Open Forum: Building Real Markets for the Good of the People

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Open Forum: Building Real Markets for the Good of the People

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Executive summary

The Bank is seeking to foster markets that make the greatest possible contribution to prosperity.

Financial markets can and should be powerful drivers of prosperity. They finance trade, investment and growth. They price and allocate capital, and they transfer risks to those most able to bear them.

Many of these activities depend on fixed income, currency and commodity (FICC) markets. These markets determine interest rates for savers and borrowers, the exchange rates we use when we travel or buy goods from abroad, and the prices of our food and raw materials.

They affect everyone.

But markets can go wrong. Left unattended they can be prone to excess, instability and abuse.

Central banks, by virtue of their responsibilities and powers, have an important role in preventing these outcomes, even when they do not regulate market conduct or markets per se. The Bank of England has neither of these responsibilities, but it does have a statutory responsibility to protect and enhance the stability of the financial system overall in the United Kingdom. It therefore has an interest in catalysing necessary changes and in supporting other authorities and market participants to build real markets. Real markets work in the interests of society, not just market participants. They enjoy the trust of society, while reliably and effectively allocating capital and risk in the economy.

The financial crisis and its aftermath cruelly exposed failings in global FICC markets. These have had enormous economic consequences and were the result of deeper failures in the mechanics, structure, codes and regulation – the hard and soft infrastructure – around FICC markets. This infrastructure failed to keep pace with the growth and development of those markets. In the United Kingdom, the crisis also exposed shortcomings in some of the Bank of England’s frameworks and operating procedures, which had become outmoded as markets evolved.

Many of the deficiencies exposed by the crisis have now been addressed by a wide-ranging programme of reform, at the Bank of England itself, in the UK financial system, and at the global level. A large body of work is ongoing (see Annex 1). These reforms are essential for the United Kingdom to remain host to one of the foremost global financial centres, not least because continued deepening of the global financial system could mean that the UK-based non-bank financial system increases in size from a little over six times UK GDP to nearly fifteen times UK GDP by 2050.
The United Kingdom’s position brings substantial economic benefits and opportunities. It also creates a particular responsibility for authorities and market participants because these markets contribute to prosperity well beyond the United Kingdom. This is why they have been heavily involved in the process of global financial reform and will continue to be so.

To promote prosperity, markets must meet two conditions: they must be effective – ensuring competitive pricing and proper allocation of capital and risks; and they must maintain their social licence – the consent of society to operate and innovate (Figure 1).

Figure 1: Effective markets with a social licence contribute to prosperity

The basic building blocks of effective markets are resilience and fairness. Resilient markets provide predictable access and liquidity for funding, investing, saving and risk transfer, and are underpinned by robust infrastructure. Fair markets have clear and consistently applied standards, are open and transparent, and have participants who act with integrity and compete on merit. But effectiveness goes beyond resilience and fairness: markets must also price and allocate capital and risks as efficiently as possible.

The foundations of social licence are fairness and accountability. It is not enough for market participants to meet the letter of regulations – they must act, and be seen to act, in accordance with the spirit of standards and codes, and the values of society, if they are to merit its trust in turn. Individuals, firms and authorities must be open to scrutiny and held accountable for their actions.

Although much attention has been given to the necessary post-crisis reforms to the core banking system, a wide range of reforms have at the same time increased the effectiveness and reinforced
the social licence of FICC markets.\textsuperscript{1} The international reform agenda has substantially increased the resilience and effectiveness of markets. With the recommendations of the Fair and Effective Markets Review, published alongside this document, reforms are now in train to further promote fairness and accountability as well.

With a full programme in place and much already having been achieved, now is the time to take stock of the reforms as a whole and to discuss the way forward. Ensuring markets contribute to prosperity is not an exercise with a defined end point, but rather a continuous process to update the infrastructure around markets as they innovate and evolve. Markets are growing in importance as providers of credit to the real economy and the response to reforms, changes to business models and new technologies are creating opportunities and challenges. Now is the time to debate questions, such as:

\begin{itemize}
\item Are reforms creating the soft and hard infrastructure to ensure FICC markets are effective and retain their social licence?
\item Where has too little been done? In some areas, might reform have gone too far?
\item Does the reform agenda form a coherent whole or are there gaps and inconsistencies?
\item How should the programme of reform be made dynamic and adaptive to current and future innovations in markets?
\end{itemize}

The Bank of England will host an Open Forum to debate these questions. Recognising that markets do not exist in a vacuum, the Bank of England is committed to bringing together a wide range of stakeholders. All will be invited to contribute their perspectives in the run-up to and during the conference.

In addition to catalysing the process, the Bank will have a role in delivering the forward agenda. However, much of that forward agenda will fall beyond its purview and will require the engagement of other UK authorities, market participants and, where global action is warranted, international counterparts.

To support the Open Forum, the Bank of England sets out in this paper its analysis of what went wrong with FICC markets, as well as shortcomings in its own frameworks and operating procedures during the crisis, what is being done to correct those failings and what challenges remain.

This paper groups the issues into building effective markets and the maintenance of markets’ social licence. It also considers the role of the Bank of England in supporting these outcomes. It highlights some specific questions to motivate discussion at the Open Forum.

\textsuperscript{1} Annex 1 contains an overview of these reform initiatives.
Building Effective Markets

Resilient markets provide predictable access to liquidity for funding, investing, saving and risk transfer. The crisis demonstrated that many markets were vulnerable to closure and episodes of severe illiquidity. Markets proved fragile. Companies found it difficult to access capital. Banks found their funding sources had evaporated.

Three issues undermined market resilience, all of which are being addressed by the reform programme.

First, the fragility of key intermediaries – ‘dealers’ – on whom markets relied to make markets by buying and selling securities.

A fundamental programme of reform since the crisis has transformed the resilience of dealers. Capital requirements have been increased by a factor of 10. The leverage ratio of major dealers has risen from less than 2.5% in 2007 to over 4.5%. In the United Kingdom, major banks’ trading assets have fallen by almost a third, interbank claims by two-thirds, and liquid assets have increased four-fold.

Second, the failure of Lehman Brothers highlighted the chaos caused by complex webs of derivative exposures.

New arrangements are being put in place in the United Kingdom and many other jurisdictions to promote orderly resolution of banks and to ‘stay’ derivative contracts in the event a large global bank fails. The web of interconnections created by derivative transactions is being addressed by clearing them through central counterparties.

Third, tensions arose in securities financing markets as uncertainty grew about the credit worthiness of structured products that had been used as high-quality collateral to secure funding. This triggered pernicious spirals of rising margins, declining liquidity and falling asset prices.

Since the crisis, reforms have been introduced to place minimum requirements on margins for repo transactions, imposing limits on the extent to which some collateral can be treated as high quality.

Together, these measures should ensure that the liquidity of markets is more resilient. However, new capital and liquidity requirements for intermediaries may restrict their ability to carry inventories of assets, curbing their market-making ability. Alongside other structural shifts, this may reduce market depth or increase volatility in fixed income markets. Firms and regulators should be alert to these changes to consider how they can be ameliorated, how the true pricing of liquidity can
be encouraged, and how their consequences, including those for investment funds offering daily redemption, can be managed appropriately.

- Do authorities have the balance right between strengthening the resilience of the core of the system and potentially increasing relative volatility in fixed income markets?
- How should risks in parts of the financial sector that have grown in importance since the crisis, such as Asset Management and Central Counterparties, be assessed and managed?

Fair markets are characterised by clear and consistent standards, transparency, open access, and participants who act with integrity and compete on merit. Repeated episodes of misconduct have shown, however, that many FICC markets did not have these characteristics. This has reduced their effectiveness and fines have reached a scale that has significantly reduced lending capacity.

The Fair and Effective Markets Review (FEMR) highlights how market structures offered opportunities for abuse, standards were poorly understood and lacked teeth, and there was limited reinforcement of standards through market discipline. A culture of impunity arose and a process of ‘ethical drift’ occurred as unethical behaviour went unchecked and became progressively more widespread.

In response to specific abuses, key FICC market pricing benchmarks have been overhauled to reduce the potential for abuse and have been brought into the scope of regulation. Transparency is being increased through pre- and post-trade reporting requirements. And standards of market practice are being clarified and strengthened.

In a more comprehensive response, FEMR recommends further action in four areas:

- **Individuals** should have greater accountability including through the extension of the Senior Managers and Certification Regimes to a wider range of firms covering at least those active in FICC markets;
- **Firms** should take greater, collective responsibility through a new FICC Market Standards Board to establish readily understandable standards as well as monitoring and addressing areas of uncertainty in specific trading practices;
- **Regulators** should have more powers, including over spot foreign exchange markets, as well as overseeing the implementation of the Senior Managers and Certification Regimes; and
- **Global action** is needed to agree common standards and codes.

- What more can be done, by authorities and firms, to ensure that the potential for misconduct is addressed pre-emptively?
- Can market transparency be further enhanced without harming market effectiveness?
Resilience and fairness are necessary building blocks, but to be effective markets must also competitively price and properly allocate capital and risks. The crisis exposed fundamental flaws in the way markets were transferring risk.

First, the ‘originate-to-distribute’ model of lending had created misaligned incentives between lenders and investors. These flaws are being addressed through retention requirements for the originators of securitised loans, and a capital framework that more accurately reflects the risks to banks of providing contingent support to securitisations.

Second, it is essential that investors understand the risks they are bearing – the crisis exposed that in many cases they did not and were overly reliant on credit ratings, which themselves proved inadequate. Since the crisis, measures have been put in place to reduce reliance on credit ratings. And the Bank is working with other authorities to develop Simple, Transparent and Comparable (STC) securitisation instruments that place much lower informational demands on investors.

Third, many banks were able to fund themselves cheaply in wholesale markets because of the implicit subsidy arising from the expectation of public support. With credit markets distorted in favour of banks, those markets misallocated risks and the real economy was over-reliant on bank-based finance. Eliminating ‘Too Big to Fail’ is thus an integral part of the global reform agenda.

This must be coupled with moves to promote access to market finance, alongside bank finance. In the context of a Capital Markets Union for Europe, the Bank has identified the need to strengthen direct access to market financing, particularly for SMEs, reinforce securitisation markets, and to develop savings pools outside of banking systems, including by opening investment possibilities in closed end funds to a wider pool of investors. To ensure investors and borrowers are matched efficiently and that risks are traded at competitive prices, market structure and trading venues must innovate and evolve.

- Are there new markets that could usefully be catalysed and developed?
- How can access to market financing be enhanced and pools of savings developed outside the core banking system?

Maintaining Markets’ Social Licence

To contribute fully to prosperity, markets require a ‘social licence’ – the consent of society to operate and innovate. An erosion of trust and loss of social licence risks the imposition of rules or restrictions on markets that are detrimental to their contribution. Markets retain their social licence only if trusted to work in the interests of society. That requires fairness and accountability.
FEMR concludes that senior managers in FICC markets became increasingly remote and unaccountable for standards in day-to-day trading operations; there were few consequences of failure; remuneration schemes stressed short-term returns; and systems of governance proved incapable of asserting the interests of firms, let alone the wider market, over those of close-knit trading staff. In short, accountability was lacking.

That is changing. From March 2016, UK banks, building societies and PRA-designated investment firms will be subject to new Senior Managers and Certification Regimes. These regimes will require firms to allocate clearly responsibilities to specific senior individuals, including those at the very top of firms, and hold them directly accountable for failures in their areas of responsibility.

FEMR recommends the expansion of the Senior Managers Regime to a wider range of regulated firms active in FICC markets, the extension of criminal sanctions for market abuse to a wider range of FICC instruments, and the consideration of standard regulatory reference templates to prevent individuals with poor conduct records simply moving between firms.

- What else can be done to repair the integrity, credibility and reputation of the professionals working within financial markets?

The role of the Bank of England

The Bank has some specific roles in the provision of infrastructure around markets. It is responsible for the stability of the financial system overall, it provides the infrastructure at the heart of the sterling payments system, it operates in markets to implement monetary policy and provide liquidity support, and it interacts with market participants to gain intelligence that can be used to pursue its objectives of monetary and financial stability. The way in which it performs these roles matters for the resilience, fairness and effectiveness of markets. In addition, the Bank’s important role in markets means its own accountability to Parliament and public and its openness to scrutiny can contribute to the social licence of markets themselves.

The crisis exposed shortcomings in the Bank’s frameworks, operating procedures and governance arrangements. Some of these had become outmoded and were, with hindsight, too informal and incomplete. Since the crisis, they have been updated, delivering formal, transparent and comprehensive frameworks that operate in concert. The Bank’s process of reform has focussed on redressing four shortcomings.

First, the crisis exposed that, like many other authorities, the Bank did not appreciate fully the risky evolution of the financial system, or spot the fault lines in the architecture of regulation in the United Kingdom.

Now, through the Financial Policy Committee (FPC), the Bank has a statutory responsibility to identify, monitor and take action to remove or reduce systemic risks. It has a mandate to look
beyond the core of the system to new and emerging risks outside and ensure that the scope of regulation is responsive to these emerging threats. The Prudential Regulation Authority (PRA) now is the prudential regulator for important firms in the financial system. To maximise the advantages of its new responsibilities the Bank has adopted a ‘One Bank’ strategy, ensuring its wide range of functions are operated in concert, thereby avoiding underlaps that characterised the United Kingdom’s regulatory regime in the run-up to the crisis.

Second, before the crisis, the Bank’s framework for providing liquidity insurance had not kept pace with the needs of markets and intermediaries. It did not define a mechanism to support a banking system facing a sharp reduction in the liquidity of its collateral and a shortening in the term of its wholesale funding, and was also unable to stabilise overnight interest rates in these circumstances. That hindered the effectiveness of the Bank’s response in the early phase of the crisis, and was overcome only through the commitment of Bank staff to innovate continuously in difficult circumstances to more effectively meet the liquidity needs of the banking system.

The lessons of the crisis and results of that innovation are embedded in a thoroughly overhauled and comprehensive framework for market operations, through which the Bank lends against a wider range of collateral, to more counterparties, and at longer terms. Broker-dealers and central counterparties are now eligible participants and the Bank has also made clear that it stands ready to act, as appropriate, as a ‘Market Maker of Last Resort’.

Third, although there is no suggestion that any Bank official was involved in or was aware of specific improper behaviour in markets, the Bank’s framework for ‘market intelligence’ failed to ensure that all concerns about the potential for misconduct in some market practices and structures were dealt with appropriately. Some market intelligence that might have been of use to the conduct regulator was not appropriately escalated within the Bank or passed on.

In response to the broadening of its responsibilities and an independent review conducted by Lord Grabiner QC, the Bank has overhauled its framework for interacting with market participants.² Ambiguities about the roles and responsibilities of Bank officials have been removed; governance established to focus the market intelligence programme, and procedures have been strengthened. Record keeping and escalation practices have been substantially reinforced, including through a strengthened compliance function. Where intelligence relating to market conduct or the potential for it is obtained, the Bank intends to share that information promptly to support conduct regulators in forward-looking supervision.

Fourth, the shortcomings in the Bank of England’s governance arrangements, highlighted by the Treasury Committee in 2011, were detrimental not just to the accountability of the Bank, but also to the social licence of markets overall.

Since then, the Bank’s governance arrangements have been reshaped, most importantly with the Financial Services Act (2012). The Bank’s Court (its Board of Directors) has been strengthened. Its members have formal powers to observe meetings of the Bank’s policy committees and to commission reviews into the Bank’s performance, and it has become more transparent, publishing minutes of its meetings with a short delay.

More recently, non-executive directors have been able to draw on an independent evaluation office that reports directly to the non-executive Chairman. The Court has released minutes of meetings held during the financial crisis. And to enhance transparency further, the minutes of the Bank’s Monetary Policy Committee (MPC) will be published alongside the announcement of the MPC’s decision. Transcripts of the policy meeting will be kept and released after an eight-year delay, alongside the key staff inputs to the meeting.

The Bank has also opened itself to greater external scrutiny and review. A series of external reviews, starting in 2012 and tackling some difficult issues for the Bank, have been commissioned and published, and the Bank has taken appropriate action in response to the conclusions of these external reviews. As this paper explains, its senior managers are expected to meet the same standards of professional conduct required elsewhere and will be held accountable for functions they direct. The Bank therefore intends to apply the core principles of the Senior Managers Regime to its own senior managers. In line with PRA rules, this applies primarily to the Governor and Deputy Governors, the Chair of Court, and members of Court who chair certain operational committees.

The Government has announced its intention to introduce legislation into Parliament to formalise many of the Bank’s proposals to lock in the improvements to governance and transparency.

- Looking ahead, how should the Bank’s market operations continue to develop?
- How might the Bank expand its assessment of and deal with risks outside the core of the banking system, including through stress testing?
- More generally, are there steps the Bank could take to support the on-going development of infrastructure around markets more effectively?
- Are there additional measures that could enhance the Bank’s governance and transparency further?

The Open Forum is itself an example of the Bank’s commitment to delivering its responsibilities in an open and transparent way. The Bank welcomes feedback on its analysis and the questions it poses for the future.
1. An Open Forum

1.1 Why markets matter

1. Financial markets can and should be powerful drivers of prosperity.

2. Markets finance growth. They intermediate between savers and borrowers, reward prudent risk-taking by savers and provide finance so that companies can hire, invest, innovate and expand.

3. Markets are critical complements to the banking system. They create diverse sources of finance and make access to credit more reliable. In fact, virtually all of the net increase in credit extended in advanced economies since the crisis has been through capital markets rather than banks.

4. Markets transfer risks to those most able to bear them. Credit risk and market risk is transferred through swaps; tail risks through options; and ‘real’ risks through products such as catastrophe or longevity bonds. By doing so, markets lower the costs faced by the real economy, whether in taking out a mortgage, saving for retirement or insuring a property.

5. Markets transform risks. They pool them to provide diversification benefits, such as through securitisation or mutual funds. And they can tranche risks to allow investors with different risk appetites to take on different degrees of risk, for example through the availability of different types of capital instrument.

6. And markets open up cross-border trade and investment opportunities for businesses and savers.

7. Much of this activity either happens in or depends on fixed income, currency and commodity (FICC) markets. These crucial markets are global in scope and size. Turnover in foreign exchange markets is some $5 trillion a day; the global stock of corporate, financial and government bonds is nearly $100 trillion; and FICC ‘over the counter’ (OTC) derivatives amount to some $620 trillion in notional terms.

8. What happens in wholesale FICC markets affects everyone. These markets help establish the borrowing costs of households, companies and governments. They establish the exchange rates we use when we travel or buy and sell goods from abroad. They determine the cost of food and raw materials. And they enable companies to manage the financial risks they incur through investment, production and trade. These markets have become ever more important to individuals as reforms over decades have delegated responsibility, opportunity and risk to citizens. People are increasingly responsible for financing their retirements and insuring against risks. The suitability of their
decisions will depend heavily on markets. It is therefore vital that FICC markets work well and that they are seen to do so.

9. The United Kingdom’s specialism in financial services means that its financial markets make a particular contribution to prosperity not just in the UK, but also in the global economy.

10. Hosting one of the foremost global financial centres broadens the investment opportunities for the institutions that look after British savings, and it reinforces the ability of UK manufacturing, creative and service industries to compete globally. Moreover, the United Kingdom’s financial markets directly support and grow jobs, incomes and exports in financial services. Financial firms employ around a third of a million people in London alone, and a further two thirds of a million across the country. They contribute 14% of our total exports and make a net contribution of £58bn to the UK trade position, the largest of any sector.

11. The United Kingdom’s financial sector also serves the global economy, connecting global commerce and driving global growth. The United Kingdom is the venue for 40% of foreign exchange trading, half of trades in over-the-counter interest rate derivatives and more than two-thirds of trading in international bonds. It is home to more than 250 foreign banks, and more international banking activity is booked in London than anywhere else. The United Kingdom hosts the world’s third largest insurance sector and the second largest investment industry.

12. London has long been at the centre of financial innovation to meet the evolving needs of individuals, companies and countries. From Eurobonds to emerging market debt instruments and credit derivatives to centralised clearing, the United Kingdom has played a leading role in developing new financial products and markets that contribute to prosperity.

13. Over the longer term, markets based in the United Kingdom will remain critical determinants of prosperity in the global economy. The size and importance of UK financial markets is likely to continue to grow. For example, if the United Kingdom maintains its market share in global finance, and the long-running trend towards global financial deepening continues, the size of the UK-based non-bank financial system could increase from a little over six times UK GDP to nearly fifteen times UK GDP by 2050.


15. But markets can go wrong. Left unattended, they can be prone to excess, instability, and abuse.

1.2 Ensuring real markets that contribute to prosperity

16. The crisis and its aftermath exposed that many FICC markets were:
• **Fragile.** There were widespread instances either of virtual closure or severe illiquidity in markets.

• **Unfair.** Numerous instances of misconduct have been revealed, including manipulation of price benchmarks, misuse of confidential information, misleading clients about the nature of assets sold to them, and outright collusion amongst market participants.

• **Unaccountable.** Few market participants bore the consequences of their actions because governance and remuneration arrangements were lacking.

• **Ineffective.** Risks turned out to be poorly understood, were mispriced, and were not transferred as intended.

17. These failings have had enormous economic consequences. Markets seized up. Borrowing costs rose sharply and credit was restricted. Companies held back productive investments. Jobs were lost in the United Kingdom and around the world. Moreover, manifest unfairness and lack of accountability undermined trust that markets were operating in society’s interest, threatening their ability to operate, innovate and grow.

18. Many of the deficiencies exposed by the crisis have now been addressed by a wide-ranging programme of reform, at the Bank of England itself, in the UK financial system, and at the global level. The size of its financial system and its impact on the global economy mean that UK authorities and market participants have a particular responsibility. That is why they have been heavily involved in the process of global financial reform and will continue to be involved.

19. To promote prosperity, markets must meet two conditions: they must be effective – ensuring competitive pricing and proper allocation of capital and risks; and they must maintain their social licence – the consent of society to operate and innovate (Figure 1).

20. The basic building blocks of effective markets are resilience and fairness. Resilient markets provide predictable access and liquidity for funding, investing, saving and risk transfer, and are underpinned by robust infrastructure. Fair markets have clear and consistently applied standards, are open and transparent, and have participants who act with integrity and compete on merit. But effectiveness goes beyond resilience and fairness: markets must also price and allocate capital and risks as efficiently as possible. That means they must:

• **Efficiently match savers and borrowers.** This ‘allocative efficiency’ ensures savings are allocated towards the most productive investments and thereby support economic growth.

• **Properly allocate risks** to those most able to bear them, thereby supporting economic stability. This requires reliable and understandable information about the risk characteristics of financial instruments, including information on liquidity and credit risks. And the transfer of risk itself must be reliable and transparent.
• Allow market participants to trade at competitive prices, set through a price discovery process reflecting the current and expected balance of supply and demand. Effective markets therefore channel cost-effective funding to corporates and offer households savings opportunities with appropriate risks and rewards.

• Be globally competitive. Competitive standards should be applied across jurisdictions, avoiding regulatory arbitrage and delivering appropriate international as well as domestic risk sharing.

21. In addition, markets contribute fully to prosperity only when they maintain the consent of society to operate. The foundations of social licence are fairness and accountability. It is not enough for market participants to meet the letter of regulations – they must act, and be seen to act, in accordance with the spirit of standards and codes, and the values of society, if they are to merit its trust. Accountability means that individuals, firms and authorities must be open to scrutiny and held responsible for their actions.

22. Effectiveness and social licence – and hence the full benefits of markets – require robust infrastructure. This has both ‘hard’ and ‘soft’ elements.

23. A market’s hard infrastructure is its mechanics. These include: mechanisms that execute transactions, such as exchanges; facilities that establish prices, such as central limit order books; arrangements that clear and settle trades; and agreements that manage risks in open positions, such as credit support annexes.

24. The soft infrastructure of markets determines how market participants interact. Soft infrastructure includes the availability of information for participants to make informed decisions; standards and codes of conduct; and prudential as well as conduct regulation.

25. The quality of this infrastructure determines how well markets function. If well-structured and reliable it delivers markets that are resilient, fair, effective, accountable, and that retain their social licence.

26. The crisis exposed that innovation had been allowed to proceed ahead of the necessary infrastructure, in the belief that a move towards more complete markets would always be beneficial, without sufficient appreciation of the risks that could arise. These issues together came to a head most obviously in FICC markets. Growth in these markets had been rapid and historically they had relied more heavily on bilateral trading and on informal codes and understandings than other more intensively regulated markets such as equities.

27. Why did the infrastructure fail to develop and allow these failures in markets to happen? Three drivers were important.
28. First, left unattended, infrastructure tends to lag behind market innovation. Markets create strong incentives for participants to innovate to meet new demands. Those who spot and take advantage of opportunities are well rewarded. But these rewards are unlikely to take account of the broader systemic consequences of new developments. Robust infrastructure is a public good – it brings social net benefits that no individual necessarily has an incentive to pursue on their own.

29. Infrastructure is therefore likely to be underprovided by the market. This bias to under provision is reinforced by the reality that markets prefer stable infrastructure against which to develop new products. Gaps between markets and their supporting infrastructure tend to grow with time. When innovations are in their infancy, this discrepancy matters little, but once adoption becomes widespread, such gaps can grow large enough to undermine the effectiveness and social licence of markets. That was evident particularly in FICC markets where growth had been fastest prior to the crisis – for example in asset backed securitisation, where global gross issuance increased by a factor of around five in the seven years to 2007.

30. Second, the tendency to underprovide infrastructure was accentuated by the fact that many market participants took the system for granted, and lacked a broader sense of responsibility. Ultimately a balance between market dynamism and the maintenance of resilient, effective and fair markets can only be maintained if there is a sense of responsibility amongst all market actors for the broad, system-wide consequences of their actions. This ‘sense of the systemic’ is a crucial part of the soft infrastructure of markets, and was largely absent from FICC markets.

31. Third, these factors were aggravated by a widespread intellectual failing, shared by the authorities, which placed excessive faith in markets. That was manifested, for example, in light-touch regulation, the belief that bubbles could not be identified and the expectation that markets always clear. And it was underpinned by a rich body of economic thinking that emphasised the role of free markets in promoting allocative efficiency.\(^3\) Markets built for a textbook rational world failed when the inevitable bouts of irrationality – exuberance and panic – put them to the test.

32. There is now a widespread recognition of the need for the infrastructure around FICC markets to catch up, and keep pace, with the development of those markets. In response a wide-ranging programme of reform has been undertaken. Although much public focus has been placed on necessary post-crisis reforms to the core banking system, a wide range of reforms have at the same time increased the effectiveness and reinforced the social licence of FICC markets. The international reform agenda has substantially increased the resilience and effectiveness of markets. With the recommendations of the Fair and Effective Markets Review (FEMR), published alongside this document, reforms are now in train to further promote fairness, effectiveness and accountability.

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33. With a full programme in place and much already having been achieved, now is the time to take stock of the reforms as a whole and to discuss the way forward. Ensuring markets contribute to prosperity is not an exercise with a defined end point, but rather a continuous process to update the infrastructure around markets as they innovate and evolve. Markets are growing in importance as providers of credit to the real economy and the response to reforms, changes to business models and new technologies are creating opportunities and challenges. Now is the time to debate questions, such as:

- Are reforms creating the soft and hard infrastructure to ensure FICC markets are effective and retain their social licence?
- Where has too little been done? In some areas, might reform have gone too far?
- Does the reform agenda form a coherent whole or are there gaps and inconsistencies?
- How should the programme of reform be made dynamic and adaptive to current and future innovations in markets?

34. This is a task in which all market actors, regulatory authorities and stakeholders should engage. Recognising that markets do not exist in a vacuum and the need for its role to be transparent, the Bank is committed to bringing together a wide range of stakeholders to take stock of the future of markets and discuss the way forward. This will take place at an Open Forum, hosted by the Bank of England, in the autumn of this year. All will be invited to contribute their perspectives.

35. The Open Forum will bring together policymakers, financial market participants and users, academics, media representatives and wider society. All of these parties have a stake in well-functioning financial markets. But, at least historically, only some have had a say in their evolution. The Open Forum intends to change that.

36. Central banks, by virtue of their responsibilities and powers, have an important role to play in ensuring the effective functioning of markets, even when they do not regulate market conduct or markets per se. The Bank of England has neither of these responsibilities, but it does have a statutory responsibility to protect and enhance the stability of the financial system overall in the United Kingdom. It therefore has an interest in catalysing necessary changes and in supporting other authorities and market participants to build real markets. In addition to catalysing the process, the Bank will have a role in delivering the forward agenda. However, much of that forward agenda will fall beyond its purview and will require the engagement of other UK authorities, market participants and, where global action is warranted, international counterparts.

37. The Bank has a direct role in building its own frameworks, operating procedures and governance to support the effectiveness and social licence of markets. The crisis exposed shortcomings in these too. The Bank, working with HM Treasury and other authorities, has
overhauled its oversight of the financial system, its market operations, its interactions with market participants to gather intelligence, and its own governance and transparency.

38. To support the Open Forum, the Bank of England sets out in this paper its analysis of what went wrong with FICC markets, as well as shortcomings in its own frameworks and operating procedures during the crisis, what is being done to correct those failings and what challenges remain.

39. This document draws out questions about how hard and soft infrastructures of all types should continue to evolve. They are collected together at the end of the document to inform the agenda for the Open Forum. The Bank has convened a small Steering Committee,\(^4\) drawing on representatives from financial markets, industry, the media, academia, civil society and the policymaking communities, who will bring their diverse skills and experience to bear on setting the agenda for the Open Forum.

40. The remainder of this document is divided into two main parts, focusing respectively on building effective markets and on maintaining their social licence.

\(^4\) See Annex 2 for membership of the Open Forum Steering Committee.
2. Building Effective Markets

2.1 Building resilient markets

41. Resilient markets are underpinned by robust infrastructure to provide predictable access and liquidity for funding, investing, saving and risk transfer.

2.1.1 What went wrong?

42. During the crisis, core markets proved fragile, with widespread instances either of virtual closure or severe illiquidity. Instances of market closure primarily related to funding markets where there were questions about the solvency of entities being funded (such as banks and structured investment vehicles (SIVs)). Instances of illiquidity, meanwhile, revealed a more fundamental problem of inadequate market infrastructure. This was most obviously manifest in the dependence of market functioning on both a concentrated set of core participants and confidence in their safety and soundness – as the crisis hit, dealer fragilities were revealed.

43. Dealers were unable to provide liquidity services to the markets precisely when they were most needed. This was due in part to their exposure to market risk, a consequence in many cases of poor risk management and ineffective regulation, and in part to their counterparty risk exposures and interconnections, exacerbated by a lack of transparency about both the network of exposures and the true capitalisation of the dealers. With dealer balance sheets compromised, the securities financing markets were further affected, thereby creating a pro-cyclicality in the functioning of financial markets more generally. While many large investors, such as investment funds and pension funds, were unaffected, others who were reliant on short-term funding were forced to sell assets at a discount. This dynamic was intensified by inadequate collateralisation practices in the securities financing markets.

Market closure and illiquidity

44. Sustained market closure is a relatively rare occurrence. Even during the crisis the main instances of virtual closure can be largely explained in terms of (perceived) fundamentals, including funding markets where there were questions about the solvency of entities being funded. For example, the bank wholesale funding market ceased functioning for long periods due to the direct exposure to the troubled banking sector. Such exposure can also explain, at least partially, the closure of all but the simplest securitisation markets. But markets for securitised assets have yet to recover to anything close to pre-crisis averages (Chart 1), even as concerns over the banking sector have abated. This suggests other forces at work.
45. As discussed in Section 2.3, the securitisation markets that thrived during the early part of the century proved ineffective along a number of dimensions. As this was exposed through the crisis, another inherent fragility was revealed, namely the reliance of these markets on the activities of so-called ‘shadow banks’, which took on bank-like risks but without regulatory standards equivalent to banks. First, securitisations were supported by demand from ‘conduits’ and structured investment vehicles, which funded long-term securitised assets with short-term asset-backed commercial paper (ABCP). Second, the significant expansion in the ABCP market during the 2000s was largely driven by US and European money market funds (MMFs), themselves subject to ‘run risk’. Amounts outstanding of ABCP fell rapidly as the crisis hit, as questions arose about the value of the underlying securitised assets and MMFs sought to protect their own balance sheets. The collapse of the SIVs withdrew a substantial source of demand for securitisations (Chart 2) and of credit protection against the underlying loans for some banks.

**Chart 1: Gross issuance of securitisations**

![Chart 1: Gross issuance of securitisations](image1)

Source: Dealogic.
(a) ABS/MBS issued by private companies.

**Chart 2: US commercial paper outstanding**

![Chart 2: US commercial paper outstanding](image2)

Source: SIFMA.

46. But even markets that did not directly expose investors to risky entities were disrupted to some degree. The foreign exchange markets, for example, are often considered to be one of the most liquid markets, but even foreign exchange bid-ask spreads spiked dramatically from low levels (Chart 3). Similarly, in the most liquid fixed income market, the US treasury market, liquidity was severely constrained as evidenced by the marked rise in the spread between yields on off-the-run and on-the-run US treasuries (Chart 4). While these core markets continued to function even given liquidity strains, other markets did not fare so well.

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5 The term ‘shadow banks’ is sometimes used to encompass all investors operating outside the banking system. In the current context, it is meant to refer only to those investors that relied on potentially flighty sources of short-term funding, such as money market mutual funds and structured investment vehicles. Real money investors and hedge funds using gates to moderate redemptions are not included.
Chart 3: Bid-ask spreads on dollar exchange rates\(^{(a)}\)

Source: Bloomberg.
\(\text{(a)}\) Bid-ask spread calculated as a percentage of midprice. One-month moving average.

Chart 4: On-the-run / off-the-run spread on US treasuries\(^{(a)}\)

Sources: Federal Reserve, Thomson Reuters Datastream and Bank calculations.
\(\text{(a)}\) 22-day moving average of off-the-run ten-year estimated US treasury yield minus on-the-run ten-year US treasury yield.

47. Spreads in the world’s deepest investment grade corporate bond market – the US dollar-denominated market – spiked up to unprecedented levels. This was driven in part by changing perceptions of credit risk, but primarily reflected a reappraisal of the compensation required for illiquidity (Chart 5), as perceptions previously held concerning the resilience of market functioning proved fragile. This effect was more prevalent for lower quality credits and was repeated across the globe. For example, the spread on BBB-rated UK corporate bonds increased five-fold, from around 500bp before the failure of Lehman Brothers to around 2500bp in early 2009.

Chart 5: US investment grade bond-CDS basis\(^{(a)}\)

Sources: JP Morgan Dataquery, Bank of America Merrill Lynch and Bank calculations.
\(\text{(a)}\) The difference between option-adjusted non-financial bond spreads and CDS premia for investment-grade corporate bond indices of approximately matched duration and maturity.

Chart 6: Net corporate bond issuance\(^{(a)}\)

Source: Dealogic.
\(\text{(a)}\) Investment-grade, high-yield bond and medium-term notes gross issuance by private companies.

48. Importantly, the dislocation in secondary market global corporate bond prices fed back onto the primary issuance markets. While these markets did not close, they were clearly impaired. Net issuance, which is a good indicator of credit conditions in these markets, fell sharply towards the end
of 2007 and 2008 (Chart 6). As the large swings in liquidity premiums moderated, net issuance picked up, but conditions clearly remained fragile for some time.

49. These inherent vulnerabilities point to an inadequate market infrastructure. The functioning of markets was largely dependent both upon the behaviour of a concentrated set of core participants and confidence in their safety. There was a relative lack of hard infrastructure that could serve to break, or at least moderate, the link that existed between these key intermediaries and certain markets.

Dealer fragilities

50. Even securities that are traded on an exchange rely to some extent on the participation of a relatively small set of institutions, namely dealers, to provide liquidity. But this dependency was shown by the crisis to be most acute for those assets overwhelmingly traded over-the-counter. The provision of market-making and other liquidity services for such instruments proved to be vulnerable, as the intermediaries upon which real money investors and hedge funds relied were themselves exposed to the turmoil in markets. Forced to defend their own balance sheets, their actions served to amplify further, rather than dampen, the fragility of certain markets, including those vital to the real economy.

Market risk

51. One important source of fragility was the proprietary trading of dealers who acted as market makers, exposing them to significant market risk.

52. The primary function of a market-making intermediary is to facilitate the efficient matching of buyers and sellers. In doing so, they are compensated by their clients for the cost of holding inventory. But many of these institutions also took directional positions in securities, materially exposing their own balance sheets to sudden changes in market prices. This is clearly indicated through the data collected by the Federal Reserve Bank of New York on dealer net positions. In the run up to the crisis, over a period from end-2001 to end-2007, net positions in the fixed income markets of the 22-24 US primary dealers increased more than three-fold, from $109bn to $365bn (Chart 7). And this increase was dominated by a rise in relatively less liquid assets, namely corporate securities (which included all securitisations other than Agency mortgaged-backed securities), inventories of which rose more than five-fold, from $51bn to $265bn. This was accompanied by significant increases in the value of corporate securities both received as collateral (increasing 250% from end-2001 to end-2007) and placed as collateral (increasing 330%).

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6 In 2003, there were 22 primary dealers: ABN AMRO, BNP Paribas, Banc of America Securities, Banc One Capital Markets, Barclays Capital, Bear Stearns, CIBC, Credit Suisse, Daiwa, Deutsche, Dresdner, Goldman Sachs, Greenwich Capital Markets, HSBC, JP Morgan, Lehman Brothers, Merrill Lynch, Mizuho Securities, Morgan Stanley, Nomura, Salomon Smith Barney and UBS Warburg. Countrywide was added in 2004 and Cantor Fitzgerald in 2006. ABN Amro was withdrawn in 2006 and CIBC in early 2007.
53. An important question is to what extent this could be explained by the US primary dealers’ role as market makers. Certainly, over that same period the corporate bond market as a whole grew rapidly, not only reflecting the importance of this market for financing the real economy, but also implying an increased demand for liquidity services. But the evidence would suggest that the rise in net positions far outstripped that needed for inventories. For example, the value of transactions in corporate securities reported by the US primary dealers grew by only 192% from end-2002 to mid-2007 (Chart 8). Consequently, the churn rate – the value of transactions per inventory stock – fell by around 25% from 1.4 to 1.06, with much of this disconnect occurring during 2007.

54. While similar data are not available for entities operating outside the United States, given that the US primary dealers are largely global entities, it is reasonable to assume a similar pattern of trading behaviour elsewhere, including London. Certainly, the Bank of England’s Financial Stability Report highlighted the rapid increase of traded assets across the consolidated balance sheets of large complex financial institutions at the time.7

Chart 7: US primary dealer fixed-income inventories8

Chart 8: Corporate bonds – net positions versus transactions (Indexed start of January 2002=100)

Source: Federal Reserve Bank of New York.
(a) Data categories have varied over time. Data consolidated to provide a consistent view over the period. But note that ‘MBS’ includes only Agency MBS prior to April 2013. All other securitisations are included in ‘Corporate’.

55. The fact that dealers were able to build up such large net positions in itself revealed other serious flaws in the infrastructure – regarding risk management and regulation. For example, the Market Risk Amendment to Basel I, enacted in 1996, enabled a substantial reduction in the capital held against trading book assets. Banks were allowed to calculate capital charges for market risk based upon Value-at-Risk (VaR) models, which tended to rely on relatively short periods of historical data that would not envisage a fall in prices commensurate with the huge spike in liquidity premia

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noted above. Moreover, VaRs were commonly calibrated on a 10-day holding period, implicitly assuming there would be sufficient market liquidity to exit positions over such a period. Among other things, this assumption did not take into account the fact that large proprietary positions – and often in complex instruments such as retained super senior tranches of collateralised debt obligations – would be built up by the very firms who were supposed to be providing liquidity to the market. Finally, there was no internationally harmonised leverage ratio to guard against uncertainties in risk modelling and excessive balance sheet ‘stretch’.

56. The consequence of this large increase in proprietary risk was that, as corporate securities prices fell, key intermediaries incurred larger marked-to-market losses than they would if they had focused on market-making activity alone. Consequently, they were forced to liquidate their positions; by the end of 2008, the corporate securities inventories of the US primary dealers had more than halved, to $111bn (Chart 9). This deleveraging was undertaken during a period when US money market funds and hedge funds were also facing outflows and selling positions (Chart 10). Whether by accident or design, the US primary dealers do appear to have absorbed a little of this selling pressure, with net positions in corporate securities spiking up just after the failure of Lehman Brothers (highlighted in Chart 9). But this was only temporary; and looking over a slightly longer time horizon, it is likely that the actions of the US primary dealers added to the downward pressure on corporate securities prices during this time.

Chart 9: US primary dealer deleveraging during the crisis

![Chart 9: US primary dealer deleveraging during the crisis](image)

Source: Federal Reserve Bank of New York.

Chart 10: Global hedge fund and US MMF outflows during the crisis

![Chart 10: Global hedge fund and US MMF outflows during the crisis](image)

Sources: Crane, BarclayHedge and Bank calculations.

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8 The Market Risk Amendment specified that – at a minimum – VaR’s should use a 99th percentile, one-tailed confidence interval prescribed over instantaneous price shocks equivalent to a 10-day movement, with an historical observation window of at least one year.

9 Prior to the crisis, trading book requirements were much lower than banking book requirements. Banks, therefore, had an incentive to build positions in the trading book, which they were allowed to do provided they could show ‘trading intent’. In practice, the crisis showed that trading intent was irrelevant; what was relevant was the underlying liquidity of different asset classes in stressed market conditions.
Counterparty risk

57. A second source of fragility was the exposure of key intermediaries to counterparty risk, through the derivatives and securities financing markets.

58. Similarly to corporate bonds, derivatives provide an essential and direct service to the real economy – in this instance, by allowing businesses to hedge interest rate, credit and other risks. But derivatives also allow those financial intermediaries upon which the market relies to offer this service to take speculative positions, thereby increasing their exposure to these risks. In the three-year run up to the crisis, the gross notional amount outstanding of OTC derivatives more than doubled (Chart 11), which is unlikely to be explained by increased activity in the real economy. The prevailing regulatory capital regime provided insufficient incentive to manage the overall size of these derivatives books. In the absence of significant clearing through central clearing counterparties (CCPs) and collateralisation, such position taking exposed firms to significant counterparty risk.

59. Securities financing markets, meanwhile, are essential to the smooth functioning of the financial system. It is through these markets that leveraged investors – including dealers – fund their purchases of securities; that short selling is facilitated; and that cash-rich financial entities (including commercial banks, US money market mutual funds and cash collateral reinvestment programmes) are able to manage their cash positions. Given that such transactions are collateralised by financial assets, these markets are generally regarded as relatively safe. Nevertheless, there remains some residual exposure to counterparty risk.

60. The importance of counterparty relationships was put into sharp relief by the failure of Lehman Brothers. Even at the outset, the creditworthiness of other dealers with similar businesses and models was called into question, especially where reported capital levels were similar. It was not long before this perceived contagion was made real. As the firm filed for bankruptcy, Lehman’s counterparties closed out their positions, contributing to the disorderly wind-down of its operations. This intensified the contagion experienced through a range of markets in which Lehman Brothers performed critical economic functions. And then to exacerbate matters, counterparties in Europe discovered that the assets they had pledged as collateral against their own risk with Lehman Brothers could not be recovered quickly in bankruptcy, thereby exposing them to liquidity risk.

61. The failure of the firm was also important in itself, undermining perceptions of the integrity of the financial system as a whole. And this was intensified first by a web of interconnections created by the derivatives market, and then by the securities financing markets as collateral inefficiencies were exposed.

10 For example, according to BIS data, the amount of global OTC interest rate derivatives outstanding between reporting dealers and other financial institutions rose from $179 trillion at end-June 2005 to $412 trillion at end-June 2008. Over the same period, amounts outstanding with non-financial customers rose from $26 trillion to $46 trillion.
Interconnections

62. The speculative behaviour of dealers in the OTC derivative markets resulted in a complex web of counterparty exposures between a relatively small set of core intermediaries. As perceptions of credit risk deteriorated following the failure of Lehman Brothers (Chart 12), the value of derivative assets held by each dealer fell, incurring marked-to-market losses. A feedback loop emerged between leverage and counterparty credit risk, whereby a deterioration in the credit risk of one institution impacted the solvency of every other.

(a) The classification of bank failure is based on Laeven and Valencia (2010), updated to reflect failure or government intervention since August 2009.
(b) Total assets have been adjusted on a best-efforts basis to achieve comparability between institutions reporting under US GAAP and IFRS.

63. This was exacerbated by a marked lack of transparency both around the network and the initial solvency positions of firms. While institutions could calculate their exposures to their immediate counterparties, they did not know if those counterparties were financially sound. Reported risk-based capital ratios failed to isolate the most fragile of institutions (Chart 13). Many such institutions already had high leverage (Chart 14) and this ballooned further via the network of exposures. In many cases, institutions requested additional collateral or simply closed out positions for which they were ‘in the money’, in both cases creating liquidity problems for their counterparties. And since it was impossible to assess the exposure of any one node within the network, there was a loss of confidence in the sector as a whole.

**Inadequate collateral and procyclicality in financing markets**

64. This loss of confidence further manifested itself in securities financing markets, revealing a strong undercurrent of pro-cyclicality in the functioning of financial markets more generally. The fall in asset prices mechanically raised margin calls, but – as concerns around counterparty credit risk emerged – this was exacerbated by an increase in haircuts in bilateral repo markets, particularly for more risky assets, such as equities and securitisations – and this was passed onto other counterparties (Chart 15).

65. Problems with financing against securitisations were particularly acute. In part, this reflected some more fundamental problems with these markets, as described in Section 2.3. But it also exposed an inherent fragility with the use of some securitised assets as collateral. In particular, it transpired that even some of the highest-quality assets were highly sensitive to underlying conditions. Prior to the crisis, this had largely been ignored, in part because investors tended to rely on the ratings of credit rating agencies, and in part due to the activity of monoline insurers. Part of the shadow banking system, these institutions provided credit protection, particularly against more senior tranches, offering additional false comfort. As credit ratings lost credibility and the monolines failed, the value of securitisation collateral became largely unknown. Consequently, lenders in the repo market stopped accepting it as collateral.

66. This dynamic in securities financing markets would have increased the pressure on the dealers to deleverage their balance sheets, with implications not only for their own net positions but also their ability to provide finance to other financial institutions, such as hedge funds. And it is short-term investors such as these that provide the most liquidity to a number of markets, including government bond and securitisation markets. As dealers deleveraged and reduced their reverse repo activity, trading volumes fell – not only for more risky assets such as securitisations, but also US Treasuries (Chart 16). In this way, the defensive actions of dealers spread liquidity issues to a range of markets.
2.1.2 What is being done to build resilient markets?

67. The financial reforms that have been put in place since the onset of the financial crisis have been focussed towards strengthening the core of the financial system, with implications for the provision of market services. These include reforms agreed by the Basel Committee of Banking Supervision (BCBS) as well as additional measures taken by individual jurisdictions. Under the auspices of the G20, the BCBS, International Organization for Securities Commission (IOSCO) and the Financial Stability Board (FSB) have further developed measures to address specific issues related to the functioning of core markets, including those aimed at reducing the network of counterparty credit risk and addressing problems arising from the securities financing markets.

Strengthening the core of the financial system

68. The core of the financial system has been strengthened substantially. Overall, regulatory capital requirements are set to be ten times higher than before the crisis for the most systemically important institutions. The leverage ratio requirement further limits the ability of core intermediaries to assume unlimited amounts of risk, such as that associated with lower margin activity – the aggregate leverage ratio of the world’s largest dealers has increased from less than 2.5% to just over 4.5% (Chart 17). In the United Kingdom, the major UK banks’ trading assets have fallen by almost 30% since 2008, while their intra-financial borrowings stand at 40% of their crisis

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Note that these figures are not quoted on a Basel III basis. Leverage ratios on this basis would be lower.
peak (Chart 18). Meanwhile, liquid assets held on balance sheet of the largest UK banks have increased four-fold.

**Chart 17: Dealers’ leverage ratios**

Sources: SNL, The Banker and Bank calculations.
(a) Leverage ratio defined as reported Tier 1 capital divided by reported total assets, except for Goldman Sachs and Morgan Stanley, where defined as reported common equity divided by total assets.
Dealers are largest 15 banks ranked by trading assets. They are JP Morgan, Goldman Sachs, Bank of America Merrill Lynch, Citigroup, Deutsche Bank, Morgan Stanley, Credit Suisse, Barclays, BNP Paribas, Societe Generale, HSBC, RBS, UBS, Credit Agricole and Mitsubishi UFJ.

**Chart 18: Major UK banks’ intra-financial borrowing**

Source: Published accounts.
(a) The data capture wholesale borrowing, consisting of deposits from banks and non-subordinated securities in issue. It does not include deposits placed by non-bank financials.

69. Key intermediaries are now subject to considerably more stringent rules, limiting their ability to take on excessive risks and offer the illusion of liquidity. Proprietary risk taking has been rendered considerably more expensive or, in the case of the Volcker Rule, has been banned.

70. Looking forward, the Basel Committee’s Fundamental Review of the Trading Book should set new standards in the management and regulation of market risk. Forthcoming implementation of liquidity standards – the liquidity coverage ratio and net stable funding requirement – further aim to ensure that banking intermediaries take a more prudent approach to the liquidity management of their balance sheets.

**Tackling the network of counterparty credit risk**

71. As noted previously, problems associated with the network of counterparty credit risk resulting from derivatives activity were exacerbated by a marked lack of transparency. Recognising this, the G20 has mandated that all derivative contracts should be reported to trade repositories; in the EU, this came into force under European Market Infrastructure Regulation (EMIR) in 2014. At a minimum, this should allow relevant authorities to understand the actual exposures of institutions for which they are responsible. But if this is to mitigate the loss of confidence in all network participants that can arise during times of stress, the data need to be shared. How best to achieve this is an outstanding issue for the FSB to address.
72. The exposure of key intermediaries to counterparty credit risk has also been reduced with a significant and mandatory shift towards the central clearing of OTC derivatives. In this way, the CCP acts as a single counterparty to cleared transactions, thereby eliminating the network of risk between transacting firms for those derivatives. In doing so, aggregate risk is also reduced via the benefits conferred by multilateral netting. Nevertheless, some residual risk remains with core intermediaries exposed to the CCPs, which are made more resilient by initial margins, default funds and, in the United Kingdom at least, access to central bank operations. For those derivative products that are not in an adequately standardised form to be centrally cleared, initial margins are being introduced by end-2016. An analysis by the BIS on behalf of the OTC Derivatives Coordination Group, comprised among others of the Chairs of the BCBS, FSB and IOSCO, confirmed that, in combination, these reforms should substantially reduce the probability of crisis arising from contagion via counterparty credit risk through the network of derivative exposures amongst the G16 dealers.

73. It is important to recognise, however, that not all risks associated with counterparty risk can be eliminated. For example, increases in market volatility can lead CCPs to demand extra collateral as initial margin, which could prove difficult for institutions to meet depending on their access to liquid assets. A demonstration of this was seen during the euro-area crisis of 2011/12; as yields increased on bonds issued by heavily-indebted governments, CCPs increased initial margins, in some cases forcing positions to be unwound and thereby exacerbating the initial increase in yields. To counteract this effect, the international community has signed up to a set of Principals for Financial Market Infrastructure, under which Financial Market Infrastructures (FMIs) are charged with setting haircuts to reduce the need for procyclical adjustments.

74. Recognising the growing systemic importance of FMIs, such as CCPs, it is also important to consider how the risk of infrastructure failure can be mitigated. That begins with good risk management and governance on the part of these institutions. However, even though such institutions are protected by margins, and default funds, the possibility of failure still exists. So there is a need to develop appropriate recovery and resolution tools. Regarding recovery, it is important that CCPs have robust arrangements to enable them to continue to provide critical services in the event of financial distress. In this spirit, the Committee on Payments and Market Infrastructures (CPMI) and the Board of IOSCO have published a report, providing clear guidance to CCPs on how to

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12 In September 2009, G20 Leaders agreed in Pittsburgh that: “All standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest.”

13 In November 2011, G20 Leaders in Cannes further agreed: “We call on the Basel Committee on Banking Supervision (BCBS), the International Organization for Securities Commission (IOSCO) together with other relevant organizations to develop for consultation standards on margining for non-centrally cleared OTC derivatives by June 2012.”


develop their own recovery arrangements. In the United Kingdom, the Bank of England has already put in place requirements for CCPs to have recovery plans and loss allocation arrangements to facilitate recovery. In the case of resolution, the United Kingdom has a domestic resolution regime for CCPs, providing the Bank of England with some of the tools necessary to facilitate resolution of a failing CCP.

75. But there is more to do at the international level. Recognising this, the FSB has published an Annex to its Key Attributes of Effective Resolution Regimes for Financial Institutions which provides guidance on their application to CCPs. Further to this, the FSB is pursuing with CPMI, IOSCO and BCBS a coordinated work plan during 2015 to promote CCP resilience, recovery planning and resolvability, key elements of which include:

- Evaluating existing measures for CCP resilience, including loss absorption capacity, liquidity and stress testing;
- Conducting a stock-take of existing CCP recovery mechanisms, including loss allocation tools, and considering whether there is a need for more granular standards;
- Reviewing existing CCP resolution regimes and resolution planning arrangements, and considering whether there is a need for more granular standards or for additional prefunded capital and liquidity resources in resolution; and
- Analysing the interconnections between CCPs and the banks that are their clearing members, and potential channels for transmission of risk.

76. As was seen during the financial crisis, derivatives have the potential to exacerbate contagion in the event of firm failure. In order to address this issue the FSB, in its Key Attributes for Effective Resolution Regimes, encouraged members to include statutory stays on close out of derivatives in their resolution regimes. Major jurisdictions – in Europe, the United States and Japan – have legislated these powers at national level but this could not address the risk of close out in resolution of cross-border trades under foreign law. To address this, the International Swaps and Derivatives Association (ISDA) and the 18 largest dealer banks worked with regulators to agree a set of amendments to standardised ISDA agreements for a contractual solution that mirrored these statutory stays. Adoption of the new agreement by 18 G-SIBs in November 2014 represented a major fillip for public-private cooperation to solve the problem. The result is that over 90% of OTC derivatives between the largest dealer firms are now subject to stays. The aim now, again working with industry, is to extend the ISDA protocol to other types of agreement (repo and stock lending) and to the rest of the market, buy-side as well as sell-side.

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18 Global Systemically Important Banks.
Securities financing markets

77. Finally, steps have been taken to reduce the likelihood of an excessive reliance of markets on leveraged investors during good times, thereby limiting the impact of their withdrawal in times of stress. In particular, numerical floors on haircuts associated with non-centrally cleared repo transactions between banks are set to be introduced by end-2016. That should help to limit the degree of pro-cyclicality in such financing markets and hence in the asset markets they support. The FSB is further considering the application of numerical floors on haircuts to non-bank-to-non-bank securities financing transactions.

2.1.3 Outstanding Issues

78. In terms of infrastructure, an important outstanding issue relates to the desire for more derivatives to migrate to exchange trading. This was set out as an objective by the G20, but relatively little progress has been made in this area.

79. The securities financing markets remain a core part of the market's infrastructure. The risks associated with the repo and securities lending markets were examined in depth as part of the FSB's shadow banking agenda. But looking forward, it is likely that the nature of the securities financing markets will change – as dealer participation is moderated by regulations, such as the leverage ratio and net stable funding requirement. It is possible that more activity will migrate to other players – such as repo conduits and brokers not regulated as banks. Dealers may also be expected to structure their businesses so as to maximise activity while minimising balance sheet impact. This all has the potential to introduce new risks to the securities financing markets going forward.

80. It is also entirely possible that dealer inventories will turn out to be structurally lower than their previous unsustainable levels. And it may be that dealers are less willing to absorb client trades that are large, or where there is no previously established relationship. However, the market liquidity services they do continue to provide should prove more resilient.

81. Nevertheless there may be more to do in ensuring the resilience of market liquidity across the system as a whole. In the current conjuncture, for example, there are some concerns that the tendency of certain investment funds to provide investors with the option of daily redemption places some markets at 'run risk', whereby selling pressure causes prices to spiral downwards. In this, it is important to recognise that this was not a symptom of the 2007/08 financial crisis. On the contrary, stressed outflows from investment funds such as mutual funds have tended to be low; historically, cumulative net redemptions from corporate bond funds have not exceeded 5.9% of assets under management over any horizon up to one year. But global assets under management

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have increased significantly since the crisis, with the proportion held in open-ended funds approaching one half.

82. While the trend towards greater market-based intermediation through asset management entities is welcome, and should contribute to the overall resilience of the financial system, it is important to ensure that any such risks to market liquidity are properly understood and managed. In this spirit, the FSB has agreed a work plan to identify financial stability risks associated with asset management and market liquidity in fixed income markets. This work will evaluate the role that existing or additional activity-based policy measures could play in mitigating potential risks, and make policy recommendations as necessary.

83. There are broader questions about the extent to which, and reasons why, market liquidity in a range of markets has apparently become more fragile. Recent events in financial markets, including in US Treasury markets in October 2014, have suggested that sudden changes in market conditions can occur in response to modest news. This reduction in liquidity probably stems in part from an observed decline in market-making activities by some dealers, combined with a greater prevalence of high-frequency traders. That in turn is likely to be related to necessary changes in the regulatory framework designed to make dealers more resilient – for example the changes to trading book capital requirements, leverage ratio and forthcoming liquidity regulations. The possibility of unpredictable changes in market liquidity poses a clear risk to financial stability, particularly when market participants take the availability of liquid markets for granted and the potential for illiquidity is not properly priced. It is therefore important to understand the drivers of recent trends in market liquidity – this is a topic the FPC is currently investigating.

2.1.4 Open Forum questions

84. At the Open Forum, the Bank is particularly interested in views on:

- Do authorities have the balance right between strengthening the resilience of the core of the system and potentially increasing relative volatility in fixed income markets? To what extent is market adjustment to these changes still in process and if so, what will the new liquidity equilibrium look like?
- How should risks in parts of the financial sector that have grown in importance since the crisis, such as Asset Management and Central Counterparties, be assessed and managed?
- Are there missing pieces of infrastructure that could be usefully supported and developed, for example, ‘all to all’ trading platforms?
- What further principles should be developed to strengthen risk management of CCPs and transparency around the network of exposures?
- Is there more to do to strengthen the risk management of OTC instruments, for example, should there be a requirement for some repo transactions to be centrally cleared?
2.2 Building fair markets

85. Fair markets should have clear, proportionate and consistently applied standards of market practice, be open and transparent, and have participants who compete on the basis of merit and act with integrity. But, as highlighted by the Fair and Effective Markets Review, trust in the fairness of financial markets has been damaged in recent years by a series of misconduct cases, involving, amongst other things, attempted manipulation of benchmarks and market prices, misuse of confidential information, misrepresentation to clients and attempted collusion.

86. Substantial progress has been made in identifying and addressing these root causes in recent years, by both firms and authorities (see Section 2.2.2). But the Review identified a number of gaps that current reforms do not tackle, and announced a package of recommendations for near-term actions to raise conduct standards (see Section 2.2.3). These were based around four principles:

- **Individuals** active in FICC markets should be more accountable for their actions (discussed in Section 3.1 of this Report);
- **Firms** active in FICC markets should take greater collective responsibility for developing and adhering to clear, widely understood and practical standards of market practice, in regular dialogue with the authorities;
- **The UK authorities** should extend the regulatory perimeter, broaden the regime holding senior management to account and toughen sanctions against misconduct; and
- **International authorities** should collaborate to raise standards in global FICC markets.

87. As the Review noted, even these reforms should not be considered as the end point. A key lesson of the financial crisis was that standards, codes, and norms of conduct failed to keep pace with market innovation. To prevent that recurring, market participants and authorities will need to work together in the years ahead:

- To promote fairer FICC market structures while also enhancing effectiveness (see Section 2.3); and
- To ensure a more forward-looking approach to the identification and mitigation of conduct risks.

2.2.1 What went wrong?

88. Responsibility for misconduct must lie first and foremost with the individuals involved, and their own standards of personal conduct. Firms also have important responsibilities for identifying and controlling the conduct of those individuals. But, over and above this, misconduct has reflected a range of deeper root causes specific to particular markets or business models, including:
• **Market structures** that presented opportunities for abuse, including: poor benchmark design; unmanaged conflicts of interest in intermediaries acting as both principal and agent, exacerbated by horizontal integration across diverse business lines; vulnerabilities to collusion; and thin markets for less liquid assets;

• **Standards of acceptable market practices**, particularly in bilateral over-the-counter markets and less heavily (or un-) regulated instruments including spot foreign exchange (FX), that were sometimes poorly understood or adhered to, short on detail or lacked teeth;

• **Systems of internal governance and control** that placed greater reliance on second and third lines of defence than on trading or desk heads, proved incapable of asserting the interests of firms and the wider market over those of close-knit trading staff, and failed to identify emerging vulnerabilities or ensure that conduct lessons learned in one business line were fully applied elsewhere (see Section 3.1);

• **Limited reinforcement of standards through bilateral market discipline** from sell-side and buy-side firms, or from end-users;

• **Remuneration and incentive schemes** that stressed short-term returns over longer-term value enhancement and good conduct (see Section 3.1); and

• **A culture of impunity** in parts of the market, coloured by a perception that misconduct would go either undetected or unpunished.

89. Taken together, the Fair and Effective Markets Review noted that these factors contributed to a process of ‘ethical drift’, where unethical behaviour went unchecked, and hence became progressively more widespread and accepted as the norm. Some of the vulnerabilities were common across financial markets generally. But others appear to have been concentrated in FICC markets, reflecting the relatively heterogeneous range of instruments and participants, more decentralised market structures, greater cross-border activity, and in some cases, lighter regulatory coverage.

**2.2.2 What is being done to build fair markets?**

90. As documented by the Fair and Effective Markets Review, substantial progress has been made in identifying and addressing these deficiencies in recent years. Major enforcement actions have been carried out in the United Kingdom, the United States, continental Europe and elsewhere. And there has been widespread reform both to regulation – through legislation such as the Market Abuse and European Market Infrastructure Regulations (MAR and EMIR) and the new Markets in Financial Instruments Directive and Regulation (MiFID2) in Europe and the Dodd Frank Act in the United States – and to market and firm-level structures, systems and controls.
91. The design and oversight of many key FICC benchmarks – the proximate source of many of the recent misconduct cases – has been overhauled. That process has included: the 2012 Wheatley reforms to Libor; the 2013 international IOSCO standards; the 2014 FSB reform packages for interest rate and foreign exchange benchmarks, now being implemented in major jurisdictions; the introduction of MAR in Europe, which will make benchmark manipulation a civil offence from 2016; and the prospective EU Benchmarks Regulation. The Review itself recommended in August 2014 that the UK regulatory framework originally applied to Libor, as well as criminal penalties for manipulation, should be extended to cover seven additional major FICC benchmarks. Those provisions came into force on 1 April 2015.

92. Transparency in some FICC markets has improved, and is likely to improve further over time, reflecting a range of regulatory reforms, including: the progressive transfer of derivatives business on to exchanges or electronic platforms as a result of reforms agreed by the G20 in 2009; the extension in 2017 of MiFID2 transparency rules to a wide range of FICC assets; and initiatives to increase transparency in securitisation markets. There has also been heightened interest in industry-led initiatives to increase the use of agency-based, order-driven electronic trading platforms and other forms of transparency-enhancing technology (for example the use of techniques to identify holders of illiquid assets or estimate the fair value price of infrequently-traded instruments). Over time that may help boost fairness and effectiveness for smaller trade sizes in more standardised assets, providing cheaper and faster access to more transparent and broader liquidity pools, with fewer principal/agent conflicts, less discretion and clearer rules.

93. Action against anti-competitive behaviour in FICC markets has been taken by competition authorities in Europe and elsewhere. In the United Kingdom, the Financial Conduct Authority (FCA) has been given new powers to enforce against breaches of competition law. Those powers sit alongside the FCA’s existing competition objective, which the FCA meets by identifying and addressing areas where competition may not be working effectively. The FCA undertook a review of competition in wholesale markets, which concluded in February 2015, and subsequently began a market study into competition in investment and corporate banking.

94. Some standards of market practice have been clarified or strengthened. In March 2015, international foreign exchange committees agreed a new common ‘global preamble’ to national codes governing trading in foreign exchange, setting out shared high-level principles for personal conduct, the handling of confidential information, and execution practices. In the European Union, MAR will extend the coverage of civil market abuse rules to a wider range of FICC markets from July 2016, and MiFID2 will extend and strengthen many conduct of business rules from 2017. Many financial firms have upgraded their internal guidance and training programmes on acceptable

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20 Specifically: the ICE Swap Rate (formally ISDAFix), WM/Reuters London 4pm Closing Spot Rates, SONIA, RONIA, the LBMA Gold Price (formerly the London Gold Fixing), the LMBA Silver Price, and the ICE Brent Index.

trading practices. And, in the United Kingdom, the Banking Standards Board has been established by leading firms to promote high standards of behaviour and competence across the UK banking industry.

95. The framework for ensuring remuneration is aligned with risk has improved significantly. And substantial efforts have been made to improve firms’ internal governance, accountability and control structures. Both of these are discussed in more detail in Section 3.1 of this report.

96. Finally, a number of developments have increased individuals’ perceptions of the probability that misconduct will be detected, and the scale of punishment. Large fines and other enforcement measures have underscored the commitment of the public authorities to tackle wrong-doing. Sell-side firms have invested in larger compliance teams and are starting to develop more sophisticated forms of electronic surveillance of their own staff’s trading and broader behaviours. Market participants report early signs of a greater willingness on the part of some firms to be open about the reasons for disciplining those found to have engaged in misconduct. Whistleblowing arrangements have been strengthened at some firms. And regulators will have access to progressively larger amounts of transaction data in many FICC markets over the coming years from new reporting requirements under EMIR, MiFID2 and other new regulations.

2.2.3 Outstanding issues

97. Taken together, the Fair and Effective Markets Review concluded that the changes listed above should deliver a substantial improvement in fairness and effectiveness over time. However, significant uncertainties remain: for example, on the final shape of regulation such as MiFID2; on the extent of lasting improvements to firms’ systems of control; and on the efficacy and penetration of technological innovation. And more profoundly, the Fair and Effective Markets Review identified a number of gaps that current reforms do not tackle. First, the professionalism and accountability of individuals in FICC markets remains too low and variable. Second, key FICC markets lack effective mechanisms for agreeing, promulgating and adhering to common standards of market practice. Third, gaps remain in the coverage of regulation. And, fourth, there is more to do to raise standards in global markets, including those for spot FX.

98. The Review has published a full package of recommendations for near-term actions to raise conduct standards (set out in full in Box 1). These cover recommendations targeted at:

- **Individuals** - including: the establishment of common standards for trading practices in FICC markets; new expectations for training and qualifications standards; mandated detailed regulatory references; and the extension of UK criminal sanctions for market abuse.

- **Firms** - including the creation of a new FICC Market Standards Board to: scan the horizon and report on emerging risks where market standards could be strengthened; address areas
of uncertainty in specific trading practices; promote adherence to standards; and contribute to international convergence of standards.

- **UK authorities** - including the creation of a new statutory civil and criminal market abuse regime for spot FX (drawing on, amongst other things, work on a global code); ensuring proper market conduct is managed in FICC markets through monitoring compliance with all standards, formal and voluntary, under the Senior Managers and Certification Regimes; and the extension of elements of the Senior Managers and Certification Regimes to a wider range of regulated firms active in FICC markets (see Section 3.1).

- **International authorities** - including agreement on a single global FX code; the exploration of ways to ensure benchmark administrators publish more consistent self-assessments against the IOSCO Principles, and to provide guidance to benchmark users; and the examination of ways to improve the alignment between remuneration and conduct risk (see Section 3.1).

99. In addition, over the medium term, the Review noted that more forward-looking approaches are needed to develop fairer and more effective FICC market structures, and to identify and mitigate new or emerging risks.

### 2.2.4 Open Forum questions

100. At the Open Forum, the Bank is particularly interested in views on:

- **How effective will the internal efforts within firms to boost market standards turn out to be?**
- **What more can be done, by authorities and firms, to ensure that the potential for misconduct is addressed pre-emptively?**
- **Can market transparency be further enhanced without harming market effectiveness?** For example, how can transparency best be enhanced in ways that maintain the benefits of diverse trading platforms, including OTC?
- **Are there any special conduct challenges posed by the rise of new trading technologies or behaviours in FICC markets?**
BOX 1: The Fair and Effective Markets Review’s policy recommendations

Near-term actions to improve conduct in FICC markets:

1. Raise standards, professionalism and accountability of individuals
   a. Develop a set of globally endorsed common standards for trading practices in FICC markets, in language that can be readily understood, and which will be consistently upheld;
   b. Establish new expectations for training and qualifications standards for FICC market personnel, with a requirement for continuing professional development;
   c. Mandate detailed regulatory references to help firms prevent the ‘recycling’ of individuals with poor conduct records between firms;
   d. Extend UK criminal sanctions for market abuse for individuals and firms to a wider range of FICC instruments; and
   e. Lengthen the maximum sentence for criminal market abuse from seven to ten years’ imprisonment.

2. Improve the quality, clarity and market-wide understanding of FICC trading practices
   a. Create a new FICC Market Standards Board with participation from a broad cross-section of global and domestic firms and end-users at the most senior levels, and involving regular dialogue with the authorities, to:
      – Scan the horizon and report on emerging risks where market standards could be strengthened, ensuring a timely response to new trends and threats;
      – Address areas of uncertainty in specific trading practices, by producing guidelines, practical case studies and other materials depending on the regulatory status of each market;
      – Promote adherence to standards, including by sharing and promoting good practices on control and governance structures around FICC business lines; and
      – Contribute to international convergence of standards.

3. Strengthen regulation of FICC markets in the United Kingdom
   a. Extend the UK regulatory framework for benchmarks to cover seven additional major UK FICC benchmarks accepted and implemented by HM Treasury on 1 April 2015;
   b. Create a new statutory civil and criminal market abuse regime for spot foreign exchange, drawing on, among other things, work on a global code (see recommendation 4a);
   c. Ensure proper market conduct is managed in FICC markets through monitoring compliance with all standards, formal and voluntary, under the Senior Managers and Certification Regimes;
   d. Extend elements of the Senior Managers and Certification Regimes to a wider range of regulated firms active in FICC markets; and
   e. Improve firms’ and traders’ awareness of the application of competition law to FICC markets.

4. Launch international action to raise standards in global FICC markets
   a. Agree a single global FX code, providing: principles to govern trading practices and standards for venues; examples and guidelines for behaviours; and tools for promoting adherence. The Review strongly welcomes the recent announcement by central banks to work towards those goals;
   b. As part of that work, improve the controls and transparency around FX market practices, including 'last look' and time stamping;
   c. Explore ways to ensure benchmark administrators publish more consistent self-assessments against the IOSCO Principles, and provide guidance for benchmark users; and
   d. Examine ways to improve the alignment between remuneration and conduct risk at a global level.

Principles to guide a more forward-looking approach to FICC markets:

5. Promoting fairer FICC market structures while also enhancing effectiveness, through:
   a. Improving transparency in ways that also maintain or enhance the benefits of diverse trading models, including over-the-counter;
   b. Promoting choice, diversity and access by monitoring and acting on potential anti-competitive structures or behaviour; and
   c. Catalysing market-led reform held back by private sector co-ordination failures.

6. Forward-looking conduct risk identification and mitigation, through:
   a. Timely identification of conduct risks (and mitigants) posed by existing and emerging market structures or behaviours;
   b. Enhanced surveillance of trading patterns and behaviours by firms and authorities; and
   c. Forward-looking supervision of FICC markets.
2.3 Building effective markets

101. Effective markets are both fair and resilient. Those essential building blocks are necessary but not sufficient. In addition, effective markets have the right infrastructure and they continually innovate to ensure that capital and risks are competitively priced and properly allocated.

2.3.1 What went wrong?

102. During the global financial crisis it became evident that, alongside the fragilities and instances of unfairness already highlighted, markets were ineffective in other important ways.

103. Well-established methods for transferring risk proved to be faulty. Opaque and imperfect risk transfer and pricing inhibited the proper allocation of capital and risk, and left investors unable to assess their exposures. Fundamental flaws were exposed in the ‘originate-to-distribute’ model of lending, including weak monitoring of credit risk. An over-reliance on credit rating agencies helped to mask these issues. Credit creation in the real economy was distorted in favour of too-big-to-fail banks that benefited from an implicit subsidy allowing them to access cheap, abundant wholesale funding. Together, all these factors prevented risks being allocated appropriately, and the efficient matching of savers and borrowers.

Opaque and imperfect risk transfer and pricing

104. In the period leading up to the financial crisis, risks were often distributed through securitisations. Used responsibly, securitisation technology can be a highly effective way of transferring risk to those most able to bear it; under the ‘originate and distribute’ model, banks provide loans and then sell on to outside investors such as pension funds, insurance companies, mutual funds, hedge funds and other banks either the loans in their entirety or simply the credit risk associated with those loans. Moreover, the loan portfolios can be structured into different tranches that can be matched more effectively to investors’ risk appetite. By transferring credit risk to outside investors, banks can reduce their regulatory capital constraints, giving households and firms easier access to credit.

105. However, as is well-documented, there were fundamental flaws in the ‘originate-to-distribute’ model of lending that were highlighted by the role of US subprime securitisation in the crisis.22 In particular, the problems inherent in separating the agents who hold the risk (the investors) from those best able to screen and monitor the risk (the banks who originated the loans) became evident. Weakened monitoring of credit risk further led to adverse selection and moral hazard problems, which reduced credit quality at origination. Investors and ratings agencies were slow to realise these dangers.

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Moreover, increasingly opaque and complex structures limited understanding of what risks were actually being transferred to holders. SIVs and conduits concealed risks. They gave the impression that banks were not on the hook for the liquidity risk of their vehicles, and they gave investors the impression their investments were independent of bank credit risk. Both ultimately proved to be false as banks had to consolidate their SIVs to protect their franchises and reputations, and safeguard investors’ money. These vehicles also had only minimal disclosure of what would prove massive margin calls in distressed situations.

**Overreliance on credit ratings agencies**

Investors were frequently unaware of the underlying risks to which they were exposed and unprepared to bear them. They developed an over-reliance on credit rating agencies, placing too much faith in their analysis and judgment; both were subsequently exposed as agencies proved unable to model some risks, were slow to react to falling credit quality, and were caught out by unexpected changes in asset correlations. These problems were most severe in leveraged securitisation structures, where returns were especially sensitive to the credit performance of the underlying assets. A relatively small but widespread deterioration in the quality of underlying asset pools could lead to default, even for highly rated securities. Three-year default rates on US Collateralised Debt Obligations (CDOs) rated AAA, issued in 2007, exceeded 16% – whereas the default rate on AAA-rated corporate and sovereign bonds was negligible.

Rating agencies also suffered from incentive problems, as they were paid for their services in part by the issuers of the securities they were rating, and enjoyed an oligopolistic position.

In the run-up to the crisis, investors, including banks and insurers, nevertheless took AAA ratings at face value when buying US subprime mortgage-backed securities, and other assets. As a consequence, the securities were often overpriced, with credit, liquidity, correlation and market risks not properly factored in. The financial crisis reflected, in part, market participants re-appraising and re-pricing these risks. This process was amplified by the reliance on credit ratings, which for example were widely referenced in investment mandates

**Chart 19: Anomalies in prices of the ABX subprime index (2007 H1 vintage)**

![Chart](chart.png)

Sources: JPMorgan Chase & Co. and Bank calculations.
(b) For the purposes of this chart, the loss given default rate is assumed to be 50%.
(c) 19 January 2007.
(d) 13 July 2007.
so that, as ratings changed, many investors were forced by those mandates to sell securities. Anomalies in prices developed, reflecting discounts for uncertainty and illiquidity, illustrated for example by the significant variation and inconsistencies between US sub-prime RMBS risk categories (or ‘tranches’) (Chart 19). And there were wider ramifications – as noted previously, the ABCP market seized up, with runs on the money market funds that were invested in it.

**Too-big-to-fail banks distorted the supply of credit to the real economy**

110. Securitisations that appeared to transfer risk from banks’ balance sheets and produce securities of the highest credit quality – but in fact did neither – enabled banks to originate loans at lower lending rates than otherwise. In addition banks benefited from coverage by public deposit insurance schemes, access to central bank finance, and an ability to issue tax-beneficial savings products. These factors all contributed to a credit system skewed in favour of banks.

111. The most obvious distortion to credit supply, however, arose from the fact that large banks were perceived as **too big to fail**. The expectation of public support for these banks in the event of financial difficulties supported their access to wholesale funding, and acted as an implicit subsidy for the cost of that funding. Estimates of the funding cost advantage this conferred on large banks vary, but it might have been of the order of 50bp in the years leading up to the crisis.\(^{23}\) During the crisis it was much larger. For example, it has been estimated that in 2009 it was more than 600bp for the four largest UK banks, or more than £130bn in value terms.\(^{24}\) The perception that banks were too big to fail was a significant distortion to effective competition in the market for supplying credit to the real economy.

112. With these advantages over non-bank sources of finance, UK banks rapidly expanded their balance sheets. A growing gap between customer loans and deposits reflected the increasing role of wholesale funding, much of it ultimately sourced from overseas (Chart 20). The result was an over-reliance on large banks as vehicles for lending, particularly in the United Kingdom and Europe, where capital markets have historically played a lesser role than in the United States.

113. Crucially, that left the broader economy vulnerable to problems in the banking sector. The increasing reliance of banks on wholesale funding sources, including higher-risk short-term funding, made them sensitive – and vulnerable – to changes in the cost and availability of global funding. During the crisis, interbank rates rose sharply (Chart 21) and bank wholesale funding markets – previously highly active and liquid – closed, as explained in Section 2.1. This led to a reduction in the

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supply, and a marked increase in the cost, of new loans, even to higher-quality borrowers. Households and companies in many economies, including the United Kingdom, faced a severe and long-lasting reduction in lending growth because the financial health of domestic and international banks became impaired. Difficulties in obtaining traditional bank credit were particularly problematic for small- and medium-sized enterprises (SMEs) in the United Kingdom because of the lack of alternative market-based sources of finance available to them.

114. In short, a structural over-reliance on banks, and the inability of market-based intermediation to make up the shortfall during the crisis, resulted in a breakdown in the efficient allocation of capital to the real economy.

115. Notwithstanding that many core markets proved fragile during the financial crisis, an important benefit of market-based finance is that it adds diversity to the funding sources available to real economy borrowers. For example, if fewer firms rely on bank finance then the impact on the real economy of problems in the banking sector is reduced; and market-based finance can take up some of the slack in lending. In this vein, the relatively larger role of capital markets compared to banks is arguably one reason why the United States recovered more quickly from the financial crisis than did Europe and the United Kingdom. As banks’ balance sheets there became impaired, causing them to retrench from lending, there was an alternative financing channel available to many borrowers to address the shortfall.

116. Markets have proven a crucial complement to the recovering banking system globally, with virtually all net finance growth since the financial crisis in market-based finance. Non-bank financial sector assets have grown by 130% over the past decade and are now equivalent to 120% of global
GDP. From 2007 to 2013, UK non-financial companies’ outstanding sterling debt securities increased by 56%; and in the United Kingdom and elsewhere, companies’ non-bank debt rose as a proportion of GDP (Chart 22). Moreover, there has been a significant increase in the number of UK firms issuing bonds, with the number of first-time issuers reaching a record high in 2014 (Chart 23).25

117. This highlights how markets can contribute substantially to the functioning of the economy. It also emphasises the importance of efforts to improve the effectiveness of markets, and of broadening access to market-based finance.

Chart 22: Non-financial corporations’ debt securities as a proportion of GDP (a)  

![Chart 22](image)

Source: ONS, OECD and Bank calculations.
(a) Securities other than shares, except financial derivatives

Chart 23: Estimate of the number of UK PNFCs issuing bonds  

![Chart 23](image)

Source: Dealogic and Bank calculations.

2.3.2 What is being done to make markets more effective?

118. The financial reforms that have been put in place by the G20 FSB, BCBS, and IOSCO include a range of measures designed to improve how well risk is understood, priced, managed and distributed by the financial system. In Europe, a positive agenda to improve private sector risk sharing and the matching of savers and borrowers through financial markets is being established under a Capital Markets Union (CMU).26 The Bank of England strongly supports this initiative. And while banks will always remain an essential means of matching savers to borrowers, the distortions inherent in the access they previously enjoyed to cheap sources of wholesale funding have largely been removed.

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Reforming securitisation markets

119. Securitisation remains the primary means by which banking risks can be shared within the financial system, so that a number of reforms have sought to improve the way in which this is done. The introduction of retention requirements, for example, seeks to align incentives between the originators of risk and investors, the ultimate bearers. The safety of securitisation structures has also been strengthened, with BCBS developing the capital framework to ensure implicit offers of contingent support by banks are properly capitalised.

120. Ultimately, if risks are to be matched to those most able to bear them, investors need to understand the risks they are taking. That requires financial instruments where the risk characteristics are known and understood. While the reputation of securitisation was severely tarnished by the financial crisis, as a result of complex and opaque structures and poorly underwritten loans, if properly structured it remains a powerful tool for diversifying bank funding and transferring risk. In addition, well-functioning securitisation markets enable non-bank financial institutions to raise funding for their real economy lending, thereby providing an alternative to bank lending. Recognising the benefits of reviving securitisation markets, as well as the potential risks, the Bank has been working with other authorities internationally to develop simple, transparent and comparable (STC) securitisation markets. Significant progress is being made towards a framework for robust and well-functioning securitisation markets, but there is more to do and efforts in this area are ongoing.

Reducing reliance on ratings agencies

121. Alongside simpler securitisation structures, a reduced reliance on credit ratings agencies should encourage investors to better understand the risks they are exposed to. The important role of rating agencies in determining investment mandates may have the effect of diminishing incentives for investors to undertake their own due diligence, with mechanistic reliance on credit rating agencies (CRAs) at the expense of risk management.

122. In 2010, the FSB issued ‘Principles for Reducing Reliance on CRA Ratings’, which aim at ending mechanistic reliance on CRA ratings. This implies both reducing the hard wiring of credit rating agencies’ ratings in standards and regulations, and creating incentives for market participants to develop their own risk assessment capacity. Accordingly, the EU has adopted new regulations setting standards of integrity, quality and transparency and putting the credit rating agencies under on-going supervision by public authorities. The Bank has also been working to reduce reliance on credit rating agencies. Indeed, the Bank’s collateral eligibility criteria now require ABS issuers to

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make additional information publicly available, including loan level information.\(^{29}\)

**Better disclosure**

123. Investors’ understanding of risk also depends on the availability of information about the liquidity and credit risks of financial instruments. Such information has a public good characteristic and is necessary for markets to function effectively. However some asymmetric information may be needed for markets to function, and additional information is not always welfare improving, as seen for example in trade reporting under MiFID2 which may be negatively impacting on market liquidity. Thus, the right balance will need to be struck between necessary and unnecessary disclosures.

124. An initiative in this direction is the Bank of England’s credit registry agenda, aiming to develop better information on small and medium-sized enterprises’ credit quality.\(^{30}\) This will help investors to assess the risks of lending to these firms, and should support alternative forms of finance and lower the barriers to entry for new credit providers. It could also support securitisation markets in SME loans by allowing investors to understand and price these instruments better.

125. Disclosure also features in CMU, an important element of which is focused on standardising public disclosure across the EU for the issuance of securities. This will enable a better matching of risks across the EU investor base that will contribute to a wider dispersion of credit risk. Moreover, bank consolidation rules will ensure that possible liquidity exposures are properly documented as a way of ensuring that exposures that may arise for reputational reasons or owing to broader exposures are fully disclosed. This should contribute to better management of liquidity risk.

126. More broadly, banks’ overall disclosure has been enhanced on the key risks arising from business models, sources of funding, market risk measures and loan forbearance policies. Much of this has been driven by the FSB and the joint public-private Enhanced Disclosure Task Force (EDTF). Banks in the United Kingdom have implemented 95% of the EDTF’s recommendations.\(^{31,32}\)

**Ending ‘Too Big To Fail’**

127. Eliminating the implicit subsidy enjoyed by banks that are too big to fail is an essential part of ensuring that credit is fairly priced, and ensuring that a diverse range of funding sources is available to borrowers in the real economy.

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\(^{32}\) The Bank of England has encouraged banks not to meet some of the remaining 5% - in order to ensure that banks can continue to receive emergency liquidity support covertly for a period of time. Experience in the crisis demonstrated that an inability to provide liquidity support covertly for a period exacerbated problems. See ‘The run on the Rock’, Treasury Committee Report, January 2008 (page 42). Available at [http://www.publications.parliament.uk/pa/cm200708/cmselect/cmtreasy/56/56i.pdf](http://www.publications.parliament.uk/pa/cm200708/cmselect/cmtreasy/56/56i.pdf).
128. Substantial progress has been made. The FSB has identified systemically important institutions; made them subject to higher standards of resilience (Section 2.1); and developed a range of tools to ensure that, if they do fail, they can be resolved without severe disruption to the financial system and without exposing the taxpayer to loss.33

129. In particular, two agreements reached in 2014 represent a watershed in ending ‘Too Big to Fail’. The first is a proposal for a common international standard on the total loss absorbing capacity that globally systemic banks must have, ensuring that shareholders and creditors who benefit in the normal course of business also absorb losses when banks fail. The second is the industry agreement regarding stays on close out of derivatives described in Section 2.1. This will prevent cross-border derivative contracts being disruptively terminated in the event of a globally systemic bank entering resolution, making cross-border resolution of banks much more realistic, thereby reducing expectations of public support.

130. The sum of measures taken since the financial crisis has markedly reduced the implicit subsidy received by the four largest UK banks, from an estimated £130bn in 2009 to around £10bn in 2013.34

2.3.3 Outstanding issues

131. There is much to do to improve the efficiency with which savers and borrowers are matched and risk is shared between them. Impediments related to the ‘structure’ of the financial system – such as the dominance of bank lending – and ‘market access’ of some potential borrowers – such as those that are too small to attract funding in a cost-effective way – need to be tackled. The international and European dimensions of any such initiatives are also crucial, given the high level of integration of the global financial system. In the context of the CMU, two areas identified as requiring reform are: bringing borrowers to the market and bringing investors to the market. The Fair and Effective Markets Review also highlights areas for further work.

Bringing borrowers to the market

132. Bringing borrowers to the market entails establishing mechanisms allowing households and firms to access financing from market-based sources.

133. The first dimension of this is strengthening direct access to market financing. SMEs struggle to access capital markets in part because their lack of scale makes it too expensive to do so, and because there may be limited information available as to their credit quality. Improving access to both equity and bond finance would help smaller firms to grow. Proposals in this direction include:
i) strengthening the environment for traded equity of smaller companies – by agreeing on a more

proportionate Prospectus Directive while maintaining investor protection, and establishing a strong and trusted brand for venture exchanges\textsuperscript{35} through spreading best practice in governance arrangements; ii) considering the role of angel investors, venture capital and mini bonds; iii) enabling a wider set of investors to access company information; iv) developing a pan-EU private placements market; v) considering tax changes that may support more diversified funding models.

134. The second dimension of this is reinforcing indirect forms of market-based finance, such as via the securitisation market. As noted previously, the Bank has been working to revive simple and transparent securitisation markets to enable the prudent transfer of risk, but there may be more to do in this area.

Bringing investors to the market

135. Bringing investors to the market would complement measures intended to bring borrowers to market. This mainly entails bringing more household and corporate-sector savings towards vehicles that will invest via capital markets, with a particular focus on the diversification of the investor base.

136. Europe is savings-rich. But these savings are concentrated in the banking system supporting assets in excess of 300\% of GDP, compared to 70\% of GDP for the US. A major ambition of CMU should be the development of savings pools outside the banking system, most naturally created by individuals preparing financially for retirement. Pension savings could be incentivised by: i) invigorating on-going efforts in EU Member States to improve financial literacy; ii) exploring behavioural measures such as auto enrolment and matching contributions; iii) improving transparency around fee structures and charges to encourage fund competition and consolidation; iv) encouraging the development of more flexible retirement savings products; and v) considering whether to develop tax transparent funds as a means to encourage pooling of institutional money. That objective can be further supported by new products that match the needs of savers to those of borrowers. For example, as part of the Bank’s CMU proposals,\textsuperscript{36} investment possibilities in closed-end fund structures could be made more attractive to a wider set of investors, by: i) examining whether ELTIFs could be opened to a broader set of investors; ii) assessing whether ELTIFs should be authorised for investment in a wider set of asset classes; iii) monitoring institutional and retail investor uptake of ELTIFs across EU Member States and collecting early feedback; iv) establishing a predictable pipeline of EU infrastructure projects, disseminated via an EU-wide platform, drawing on existing initiatives.

\textsuperscript{35} By venture exchanges, we mean to refer to stock markets such as the Alternative Investment Market (AIM) in London that are aimed specifically at catering for smaller, growth companies.

Fair and Effective Markets Review

137. The Fair and Effective Markets Review has identified a number of areas in which future developments in market structures could support the fairness and hence effectiveness of FICC markets. These are grouped into three themes.

138. First, enhancing transparency in OTC markets in ways that also enhance effectiveness. For markets in Europe falling within the scope of MiFID2, that will require careful calibration of regulatory transparency requirements, to ensure they take due account of market making and the economic reality of the markets in the instruments covered. For markets lying outside the scope of direct regulation, there may be scope to enhance transparency further.

139. The Review’s consultation highlighted a number of areas where, at a minimum, further market-led improvements in transparency would be desirable. These include trading practices in FX markets, such as time stamping trades and ‘last look’, and transparency around: the use of ‘internalisation’, whereby market-makers match trades across their own books rather than through an external broker; trading of some of the more liquid and standardised physical commodities; and the allocation of primary bond issuance.

140. Second, promoting effective competition and market discipline in order to ensure that the full benefits of innovation are realised. For example, innovations in trading technology – such as the increase in the use of transparent, anonymised, all-to-all electronic trading venues – should improve fairness and effectiveness in markets for liquid and standardised assets by increasing choice for market users. Slow adoption of new technology may reflect co-ordination failures but may sometimes be the result of anti-competitive practices on the part of incumbents. The FCA will maintain a watching brief of potential obstacles to the development of all-to-all trading and other innovations, including the possibility of competitive abuse by firms (or their staff) that occupy existing dominant positions.

141. Respondents to the Review also identified other areas where they perceived competition might not be operating effectively. These included: the pricing of investment banking services, including the fees paid on corporate bond issuance; the awareness of how competition law applies to FICC markets; and the effectiveness of market discipline from both the buy and sell side in ensuring competitive outcomes and good standards of market conduct.

142. Third, identifying coordination failures and catalysing reform. A good example is the possible greater standardisation of corporate bonds in order to increase their secondary market liquidity. The Review concluded that there is a case for a market-wide debate about the potential costs and benefits. However, to be effective, these discussions would need to take place across a broad range of market participants and end users, catalysed as appropriate by suitable public authorities — as suggested by the Market Practitioner Panel and Association of Corporate Treasurers...

2.3.4 Open Forum questions

143. At the Open Forum, the Bank is particularly interested in views on:

- Are there new markets that could usefully be catalysed and developed? How can access to market financing be enhanced and pools of savings developed outside the core banking system?
- Are there additional parts of the market infrastructure that should be developed or regulated to ensure that capital is properly allocated and risks are effectively shared?
- Are there additional measures that should be considered to ensure that market participants can trade at competitive prices?
- What is the appropriate balance between further domestic reforms and the need to promote a level playing field at the global level?

144. This and the preceding sections have documented important improvements that have been made, and are being made, in the infrastructure supporting markets, boosting the resilience, fairness and effectiveness of those markets. In many cases the Bank of England has influenced or catalysed the change. The next section focuses instead on the infrastructure supporting market effectiveness that is directly provided by the Bank.

2.4 The Bank of England’s direct contribution to effective markets

145. The Bank of England is neither the conduct regulator nor the regulator of markets per se. However it is responsible for the stability of the financial system overall, and has some specific roles in the provision of infrastructure around markets: it provides the infrastructure at the heart of the sterling payments system; it operates in markets to implement monetary policy and provide liquidity support; and it interacts with market participants to gain intelligence that can be used to pursue its objectives of monetary and financial stability. The way in which it performs these roles matters for the resilience, fairness and effectiveness of markets.

146. The crisis exposed shortcomings in the Bank’s frameworks, operating procedures and governance arrangements. Despite some significant positive changes in the years before the crisis, some of these frameworks had become outmoded and were, with hindsight, too informal and incomplete. Since the crisis, the Bank, working with Parliament, HM Treasury and other authorities, has continued to overhaul them, delivering more formal, transparent and comprehensive frameworks operating in concert. The Bank’s frameworks have been modernised.
147. In particular, the Bank’s powers and approach to regulating the broader financial system, its framework for operating in sterling money markets and its market intelligence gathering function have all been updated.

148. This section explains the deficiencies in the Bank’s frameworks that were exposed by the crisis and the substantial programme of reform that has been undertaken to put them right. Like other parts of the infrastructure around markets, the Bank will need to continue to evolve these frameworks alongside markets themselves, so it also highlights questions about their future evolution.

2.4.1 Moving to a formal, comprehensive and transparent framework for regulating and overseeing the financial system

149. In the decade before the crisis, the Bank had nominal responsibility for “maintaining a broad overview of the financial system as a whole.” However, the Bank had no well-defined formal responsibility for oversight of the financial system. As an HM Treasury report into the ‘tripartite’ regulatory system (made up of the Bank of England, Financial Services Authority and HM Treasury) concluded, responsibilities were distributed across the three authorities and “a major deficiency in the UK’s tripartite system [was] precisely that no authority had clear, overall responsibility for identifying, monitoring and responding to risks building up and fault lines in the system as a whole.” Furthermore, the Bank had no powers with which to take action to mitigate risks arising in the financial system. It was limited to use of its capacity for analysis and powers of persuasion.

150. With only an informal responsibility shared with other authorities, and without powers, the Bank’s focus on financial stability had diminished. It understandably focussed its resources on its formal statutory monetary policy objectives, for which it was regularly held to account. In the five years before the crisis, resources devoted to financial stability were cut by 30%. Bank executives were called to the Treasury Select Committee 64 times between 1997 and 2007 to give evidence on the conduct of monetary policy; not once before 2007 were they asked to give evidence on an inquiry into the Bank’s conduct of its informal financial stability responsibilities.

151. Although it identified some of the problems that contributed to the crisis, the Bank did not appreciate the full extent of the fragilities that were building before the crisis. Like many other authorities the Bank did not take sufficient account of the growth of risk-taking away from the

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37 This was set out in a ‘Memorandum of Understanding between the Bank, HM Treasury and the Financial Services Authority (FSA)’. Available at http://www.bankofengland.co.uk/financialstability/Documents/mou.pdf
balance sheets of major banks and of interconnections that posed systemic risks.\textsuperscript{40,41} In April 2007, for example, the Bank’s \textit{Financial Stability Report} identified increases in risk taking and reductions in depth and quality of risk assessment as drivers of increased vulnerability in the financial system as a whole, but it concluded that “non-UK Large Complex Financial Intermediaries and major UK banks remain highly resilient.”\textsuperscript{42}

152. Furthermore, the Bank did not spot the fault lines in the architecture of regulation. As the Financial Services Authority (FSA) Board Report into the failure of RBS concluded, the approach of the FSA to regulation of individual banks and building societies was flawed.\textsuperscript{43} The Bank did not identify or seek to use its power of influence to catalyse changes to the way microprudential policy was implemented by the FSA, or changes to the regulation of entities and activities outside the core banking system.

153. Reforms have been implemented to address the flaws in the overall architecture of regulation and in the Bank of England’s own operating framework.\textsuperscript{44} Accountability is clear and responsibilities and powers have been aligned. The Bank now has formal responsibility for prudential supervision of deposit takers, major investment firms and insurers and has a clear forward-looking, judgement-led, approach to supervision of those firms.\textsuperscript{45} It supervises financial market infrastructures including payment, clearing and settlement infrastructure. It is the United Kingdom’s formal resolution authority tasked with dealing safely with failing financial firms.

154. Parliament has created a statutory Financial Policy Committee (FPC) in the Bank with a dedicated focus on systemic risks and statutory objectives for identifying, monitoring and taking action to remove or reduce those risks.\textsuperscript{46} The FPC has statutory macroprudential powers to make recommendations, including to regulators, and to use powers of direction over bank capital and leverage requirements and residential owner-occupied mortgage terms.

\textsuperscript{40} Including the IMF in its 2006 Global Financial Stability Report, which praised the distribution of risk around the system. See \url{https://www.imf.org/external/pubs/ft/fsr/2006/02/pdf/chap1.pdf}
\textsuperscript{43} See ‘The failure of the Royal Bank of Scotland’, Financial Services Authority Board, December 2011. Available at \url{http://www.fsa.gov.uk/pubs/other/rbs.pdf}
\textsuperscript{44} The Banking Act 2009 introduced a resolution regime administered by the Bank; it also gave the Bank oversight powers over payment systems, and reformed Court, reducing numbers and providing for a non-executive chairman. The Financial Services Act 2012 (implemented 2013) created the FPC with macro-prudential powers; transferred prudential supervision to the PRA as part of the Bank; gave the Bank powers over clearing and settlement systems; and made further reforms to Court, increasing the oversight powers of the non-executive directors. The Financial Services (Banking Reform) Act 2013 implemented many of the recommendations of the Parliamentary Commission on Banking Standards, including the Senior Managers Regime, and of the Vickers Commission (ring-fencing). See documents available on the PRA’s supervisory approach. Available at \url{http://www.bankofengland.co.uk/pru/Pages/supervision/overview/default.aspx}
\textsuperscript{45} The FPC was created as a Committee of the Bank’s Court. The Bank has now recommended amendments to HMT in the forthcoming Bank of England Bill to make it a Committee of the Bank, like the MPC, and to put the PRA Board on that footing as well.
155. Importantly, the FPC looks beyond that part of the financial system that is subject to prudential regulation. It has the power to provide advice and to recommend to HM Treasury what activities should be regulated and the form that regulation should take. It has committed publicly to doing this at least annually.\(^47\) This is a key part of the regulatory architecture that aims to ensure regulation responds to the evolution of risks.

156. The FPC is now developing its framework for monitoring and mitigating risks that arise outside the core banking system. That involves considering – at both domestic and international levels – what, if any, role stress testing can play in assessing such risks, what policy instruments could mitigate them, and the data that would need to be collected in order to monitor those risks.

157. The Bank has adopted a ‘One Bank’ strategy, ensuring that its new functions are deployed in concert and that the underlaps that characterised the tripartite regime are avoided. The clarity of the new framework also serves to enhance the Bank’s transparency and accountability. The decisions and records of the meetings of the FPC are published. Contingency plans for the crystallisation of specific risks are revealed as soon as their revelation would not itself trigger the risk. In line with that approach, the Bank disclosed the details of its contingency planning around the Scottish referendum in the Record of the FPC policy meeting immediately after the event.\(^48\)

158. The Financial Stability Report is published biannually, meeting a formal statutory requirement to assess the stability of the financial system and risks to it, and to report the FPC’s activities to mitigate those risks. Those Reports are accompanied by Press Conferences led by the Governor. The Governor and Chancellor regularly discuss the risks. Minutes of their discussions of the FSR are published.\(^49\)

159. Reflecting the increased focus on financial stability across the authorities, the Governor and other members of the FPC have been held to account publicly for their assessments and actions. In the past 4 years, the Treasury Committee has held 24 sessions covering the Bank’s conduct of macroprudential supervision.\(^50\)

2.4.2 Moving to a formal, comprehensive and transparent approach to sterling market operations

160. Financial intermediaries typically provide maturity transformation, receiving short-term, liquid, deposits from investors and supplying long-term loans to borrowers. They bear the risk of this maturity mismatch but, in doing so, they provide a vital service to the real economy.

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\(^{50}\) There have been a further 3 hearings on microprudential issues.
161. Eliminating that risk would reduce drastically the availability of finance for real economic activity. So it must be managed. Since Bagehot, central banks have stood ready to provide ‘liquidity insurance’; lending to financial institutions suffering unexpected calls on their short-term liabilities and taking banks’ assets as collateral for those loans.51

162. The crisis revealed that the Bank of England’s framework for providing liquidity insurance had not kept pace with the needs of markets and intermediaries.

163. An overhaul of the Bank’s operating framework in 2006 had created a formal and transparent mechanism for implementing monetary policy, which reduced the volatility of overnight market interest rates substantially. The standard deviation in the spread to Bank Rate of sterling overnight interest rates fell from around 14bps in the two years prior to 2006, to around 5bps in the new regime.

164. But the design of the new regime had not allowed for the possibility of significant, unexpected changes in the banking system’s overall demand for reserve assets. This weakness was first demonstrated in a sudden spike in short-term money market rates during August 2007, when sterling overnight rates rose more than 70bp above Bank Rate, meaning that the rate set by the Bank’s Monetary Policy Committee – and for which it is accountable – was not, for a short period, implemented in practice.

165. More fundamentally for the resilience of markets, however, the 2006 reforms did not extend to putting the provision of liquidity insurance to the financial system on a formal footing. The Bank continued to rely on its traditional policy of “constructive ambiguity.”52 In the absence of robust regulation of the liquidity position of banks, such ambiguity was perceived to minimise any incentive for banks to take excessive liquidity risks and therefore to minimise ‘moral hazard’. But the crisis subsequently showed that ambiguity was not an effective substitute for formal liquidity regulation in limiting moral hazard, and the response of banks betrayed a strong assumption that the central bank would step in with support if necessary.53

166. Without a clearly defined mechanism to provide liquidity insurance, the Bank’s framework was unable effectively to support a banking system facing a sharp reduction in the liquidity of its collateral and a shortening in the term of its wholesale funding, as occurred during the second half of 2007.

167. This deficiency stemmed in part from the absence in the Bank’s framework of mechanisms by which it would lend to banks against collateral other than sovereign debt or in large size for terms longer than one month. The Banks’ key operations offered one-week loans against highly-rated

sovereign collateral. Moreover, the Bank dealt directly only with the 33 largest banks, relying on those counterparties to distribute liquidity to other parts of the system: a mechanism that proved highly unreliable in stressed conditions.

168. As a result, operating within its recently reformed framework, the Bank did not succeed in addressing urgent needs of the financial system in the early stages of the crisis. As the Treasury Committee, in its Report ‘The run on the Rock’ concluded: “in our view, the lack of confidence in the money markets was a practical problem and the Bank of England should have adopted a more proactive response.”54 Thereafter, from the autumn of 2007, the Bank began to innovate and move toward a more comprehensive framework for providing liquidity support to the banking system.

169. When it started innovating, the Bank, like other central banks, developed a range of facilities to lend to banks against a wide range of collateral and for longer terms. But these new facilities also needed to evolve in response to the experience of their use for the first time.

170. A central problem faced by the Bank and many of its peers in developing new facilities was that of ‘stigma’. Any bank or building society seen to access liquidity support was exposed to becoming stigmatised – signalling weakness, and potentially compromising its access to funding in private markets. The experience of Barclays in August 2007 in accessing an overnight standing facility for technical reasons and, more forcefully, of Northern Rock in September 2007, showed the difficulties of lending in bilateral facilities.55 Only market-wide operations, offering to lend to all banks, and being taken up by many, had the potential to overcome the stigma problem decisively.

171. However, even these operations faced challenges, most clearly illustrated in Autumn 2007 when, amidst acute strains in sterling money markets, the Bank conducted a sequence of four auctions offering to lend £10bn to the banking system, but at a minimum rate of Bank Rate plus 100 basis points. That penalty rate discouraged banks from participating in the auctions for fear of signalling desperation. No bids were received in any of the four operations, despite widespread liquidity shortages.

172. The Bank innovated again, launching the first Extended Collateral Long-Term Repos (ELTR) in December 2007. These operations allowed counterparties to borrow against a wider range of collateral and without such a penalty borrowing rate. These new market-wide auctions provided substantial funding to institutions facing difficult market conditions. However, they did not eliminate the stigma problem entirely. Banks and building societies, many of whom had no familiarity with these new operations, were required to perform a balancing act, bidding sufficiently high interest rates in the auction to obtain the funding they needed but without bidding so high that they would signal any distress. The key results of the auctions were published, including the highest

55 Ibid.
bid rates, so there was a risk of a ‘witch hunt’ of the sort that had been experienced by Barclays when it accessed the Bank’s regular standing facilities for technical reasons. In short, the ELTR was a positive innovation, implemented under trying circumstances, but was not fully effective.

173. The Bank continued to innovate. As the crisis deepened, and the liquidity needs of the system became more apparent, the Bank launched the Special Liquidity Scheme, allowing banks to borrow at a common interest rate, using a wide range of assets as security.  

The attractive terms, and efforts by the Bank to co-ordinate widespread participation, substantially reduced any stigma of participation. And by removing the competitive element of earlier auctions, institutions wishing to borrow no longer faced a balancing act in deciding how much to bid. However, even this was not a panacea. Many banks were initially reluctant to recycle this liquidity into markets and, as a consequence, many core markets remained impaired long after the immediate needs of banks were addressed.

174. Bank staff showed immense commitment during this period to design and implement these various innovative operations, and deserve much credit for the eventual success of the Bank’s attempts to provide effective liquidity support to the banking system. Nevertheless, the crisis demonstrated that the Bank’s framework for providing liquidity insurance had been incomplete when the crisis started. The initial failure to have an adequate framework in place meant the Bank had to undergo a learning process, which hindered the effectiveness of its interventions, particularly during the early phases of the crisis.

175. In response to the lessons learned from this experience, the Bank subsequently developed a much more comprehensive and transparent framework to cover the provision of liquidity insurance to the banking system. That framework now includes regular auctions of funds to banks and building societies, against a wide range of collateral, and in which all successful bidders pay the same interest rate and the amount on offer flexes with the degree of stress in bank funding markets.

There is a standing discount window facility – analogous to a long-standing part of the monetary framework of the Federal Reserve in the United States. The Bank also introduced the Extended Collateral Term Repo facility (ECTR), which can be offered at very short notice, and gives the Bank full flexibility to lend in any size, at any term, and at any price against the full range of eligible collateral.

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58 Renamed the Contingent Term Repo Facility (CTRF) in January 2014.
176. That reformed and comprehensive system was independently reviewed by Bill Winters in 2012.\(^{59}\) He concluded that the Bank had consistently improved its framework for liquidity provision to the banking system and had been responsive to the changing market environment. Winters also highlighted how the Bank could establish governance processes to make its framework more responsive to the evolution of markets in future. An annual review process has since been initiated, consulting key stakeholders in the Bank’s liquidity operations.\(^{60}\)

177. The Winters Review also recommended ways in which the Bank could adapt to an already-changed market environment. He recommended, amongst other things, that the Bank should respond to developments in markets by extending access to central counterparties, extending the maturity of its lending to recognise its role in maturity transformation, broadening the collateral accepted further, and reducing the reliance on penal pricing to manage risks. Consistent with this, the Bank has continued to innovate.\(^{61}\)

178. It has further mitigated the stigma problem. More robust regulatory standards for banks’ liquidity have allowed the fees banks pay for access to funding at the Discount Window to be reduced. And by amending its policy on disclosure, the likelihood that any bank accessing the facility is identified during a prolonged period of market stress has been minimised.

179. The Bank has also expanded very significantly the range of collateral against which counterparties can borrow. The Bank now accepts as collateral a wide range of securities – including both sterling and foreign currency-denominated government securities, and private sector bonds. It has also developed the capability to lend against portfolios of mortgage, social housing and other loans. In parallel, it has been encouraging collateral pre-positioning – whereby counterparties identify, and the Bank of England assesses, various types of collateral outside periods of stress, so that the Bank is able to conduct sufficient due diligence and lend with confidence at short notice if needed, without the need for excessive discounting of the value of the collateral.\(^{62}\)

180. As markets continue to evolve, the Bank’s collateral policy needs also to be dynamic. It has adopted the principle that if its counterparties hold significant quantities of an asset, and the financial risk associated with it can be managed, then the collateral should be eligible. The Bank has recently announced that it will work to ensure there are no technical obstacles to accepting major index equities as collateral.

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\(^{62}\) As at 29 May 2015, total pre-positioned collateral was £328bn of which £261bn is loans (£244bn of residential loans).
181. The range of eligible counterparties in the Bank’s regular liquidity auctions has been expanded significantly, doubling over the last seven years, and there are now over 150 Bank of England reserve account holders, compared to 41 in August 2007. All PRA-authorised banks and building societies can now obtain access to the Bank’s liquidity insurance facilities. More recently, the Bank has opened its facilities to broker-dealers and central counterparties – recognising their increasing systemic importance and the associated need to ensure that they are robust to unexpected shocks to market liquidity.

182. Finally, drawing on the experience of the crisis, the Bank has also recognised the value, in certain circumstances, of backstopping the liquidity of markets directly. Central banks cannot necessarily rely on banks to on-lend to provide liquidity to core markets. In the United Kingdom, the problems in the banking system in 2008 spilled over to credit markets. These developments, which were primarily driven by sudden loss of liquidity, rather than concerns about the underlying credit risk of the issuer, threatened to impede the flow of credit to the corporate sector, stymie investment, and reduce economic activity. In early 2009, the Bank acted as a Market Maker of Last Resort (MMLR) in commercial paper and corporate bond markets. The Bank now stands ready to act as a Market Maker of Last Resort to catalyse and improve the liquidity of markets whose illiquidity may pose a threat to financial stability, or is judged to be important to the transmission mechanism of monetary policy.

183. The potential value of lending to a broader range of counterparties, and of acting as a MMLR, is increased by the growth of core funding markets and shift since the crisis to market-based finance of the real economy.

184. The new framework for the Bank’s operations is more formalised, more comprehensive and more transparent. The pre-crisis framework from which it was developed is now barely recognisable. But the Bank will need to continue to evolve its approach as the financial sector changes – including refining its approach to liquidity insurance for non-banks, developing its framework for MMLR, and co-operating with other central banks on swap lines to ensure liquidity support can be provided in appropriate currencies.

2.4.3 A formal, comprehensive and transparent framework for conducting market intelligence work

185. The Bank has always engaged regularly with contacts in markets to learn about conditions and developments in those markets. That intelligence offers valuable insights, and is used to inform the Bank’s core policy functions. It is essential to the Bank’s understanding of how markets are evolving and helps to scan the horizon for potential threats to financial stability.

186. In 2004, the Bank developed a formal strategy and framework for the collection of market intelligence. This reform greatly enriched the quality and quantity of intelligence available to the
Bank and established a more organised framework. The work did identify a significant number of strands that played a part in the eventual crisis, such as the search for yield that had developed and the vulnerabilities inherent in the business model that many banks and building societies had adopted.

187. However, interactions with market participants did not identify all of the key ingredients of the crisis and crucially, as discussed earlier, the Bank as a whole failed to draw the correct conclusions about the vulnerabilities of the key institutions or core markets in the run-up to the crisis.

188. Furthermore, concerns about the fairness of markets or the potential for misconduct, which were gained as a by-product, were not always appropriately escalated. A distance grew between the Bank’s market intelligence on the one hand and conduct regulation, for which the FSA (and after 2013, the FCA) was responsible on the other. This fault line reflected the Bank’s understandable approach to distinguishing its responsibilities from those of the other authorities. However, the Bank’s view of this segregation of responsibilities was in hindsight too absolute. This may not have mattered in a period of limited market innovation, but became important as markets developed rapidly and the scope for misconduct by some market participants emerged.

189. This shortcoming in the Bank’s market intelligence was highlighted amidst allegations of misconduct in financial markets, and around foreign exchange benchmarks in particular. Although there has never been any suggestion that the Bank or any of its staff were involved in any way in such misconduct, it has subsequently become clear that some market knowledge and understanding that might have been of use to the conduct regulator was not appropriately escalated within the Bank or passed on to the conduct regulator.

190. The Oversight Committee of the Bank’s Court (its non-executive directors) commissioned Lord Grabiner QC to conduct an independent investigation. That report,63 which has been published in full, found no evidence to suggest that any Bank official was involved in any unlawful or improper behaviour in the FX market or that any Bank official was aware that improper behaviour was happening. However, the report also concluded that one member of Bank staff had, since at least 2008, been aware that FX traders were sharing aggregated information and, although this practice was not itself improper, the staff member had concerns about the potential created by this practice for collusive behaviour. The Report found that those concerns had not been escalated. The Bank therefore did not identify how the design of FX market benchmarks, the modes of communication

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and the structure and understanding of informal standards and codes in that market, had failed to keep up with innovation and that, as a result, these markets were open to abuse.64

191. The Bank accepted Lord Grabiner’s conclusions and is implementing his recommendations in full. In response it committed to enhanced training, for any Bank official working in connection with the foreign exchange market, in the relevant market standards and codes; a charter clarifying its relationship with market participants; regular review of its escalation policy; and clarity of the separation of market intelligence from relevant trading activity.

192. Reviews by the Treasury Committee and the independent investigation conducted by Lord Grabiner have also highlighted some cases of informality in the Bank’s interactions with market participants. 65 Contacts with market participants had not always been properly and formally recorded. For example, the Treasury Committee questioned the Bank’s note keeping procedures. In response to that, the Bank’s Internal Auditors conducted a review for the Bank’s Court of record keeping procedures and made 10 recommendations, all of which have been or are being implemented.66

193. These developments highlighted a need for further reforms and a more comprehensive approach to market intelligence gathering at the Bank of England. In March 2014, the Governor launched a comprehensive review of the Bank’s market intelligence programme. That review has resulted in changes that remove ambiguities about the role of the Bank officials and their contacts, and make market intelligence more effective in supporting the Bank’s main policy functions.

194. Specifically, the Bank has recently established an executive level committee to agree and oversee the Bank’s priorities for its market intelligence gathering. That will focus the programme and ensure that it continues to evolve with markets and that it is able to provide information about the most pertinent threats to financial stability, in particular.

195. The Bank has also benchmarked and strengthened its practices. It has conducted an attestation exercise for all staff involved in intelligence gathering. In the year to March 2015, the Bank escalated over 40 instances of concerns about the potential for misconduct in markets67 and continues to focus on this. It has introduced new controls and clear policies for escalation of concerns about potential misconduct. It has also improved its information sharing protocols – both across the Bank and with the FCA – to ensure that any allegations about individual firms or about the potential for misconduct in markets are identified and escalated. And, to increase transparency around its intelligence gathering activities, it has published a Charter that explains clearly to market

66 Eight of these recommendations have already been fully implemented.
participants and Bank officials the purpose of the exercise, the terms of engagement and the use of the outputs.

196. More generally, the Bank’s approach to risk management is being reinforced, bringing it up to date in a way that is appropriate for a modernised central bank. The Bank is moving towards a more standard three lines of defence model to protect against poor execution of agreed frameworks, including those around market intelligence gathering. First, it is investing in greater training for staff in policies and procedures. Second, it has established a stronger compliance function to ensure officials continuously meet the terms of those policies. These augment the third line of defence – an already robust internal audit function which reports directly to Court.

197. The objective is to ensure that the Bank’s interactions with markets yield intelligence that supports the Bank’s main policy functions as fully as possible and that, where information is found that is of relevance to the fairness of markets, it is dealt with quickly and appropriately. Information about the potential for misconduct can be used by conduct regulators in forward-looking, preventative supervision, rather than enforcement after the event.

198. Of course it would be unrealistic to imagine that market intelligence alone can identify all risks to the effective functioning of markets – it is an important input, but one of many, to the Bank’s overall assessment of monetary and financial stability. But the reforms are designed to maximise the probability of successfully identifying risks and to avoid any repeat of the situation in which potentially relevant insights are not shared by the Bank with the relevant conduct authority.

2.4.4 Open Forum questions

199. To guide the future development of these frameworks, the Bank is particularly interested at the Open Forum in views on:

- **Looking ahead, how should the Bank’s market operations continue to develop?** Should its sterling market operations develop beyond banks to non-bank financial institutions, including investment funds? Should the Bank stand ready to support core markets directly through ‘Market Maker of Last Resort’ actions?
- **How might the Bank expand its assessment of and deal with risks outside the core of the banking system, including through stress testing?** What policy tools could mitigate those risks? And what data gaps need to be closed in order to monitor risks?
- **More generally, are there steps the Bank could take to support the on-going development of infrastructure around markets more effectively?** In particular, how can it most effectively support conduct regulators like the FCA to identify potential areas for misconduct and prevent it before any such misconduct actually arises?
3. Maintaining markets’ social licence

3.1 The role of accountability

200. Markets maintain the consent of society to operate and innovate only if they are fair, accountable and trusted to work in the interests of society. Only if markets maintain this ‘social licence’ can they contribute fully to prosperity. An erosion of trust and loss of social licence risks the imposition of rules or restrictions on markets that are detrimental to overall effectiveness. Section 2.2 explained how failures in market infrastructure led to markets that were demonstrably unfair, eroding their social licence, and how that has been addressed. The other essential building block of markets’ social licence is accountability – individuals, firms and authorities must be open to scrutiny and held responsible for their actions.

201. This section explains how deficiencies in infrastructure meant that, before the crisis, there was a deficit of accountability; what measures have been taken to address this issue; and sets out some outstanding issues.

3.1.1 What went wrong?

202. A lack of individual accountability by those running financial institutions, and poor governance and culture within those institutions, played a prominent role in both the build-up of risk in the financial system and in the series of misconduct incidents which have emerged in recent years.

203. As the Fair and Effective Markets Review notes, the years prior to the financial crisis were characterised by three key trends, all of which materially reduced the ability or willingness of firms in financial markets to uphold strong standards of market conduct:

- First, senior managers became increasingly remote and unaccountable for the maintenance of standards in day-to-day trading operations. That reflected a range of causes, including the increasing scale and breadth of firms’ trading operations, and the progressive delegation of responsibility for oversight and risk management to firms’ second and third lines of defence, and to regulators. A particular aspect of that last factor in the United Kingdom was that firms relied largely on the Financial Services Authority to assess individuals’ fitness and propriety to perform their roles, under the Approved Persons Regime (APR).

- Second, senior managers faced few apparent consequences for failing to ensure that their teams upheld appropriate standards of market practice. That was particularly true in less regulated markets, where practices were governed by voluntary codes which lacked ‘teeth’.
- Third, there was an increasing shift in power within firms and their management teams towards trading staff, reflecting the factors outlined above and the high profitability of trading desks.

204. These trends were apparent in many of the recent FICC enforcement investigations. For example, FCA enforcement notices in relation to the attempted manipulation of Libor identified weak or non-existent oversight of trading staff in banks and brokers and a lack of clearly defined individual responsibilities. FCA enforcement notices on misconduct in foreign exchange markets showed that voluntary codes in FX and other markets had not been translated into meaningful internal guidance within firms. And trading staff in different firms attempted to collude in order to manipulate markets, against the interests both of the markets at large and, in some cases, their firms.

205. Firms’ failure to uphold strong standards of market conduct were particularly unfortunate in the context of bonuses and other elements of the variable pay of staff at many firms that were too closely linked to short-term revenues, with insufficient weight placed on longer-term value generation and risk for the firm as a whole (including risk related to conduct). These pay structures both incentivised excessive individual risk-taking, and left firms and their shareholders to absorb losses when risks (including misconduct fines) materialised.

3.1.2 What is being done to improve accountability?

206. Significant steps have been taken – by Parliament, regulators, the international authorities, and firms themselves – to improve individual accountability and governance within UK regulated firms.

207. Parliament has undertaken significant legislative reform. The Parliamentary Commission on Banking Standards (PCBS) argued that the APR had failed to set clear expectations for individuals performing critical roles in banks, and recommended strengthening the accountability for bankers and their incentives to behave appropriately by shifting governance responsibilities from the regulators to the firms, accompanied by stronger and more focused approval and enforcement powers for the regulators with respect to senior individuals.68 In response, the Senior Managers and Certification Regimes (SM&CR) were introduced by the UK government through the Banking Reform Act 2013. The regulators have published near-final rules on elements of the regimes in response to their July 2014 consultation.69,70 The remaining final rules are expected to be published over the coming months, and the SM&CR will come into force in March 2016.

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208. The Senior Managers Regime will focus regulatory attention on a smaller set of senior individuals than the APR, limiting regulatory pre-approval to the most senior individuals in banks, building societies, credit unions and PRA-designated investment firms, known collectively as ‘Relevant Authorised Persons’ (RAPs). As part of the regulatory pre-approval, firms will be required to submit ‘Statements of Responsibilities’ setting out the areas of the firm for which a prospective senior manager will be responsible for. This should ensure that in the event of misconduct, there are clear lines of accountability. Individuals that will be approved by the regulators as senior managers will continue to be registered on the regulators’ public register. The Senior Managers Regime includes a ‘presumption of responsibility’, under which senior managers in RAPs are held to be responsible for regulatory breaches in their areas of responsibility unless they can demonstrate to the satisfaction of the relevant regulator that they took reasonable steps to prevent such breaches.

209. The Certification Regime recognises that some individuals below senior managers, including traders, nevertheless have the potential to pose ‘significant harm’ to the firm or its customers. The Banking Reform Act introduces requirements for RAPs to take responsibility for ensuring that such individuals are fit and proper on an ongoing basis and to certify that this is the case at least annually. Regulators will not approve these appointments. The regulators’ rules will require a senior manager to be formally responsible for the firm’s compliance with its obligations under the Certification Regime.\(^71\)

210. Enforceable Conduct Rules under the SM&CR will also apply to a wide set of individuals within each firm. The new Conduct Rules will build on the Statements of Principle and Code of Practice for approved persons under the APR. If an individual breaches a Conduct Rule, the regulators may choose to take enforcement action against that individual. The regulators propose that the Conduct Rules should apply to all senior managers and certified persons. In addition, the FCA proposes to apply the Conduct Rules to all other employees of relevant firms except staff carrying out purely ancillary functions. Such firms will also be required to notify the regulators of actual or suspected breaches of any Conduct Rule, and of any disciplinary action relating to a breach of the Conduct Rules by senior managers, certified staff and relevant employees.

211. **Regulators** have built on these legislative foundations to further enhance individual responsibility. Assessing the adequacy of governance in firms is now a fundamental part of the PRA’s and FCA’s supervisory approach in the United Kingdom, and the regulators regularly review the fitness and propriety of the most senior individuals in authorised firms.


\(^71\) The application of the Certification Regime by the PRA and FCA is set out in the Bank of England & FCA consultation paper linked to in the previous footnote.
212. In May 2015, the PRA published for consultation a supervisory statement which underscores the importance it places on good Board governance and emphasises in particular the key role the PRA sees for Boards in setting clear strategies and measurable risk appetites, overseeing risk management across the business and holding management effectively to account.72

213. The PRA also proposes to introduce a new regulatory framework for individuals in insurance firms. The proposed Senior Insurance Managers Regime (SIMR) incorporates aspects of the SM&CR within the existing legislative framework for insurers. The SIMR will require firms to adopt clearer governance arrangements, and set clearer allocations of responsibilities and accountabilities for senior managers, in a manner similar to the SM&CR, but without the ‘presumption of responsibility’.

214. There have also been significant steps to maintain and enhance the effectiveness of enforcement and criminal sanctions for market abuse in the United Kingdom. The FSA and subsequently the FCA have adopted a more active credible deterrence approach since 2008, and in 2010 introduced a new policy to impose penalties in a more transparent and consistent manner.73 As a result, the regulators materially increased the scale and breadth of their enforcement actions across a number of products, markets and practices with the objective of effecting changes in behaviour and culture, and deterring misconduct in financial markets.

215. These fines have played an important role in focusing firms on conduct issues and tackling the culture of impunity that prevailed in many firms in the pre-crisis period. However, the scale of misconduct is such that the necessary fines have the potential to be systemic. For example, US, UK and European banks have been fined more than $150bn by international authorities since 2009. Assuming an average leverage ratio of 5%, that amount of capital could support a lending capacity of $3 trillion.

216. **Global action** has been taken to align remuneration with prudent risk taking. The FSB concluded in November 2014 that implementation of its international principles and standards for sound compensation practices had been essentially completed. The United Kingdom’s rules will be amongst the most comprehensive globally. The authorities have consulted on proposals for senior bank managers’ bonuses to be deferred for periods up to seven years (instead of the current three to five years), during which time they may be reduced or cancelled in the event of employee misbehaviour (‘malus’). Variable remuneration already paid may also be ‘clawed back’ in certain circumstances. In 2014, firms used a combination of malus and significant reductions in current-year bonus pools to reflect fines for misconduct in FX and other markets.

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217. **Firms themselves** have also made substantial efforts to improve their internal governance, accountability and control structures. Many firms have embarked on costly and extensive programmes of reform, often led by CEOs, in attempts to address these failings. Recent emphasis on tone from the top has seen some firms take positive steps, including remodelling codes of conduct and introducing new values statements. And board-level committees dedicated to addressing conduct issues have been established.

### 3.1.3 Outstanding issues

218. The measures described above should help to improve accountability substantially within financial institutions. To strengthen their impact, the Fair and Effective Markets Review has made a number of recommendations to improve further the accountability of staff working within those financial institutions. In summary:

- In order to establish common standards across a broader range of FICC market participants, the Review recommended that HM Treasury should consult on legislation to extend elements of the Senior Managers and Certification Regimes to a wider range of regulated firms, covering at least those active in FICC wholesale markets.

- Proper market conduct should be managed in FICC markets through regulators and firms monitoring compliance with all standards, formal and voluntary, under the Senior Managers Regime and Certification Regimes.

- The FCA and PRA should consult on a mandatory form for regulatory references, to help firms prevent the ‘recycling’ of individuals with poor conduct records between firms.

- The new FICC Market Standards Board should give guidance on expected minimum standards of training and qualifications for FICC market personnel in the United Kingdom, including a requirement for continuing professional development.

219. With regards to remuneration, the FSB has announced its intention to review how the incentives created by reforms to remuneration structures (among other things) have helped to reduce misconduct, and whether any additional measures are needed. 74 Given the global nature of financial markets, it is right that this analysis should proceed at an international level. The Fair and Effective Markets Review therefore recommended that:

- The FSB should examine further ways to improve the alignment between remuneration and conduct risk at a global level.

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3.1.4 Open Forum questions

220. At the Open Forum, the Bank is particularly interested in views on:

- How effective will the internal efforts within firms to boost standards turn out to be?
- What else can be done to repair the integrity, credibility and reputation of the professionals working within financial markets?
- How can remuneration structures best be designed to align incentives between firms, staff, shareholders, creditors and other stakeholders?

3.2 Strengthened accountability for the Bank of England

3.2.1 Improvements in Bank of England accountability

221. The need for accountability extends to all actors in markets. That includes the Bank of England which – especially given the importance of its responsibilities and the scope of its influence in markets – must be accountable to Parliament and public. The Bank’s performance is an important determinant of how well these markets function. Operating at the heart of the financial system, the Bank has the influence to catalyse change in markets where necessary. A transparent, accountable and well-governed central bank is essential not only for effective policy, but also for public legitimacy. Transparency and strong accountability of the Bank reinforce the social licence of financial markets as a whole. The Bank must not only act in a way that promotes the good of the people of the United Kingdom, it must also be seen to do so.

222. The Bank’s accountability arrangements had tended to evolve in a piecemeal way over time. Like the Bank’s financial stability, liquidity insurance and market intelligence frameworks, they became outmoded, limited and opaque. These issues were highlighted in detail in the Treasury Committee’s 2011 report.\(^\text{75}\)

223. That report highlighted how the position and powers of the Bank’s Court were outmoded and how there were no clear, formal mechanisms by which the Bank would review its own performance. It argued for greatly enhanced supervision of the Bank’s executive by a Board with a majority of independent members. In addition, other reports highlighted the shortcomings of informal governance processes and the decision-making burden placed on the Governor and senior management.\(^\text{76}\) Others highlighted the benefits of enhancing the Bank’s transparency

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arrangements. The need to remedy these deficiencies was made even more important by the marked expansion in the formal powers and responsibilities of the Bank after the financial crisis.

224. As a result of these imperatives, the Bank has made wide-ranging changes to its governance and transparency over the past five years. These changes support its role in delivering and shaping the infrastructure around financial markets and its accountability to Parliament and public.

Governance

225. First, the Bank’s Court has been greatly strengthened. Subject to the activities which are reserved by statute to the MPC, FPC and PRA Board, Court is responsible for managing the Bank’s business, and, where appropriate, may delegate as it sees fit. It has a majority of independent non-executive members and an independent non-executive Chairman. Those non-executive members have the right to observe meetings of the Bank’s Policy Committees, to receive the same papers as members of those Committees, and to commission reviews into the Bank’s performance. Non-executive members of the Bank’s Court also regularly meet without executive members, both informally and in the form of the Oversight Committee of Court.

226. Second, the Bank’s non-executives are also now able to draw on the expertise of a new Independent Evaluation Office, headed by a senior staff member who reports directly to the Chairman of Court. The IEO has access to the resources necessary to conduct reviews of the Bank’s performance on behalf of Court.

Transparency

227. In addition to the above changes, the Bank’s Court has also become more transparent. Minutes of its meetings have been published since 2013, with a short delay. This is unusual for a public body. In addition, following requests from the Treasury Committee, the Bank has published the minutes of the meetings of its Court during the 2007-9 financial crisis. This release was consistent with the Bank’s recognition that it has a responsibility to meet, as openly as possible, requests for information from Parliament through the Treasury Committee. The Bank has also now brought the timing of the release of the minutes of Court’s historic meetings into line with the standard for other material in the Bank’s Archive. In doing so it has released the minutes of meetings from 1914 to 1987. The Bank now plans to follow the practice of the National Archives and move to a 20-year rule, opening two years of records each year until 2022.

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78 Within 6 weeks of the meeting or, if no meeting of Court is subsequently held during that period, within 2 weeks after the next meeting. See www.legislation.gov.uk/ukpga/2012/21/schedule/2/enacted
80 See www.bankofengland.co.uk/archive/Pages/digitalcontent/archivedocs/courtminutes.aspx
228. The transparency of the Bank’s Monetary Policy Committee has also been enhanced. From August, the minutes of the MPC’s meetings will be published alongside the announcement of the MPC’s decision. Transcripts of those meetings where policy is decided will be released after an eight-year delay, alongside the key staff inputs to the Committee’s discussions. This strikes a good balance between bolstersing accountability and maintaining space for open Committee deliberation.

229. Since the crisis, the Bank has also opened itself to greater external scrutiny and review, building on the external scrutiny performed formally by the Treasury Committee. Both the Bank and PRA publish comprehensive annual reports, laid before Parliament, that explain strategy, set out financial performance, and detail how statutory objectives have been discharged. The Bank has supplemented that by commissioning and publishing a series of independent reviews conducted by outside experts into aspects of its performance:

- The Pledgerleith Review (2012) into the provision of Emergency Liquidity Assistance (ELA) in 2008/9 considered the basis of the decisions to provide ELA to each firm and the capability of the Bank to plan, implement and manage the operations. The Review concluded that the Bank could be “judged to have achieved its purpose effectively” but highlighted useful operational lessons for any future ELA. As a result of the review, the Bank has taken steps to increase its capacity around ELA operations, including its ability to lend to different types of institution, including non-banks, should the need arise.

- The Stockton Review (2012) considered the Monetary Policy Committee’s forecasting capability. It recommended that the Bank undertake a fuller analysis of its past forecasting performance, suggested the need to account for a range of alternative views in the forecast process, and highlighted the need for the Bank to communicate forecast results with greater clarity. Following the review, the Bank enhanced its communications around the outlook for monetary policy by introducing forward guidance, as well as by moving to wide-band fan charts in its Inflation Report.

- The Winters Review (2012) looked at the Bank’s framework for providing liquidity to the banking system. It concluded that the Sterling Monetary Framework in place prior to the crisis was insufficient to meet the Bank’s financial stability objectives, although the extensive changes made during the crisis made the framework robust and broadly fit for purpose. The Review made recommendations aimed at reducing banks’ reluctance to access Bank of England facilities which, together with the Bank’s own assessment of the changing landscape, led to significant changes to the SMF announced in 2013. These changes increased the availability and flexibility of liquidity insurance by providing for longer-

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maturity liquidity to a wider range of firms, against a wider range of collateral and with greater predictability of access.

- The Warsh Review was commissioned to review practices and procedures around recording MPC decisions. It recommended reforms aimed at communicating policy judgments more effectively, enhancing accountability, and ensuring a fair and accurate historical record was made. As a result written transcripts of the meetings at which monetary policy is decided, and related staff policy briefing material, will be published with an 8-year lag. Also, the Bank is moving to publication of the minutes of MPC meetings and the Inflation Report at the same time as policy decisions are announced. The Bank has proposed to move to eight MPC policy meetings a year, and plans to hold four additional joint meetings between the Monetary and Financial Policy Committees in 2016.

230. The Bank has also commissioned other reviews which faced up to and tackled other, difficult, issues. In March 2014 the Oversight Committee of Court appointed Lord Grabiner to review levels of awareness of Bank officials in relation to market manipulation concerns in the foreign exchange market. It responded swiftly, on the day, to the outage of the Real Time Gross Settlement System in October 2014 by commissioning an independent review. Each of these reviews has been published for external scrutiny and the findings have been acted upon.

231. In doing so, the Bank is committed to investigating any issues thoroughly and seriously when they come to light, and then taking decisive actions, including sharing the findings of its investigation with any appropriate authorities. Moreover, it is committed to making public its actions at the appropriate time ensuring that the proper processes are followed in a suitably transparent manner.

232. In light of the findings of recent investigations the Bank has taken a number of decisive actions to modernise its operations. A Charter has been published detailing how the Bank will collect and use market intelligence. Strengthened information management processes have been instituted to overhaul how the Bank manages its own documents. The Bank’s whistleblowing framework and escalation policies have been strengthened to ensure that concerns about market conduct are handled appropriately.

233. Reinforcing all of these changes the Bank intends to hold itself to the same high standards it expects of regulated financial institutions. Box 2 sets out how the Bank of England intends to apply the principles that are the foundation of the Senior Managers Regime (SMR) to itself.

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BOX 2: Applying the Senior Managers Regime to the Bank of England

Responsibility for running firms rests with Boards and senior managers. Those that sit at the top should be accountable for their actions or failures to act.

In some parts of the financial sector the link between seniority and accountability became blurred or severed in the run up to the financial crisis. In response, Parliament mandated a stronger regime to allocate responsibilities to individuals who run banks, and to give regulators the tools to hold them to account. A similar regime has been developed for insurers and, as described in Section 3.1, the Fair and Effective Markets Review has recommended that certain elements of the Senior Managers Regime (SMR) should be extended to FICC market participants.

The principles are uncontroversial: senior managers should behave with integrity, honesty and skill. Leaders must understand their responsibilities and discharge them. The excuse of delegating responsibilities will no longer wash. What is most remarkable is that these principles were not applied previously.

The Bank has long been held accountable by Parliament and the public, including through Select Committee hearings, publications, speeches and via the Freedom of Information Act. The Bank of England is not a regulated firm, and the majority of its policy decisions are by statute taken on a collective basis by the MPC, FPC and the PRA Board. Statute also prescribes a range of ways in which these Committees are held accountable for their decisions. For example, the FPC must explain its decisions and provide a summary of its deliberations; the PRA has a statutory duty to investigate and report on instances of possible regulatory failure; and the Governor, on behalf of the MPC, must write an open letter if inflation deviates too much from target.

Despite this, the Bank expects that its senior management should meet the same standards of professional conduct required elsewhere, and be held accountable for functions they personally direct.

The Bank therefore intends to apply the core principles of the SMR to its own senior managers. In line with PRA rules the principles of the SMR will apply primarily to the Governor and Deputy Governors, the Chair of Court, and members of Court who chair certain operational committees.

In order to reflect the provisions of the SMR the Bank will:

- Map how the Bank’s responsibilities are discharged, and allocate core responsibilities to individual senior managers, building on an existing recommendation from the Treasury Committee to the PRA. These maps will be published.
- Describe and publish its governance structure, including setting out where there is collective
responsibility for decisions made by the Bank’s statutory Committees.

- Assign responsibility for delivering the day-to-day activities necessary to meet the Bank’s statutory objectives, as well as the relevant functions prescribed by the SMR, to individual senior managers (where they are not reserved to a statutory policy Committee).
- Publish senior managers’ statements of responsibility to enhance understanding of roles and accountability.
- Continue to take a rigorous approach to senior managers’ suitability for the roles that they occupy. There are a number of key elements to the Bank’s approach:
  - First, a robust appointments process. Many senior appointments at the Bank are made by the Crown and are subject to Parliamentary scrutiny. This delivers a very high level of assurance about fitness for role. Other appointments made by the Bank are subject to rigorous competition and scrutiny, including relevant background checks and references.
  - Second, ongoing suitability of senior executives for their role is assessed annually through the Bank’s new performance management framework. This suitability will be reviewed by Court.
  - Third, the Bank will supplement these processes with an improved induction package to ensure that new senior managers fully understand their responsibilities.

More generally, the senior management of the Bank is implementing its responsibilities to ensure that all Bank staff are aware of, and receive, the necessary training to meet, the standards required of individuals in regulated firms. As part of that the Bank:

- Has introduced a new Bank-wide Code of Conduct, setting out the conduct expect of its officials, rooted in principles of integrity, inclusivity, impartiality, openness and accountability. These principles draw on the conduct rules that will apply to senior managers and other staff in regulated firms, as well as the Government’s Principles of Public Life. The Bank’s code will draw together a series of internal standards in one place, backed up by training on core responsibilities. Like the standards for FICC markets recommended by FEMR, it will be written in language that can be readily understood.
- Has ensured that breaches of the Code are reported, through the Bank’s strengthened compliance function, into Court, in an arrangement similar to the requirement for regulated firms to report breaches to the PRA and FCA.
- Is strengthening the training available to staff to ensure they are equipped to meet these standards.

One feature of the SMR for Banks is the “presumption of responsibility”, whereby senior managers can be held accountable for regulatory breaches within their areas of responsibility unless it is shown that preventative steps were taken.
Parliament devised the “presumption of responsibility” as a tool for regulators to enforce regulations and to incentivise senior managers to put in place measures to deter or prevent regulatory breaches occurring. The “presumption of responsibility” is not part of the Senior Managers regime for insurers or the proposed extension to FICC market participants. For obvious reasons it is not strictly relevant for the Bank. There are, however, established means by which Bank officials can be called to account, including by Parliament. Select Committees frequently ask the Bank’s senior managers to give evidence or explain their decisions, and rightly presume the Bank’s senior management have responsibility for the Bank’s affairs. Measures to enhance clarity around individual responsibilities ought to enhance further that accountability.

3.2.2 Outstanding issues

234. The above steps are all intended to improve the Bank’s performance, to ensure that it draws on external perspectives, and that it can be held to account publicly. The Government has announced its intention to introduce legislation into Parliament to formalise many of the Bank’s proposals to lock in the improvements to governance and transparency.\(^{85}\)

235. The forthcoming Bank of England Bill will build on the Financial Services Act 2012. The main elements of the Bill will be announced in due course, but the Government has indicated that it will contain measures to further strengthen the governance and accountability of the Bank.

236. The Bank has taken great steps towards building an institution that is unified, diverse and talented, and that delivers excellent analysis and outstanding execution. But it will always seek to strengthen its governance and accountability where it can.

3.2.3 Open Forum questions

237. Consistent with that approach, at the Open Forum the Bank is particularly interested in views on the following:

- Are there additional measures that could enhance the Bank’s governance and transparency further?
- What steps can be taken to improve further how the Bank discharges its policy responsibilities in a co-ordinated way?
- How are the changes that the Bank has implemented in the recent past bedding down?

4. Conclusion and next steps

4.1 Conclusion

238. To support the Open Forum, this paper has set out the Bank’s analysis of what went wrong with FICC markets, as well as shortcomings in its own frameworks and operating procedures during the crisis, what is being done to correct those failings and what challenges remain.

239. Many of the deficiencies exposed by the crisis have now been addressed by a wide-ranging programme of reform, at the Bank of England itself, in the UK financial system, and at the global level. Reforms have increased the effectiveness and reinforced the social licence of FICC markets. The international reform agenda has substantially increased the resilience and effectiveness of markets. With the recommendations of the Fair and Effective Markets Review, published alongside this document, reforms are now in train to further promote fairness and accountability as well.

240. In addition to the implementation of agreed reforms, this paper has highlighted the new and evolving issues that will need to be addressed. In this regard, work is already underway across a range of institutions in the United Kingdom, Europe and globally. These workstreams are listed in Annex 1.

241. For example, with respect to market resilience, the Bank of England’s FPC, the European Systemic Risk Board and, at the global level, the FSB, all have work underway to analyse and address the apparent increase in the fragility of liquidity in many FICC markets and associated increase in volatility.

242. To promote effectiveness, the Bank of England and the ECB have been working to develop standards for Simple, Transparent and Comparable securitisations. In the EU, the Commission launched a consultation on a Capital Markets Union in February. The Bank responded to the consultation, which closed in May. The Commission is expected to produce an action plan in the Autumn.

243. To deal with fairness and accountability, UK and international authorities will take forward the work of the Fair and Effective Markets Review. Authorities, including the Financial Conduct Authority, as well as IOSCO, the Bank for International Settlements and the FSB, are working in concert to develop common standards and principles and to address the consequences of misconduct in markets.

244. The Bank continues to develop its own operating frameworks, including through an annual review of the sterling monetary framework. It intends to consult on the future direction of its stress testing work and will continue to develop its assessment and mitigation of risks outside the core
banking system. A Bank of England Bill in the course of the current Parliament will clarify and embed the Bank’s governance improvements.

245. The Bank is organising the Open Forum to discuss all of the issues raised in this paper. It will take place in the autumn of this year. It will bring together policymakers, financial market participants and users, academics, media representatives and wider society. All of these parties have a stake in well-functioning financial markets. But, at least historically, only some have had a say in their evolution. The Open Forum is a step towards changing that.

246. The Bank has convened a small Steering Committee,86 drawing on representatives from financial markets, industry, the media, academia, civil society and the policymaking communities, who will bring their diverse skills and experience to bear on setting the agenda for the Open Forum.

247. The intention for the Open Forum is to take stock of the reforms as a whole and to discuss the way forward. Financial reform to ensure markets contribute to prosperity is not an exercise with a defined end point, but rather a continuous process to ensure that the infrastructure around markets keeps pace with their future evolution and innovation. The Bank of England is committed to that process, in seeking to foster markets that make the greatest possible contribution to prosperity.

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86 See Annex 2 for membership of the Open Forum Steering Committee.
4.2 Collected Open Forum questions

The overall reform agenda

- Are reforms creating the soft and hard infrastructure to ensure FICC markets are effective and retain their social licence?
- Where has too little been done? In some areas, might reform have gone too far?
- Does the reform agenda form a coherent whole or are there gaps and inconsistencies?
- How should the programme of reform be made dynamic and adaptive to current and future innovations in markets?

Building resilient markets

- Do authorities have the balance right between strengthening the resilience of the core of the system and potentially increasing relative volatility in fixed income markets? To what extent is market adjustment to these changes still in process and if so, what will the new liquidity equilibrium look like?
- How should risks in parts of the financial sector that have grown in importance since the crisis, such as Asset Management and Central Counterparties, be assessed and managed?
- Are there missing pieces of infrastructure that could be usefully supported and developed, for example, ‘all to all’ trading platforms?
- What further principles should be developed to strengthen risk management of CCPs and transparency around the network of exposures?
- Is there more to do to strengthen the risk management of OTC instruments, for example, should there be a requirement for some repo transactions to be centrally cleared?

Building fair markets

- How effective will the internal efforts within firms to boost market standards turn out to be?
- What more can be done, by authorities and firms, to ensure that the potential for misconduct is addressed pre-emptively?
- Can market transparency be further enhanced without harming market effectiveness? For example, how can transparency best be enhanced in ways that maintain the benefits of diverse trading platforms, including OTC?
- Are there any special conduct challenges posed by the rise of new trading technologies or behaviours in FICC markets?

Building effective markets

- Are there new markets that could usefully be catalysed and developed? How can access to market financing be enhanced and pools of savings developed outside the core banking
system?
- Are there additional parts of the market infrastructure that should be developed or regulated to ensure that capital is properly allocated and risks are effectively shared?
- Are there additional measures that should be considered to ensure that market participants can trade at competitive prices?
- What is the appropriate balance between further domestic reforms and the need to promote a level playing field at the global level?

The Bank of England’s role

- Looking ahead, how should the Bank’s market operations continue to develop? Should its sterling market operations develop beyond banks to non-bank financial institutions, including investment funds? Should the Bank stand ready to support core markets directly through ‘Market Maker of Last Resort’ actions?
- How might the Bank expand its assessment of and deal with risks outside the core of the banking system, including through stress testing? What policy tools could mitigate those risks? And what data gaps need to be closed in order to monitor risks?
- More generally, are there steps the Bank could take to support the on-going development of infrastructure around markets more effectively? In particular, how can it most effectively support conduct regulators like the FCA to identify potential areas for misconduct and prevent it before any such misconduct actually arises?

Making markets more accountable

- How effective will the internal efforts within firms to boost standards turn out to be?
- What else can be done to repair the integrity, credibility and reputation of the professionals working within financial markets?
- How can remuneration structures best be designed to align incentives between firms, staff, shareholders, creditors and other stakeholders?

Strengthened accountability for the Bank of England

- Are there additional measures that could enhance the Bank’s governance and transparency further?
- What steps can be taken to improve further how the Bank discharges its policy responsibilities in a co-ordinated way?
- How are the changes that the Bank has implemented in the recent past bedding down?
## Annex 1: Overview of ongoing reform initiatives

### Resilience

<table>
<thead>
<tr>
<th>Body</th>
<th>Workstream</th>
<th>Description</th>
<th>Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPC</td>
<td>Market liquidity</td>
<td>The FPC noted in its March statement that ‘investment allocations and pricing of some securities may presume that asset sales can be performed in an environment of continuous market liquidity, although liquidity in some markets may have become more fragile’. Analysis aims to help to clarify the extent of any macro-prudential risks associated with market liquidity and allow FPC to assess potential policy mitigants.</td>
<td>Interim report, June 2015. Final report, September 2015.</td>
</tr>
<tr>
<td>ESRB</td>
<td>Market liquidity</td>
<td>Complementing work of FSB. Setting out the conceptual drivers of market liquidity, how these differ across financial markets and possible policy options to mitigate the associated risks.</td>
<td>End-2015</td>
</tr>
<tr>
<td>FSB</td>
<td>Market liquidity</td>
<td>Work plan to identify financial stability risks associated with market liquidity in fixed income markets and asset management activities in the current conjuncture, as well as longer-term structural financial stability issues. Evaluate the role that existing or additional activity-based policy measures could play in mitigating potential risks, and make policy recommendations as necessary.</td>
<td>Discuss initial findings in September 2015.</td>
</tr>
<tr>
<td>FSB</td>
<td>Sharing of trade repository data</td>
<td>To identify the legal barriers in member jurisdictions to reporting of counterparty information to trade repositories and set a deadline for jurisdictions to address them.</td>
<td>November 2015.</td>
</tr>
<tr>
<td>FSB</td>
<td>Exchange trading for derivatives</td>
<td>Relates to G20 objective for more derivatives to migrate to exchange trading. Relatively little progress made to date, compared to trade reporting and CCP regulation.</td>
<td>Current state of progress to be outlined in the ninth progress report on implementation from the FSB OTC Derivatives Working Group, July 2015.</td>
</tr>
<tr>
<td>FSB</td>
<td>CCP workplan</td>
<td>Co-ordinated workplan (with CPMI, IOSCO and BCBS) to promote CCP resilience, recovery planning and resolvability.</td>
<td>During 2015. No deadline set for completion.</td>
</tr>
<tr>
<td>Body</td>
<td>Workstream</td>
<td>Description</td>
<td>Milestones</td>
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<tr>
<td>FSB</td>
<td>Extension of ISDA protocol on ‘stays’</td>
<td>Working through its members and relevant industry bodies to address cross-border close-out risks in other financial contracts and products</td>
<td>Due for completion by end-2015.</td>
</tr>
<tr>
<td>BCBS</td>
<td>Liquidity Coverage Ratio</td>
<td>Requires banks to hold liquid assets to cover net cash outflows over a 30-day stressed period.</td>
<td>Agreed in 2013 and updated in 2014. To be implemented in EU from October 2015.</td>
</tr>
<tr>
<td>BCBS</td>
<td>Net Stable Funding Ratio</td>
<td>Reduces incentives for excessive maturity mismatch by requiring a portion of banks’ activities to be funded by long-term funding. All activities are captured, including prime brokerage and derivatives.</td>
<td>Agreed in 2014; implementation due 2017. Review of the treatment of initial margin set for H1 2016.</td>
</tr>
<tr>
<td>BCBS</td>
<td>Fundamental Review of the Trading Book</td>
<td>Fixes gaps in the market risk framework that were not fully addressed by Basel 2.15 reforms in 2009.</td>
<td>Due for completion by end-2015. No implementation date set as yet.</td>
</tr>
<tr>
<td>BCBS</td>
<td>Interest Rate Risk in the Banking Book</td>
<td>Ensures that interest rate risk in the banking book is adequately capitalised. Reduces the arbitrage opportunities caused by differences between the trading book and banking book treatments of interest rate risk.</td>
<td>Consultation document issued on 8 June 2015. Due for completion by mid-2016. No implementation date set as yet.</td>
</tr>
<tr>
<td>BCBS</td>
<td>Large Exposures</td>
<td>Treatments for exposures to CCPs and interbank exposures under review.</td>
<td>Review to be concluded by 2016. To be implemented by 1 January 2019.</td>
</tr>
<tr>
<td>BCBS</td>
<td>Margin requirements for OTC derivatives</td>
<td>Aims to reduce systemic risk associated with OTC derivatives transactions and incentivise central clearing, by introducing mandatory margin requirements</td>
<td>Finalised in 2013. Implementation in September 2016.</td>
</tr>
<tr>
<td>BCBS</td>
<td>Credit valuation adjustment (CVA) risk</td>
<td>Aims to fix certain weaknesses in the Basel III framework for capitalising CVA risk, notably to improve the treatment of market risk hedges.</td>
<td>Consultation document due to be issues in Summer 2015. No implementation date set as yet.</td>
</tr>
<tr>
<td>Body</td>
<td>Workstream</td>
<td>Description</td>
<td>Milestones</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>BCBS</td>
<td>Capital penalty for bank-to-non-bank securities financing transactions that do not meet FSB minimum haircuts.</td>
<td>Acts as an incentive for banks to set collateral haircuts on non-centrally cleared securities financing transactions at or above the floors set by the FSB.</td>
<td>Due for completion by end-2015.</td>
</tr>
</tbody>
</table>

### Fairness

<table>
<thead>
<tr>
<th>Body</th>
<th>Workstream</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Bank / FCA / HMT</td>
<td>Recommendations of the Fair and Effective Markets Review</td>
<td>Implement recommendations, as shown in Box 1. Proposed owners include: IOSCO, FMSB, FCA, PRA, HMT, BIS, FSB, national central banks, CMA and firms</td>
<td>Bank, FCA and HMT to provide a full implementation update to the Chancellor of the Exchequer and Governor of the Bank of England by June 2016.</td>
</tr>
</tbody>
</table>

### Effectiveness

<table>
<thead>
<tr>
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<th>Description</th>
<th>Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCBS / IOSCO</td>
<td>Simple Transparent and Comparable (STC) Securitisation</td>
<td>Defining STC structures in order to help revive an effective and resilient securitisation market.</td>
<td>To be agreed by end-2015.</td>
</tr>
<tr>
<td>BCBS</td>
<td>Review of securitisation capital framework</td>
<td>Examine the case for differentiating capital requirements for STC exposures.</td>
<td></td>
</tr>
</tbody>
</table>
# Accountability

<table>
<thead>
<tr>
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<th>Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMT</td>
<td>Bank of England governance and transparency</td>
<td>Government has announced intention to introduce legislation to formalise many of the Bank’s proposals to lock in improvements to governance and transparency.</td>
<td>[To be determined].</td>
</tr>
<tr>
<td>FSB</td>
<td>Remuneration and conduct</td>
<td>The FSB is reviewing how the incentives created by reforms to remuneration structures (among other things) has helped to reduce misconduct and whether any additional measures are needed.</td>
<td>No deadline set as yet.</td>
</tr>
</tbody>
</table>
### Annex 2: Membership of the Open Forum Steering Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andy Haldane (Chair)</td>
<td>Bank of England</td>
</tr>
<tr>
<td>Mark Yallop</td>
<td>PRA Board Non-Executive Member</td>
</tr>
<tr>
<td>Samir Assaf</td>
<td>HSBC</td>
</tr>
<tr>
<td>Elizabeth Corley</td>
<td>Allianz Global Investors</td>
</tr>
<tr>
<td>Helena Morrissey</td>
<td>Newton Investment Management</td>
</tr>
<tr>
<td>Mike Sherwood</td>
<td>Goldman Sachs</td>
</tr>
<tr>
<td>Matt Zames</td>
<td>J P Morgan Chase &amp; Co</td>
</tr>
<tr>
<td>James Aitken</td>
<td>Aitken Advisors</td>
</tr>
<tr>
<td>Neil Garrod</td>
<td>Vodafone</td>
</tr>
<tr>
<td>Dan Janki</td>
<td>General Electric Company</td>
</tr>
<tr>
<td>Richard Lambert</td>
<td>British Museum</td>
</tr>
<tr>
<td>Frances O’Grady</td>
<td>Trades Union Congress</td>
</tr>
<tr>
<td>Xavier Rolet</td>
<td>London Stock Exchange</td>
</tr>
<tr>
<td>Alex Brummer</td>
<td>Daily Mail</td>
</tr>
<tr>
<td>Gillian Tett</td>
<td>Financial Times</td>
</tr>
<tr>
<td>Julia Black</td>
<td>London School of Economics</td>
</tr>
<tr>
<td>Richard Payne</td>
<td>CASS Business School</td>
</tr>
</tbody>
</table>