number of large, international financial groups. This in turn has highlighted issues about the ways in which these groups are supervised, both by the FSA and other regulators.

FSA position and objectives

Analysis of the issues arising from these experiences indicates a clear need for supervisors to achieve the right balance in their scrutiny of these groups between the way in which they are organised and managed for business purposes, and on the individual legal entities of which a group is ultimately composed. Supervisors need to pay the right amount of attention to both.

Supervisors need to be satisfied that the organisational, management and financial structures that groups adopt are capable of being effectively supervised. This may point to changes that the groups need to make to the way in which they manage and structure themselves.

8.1 The ongoing crisis of the last 18 months has highlighted the issues and risks arising from large international group corporate structures operating in multiple jurisdictions and their internal and external exposures and relationships. The problems suffered by groups such as Lehman Brothers and AIG (discussed in Box 8.1) have demonstrated the complex effects of these relationships for the entities within the group and their customers, and the wider financial system when problems emerge. As a consequence it is right for the FSA and supervisors around the world to review their approach to supervising these large groups.

8.2 The corporate ownership structure, capital and funding arrangements within large groups are established for a variety of reasons (such as the efficient use of capital and liquidity, tax planning or as the legacy of previous corporate structures resulting from acquisitions). This is supplemented by intra-group relationships that serve a number of corporate objectives, such as enabling protection of smaller subsidiaries from peak exposures and providing ratings management, risk management and operational

management structures which can be directed from the group's corporate centre. This in turn generates significant efficiencies for the groups concerned.

8.3 Although the structures generate significant efficiencies for the group, they often serve to increase the complexity and contagion by intertwining the financial health of one company with others within the group. Moreover, they can be used to take advantage of differences between regulatory regimes and as a conduit for funds and products through unregulated entities (e.g. SPEs, SIVs and conduits). This can be beneficial or detrimental to different groups of customers. The regulatory and accounting issues relating to SPEs, SIVs and conduits are discussed in Box 8.2.

8.4 Events during the crisis have raised the issue of the value (whether implicit or explicit) that can be ascribed to parental guarantees, or even general assumptions that parental support will be forthcoming. Such arrangements can serve a useful purpose for supervisors when an individual subsidiary encounters financial difficulties,[1] but their value in a position where the group as a whole is in a distressed condition is clearly more questionable. Conversely, the group's (or parent company's) potential liability for actions taken to preserve the reputation of another part of the group needs to be more explicitly built into both the supervisor's and the group's own analysis and stress testing. For example, some investment management firms (or the banks which owned them) provided financial support to money market funds to mitigate potential reputational risk from losses.

8.5 Faced with these complexities, it would be possible for supervisors to conclude that, in order to make a multi-jurisdictional group supervisable, a group would be required to operate its businesses throughout the world using a series of national entities that each had operational and financial independence. This would also reflect the reality that, during a crisis, it is legal entities rather than business lines that fail, and that, the more integrated a regulated subsidiary in one country is into the operations of the wider group (spanning a number of countries), the more challenges there are to achieving an orderly resolution or sale of that subsidiary. As noted in *The Turner Review* (section 1.3 (i)) there is a need for stronger international cooperation of supervision, buttressed by more extensive use of host country supervisory powers.

8.6 However, a shift of emphasis is needed, to reflect the issues and risks that have emerged during the crisis. This rebalancing can be done, in the main, through a change in the FSA's supervisory approach. In practice this will mean that the focus of the framework for the supervision of financial groups needs to include:

- the integrated business line risk management structure often adopted by groups and their ability to move funds in the group to support entities, with particular emphasis on the intra-group relationships created to integrate this structure; and also
- the integrity of the legal entities that form the group and implications of their intra-group relationships.

1 They also serve other commercial purposes, such as enhanced ability to 'downstream' parental ratings.

8.7 As part of this, it is essential that the scope of supervision of a group reaches all entities regulated or unregulated which could pose potential risk to the group and the regulated entities within the group for which supervisors are responsible. This is discussed in Section 6 on the scope of regulation.

Box 8.1: Case Studies – Lehman Brothers and AIG

As with all large, internationally active firms, Lehman Brothers Group had a complex organisational structure. The structure was designed to optimise the economic return to the group whilst at the same time achieving compliance with legal, regulatory and tax requirements throughout the world and enabling the firm to manage risk effectively. The group was subject to consolidated supervision by the US SEC.

The arrangements employed by Lehman Brothers included: (i) the use of unregulated entities for capital-intensive products such as loans, real estate, private equity businesses and derivatives, either booking directly to these entities or through back-to-back trades; (ii) the use of remote booking practice whereby traders in London could book trades to other group entities in the world and vice versa; (iii) the centralisation of excess liquidity at the ultimate parent holding company level so that the resources could be used to support liquidity needs wherever these arose in the group without breaching regulatory limits on intra-group exposures; and (iv) the existence of large numbers of legal entities used to support business or tax optimisation within the group.

These arrangements carried some regulatory and economic benefits but also made oversight of the group more difficult. Most importantly, the fact that positions were booked across multiple legal entities (some within, some outside the FSA's oversight) meant that there was a mismatch between the governance of the firm (i.e. how the business was run in practice, which was along global business lines) and how legal entities were used (essentially as fungible booking vehicles). It was difficult for national regulators outside the US to 'map' business lines to legal entities, and assess the true financial and liquidity position of legal entities based in their jurisdiction.

While the arrangements were acceptable as long as the group remained a going concern, this web of complex intra-group relationships created difficulties in insolvency. It made it impossible to 'extract' the UK entities in the group as a going concern given the linkages between the legal entities, and the significant reliance on overseas locations for operations, technology and oversight. It also made it difficult to contemplate any form of liquidity support for the UK entity. This meant that the failure of the parent automatically triggered the failure of other group entities, and the FSA had very few options to mitigate the impact of the collapse on the UK financial system.

An important issue for the FSA to consider is whether the commercial benefits of the globally integrated operating model for major firms (which accrue to shareholders) outweighs the costs that it triggers in the event of financial collapse (which typically fall to be paid by creditors).

The costs of challenging the globally integrated operating model are considerable. For a UK subsidiary of a major firm to be genuinely autonomous or 'severable' from its parent entity would require substantial investment. It would require not only additional capital and standalone liquidity to survive, but would also need operational independence. This would imply it would not be able to rely entirely on IT systems or operations staff located overseas; would need its own network of sub-custodians, brokers and agent banks separate to the rest of the group's; and would need a franchise that could be meaningfully carried on in the absence of its parent entity. Each of these would carry significant long-term costs.

On balance, the FSA believes that firms should continue to be able to run operating models that straddle legal entities and countries, even if this creates more complexity in the day-to-day oversight of the firm and creates difficulties in a bankruptcy. However, there remains further work to be done to assess the right supervisory approach and what simplification of group structures is possible to deliver a more orderly insolvency process in the event that a firm fails. This is considered further in the Section 9 in the section dealing with crisis management arrangements.

AIG

AIG, although regarded by most as a major global group, is actually a financial conglomerate with activities that include insurance and investment business. AIG is a primary example of a group that was damaged not by an event relating to its traditional activities but by contagion from an unregulated part of the group assuming risk through non-regulated products.

AIG Financial Products (FP) performed a number of OTC derivatives activities including 'insurance' on the credit risk attached to Collateralised Debt Obligations (CDOs), known as credit default swaps (CDSs). These activities are outside the scope of solo regulation (considered in Section 6 on boundaries) and were carried out by distinct operating subsidiaries in the AIG group.

As credit markets began to deteriorate, and spreads began to widen, AIG began to take mark to market losses on this portfolio. As the losses developed and the broader perception of AIG FP's exposures deteriorated, a credit rating downgrade became inevitable. This downgrade triggered collateral requirements on the very contracts that caused the problems, and AIG Inc could not find sufficient liquidity to meet the collateral calls. Despite negotiations to release liquidity from insurance subsidiaries, it became clear that this would not be feasible, and the US Federal Reserve decided to step in to provide the liquidity (initially $85bn). AIG's insurance subsidiaries effectively became collateral against the US Federal Reserve loan.

As these events were unfolding, a second liquidity problem was rapidly unfolding. AIG also conducted a securities lending programme, using the assets of some of its insurance subsidiaries to raise cash collateral from repo counterparties, and then reinvesting this cash in asset-backed securities (ABSs). As the credit crunch developed, the repo counterparties needed liquidity themselves and therefore started unwinding their positions, leaving AIG needing to find about $60bn of cash to repay the collateral they had taken. As the market for the ABS that AIG had bought dried up, the group could not produce the cash needed. As a result the total liquidity line provided by the US Federal Reserve was extended from the initial $85bn to $150bn.

AIG's problems appear to have been isolated in a part of the corporate structure that is separate from the insurance operating companies. Therefore, if the operating companies maintain a strong solvency position and franchise, it is conceivable that they could be separated from the problematic part of the group, thus avoiding complete contagion across the group and resulting detriment to policyholders. It appears that the most recent restructuring of the group is a step in that direction. While the problems of the group as a whole remain, the support that the US government has been compelled to provide to AIG is due to its position as a counterparty to other systemically important entities through its non-insurance operations – operations that were outside of the regulatory perimeter.

8.8 The features of an approach that balances the supervision of a group with a greater focus on individual entities within the group and the intra-group relationships that exist within it are set out below.

8.9 The supervision of groups must deliver an assessment of the sources of strength and weakness that membership of a group provides to a firm or firms operating in a particular jurisdiction. This needs to balance the risks the group presents to solo entities without ignoring the considerable benefits it delivers.

8.10 In this connection the financial position of the group is important. Even if the group as a whole has surplus capital this does not necessarily mean that all regulated entities in the group have adequate capital or that the surplus will always flow from one part of the group to another if it is needed. The group capital adequacy calculations cannot take into account all constraints or restrictions that may apply to capital located in various jurisdictions particularly those that might be imposed by other supervisors. Therefore, it is important to assess the solo financial position and the relationships within the group that may affect intra-group funding.

8.11 As part of this, supervisors need to understand the extent to which an entity within the group, rather than the group, can remain a going concern or experience an orderly wind-down that protects its customers in the event of problems at, or a collapse of, the other companies in the group. This understanding will be informed by the preparation of a contingency plan for the winding up of a group and its operating units discussed in Section 9. At the limit this analysis may also point to changes that the groups need to make to the way in which they manage and structure themselves.

8.12 Many groups are run through matrix management structures which are usually directed from the group's corporate centre. This can give rise to conflicts between managers' responsibilities and obligations in respect of local regulated firms, and those they owe to the wider group. Such conflicts need to be identified and managed appropriately by senior management of firms, so that they can demonstrate, including to supervisors, that they do not give rise to undue risk. It should also be clear that the individual entity's senior management has paramount responsibility for compliance with solo regulatory requirements.

8.13 The relationships that exist within a group can affect the ability of the national supervisors to protect consumers through the supervision of a particular entity. These relationships including funding, outsourced employment or investment services, will affect the financial position of an entity and how risks are likely to develop or crystallise. Greater emphasis by supervisors on the different types of relationships that exist should enable a better assessment of how effectively they can supervise an entity or sub-group within a group. This should provide a basis for ensuring transparent group structures that do not present additional risk to consumers or the market. In some cases this may require changes to how groups operate.

8.14 The increase in supervisory emphasis in these areas should provide a clear strategy for the development of cooperation and coordination between the supervisors of entities within the group. The aim should be to balance an understanding of the group's financial position with assessing the wider context in which the individual entities operate, identifying the linkages and relationships between them and evaluating the implications of their membership of the group.

8.15 Convergence of understanding amongst supervisors is critical and the role of the supervisor responsible for the group (the 'group supervisor') is clear in this context. Although this supervisor will be responsible for ensuring that the financial position of the group accurately reflects its risks and their likely impact, the key focus will be on their ability to facilitate an information exchange to build this convergence. Clearly, in order to do this supervisors must have access to relevant information from entities, regulated or unregulated, in the group and to be able to exchange this for the benefit of mutual understanding. This should enable supervisors to challenge the rationale for group structures, senior management's ability to assess the impact of specific relationships on entities and take coordinated action at the appropriate levels within the group to react to the risks presented.

8.16 The arrangements to facilitate this exchange and convergence could build on the existing structures for colleges of supervisors. The FSA's views on colleges are set out in Section 9.

Box 8.2: Accounting and regulatory treatment of SPEs, SIVs and other conduits in financial groups

A key feature of structured finance is the use of Special Purpose Entities (SPEs). An SPE allows assets to be ring-fenced such that they are bankruptcy remote. The assets are initially funded, typically, using a bridging loan (often provided by the sponsor of the SPE) until wholesale investors provide sufficient limited recourse funding (short and long-term) to pay down the bridging loan. The time taken to pay down the bridging loan can vary from instantaneous (e.g. investors in place following a book-build with bridging loan used purely to facilitate legal transfer) to several months during a warehousing period.

The asset category and form of founding define the risk characteristics of a structure. For example the assets in a Collaterallised Debt Obligation (CDO) are transferable securities, typically bonds, including asset-backed bonds, and funding is limited recourse and matched. Assets in a securitisation tend to be loans (e.g. residential mortgages) or some other form of receivable (e.g. credit cards) with limited recourse matched funding. Other SPE structures are conduits where there is still limited recourse but funding is mismatched (i.e. short-term funding is used to fund long-dated assets). This maturity transformation is essentially banking, which has led to these vehicles being referred to collectively as the 'shadow banking sector'. The most common structures are ABCP conduits and SIVs. The loss-absorbing capital in these 'shadow banking' structures took the form of capital notes for SIVs and for ABCP a combination of individual pool over-collateralisation and programme-wide credit enhancement.

Structured finance terminology has evolved over time and whilst many terms have a broad market acceptance they are by no means legal terms, for example loans can back both CDOs and a securitisation.

Under the International Accounting Standards, SPEs and SIVs are often consolidated into the group's balance sheet if banks (or other financial entities for which the vehicles were set up or those that sponsor the vehicle) are considered to 'control' these vehicles. Regulatory treatment of these vehicles could vary in different jurisdictions. In the UK, credit exposures in the securitisation vehicles that meet the conditions set out in Chapter 9 of the Prudential Sourcebook for Banks, Building Societies and Investment Firms (BIPRU) in the FSA Handbook can be excluded from the credit risk calculations. A similar treatment is used by firms for other forms of SIVs and conduits.

The recent crisis, however, has seen cases where exposures in these vehicles, which were 'off-balance sheet' for regulatory purposes, come back to the financial group's balance sheet. The reasons that triggered the sudden change of regulatory treatment were often not related to credit risk exposures, but to the liquidity support the group provided or reputational risk that management feared might damage the group.

Overall, the credit risk transfer mechanism for the traditional securitisation regime, as set out in Chapter 9 of BIPRU, operated as intended. The problems arose out of more diverse facilities and support banks and other financial entities opted to provide to these vehicles and their funds.

The FSA is working to enhance its regulatory regime in this area. The FSA's current position is to leave Chapter 9 of BIPRU and continue to allow firms to apply it to securitised exposures. For other types of exposures arising out of vehicles such as SIVs and other conduits, the FSA may consider aligning its regulatory approach with the accounting approach in terms of consolidation of these vehicles or set the default regulatory position to consolidate these vehicles (unless conditions in Chapter 9 of BIPRU are met). In some circumstances a waiver from a rule or modification of a rule (or rules) may be appropriate. Either way, the FSA considers enhanced disclosure will be beneficial, and is closely following developments in this area in the accounting, as well as regulatory, world.

Q23: Are there other aspects of group structures that the FSA should be taking into account?

Q24: Is the increased focus on group structures and intra-group relationships and increased supervisory cooperation the right way to deal with the threats to financial stability and consumer protection posed by large, international group structures? In what circumstances would a greater focus on individual legal entities be warranted?

9 International architecture

Key issues in this section

A feature of the current crisis was that there were major failings in the international regulatory architecture. It did not fulfil its intended task of identifying and mitigating the risks to global financial stability. Growing macroeconomic and macro-prudential risks were not picked up in a way that prompted or required national authorities to act, there was insufficient oversight of the implementation of internationally agreed standards by standard-setting bodies and, when the crisis broke, coordination and crisis management arrangements did not work as well as had been hoped.

Coordination between supervisors responsible for internationally active financial services conglomerates was in some cases insufficient prior to the crisis. This led to national supervisors having an incomplete picture of the risks to which the groups, of which their national entities were part, were exposed.

Recent events have also revealed key deficiencies in the current EU system of passporting which can put consumers at risk from developments in other countries in a way that national authorities are unable to mitigate sufficiently.

FSA position and objectives

There is a clear need for improved early warning systems to alert regulators and financial services companies to emerging risks, including those from macroeconomic trends, which could be detrimental to the financial services industry and therefore to financial stability, both nationally and globally. This function could be performed by a strengthened IMF and FSF.

Strengthened colleges of supervisors would offer the most effective way of improving communications between supervisors of multi-national financial services conglomerates in normal times. Whilst colleges and crisis management groups share many attributes, they perform different functions. The FSA supports crisis management arrangements which are above all practical and which will lead to efficient information flows between the relevant parties in times when instinct might lead regulators, central banks, and finance ministries to concentrate on national, rather than global, priorities.

There is an urgent need for a radical review of the EU rules on 'passporting' of bank branches. Host regulators in the EEA should have clearer powers to restrict (or even halt) the business of EEA bank branches where they perceive a significant emerging risk to depositors and are not satisfied with the regulatory arrangements relating to supervision and/or DGS in the bank's home country. This might include the imposition of local liquidity requirements.

The FSA agrees with many of the general high level recommendations of the de Larosière report including particularly the need to review Basel II, the need for regulators to have appropriate powers, the appropriate and proportionate regulation of the shadow banking system, and the need for better alignment of remuneration incentives. The FSA also agrees that there is a case for further streamlining of EU structures for developing regulation. However, the FSA believes a different solution to the question of EU regulatory structures is required.

The FSA recommends the establishment of an EU body for the oversight of regulation at the European level. It would recognise that supervisory authority is inextricably linked with fiscal responsibility and political accountability. Day to day supervision of financial services firms would therefore remain with national supervisors whilst the oversight of regulation, including rulemaking, would be done at EU level.

Early warning and challenge

9.1 The upheavals in the banking system have been global, both in their causes and effects. It is therefore necessary to review regulatory policies and approaches in an international context. Intensive work to strengthen global standards of regulation is already underway as part of the G20 process, with the FSF playing a key role. The UK is also active in EU processes designed to improve regulation at European level.

9.2 Recent events have highlighted a number of shortcomings in international regulatory arrangements. Policymakers were not good enough at identifying risks and assessing what these meant for their regulatory approaches. Global standard setting bodies varied in the speed and effectiveness with which they introduced new standards and adapted existing ones in the light of changing market circumstances. There was insufficient oversight of the implementation of agreed standards. And when the crisis broke, coordination and crisis management arrangements did not work as well as expected.

9.3 These aspects of the structure of international regulation are all receiving attention in a range of global fora. The FSA strongly supports efforts to develop more effective ways of identifying risks to financial stability. These need to involve a combination of sound analysis and basic common sense while challenging the tendency of policymakers and regulators to be captured by a form of 'group-think'. There is also a need for rigorous, outcome-focused, mechanisms for assessing the extent to which countries have effectively implemented global standards. This would not involve the development of a single global supervisor but the introduction of a stronger and more apolitical challenge to national supervisors. The IMF – perhaps with some change of focus and adjustment to its staffing mix – could carry out these tasks. Equally, they could fall to the augmented FSF.

Box 9.1: Early warning and challenge

The FSA would like to see much more effective mechanisms in place for the early detection of trends – both within and across countries – which pose a significant threat to financial stability and for assessments of the extent to which countries have implemented agreed standards. These tasks, regardless of who carries them out, need to fall to one or more bodies which have the following:

- the ability and capacity to undertake rigorous analysis of financial markets and trends based not only on technical expertise but a good grounding of common sense with regard to developments and trends that are likely to prove unsustainable;
- the capacity to assess the extent to which countries have implemented core standards as set out by global standard setters (such as the BCBS core principles and the IOSCO principles) and are following sound supervisory practices;
- the FSA sees a strong case for effective peer review, perhaps undertaken by representatives from two countries, one close partner and another without close ties. The oversight body could facilitate such peer reviews as well as providing supporting resources and advice. It would be a condition of membership of the FSF that countries undergo this form of assessment every four years and that the results are made public;
- the body would need free access to the market players and national authorities who are key to undertaking these assessments (though there is of course no suggestion that this would involve any form of 'shadow' micro-prudential supervision of individual firms);
- it is essential that the body has the political independence to enable it to issue forthright conclusions, preferably in the form of challenges to the institutions involved, to which they would be expected to respond. Ideally these challenges (and the responses) would be in the public domain, though it is recognised that this would increase the pressure for statements to be 'negotiated'. The analysis would also form a key input to decisions about the use of macro-prudential policy tools by national authorities.

The issue of political independence is crucial to achieving better outcomes than in the past. Any process designed to identify and draw attention to unsustainable trends or policies, or shortcomings in the implementation of standards, will inevitably create discomfort for national authorities from time to time. It is essential that the body undertaking the analysis has the confidence and independence to make properly rigorous assessments and that its conclusions, while framed by key international agreements, do not become the subject of political negotiation. Achieving this independence will depend on a combination of effective senior management, independent staff, an explicit commitment on the part of participating countries (G20 members and beyond) to this independence, and a willingness on the part of participating countries to accept its considered judgements, even where these are critical.

Within the EU the FSA sees a role for the European Central Bank, working in close collaboration with national supervisors and the EU regulatory committees (the so called 'Lamfalussy' committees or their successors) in work of this kind. In order to be truly effective however such oversight needs to be done at a global level. The IMF – with some adjustments to it

resources and skills mix – working in conjunction with the FSF, whose membership is about to be augmented, would seem to be the natural body to undertake this work. It already undertakes this to some degree in its Financial Sector Assessment Programme (FSAP), a programme which the UK strongly supports and to which it was subject in 2003. What is proposed here would build on the FSAP process but would involve some change in focus and process.

Q25: How can the international architecture be arranged to provide the most effective early warning of threats to financial stability and challenge to national authorities and in an apolitical way?

Table 9.1 over shows the various national memberships of key international groups looking to address the financial crisis and plan for future regulatory policy developments. It also lists the most recent dates that countries have submitted to the IMF FSAP.[1]

1 On 12 March the FSF invited all those G20 members that are not already members plus Spain and the European Commission to join the FSF.

Table 9.1

Country/ entity	Last IMF FSAP against standards[2]	FSF member (Central Banks, Sups, Treasuries)	G20 member (Treasuries & Central Banks)	Basel Committee (Sups & Central Banks)	Senior Supervisors Group
Argentina	–		✓		
Australia	2006	✓ (RBA)	✓		
Brazil	–		✓		
Belgium	2006			✓	
Canada	2006	✓	✓	✓	✓
China	–		✓		
France	2005	✓	✓	✓	✓
Germany	2003	✓	✓	✓	✓
Hong Kong	2003	✓ (HKMA)			
India	–		✓		
Indonesia	–		✓		
Italy	2006	✓	✓	✓	
Japan	2003	✓	✓	✓	✓
Luxembourg	2002			✓	
Mexico	2007		✓		
Netherlands	2004	✓ (DNB)		✓	
Russia	2003		✓		
Saudi Arabia	2006		✓		
Singapore	2004	✓			
South Africa	2008		✓		
South Korea	2003		✓		
Spain	2006			✓	
Sweden	2002			✓	
Switzerland	2007	✓ (SNB)		✓	✓
Turkey	2007		✓		
UK	2003	✓	✓	✓	✓
US	–	✓	✓	✓	✓

2 Collated from www.imf.org/external/NP/fsap/fsap.asp

Supervisory colleges

9.4 Identifying macro-prudential risks and developing and implementing regulatory standards are key inputs to the global supervisory task. Ultimately however this involves supervisors developing a clear oversight of the risks facing the groups for which they are responsible and ensuring that these are adequately controlled by management. Despite the current retrenchment and consolidation that is under way, the largest groups will continue to be run on a global basis and it is important that supervisory arrangements, which tend to be based in national legislation, are equal to this challenge.

9.5 The FSA has, for some time, had a leading role – in the FSF and elsewhere – in the development of supervisory colleges. Whilst colleges are not a universal panacea we believe that improved supervisory college arrangements represent a major contribution to enhanced supervision of complex international groups. The FSF has supported a vision of colleges as relatively informal arrangements in which a small number of key supervisors of a group come together periodically to share information about the risks facing the group, their views of the controls, and their supervisory actions. The membership and the agendas of colleges need to be reasonably flexible, existing home-host arrangements are unaffected and the colleges themselves have no decision making powers (though they should assist the participants in making better decisions). The UK's largest and most international banks: HSBC, RBS, Barclays and Standard Chartered all held global colleges consisting of the supervisors of the firms' largest operations before the end of 2008. EU colleges have been established for some time in the insurance sector and global insurance colleges are in advanced planning stages.

9.6 The argument has been advanced that only a 'supra national' or 'global' regulator can really solve the issues of information sharing coordination and cooperation amongst regulators of global financial groups. The FSA does not support this view, mainly because of the imperative noted above for supervisory responsibilities to be aligned with fiscal ones. Despite the fact that supervision is, and will remain, a national responsibility, it is of the utmost importance that information flows freely between supervisors responsible for, as an example, the UK, Hong Kong, and Swiss business activities of a group. There will always need for the supervisors 'on the ground' to meet and discuss their views of the risks to which the group is exposed, and the ability of local and global management to mitigate those risks. The organisational framework in which those supervisors operate is secondary to the information which they exchange and the assessments they make as a result. The key consideration is that the relevant information is exchanged and made available to all. Indeed the question of colleges of supervisors is not confined to cross-border activities. In those countries which have a 'sectoral' model of regulation there is a need for colleges of supervisors amongst the various domestic supervisors in order to gather a full picture of the domestic activities of a complex financial group.

Box 9.2: A model for the improved operation of international colleges of supervisors

The FSA believes that the approach which is most likely to be successful in this regard is one which recognises and builds upon the different levels of interaction that regulators around the world already have with major groups. It should also be an approach that reflects not just the potential importance of an individual country to a banking group but also the group's importance to the banking sector of an individual country.

The 'core' group

A logical first step is for the home or consolidating supervisor to identify for each of the largest banking groups whether there is a small 'core' group of supervisors from countries which represent the most significant contribution to a banking group's profitability or its risk profile. This would probably be a small group of supervisors representing perhaps three or four countries. This group would meet every six months, under the Chairmanship of the consolidated supervisor but with the venue alternating between countries. Although all supervisors will have, in varying degrees, a desire to be involved in information sharing about the largest groups, meetings need to be small enough to be effective.

The purpose of these meetings would be to develop a shared overall assessment of the main risk areas within a banking group, its management, controls and strategy. It should also develop a shared understanding of each supervisor's mitigation programmes, with a particular focus upon identified risk areas planned over the next six months.

In these meetings, each supervisor would provide an update to the others on the main areas of crystallised risk within their respective countries and the results of their routine supervisory programme. This would enable all participants to see whether there were common themes emerging which, in turn, could affect the way in which risks were mitigated. Meetings should also cover prospective work that each supervisor planned over the next six-month period. This would enable the group to see whether there were any areas of duplication or omission. In the case of the former, this would allow the college to see whether there was scope to rely on the work that another member was proposing to undertake or at least be aware of the results of their work in deciding the scope and prioritisation of their own work.

It is likely that part of each meeting of the core group would be devoted to a discussion with some of the group's local senior management.

The intermediate group

In addition to the 'core' group, there will be a range of supervisors from countries for which the financial group concerned represents a significant share of their local market and/or which represents a growing share of a bank's risk profile or profitability. It is up to the home or consolidating supervisor to decide how they should best involve these supervisors in the process. For the FSA's part, this could best be achieved by having a rolling programme of visits to such countries, probably based around visits to regional 'hubs'. For instance, if a group ran its regional management from Singapore or Brazil, this would enable the FSA to have meetings with a range of supervisors based in that region.

The purpose of these meetings would be two-fold. First, to update the regional group on the latest overall assessment of a banking group's risk profile by the 'core' group together with any significant planned risk assessment/mitigation work (in particular anything which could have a bearing on the group-wide control processes of risk management, compliance and internal audit). Second, to hear from each of the regional supervisors of the main areas of risk within their respective countries and the results of their routine supervisory programmes.

The FSA would expect to have a rolling programme of meetings with the regional groups where, for instance, it saw each hub once every 12-18 months. It is likely that at each of these meetings there would be a presentation by some of the group's regional senior management.

All other supervisors

As outlined earlier, the largest groups have operations throughout the world, and can, in principle, find themselves dealing with many different regulatory agencies. To accommodate this group of supervisors, the FSA would expect to host a conference, roughly once every two years, which would be open to all banking supervisors. At this the FSA, as consolidated supervisor, would share the results of the overall risk assessment of a banking group which would, of course, be informed by the input of all the other interactions with other regulators. These meetings would allow all supervisors to be given the same information about the overall risk assessment of the consolidated supervisor and the FSA's planned risk mitigation work. It would also be an opportunity to raise any matter of concern directly with the FSA.

It is worth stressing that none of the above in any way restricts the access which an individual supervisor might want to have directly or bilaterally with either the FSA as consolidated supervisor or an individual banking group. Rather, it is a pragmatic attempt to ensure that information is shared among a community of interested parties which reflects the size and contributions each country makes to the overall risk profile and profitability of individual banking groups. By raising awareness of issues across the relevant supervisory community, the aim would be to identify areas where supervisors might be able to rely on the work of others or at least be aware of the results when framing their work programme. This should make for a more focused programme of work with banking groups and potentially eliminate duplication of effort.

9.7 The EU has embraced the idea of colleges in a number of legislative measures such as the Capital Requirements Directive (CRD) and the proposals for Solvency 2. The vision of colleges in these measures differs slightly from that agreed in the globally focused FSF. Membership may be more inclusive, areas of debate prescribed and the colleges may be given more formal decision-making powers. The FSA believes that colleges have a very valuable role to play in ensuring the effective implementation of EU measures. It is important however that arrangements put in place at EU level complement, rather than undermine, the operation of global colleges. It would be very unfortunate, for example, if requirements were introduced which made mandatory the sharing of information received from non-EU third party regulators

with all other EU member states. This would compromise the free flow of information at the global level and the UK will carefully scrutinise proposals emerging from the EU to ensure that this is avoided.

Crisis management arrangements

9.8 As well as the improvements which are expected in the area of risk identification and management, it is important to have in place sound preparations for dealing with crises. Recent events have revealed a number of important considerations in this area, including some shortcomings and unwarranted assumptions:

- there is a natural tendency in periods of crisis for national supervisors to become more inward looking and domestically focused. It is reasonable and proper to press for more cooperation and collaboration, but unrealistic to assume that this will always be forthcoming;
- this domestic focus is inevitable because of the explicit national mandates of supervisors and because ultimately, if government support is needed, national taxpayers are put at risk;
- insolvency and administration arrangements differ widely across countries – even within the EU. Crisis management arrangements need to take account of this. In particular, crisis management preparations need to be informed by a good working knowledge of the practical difficulties and obstacles that will arise from the interaction of different national regimes;
- managing crises involves taking decisions in conditions of extreme uncertainty. Good information flows are at a premium; and
- crisis management structures need to be highly practical, focusing on the key participants in the process (regulators, central banks and in some cases finance ministries); information flows; and legal issues in resolution. Over-complicated blueprints or memoranda of understanding will be of limited value.

9.9 Crisis management arrangements are another of the workstreams being carried forward in the FSF, where the work is being led by the Bank of England. The intention is that:

- for the largest cross-border financial firms, the most directly involved supervisors and central banks should establish a small group to address specific cross-border crisis management planning issues;
- authorities should share international experiences and lessons about crisis management. These experiences should be used as the basis to extract some good practices of crisis management that are of wide international relevance.

9.10 A number of issues have already emerged clearly:

- colleges and crisis management structures are essentially different. The former aim to improve the quality and efficiency of ongoing supervision while the latter have the objective of resolving crises, often within very short time frames. However college structures are likely to form an effective platform for consideration to be given to what crisis management arrangements should look like;

- any crisis management arrangements need to take full account of the lessons that have been learned from the events of the past 12 months. Particularly relevant in this regard are the extent to which insolvency arrangements in different jurisdictions may have got in the way of effective resolution. To the extent that it is not feasible to harmonise such arrangements even in the medium term, a task for crisis management groups will be to develop and maintain a firm or group specific winding up plan (or, alternatively, to ensure that the firm or group itself maintains such a plan). This would be done during normal times so that it could be put into operation in the event of a crisis and eventual failure. The work will help provide, ex ante, clarity about potential problems that could arise during a crisis, which could include potential clashes caused by differing insolvency regimes or identify where failure would create significant costs (for example through contagion effects). In some cases this analysis would enable changes to be made to operating structures to help contain such costs;

- crisis management arrangements are under review in the European Union, where there is scope for convergence and/or harmonisation in a number of areas. The European Commission will produce a White Paper on early intervention by June 2009. As with colleges, however, it is important to note that crisis management arrangements, along with the firms for which they may be necessary, are global in scope. EU arrangements therefore need to complement global arrangements and not undermine them.

Q26: Is this the most effective way of organising colleges on the one hand and crisis management groups on the other?

Passporting and branching

9.11 2008 witnessed rapid growth in retail deposits through the UK operations of Icelandic banks. In particular, retail deposits with 'Icesave', the internet deposit business operated by the UK branch of Landsbanki Islands hf, grew to £4.5bn during the year.

9.12 This rapid growth created significant liquidity stresses. The FSA's efforts to address the regulatory issues arising revealed serious shortcomings in the operation of the branch passporting regime.

9.13 The 'passporting' arrangements for financial firms within the EU are long established. Under these arrangements, firms incorporated in one member state have an automatic right to establish branches – as opposed to subsidiaries – in others. A branch is part of the same legal entity as the bank in the country of origin – a subsidiary is a separately incorporated entity owned by the parent. This right derives ultimately from the EU treaty and is made operational in a range of directives such as the CRD. The 'host' supervisor in the country in which a branch is located has very little oversight of the activities of the group or the branch and its prudential responsibilities are very narrowly confined – principally to the oversight of liquidity management.

9.14 The FSA believes this situation to be intrinsically unsatisfactory. EU branches vary widely in terms of their size and the nature of the business they do, and for the most part, the branching arrangements do not create problems. However, the current arrangements in principle permit banks from jurisdictions in which the supervisors may lack the skills, resources or motivation to take an adequate group-wide approach to establish branches which may be large and systemically important in the host country and which take extensive retail deposits. The host supervisor may have no way of identifying emerging firm-wide problems and, even if they are able to identify these, they currently cannot ensure that these problems are adequately addressed at a sufficiently early stage. A range of emergency provisions is available to host authorities, but it is clearly preferable for all concerned for host authorities to be able to identify and address problems in good time – long before they reach a crisis stage. Finally, there is no guarantee that the home state deposit guarantee arrangements will be adequate to meet the claims of depositors in the host state if the institution does fail.

9.15 A number of changes are under way which aim to improve this situation. Proposed revisions to the CRD make provision for host supervisors of 'significant' branches to be included in colleges and, as such, to receive routine information about the firm. These supervisors of significant branches would also have the right to be informed about significant adverse developments affecting the whole bank or group, sanctions and other significant supervisory measures being taken by the parent supervisor. In addition to these measures, proposed revisions to the Deposit Guarantee Schemes Directive will result in an increase in the EU guarantee scheme limit to €50,000, with a further increase to a maximum harmonised limit of €100,000 likely from the end of 2010.[3]

9.16 These measures will clearly go some way towards mitigating risks arising from significant branches that may get into difficulty. The measures do not, however, provide host jurisdictions with any control over the establishment of branches (if, for example, they have well-founded concerns about the home supervisory jurisdiction). Neither do they provide the host jurisdiction with effective remedial powers – which could be exercised directly on the firm or through the home supervisor – which would enable it to take pre-emptive action where it had legitimate concerns regarding risks to consumers. For these reasons the FSA believes that serious consideration should be given to three further options:

a) a tough and effective system of peer review could, for example, be deployed within the EU to ensure that home countries exercise truly effective supervisory regimes and/or that financial support (principally deposit guarantee arrangements) would be sufficient to compensate host state customers in the event of failure. If the home supervisor was unable to provide sufficient reassurance on these points, branching might be prohibited or made conditional (for example by limiting the scale of branches or confining them to wholesale business);

b) host supervisors might also be given further powers over branches. Again a range of options might be considered. At the very least, the host authority might be given the right to insist on an explanation from the home authority of why it is

3 Subject to a report by the European Commission to establish that such an increase and such harmonisation are appropriate and financially viable for all Member States.

not taking certain remedial measures which, on the face of it, appear to be warranted. A more radical approach would be to permit the host authority to restrict the business of the branch in measured way if it was not satisfied that the home authority was taking sufficient steps to address emerging risks and hence that consumers in the host jurisdiction were being put at risk;

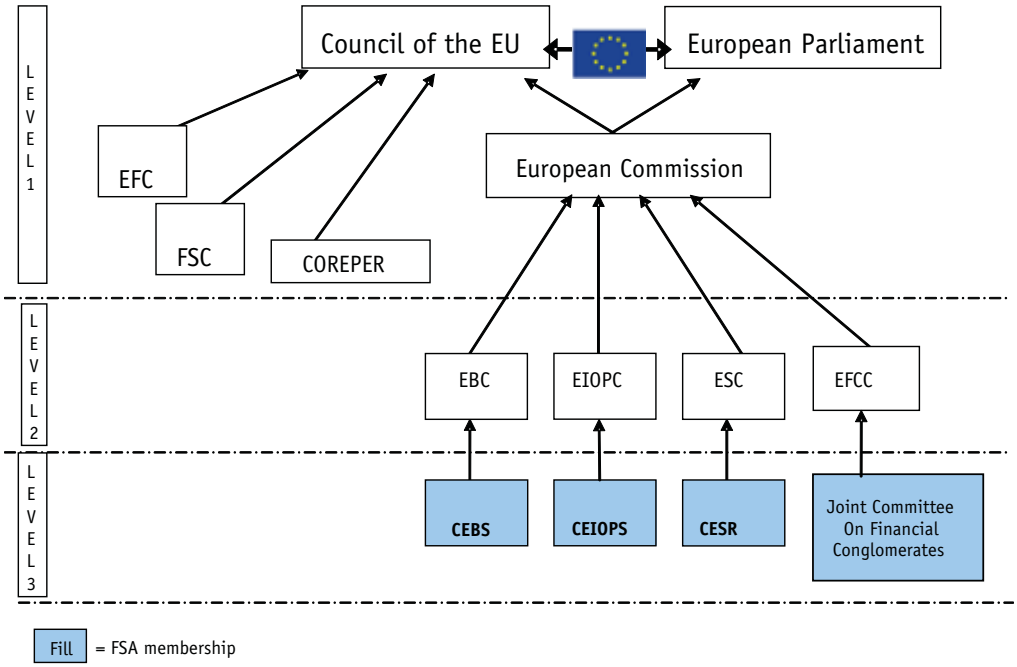
c) whilst the FSA would not advocate it at this point, a very radical alternative worth exploring would be to insist that the passporting regime could only continue in its present form if it were underpinned by an EU-wide framework, such as an EU-wide pre-funded DGS. This could cover all EU branches or, more likely, those that use the passport to branch elsewhere in the EU. It would help ensure that funding was available to compensate depositors in the branch of any failed institution.

9.17 The FSA is aware that these more radical options would require extensive legislative change and could be seen as running counter to aspects of the European single market. Any such move would need to command broad support both within the UK and other Member States. It should be emphasised, however, that the intention would not be to prevent branching or to place unwarranted constraints on cross-border activity. Rather it would be to ensure that the scope for branching does not involve unacceptable risks to depositors, and ultimately taxpayers, in host member states.

9.18 The FSA has for many years placed some restrictions on the scope for firms from outside of the EU/EEA to establish branches. The FSA conducts extensive and thorough home country supervisory assessments to satisfy itself that home supervisors of firms with branches in the UK apply appropriately high standards and are willing and able to communicate fully with us. If there is any doubt about these matters the FSA will traditionally insist that any UK presence takes the form of a subsidiary rather than a branch. Recent experience has called into question some of the assumptions we have made both about our relations with third country supervisors at times of crisis and the effectiveness of ring fencing arrangements. Even with subsidiarisation the FSA found that, under the pressure of the crisis, these measures were not sufficient to protect UK operations from fundamental problems in the parent of the group.

Q27: Do these options represent the right approach to the problems posed by EEA branching?

Current EU structure



EU level rulemaking and oversight body

9.19 Recent events have prompted considerable discussion on the most desirable structure for financial services regulation in the EU. In addition to the issues set out above, the FSA believes the EU should consider the establishment of a new body for overseeing regulation at the European level.

9.20 A key feature of any such body or arrangement is that it would recognise that supervisory authority is inextricably linked with fiscal responsibility and political accountability. For as long as these remain national, supervisory authority must also remain a national responsibility. This means that day-to-day supervision of financial services firms needs to rest with national supervisors. There is, however, scope for a range of regulatory activities, most specifically rulemaking, to be centralised.

9.21 The FSA would support the development of an EU body that would be a radical development of the existing Lamfalussy Committees. It would take on their dual functions of assisting with the development of EU legislation and bringing about convergence in supervisory practice. The body would have rule-making powers covering both prudential and conduct of business requirements and would provide guidance on the meaning of the rules it adopted.

9.22 The EU body would also promote good supervisory practice by overseeing peer review based on the assessment of supervisory outcomes, and would produce non-binding guidance on a range of supervisory issues. It would be operationally independent from the European Commission.

9.23 Recent events have shown that an EU level supervisor, whether of all firms or merely the largest ones, is neither practically nor politically feasible because, in the event of a

regulatory failure by such a single EU supervisor, a Member State would be providing fiscal support to its banks, while it had had no authority over their supervision.

9.24 In order to be fully effective and to preserve the alignment of fiscal responsibility and political accountability with supervisory responsibility, it would be necessary for the body to have the following characteristics:

- it would need to be truly independent;
- it must be responsive to market developments in its rule-making;
- it would provide firms and markets with a single set of regulatory requirements, with informed guidance provided by a regulator that understands the market and the wider public interest the market serves;
- it would take account of the results of industry consultation and subject its proposals to rigorous impact assessment, market failure analysis and cost benefit analysis;
- its operations would recognise that supervision remains a national competence, that supervisory approaches in different Member States can be different, and that (because of different market structures) such approaches will often need to be different;
- it would work to replace the current diversity of reporting formats, reporting times and frequencies with a single set of proportionate reporting requirements;
- the standards of supervision and the outcomes national supervisors achieve would be subjected to peer review. This will raise standards, mitigate failings and promote convergence;
- the operation of colleges would also be subjected to peer review so that their effectiveness can be bench-marked and good practice promoted;
- it would have responsibility for both prudential and conduct of business matters, because conduct of business failures can pose significant risks to the viability of the institution and financial stability more widely; and
- finally, the body would deliver requirements without negotiated compromises and national discretions (which can result in legislative texts that are unclear, ambiguous and over-detailed).

9.25 The existing committees would be wound up following a transitional period during which the new body would assume their tasks and responsibilities.

Q28: Are the functions of rule-making capability and supervisory oversight the right ones to be given to a European body that has the characteristics described here?

10 Markets issues

Key issues in this section

Although there was no single cause of the crisis, its development has given grounds for concern about the workings of certain aspects of the market. Remuneration, Credit Rating Agencies (CRAs) and certain aspects of the regulatory regime for markets have either been subject to criticism or had questions raised about their operation.

FSA position and objectives

The FSA supports ongoing work on CRAs in IOSCO and the EU, but acknowledges that these only seek to address deficiencies in the rating process, not in how the market uses ratings.

Although the ratings of corporate securities have performed broadly as expected, serious doubts have arisen about the ratings of structured products. These in turn prompt questions about the way such ratings are used within the Basel II framework.

The FSA will not seek to prohibit ratings triggers in contracts but believes it is essential that the risks of using them are fully identified, with appropriate regulatory action taken.

The FSA believes there needs to be a fundamental review of the use of structured finance ratings within the Basel II framework (which would be separate from a review of the trading book).

The FSA supports improvements in the transparency of OTC markets, the introduction of eligible clearing of standardised CDS transactions, and other measures to strengthen the resilience of OTC markets.

The FSA will review, with market participants, the arrangements for client protection, at clearing houses, and for the handling of defaults by participants in the clearing and settlement systems.

10.1 The current crisis has revealed a number of issues where the market and market discipline have and have not worked. This DP does not aim to cover all of them. Instead, it focuses on those that have a particular relevance to its responsibilities and the wider international regulatory framework.

Remuneration

10.2 Although it is hard to prove a direct causal link, there is widespread concern that remuneration policies may have been a contributory factor to the market crisis. The policies in common use during the period leading up to the crisis, mainly but not exclusively in investment banking, tended to reward short-term revenue and profit targets. These gave staff incentives to pursue risky policies, for example by undertaking higher risk investments or activities which provided higher income in the short run despite exposing the institution to higher potential losses in the longer run. In many cases, remuneration policies were running counter to sound risk management, in effect undermining systems that had been set up to control risk.

10.3 The balance of risk and reward offered by poor remuneration policies is unequal. Employees have the incentive of substantial and immediate reward if risky strategies are successful and remuneration is not deferred. If the strategies are unsuccessful, the loss to the employee is limited – a bonus foregone, or at worst the loss of a job – whilst the losses to shareholders, depositors, creditors and, if government assistance is required, to taxpayers can be on a massive scale.

10.4 A number of bodies in both the public and private sectors have published, or are due to publish, high level principles or guidelines relating to remuneration. These include, in the private sector, the Institute of International Finance, and in the public sector, the FSF and the Committee of European Banking Supervisors (CEBS). The FSA is an active participant in both the FSF and the CEBS working groups. The FSF report will be presented to the G20 meeting in April and, it is hoped, endorsed by the Heads of State as part of the global response to the crisis. International cooperation in this area is essential since rules on remuneration policies would be an easy target for regulatory arbitrage, and it is clear that none of the major financial centres would be able to go very far in setting or enforcing effective rules on its own.

10.5 High level principles and guidelines will undoubtedly help to increase understanding of the link between remuneration policies and risk, and to steer banks and other financial firms towards better practices. The FSA believes that it is not the place of supervisors to attempt to control levels of reward. However, if remuneration policies encourage excessive risk taking then action should be taken.

10.6 The FSA has carried out a study of remuneration policies across the major high impact UK-based banks, which benchmarked them against criteria for good and poor remuneration policies originally set out last October.[1] The group included the major investment banks, major retail banks with a mix of business activities, and some

1 See letter from Hector Sants to the Chief Executive Officers of major UK-based banks, 13 October 2008 – www.fsa.gov.uk/pubs/ceo/ceo_letter_13oct08.pdf.

smaller banks/larger building societies. The FSA found a broad spread of policies, including a number of examples of good practice, together with some significant efforts by firms to take action to improve their policies and practices. However some examples of poor practice were also found.

10.7 The FSA has now developed its criteria into a Code of good practice for remuneration policies, which was published on February 26.[2] It will be publishing a Consultation Paper alongside this DP which consults on plans to implement this Code in its Handbook.[3] It proposes one key high level rule (at least initially) to significant FSA authorised firms, applicable to all FSA-authorised firms, requiring them to have remuneration policies which are consistent with effective risk management. There are then ten principles which are supporting evidential provisions, i.e. benchmarks by which the FSA might judge the extent to which a firm meets the high level rule. In publishing the Consultation Paper, the FSA is the first supervisory authority to produce a specific plan for the regulation of remuneration policies. However, the FSA's proposals are consistent with those contained in the FSF and CEBS reports, and the FSA is confident that the ways in which supervisors in the major financial centres implement the agreed principles will also be consistent. Major international firms should expect a significant increase in attention on remuneration policies from all supervisory authorities.

Credit Ratings Agencies (CRAs)

10.8 Ratings play a fundamental role in the assessment of risk throughout the financial system. They are used widely in assisting with investment decision-making, helping investors to achieve their favoured risk-return profile and in allocating capital efficiently across the economy through rational pricing of risk. The introduction of Basel II added a new dimension through the key function ratings have as a means of discriminating risk and determining capital requirements within the regulatory framework.

10.9 The role of CRAs in the current crisis has attracted considerable attention, particularly concerning the downgrading of significant volumes of previously highly rated structured finance products, primarily backed by US subprime mortgages. The resulting loss of confidence in credit ratings of structured finance instruments and vehicles is seen by many as a key trigger event for the problems currently being experienced in the global financial system. CRAs have since faced significant criticism over their role in the financial crisis, including claims that: they allowed business pressures and conflicts of interest to affect the integrity of their ratings; that the methodologies and assumptions used to rate structured finance products were not fit for purpose; and they did not dedicate sufficient resource and attention to the monitoring of outstanding ratings.

10.10 Whilst these can be seen as valid criticisms of CRAs and are discussed in more detail below, it is also important to focus on the way in which ratings have been used within the market, a topic which is discussed in more detail later in this section.

2 www.fsa.gov.uk/Pages/Library/Other_publications/Miscellaneous/2009/cop_remun.shtml.

3 FSA Consultation Paper 09/10.

Key risks to the quality of the ratings

10.11 The 'issuer pays' business model for the provision of credit ratings, which is the predominant remuneration model within the credit rating industry, creates a conflict of interest for those CRAs competing for business from issuers. Whilst this central conflict of interest cannot easily be eradicated from a CRA's business model (and indeed other remuneration models, such as 'investor pays' would create their own distinct problems and conflicts), appropriate governance and controls are vital in order to mitigate the associated risks. These mitigants may include appropriate analyst rotation policies, suitable rating committee structures and the separation of commercial and rating activities.

10.12 A key risk to the quality of ratings produced by a CRA is the accuracy and effectiveness of its methodologies. Whilst many CRAs have a long and relatively accurate track record of rating sovereign, corporate and some forms of securitised debt, the rapid innovation in structured finance over the last decade has seen CRAs adjust to a significant volume of new and highly complex debt instruments. As discussed below, the transitions of some structured finance ratings appear to be outside the range that would have been expected at issuance. Whilst it is not the role of regulators to opine on individual methodologies, it is important that CRAs provide rigorous governance of credit policy development and appropriate levels of transparency to the market as to the use and application of their methodologies. These remain valid areas of concern for public policymakers.

10.13 CRAs have also been criticised for the perceived lack of speed with which they acted to downgrade large quantities of US subprime related structured finance products once issues had emerged in the sector. Historically, CRAs have often derived proportionally greater amounts of income from their initial rating activities for structured finance products rather than ongoing monitoring fees. This may have contributed to a lack of focus and resource on ensuring timely and accurate review of issued ratings. It therefore remains vital for CRAs to ensure an appropriate quantity and quality of resource is dedicated to the ongoing monitoring of ratings as well as the initial credit assessment.

Credit ratings as indicators of credit quality and default probability

10.14 Given the performance of structured finance ratings since 2007 regulators have to consider appropriate policy responses on the use of structured finance ratings in the prudential regulatory framework. The FSA believes there needs to be a fundamental review of the use of structured finance ratings within the Basel II framework (separate from a fundamental review of the trading book). In the interim the BCBS is currently consulting on applying higher risk weights to re-securitisation exposures and the FSA, in conjunction with other EU Member States, is reviewing the 'mapping' of securitisation ratings to risk weights.

10.15 The key success criteria for any ratings system are (i) discriminatory power and (ii) stability over time. If ratings have these properties they will differentiate the relative risk (probability of default) presented by different securities and companies consistently over significant periods of time. Over several decades the CRAs have, by and large,

met these tests for their ratings of individual companies and the securities they issue (corporate finance ratings).[4] Further, despite the extraordinary financial market instability of the past six months, there is no persuasive case which undermines the credibility of these ratings generally.

10.16 Indeed, the three largest CRAs' most recent three-year corporate Cumulative Default Rates (CDRs) for the highest rating categories, AAA – A, are on average close to zero and steadily increase to around 40% for the lowest rating category before default. On the basis of the most recent figures available there is no reason to conclude that corporate finance ratings are inconsistent with actual corporate default rates.

Table 10.1: Average CDRs: 1981-2007[5]

%	1 year	2 year	3 year	4 year	5 year
AAA	0.00	0.00	0.03	0.06	0.09
AA	0.00	0.02	0.03	0.07	0.11
A	0.04	0.14	0.26	0.39	0.55
BBB	0.25	0.71	1.25	1.87	2.52
BB	0.95	2.69	4.61	6.42	8.12
B	3.73	8.30	12.58	16.29	19.06
CCC-C	23.47	33.29	40.54	45.12	49.38
Largest three CRAs' corporate default rate data published 2007 and FSA estimates.[6]					

10.17 As Table 10.2 shows, Standard and Poor's corporate finance transition rates (which are broadly representative of the other two large CRAs) illustrates that rating downgrades were considerably higher in 2008 than in 2007 and the averages recorded over 1981-2008. But they are consistent with those recorded in previous downturns, for instance in 2001.

4 Corporate finance refers to corporate long-term local currency issuer credit ratings. It includes all industrials, utilities, financial institutions and insurers, but excludes all public sector ratings and all structured finance ratings.

5 The largest credit rating agencies use different time horizons ranging from 1981-2007 to 1990-2007.

6 The default rates are averages from Standard and Poor's, Moody's Investor Services and Fitch Ratings. Earlier work by the FSA illustrates that their rating grades are equivalent; however, there are variations in the length of the CRAs' time series data used in Table 10.1.

Table 10.2 Standard and Poor's global corporate finance one-year transition experience (1981-2008)

	1981-2008			2007			2008		
	Downgrade	Upgrade	Stable	Downgrade	Upgrade	Stable	Downgrade	Upgrade	Stable
AAA	8.7%		91.3%	1.1%		98.9%	12.9%		87.1%
AA	8.9%	0.6%	90.5%	3.4%	0.6%	95.9%	18.7%	0.0%	80.9%
A	6.3%	2.2%	91.5%	3.6%	3.2%	93.2%	6.1%	1.7%	92.3%
BBB	5.4%	4.3%	90.2%	3.8%	4.3%	92.0%	4.8%	2.7%	92.4%
BB	10.0%	6.2%	83.9%	7.5%	7.7%	84.8%	10.9%	5.4%	83.7%
B	10.1%	7.0%	83.0%	3.3%	8.3%	88.4%	13.4%	4.3%	82.3%
CCC/C	*29.8%*	*15.6%*	*54.6%*	*18.6%*	*25.6%*	*55.8%*	*33.3%*	*14.1%*	*52.6%*

Source: Standard and Poor's annual global corporate default study and ratings transitions, 2008 and FSA estimates

10.18 However, the same cannot be said of the performance of structured finance ratings.[7] As highlighted in Table 10.3 on a global basis the stability of structured finance ratings deteriorated sharply in 2007 relative to previous years and the rise in the instability of ratings is due to downgrades. Further, recently published figures from Standard and Poor's indicate that this trend worsened significantly in 2008.

10.19 The ratings history for these products is shorter than for corporates' securities and the exponential growth of structured finance issues since the first half of the decade invites the question of whether a structural break may have occurred in the nature of the structured finance securities issued or the process of rating them, in which case the stability of such ratings in earlier periods may have limited relevance.

10.20 A far greater share of all structured finance assets benefit from the highest, 'AAA', rating than is the case for corporate securities (more than 30% for structured finance compared to around 2% for corporate finance ratings in 2007). This follows by construction as issuers seek to satisfy investor demand for apparently low risk assets. However, in part it may also reveal important issues in the underlying nature of structured finance assets and their rating; for example, there may have been a tendency to rate 'at the edge' so that securitised assets were structured so as to only just meet the 'AAA' standard.

7 Structured finance refers to long-term issue ratings on global structured securities including asset backed securities (ABS), collateralised debt obligations (CDOs), commercial mortgage-backed securities (CMBS) and retail mortgage backed securities (RMBS).

Table 10.3: The largest three CRAs' global structured finance one-year transition rates

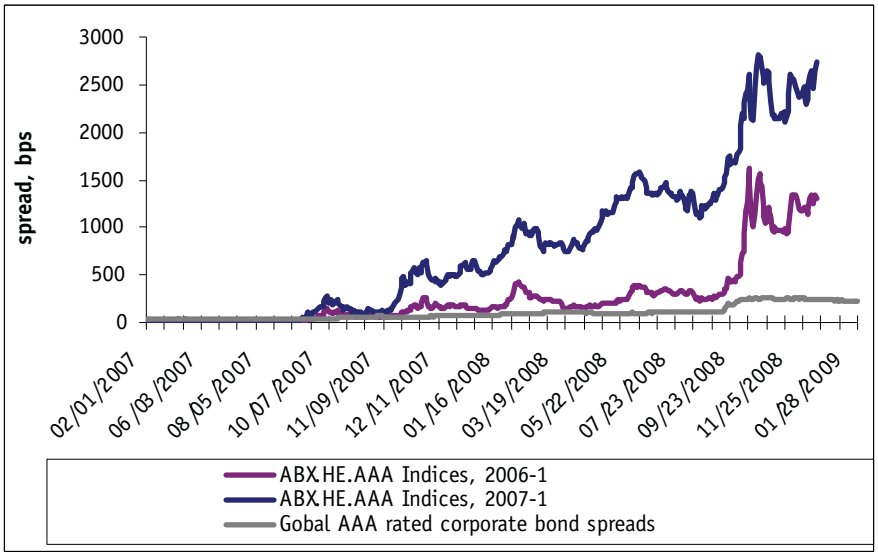
	1991-2006		2007		2008	
	Downgrade	Upgrade	Downgrade	Upgrade	Downgrade	Upgrade
AAA	0.5%		1.0%		23.4%	
AA	1.7%	7.9%	4.4%	3.5%	34.9%	1.8%
A	2.6%	7.2%	11.3%	4.2%	36.9%	2.1%
BBB	3.8%	6.3%	20.2%	2.9%	40.2%	1.0%
BB	5.4%	7.6%	21.0%	2.3%	44.8%	1.7%
B	7.7%	6.4%	11.1%	1.8%	55.5%	1.3%
CCC	38.4%	0.5%	34.9%	0.7%	78.5%	1.0%

Source: Largest three CRAs' published 2007 default & transitions studies, Standard and Poor's global structured finance default and transition study 1978-2008 and FSA estimates.

10.21 In addition the effects of the current financial turmoil led to further uncertainty about the reliability of structured finance ratings. The most recent currently available data (Standard and Poor's Global structured finance default and transition study – 1978-2008) shows a dramatic increase in the proportion of structured finance assets suffering downgrades relative to the 1991-2006 period, and even relative to 2007, when downgrades had already increased significantly compared with previous years. In the same vein, market prices of structured assets (across the rating grades) have fallen sharply during the financial crisis. This suggests that the underlying value of the securitised assets may in some cases be permanently heavily impaired, although at this stage it is not possible to attribute the mark-to-market losses accurately between fundamental value changes and price effects due to highly illiquid asset markets. Nevertheless the very high market value loss for these products is far in excess of the capital held against them. (In the Basel II framework, the 'ratings-based-approach' allows the most senior AAA tranches to qualify for a 7% risk-weight implying less than $0.60[8] of capital for each $100 of exposure.)

8 This includes the 1.06 scalar referred to in Box 3.1.

Chart 10.1: AAA rated structured products and corporate bond spreads



Source: Markit & Merrill Lynch indices

10.22 The relative performance of some structured finance assets compared with non-financial corporates' securities since July 2007 further suggests that greater caution should be exercised in using the ratings of securitised assets as risk measures. For example, for sustained periods since July 2007 credit spreads on AAA securitised assets have significantly exceeded those on AAA rated corporate securities as shown in Chart 10.1.

10.23 Further, Standard & Poor's data shows that there is strong evidence, at least for their rating of RMBS assets originated since 2005, that where downgrades occurred of these assets they were far more likely to be multiple notch downgrades than is the case for corporate securities.[9] This corroborates the view that either these asset classes were structurally over-valued at origination, or they are more susceptible to deterioration in their credit quality than is typically the case for corporate securities.

10.24 The evidence on structured finance ratings points to more fundamental questions about the economics of securitisation and about the process of rating structured finance assets. In general CRAs are far more reliant on quantitative modelling approaches to derive the rating of structured finance assets than is the case for their corporate ratings, where the ratings philosophy is more eclectic. This implies greater model risk in the reliability of structured finance ratings which may be particularly significant in the context of a historical data series which is subject to a recent structural break. Having said this it should be acknowledged that the rating agencies were far from alone in underestimating the extent to which a systemic financial crisis would lead to very substantial value loss in structured finance assets.

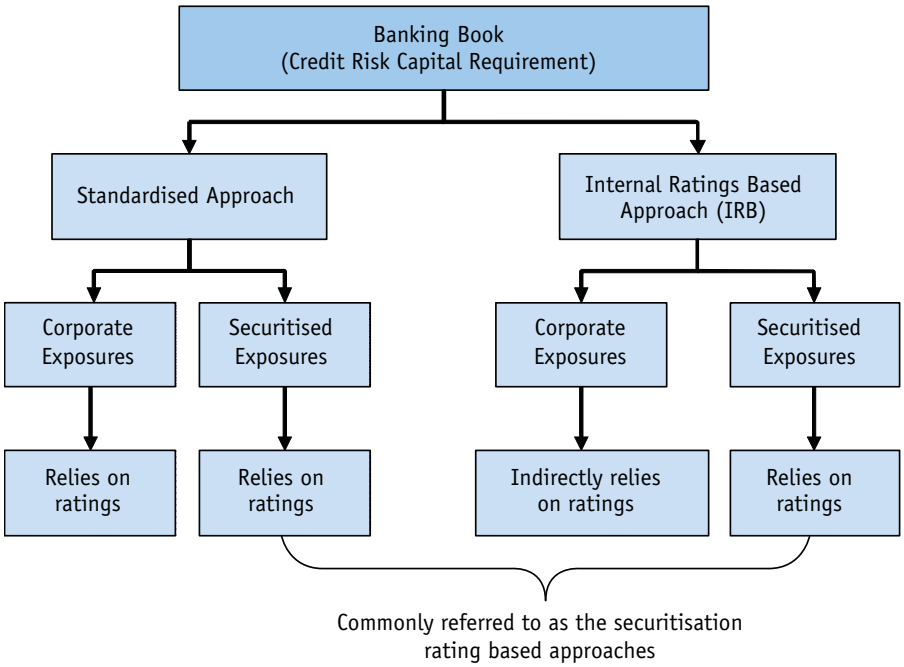
10.25 It also implies the possibility of a deeper flaw in the concept of a structured finance asset whose rating is primarily model-determined. Structured finance assets can substantially reduce the idiosyncratic risk of the underlying borrowers whose loans have been packaged into the security. This, however, leaves systematic risk – i.e. the undiversifiable risk of a synchronised economy-wide deterioration in economic

9 April 2008 IMF Global Financial Stability Report, page 61.

prospects which affects all asset prices adversely. Structured finance assets are exposed to this risk no less than corporate securities, but crucially their returns may also be more highly correlated with systematic risk. In particular some corporate securities may be relatively counter-cyclical – for example, those in 'defensive' industrial sectors where demand is relatively income inelastic. Given that the bulk of assets underlying structured finance securities are likely to be correlated with the cycle, this suggests that both investors and supervisors need to take account not just of the default probabilities of these assets, and losses given default, but the relationship between these variables and the economic cycle.

Use of ratings in the prudential regulatory framework

10.26 The prudential framework is fundamentally reliant on external credit assessments, directly through the rating-linked calibration of the standardised approach for corporate exposures and the standardised and IRB approaches[10] for structured finance exposures, and indirectly through the IRB approach for corporate exposures. The possible methods through which capital requirements in the banking book are directly or indirectly determined via CRAs' ratings is illustrated in the diagram below.



10.27 The current framework requires banks to use ratings on structured finance exposures where they exist to determine their capital requirements. There are various methods for dealing with unrated structured finance exposures. For example, under the IRB approach the 'supervisory formula' is available to derive an 'effective' risk weight for unrated exposures. There is currently no method available which allows firms to use their own models/estimates to determine their capital requirements for structured finance exposures.

10 Banks that have received approval to use the IRB approach for the type of underlying exposures securitised must use the IRB approach to securitisation.

10.28 The recent performance of CRAs' structured finance ratings would suggest that reliance on these ratings for capital requirements purposes is no longer justified and should not continue in its current form. Below we consider the alternative policy options available to supervisors:

(a) require IRB firms to use the supervisory formula;

(b) review the risk weights assigned to CRAs' ratings; or

(c) combination of both.

10.29 To remove the regulatory use of structured finance ratings, regulators would need to allow all firms to use the supervisory formula; however, this formula is not a panacea and would need to be improved to deliver the desired outcome sought by supervisors. In its current form, for typical securitisation tranching (which maximises the AAA tranche) the formula tends to deliver very high or very low risk weights; to some extent this reflects the structures of the securitisations. Further, the formula would need to be updated to address the potential for future credit deterioration as well as default at the risk measurement horizon (this adjustment could take the form of an explicit 'maturity adjustment' to reflect the possibility of changes in credit quality at the end of the one-year horizon or increased correlation assumptions reflecting the systemic nature of the exposures). In addition to making wider use of the supervisory formula, firms would have to collect more information about the underlying exposures than they do at present.

10.30 Regulators could only justify option (b) if CRAs successfully address the shortcomings identified in their rating processes and methodologies. The FSA would argue for a fundamental review of the risk-weights assigned to ratings to also address the 'cliff' effect whereby, as downgrades occur, the exposure starts to consume dramatically more capital, culminating in a 1250% risk-weight (which in effect implies that the asset cannot contribute to the firm's capital for regulatory purposes). As above, the risk-weights assigned to ratings should also reflect potential losses from a deterioration in credit quality over a one-year horizon.

10.31 The FSA expects the BCBS will re-evaluate the role of ratings to determine the capital requirements for structured finance products and consider alternative policy options which address the issues raised in the current crisis, and the FSA will participate actively in this work.

10.32 The prudential framework not only places direct reliance on external credit assessments through the rating-linked calibration of the standardised approach and securitisation-based approaches, but also indirectly through the widespread use of CRA experience as the primary component in firms' own PD estimates for much of their wholesale exposures under the IRB approach. This is generally carried out by linking internal rating grades with the CRA grades through identification of those borrowers who also have an external rating and applying an associated PD to the internal grade.

10.33 An observed consequence of this approach is that for the highly rated exposures that tend to dominate their portfolios firms with permission to use the IRB approach are holding considerably less capital against wholesale exposures than their counterparts

using the standardised approach. It is also the case that the calibration of external ratings to PDs will vary among IRB firms. This is not necessarily always because of a different perception of the risk; for example two IRB firms may agree that a borrower should be rated single A. However, the capital required to be held by one may be considerably less purely because of the different basis of calibration. Further, for both IRB firms the capital required will almost certainly be less than that held by the standardised approach firm.

10.34 For this reason, the FSA will examine prescribing rating-linked calibrations for this type of IRB model to bring PDs more in line with those implied by the standardised approach – not dissimilar to the way in which there is a supervisor-imposed calibration on the structured finance side. For example, using the LGD and maturity assumptions in Foundation IRB, it is possible to back out the PDs necessary to achieve the standardised risk weights. These could then be used as an input into the IRB formula instead of firms' own estimates of PD. A potential drawback with this approach is that the standardised risk weights cover a broad range of grades. However, more granularity could be achieved within the IRB approach by interpolation from the standardised approach values.

10.35 Another general issue is the extent to which implicit government support is reflected in firms' capital requirements against inter-bank exposures. When rating banks, CRAs consider both the stand-alone strength of a bank as well as the likelihood of external support. Over the long term, it is not desirable to incorporate the likelihood of government support since, by definition, a stable financial system is one in which reliance on contingent government support should not be reflected in measures of risk which drive regulatory capital requirements under normal market conditions. Indeed to allow such an approach would lead to very low capital requirements across the banking system because of the assumption that the government will rapidly step in. Therefore over the longer term, but not before financial conditions have clearly stabilised, supervisors should consider requiring firms to use, for capital requirement purposes, the CRAs' stand-alone bank ratings rather than the over all rating which reflects government support. The FSA believes that this issue should be explored by the BCBS.

Use of ratings by market participants

10.36 The crisis has highlighted concerns and risks about the way ratings produced by CRAs are used by market participants. One example is how ratings are integrated into investment mandates of institutional investors. In many cases restrictions on whether a manager can invest funds in, or continue to hold, a certain security will include reference to a credit rating. Whilst many mandates are more sophisticated and flexible than simply containing investment and non-investment rating restrictions, they still create a framework which generates a level of dependency on ratings within the investment industry and may result in forced selling upon the downgrade of an individual security.[11]

11 It should be noted that a downgrade may not automatically result in a wave of forced selling. Many mandates include procedures that allow the continued holding of downgraded assets permitting disposal over a period (typically 90 days) or, with investor agreement, holding the assets until maturity.

10.37 Investors have also historically used credit ratings to support their own due diligence on counterparties, for example through contract clauses that trigger action if a counterparty is downgraded. Such clauses are, of course, intended to offer some additional protection to the purchaser of a contract. However, in some cases they can actually contribute to the very events from which they are designed to mitigate, i.e. the failure of the counterparty.

10.38 While market forces may reduce emphasis on these clauses from future transactions, as participants grow to understand their full implications, the impact of existing clauses should be recognised by counterparties and taken into account by supervisors. At least one major insurance supervisor has already taken steps to require firms under its supervision to stress-test the impact of a significant reduction in their own credit rating. The FSA has recently consulted on stress and scenario testing for financial firms and this is clearly one potentially high risk for firms which have written large number of contracts with such clauses.[12]

10.39 The use of ratings 'triggers' in financial products and contracts may, if ratings change rapidly, present significant challenges to a firm in managing its risks and obligations. The FSA has considered prohibiting authorised firms from entering into agreements which include such triggers. The conclusion reached is that it would not be possible to achieve this in a way that could not be circumvented. However, it is essential that firms take full account of the existence of such triggers in their stress testing and contingency funding plans. Equally, the FSA will work with the investor community to raise awareness of that the inclusion of such triggers in contract documentation which, while intended to protect their interests, may perversely undermine them by precipitating the rapid collapse of the entire firm.

Assessment of the current regulatory proposals and their likely effectiveness

10.40 In addition to reviewing the Basel II structured finance framework regulators are focusing on the conduct of the CRAs' business; changes need to be made to ensure that CRAs have, among other things: appropriate governance and oversight of the rating process by senior management to promote its quality and integrity; adequate controls to mitigate conflicts of interest; sufficient resources, both in terms of quality and quantity, to ensure ratings are defined, reviewed and updated in a timely manner; and appropriate processes in place to disclose information to the market regarding their ratings, particularly key elements of their methodologies.

10.41 In response to the performance of CRAs in rating structured finance products the IOSCO Code of Conduct fundamentals for CRAs was strengthened in May 2008. IOSCO is now taking forward further work on common supervisory examination models and enhanced coordination/cooperation between supervisors of CRAs. The European Commission has produced proposals for formal regulation of CRAs which are currently being debated in the Council and Parliament with a view to introducing legislation in 2009, and in the US the SEC has adopted additional rules to address concerns over CRA and activity.

10.42 The FSA supports the work already under way in IOSCO and the EU to promote more effective oversight and supervision of CRAs through the implementation of an

12 *Stress and scenario testing*, Consultation Paper 08/24

appropriate EU registration scheme alongside greater consistency, cooperation and information sharing on CRAs between regulators at a global level. However, it is important to acknowledge that while these steps will help address issues concerning the independence, quality and transparency of ratings, they will not address all relevant issues such as the use of ratings by market participants. This is discussed further below.

Regulation of CRA conduct of business

10.43 As mentioned above the EU is currently working to introduce regulation of CRAs, a process in which the FSA is heavily engaged. This regulation will focus on addressing weaknesses in CRA conduct of business and is likely to create a more thorough and clear evaluation of their governance, controls and transparency. However, the quality of ratings is not solely dependent on the integrity of the ratings process but also the accuracy of methodologies and assumptions used as well as the experience and insight of the rating analysts in the determination of ratings. Therefore whilst oversight of CRA conduct of business may address a number of concerns outlined in this paper it cannot guarantee the quality of ratings or the appropriate use of these ratings by market participants. The requirements for greater transparency from CRAs will improve market participants' ability to form an independent view of the relevance of their ratings.

Regulation of methodologies

10.44 Any attempts by regulators to supervise CRAs' methodologies would pose a number of complex challenges and the FSA does not see a case for pursuing this form of intervention. Most importantly there is no evidence to suggest that regulators would be more accurate in assessing the appropriateness of methodologies than the CRAs. Regulation of methodologies would shift the reputational risk for rating inaccuracy further from the rating agencies. Supervisors should, however, focus on the process by which CRAs generate their methodologies to ensure that it is rigorous, systematic and subject to appropriate challenge as part of conduct of business regulation. Greater transparency of rating methodologies will also be achieved via regulation and, combined with appropriate transparency of underlying product data, will allow market participants to evaluate rating agency performance more effectively. When formulating requirements for greater transparency of methodologies and assumptions, the risk of issuers structuring to achieve a specific rating in structured finance must be balanced against the benefits of transparency to investors.

Use of ratings by market participants

10.45 While current regulatory developments will lead to increased transparency of CRA processes and methodologies they are unlikely to address fully the issue of widespread reliance on credit ratings produced by a small number of global CRAs. Market participants should re-evaluate the extent to which their internal controls and procedures reference ratings and consider whether this remains appropriate. They should also reconsider how their business exposes them to rating based triggers and conduct appropriate stress-testing. The FSA will continue to monitor financial firms to ensure that they are appropriately meeting their due diligence responsibilities and

compare their processes with relevant market guidelines, for example the EFAMA Asset Management Industry Guidelines to Address Over-Reliance upon Ratings.[13] Where the FSA considers specific firms or market participants more widely are overly reliant on ratings it will act appropriately.

10.46 Further, the current proposed CRD amendments include increased due diligence requirements for firms before they can invest in structured finance products. Should firms fail to satisfy these requirements a risk weight of 1250% will be applied to the positions. The FSA expects a penalty clause, such as that proposed, to discourage sole reliance on CRAs' ratings.

Conclusion

10.47 CRA ratings play a key role in setting capital requirements, both under the Basel II standardised approach and the securitisation ratings based approaches. Although recent evidence suggests that the corporate finance ratings have continued to perform broadly as expected there is evidence that structured finance ratings have been less reliable. As a consequence the FSA believes there needs to be a fundamental review of the Basel II securitisation framework.

10.48 Current EU regulatory proposals will lead to formal oversight of the systems and controls which CRAs have in place to manage conflicts of interest and business pressures as well as increasing the transparency of their methodologies and business processes. The FSA believes, however, that this will not address the market failure created by the significant, and often systematic, integration of ratings into the financial system and over-reliance on ratings by market participants. Alongside reviewing the use of ratings in regulation the FSA will continue to monitor developments within the financial services industry to assess whether the issue of over-reliance on ratings requires further action, either at a specific firm, sector or market-wide level.

Q29: Does the DP highlight the correct issues concerning the role of CRAs and the use of their ratings?

Q30: Are the approaches outlined to address these issues appropriate and proportionate?

Q31: What options should a review of the use of structured finance ratings in the prudential regulatory framework consider?

Market regulation

10.49 Markets need to be appropriately transparent and resilient in order to underpin financial stability, as well as promote efficiency and investor protection. The crisis has highlighted questions about whether the rules and arrangements which govern the way that markets operate remain appropriate and effective. The sections below discuss two important aspects in particular:

13 www.efama.org/index.php?option=com_docman&task=cat_view&gid=70&limit=5&limitstart=0&order=name&dir=DESC&Itemid=-99#Credit%20Rating%20Assessment%20Guidelines.

a. the extent to which market transactions and positions are transparent to other market participants and to the FSA; and

b. the robustness and effectiveness of the market infrastructure in supporting the trading process and reducing systemic risk, in a way which is appropriate to each asset class. Effective procedures are also needed to manage default.

10.50 Intervention by regulators explicitly designed to alter market structure needs to be taken with great caution. For example, while there are potential benefits to markets where trading is conducted on organised multilateral platforms – such as greater transparency, and potentially lower counterparty risk – the FSA is of the view that these benefits can be achieved without necessarily mandating that trading takes place on a particular type of organised market. More generally, the FSA believes that regulatory intervention should focus on addressing risks, and not impose a specific market structure.

Transparency in the system

10.51 Transparency is essential for efficient and well-functioning markets. A lack of trading transparency does not seem to have played any major role in causing or exacerbating the crisis, partly because, unlike for shares, there is no active secondary market for the vast majority of securitised products. However, there is now an opportunity to assess whether an enhancement to transparency for a range of non-equity markets will help rebuild confidence, better protect investors in future, and contribute to recovery. But it is important to recognise the specific nature and characteristics of non-equity markets, otherwise there is a risk that enhanced transparency will result in a further withdrawal of liquidity.

10.52 The Markets in Financial Instruments Directive (MiFID) already imposes a detailed pan-EU regime governing pre- and post-trade transparency for trading in equities admitted to trading on a Regulated Market, whether those trades take place on a Regulated Market, Multilateral Trading Facility (MTF) or OTC. The European Commission has indicated that it will be starting a review of the details of this regime this year, concluding in 2010. However, for other asset classes, transparency arrangements are left to Member States, which have typically imposed some transparency requirements on organised trading platforms, but allowed OTC trading to find its own level of transparency. CESR and the European Commission concluded a review of this position for bond markets in early 2008, noting that there was no systematic market failure that required a regulatory intervention.[14]

10.53 Both CESR and IOSCO have initiated workstreams to revisit aspects of the question of transparency for non-equity markets. CESR published a CP in December on trading transparency for corporate bonds and structured finance products (e.g. ABS, CDOs), ABCP and credit derivatives (e.g. CDS).[15] CESR will most likely reach conclusions in the Spring. CESR has also provided, jointly with the energy regulators

14 http://ec.europa.eu/internal_market/securities/docs/isd/nemt_report_en.pdf.

15 www.cesr-eu.org/index.php?page=consultation_details&id=127.

grouping, ERGEG, some advice to the Commission on whether there is a need for additional transparency for commodity derivatives in electricity and gas.

10.54 The FSA supports reviewing transparency arrangements. Enhanced transparency could contribute towards rebuilding confidence in a number of markets, but it is essential that enhancements are fully tailored to the characteristics of each particular product. Any trade transparency regime should also be delivered in a cost-effective way, without unintended adverse consequences.

10.55 The focus of current European and international workstreams is on post-trade transparency. In this DP, the FSA is proposing a framework for enhancing post-trade transparency to take account of the specificities of non-equity markets. In particular, a post-trade transparency regime should take account of the following factors:

- **Investor base** – whether the investor base is predominantly wholesale or if there is significant retail participation in the specific asset class. When a market comprises both wholesale and retail investors, it would be desirable to differentiate transparency requirements between them.
- **The trading methodology and degree of product standardisation** – certain products, such as index CDS, are standardised and currently trade electronically. However, some instruments are bespoke and the complexity of these products limits the usefulness of trading information.
- **Trading strategy** – investors for corporate bonds and structured finance products tend to adopt a buy and hold strategy with very little trading after issuance. Mandating transparency in instruments which rarely trade is unlikely to bring significant benefits.
- **Current transparency** – there is already a degree of pre and post-trade transparency available. Supervisors should look to leverage off existing infrastructure (e.g. reporting channels to third party data vendors) to deliver any solution in the most cost-effective way.
- **Need for transparency at issuance** – for some products, such as structured finance products, it is important that any transparency deficiencies at the issuance or post-issuance stage be addressed in conjunction with post-trade transparency.

10.56 The FSA is working with the industry to further develop this framework, and remains open to credible industry solutions which would implement its principles.

Q32: Is this the most appropriate framework for post-trade transparency or are there other aspects the FSA should consider?

Transparency of positions to market participants

10.57 In general, it would undermine the operation of markets if participants were forced to reveal the nature and size of their trading or investment positions. However, an exception has been made for equity markets – in both company law and securities

regulation – because of the link between equity holding and the market for corporate control, and corporate governance more generally. Major shareholdings are therefore disclosable to the market. Market events over the past few years have raised the question of whether the regime should be extended to cover equity derivative and short positions.

10.58 The FSA is extending the UK major shareholding disclosure regime in June 2009 so that all long economic interests will be disclosed. This will in particular capture Contracts for Difference (CfD) activity. On short selling, the FSA has rescinded the restrictions on shorting which it introduced on an emergency basis last September. But the FSA has retained the disclosure provisions for short sales in specified financial services sector issuers, and in respect of rights issues. The FSA is currently consulting on whether there should be a permanent and more extensive disclosure regime for short-selling, and if so, what form it should take.

Transparency about the nature of products for investors

10.59 It is widely perceived that a lack of understanding of the risks associated with certain capital market products (such as RMBS, CDOs etc) resulted in some market participants conducting ineffective due diligence based largely on third party analysis (such as credit ratings). This, associated with further misunderstanding about capital market processes (e.g. default procedures), has significantly reduced market confidence, leading directly to a lower level of liquidity and market participation (this is separate from any concerns about public awareness or consumer protection).

10.60 The FSA is supporting efforts in IOSCO and CESR to review and enhance initial and ongoing disclosure requirements, including due diligence, as well as conduct of business principles. The FSA is also addressing weaknesses in the oversight of CRAs (as noted earlier in this section). The Government also introduced legislation on covered bonds in 2008, with the subsequent registration of relevant covered bond issues, which, among other outcomes, is designed to improve confidence in domestic covered bond markets.

Q33: Are there other measures which the FSA should be considering or promoting in international fora?

Transparency to the FSA about market transactions and positions

10.61 The FSA is reviewing the information which it obtains or has access to across the full range of markets and market participants. For example, the FSA is considering the information which it currently receives from Regulated Markets in relation to large positions taken out on those markets. At present the information the FSA receives on Regulated Market activity is supplemented by periodic surveys of OTC derivative markets, and their participants. The FSA is also reviewing whether such activity could be made more effective and focused on the key risks.

10.62 The shifting of transactions – both trading and clearing – from OTC to centrally-organised markets, whether this happens because of regulatory pressure or is simply market-led, will also enhance transparency and the information available for regulators.

Strengthening market infrastructure

10.63 Whilst recent events, including the failure of at least one major counterparty, have seen the current infrastructure and post-trade arrangements for OTC derivatives perform broadly as anticipated, certain limitations relating to counterparty risk, operational risk and the risk that limited transparency affects market confidence and effective regulatory oversight, have become apparent in the last 18 months at times of high volume and during periods of decreased counterparty confidence.

10.64 The FSA is working with fellow regulators and with market participants on a range of initiatives designed to strengthen the infrastructure for OTC derivatives.

10.65 In April 2008, the FSF published recommendations for building a stronger integrated operational infrastructure capable of supporting the important and rapidly growing OTC derivatives market. Following this, an international group of regulators, including the FSA, required the market to provide a roadmap to address these recommendations and continues to monitor and follow up with firms on the progress.

10.66 An important specific action concerned establishing and using a Central Counterparty (CCP) for credit default swaps (CDS). CCP clearing of CDS contracts could play a significant role in reducing systemic counterparty risk in this market, and possibly also be a means of providing greater transparency to regulators of the positions taken by individual firms. There are currently six potential providers of CCP services which have announced their intention to launch CDS clearing. Four are located in Europe and two in the US. The FSA continues to engage with these potential CCPs and international regulatory counterparts. In December 2008, the FSA approved the NYSE Liffe/BClear/LCH.Clearnet proposal to clear the European Index CDS product.

10.67 The FSA is keen to ensure that the risk management arrangements for the clearing of CDS – particularly for single name contracts – are robust, and that there is supervisory cooperation to agree common approaches across jurisdictions. At the European level, this work has involved a gap analysis and subsequent update of the proposed CESR/ESCB recommendations for CCPs to include provisions for OTC derivatives. The FSA supports moves to update the IOSCO-CPSS recommendations to reflect the updated CESR/ESCB recommendations.

10.68 The European Commission has stated that it wants to see CCP services based in Europe for the clearing of European CDS contracts. Nine dealers have written to the European Commission and committed to clearing CDS on European reference entities via a European CCP by the end of July 2009. However, the FSA believes that, given the global nature of these markets, it is essential that arrangements do not limit the ability of firms or CCPs to manage risks effectively across jurisdictions, including between the EU and the US.

10.69 It is likely that regardless of jurisdiction, cross-border supervisory cooperation will continue to be vital to mitigate risks to the UK market. To this end, the FSA is working alongside the Federal Reserve Bank of New York (FRBNY) and other supervisors to develop an information sharing framework that will allow for consistent, reliable information flows among the regulatory community.

10.70 Whilst the benefits of a CCP for mitigating counterparty risk are considerable, it is important to note that not all CDS products are suitable for clearing. The counterparty risk for those products that remain outside of the CCP will continue to be managed on a bilateral basis via collateral posting mechanisms. To ensure these processes are sufficiently robust, the FSA will undertake a thematic review of collateral management processes in 2009.

10.71 Regulators have also been seeking increased publicly available information about CDS. In October 2008, the Depository Trust & Clearing Corporation announced that it would publish aggregate market data from the central repository it maintains on credit derivatives. The FSA, along with other regulators and central banks, continues to engage with market participants and service providers to further enhance the release of public market data. The FSA would like to see sufficient data released by the end of the year to provide a high-level overview of the volumes traded and positions outstanding as well as the identification of sectors where substantial net positions are accumulating.

10.72 Good progress has also been made on several other operational objectives, such as the scheduled incorporation of a cash settlement process for CDS into standard documentation. These include the establishment of new targets including T+0 submission of eligible CDS trades, electronic matching and the increased use of compression services (which terminated US$27 trillion of contracts in 2008) and the development of 'roadmaps' for similar operational improvements for all major OTC derivative asset classes and for collateral management practices. This momentum needs to be maintained.

Q34: What other considerations should the FSA take into account with respect to OTC derivatives infrastructure?

Strengthening clearing arrangements in the light of the Lehman Brothers default

10.73 Clearing houses providing CCP services interpose themselves between the buy and sell sides of each traded that is 'cleared' and act to guarantee the performance of the trade by becoming the counterparty to the original parties to the trade. While the operation of the clearing house default arrangements in the Lehman Brothers case has generally been perceived to have been effective, there are some issues which have been highlighted for review.

10.74 The FSA is reviewing the arrangements for holding of client positions and margins at the clearing house level. Some Lehman Brothers clients had their positions held in the Lehman Brothers' house account (which generally allows some economising on margin, as positions can be netted across client and proprietary business). This raised questions about both the level of knowledge and understanding by these clients of the potential impact of this lack of segregation and the appropriateness of current clearing account arrangements.

10.75 The FSA has identified a number of potentially viable options for clearing account structures at the clearing house level:

- maintenance of the status quo, although with a requirement for greater transparency and disclosure of the segregation arrangements to market participants;
- the introduction of an explicit requirement that clearing houses offer facilities for their members to segregate client business (effectively formalising current standard market practice in the UK, but giving the FSA greater traction over overseas clearing houses that wish to provide services in the UK);
- the introduction of a requirement that all client business be held on a segregated basis; and
- the introduction of a requirement that client business must be held in a client-specific (i.e. one account per client) 'designated' account and/or that all client business must be margined on a gross basis.

10.76 Any arrangements will need to strike an appropriate balance between protection of the clearing house, protection of clients, and preservation of the efficiency of the UK markets. Initial discussions with Recognised Clearing Houses and clearing firms suggest that account designation and gross margin may have an unintended negative impact on market participants and the attractiveness of the UK as a place to transact business. Recognised Clearing Houses, clearing firms and representatives of buy-side users of clearing services would appear to support enabling choice over the type of account in which a client holds its business, increasing the transparency of disclosure to clients, and formalising the FSA's regulatory requirements in this area. The feedback also emphasised the importance of the effective operation of the UK's insolvency regime, which is the subject of a separate workstream.

10.77 The FSA is also analysing the current default arrangements of both UK Recognised Clearing Houses and Recognised Exchanges. The objective of this review is to study mandatory and optional actions that are available to the clearing house or exchange both before and after the declaration of a default, and to analyse if elements of the UK arrangements could conflict with the potential changes being proposed as part of the post Lehman Brothers crisis agenda (for example client money or insolvency arrangements).

10.78 These workstreams link to the work the FSA is doing on client assets more generally, and on possible changes to the way the administration regime works. The FSA is to play an active role in the Investment Bank Insolvency Group. This has been established by HM Treasury to determine whether changes to insolvency procedures are necessary to resolve some of the issues which emerged from the failure of Lehman Brothers. In particular the Group will investigate whether legislative, regulatory or market solutions are required to ensure the expeditious return of client assets in any future investment bank insolvency or if there is a necessity to strengthen markets infrastructure.

10.79 HM Treasury is also considering launching a wider review of the Part VII protections under the Companies Act 1989 and other similar matters. The FSA will continue to discuss these options with market stakeholders, and may consult on change to the regime later this year, taking due account of any Government initiatives in this area.

Q35: Are any (other) changes to clearing arrangements needed? If so, what should they be?

Strengthening settlement arrangements in the light of the Lehman Brothers default

10.80 The post-MiFID environment has given the UK markets greater opportunity to undertake equity trading away from Regulated Markets and a significant proportion of that trading now takes place on MTFs and OTC.

10.81 Transactions conducted on Regulated Markets and/or cleared through Recognised Clearing Houses are subject to default rules of those bodies and, in the event of the insolvency of a participant, the operation of those rules would have the protection afforded by Part VII. This means that the systemic impact of a member default is lower than it otherwise would be.

10.82 Part VII protection does not extend to MTF or OTC trades. However, the majority of MTF platforms use a Recognised Clearing House and so, on an insolvency, the default rules of that clearing house would apply with Part VII protection. The scope of Part VII protection, as noted above, is likely to be subject to review.

10.83 The CREST system is the UK dematerialised securities settlement system. It is designated for the purposes of the Settlement Finality Directive (SFD),[16] and therefore settlement instructions entered into the system, including OTC instructions, and CREST's default arrangements are protected against insolvency challenge.

10.84 In the CREST system, the principal difficulties with OTC transactions which emerged on the Lehman Brothers' default included:

- operational problems, primarily in correctly identifying and classifying transactions as OTC or on exchange. The FSA is working with firms to strengthen their systems and controls to prevent any future recurrence; and
- disabling settlement instructions for transactions with Lehman Brothers which were already matched.[17]

10.85 Uncertainty consequently arose in the market, with some market participants impacted more than others, depending on their circumstances, as to what would happen to the transactions disabled in CREST, in particular, as to whether they would be settled, in whole or in part only, and, if so, when settlement would occur. As a result, some market participants found that they did not know what positions they held and could not effectively manage their exposure.

10.86 After some time and following discussions with the FSA and market participants, the operator of the CREST system, Euroclear UK and Ireland (EUI) instructed the Lehman Brothers' administrators and all counterparties to open settlement

16 SFD is a European Directive, implemented in the UK through the Financial Markets & Insolvency (Settlement Finality) Regulations 1999, and it aims to reduce systemic risk associated with participation in payment and securities settlement systems. It does this by modifying UK Insolvency Law to stop instructions sent through the system being set aside on an insolvency.

17 Transactions entered into the CREST system cannot be unilaterally cancelled once they have been matched. Cancellation of a matched transaction can only occur if both counterparties to the settlement transaction match their cancel instruction.

transactions to enter a 'match delete' instruction (i.e. they would match their cancel instructions). This provided certainty to the market (at least from the point that the 'match delete' process was completed) that settlement in CREST was not going to occur. Parties to the corresponding underlying contracts then were left with their bilateral rights and remedies, without the possibility of settlement within the CREST system.

10.87 Concern has been expressed that the scenario described above and its related uncertainty resulted in significant market risk for many participants.

10.88 The FSA has reviewed the provisions of the SFD and is satisfied that the current UK arrangements implementing the SFD are in line with those provisions. However, the FSA is engaged in discussions with relevant parties, including other European regulatory bodies, as to the implications of the application of the SFD provisions for settlement systems.

10.89 The FSA is discussing with EUI and other market participants whether the current arrangements for dealing with the default of a market participant to OTC transactions can be improved and appreciate that markets strive for certainty in that scenario. Possibilities for change range from fixing particular problems to a more broadly-based approach. The FSA's views so far are that the settlement regime is generally effective upon a default of a participant and efforts should be focused on particular difficulties which have arisen or may arise. Those possibilities for change include:

- market-led initiatives can be used to make a default situation operate more effectively. One proposal which has been made by market participants, together with a trade association, is to develop contractual provisions to cover how OTC transactions might be dealt with in the default of a party, including their close-out. In particular, a protocol approach could be used so that transactions would be covered to the extent they are made between adhering parties in the market. Another proposal that market participants may also choose to work towards is a reduction in the settlement cycle from the current T+3 standard so that exposures are outstanding for a shorter time. Market-led solutions generally would have the advantages of building on how the current market works and of being less costly and quicker to implement. The FSA would expect to support market-led initiatives which would lead to the more effective operation of markets, subject to a closer review of any particular initiative;

- additional guidance for clarification has already been introduced by EUI to describe in further detail the steps that are likely to be taken following the notification of a default of a CREST participant. This guidance includes a detailed framework and timescales for taking certain actions, for example, to require participants to 'match delete' settlement instructions in certain circumstances after the default of a participant. It is based on steps EUI has successfully taken previously in default situations and which would be taken by EUI under its existing powers. To the extent that the underlying contracts are otherwise dealt with, in accordance with the market-led initiative described above or by other means, then it may be easier to formulate how additional precision within the CREST system could be achieved. This additional guidance

is welcome, although it is not intended to provide a conclusive solution to market issues. In addition, EUI remains open to future possible developments.

- legislative or other changes could be implemented to deal with difficulties which have arisen in light of the default of Lehman Brothers or may arise in similar circumstances. They could deal with specific issues. In addition, a new OTC default regime could be introduced, perhaps by extending protection similar to Part VII to default mechanics which are or may be used in the market. Depending on what is proposed by market participants by way of a protocol as described above, further thought may need to be given as to how such arrangements can be protected from challenge under insolvency law.

10.90 The FSA will continue to discuss settlement matters with market participants. Those discussions may lead to proposals for regulatory change which could be the subject of consultation later this year, taking due account of any government initiatives in this area.

Q36: Are any changes to settlement arrangements needed? If so, what should they be?

11 Supervisory approach

Key issues in this section

The historic regulatory philosophy of the FSA needs refining in the light of events. The FSA's regulatory responsibilities cover both policy formulation and supervision.

On policy formulation the FSA is a participant in the process, not its sole owner. The FSA is, however, responsible for delivering effective supervision and recognises it is fully accountable for that delivery.

FSA position and objectives

The FSA has revised its regulatory philosophy to be more 'outcomes-focused'. The supervisory operating model has also been revised to deliver 'Intensive Supervision'.

These changes are being put in place through the 'Supervisory Enhancement Programme'.

The now revised outcomes-focused Intensive Supervision model has two key features. First, a significantly enhanced analysis and risk identification capacity which will focus on business model risk and interact with macro-prudential analysis.

Second, there will be a greater focus on outcome testing over ensuring firms have the appropriate systems and controls. This approach also requires early and more direct regulatory intervention which, however, will in itself carry risks.

The Intensive Supervision model will be underpinned by the delivery of our 'credible deterrence' philosophy.

The new model requires a significant increase in our supervisory resource and our approach remains fundamentally based on quality not quantity. There is no prima facie case for the FSA moving to a 'bank examiner' approach to supervision but we will keep the position under review.

Regulatory philosophy

Background

11.1 The FSA as a regulator has two key roles: to formulate policy and to supervise firms.

11.2 Historically, the regulatory philosophy which guided the FSA's approach to policy formulation and supervision has had the strap line 'principles-based regulation'. This approach was most recently set out in the document *Principles-Based Regulation: Focusing on the outcomes that matter* in April 2007[1], but in essence it dates back to the inception of the FSA in 1998.

11.3 The FSA characterises this regulatory approach as evidence-based and risk-based. A decision to introduce new requirements must be based on evidence of a market failure and cost benefit analysis that demonstrates that the benefits of intervention outweigh the costs. The FSA's intervention in firms and markets, and direction of resource, must be based on a rigorous and explicit assessment of the risk to the statutory objectives that is presented by the activity concerned. And the FSA's rule-making, supervisory determinations and enforcement reflect, where possible, a focus on the principles, high level rules and outcomes that encapsulate the FSA's regulatory objectives – rather than addressing per se the detail and process of firms' compliance.

11.4 In formulating policy and executing supervision, the FSA seeks to ensure this is done in partnership with and with extensive input from consumers and the industry, using in particular the statutory consultation mechanisms and input from the Practitioner and Consumer Panels.

11.5 The FSA believes that a refocusing and re-articulation of this approach drawing upon the lessons from the global credit crisis will help better address the challenges ahead.

Refocusing the FSA's regulatory philosophy

11.6 Principles-based regulation means, wherever possible, moving away from prescriptive rules to a higher level articulation of what the FSA expects firms to do. This has the major advantage of giving firms greater freedom to decide how best to align their business objectives and processes with the regulatory outcomes the FSA has specified but also emphasises their explicit responsibility to do so and so helps to reinforce the statutory principle that senior management is responsible for firms' compliance. The focus of the FSA's philosophy, however, is not per se the principles but rather on judging the results of the actions of the firms and individuals the FSA supervises, whilst remaining firmly risk-based and proportionate. Given this philosophy, a better strap line is 'outcomes-focused regulation'.

11.7 It is important to understand that the FSA's ability to adhere to this philosophy varies across its roles of policy formulation and supervision.

11.8 On policy formulation, the FSA is a participant in the process, not its sole owner. The FSA designs policy in partnership globally with international bodies, other regulators, central banks and finance ministries. Policy outcomes, in consequence, will not always

1 www.fsa.gov.uk/pubs/other/principles.pdf.

conform to the FSA's preferred approach. However, the FSA believes that having a distinctive approach maximises its impact on the relevant international policy fora. In particular, a rigorous focus on outcomes can provide a useful means by which other participants in these fora can find common ground to solve shared problems.

11.9 The FSA is, however, responsible for delivering effective supervision and recognises that it is fully accountable for that delivery.

Limitations of regulation

11.10 It is important nevertheless to recognise that, regardless of the improvements the FSA makes, there are limits to what regulation can achieve. All regulatory judgements carry risks and, in particular, judgements on the future will necessarily not always be correct with hindsight. Regulators make no claim to be infallible. Indeed it is essential that firms do take risks, for without risks there will be no innovation or competition which are the basis for economic prosperity. Given this view it remains essential to recognise that firms' senior management carry primary responsibility for their actions and their resulting consequences. This responsibility is also shared with non-executive directors (NEDs), shareholders and auditors. The FSA believes strongly that a key element of successful regulation is to work in partnership with these groups. The recent market events support the view that NEDs, in particular, must play a greater role in the oversight of executive management. More detailed views on governance issues are in Box 11.2.

Market discipline

11.11 It should also be recognised that historically market discipline has been a significant element in the FSA's and other supervisors' approach. Market discipline is presumed to be delivered both through efficient market theory, mean reversion and the checks and balances of economic interest, notably shareholders. In practice this discipline has not been apparent in the recent credit crisis and, if anything, market behaviours have been procyclical. In future the supervisory processes as well as the regulatory framework will have to recognise this fact and adjust accordingly. Inherent in this for supervisors will be a need to intervene earlier, which in itself implies acting both on expectations of future events as well as focusing solely on historical data.

Supervisory philosophy

Background

11.12 Having the best possible regulatory philosophy is clearly essential to effective regulation but it will be worthless without effective application through supervision. The FSA has therefore extensively reviewed its supervisory process in the last 18 months and concluded that, although the FSA's core supervisory principles have been supported by recent events, changes were nevertheless required. The FSA has implemented these changes through its 'Supervisory Enhancement Programme' and refers to the resulting, enhanced process as 'Intensive Supervision'.

11.13 Overall these changes in approach do represent a significant shift in the FSA's supervisory philosophy. In the period from the FSA's creation through to 2007 the prevailing view of industry, society as a whole and government was that market disciplines would in general prevent the development of systemically damaging excesses in the economy and the risk of proactive regulatory intervention far outweighed the benefit particularly in terms of inhibiting innovation, competition and growth in the financial sector. As the FSA has commented before, recent events have led to a change in society's expectation from its regulators and this is a major driver in the FSA changing its philosophy.

11.14 The historical philosophy was that supervision was focused on ensuring that the appropriate systems and controls were in place and then relied on management to make the right judgement. Regulatory intervention would thus only occur to force changes in systems and controls or to sanction transgressions which were based on historical facts. It was not seen as a function of the regulator to question the overall business strategy of the institution or more generally the possibility of risk crystallising in the future. In the future the FSA's supervisors will seek to make judgements on the judgements of senior management and take action if in their view those actions will lead to risks to the FSA's statutory objectives. This is a fundamental change. It is effectively moving from regulation based on facts to regulation based on judgements about the future.

Supervisory model

11.15 The new model of supervision is designed to deliver a more intrusive and direct regulatory style than the FSA has previously adopted and requires a 'braver' approach to decision-making by supervisors. However, this focus on the importance of the FSA making judgements should not be seen as detracting from the FSA's focus on the outcomes and the consequences of actions taken by firms' senior management.

11.16 In order to ensure effective delivery of this new supervisory philosophy the operating model has been changed. The two key aspects of the supervisory model are an effective risk identification process and an effective set of tools to measure whether firms are managing these risks.

11.17 The FSA believes that central to achieving effective risk identification is the need to ensure the supervisor has an integrated view of firms and the markets in which they operate. This enables a comprehensive view of risks to be taken, particularly with regard to management competence, business models and the interaction of conduct and prudential issues. This means that the FSA remains a strong advocate of integrated supervision both on scope and on prudential and conduct issues. The FSA believes that the events of the last 18 months have strongly demonstrated the value of this approach. It is inherent that an integrated approach to regulation must consider both economic and behavioural factors when addressing risks and weigh up the relative impacts on firms, the market as a whole and consumers. This approach has an element of inherent conflict and tension but the FSA believes the most efficient and effective way of addressing this is within a single organisation and process.

11.18 The focus on ensuring the supervisor has an integrated view of a firm's risk also means that the supervisory process, for its risk identification, needs to draw not just on firm specific data but also on market information, sector and general economic analysis. For the FSA this will require an increased investment in and subsequent usage of industry, sector and macro-prudential insights. This concept of firm supervision being facilitated by the supervisor having good insights into market-wide risks also leads the FSA to believe that a firm's supervisor should have a role in determining macro-prudential policy since this is most effectively determined by both bottom-up as well as top-down perspectives.

11.19 Essential to the focus on assessing business models and judgements will be for the FSA to ensure it has an in-depth knowledge of the firm's current and future risks. This entails not just the wider understanding of macro-prudential and sector issues but also an in-depth first-hand knowledge of operational and market risks within the firm.

11.20 In the past the FSA has not involved itself in reviewing and valuing detailed position data nor in reviewing and comparing the accounting approaches to fair value assessments. However, in the past six months the FSA has reviewed bank balance sheets and their respective approaches to valuation and the recognition of impairment in some detail. This work has been related to the bank recapitalisation and asset protection schemes.

11.21 These reviews have highlighted some significant differences across banks, both in terms of the marks used for similar assets and in the allocation of assets between the trading and banking books. In future, the FSA will embed such reviews into its new supervisory approach, comparing the judgements made by senior management and auditors, challenging the outliers and, if need be requiring changes to the approach to valuation for regulatory purposes where supervisors conclude that a bank is acting imprudently.

11.22 In respect of the tools to ensure risks are being effectively mitigated by firms the FSA has historically, principally relied upon ensuring an adequate systems and controls environment. The FSA will now put greater emphasis on outcomes testing such as mystery shopping and branch visits. This will assist in delivering a balanced prudential and conduct agenda. Both components will remain part of the FSA's ARROW risk methodology. However, testing and good systems and controls alone will not ensure that firms adhere to the FSA's principles and thus it should not be forgotten that the delivery of the FSA's credible deterrence philosophy is also a central part of the new supervisory approach.

11.23 A more detailed explanation of the changes to the FSA's supervisory model is set out in Box 11.1 and Box 11.3 comments further on 'credible deterrence'.

Supervisory resource

11.24 The FSA's rigorous approach to delivering this supervisory process is built on a risk-based assessment. The FSA believes that all firms whose failure could cause significant market or consumer disruption – which the FSA terms 'high impact' – should always have sufficient supervisory resource to ensure a full understanding of the firm's business model and risks. This view that high impact firms (HIFs) require a minimum

level of supervisory resource regardless of the risk they pose and the probability of failure is a change in the FSA's approach. The change recognises that the FSA needs to prepare for the possibility of such a firm failing even if the expectation of it occurring is very low. Recent events have clearly demonstrated that without that preparation it would be very difficult to handle the failure of such a firm. This change in approach will ensure the FSA has sufficient numbers of dedicated supervisors on each major firm to have continuity of FSA personnel with an in-depth understanding of the business model and risks inherent in an individual firm. However, although this approach requires greater resource in the FSA, its supervision remains fundamentally based on the quality of the resource not the quantity.

Box 11.1: Changes to our Supervisory model: Supervisory Enhancement Programme

The FSA's original approach to supervision was laid out in a series of documents published in 2000. In 2008/09 the FSA launched and completed the Supervisory Enhancement Programme which was designed to significantly re-engineer the supervisory process to ensure the lessons of the credit crisis were learnt. The core part of the programme was completed in 2008 and these improvements will be fully embedded in 2009/10.

The intended outcomes of the Supervisory Enhancement Programme are summarised below:

Better, more effective and consistent supervision as defined by:

- an integrated and consistent supervisory process across all relationship managed firms;
- a focus on big picture risks: business models and strategy;
- a balanced approach to prudential and conduct risks;
- an increased focus on macro-prudential and cross-sector risks;
- an effective relationship management capability; and
- a willingness to make judgements on the future risks and to require firms to mitigate them in advance of them crystallising.

The central enablers of these outcomes are:

Resource

- The FSA will have appointed around 200 additional supervisors by Q2 2009, through external recruitment and staff deployment. External recruitment will be used to fill specific skills or knowledge requirements and ensure the right mix of regulatory and market experience.

Competence

- In Q1 2009 the FSA will launch an upgraded Training and Competence (T&C) scheme for relationship management supervisors. This includes eight core modules for existing supervisors and an updated induction programme for new supervisors. Further core and specialist training will be developed during 2009 to address ongoing business needs. The T&C scheme requires supervisors to demonstrate competence across technical and behavioural competencies, sector specific knowledge and skills and on-the-job activities. The FSA will develop and roll it out for other groups of our staff during 2009/10. The T&C scheme will enable the FSA to demonstrate to external stakeholders the ongoing competence of our supervisory staff.

Tenure

- To provide continuity of supervision for relationship-managed firms, the FSA will introduce a tenure policy. This will provide a framework for the minimum and maximum time a supervisor should supervise a firm. It will provide benefits for firms by ensuring continuity of knowledge and experience in the FSA teams.

Risk identification

- Critical to effective supervision is risk identification. The FSA has revamped its risk identification process; in particular, to strengthen its industry sector capability, which is designed to identify and analyse industry and overall risks, and to equip its supervisors to work more effectively with firms to mitigate risk. Fully staffing and implementing this process will be a key focus for 2009/10.

Technical support

- The FSA has significantly strengthened its technical support on prudential and conduct issues through the creation of specialist areas for prudential and conduct risk. In 2009/10 the FSA will further strengthen these areas, including by recruiting specialists in liquidity risk management.

Quality assurance

- A new group of supervision advisory specialists will conduct a regular quality review of the supervisory process for all HIFs. It will also provide support to supervisory teams at times of crisis.

Culture

- A culture of continuous learning and improvement, which attracts and retains quality people who act in a 'brave' and 'decisive' manner, and who are able to make judgements on the judgements made by firms' own management.

In addition to identifying the key general areas of change the FSA also concluded that significant improvements to the supervisory framework needed to be made. They reflect a clear intention to deliver a more intensive relationship with the firms and to enhance the ability of the supervisor to make better quality judgements on business models and wider risks to the FSA's statutory objectives. These changes are being implemented and comprise:

- a compulsory and irreducible programme of regular meetings with the senior management, control functions and NEDs of firms subject to our 'close and continuous' regime (namely HIFs). This is to establish and communicate to the firm the minimum level of interaction the FSA expects and will now include:
  - an annual meeting to focus specifically on the business and strategic plans for the firm;
  - an annual meeting with the external auditors; and
  - specific items of management information to support these meetings (such as annual strategy documents, operating plans, particular Board reports and the Management Letter provided by the external auditors).
- a regulatory period between formal ARROW assessments of not longer than two years for each HIF. During this period, more formal internal checkpoints will held on a six-monthly basis to provide more senior management input and oversight of the supervisory approach for the firm;
- an increased scrutiny of candidates for Significant Influence Functions (SIFs) (specifically Chair, CEO, Finance Director and NED), including interviewing, as appropriate, SIF candidates for HIFs;
- a greater focus on testing outcomes as well as the firms' systems and controls;
- a greater focus on 'peer comparison' of industry and sector interactions and macro prudential issues; and
- a greater focus on 'behavioural drivers' in problem compensation structures.

Box 11.2: Governance and risk management

The current crisis has exposed significant shortcomings in the governance and risk management of regulated firms. Although these weaknesses have been most evident in banks and investment banks, other financial services firms have not been immune. Any changes shall thus have general application. Sir David Walker has been commissioned by government to produce a report on governance. The FSA will thus be working with him to develop proposals to address these issues.

Governance and risk management is in the first instance the responsibility of the Board and senior management of a firm, taking into account their duties to shareholders and the regulatory requirements to which they are subject. The Board, in discharging these obligations, needs to provide strong independent oversight of the executive management. Evidence from the current crisis indicates that non-executive directors NEDs have struggled to provide such oversight. In future, in order to fulfil this role, boards will need to have NEDs with the relevant degree of expertise and the time to be able to devote to overseeing complex business. This will probably involve NEDs spending weeks rather than days per month in order to discharge their responsibilities and having greater resource to support them.

Risk Committees have a key role which should not be diluted by having other responsibilities, e.g. audit or compliance. The mandate and membership of the Risk

Committee needs to be clear, comprehensive and public and it needs both the resources and authority to ensure that the risks it identifies are mitigated.

Any financial services firm needs an effective risk management function, with clear, independent and unconflicted reporting lines, including to the Risk Committee. Effective risk managers need a combination of technical competence, communication skills (to convey arcane subjects in an accessible way) and stature in the organisation to provide a genuine challenge to business managers.

The last will happen if there is an executive director solely responsible for risk on the main board.

Auditors have a key role to play in assessing the risk management function, and governance overall, particularly as they relate to systems and controls. As part of its Intensive Supervision model the FSA will look to increase its engagement with auditors.

Good governance and risk management are also essential if a firm is to meet its regulatory responsibilities and this area will continue to be subject to close supervisory scrutiny. The FSA will be making changes to its approach in this area. First, the FSA is consulting on changes to its approach to SIFs, which include a proposal to extend the regulatory responsibility of NEDs.[1] Second, the FSA has begun to interview those individuals who are put forward by firms for SIFs to ensure that they are aware of and able to discharge, their regulatory responsibilities. Third, as part of its Intensive Supervision approach, the FSA's supervisors will be testing rigorously whether firms' risk management and governance arrangement are in practice delivering the right outcomes.

Box 11.3: Enforcement

Effective regulation requires effective enforcement. Since 2007 the FSA has given greater emphasis to the role of enforcement action in securing its objectives. It has abandoned the mantra of 'not being an enforcement-led regulator' in favour of a more overt and aggressive philosophy of 'credible deterrence'.

Central to this philosophy is the realisation that the FSA should use all of the powers available to it to stop and deter those in the financial services industry who break the law or flout FSA rules.

The FSA has in particular made greater use of its power to prosecute insider dealing and other offences identified in FSMA. This approach has prompted some to ask whether it is right to have more than one body responsible for the prosecution of 'white-collar' crime. The Serious Fraud Office and the Fraud Prosecution Service of the CPS are charged with prosecution of complex or serious fraud, so the question has been raised whether the current division of responsibility is sufficiently clear. The concern has been that a fragmentation of the fraud landscape creates inefficiencies and inadequate accountability for the bodies responsible. Undoubtedly with regard to 'conventional' financial fraud it could be argued that there is fragmentation of responsibility. However, this is not a matter for the FSA since we are clear that the FSA's focus is on those offences which are central to our FSMA responsibilities notably market and perimeter issues such as boiler rooms.

1 *The approved persons regime - significant influence function* Consultation Paper 08/25.

The FSA remains convinced that the ability to bring criminal prosecutions is a key tool for the FSA in delivering clean markets and protecting consumers. It is not for the FSA to tackle fraud in all its guises. But the FSA believes that there are strong benefits in being able to take effective action against those who abuse the markets or seek to engage in financial services activity without authorisation. There is a natural synergy between the oversight and monitoring of the markets and subsequent enforcement action, including criminal prosecution, against those guilty of misconduct.

Benchmarking our supervisory process: comparison of Intensive Supervision with Bank Examiner model

11.25 The FSA, in moving to the Intensive Supervision model, has benchmarked this approach with those used in Canada, Spain and the US to assess its effectiveness. Canada has the closest regulatory structure to the UK, having moved to a single, integrated organisation that covers prudential regulation in banking, insurance and pensions; conduct regulation is not within its scope. Spain and the US both continue with a multi-organisation approach with the regulators featuring in this exercise (Bank of Spain and the OCC respectively) focusing on banking prudential regulation only. As the data below show Spain and the US have a more 'resource heavy' supervisory model than the FSA and Canada. For benchmarking purposes the FSA has referred to this as the 'Bank Examiner' approach to contrast it with the FSA's Intensive Supervision model.

Regulatory framework

11.26 In carrying out their supervision, all of the regulatory bodies use a mix of principles and rules. The Canadians emphasise principles in the same way as the FSA promotes this philosophy in the UK, whereas Spain and the US focus on a rules-based approach.

11.27 All the regulatory bodies use a formal model to assess risk (ARROW in the UK) and, with the exception of Spain, share the results (including the risk rating) with the firms. All place value on peer analysis as part of the regulatory assessment and include business model as well as financial analysis as key ingredients.

11.28 All categorise firms based on a scoring system and this drives both the level of interaction with the firm and the amount of resource applied (see below). One body – Spain – allocates two scores per firm; one is firm risk related and one relates to its systemic importance.

11.29 Similar to the UK, all use a regular cycle of review, with the formal checkpoints less frequent as the impact rating decreases. However, unlike the FSA whose maximum period between formal risk assessments for high impact firms is 24 months, Canada, Spain and the OCC all adhere to a 12-month cycle. This is a key difference but probably reflects the number, size and complexity of the HIFs that each regulator has to review.

Banking Groups	UK	Spain	Canada	US
Total number of firms	826	364	158	1542
of which HIFs	*39*	*12*	*8*	*16*
of which non-HIFs	*787*	*352*	*150*	*1526*

Interaction with firms

11.30 For all, the impact score determines the amount of interaction with the firm, with the risk assessment used to determine specific areas of focus. These areas are then laid out in a supervisory plan that is shared with the firm (for the UK, this is called the Risk Mitigation Programme). The supervision of HIFs will also include annual meetings with the firms' senior staff to discuss strategy. In addition to this, Canada and Spain – as per the UK's 'close and continuous' methodology – hold regular quarterly meetings with the heads of control functions and others to discuss risks and issues.

11.31 The key difference, however, between the UK/Canadian model and that adopted by Spain and the US is the amount and type of testing undertaken. For the former, the supervisor undertakes limited detailed testing unless a specific risk is identified and this may then be expanded in a variety of ways (on-site visits, use of specialists as well as transactional and/or file testing). These areas are often – but not limited to – those set down in the supervisory plan.

11.32 For Spain and the US, transactional testing forms a major part of regular firm examinations that can cover the operations of the whole firm (within the regulatory scope of the supervisory authority). The areas laid out in the supervisory plan are those where additional, more in-depth work will take place.

11.33 All receive firms' own management information which supplements the receipt of regular regulatory reporting. With the exception of the UK, the other regulators have sizeable statistical areas to deal with the latter, whose focus is on providing automated standardised and ad-hoc firm and peer analysis to supervisors.

Resourcing – supervisory staff[2]

11.34 The differences in coverage and testing lead to differing models of staffing. In the UK and Canada, no staff are based permanently on-site; supervision is conducted by a mix of regular questioning and challenging of the firm's senior management, on-site visits where appropriate to review key areas of potential risk, desk-based monitoring, including data analysis and peer review.

11.35 In Spain and the US, both have teams of staff permanently on-site at HIFs;[3] for the former, this accounts for around 60% of their supervisory staff. For lower impact firms, a similar model is also used, albeit the teams of staff do not need to spend the whole year at only one firm. This model is also supplemented by periodic data analysis and peer review.

2 'Supervisory staff' refers to those with an understanding of the overall picture of the firm and who have the responsibility for the supervision of that firm; sometimes referred to as the relationship manager and/or the day-to-day point of contact for the firm. This is in contrast to 'specialists' who support the supervisory staff on particular subjects.

3 'On-site' may mean the supervisors being located in a building near to the firm as opposed to being on the firm's premises.

Banking Groups	UK	*Firms per supervisor*	Spain	*Firms per supervisor*	Canada	*Firms per supervisor*	US	*Firms per supervisor*
Total Relationship Managers	197	*4*	310	*1.2*	89	*1.8*	2085	*0.7*
of which no of RM HIFs	152	*0.3*	180	*0.1*	33	*0.2*	476	*0.03*
of which no of RM non-HIFs	45	*17*	130	*2.7*	56	*2.7*	1609	*1*

Resourcing – specialists

11.36 All regulators use specialist resource to assist their relationship management staff. In a similar way to the UK, Canada and Spain manage their specialists in a separate division to their front-line supervisors, with the former providing services to the latter on request.

11.37 Where appropriate, both the UK and Canada commission external parties (such as accountants, lawyers, specialists in particular fields such as IT) to undertake reviews in firms.

Banking Groups	UK	Spain	Canada	US
No of risk specialists	88	36	47	34
o/w market/liquidity risk	29	14	7	12
o/w credit risk	24	19	16*	20
o/w operational risk	16	3	8	
o/w risk models and analytics	19	0	16	2

*Supplemented by 21 former credit executives and managers for credit file reviews.

All the regulatory bodies have in-house staff dedicated to sectoral and macroeconomic analysis as follows:

Banking Sector	UK	Spain	Canada	US
Sectoral/macroeconomic support	15	23	10	36

Use of powers

11.38 All of the supervisors use a combination of formal statutory powers and a suite of informal (but potentially quite directive) communications with firms. Most are in similar areas of review (e.g. applications, change of controller, waivers). The UK is alone in introducing a more routine formal interview structure for appointments to significant influence functions within HIF firms (usually CEO, Chair CFO, NED level).

11.39 All of the supervisors use enforcement as a key regulatory tool. While much of this work does not make it into the public domain, some elements are used, such as fines and penalties, to achieve a credible deterrent.

Delivering quality

11.40 In addition to day-to-day management and oversight, quarterly internal challenge sessions are held for all HIFs in all but the UK (where the frequency is six-monthly).

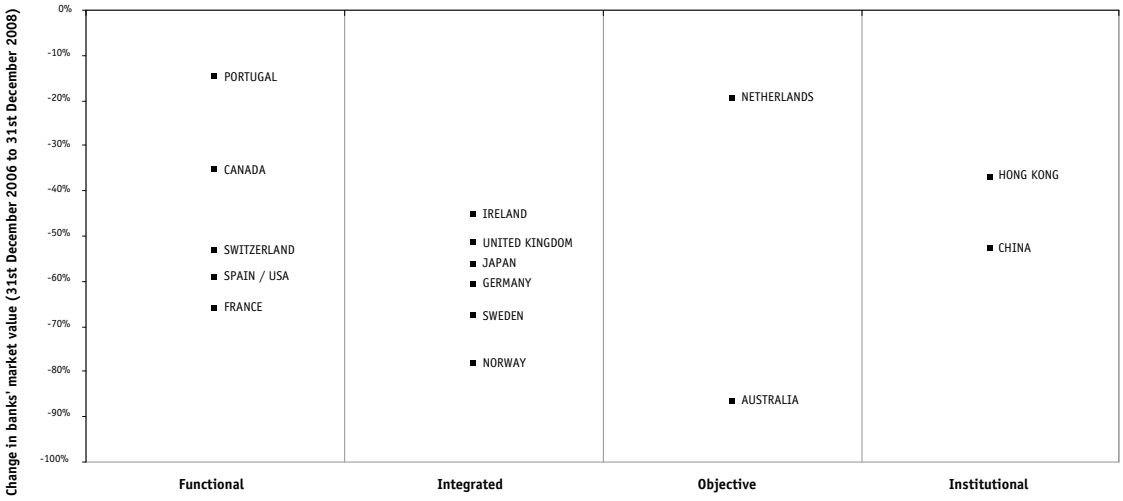
11.41 All supervisors invest heavily in the provision of training for their staff. In addition, both Spain and the US promote knowledge and best practice by rotating staff on to different firms/teams across the firm impact spectrum. All have a system of performance assessments for staff against individual objectives/competencies. However, in addition to this, it is only the UK that requires an annual 'assertion' to be made by the manager of each supervisor as to their capability to continue to meet the requirements necessary to perform a regulatory role. This 'assertion' is based on a combination of the completion of both technical and behavioural training and assessments together with evidence collected from on-the-job activity.

11.42 All of the regulatory bodies provide assurance on supervisory work by way of line management oversight and peer review. However, similar to the UK, the US has a quality unit providing independent assurance on work conducted by the supervision teams; Canada has started to form such a unit. In addition, all the regulatory bodies are subject to an internal audit – be it in-house (UK, Spain, Canada) and/or from a government body (US, Spain, Canada).

Conclusions

11.43 Reaching any conclusion as to the effectiveness of any of the different approaches is undoubtedly complex. What is clear is that Spain and the US believe their models enable them to deliver an even more intrusive style of regulation but it is very difficult to judge whether this produces better outcomes. It seems likely it would potentially better prepare the supervisor for the failure of a firm when it occurs but there is no evidence that it reduces the likelihood of failure. Thus the FSA concludes that moving to a full bank examiner model is not justified by the evidence. But the analysis does highlight that the Intensive Supervision approach is relatively under-resourced when compared to this alternative approach.

Change in banks' market values under different regulatory structures



11.44 The chart above maps the percentage fall in bank equity prices in a broad range of countries against the type of regulatory model (which is clearly not synonymous with regulatory philosophy or approach) in each country. What is most interesting about the chart is that there is no evidence that the choice of supervisory model has any strong bearing on the outcomes achieved by the supervisor (using the movement in banks' share prices as a very crude proxy for the effectiveness of supervision).

11.45 However, it seems axiomatically true that the most effective supervisory approach is the one with the ability to respond flexibly to changing risk. This has underpinned the FSA's philosophy and it believes the extra resource being applied to supervision further enhances the FSA's ability to deliver against this challenge. Consistent with this, the FSA is clear that it will need to keep its intensive model under continuous review to determine whether or not it is delivering the required outcomes. If not, the likely outcome will be to move towards the bank examiner approach.

11.46 The FSA will also have to ask itself whether its philosophy and model will be capable of implementing and delivering the new international supervisory framework that will emerge from the G20 and related processes that are currently underway. There is no obvious reason why this should not be the case, but the FSA will test this assumption rigorously once the shape of the new framework is clear.

12 Implementation and transition

The text of this section of the DP reproduces the relevant text from *The Turner Review*

- **Summarises the recommendations and discusses implementation and timing.**
- **Considers in particular the need for careful management of the transition towards higher capital adequacy requirements.**

12.1 Domestic implementation and international agreements

The boxes at the end of this section set out the full set of recommendations. They also distinguish between those where action has already been taken, those where the FSA can and will take action on its own, and those where implementation either is unavoidably or should ideally be dependent on international agreement, either at European or global level.

Four categories of dependence on international agreement can usefully be distinguished:

- Areas where the UK must act within the constraints of European Union law and/or institutional arrangements, and where therefore the key priority is for the FSA and the UK government to play a major role in European-wide debates and decisions. The most crucial recommendations in this category are those relating to:
  - the operation of the European single market in financial services i.e. the recommendations for a new European regulatory institution and for changes to depositor protection ('more Europe') and/or for some increase in national powers ('less Europe'); and
  - the capital adequacy proposals, which will eventually need to find expression in amendments to the European Capital Requirement Directive.

Recommendations relating to credit rating agencies, CDS clearing, and macro-prudential analysis also have important pan-European dimensions.

- Areas where the UK must contribute to global decision-making about big impact regulatory levers, in particular those relating to capital adequacy. Here the key institutions are the FSF and the BCBS, in which the FSA – along with the Bank of England and, in the case of the FSF, the Treasury – is intensively involved. International agreement on new capital adequacy standards is highly desirable since without it:
  - there would not be a level playing field for international competition; and
  - the UK could be exposed to financial stability problems deriving from inadequate capital adequacy regimes in other countries.

Proceeding on an entirely national basis – e.g. in relation to the design of a countercyclical capital adequacy and provisioning regime, would be by far second best.

- Areas where there is a need for mechanisms to ensure that international agreements already reached are reflected in world wide implementation
  - The FSF has, for instance, already agreed at its plenary meeting on 11 March 2009 an international code of practice on remuneration policies. This must be applied evenly across the world; different rules for employees of the same bank operating in different locations or different rules for banks of different ownership nationality operating in the same location would make implementation ineffective. Processes for international surveillance/peer review of supervisory enforcement are now essential.
  - And the FSF has also agreed appropriate guidelines for the operation of colleges of supervisors for major cross-border financial institutions. The effective implementation of these guidelines requires actions by supervisors in all financial centers and needs to be ensured by some mechanism of agreed surveillance and review.
- Areas where there is a need for global political leadership to create the capacity for independent global analysis of macro–prudential trends, including effective review of and challenge to conventional wisdoms and national policies.

The box at the end of this section identifies the required next steps in pursuing each of these dimensions of international agreement, and proposes the timescales which should ideally be followed.

12.2 Transition from today's macroeconomic position

Section 2.2 in *The Turner Review* argued that national and global banking systems should in future be subject to a capital regime which entails: (i) more and higher quality capital than required in the past; (ii) more capital specifically against trading book risk-taking; and (iii) some type of counter-cyclical capital regime, with capital buffers being built up in periods of strong economic growth so that they can be drawn on in downturns.

Such a regime will create a future banking system which is better able to absorb and moderate rather than amplify macroeconomic cycles. If such a system had been put in place a decade ago, the world would not have suffered an economic setback anything like as severe as the one it now faces. Lending growth would have been constrained by the need to build up capital buffers: and capital buffers would have been available to absorb losses at the onset of the economic downturn.

The government-backed recapitalisations which have been implemented in many countries, are in essence mechanisms to achieve through one-off and government backed action the capital positions which ideally should have been built up gradually over time and from private sources.

But the transition to the future capital regime needs to be managed carefully. All the major developed economies are now in severe recessions and are therefore in a phase of the economic cycle where capital ratios should be in decline, with banks absorbing losses while still maintaining lending to the real economy. Requirements on the banks to increase capital ratios would constrain their ability to lend. And while it would be desirable if capital ratios were already higher, avoiding the need for government support through, for instance, tail risk asset protection schemes, the reality is that many banks would find it impossible today to raise sufficient capital to achieve this without government support. Meanwhile government commitments that no systemically important bank will be allowed to fail are an effective alternative means of achieving financial stability.

Policy today therefore needs to focus on the pragmatic management of the macroeconomic challenge, using whatever interventions in the banking system are required to maintain lending capacity, while planning for a gradual exit strategy from government involvement which leads to a better more stable system for the future.[1]

Once international agreement on a long-term capital regime is achieved, a lengthy transition process and one whose precise timing will be dependent on the evolution of the macro economy and the recovery of banking profitability will be appropriate.

The one exception to this lies in the area of trading book capital where the BCRS has already published proposals for significant changes, implying significant increases, which will be implemented by 2010 (see Section 2.2 (ii) of *The Turner Review*). This is appropriate given the central role that inadequate trading book capital played in the origins of the crisis and given the desirability of encouraging a rundown of excessive trading book positions and a concentration of deleveraging in trading book activity.

1 A key tradeoff to be struck will be between the desire to maximise government proceeds in privatisation of bank holdings and the pace at which capital buffers can be built up, for instance via dividend restraint or new capital raising alongside privatisation sales.

RECOMMENDATIONS AND IMPLEMENTATION DEPENDENCIES

RECOMMENDATIONS	DEPENDENCIES	NEXT STEPS/TIMING
Organisations referred to in this table are BCBS: Basel Committee on Bank Supervision FSF: Financial Stability Forum IASB: International Accounting Standards Board FASB: Financial Accounting Standards Board IOSCO: International Organisation of Securities Commissions FSCS: Financial Services Compensation Scheme In some cases the indications of timing for next steps reflect FSA proposals rather than formally agreed commitments by the bodies concerned.		
Capital adequacy		
• Higher quantity and quality of capital	FSA interim regime (4% CT1) already in place International agreement on long-term regime required	BCBS proposals on capital quality October 2009. Review of regulatory capital minimum in 2010
• Trading book capital		
– Immediate changes and significant increase	BCBS proposals issued January 2009	In effect by December 2010
– Fundamental review	FSA proposing BCBS review	Start 2009 and complete by December 2010
• Avoiding procyclicality	FSA adjustments (variable scalars) now being introduced	In place by March 2009
• Introducing counter-cyclical capital buffers	Ideally as part of international agreement. General principle agreed in FSF and BCBS	BCBS proposals October 2009
• Changes to published accounts	Requires international agreement with regulators and accounting standards bodies	To be agreed by FSF
• Gross leverage ratio	Ideally as part of international agreement. Principle broadly accepted by FSF	BCBS final report on supplementary measures in December 2009
Liquidity		
• Major reforms to liquidity regime	FSA Consultation Paper (08/22) has already made proposals; can be implemented at national level But general principles also supported by BCBS	Phased implementation Q4 2009 through to 2010

RECOMMENDATIONS	DEPENDENCIES	NEXT STEPS/TIMING
• Consider 'Core funding ratio'	Can be implemented nationally, but global agreement on principles desirable	FSA Discussion Paper invites responses; possible implementation in 2010
Institutional and geographic coverage		
• Economic substance, not legal form	FSA already has some powers to enforce in UK	Additional powers on information gathering and right to extend regulation now required
• Information from hedge funds	FSA will introduce increased requirements on London located asset managers. Global agreement highly desirable; principle accepted by FSF	G20 commitment to principle
• Offshore countries covered by regulation	Dependent on overall political support	G20 commitment to principle
Deposit insurance in UK		
• Increase from pre-crisis level	Already implemented	
• Consider brand versus entity and temporary large balance issues	FSA consultation in hand	Proposals by Q3 2009
• Communicate to ensure consumer understanding	FSA working with FSCS to design communication programme	Probably Q3 2009
UK Bank Resolution Regime	Introduced by Banking Act, 2009	In place
Credit Rating Agencies		
• Registration and supervision of governance	Dependent on European agreement and legislation and ideally on globally agreed approach. New IOSCO Code of Conduct published May 2008	Legislation expected to be introduced summer 2009. Implementation probably by Q2 2010
• Clearer communication of appropriate use	Requires action by CRAs, industry associations and regulatory bodies eg IOSCO	EU legislation requires specific disclosures. Further IOSCO work
• Review of use of structured finance ratings in Basel II	FSA proposing review by BCBS	To be determined

RECOMMENDATIONS	DEPENDENCIES	NEXT STEPS/TIMING
Remuneration		
• UK Code	Already issued by FSA in Consultation Paper (CP 09/10)	Implementation possible by November 2009
• Global agreement	Dependent on international agreement to: - A global code - Processes for ensuring enforcement in all major centres	Agreed by FSF March 2009 BCBS to coordinate implementation
Central Clearing of CDS	FSA approved proposal for some European Index CDS products in December 2008 US authorities have approved proposal for some North American Index CDS products	Nine leading dealers have confirmed engagement to use EU-based central clearing for eligible EU CDS contracts by end-July, 2009
Macro-prudential analysis		
• Within UK	Bank of England and FSA need to put in place resources, methodologies and coordination processes	Define formal character of relationship between FSA and Bank of England
• At European level	Dependent on future institutional relationships (see 2.10 below)	To be determined
• Globally	Requires commitment to allow e.g. IMF robust independence in reports	G20 commitment
FSA supervisory approach		
• Supervisory Enhancement Programme (SEP)	Already being implemented	Main changes in place by Q2 2009
• Further intensification of change	Will be implemented by FSA - Macro-prudential capability	In place by Q4 2009
	- Increased role in balance sheet analysis and accounting judgements	Already underway with APS analysis. Proposals for role in accounting judgements by Q3 2009

RECOMMENDATIONS	DEPENDENCIES	NEXT STEPS/TIMING
Firm Risk Management and Governance	To be addressed by Walker Review with FSA input FSA will decide implications for rules and processes	Q4 2009 Q4 2009
Cross-border Banks: Global • Colleges of supervisors for all major cross-border firms • Improved coordination and contingency planning for crisis management	FSF has agreed standards for proposal to G20. Colleges already in place for 25 out of 30 major global firms	FSF to review follow-up by Q3 2009
• Increased use of national powers over capital and liquidity	Can be pursued by FSA alone; significant changes to practice already introduced, and will be reinforced by new Liquidity Standards regulation	Liquidity policy to be implemented Q4 2009 to 2010
Cross-border Banks: Within Europe • New European body for regulation and oversight of supervision • Increased national powers over subsidiarisation or branch liquidity • Possible European aspect to deposit insurance of cross-border banks	Dependent on European debate and agreement, with other ideas input by e.g. Larosière, Commission	To be determined

13 Implications for other regulated sectors

13.1 As Section 2 makes clear, the main causes of the current crisis arose in the banking, investment banking and 'shadow banking' sectors. Although some insurance companies, such as AIG and the monoline insurers, have experienced serious distress and have either been supported or restructured, in the main their problems have so far stemmed from credit or trading-related activities. Against this background, the scope of this DP – unusually for the FSA – is narrower than would be the norm, at least in the first instance.

13.2 As a consequence the majority of the regulatory policy proposals discussed in this DP are aimed primarily at banking and related activities and those firms that engage in them. This needs to be borne in mind when considering the extent to which these issues, and proposals, should be read across to other sectors, including insurance and investment firms that take proprietary positions.

13.3 However, some of the issues identified in the DP are likely to have some application to other sectors, viz:

- Section 11, which sets out the FSA's regulatory philosophy and its new Intensive Supervision model applies generally across all sectors. In particular the box in this section on governance and risk management is generally relevant;
- quality of capital clearly matters in all regulated firms, although the extent to which a firm needs to have the highest quality capital will depend on the relative importance of it being able to continue as a going concern. This will in part depend on its ability to enter into an orderly run-off. Evidence suggests that this is less complex in insurance than banking;
- Section 8 dealing with the FSA's proposed approach to groups applies generally to all types of financial services group that the FSA regulates;
- although the main focus of the FSA's macro-prudential approach will be the banks, since their effect on the real economy is the most significant, it will be important for the FSA and the Bank of England to be alert to possible macro-prudential risks arising from other sectors, including insurance. In particular, the wealth effects, and hence impact on the wider economy, of system-wide problems in the life insurance and annuities markets could be significant. Equally, there would be

disruption to the economy from the withdrawal of general insurance cover for particular activities. Indeed in the past the withdrawal of terrorism and airline cover has prompted government intervention;

- concerns about how well CRAs' ratings, particularly for structured finance products, were understood and hence used are relevant to a broad range of regulated firms. The same applies to concerns about ratings triggers;
- the FSA's thinking on EU passporting arrangements (and, to some extent on an EU-wide DGS), although driven by concerns about cross-border banking have some read-across to other sectors.

13.4 The FSA would welcome comments from regulated firms in other sectors and their trade associations about the implications of these and any other aspects of the DP for the regulation of their activities. Having considered these comments, the FSA will then set out in the Feedback Statement to this DP how, if at all, it plans to take this forward.

Q37: Which of the issues set out for discussion in this DP are most relevant to other regulated sectors?

Q38: Are there any lessons which have been learned in other sectors which could be applied to banking?

The costs and benefits of regulatory capital requirements

In the FSA's market failure framework, capital regulation is thought to deliver benefits through several possible mechanisms: reducing information asymmetry (between banks and unsecured creditors and depositors about the financial strength of a bank); internalising externalities; and reducing the risk of failure and lessening its impact. Capital regulation also imposes costs, including direct compliance costs for banks as well as indirect costs (i.e. negative market impacts). The latter include effects on risk-taking incentives and economic output and are generally more significant, but more difficult to measure, than compliance costs.

The extent to which these costs and benefits arise depends on how capital regulation alters banks' and consumers' behaviour. Research shows that banks hold capital for a number of reasons besides the need to satisfy regulatory requirements;[1] however, it is clear that regulatory requirements do affect capital management even at institutions holding sizeable capital cushions above regulatory minima.[2] Several studies find that banks seek to mitigate the expected costs of breaching regulatory thresholds: on average, banks react to higher (lower) requirements by raising (lowering) capital levels or ratios.

Given that banks respond to changing capital requirements by altering actual capital ratios, there are cost implications which depend on the degree to which banks respond by raising actual capital levels as well as effects on the banks' cost of capital. The determinants of those costs depend crucially on the degree to which increased equity capital reduces the costs of other forms of external capital: subordinated debt and hybrid equity/debt instruments; in turn this depends on the extent to which the Miller-Modigliani (M-M) theorem that capital structure is irrelevant to firm value holds for banks. The M-M theorem is explained in further detail in the box below. The Annex then goes on to discuss the macroeconomic effects of regulatory capital requirements, including a summary of a quantitative analysis of these effects undertaken by NIESR.

1 See Berger, A.N., Herring, R.J., and Szego, G.P., (1995), 'The Role of Capital in Financial Institutions,' *Journal of Banking and Finance*, 19, pp. 393-430 for a good discussion of these reasons. Alfon, I., Argimon, I., and Bascunana-Ambros, P., (2004), 'What determines how much capital is held by UK banks and building societies?', *FSA Occasional Paper no. 22* discusses these in the context of the UK banking sector.

2 See Alfon, I., Argimon, I., and Bascunana-Ambros, P. (2004), 'What Determines How Much Capital is Held by UK Banks and Building Societies?', FSA *Occasional Paper no. 22*.

The Modigliani-Miller Theorem

Under the well known M-M theorem,[3] regulators would be able to achieve any particularly desirable mix of debt and equity in banks at negligible cost, since leverage (banks' debt:equity ratio) would then be irrelevant to lending and its pricing. The charts below set out a stylised illustration of the M-M theory. While equity will in general be more expensive than debt financing, any savings made by switching to debt will be exactly offset by an increase in the cost of equity, as shown in figure 1.

M-M requires a restrictive set of assumptions, which need to be relaxed in order to understand capital structure decisions in the real world. In particular, debt is given a favourable tax treatment relative to equity due to interest tax shields, which tends to reduce the cost of higher leverage, as shown in figure 2. On the other hand, the existence of substantial bankruptcy costs for banks tends to raise the cost of higher leverage, when there is significant probability of default by the bank, as shown in figure 3. The opacity of the loan book means that investors are unable to observe the quality of banks' assets, resulting in substantial 'fire sale' discounts at bankruptcy. As a result, once leverage rises to a sufficiently high level, the overall cost of capital rises significantly as debt and equity holders require higher returns to compensate them for the higher probability of incurring these bankruptcy costs.

Weighing up the tax advantages against expected bankruptcy costs suggests that there may be a private optimal leverage ratio, but since the default of a bank imposes substantial negative externalities on the economy, the socially optimal level of leverage is likely to be significantly lower than this, as shown in figure 4.

However, other features of the real world may lead to further departures from the M-M theorem. Information asymmetries between investors and managers lead to lower leverage imposing net costs on banks. If investors are unable to observe whether assets are correctly valued, equity issuance is often interpreted as a sign of weakness by the market, resulting in a higher overall cost of capital. For similar reasons, there may be a "pecking order" in terms of the relative informational intensity and transaction costs of relying on different sources of funding, consisting of equity, followed by debt, then internal funds.

There may also be information asymmetries between shareholders and debtholders. The lack of information on the quality of loans and about managers' actions in general means that, when there is low leverage, shareholders may be willing to engage in risky investments without effective opposition from debtholders. Shareholders have an incentive to do so since, unlike debtholders, they benefit from the upside of such strategies. As a result, higher returns need to be paid on debt as the equity share rises, leading banks to prefer lower leverage, other things equal.

3 Miller, M. and Modigliani, F, 'The cost of capital, corporation finance, and the theory of investment', *The American Economic Review*, 1958, 48:3, pp. 261-297; 'Corporate income taxes and the cost of capital: A correction', *American Economic Review*, 53:3, 1963 pp. 443-53.

Guarantees of banks' debt in the form of a deposit insurance scheme or the perception of an effective wider government guarantee against default by banks, may make the cost of debt insensitive to the equity ratio since debt will already be pricing in a virtually zero probability of default. This suggests that the scope to offset the cost of extra equity may be limited and therefore that reducing leverage may have net costs for banks, other things equal.

Unfortunately, theory alone does not establish the costs of lowering bank leverage, and assessing the costs of increased capital requirements is therefore an empirical question. FSA and Bank of England research[4] suggests that banks do raise their capital ratios when required to do so by the FSA, revealing their preference for lower capital ratios, and thus implying that higher equity imposes private costs on banks. Research by NIESR (see accompanying box on NIESR results below) finds that lower leverage tends to be associated with higher bank costs, reflected in net interest margins, and hence, in NIESR's model, capital requirements do raise the overall cost of capital for banks.

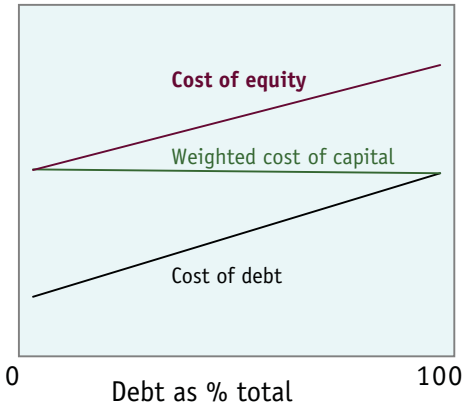
Overall, departures from M-M theory applied to banks mean that increasing capital requirements will not be costless; some rise in the weighted cost of funding will result. But the theory does suggest that some of the impact of raising capital requirements will be offset by a falling cost of equity and a falling cost of some categories of debt. This is also reflected in the NIESR analysis, which predicts some fall in equity risk premia as leverage is reduced.

A stylized illustration of the M-M theorem

Figure 1: The M-M Theorem

In the presence of perfect information and capital markets, and the absence of taxation:

- as leverage increases the firm's risk rises, driving up the cost of both equity and debt proportionately;
- the weighted average cost of capital subsequently remains constant.



4 Alfon, I., Argimon, I., and Bascunana-Ambros, P. (2004), 'What Determines How Much Capital is Held by UK Banks and Building Societies?', *FSA Occasional Paper no. 22*; Ediz T, Michael I and Perraudin W (1998), 'The Impact Of Capital Requirements On UK Bank Behaviour', FRBNY Economic Policy Review, October 1998, 15-22; Francis and Osborne (2009), 'On the Behaviour and Determinants of Risk Based Capital Ratios', Mimeo, FSA – forthcoming.

Figure 2: The impact of tax

Tax allowances for debt repayments lower the cost of debt for the firm at each level of leverage:

- the weighted cost of capital therefore declines with higher leverage;
- if possible, firms would choose 100% debt.

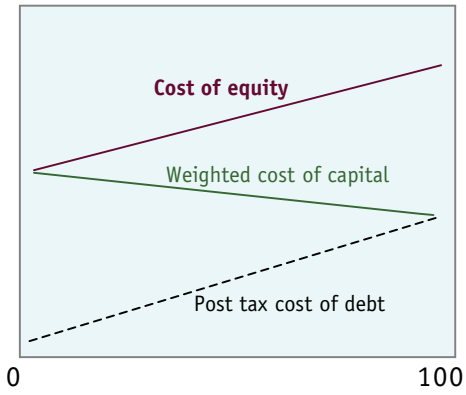


Figure 3: The bankruptcy cost constraint

The likelihood of bankruptcy rises with leverage and imposes large and irreversible costs on shareholders:

- the cost of debt and equity rises sharply in a non-linear fashion past a certain level of firm leverage;
- it is no longer optimal for firms to seek 100% debt.

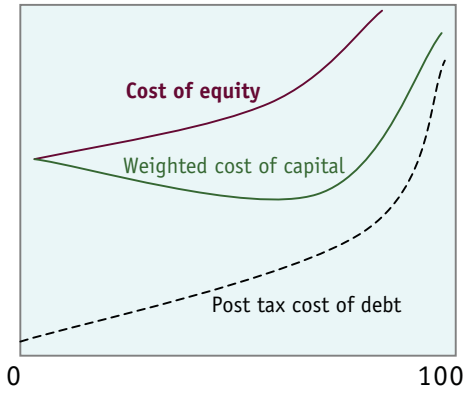
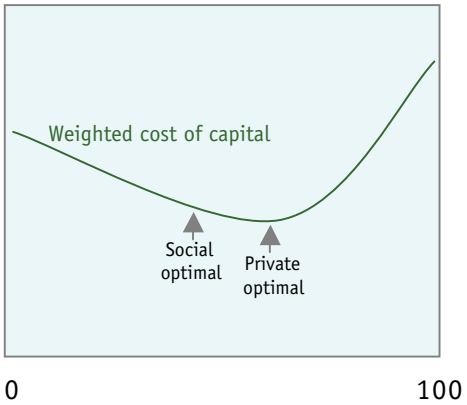


Figure 4: The case for regulation

The social cost of bankruptcy for financial market firms is higher than the private cost:

- the social costs of systemic failure including taxpayer support for failed or failing banks are not considered by individual firms;
- firms' private optimal leverage will be higher than the social optimal;
- the issue to be resolved is where the social optimal level might be.



Macroeconomic effects of regulatory capital

If banking markets are competitive any changes in costs due to higher capital requirements will be passed on to users of bank services in the form of lower deposit rates or higher borrowing rates. The impacts ultimately feed through to affect economic output more widely. First-round effects of a permanent, regulatory-induced increase in lending margins would increase the cost of funding for bank borrowers, reducing consumption and overall economic output.[5] The extent of the reduction depends on the extent of the increase in borrowing costs overall.

However, there are important benefits of regulatory capital requirements to consumers, to the economy as a whole and to the banking sector itself. From the viewpoint of the consumer, effective capital regulation which reduces the probability of a bank defaulting generates two sources of benefit. First, there is a reduction in expected losses and other costs associated with individual bank default and especially systemic failure. Further, to the extent that consumers are risk averse, there are additional benefits beyond the reduction in expected losses through reduced instability and therefore lower probability of severe adverse shocks to real economic variables, notably employment and income. Second, there is a reduction in transaction costs, including consumer search/monitoring costs.

It is also likely that the banking sector would face additional costs in the absence of capital requirements. For example, banks would need to devote more resources to monitoring their counterparties and may also face higher funding costs if suppliers of funds were not able to rely on regulatory capital measures to assess a bank's financial condition. In addition, the existence of capital regulation may create demand from consumers or firms that might otherwise be too risk-averse to transact business with the banking sector.

Improvements in market outcomes both for consumers and financial institutions that result from capital regulation translate into direct benefits to the economy. Potential wider benefits include, for example, higher output due to reductions in systemic risks, increased outputs for sectors providing ancillary services to banks and lower costs in other industry sectors as a result of more efficient provision of banking services and products. There may also be second-round effects from equity markets that potentially lessen the negative impacts discussed above. In particular, higher capital requirements that lead to higher actual capital levels may lower banks' equity risk premium and the required return on their liabilities, by reducing systemic risk. The effect on banks' equity prices and, hence, cost of capital acts to offset the effects of wider spreads on economic activity as described above.[6] A reduction in the risk of systemic bank failure may also reduce risks across the real economy, reflected for example in lower equity premia.

5 Barrell et al. (2008).

6 Barrel et al. (2004) present simulation results using the National Institute global model. They also provide a useful discussion of the channels through which costs and benefits to the economy derive.

However, the most important benefit of an adequately capitalised banking system is the reduction in systemic risk and therefore in the probability of repercussions for the real economy of severe financial stress, as seen across the globe over the past 18 months. While the full extent of the detrimental impact on economic output of the current financial turmoil is not yet clear, estimates of the effects of similar crises in the past are significant.[7] The impact of the crisis also has considerable adverse effects on the cost of finance in general and therefore on investment in the economy. In addition, financial wealth can be destroyed, leading to a reduction in consumption spending and further reductions in economic output. Previous studies also show that an additional large and detrimental effect on the behaviour of lenders follows.[8] In particular, credit rationing increases during a crisis and this reduces consumption more than would be predicted by a fall in consumer income and wealth. Recent quantitative work on the costs and benefits of regulatory capital requirements for the banking sector, which the FSA has commissioned, is summarised in the box below.

The macroeconomic impacts of capital requirements

The FSA commissioned the National Institute of Economic and Social Research (NIESR) to assist in measuring the costs and benefits of capital requirements on the wider macroeconomy. NIESR extended its well-known general equilibrium model, NiGEM, to include a banking sector, allowing measurement of the effects of altering prudential capital requirements on real economic output. In their framework, previous work by the FSA[9] was used to show that altering capital regulation influences lending behaviour and, therefore, balance sheet and capital management practices. Changes in regulation also change the structure of bank costs,[10] which, in a competitive market, are passed on to borrowers and lenders. Both of these effects then feed through to affect the economy more broadly.

How do higher capital requirements affect the economy?

Capital regulation has important effects on banks' costs that then influence economic activity indirectly. Raising capital requirements increases the costs to banks of distributing finance through the economy, as it raises banks' internal capital targets.[11] Banks, in turn, pass on these costs as wider spreads between borrowing and savings rates. This raises the cost of finance for borrowers and lowers the income of households, ultimately feeding through to reduced investment, consumption and output. NIESR estimates of the effects of policy show that an increase in capital

7 Hoggarth and Sapporta (2001) discuss the empirical evidence on the costs of banking crises and suggest that GDP impacts can be large, upwards of 25% of GDP.

8 See, for example, Barrell, Davis and Pomerantz (2006).

9 See Francis and Osborne (2009), 'On the Behaviour and Determinants of Risk Based Capital Ratios', Mimeo, FSA – forthcoming (available shortly on the FSA website).

10 The empirical results from the model bear out that the M-M propositions do not hold in the UK economy – see box above on the M-M theorem.

11 A broad body of literature shows that capital regulation affects banks' desired capital targets. Alfon, Argimon and Bascuñana-Ambrós (2004), 'What determines how much capital is held by UK banks and building societies?' FSA Occasional Paper No. 22, for example, provides empirical support for this behaviour in the context of the UK banking market. Their findings suggest that even if banks hold buffers sufficient to absorb higher capital requirements, they respond by adjusting actual capital ratios, thus implying capital compliance costs.

requirements does reduce long-run output. Moreover, in the short-run, higher capital requirements may cause credit rationing,[12] especially if banks hold relatively small buffers above their desired, targeted levels which may intensify the impacts on the economy.

Higher capital requirements, on the other hand, produce important, offsetting benefits for both banks and the economy. Higher capital requirements lead banks to hold higher capital ratios overall, lowering the probability of both banking crises and the ensuing effects, i.e., increases in the equity risk premia, insolvency and arrears rates, and interest rate volatility. NIESR's research suggests that crises raise banks' equity risk premia and, as a result, economy-wide borrowing rates for a subsequent six to nine years. Sustainable output, in this event, is lower than it otherwise would have been – that is, there is a bigger loss to the economy in reduced output following a crisis, due to the increase in equity risk premia, than the boost to output provided by lower costs prior to the crisis. For example, NIESR estimates that a four percentage point increase in both capital and liquidity requirements reduces the probability of financial crises by roughly one third. Moreover, the probability of crisis is halved if these requirements lower the extent of the house price cycle.

NIESR have provided preliminary estimates for the net effects of raising both capital and liquidity requirements by four percentage points, showing the effect of different assumptions about the extent to which gains to output made during the upswing from 2001 are assumed to be wiped out by the crisis and subsequent downturn. At one extreme, if the gains are left intact, NIESR estimate that such a policy change would involve a net *cost* of 8% of current GDP. At the other extreme,[13] where it is assumed that the gains to output are largely wiped out by the crisis, NIESR estimate that there could be a net *benefit* to the economy of almost 30% of current GDP.

12 While increases in borrowing costs lower the demand for credit, there may also be a supply-side – or credit rationing – effect as banks respond to higher capital requirements by changing balance sheet make-up rather than capital levels directly in response to higher capital requirements.

13 The calculations depend on a number of assumptions about the state of the economy and gains from the recent boom, which the FSA is still examining and discussing with NIESR to understand better.

Annex 2

Acronyms

ABCP – asset-backed commercial paper

ABS – asset-backed security

AMA – advanced measurement approach

BCBS – Basel Committee on Banking Supervision

BIPRU – prudential sourcebook for banks, building societies and investment firms

bn – billion

bp – basis point

CP – Consultation Paper

CCP – central counterparty

CfD – contract for difference

CDO – collateralised debt obligation

CDR – cumulative default rate

CDS – credit default swap

CEBS – Committee of European Banking Supervisors

CEIOPS – Committee of European Insurance and Occupational Pensions Supervisors

CESR – Committee of European Securities Regulators

CLO – collateralised loan obligations

CML – Council of Mortgage Lenders

COREPER – Committee of Permanent Representatives

CRA – credit rating agency

CRD – Capital Requirements Directive

CU – currency unit

DGS – deposit guarantee schemes

DP – Discussion Paper

EAD – exposure at default

EBC – European Banking Committee

EC – European Commission

ECR – Economic Cycle Reserve

EEA – European Economic Area

EFC – Economic and Finance Committee

EFCC – European Financial Conglomerates Committee

EIOPC – European Insurance and Occupational Pensions Committee

EL – expected loss

EMEA – Europe, the Middle East and Africa

ESC – European Securities Committee

ESCB – European System of Central Banks

EWS – early warning system

FP – AIG Financial products

FSAP – Financial Sector Assessment Programme

FSC – Financial Services Committee

FSF – Financial Stability Forum

FRBNY – Federal Reserve Bank of New York

GDP – gross domestic product

HIF – high impact firm

IAIS – International Association of Insurance Supervisors

IAS – International Accounting Standards

IASB – International Accounting Standards Board

IFIAR – International Forum of Independent Audit Regulators

IFRS – International Financial Reporting Standards

IMF – International Monetary Fund

IRC – incremental risk charge

IOSCO – International Organization of Securities Commissions

IRB – Internal Ratings Based

IMF – International Monetary Fund

IMM – internal model method

LGD – loss given default

LIBOR – London interbank offered rate

LTV – loan to value

MBS – mortgage-backed securities

MiFID – Markets in Financial Instruments Directive

mn – million

MTF – Multilateral Trading Facility

MTN – medium term note

NED – Non-Executive Director

OTC – over-the-counter

OTS – Office of Thrift Supervision

PD – Probability of default

P&L – profit and loss

PiT – point in time

RMBS – residential mortgage-backed security

RWA – risk weighted assets

SEC – Securities and Exchange Commission

SEP – Supervisory Enhancement Programme

SIV – structured investment vehicle

SPE – Special Purpose Entity

SPV - special purpose vehicle

TTC – through the cycle

UL – unexpected loss

PUB REF: 003299

The Financial Services Authority
25 The North Colonnade Canary Wharf London E14 5HS
Telephone: +44 (0)20 7066 1000 Fax: +44 (0)20 7066 1099
Website: http://www.fsa.gov.uk