The Wheatley Review of LIBOR:

final report

September 2012

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Foreword

In a few months' time, subject to completion of the remaining Parliamentary stages of the Financial Services Bill, the new Financial Conduct Authority will come into being. This body – of which I will be the first Chief Executive – will have a sharp focus on making sure that financial services and markets function well, by promoting market integrity, consumer protection and effective competition.

This, alongside the creation of dedicated new prudential and macro-prudential regulatory authorities, will represent a significant milestone in strengthening financial regulation in the UK. I am very much looking forward to leading the FCA as it takes over the work of ensuring that UK financial services conducts its business in line with the highest standards of integrity.

Important as these institutional changes will be, it is clearly absolutely crucial that the regulatory authorities remain entirely focused on the continuing business of supervision and oversight during the transition. Consumers and market participants must be sure that the regulators stand ready to deal quickly and effectively with issues as they arise. This has been particularly true of the conduct business unit at the Financial Services Authority over the last two years, and nowhere has it been more apparent than in the work that we have undertaken – in partnership with our counterparts in the US, Japan, Switzerland, the EU and elsewhere – to tackle the attempted manipulation of LIBOR.

So I was very pleased when the Chancellor of the Exchequer asked me to consider – independently of my responsibilities for investigating and tackling potential LIBOR manipulation – whether the revelations surrounding LIBOR (and, indeed, other financial benchmarks) require a wider policy response. I regard this as an issue with far-reaching implications for international financial markets, not least because of the risk to London's status as a leading global financial centre. As one of those responsible for upholding the standards that underpin London's pre-eminence, I recognise how important it is that swift and decisive action is taken to restore confidence in LIBOR – a benchmark referenced by contracts worth well in excess of $300 trillion.

My work in reviewing LIBOR has therefore, of necessity, proceeded quickly. I have been enormously helped in this by the prompt and constructive engagement my Review has received from stakeholders who are involved with or use LIBOR. And I am confident that the substantial package of reforms that I recommend in this final report provides a credible blueprint for the restoration of trust in LIBOR.

It now falls to the Government, the British Bankers' Association, the banks and other market participants, and the international regulatory community, to consider these recommendations and take them forward, in many cases working closely with the FSA and (in due course) the FCA. So while this is the Wheatley Review's final report, I am well aware that it is far from the last word on the subject. However – speaking as the person ultimately responsible for conduct regulation in the UK – I am determined that the FSA and FCA will do whatever is needed to restore the faith of financial markets in LIBOR. I expect those with a direct interest in LIBOR – particularly those in the markets who contribute to or use the benchmark – to show the same degree of commitment to getting this right.

1 The blueprint for LIBOR reform

The Wheatley Review of LIBOR

1.1 The London Inter-Bank Offered Rate (hereafter referred to as LIBOR) refers to a series of daily interest rate benchmarks administered by the British Bankers' Association (BBA). These rates are currently calculated across ten currencies and fifteen tenors (i.e. borrowing periods) ranging from overnight to one year. They serve as a series of interest rate benchmarks of the average cost to banks of unsecured borrowing for a given currency and time period.

1.2 Since 2009, the Financial Services Authority (FSA), together with regulators and public authorities in a number of different jurisdictions – including the United States, Canada, Japan, Switzerland and the European Union – has been investigating a number of institutions for alleged misconduct relating to LIBOR and other benchmarks, including EURIBOR (the Euro Inter-Bank Offered Rate) and TIBOR (the Tokyo Inter-Bank Offered Rate).

1.3 Following the announcement of findings against Barclays in late June 2012, the Government asked Martin Wheatley, managing director of the FSA and CEO-designate of the new Financial Conduct Authority (FCA),[1] to establish an independent review into a number of aspects of the setting and usage of LIBOR.

1.4 Box 1.A sets out the Review's terms of reference. The Review has <u>not</u> considered any specific allegations against particular financial institutions or individuals regarding attempts to manipulate LIBOR or other benchmarks. These allegations will continue to be investigated by the FSA and other regulators around the world.

1.5 This report sets out the final recommendations of the Wheatley Review to the Government, the BBA, banks and the regulatory authorities. The report is organised as follows:

- Chapter 2 makes the case for regulation of activities related to LIBOR, and strengthening the sanctions regime;
- Chapter 3 establishes the need for a new set of institutions to administer and oversee LIBOR;
- Chapter 4 describes how these two new elements of the framework – statutory regulation and strengthened institutional governance – should operate together to establish new rules governing LIBOR submissions;
- Chapter 5 recommends a number of immediate reforms that should be adopted by those currently involved in the setting of LIBOR;
- Chapter 6 discusses potential alternatives to LIBOR; and
- Chapter 7 explores the implications of the Wheatley Review for other global benchmarks.

[1] All references to the FSA within the Wheatley Review final report should be understood also to apply to the FCA once the latter organisation is established.

Box 1.A: Terms of reference of the Wheatley Review

The Wheatley Review will formulate policy recommendations with a view to:

1. Reforming the current framework for setting and governing LIBOR. This work should, inter alia, consider:
   - whether participation in the setting of LIBOR should be brought into the regulatory perimeter under the Financial Services and Markets Act 2000 as a regulated activity;
   - how LIBOR is constructed, including the feasibility of using of actual trade data to set the benchmark;
   - the appropriate governance structure for LIBOR;
   - the potential for alternative rate-setting processes; and
   - the financial stability consequences of a move to a new regime and how a transition could be appropriately managed.
2. Determining the adequacy and scope of sanctions to appropriately tackle LIBOR abuse. This work should consider:
   - the scope of the UK authorities' civil and criminal sanctioning powers with respect to financial misconduct, particularly market abuse and abuse relating to the setting of LIBOR and equivalent rate-setting processes; and
   - the FSA's Approved Persons regime and investigations into market misconduct.
3. Whether similar considerations apply with respect to other price-setting mechanisms in financial markets, and provide provisional policy recommendations in this area.

Discussion paper and consultation

1.6 On 10 August, the Wheatley Review published a discussion paper, which can be found on the Wheatley Review webpage.[2] That paper set out the case for reform of LIBOR (which is summarised in Annex C) and proposed a range of options for reform of the benchmark. In addition, the paper considered potential alternatives to LIBOR and examined the implications of the Review's thinking on other global benchmarks.

1.7 The discussion paper marked the beginning of the consultation phase of the Wheatley Review, which ran until 7 September. During this period, interested parties were encouraged to submit responses to the discussion paper, while the Review team held a large number of meetings with key stakeholders.

1.8 Despite the necessarily brief consultation period, the Wheatley Review received over 60 written responses from stakeholders and met with over 60 individuals and organisations. The Review team is extremely grateful to those who participated in the consultation process. Annex B contains an overview of the responses received during the consultation process.

1.9 The Review's analysis and findings of the failings in the LIBOR process were largely accepted by those who engaged in the consultation process. The Review has therefore proceeded to draw

[2] http://www.hm-treasury.gov.uk/wheatley_review.htm

up its final recommendations and conclusions on the basis of the diagnosis published in the discussion paper.

Key conclusions and recommendations

1.10 Through the process of analysis and consultation, the Wheatley Review has reached three fundamental conclusions that underpin its recommendations.

1.11 First, the Review has concluded that there is a clear case in favour of comprehensively reforming LIBOR, rather than replacing the benchmark. LIBOR is used in a vast number of financial transactions; it is estimated that contracts with an outstanding value of at least $300 trillion reference the benchmark. A move to replace LIBOR could only be justified by clear evidence that the benchmark is severely damaged, and that a transition to a new, suitable benchmark or benchmarks could be quickly managed to ensure limited disruption to financial markets.

1.12 The Wheatley Review has concluded that the issues identified with LIBOR, while serious, can be rectified through a comprehensive and far-reaching programme of reform; and that a transition to a new benchmark or benchmarks would pose an unacceptably high risk of significant financial instability, and risk large-scale litigation between parties holding contracts that reference LIBOR.

1.13 Furthermore, through the course of the consultation, it has become clear that, despite the loss of credibility that LIBOR has suffered recently, there has been no noticeable decline in the use of LIBOR by market participants. Indeed, a clear majority market participants responding to the Review's consultation argued for the continuation of a form of LIBOR, rather than its wholesale replacement. While there are other benchmarks that are used in some cases as substitutes for LIBOR, there is clearly a large role that LIBOR plays in financial markets for which there is no immediately obvious alternative.

1.14 It should however be noted that, given the immediate focus of the Review and the difficulties identified with attempting to replace LIBOR quickly, this Review has not attempted to conduct a detailed evaluation of alternatives that might, over time, come to be used by market participants. That work should proceed, as described in Chapter 6, through internationally coordinated action.

1.15 Second, the Review has concluded that transaction data should be explicitly used to support LIBOR submissions. A number of the Review's recommendations are intended to establish strict and detailed processes for verifying submissions against transaction data and limiting the publication of LIBOR to those currencies and tenors that are supported by sufficient transaction data.

1.16 Third, the Review has concluded that market participants should continue to play a significant role in the production and oversight of LIBOR. While LIBOR needs to be reformed to address the weaknesses that have been identified, it would not be appropriate for the authorities to completely take over the process of producing a benchmark which exists primarily for the benefit of market participants.

1.17 Many alternative benchmarks do already exist and are in use in a number of markets, although none with such widespread usage as LIBOR. Market participants can, and do, adopt the benchmark that is most appropriate for each type of contract. The role of the authorities is primarily to ensure the integrity of the process by which benchmarks are determined rather than to direct users to adopt a particular benchmark This said, the market is likely to coalesce around the most reliable and verifiable benchmark for any given transaction; the reforms recommended by the Wheatley Review to strengthen LIBOR should inform the work being done by the IOSCO Board Level Task Force (see Chapter 7).

1.18 Drawing on these three fundamental conclusions, this report presents the Wheatley Review's ten-point plan for the comprehensive reform of LIBOR, summarised in Box 1.B below.

Box 1.B: A ten-point plan for comprehensive reform of LIBOR

Regulation of LIBOR

1. The authorities should introduce statutory regulation of administration of, and submission to, LIBOR, including an Approved Persons regime, to provide the assurance of credible independent supervision, oversight and enforcement, both civil and criminal (see Chapter 2).

Institutional reform

2. The BBA should transfer responsibility for LIBOR to a new administrator, who will be responsible for compiling and distributing the rate, as well as providing credible internal governance and oversight. This should be achieved through a tender process to be run by an independent committee convened by the regulatory authorities (see Chapter 3, paragraphs (3.5 to 3.16).
3. The new administrator should fulfil specific obligations as part of its governance and oversight of the rate, having due regard to transparency and fair and non-discriminatory access to the benchmark. These obligations will include surveillance and scrutiny of submissions, publication of a statistical digest of rate submissions, and periodic reviews addressing the issue of whether LIBOR continues to meet market needs effectively and credibly (see paragraphs 3.17 to 3.38).

The rules governing LIBOR

4. Submitting banks should immediately look to comply with the submission guidelines presented in this report, making explicit and clear use of transaction data to corroborate their submissions (see paragraphs 4.5 to 4.13).
5. The new administrator should, as a priority, introduce a code of conduct for submitters that should clearly define:

- guidelines for the explicit use of transaction data to determine submissions;
- systems and controls for submitting firms;
- transaction record keeping responsibilities for submitting banks; and
- a requirement for regular external audit of submitting firms.

(see Chapter 4, paragraphs 4.14 to 4.31)

Immediate improvements to LIBOR

6. The BBA and should cease the compilation and publication of LIBOR for those currencies and tenors for which there is insufficient trade data to corroborate submissions, immediately engaging in consultation with users and submitters to plan and implement a phased removal of these rates (see Chapter 5, paragraphs 5.3 to 5.13).
7. The BBA should publish individual LIBOR submissions after 3 months to reduce the potential for submitters to attempt manipulation, and to reduce any potential interpretation of submissions as a signal of creditworthiness (see paragraphs 5.14 to 5.18).
8. Banks, including those not currently submitting to LIBOR, should be encouraged to participate as widely as possible in the LIBOR compilation process, including, if necessary, through new powers of regulatory compulsion (see paragraphs 5.19 to 5.28).

9 **Market participants using LIBOR should be encouraged to consider and evaluate their use of LIBOR,** including the a consideration of whether LIBOR is the most appropriate benchmark for the transactions that they undertake, and whether standard contracts contain adequate contingency provisions covering the event of LIBOR not being produced (see paragraphs 5.29 to 5.39).

International co-ordination

10 **The UK authorities should work closely with the European and international community and contribute fully to the debate on the long-term future of LIBOR and other global benchmarks**, establishing and promoting clear principles for effective global benchmarks (see Chapters 6 and 7).

Next steps

1.19 This report contains a number of recommendations for the Government, the BBA and the banks, and the regulatory authorities both in the UK and internationally.

1.20 The Government has already indicated that the Financial Services Bill will be the legislative vehicle for taking forward those recommendations which are accepted. The Bill is currently being considered by the House of Lords.

1.21 Under the leadership of Martin Wheatley, the conduct business unit of the FSA, and in particular the markets division, will work closely with the BBA and the banks to ensure that the recommendations addressed to market participants are implemented. Martin Wheatley and the FSA will also continue to engage proactively with international partners in relation to the global debate on benchmarks, working closely with the Treasury and the Bank of England.

1.22 In addition, the Wheatley Review hopes to inform other work being done by international organisations to strengthen globally significant benchmarks. In particular, the Review recognises the work being done by the IOSCO Board Level Task Force, the European Commission and the European Parliament to improve benchmarks on an international basis and hopes that the Review is taken as a significant step towards their respective goals.

2 Regulation and sanctions

Box 2.A: Key reforms and specific recommendations

The authorities should introduce statutory regulation of administration of, and submission to, LIBOR, including an Approved Persons regime, to provide the assurance of credible independent supervision, oversight and enforcement, both civil and criminal.

To implement this key reform, the Wheatley Review specifically recommends that:

- administering LIBOR and submitting to LIBOR become regulated activities under the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001;
- controlled functions are created in connection with both of these activities;
- the UK supports efforts in the EU to proceed swiftly with developing and implementing a new civil market abuse regime and open and transparent access to benchmarks; and
- Section 397 of the Financial Services and Markets Act 2000 is amended to enable the FSA to prosecute manipulation or attempted manipulation of LIBOR.

2.1 A clear finding of the Review is that the systems, controls and governance arrangements covering the processes of submitting to and administering LIBOR have proven inadequate especially given the pressures on LIBOR created by market developments in recent years. Given the importance of the benchmark to the stable and efficient operation of a wide range of financial markets, there is a strong case for bringing these activities clearly and explicitly within the regulatory perimeter.

2.2 The FSA and other international regulators have taken action in respect of attempted manipulation of LIBOR. However, the Review is of the view that a purpose built regime, including an Approved Persons regime allowing the regulator to exercise control and oversight over individuals as well as firms, will significantly increase the ability of the new Financial Conduct Authority to oversee LIBOR effectively.

2.3 This chapter makes recommendations to the Government and the regulatory authorities to propose amendments to the Financial Services and Markets Act 2000 (FSMA), and associated secondary legislation and rules, to enable these changes in regulation and enforcement to be implemented.

Regulation

Making submitting to and administering LIBOR regulated activities

2.4 At present neither submitting to LIBOR, nor administering LIBOR, is a regulated activity under FSMA. As a result, while the FSA is currently taking regulatory action in relation to attempted manipulation of LIBOR by firms, this action is proceeding on the basis of the connection between LIBOR submitting and other regulated activities, and there is no directly applicable specific regulatory regime covering these activities. This affects the FSA's ability to supervise and take enforcement action in relation to these activities, even when carried out by a firm that is regulated in respect of its general business activities. The discussion paper therefore raised the option of specifying either or both of these activities as regulated under the FSMA 2000 (Regulated Activities) Order 2001 (RAO).

2.5 On the basis of analysis and consultation responses, the Review has concluded that, as the highest risk of misconduct occurs in the contribution of submissions to LIBOR, there is a strong case to support making submitting to LIBOR a regulated activity.

2.6 However, the administrator also has an integral role in the production of LIBOR. In particular, the administrator is likely to be best placed to identify any potential manipulation, carry out preliminary enquiries into this and advise the regulator of the concerns. Failure to regulate the administration of LIBOR could therefore create a potentially significant gap in the regulatory regime. Regulation of the administrator would allow the regulator to ensure that the administrator maintains proper systems and controls for identifying and investigating suspicious submissions, and reports these to the FSA. The Wheatley Review has therefore concluded that LIBOR administration should also be a regulated activity.

2.7 Making the acts of submitting to and administering LIBOR regulated activities will significantly enhance the FSA's ability to oversee these processes and take action in relation to any misconduct. In particular, it will enhance the ability of the FSA to take the following steps:

- write and implement rules in relation to the LIBOR process, which will – among other things – set out the systems and controls that a firm must have in place for the production of LIBOR;
- supervise the conduct of the firms and individuals involved in the process, with this supervision including regular reviews of relevant systems and controls in place, as well as the performance of the activities; and
- take regulatory action for misconduct. If a firm does not conduct itself in accordance with either the FSA's Principles for Businesses or any other regulatory requirements in its LIBOR activities, the FSA will be able to impose a public censure or financial penalty, and will in addition be able to impose regulatory requirements on a firm, for example by varying the firm's permission.

2.8 This will result in a clear, robust regulatory regime that firms will be required to abide by, while the existence of sanctions will provide a powerful incentive on firms to ensure they act properly and in compliance with the relevant regulatory requirements. It will also enable the FSA to create controlled functions in relation to these activities, as discussed below.

2.9 The majority of responses to the discussion paper have been in favour of making both of these activities regulated activities. In particular, there was broad consensus that making LIBOR submissions should be a regulated activity under FSMA, with some respondents commenting that this regulation should have the scope to cover benchmarks more broadly.

2.10 Where there was opposition to such regulation, it came from responses advocating that judgement be removed from submitting banks, with submissions instead relying entirely on transaction data or committed quotes. In relation to the question of whether administering LIBOR should become a regulated activity, most of the responses addressing this issue were in favour of regulation.

2.11 While there are some disadvantages to making these activities regulated activities, including, in particular, increased compliance costs for firms and an increased supervisory burden on the regulator, the Review considers that these burdens are outweighed by the benefits of regulating these activities.

2.12 The Wheatley Review therefore recommends that submitting to LIBOR, and the administration of LIBOR, become regulated activities. While the Government will need to consider the specific legislative changes needed to implement this recommendation, should it choose to proceed, initial analysis by the Review indicates that these changes can be implemented by:

- amending Section 22 of FSMA, which currently sets out the nature of the activity which can be regulated in a way that does not cover LIBOR related activities;
- amending Schedule 2 to FSMA, which sets out the indicative list of the activities which may be brought within the scope of FSMA regulation, to include contributing to, and administering a benchmark; and
- amending the Regulated Activities Order to include, as regulated activities, contributing to and administering a benchmark, with LIBOR specified as a relevant benchmark.

The scope of the regulated activities

2.13 The new regulated activities should be defined in such a way as to cover the production of the submissions, the calculation of the benchmark and its publication. Regulation of these activities should also cover the systems and controls regarding these functions, including, in particular, the processes for identifying and querying suspicious submissions and advising the FSA of any such conduct.

2.14 The Wheatley Review does not recommend that regulation should seek to prescribe the exact elements of the money markets that LIBOR is intended to measure – in other words, the precise question that submitters are requested to answer. Instead, this should continue to be market led, thereby being able to respond to the needs and requirements of the market as these evolve.

2.15 This Review has been narrowly focused on LIBOR, and the recommendations are therefore only made in respect of LIBOR. However, the Review is aware of other work underway in relation to benchmarks generally, including the EU Commission's consultation on benchmarks and the Board Level Task Force set up by the International Organisation of Security Commissions (IOSCO). In light of this wider work, it is suggested that legislation should ensure that the regulatory regime can be extended to other benchmarks in the future, if appropriate.

Controlled functions

2.16 Assuming that LIBOR activities will be regulated, the question arises as to how the Approved Persons regime under FSMA should be applied to these activities.

2.17 Under the Approved Persons regime, certain activities can be designated as controlled functions by the FSA. The holder of a controlled function must be approved by the FSA in order to perform that function, and must also comply, in the performance of that function, with the FSA's Principles for Approved Persons.

2.18 Creating controlled functions in relation to both submitting and administering will therefore allow the FSA to:

- ensure that only individuals who can satisfy the FSA that they are "fit and proper" to perform the role are allowed to hold these controlled functions; and
- ensure the accountability of key individuals – if they do not comply with the relevant regulatory requirements, the FSA will have the power to impose a public censure or financial penalty on the individual, in addition to being able to prohibit them from being involved in any regulated activity.

2.19 This will help to ensure that these individuals are fully aware of their responsibilities in the performance of their duties, and will thereby assist in supervising and influencing the behaviours of others involved in the processes.

2.20 Creating controlled functions for these activities may introduce a modest burden on the individuals involved, and will also involve some additional cost for the firms, as a result of the necessity for the relevant individuals to be approved. Nonetheless, in light of the importance of LIBOR, it is considered that it is appropriate and proportionate for these controlled functions to be created. In introducing this (or indeed any other) element of a new regulatory regime, the FSA would, of course, be under a duty to have regard to the statutory principle of proportionality – the burden imposed by any action it takes must be proportionate to the benefit that will be realised.

2.21 Accordingly, the Review recommends that controlled functions are created in relation to both submitting to and administering LIBOR. The next section considers the practicalities of implementing this recommendation.

Location of the new controlled function

2.22 In relation to submitting, the discussion paper identified three possible options for the creation of the controlled function. These are:

- senior management;
- the manager responsible for the submission process; or
- the individual submitters.

2.23 The Review considers that the manager of the LIBOR submitting process would be the most suitable role for locating the controlled function. The individual holding this position will be closely involved in the submission process, and will therefore be able to exercise close control over the process by checking and confirming the LIBOR submissions, and by directly supervising the conduct of other employees involved in the process. The manager will also have more oversight of the process than the individual submitters.

2.24 A number of submitters to LIBOR are currently located outside the UK. Assuming a controlled function is created, the requirement for a relevant individual to be approved, and the obligations on the individual, including their liability for a regulatory sanction in the event of misconduct, would still apply if the individual were located outside the UK (save that in the case of a European Economic Area (EEA) firm the FSA may not make a function into a controlled function if the role of assessing the fitness and propriety of the person performing it is reserved to the domestic regulator).

2.25 In relation to administration, the role of the manager of the administration process should become a controlled function. Again, this role is closely involved in the relevant process, and the relevant individual will be able to monitor and supervise the process, as well as the conduct of any other employees involved in it.

2.26 As the Approved Persons regime currently applies to those who have significant influence over the conduct of a firm's affairs in relation to a regulated activity, the amendments to FSMA and secondary legislation recommended above will be sufficient to enable these new controlled functions to be created.

Transition to the new regulatory regime

2.27 If the Government accept these recommendations, it is anticipated that the necessary amendments to primary legislation could come into force in 2013, when the regulatory regime provided for in the Financial Services Bill comes into force. The precise timing of the introduction of the new regulatory regime will depend on the practicalities involved in the making of amendments to the Regulated Activities Order and the FSA developing, including consulting upon, the rulebook covering the new regulated activities.

2.28 Consideration will also need to be given as to how relevant firms are authorised. In particular, it is possible that a future benchmark administrator (see the next chapter for detailed discussion of new institutional arrangements) may not currently be an authorised person. A possible approach to the transition would be for firms who are already performing these activities to be deemed to be authorised, pending application within a limited specified time. This would enable the new regime to apply with minimal disruption.

Enforcement and other sanctions for misconduct

2.29 As set out above, regulation will enhance the FSA's ability to take enforcement action against the firms and Approved Persons involved in the process, including by imposing financial penalties on the firms and individuals for breach of the relevant regulatory requirements. There are also alternative options for enabling enforcement action to be taken, including under the civil market abuse regime, the proposed European regime for criminal market abuse sanctions and the wider criminal regime. This report considers these below.

Market abuse

2.30 As set out in the discussion paper, there is already a well-developed civil market abuse regime in the UK, which stems largely from the EU Market Abuse Directive 2003. However, the EU and UK market abuse regimes were designed to capture market abuse in relation to financial instruments, and were not constructed with activities such as benchmark manipulation in mind. As a result, and for the reasons set out in Annex B of the discussion paper, the regime is unlikely to capture LIBOR misconduct directly, and even where it might capture such conduct indirectly, it places a high burden of proof on the competent authority to show the effect, or likely effect, on one or more financial instruments of any manipulation of submissions.

2.31 The Review has concluded that submission of false or misleading information in connection with a benchmark such as LIBOR is a form of wider market manipulation and should therefore be brought within the scope of market abuse. Benchmarks should be brought within scope in their own right, due to their importance to market functioning, rather than requiring competent authorities to establish a consequent effect on a particular financial instrument.

2.32 New EU legislation is currently being developed in this area, as follows:

- a new Market Abuse Regulation (MAR) is currently being developed, harmonising EU law on market abuse. MAR will apply to all EU countries, and is likely to come into force two years after it is adopted, replacing the existing Market Abuse Directive 2003;
- a new Market in Financial Instruments Regulation (MIFIR), which for the first time brings benchmarks into the scope of regulation and ensure fair and non-discriminatory access to them and, in so doing, provides an essential underpinning to the market abuse regime; and
- a Directive requiring the establishment of criminal offences for the most serious cases of market abuse (CS-MAD), to which a Justice and Home Affairs "opt-in" applies for the UK and Ireland. The UK may decide to adopt this Directive by opting in to it in due course, provided the standards are sufficiently robust and do not entail a reduction in protections against market abuse. The Government has indicated that it will consider its position once negotiations on MAR and the proposed revised Markets in Financial Instruments Directive (MIFID), on which CS-MAD depends, have concluded.

Market Abuse Regulation

2.33 EU proposals to begin to extend the regulatory perimeter and principles of fair access and transparency to benchmarks in MIFIR and amendments to extend the proposed market abuse regime under MAR to cover attempts to manipulate benchmarks have now been put forward by the Commission, as set out in Box 2.B below. The Commission has also made a proposal for corresponding changes to the draft CS-MAD.

Box 2.B: EU amendments to MAR and MIFIR

The amendments are detailed in the Amended Proposal for a Regulation of the European Parliament and of the Council on Insider Dealing and Market Manipulation (2011/0295).

The Amended Proposal extends the definition of market abuse to include transmitting false or misleading information, providing false or misleading inputs, or any action which manipulates the calculation of a benchmark.

This provision applies to transactions, orders to trade or other behaviour relating to benchmarks, where any transmission of information, input, calculation or behaviour is used to affect, affects or is likely to affect the calculation of the benchmark. A benchmark is defined for these purposes as being any commercial index or published figure calculated by the application of a formula to the value of one or more underlying assets or prices, including estimated prices, interest rates or other values, or surveys by reference to which the amount payable under a financial instrument is determined.

2.34 These amendments are helpful, positive steps forward, which start to address the concerns raised in relation to the manipulation of, or attempts to manipulate, LIBOR. The UK should welcome these proposals from the Commission, while working with its EU partners to secure the amendments to the proposal which are necessary to ensure that MAR covers the full range of false submissions in respect of such benchmarks.

2.35 As MAR will apply to all EU countries and is likely to come into force in the near future (subject to the Regulation being adopted), and as prompt action is being taken to extend MAR to cover the attempted manipulation of benchmarks, it is recommended that the UK should not make unilateral changes to its civil market abuse regime prior to MAR being agreed, but should instead continue to assist in the finalisation of MAR.

2.36 It is, nevertheless, important that MAR is sufficiently wide to cover the possible manipulation of relevant benchmarks. While work to date has gone a long way towards formulating the relevant provisions, careful consideration still needs to be given as to the precise formulation of MAR, including:

- whether the proposed definition of benchmarks is sufficient to cover all benchmarks, including, in particular, any benchmarks which may not be based on the value of underlying assets or prices, or which may not use a formula to calculate the level of the benchmark; and
- whether it should be a necessary element of market abuse that the calculation of the benchmark was in fact affected, or whether making a false or misleading submission is sufficient, even if the calculation of the benchmark was not affected. Thought should be given as to whether a requirement to consider the effect on the benchmark will push some scenarios, where false submissions are made, out of scope.

2.37 In relation to this second consideration, determining the impact on the benchmark, or likely impact, may introduce new difficulties regarding evidential burden for the relevant Competent Authorities which require careful consideration.

2.38 Furthermore, there is a potential risk that a requirement that the calculation of the benchmark was affected will inadvertently exclude certain scenarios from the regime. For example, if a false LIBOR submission were made for purposes other than to affect the benchmark or relevant financial instruments, and did not in fact affect the calculation of LIBOR as it fell at the top or bottom of the range of submissions and was therefore discarded from the calculation of the rate.

2.39 It is also important that the sanctions available under MAR for market abuse by firms and individuals are sufficiently serious to deter this behaviour. The financial penalty of £85 million imposed on Barclays (reduced to £59.5 million for agreeing to settle at an early stage) for its failings in respect of its submissions to LIBOR and EURIBOR represents a serious disincentive in relation to this type of behaviour, and it is suggested that similar penalties should be available under MAR. Indeed, the LIBOR and EURIBOR investigations underline the importance of many objectives underpinning impending EU legislation. The need for a strong sanctioning regime in the proposed Market Abuse Regulation is clear: it sends a powerful message of deterrence across the EU that market abuse will not be tolerated.

2.40 The UK should, therefore, continue to oppose any attempts to weaken the sanctioning regime proposed by the European Commission. In particular, a lowering of the indicative maximum fines provided for in the Market Abuse Regulation would be hard to justify. Having indicative penalties of this sort provided for in unilateral EU legislation is highly valuable: it sends a strong public message that the EU takes market abuse, including the manipulation of benchmarks, very seriously.

New EU-harmonised criminal offences for market abuse

2.41 Important progress has also been made by the EU in the development of CS-MAD. This includes an amended Commission proposal which provides that criminal conduct shall include intentionally transmitting false or misleading information, providing false or misleading inputs, or any other equivalent activity which intentionally manipulates the calculation of a benchmark.[1]

2.42 As with MAR, the Review has concluded that the amended Commission proposal is a helpful response by the EU to address the concerns that have arisen in relation to attempts to manipulate benchmarks. The same considerations should be given to the scope of the offence of market manipulation and the definition of a benchmark.

2.43 As detailed above, and in contrast to MAR, CS-MAD will not automatically apply in the UK – the UK has not at present opted in to CS-MAD, which is necessary for the new Directive to apply in the UK. Furthermore, if the UK does decide to opt in, it would be able to extend or strengthen specific provisions (as long as this is consistent with the Directive).

2.44 In light of the greater flexibility available to the UK in this area, the Review therefore considers it sensible to evaluate the question of whether new criminal sanctions in UK law are required for LIBOR manipulation without reference to the current CS-MAD proposals. The next section of the report therefore considers this issue on a standalone basis. However, it should be noted that the recommendations set out below do not seek to prejudice the ongoing development CS-MAD or preclude the UK from being able to opt in.

[1] The Amended Proposal for a Directive of the European Parliament and of the Council on criminal sanctions for insider dealing and market manipulation (2011/0297 (COD))

New offences under FSMA

2.45 The FSA currently only has statutory powers of investigation with respect to various offences under FSMA and insider dealing under the Criminal Justice Act 1993. While attempts to manipulate LIBOR could potentially constitute a criminal offence under legislation other than FSMA, the FSA is currently not in a position to investigate and prosecute such conduct.

2.46 As set out in the discussion paper, a possible approach is therefore to amend FSMA to include, as an offence, the making of a false or misleading statement in order to manipulate LIBOR, potentially by making changes to Section 397 of FSMA.

2.47 While this approach drew some support from certain quarters, many respondents were cautious about introducing criminal sanctions for LIBOR submissions. Some concerns were raised about combining criminal sanctions with the continued application of judgement by banks. There were also concerns expressed that amending Section 397 could unintentionally criminalise some unrelated activities, create overlap with existing fraud offences and create legal uncertainty. At least one respondent argued that if criminal prosecution proved difficult to pursue in many cases, the existence of specific criminal sanctions could prove counter-productive as authorities could be criticised for not using available powers.

2.48 The Review is mindful of these comments, and of the Government's wider policy that there should not be a proliferation of unnecessary criminal offences.

2.49 However, the Review is also aware that, in light of the high value of the contracts that reference LIBOR, and the financial benefits that might possibly be obtained from manipulating LIBOR, some individuals may nonetheless be motivated to deliberately and dishonestly attempt to manipulate LIBOR, either directly or through collusion with others. Such behaviour would normally be for direct or indirect advantage – for example, by benefiting trading positions. The perpetrators of such behaviour are likely to be conscious of the dishonesty of their conduct, and civil sanctions under either the regulatory code of conduct or the civil market abuse regime may not therefore be sufficient to prevent such behaviour in all cases.

2.50 Further, while this conduct may fall within the scope of other criminal offences, it is important that the FSA, as the body responsible for the supervision of the financial services sector, is able to conduct effective criminal investigations and prosecutions in this area. The FSA is responsible for monitoring and investigating behaviour in the financial markets in relation to the regulatory and market abuse regimes. The Review considers that it is sensible that the FSA is also able to use its statutory powers of investigation and bring prosecutions in relation to such conduct where appropriate.

2.51 The Wheatley Review has concluded that this can best be achieved by amending Section 397, rather than empowering the FSA to investigate and prosecute fraud offences more generally. This will ensure that the FSA's ability to investigate and prosecute offences is clearly limited to offences connected with the financial markets, and will avoid an uncertain and potentially wide ranging extension of the FSA's criminal investigation powers.

2.52 The Review also considers that any attempts to manipulate LIBOR constitute sufficiently serious conduct to merit this being a criminal offence. As set out above, this conduct is likely to occur in full awareness of the potentially serious and wide ranging impact that manipulation of LIBOR may have in light of its global use. For these reasons, it is considered that there are strong public interest grounds for ensuring that this conduct can be prosecuted.

2.53 Accordingly, while it is recognised that there are arguments both for and against amending the current criminal regime, the Review recommends that Section 397 of FSMA is amended to cover manipulation of LIBOR, so that the FSA is able to investigate and prosecute such conduct.

2.54 It is envisaged that this could be achieved by amending Section 397 so that it applies to individuals who intentionally or recklessly make a false or misleading statement in relation to the setting of a benchmark. The scope of the offence could be limited to false or misleading statements in relation to the setting of a specified benchmark, or relevant financial instruments or relevant agreements as currently defined in FSMA. This would retain the necessary connection to the financial markets. Consideration should be given as to whether it should be necessary to show that the person acted in order to obtain a profit or benefit, or avoid a loss, and to whether the offence should also cover undertaking an equivalent course of action (for example, undertaking transactions at an artificial level in order to manipulate a submission based on these transactions).

2.55 It would also be appropriate at this time to review the workability of Section 397 as a whole, so that the scope of the market manipulation provision for benchmarks is consistent with the scope of market manipulation of financial instruments.

2.56 By creating this offence, the actions of others who attempt to persuade submitters to submit false figures, or who attempt to manipulate benchmarks through collusion, should be caught as encouraging or assisting others to commit this offence, or conspiring with others to commit the offence.

3 Strengthening institutions and governance

Box 3.A: Key reforms and specific recommendations

The BBA should transfer responsibility for LIBOR to a new administrator, who will be responsible for compiling and distributing the rate, as well as providing credible internal governance and oversight. This should be achieved through a tender process to be run by an independent committee convened by the regulatory authorities.

The new administrator should fulfil specific obligations as part of its governance and oversight of the rate, having due regard to transparency and fair and non-discriminatory access to the benchmark. These obligations will include surveillance and scrutiny of submissions, publication of a statistical digest of rate submissions, and periodic reviews addressing the issue of whether LIBOR continues to meet market needs effectively and credibly.

3.1 In its discussion paper, the Wheatley Review identified a number of failings with the current administration of LIBOR, focusing on three key areas of weakness:

- insufficient independence of the governance structures, which relied too heavily on the participating banks and their own industry organisation;
- inadequate oversight structures, such as the lack of systematic oversight of systems and controls within contributing banks; and
- limited transparency and accountability of the governance structures.

3.2 Further analysis of the issues and failings with the administration and governance of LIBOR can be found in Annex C. During the consultation process, the vast majority of respondents agreed with this analysis. In particular, many noted that that the BBA acts as the lobby organisation for the same submitting banks that they nominally oversee, creating a conflict of interest that precludes strong and credible governance. Many questioned whether the BBA could remain involved in the governance and administration of LIBOR.

3.3 Respondents also raised concerns that the institutions of LIBOR are not empowered to effectively administer and govern the benchmark. The failure of these institutions to identify, investigate and sanction participants for alleged misconduct was seen as evidence of this failing.

3.4 As set out in the previous chapter, the Wheatley Review recommends that submission to, and administration of, LIBOR are regulated by the FSA. However, it is clear that, on its own, regulation is not a sufficient solution to all of the problems identified with LIBOR. LIBOR must also, in the first instance, be administered in a robust fashion, with regulation acting as a back-stop, providing statutory powers for intervention and enforcement.

A new set of institutions for LIBOR

3.5 Informed by the considerations immediately above, the Review has concluded that weak institutions helped to create the opportunity for misconduct, which in turn discredited LIBOR. A new set of institutions would have the capacity to administer and govern LIBOR in such a manner that credibility could be restored in the benchmark. Therefore the Review recommends that the BBA passes on the role of future administration and governance of LIBOR, subject to the identification of a new institution (or institutions) to take on these roles.

3.6 The Wheatley Review has concluded that LIBOR should be a market-led benchmark, administered by a private organisation rather than by a public body. The functioning of LIBOR affects a much wider group of actors than those involved directly in the production of the benchmark. However, while there is significant justification for regulation and reform of the benchmark, it is not clear that there is sufficient justification for a public authority to administer the benchmark.

3.7 As an important market benchmark, it is appropriate that LIBOR can evolve to meet the needs of users. A private organisation is likely to have a greater incentive to ensure that the benchmark is fit for purpose and evolves to meet the changing needs and nature of the market. In contrast, public ownership would: change the relationship between the market that created and developed LIBOR, and the future evolution of the benchmark; reduce the incentive and ability for LIBOR to adapt to the needs of market participants; and potentially affect the choice of benchmarks by these participants.

3.8 Further, the Wheatley Review has concluded that LIBOR can and should be successfully administered by private organisations, within rules and guidance set by the authorities. The package of recommendations put forward by the Review is a proportionate response to the issues and failings identified, and should be sufficient to deliver a benchmark that is robust and accountable, without moving the ownership of LIBOR to a public authority.

3.9 Introducing a public body to administer LIBOR could also set a precedent for other globally significant benchmarks. LIBOR is one of many important benchmarks that are used across financial, commodity and other markets. A policy of transferring such benchmarks to public bodies, rather than guiding reform through oversight and regulation, could set a precedent that would need to be applied to many of these other benchmarks.

3.10 The process to identify other candidates to take on these functions should be as streamlined as possible to ensure that there is limited disruption arising from the transition between administrators.

3.11 Therefore, the Wheatley Review recommends that the BBA should, under guidance from the authorities, immediately commence a process for tendering out the role of LIBOR administration and governance to an independent party. This should take account of the failings with the existing model and propose a reformed mode of administration and governance.

3.12 Specifically, new institutions should demonstrate:

- greater independence, with a clear distinction between the interests of institutions and submitting banks;
- specific oversight processes to be set up at administration, governance and bank levels;
- transparent systems, processes and structures, with clear accountabilities at every level; and
- a firm commitment to providing access to the benchmark on fair and non-discriminatory terms.

These expectations of a new institutional model are expanded upon below.

Process for tendering LIBOR institutions

3.13 In order to ensure that an open and transparent process is followed, and that the recommendations of this Review are implemented in such a way that credibility is fully restored to LIBOR, the Review recommends that the BBA delegates the tendering process to an independent committee, convened by the Government and the FSA. The membership of the committee should be appointed by the authorities, and include an independent chairperson and representatives from the authorities, the BBA and a variety of other market participants.

3.14 Once established, this committee will conduct a tendering process, based on a set of explicit criteria. These criteria will be designed to ensure that the new rate administrator puts in place a reformed governance structure that is sufficiently strong and credible (as discussed in more detail below). Further, it will take into account other factors such as legal and intellectual property considerations. The committee will then make a recommendation to the BBA as to the preferred candidate to take ownership of LIBOR. The BBA will be expected to transfer ownership and responsibility to the preferred candidate. If LIBOR administration becomes a regulated activity, the successful candidate will also need to apply for a permission to carry out this activity, in due course.

3.15 The Review understands that the balance of incentives may not be sufficient to encourage a new administrator to take ownership of the benchmark in absence of a financial incentive. As a result, the new administrator should be permitted to explore the commercial viability of LIBOR, and this will be reflected in the design of the tender process. However, the clear priority in conducting the tender process will be to find a new administrator to provide a robust operational and oversight framework for LIBOR.

3.16 Details of the selection committee and criteria will be provided on the Wheatley Review webpage as soon as possible.

Proposals for a reformed governance framework

3.17 The Review presented recommendations for the regulatory oversight of LIBOR in the preceding chapter. As such, the FSA will provide a strong degree of external governance to the entire framework, through supervision and oversight of contributing firms and the benchmark administrator.

3.18 Given that the Review has recommended that the BBA entrust the role of LIBOR administrator and sponsor to a new administrator, the Review considers that the detailed design of the overall internal governance framework should be established by the new rate administrator. Organisations interested in taking on this role will likely have differing views on the most effective and robust organisational frameworks, and the tender process will allow these to be evaluated carefully.

3.19 The Review is open to some aspects of benchmark administration being undertaken by different bodies, provided this is operationally effective. For example, the separation from administration of the activities of LIBOR distribution or calculation to another body through a process of delegation. However, the benchmark administrator should retain overall responsibility for all these activities.

3.20 While the new benchmark administrator would have the flexibility to design and manage the organisational and commercial aspects of the framework, there are a number of high-level elements that the Review would expect to see reflected in the future governance structure. Indeed, the Review expects that these aspects should take prominence in the tender process for a new benchmark administrator.

3.21 In particular the Review expects the governance framework should have certain structures and features. First, the benchmark administrator should be under a requirement to analyse and scrutinise submissions from contributing banks. Second, the framework should include a prominent decision-making and oversight role conducted by an independent and powerful committee with the ability to operate autonomously.

3.22 Finally, the benchmark administrator and oversight committee should take responsibility for developing and implementing an industry-led code of conduct outlining the detailed policies and procedures that contributing firms and the LIBOR administrator would be expected to follow (as detailed below).

Structures for a reformed governance framework

Role of an administrator/distributor

3.23 The benchmark administrator will be ultimately responsible for the effective oversight and operation of all aspects of LIBOR. There is a specific set of requirements that the Review believes the administrator should meet in order to ensure that confidence in the integrity of LIBOR as a benchmark is widely restored.

3.24 The benchmark administrator should have responsibility for many of the operational aspects of LIBOR, which include the day-to-day management and administration, as well as public relations.

3.25 The Commission's proposals in Article 30 of the Markets In Financial Instruments Regulation (MIFIR) require benchmark providers to provide fair, reasonable, and non-discriminatory licenses to trading venues and central clearing counterparties to trade and clear products related to their benchmarks. The administrator and distributor, whether a single body or not, would need to ensure that access to LIBOR is not reserved for certain market participants.

3.26 Scrutiny of submissions is also a crucial aspect of the benchmark administrator function to ensure the integrity and credibility of the benchmark. Therefore, as part of the wider benchmark compilation responsibilities, the administrator should have in place rigorous and effective systems and procedures for such scrutiny. This should include both pre-publication verification checks, to avoid manifest errors in submissions, as well as post-publication scrutiny against a set of verifiable statistics, encompassing inter-bank and other unsecured deposit transactions, as well as other relevant financial data.

3.27 In addition, there are a number of operational issues that a rate administrator would need to consider, including:

- defining procedures and criteria for banks to become members of LIBOR panels and setting out the responsibilities of notice period for banks considering leaving the LIBOR panels; and
- technical and operational procedures for submitting rates to LIBOR; e.g. to whom submissions should be made, submission time window, and other operational issues.

3.28 When administering the benchmark, there are a number of issues that may be best achieved through multilateral agreement. For example, there are decisions relating to the definition and calculation of the benchmark, which should be achieved through in-depth consultation with market participants. In order to achieve all of these objectives, the administrator should convene an oversight committee.

3.29 The administrator should refer any anomalous submissions to the oversight committee as part of a process of discussion and triage ahead of any referral to the FSA.

Role of an oversight committee

3.30 While, as the regulated entity, the benchmark administrator will have ultimate responsibility for all aspects of governance, many of the decision-making and technical discussions should be devolved to an independent and separate external oversight committee.

3.31 The oversight committee should take responsibility for those aspects of LIBOR internal governance which require the input from a wider pool of stakeholders. The role of an oversight committee establishes a level of independence and collective decision-making which in turn should improve the credibility and transparency of the governance process.

3.32 Importantly, the definition, scope and context of LIBOR as a benchmark should remain the discretion of the oversight committee as this aspect should be informed by market participants. This would allow participants to ensure that the definition of LIBOR evolves in line with changes in the structure and operation of financial markets.

3.33 Other responsibilities of the oversight committee should include collective scrutiny of individual submissions by contributors. As discussed, the rate administrator will have responsibility for identifying and analysing the submissions against a set of parameters. Those parameters may need to be defined by the oversight committee, using their expertise and understanding of the inter-bank funding market.

3.34 The oversight committee should have responsibility for the key instrument of the governance framework, a code of conduct. The code of conduct should outline the responsibilities of the relevant institutions of governance, including contributing banks, the oversight committee and the benchmark administrator (see Chapter 4 for a detailed discussion).

3.35 The oversight committee should be able to enforce low-level sanctions with respect to participating banks, for example as a result of recurring operational problems. All other breaches should be referred to the FSA for supervisory review.

3.36 In order to improve representation and independence, the oversight committee should include members from beyond the ranks of the contributing panel banks, particularly from the wider cross-section of participants that use LIBOR, or industry bodies who represent those users. All members should have equal standing on this committee.

3.37 The discussion paper outlined a number of actions that could be taken to improve the transparency of such an oversight committee, and these should be implemented:

- the terms of reference of the committee should be made available to the public;
- the details of the membership of the committees should be published, along with any declarations of conflicts of interest and processes for election or nomination of members of the committee; and
- minutes of meetings should also be published, with a delay where necessary.

3.38 One proposal raised by consultation respondents was that the regulatory authorities should join the oversight committee. However, the Review has concluded that if, in line with its recommendations, rate administration and submission are regulated, it would be inappropriate for the regulator to sit on such an oversight committee, as there would need to be a clear distinction between external regulatory oversight and internal governance. For this reason, the Review does not recommend the participation of the regulators.

4 Rules and guidance for LIBOR

Box 4.A: Key reforms and specific recommendations

Submitting banks should immediately look to comply with the submission guidelines presented in this report, making explicit and clear use of transaction data to corroborate their submissions.

The new administrator should, as a priority, introduce a code of conduct for submitters that should clearly define:

- guidelines for the explicit use of transaction data to determine submissions;
- systems and controls for submitting firms;
- transaction record keeping responsibilities for submitting banks; and
- a requirement for regular external audit of submitting firms.

4.1 In prior chapters, the Wheatley Review has concluded that LIBOR, as an industry-defined benchmark, should continue to be administered by a private organisation rather than a public authority. Furthermore, the Review has recommended the introduction of regulatory oversight of the submission and administration of LIBOR, which would allow the FSA to apply its Principles for Businesses to LIBOR administration and to write rules specifically relating to LIBOR submission and administration.

4.2 However, in addition to these rules, the Wheatley Review will also recommend in this chapter that the LIBOR administrator and oversight committee (discussed in the preceding chapter) should develop and implement an industry-led code of conduct to provide detailed guidance on operational and procedural issues of submitting to LIBOR. In due course, the FSA should consider endorsing this code as industry guidance, providing contributors with clear guidance on how to act in accordance with applicable FSA rules on the new regulated activity.

4.3 Recognising the transition times required for introducing this new regime, the Review therefore recommends that, in advance of the code of conduct being agreed, contributors should be guided by submission guidelines that set out a detailed and accountable process for the determination of submissions.

4.4 This chapter sets out the key elements that the Review expects to be included in a code of conduct and defines the submission guidelines that contributors should begin to implement immediately.

LIBOR submission guidelines

4.5 One of the key findings of the Wheatley Review is that LIBOR submissions should be explicitly and transparently supported by transaction data. While the Review supports retaining the existing definition of LIBOR based on unsecured inter-bank lending, there are other relevant transactions that can be used to support contributors' assessment of the market for inter-bank funding, especially during periods of limited activity.

4.6 A detailed, industry-led code of conduct drawn up by the rate administrator and oversight committee, as discussed below, would serve to ensure that best practice is applied to operational aspects of LIBOR submissions, in a manner consistent with FSA rules.

4.7 However, it will be some time before the new rule-book and a fully-developed code of conduct are in place. Given that there is a need to introduce immediate reform to the process of LIBOR submission, the Wheatley Review recommends that, in advance of the agreement of a more detailed code of conduct, LIBOR submitters should refer to the suggested submission guidelines set out in Box 4.B in the determination of their LIBOR submissions.

4.8 These submission guidelines set out the specific transactions that contributing firms should use to determine their assessment of the inter-bank funding market and the hierarchy of these transactions.

Box 4.B: LIBOR submission guidelines

LIBOR submissions should be determined based upon the following hierarchy of transaction types. Submitters should use their experience of the inter-bank deposit market and its relationships with other markets to develop their LIBOR submission. Greatest emphasis should be placed on transactions undertaken by the contributing bank.

1. Contributing banks' transactions in:
    - the unsecured inter-bank deposit market;
    - other unsecured deposit markets, including but not limited to, certificates of deposit and commercial paper; and
    - other related markets, including but not limited to, overnight index swaps, repurchase agreements, foreign exchange forwards, interest rate futures and options and central bank operations.
2. Contributing banks' observations of third party transactions in the same markets.
3. Quotes by third parties offered to contributing banks in the same markets.
4. In the absence of transaction data relating to a specific LIBOR benchmark, expert judgement should be used to determine a submission.

Submissions may also include adjustments in consideration of other variables, to ensure the submission is representative of and consistent with the market for inter-bank deposits. In particular, the information obtained above may be adjusted by application of the following considerations:

- Proximity of transactions to time of submission and the impact of market events between transactions and submission time;
- Techniques for interpolation or extrapolation from available data;
- Changes relative credit standing of the contributor banks and other market participants; and
- Non-representative transactions.

4.9 These submission guidelines are closely modelled on the undertakings proposed by the Commodity Futures Trading Commission (CFTC) in their settlement with Barclays Bank Plc.[1] It is the view of the Wheatley Review that banks should begin to create their LIBOR submissions by taking account of these guidelines immediately.

4.10 The proposed submission guidelines place greatest weight on the inter-bank deposit transactions of contributing banks, in accordance with the current definition of LIBOR. For some currencies and maturities there are sufficient underlying transactions with which to determine submissions; in this case the weighted average rate of those transactions should be used.

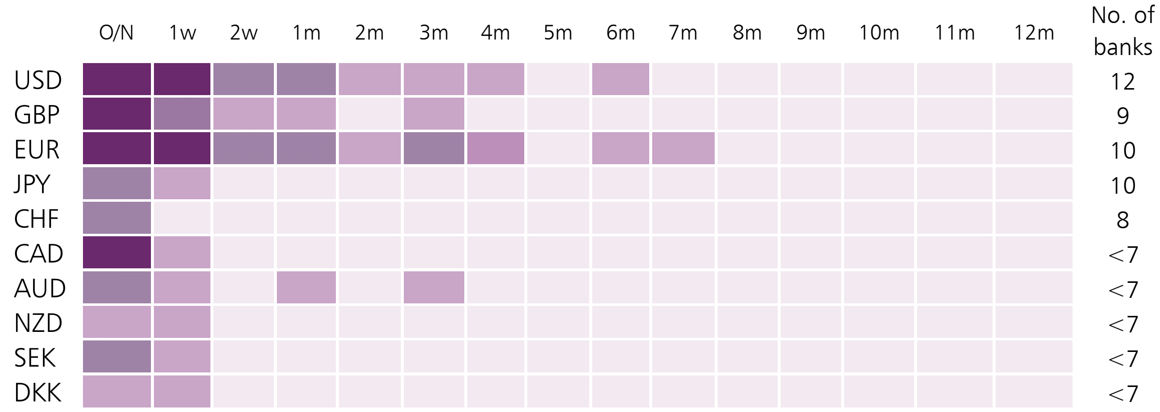
4.11 However, where a contributor bank has few transactions in inter-bank deposits, or those transactions are not representative of the inter-bank market, then an assessment of the inter-bank funding market should be based on transactions or observations of other sources of unsecured deposits and other relevant financial instruments, as set out in the guidelines.

4.12 Chart 4.A demonstrates that, for a reasonable number of currencies and maturities, there may be sufficient transactions in the inter-bank and other wholesale deposit markets to be explicitly used when determining submissions to LIBOR.

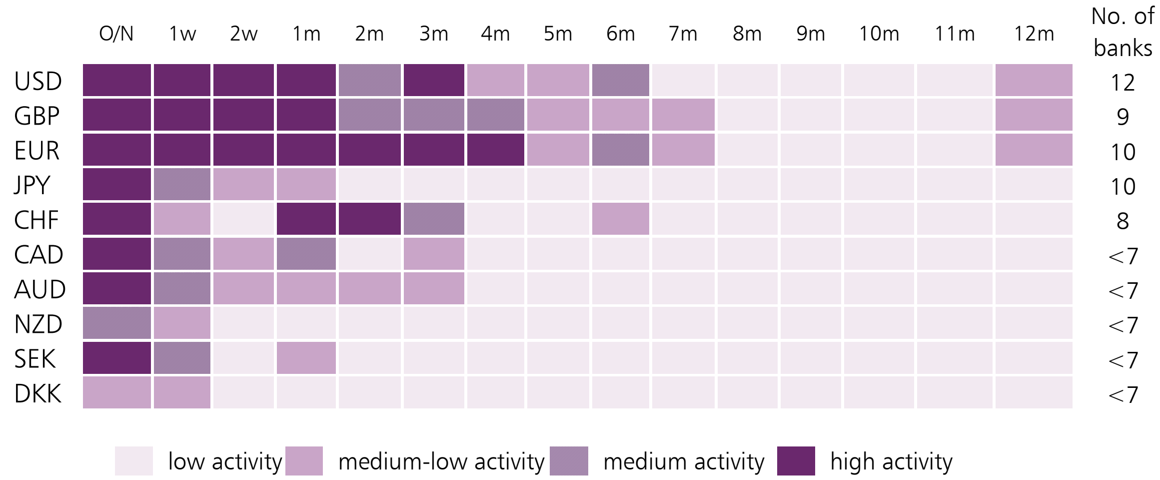
[1] http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfbarclaysorder062712.pdf

Chart 4.A: Unsecured deposit transactions by LIBOR contributing banks, per bank in 2011

Inter-bank deposit transactions



Wholesale deposit transactions



Note: This is based on data from a subset of contributing banks, may not be include all relevant transactions or be entirely representative for all currencies.

Source: Oliver Wyman, Bank of England and Wheatley Review calculations

4.13 The Review recognises that there are limited transactions on which to base LIBOR submissions for some currencies and maturities. In Chapter 5 the Review recommends that the number of currencies and maturities for which LIBOR is published be reduced, with those currencies and maturities that are thinly traded and used to be phased out over a 12-month transition period.

Code of conduct for contributing banks

4.14 The Wheatley Review recommends that FSA Principles and rules should provide the high-level basis for the regulation of contributing banks and the administrator. It may be necessary for the FSA to draft specific rules relating to these regulated activities. However, the Review believes that once a new rate administrator is in place, more detailed guidance relating to submissions to LIBOR should be developed and implemented.

4.15 Therefore the Review recommends that the LIBOR administrator, through the oversight committee, should draft a code of conduct, in collaboration with contributors and market participants, which should serve as a manual for the internal governance and organisation of LIBOR submission, detailing the specific requirements for firm behaviour and procedures.

4.16 To the extent that these details are not covered by FSA rules, the code of conduct will serve as guidance on the FSA Principles and rules in relation to the regulated activity of LIBOR submission. Since the code will be drafted by industry participants, it will constitute industry guidance, rather than FSA guidance, on those Principles and rules.

4.17 The FSA rules are principle-based and outcome-focused; therefore, the details for submission guidance should remain with the institutions of LIBOR, which will remain responsible for the definition of the benchmark. The benefit of industry guidance is that the rate administrator can develop the code of conduct over time; as both LIBOR and the market that it is intended to assess evolve, the requirements of its users will also change.

4.18 The FSA has a detailed policy for endorsing industry-led guidance, known as 'FSA confirmation', which clarifies and standardises the role of industry guidance and its stature within the regulatory framework.[2] This process should be applied to the code, subject to the FSA being satisfied that it is fit for purpose. Once the detailed code of conduct has been confirmed by the FSA, the code should serve to ensure that best practice is applied to LIBOR submissions and all operational aspects of LIBOR, in a manner consistent with FSA rules.

Coverage of the code of conduct

4.19 The Wheatley Review recommends that the code of conduct should cover the areas discussed below. The code of conduct should also be published to ensure transparency around the industry guidance for LIBOR submission.

Submission procedures

4.20 The code should specify, in detail, the process by which submission are made, including:

- specific and detailed LIBOR submission guidelines; for example, the role and explicit use of inter-bank deposit transactions and other transaction data, other relevant and related markets which can be used to develop a precise assessment of the inter-bank funding market. Should also include specific aspects that should not be taken into account when determining submissions;
- a requirement to keep accurate and accessible internal records of all transactions in the inter-bank deposit market and other relevant markets, alongside a requirement to provide these records to the rate administrator and oversight committee on a regular basis and on request. (Submitting banks should begin implementing this immediately, as discussed below.);
- detailed procedures for validation of submissions prior to publication and corroboration of submissions after publication. Validation and corroboration should be compared with relevant financial data and parameters should be agreed in advance. Procedures to include contact between the calculation agent and the submitters, with appropriate managerial oversight;
- policies for training of the LIBOR submitter, including what inputs to take into account when determining submissions and how to use expert judgement, within the framework of submission guidelines. Also, should include knowledge of regulatory responsibilities and the code of conduct as outlined. Similarly, training for derivatives traders detailing their potential role in the rate determination, but also outlining types of unacceptable contact with LIBOR submitters; and
- a requirement for all institutions to have in place suspicious submission reporting procedures to the rate administrator and oversight committee for review. Any unaccountable and anomalous submissions should be escalated to the FSA.

[2] For details on this process, see Policy Statement 07/16, available at: http://www.fsa.gov.uk/pubs/policy/ps07_16.pdf

Internal systems and control policies

4.21 The code should also cover, in detail, the requirements and expectations for systems and controls related to the submission process, including:

- an outline of personal responsibilities within each firm, including internal reporting lines and accountability. Specifically, location of LIBOR submitters and associated managers to be within the function responsible for the contributors' liquidity and liability management. Names of relevant individuals should be recorded, alongside alternates. To reiterate the requirement that certain individuals within the firms are Approved Persons;
- internal procedures for sign-off of rate submissions as well as exception reporting and provision of management intelligence;
- implementing disciplinary and/or whistle-blower procedures for attempts to manipulate or failing to report attempted manipulation by parties external to the LIBOR submission process. Subsequent reporting of misconduct and disciplinary proceedings to the FSA;
- installation of effective conflicts of interest management procedures and communication controls, both within banks and between banks and other third parties to avoid any inappropriate external influence over those responsible for submitting rates. Specifically, LIBOR submitters should be physically separated from interest rate derivatives traders;
- a requirement that all relevant records relating to the submission process (over and above transaction-related records) should be kept. Of particular focus should be:
  - the process surrounding rate determination and subsequent sign-off;
  - the names of individuals and their responsibilities;
  - any communications between the submitting parties and others in determining submissions, such as internal and external traders and brokers;
  - any interaction with the rate administrator or calculation agent;
  - any submission queries and their respective outcomes;
  - sensitivity reports to LIBOR fixing rates for interest rate swap trading books and any other derivative trading book with a significant exposure to LIBOR fixings; and
  - the findings of any internal and external audits.
- requirements for annual internal audit and regular compliance reviews; and
- requirements for external audit, to be first implemented 6 months after introduction of the code, and subsequently every 2-3 years (outlined in more detail below). The oversight committee can require an external audit of contributing firms if dissatisfied with aspects of their conduct. (See below for the Review's recommendations regarding external audit of submissions and governance).

The requirement for submitting banks to record relevant transactions

4.22 As discussed above, expert judgement will be supported by transactions in inter-bank deposits and other relevant instruments. This facilitates the corroboration of submissions, both internally within the submitting firm, as well as externally by the new administrator of LIBOR and the oversight committee. During the course of supervision of panel banks, the FSA may also request to see these records, when reviewing firms' systems and controls for submissions.

4.23 In the longer-term, a code of conduct will specify how submitting banks should make use of trade data in their LIBOR submissions, while, in the short term, the submission guidelines above will advise banks on how best to use trade data in advance of the introduction of the code.

4.24 At present, submitting banks do not have to record the trade data used to support their LIBOR submissions. This means that it is difficult for the administrator and the regulator to compare the expert judgement of a submitting bank against trades that have been undertaken by the submitting bank.

4.25 Therefore, the Wheatley Review recommends that contributing banks keep accurate and accessible records of transactions in inter-bank deposits and other relevant financial instruments (including information on currency, maturity, price and counterparty-type).

4.26 Moreover, these records should be made available to the new rate administrator and any relevant governance committees on a regular basis. The administrator of LIBOR will make use of this information to monitor submissions, comparing transaction information against submissions and referring any anomalies to the regulatory authorities.

4.27 These transaction records should also be made available to the FSA for the purpose of supervising contributing firms' submission as well as firms' system and control procedures.

Industry guidelines for assurance and audit

4.28 Contributing banks and the rate administrator will together establish a code of conduct outlining requirements and responsibilities of individual firms. The Review's broad recommendations for the contents of the code were outlined above. A key component of the code is that institutions will be required to obtain regular external assurance to confirm their adherence to the code.

4.29 Assurance from external auditors can play a major role in instilling public confidence and establishing credibility to LIBOR. External assurance provides an independent review that published benchmarks are fairly presented as well as firm systems and internal controls used to support LIBOR submissions and internal governance arrangements.

4.30 Such external assurance should be provided on a consistent basis and based upon a robust framework. The Review welcomes the project announced by the Institute of Chartered Accountants of England and Wales (ICAEW) to develop guidance for providing external assurance on interest rate benchmark submissions, including LIBOR, based upon standards set out by the International Auditing and Assurance Standards Board. The Review recommends that the ICAEW work with the new LIBOR administrator to ensure that their guidance informs and is consistent with the code of conduct.

4.31 Development of this guidance will ensure standardisation of assurance and audit across all participants, which will benefit contributing banks, the rate administrator and the regulatory authorities. However, the Review recognises that the systems and controls of banks are likely to be dynamic while a code of conduct is developed and implemented, but stresses the creation of this guidance should be in place when banks are required to obtain external assurance.

5 Reforms to the LIBOR mechanism

Box 5.A: Key reforms and specific recommendations

The BBA and, in due course, the new administrator, should cease the compilation and publication of LIBOR for those currencies and tenors for which there is insufficient trade data to corroborate submissions, immediately engaging in consultation with users and submitters to plan and implement a phased removal of these rates.

The BBA should publish individual LIBOR submissions after 3 months to reduce the potential for submitters to attempt manipulation, and to reduce any potential interpretation of submissions as a signal of creditworthiness.

Banks, including those not currently submitting to LIBOR, should be encouraged to participate as widely as possible in the LIBOR compilation process, including, if necessary, through new powers of regulatory compulsion.

Market participants using LIBOR should be encouraged to consider and evaluate their use of LIBOR, including whether standard contracts contain adequate contingency provisions covering the event of LIBOR not being produced.

5.1 The preceding chapters of this report have set out a blueprint for reform of the regulation of LIBOR and the institutions that will administer the rate in a more robust and transparent fashion. There are also a number of other reforms that could serve to strengthen the credibility of LIBOR in the immediate term. These include:

- reducing the number of currencies and maturities for which LIBOR is published;
- delaying the publication of individual submissions; and
- ensuring sufficiently large panel sizes for LIBOR.

5.2 In addition, there are also reforms that could improve the understanding of LIBOR among market participants and potentially increase the resilience of the markets that reference LIBOR. In particular:

- developing robust contingencies for the unavailability of LIBOR within contracts; and
- regular publication of statistical bulletins on the transactions that LIBOR submissions are intended to reflect.

Improving the LIBOR mechanism

Reducing the number of currencies and maturities for which LIBOR is published

5.3 LIBOR is currently published for ten currencies and fifteen maturities. The discussion paper, and subsequent responses, demonstrated that:

- the volume of transactions underpinning each LIBOR benchmark published vary considerably, with very few underlying trades in some currencies and maturities; and
- some LIBOR benchmarks are not used as a reference for many transactions. They tend to correspond to smaller markets, or where domestic alternatives are preferred.

5.4 The Wheatley Review has recommended that LIBOR submissions should be explicitly and transparently supported by transaction data (see Chapter 4). However, there is a lack of regular transactions for many of the currencies and tenors for which LIBOR is calculated; Chart 4.A shows the volume of inter-bank deposit transactions for each currency and maturity over 2011. While this data shows significant numbers of transactions in core currencies and tenors, trading volumes are thin for many others. LIBOR submissions for these currencies and maturities would be more difficult to support using transaction data.

5.5 The prevalence of the use of different currencies and maturities in interest rate swaps and floating rate notes referencing LIBOR is illustrated by Table 5.A. While based on incomplete data – no comparable data could be found for syndicated loan transactions, mortgages and other markets – the Table clearly shows that usage of LIBOR is concentrated in a few core currencies and maturities was supported anecdotally by respondents throughout the Review process, who also noted the use of overnight and 9 month maturities. This analysis makes it clear that the use of LIBOR, at least in these applications, is concentrated:

- for currencies, in US Dollar, Pound Sterling, Swiss Franc, Japanese Yen and, to a lesser extent, the Euro; and
- for maturities, in overnight, 1 month, 3 months, 6 months and to a lesser extent 9 and 12 months.

Table 5.A: The use of LIBOR as a reference rate

Interest rate swaps and floating rate notes

	1m	3m	6m	12m	Total
USD	5.6%	52.8%	0.3%	0.1%	59%
EUR	-	-	0.1%	-	0%
GBP	0.4%	2.9%	8.9%	-	12%
JPY	0.1%	3.6%	23.5%	-	27%
CHF	0.1%	0.4%	1.6%	-	2%
AUD	-	-	-	-	0%
CAD	-	-	-	-	0%
NZD	-	-	-	-	0%
SEK	-	-	-	-	0%
DKK	-	-	-	-	0%
Total	6%	60%	34%	0%	100%

Source: Dealogic, Depositary Trust and Clearing Corporation

5.6 For some of the less-used currencies, benchmarks calculated in domestic jurisdictions tend to be preferred to LIBOR, due to the greater liquidity of transactions in the domestic markets. For example, the Stockholm Inter-bank Offered Rate (STIBOR) is used more frequently than the corresponding Swedish Krona LIBOR benchmark.

5.7 Thus, the Wheatley Review has concluded that there are a number of published LIBOR benchmarks that are both difficult to support using trade data, and are not heavily used by market participants. Furthermore, given the low usage of many of the currencies and tenors for which LIBOR is published, the Wheatley Review has concluded that a carefully managed and phased reduction in the number of LIBOR benchmarks published could occur without significant market disruption.

5.8 During the Wheatley Review consultation process, market participants made it clear that, in the absence of certain tenors, interpolation or extrapolation techniques could be used to create intermediate maturities between existing data points.

5.9 Therefore, the Review recommends that the number of currencies and tenors for which LIBOR is published be reduced. Specifically:

- publication of all LIBORs for Australian Dollars, Canadian Dollars, Danish Kroner, New Zealand Dollars and Swedish Kronor should be discontinued;
- for remaining currencies, publication of LIBOR for 4 months, 5 months, 7 months, 8 months, 10 months and 11 months tenors should be discontinued;
- continued publication of overnight, 1 week, 2 weeks, 2 months and 9 months should also be re-considered.

5.10 Should this recommendation be implemented in full, the number of LIBOR benchmarks published daily could be reduced from 150 to 20. These remaining rates could more easily be supported by trade data, and moreover, are heavily used by market participants.

5.11 Despite the infrequent use of LIBOR in some currencies and maturities, there are likely to be at least some outstanding contracts referencing every LIBOR rate. As a result, immediate cessation of those rates could have potentially disruptive implications for financial markets. Any reduction in the availability of particular LIBOR rates should therefore be preceded by a significant and public notice period to facilitate an orderly transition to alternative rates and arrangements.

5.12 The Review recommends a 12-month transition period for the full implementation of these changes. However, some LIBORs may be able to be reduced in a shorter time period, perhaps within six months. This timeframe would give market participants time to adapt to alternative benchmarks. It would also give market participants the time to establish market-wide solutions, where appropriate. In addition, bond issuers would have the opportunity to reflect the changes to LIBOR in annual updates to their issuance programmes.

5.13 Work towards implementing this recommendation should be taken forward by the BBA and, in due course, the new LIBOR administrator, through an open process of consultation with LIBOR users and submitting banks.

Delaying publication of individual submissions

5.14 Up until now, the LIBOR submissions of individual contributors have been published daily, alongside the final LIBOR rate. This publication was originally intended as a mechanism to promote transparency and public accountability for the accuracy of submissions.

5.15 However the discussion paper highlighted a concern that the publication of individual submissions could facilitate the manipulation of the rate and create incentives for contributors to submit inappropriate rates. In particular:

- the submissions provide information to contributors that may facilitate manipulation since contributors can, assuming that other contributions do not change significantly from day-to-day, estimate the likely impact of their submission on the overall rate; and

- while individual submissions reflect elements other than solely idiosyncratic counterparty credit risk, changes in a particular bank's submission may be interpreted by some observers as an implicit signal as to the creditworthiness of that contributor. Real-time publication of submissions can create incentives to submit a lower rate than would otherwise have been submitted.

5.16 The Review considers that these considerations outweigh the merits of making this information public in real-time. Therefore, the Review recommends that the publication of individual submissions be delayed by a period of at least 3 months.

5.17 Individual submissions will remain available to the rate administrator and if necessary any relevant oversight committees in real-time, for the purpose of calculating the rate and facilitating corroboration and monitoring techniques. The information will also remain available to the FSA for the purpose of supervision and market monitoring.

5.18 The Review believes there is relatively low level of transition risk to the implementation of this recommendation and therefore, recommends that the BBA and Thomson Reuters introduce this change immediately.

Ensuring sufficiently large panel sizes for LIBOR

5.19 It is important that banks continue to take an active role in the process of submitting to LIBOR. The benchmark is compiled from banks' submissions; thus, in the absence of participating banks, LIBOR would lack sufficient submissions to be an accurate reflection of bank borrowing costs and would eventually fail, leading to major implications for banks, institutions and financial markets.

5.20 At present, 23 banks are members of LIBOR panels and the panels vary in size between 6 and 18 banks. Participation is voluntary, and eligible banks nominate themselves for selection to become a member of each LIBOR currency panel, and are subsequently selected and approved by the Foreign Exchange and Money Markets (FX&MM) Committee, based on criteria such as market activity, expertise and reputation.

5.21 The existence of LIBOR provides significant benefits to a wide variety of market participants, such as commercial banks, investment banks, borrowers and investors around the world. The many benefits of a single benchmark for inter-bank interest rates have been discussed at length in the discussion paper.

5.22 While the benefits of LIBOR are enjoyed by all banks (and a large number of other market participants), only a small group of banks contribute to the benchmark, and there are some notable large banks that do not participate in the LIBOR panels.

5.23 In the discussion paper, the Wheatley Review noted that large panel sizes would benefit the accuracy and credibility of the benchmark. This was reflected in the consultation process, where many respondents supported large panels of submitting banks. There were two main reasons cited for ensuring large panel sizes.

- large panels ensure that individual submissions have a limited impact on the published benchmark. Thus wider panels discourage attempts to manipulate LIBOR; and
- an increase in the number of contributors could increase the overall representativeness of the LIBOR benchmark.

5.24 Given the global importance of LIBOR, the Wheatley Review also believes that the international community stands to gain from the continuing participation of major banks in the LIBOR panels. Therefore, the Wheatley Review asks that international authorities engage with relevant institutions to encourage continuing participation in the LIBOR panels.

5.25 A reduction in the number of currencies for which LIBOR is published will lead to the existence of fewer panels. The remaining panels will require the submission of rates that are based on heavily-traded transactions, thus limiting the potential risks associated with use of expert judgement in the absence of trade data. This will make it easier for banks to make submissions to LIBOR.

5.26 The introduction of regulation and more robust governance of LIBOR will also benefit participating banks. While these reforms may impose some moderate costs on submitting banks, they will deliver a series of benchmarks that are more accurately compiled. This will, in turn, re-establish credibility in LIBOR, restoring the prestige of being a member of a submitting panel.

5.27 At this stage, the Wheatley Review does not consider it necessary to recommend that the FSA compel particular banks to be members of LIBOR panels. However, the Wheatley Review recognises that, if submitting banks were to explore leaving the LIBOR panels, or if panel sizes did not increase, this might be necessary. For example, there could be a state of affairs whereby banks that have expertise in certain inter-bank markets, including those not currently involved in LIBOR, might be required to participate in LIBOR panels as a condition of their activity in those markets. This could possibly be achieved by making rules requiring such firms to contribute, on a continuing basis, to LIBOR.

5.28 While the FSA's current powers would allow it to impose such an obligation on a temporary basis, for example to avoid the threat of financial stability or a loss of market integrity, they would not allow the imposition of a long term continuing obligation on banks to submit to LIBOR. This suggests there is a potential gap in the regulatory toolkit. The Wheatley Review therefore recommends that the Government legislate to provide the FSA with an express "reserve" power to compel LIBOR submissions, to be used only if the FSA should consider it to be necessary in the future.

Improving understanding and resilience

Develop robust contingencies for the failure of LIBOR within contracts

5.29 Many of the contracts that reference LIBOR use definitions and terms and conditions that are standardised across the industry and which are published by trade organisations. For example, the vast majority of interest rate swap contracts use International Swaps and Derivatives Association (ISDA) documentation. Similarly, although less homogenous, syndicated loan agreements generally use the Loan Markets Association (LMA) Agreement. There is also a wide variety of other, less standardised forms of documentation for contracts that reference LIBOR.

5.30 Most types of documentation contain contingency provisions in the event that LIBOR is unavailable. These provisions are intended to be used in the event of occasional operational problems, or other market disruptive events, which lead to LIBOR not being published in the usual manner.

5.31 In most cases, the contractual provision in the case of LIBOR being unavailable is to trigger an alternative rate calculation process. This process generally requires contacting a set of reference banks, each of whom would be asked to provide indicative quotes for deposit rates in the required currency and maturity. The mean of these quotes would then be used to make payments due, in place of LIBOR.

5.32 There are number of problems with this approach:

- first, given the huge volume of contracts that reference LIBOR, it is likely that, in the event that LIBOR was unavailable, the sheer volume of existing contracts would make this approach unworkable;

- second, given that the reference banks are in many cases the same as the LIBOR submitting banks, there is a risk that these banks may not be prepared to provide quotes in a circumstance where LIBOR has failed; and
- third, widespread use of these contingencies would mean that different contract provisions may lead to different interest rates payable in place of LIBOR between counterparties.

5.33 Fundamentally, the established contingency plan for the failure of LIBOR relies on the same inputs that one could expect to be unavailable in the instance of LIBOR being unavailable, albeit without the benefit of the inputs and outputs being standardised through a single institution.

5.34 Therefore, the Wheatley Review recommends that industry bodies that publish standardised legal documentation in relation to contracts referencing LIBOR, as well as LIBOR users, should develop robust contingency procedures to take effect in the event of longer-term disruption to the publication of LIBOR. Specifically, new contingency provisions should be designed to function without reliance on submissions from LIBOR panel banks. Chapter 6 explores alternative benchmark rates that could be used in such a contingency.

Regular publication of statistical bulletins on underlying trades

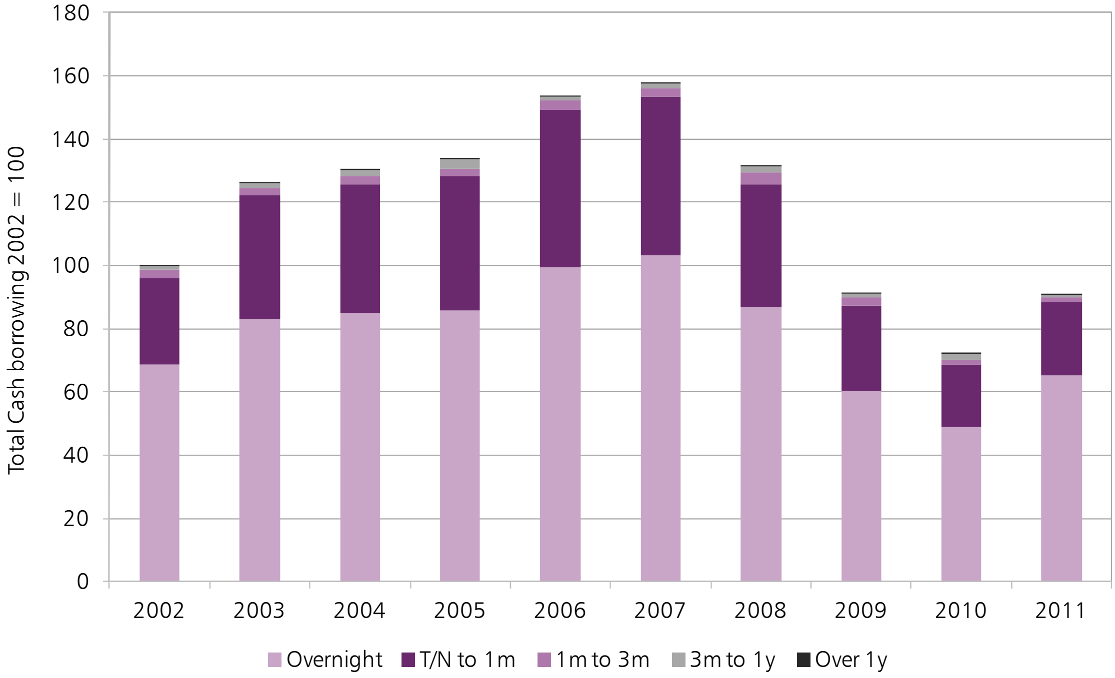
5.35 Currently, the market for inter-bank deposits is not transparent; LIBOR users are not necessarily aware of the volumes of the inter-bank transactions that underpin the benchmark. Better record-keeping by banks in relation to inter-bank and other transactions would allow more detailed aggregate statistics to be compiled.

5.36 These bulletins could be used to improve transparency in these markets, as well as to develop user understanding and education, which could facilitate selection of rate usage. This would help users understand the extent to which expert judgement was used for a given LIBOR benchmark.

5.37 Therefore, the Wheatley Review recommends that the new LIBOR administrator should publish a regular statistical bulletin detailing the condition of the underlying market. This publication should use the data collected from contributing banks of relevant transactions. In particular, the statistical bulletin should include the volume and value of relevant inter-bank funding transactions and other related financial instruments.

5.38 As an example, Chart 5.A below shows the evolution of unsecured cash lending and borrowing in the Euro money markets, by maturity. Analogous detailed data does not exist for other currency markets. A similar statistical bulletin detailing the volumes of transactions that support LIBOR would be a primary instrument of user education.

Chart 5.A: Average daily turnover in unsecured Euro lending and borrowing, 2011
Index: daily turnover in 2002 = 100



Source: European Central Bank, Euro Money Market Survey 2011

5.39 The Wheatley Review expects that submitting banks and the new LIBOR administrator will need to develop new operational systems to collect, store and analyse the relevant information and that the process of upgrading the necessary systems should begin immediately.

6 Alternatives to LIBOR for the longer term

Box 6.A: Key reforms and specific recommendations

The UK authorities should work closely with the European and international community and contribute fully to the debate on the long-term future of LIBOR and other global benchmarks, establishing and promoting clear principles for effective global benchmarks.

As part of this process:

- International authorities should take forward a discussion of existing applications of inter-bank rates such as LIBOR, the merits of alternative reference rates for certain applications, and the role – if any – that the authorities should play in facilitating or encouraging transition to these reference rates. In the first instance this should be the Financial Stability Board (FSB), working in conjunction with IOSCO, the European and other interested regional and domestic authorities; and
- users of LIBOR should ensure that they are using the most appropriate reference rate for their purpose. Where this is not LIBOR, they should look to transition to a new reference rate where feasible.

6.1 This chapter will explore the following:

- the extent to which there is a case for a scenario in which a variety of viable alternatives to LIBOR exist, with different interest rate benchmarks used for different applications;
- the role of authorities in promoting or mandating the use of alternative benchmarks to LIBOR; and
- the most plausible candidate alternative benchmarks that were presented in the discussion paper, and examines each of these in more detail.

6.2 Conclusions and recommendations on these issues are beyond the scope of this Review. However, it is intended that the issues raised by the Review can serve as a starting point for further discussion by both market participants and the authorities.

The case for an alternative to LIBOR

6.3 The recommendations for reform of the existing LIBOR model set out in the preceding chapters are intended to restore the credibility of LIBOR.

6.4 As stated above, the Wheatley Review has found that LIBOR should be reformed, rather than replaced, in the immediate term. This view was strongly supported by responses to the discussion paper.

6.5 Further, one of the conclusions of the Review is that there is a package of feasible reforms to the current LIBOR system that could serve to (a) strengthen LIBOR sufficiently that credibility, integrity and confidence in it are restored, and (b) without putting at risk the substantial stock of outstanding contracts that reference LIBOR.

6.6 However, there is a case for exploring alternative benchmarks that could be used in certain applications. A number of responses to the discussion paper addressed the issues, exploring two questions in particular:

1. *LIBOR may no longer serve its original intended purpose: representing the average marginal funding cost across a range of leading banks*

   First, the shortening in the maturity of unsecured inter-bank lending markets, along with the increasing extent to which banks' borrowing is overnight and collateralised, may mean that the assumption of a permanent and deep inter-bank market for term, as originally envisaged by the LIBOR user, is no longer correct.

   Second, a single benchmark representing the average credit and liquidity risk of an increasingly diverse set of banks may no longer relate to a given institution's own borrowing costs. Originally, the credit risk of a panel of leading banks was assumed to be low and relatively homogenous. Where institutions used LIBOR, it was with the understanding that variations in funding costs had a relationship to LIBOR. Now, LIBOR rates have a much more complex credit and liquidity risk elements.

2. *Alternative reference rates may be more suitable in some of the current applications of LIBOR*

   For example, many users of derivative contracts that reference LIBOR may be using them to manage exposure to interest rate changes, and therefore do not need an inter-bank credit and liquidity risk aspect in the contract. In this case it could be argued that referencing a benchmark that more purely relates to short-term interest rate risk (such as Overnight Index Swaps) might be more suitable. When the inter-bank credit and liquidity risk elements of LIBOR were small, the difference did not matter much in practice; however now that these elements are large and volatile, the issue may be of greater significance.

6.7 The following section of the chapter explores some of the many and varied applications of LIBOR, and to what extent these arguments apply.

Examples of applications of LIBOR

Lending and borrowing

6.8 LIBOR is used to determine variable interest rates in some syndicated loans, floating rate notes (including asset-backed securities and corporate bonds), and variable rate mortgages (although this last usage is relatively rare in the UK).[1] The use of a benchmark such as LIBOR allows lenders to use it as a barometer of the inter-bank funding market to base the margin to be applied to its customers.

6.9 The use of a benchmark that reflects the average cost of funds for a panel of leading banks to price loans and other floating rate notes would appear to be justified. However, there is a question as to whether LIBOR is the most suitable floating rate for referencing some of these assets and liabilities when the underlying market has dramatically changed. There is a question as to whether the cost of a variable rate mortgage should reflect the cost to access liquidity in local currency for a particular set of international banks.

[1] There will also be an indirect link to the price of fixed rate mortgages since these tend to be driven by the price of interest rate swaps, which in turn will depend on a reference rate for pricing and determining cash flows.

Interest Rate Derivatives

6.10 Interest rate derivatives are financial products that allow the managing of and speculation on interest rate risk. They can be used by market participants to manage their balance sheets. For example they can be used to match maturity structure and the balance between floating and fixed interest rates across assets and liabilities. Furthermore, they can be used to take a position on future developments in financial markets: for example, changes in interest rates or credit spreads. Interest rate derivatives can also be used as a price reference curve for loans or bonds.

6.11 LIBOR, or alternative interest rate benchmarks, can be used in two main ways in relation to interest rate derivatives:

- as a reference rate – the interest rate on which payment amounts are based. For example, a fixed-floating interest rate swap may involve the exchange of a fixed rate of interest of say 1 per cent for interest calculated from 3-month LIBOR. In this case 3-month LIBOR is the floating reference rate that determines the payment amount; or
- as a discount rate – the discount rate is used to calculate the present value of an interest rate swap. It does not determine the nominal cash flow that passes between counterparties to a swap. Instead it is the interest rate used to calculate the present value of that cash flow and is used to determine the value of the cash flows involved in the swap.

LIBOR as a reference rate

6.12 LIBOR may not always be the most suitable interest rate benchmark for all financial products, as this will depend on what the product is used for. For example, LIBOR may not be the most suitable reference rate for some swaps used to hedge exposure to funding costs, as it does not reflect all elements of bank funding sources.

6.13 Several responses to the discussion paper argued that, for at least some of the uses of interest rate derivatives, a rate containing a purer measure of interest expectations may be more suitable than a benchmark including bank credit risk such as LIBOR.

6.14 One specific example given in a response to the discussion paper was that, for pension funds and insurance companies, both substantial users of long-dated interest rate swaps, the credit risk element of LIBOR may be unnecessary. However, due to the lack of liquidity in long-dated swaps referencing viable alternatives (such as SONIA and EONIA) switching is difficult at present.

LIBOR as a discount rate

6.15 Since interest rate derivatives involve the exchange of future cash-flows, valuing these instruments requires first calculating the present value of these future cash-flows. This is done by discounting these flows using an interest rate called the 'discount rate'. Discounting cash flows can be done for a variety of purposes for example swap pricing, accounting, calculating counterparty risk or determine collateral amounts. Market participants should choose the best benchmark curve to determine those present values and be aware that LIBOR discounting might not necessarily be always the best option.

6.16 The Wheatley Review recommends that users of LIBOR should ensure that they are using the most appropriate reference rate for their purpose. Where this is not LIBOR, they should look to transition to a new reference rate where feasible.

The role of the authorities and market in transition to an alternative

6.17 If there were a desire to move to using alternative interest rate benchmarks for at least some of the current uses of LIBOR, there could be a question about what role, if any, the authorities should play in facilitating and encouraging any transition. The potential rationale for authority intervention would rest on two sources of inertia:

- first, inter-dependency between past exposures and future contracts – to the extent that financial instruments are used to hedge against existing exposures and movements in LIBOR, a switch to an alternative rate may be difficult. Thus, there will be a desire to ensure that future contracts use the same reference rate so that basis risk – the exposure to movements in LIBOR – can be managed; and
- second, network effects – there are significant benefits from common reference rates – the more they are used, the market for products linked to these rates is substantially more liquid and the easier it is to hedge past exposures. This results in inertia, which can lead to the locking-in of particular benchmarks; because of the strong liquidity effects, reference rates may be used even where they are not necessarily the most ideal reference rate in order to take advantage of liquidity.

6.18 A further potential justification for active intervention by government or the regulatory authorities lies in the fact that, in some cases, reference rates are of systemic importance to financial markets. For example, the choice of benchmark may have implications for the monetary policy transmission mechanism, financial stability objectives or both.

6.19 Therefore, if moves to alternative reference rates were desirable for at least some of the uses to which LIBOR is currently put, then there could be justification for the involvement of public authorities to assist the transition, whether to specific alternative rates, or a plurality. However, there is, as yet, no consensus on the role for authorities in facilitating or encouraging transition to such alternative benchmarks. There may be merit in the international community taking forward this debate.

6.20 While several responses to the discussion paper were in favour of exploring whether alternatives could be used in the future for certain existing applications of LIBOR, most suggested that the choice of alternatives should be market-led. A handful of responses to the Review recognised a need for authorities to facilitate transition to other benchmarks, given that such a migration would inevitably involve investor protection and market integrity issues.

6.21 The Review recommends that, at an international level, authorities should take forward a discussion of existing applications of inter-bank rates such as LIBOR, the merits of alternative reference rates for certain applications, and the role, if any, that the authorities should play in facilitating or encouraging transition to these reference rates. In the first instance this should be the Financial Stability Board (FSB), working in conjunction with IOSCO, the European and other interested regional and domestic authorities.

Consideration of alternative benchmarks

6.22 As set out in the discussion paper, there are a number of criteria that can be used to determine the suitability of a particular interest rate as a direct alternative to LIBOR:

- the benchmark should have a maturity curve for the full spectrum of maturities;
- the underlying market should be resilient, as far as possible, through periods of stress and illiquidity;
- a liquid underlying market with transaction volumes would help corroborate the rate;
- an interest rate benchmark should be transparent, simple and standardised with respect to the instruments and transactions that are used to determine the rate. In particular, across multiple currencies. This can facilitate a deeper and more liquid market from which the rate can be derived; and

- ideally a historical time series would be available for alternative benchmarks, allowing past behaviour to be used in pricing and risk models.

6.23 Responses to the discussion paper were generally sceptical that immediate alternatives to LIBOR exist, particularly if interpreted as direct replacements, exhibiting same elements of interest rate expectations, term premia and credit risk. However, several respondents were in favour of exploring whether alternatives could be used in the future for certain existing applications of LIBOR, although most suggested that the choice of alternatives should be market-led.

6.24 Although there may be few, if any, candidates for direct substitutes for LIBOR, there may be certain benchmarks that can be used for certain applications. Further, it is worth noting that some of the instruments described below could be considered as part of a framework to determine appropriate LIBOR submissions (see Chapter 4).

6.25 With regards to alternatives to LIBOR for certain applications specifically mentioned by responses to the Review, overnight index rates (SONIA, EONIA, Federal Funds Effective Rate), and the swaps based upon them (for example, OIS), received the most support.

6.26 However, respondents pointed out that alternative benchmarks have limitations. For example, OIS benchmarks are a snapshot of a largely bespoke transaction market, and thus subject to many of the same issues as LIBOR. To address this, some of these responses recommended the creation of formal OIS fixes where they do not already exist. There was some, albeit relatively limited, support for a ‘synthetic’ rate consisting of OIS plus a credit spread.

6.27 It is important to note that a detailed analysis of these rates is beyond the scope of this Review. While the candidate alternative rates that were presented in the discussion paper are examined in turn in more detail below, along with the relevant points drawn from the responses to the Review, no detailed analysis is offered as to whether these rates are more robust or credible than LIBOR; they may exhibit similar, or indeed a different, weaknesses and conflicts to LIBOR.

Central Bank Policy Rate

6.28 Central bank policy rates are the target rates for the central bank and, in the UK, the rate which certain deposits (e.g. currently all central bank reserves, although within the currently-suspended Sterling Market Framework, the reserves averaging target) are remunerated. Because it is not a rate at which transactions are undertaken, other than those with the central bank that are largely short maturity, such a rate does not include a measure of market expectations of future changes in interest rates. Few, if any, jurisdictions have developed derivative markets that reference the central bank policy rate (rather than the equivalent market overnight rate such as SONIA, EONIA or Fed Funds).

Overnight Index Rates (OIR) and Overnight Index Swaps (OIS)

6.29 The markets for overnight unsecured lending are fairly developed and liquid. In the UK the main benchmarks for overnight interest rates – Overnight Index Rates (OIR) – are SONIA and EURONIA, which are based on overnight unsecured money market transactions brokered in London and denominated in Sterling and Euros respectively. Volume-weighted average prices are collected by a selection of brokers and submitted to the Wholesale Market Brokers’ Association (WMBA). The main US and European OIRs are the Federal Funds Effective Rate and EONIA respectively, although it should be noted that these are defined differently.

6.30 While OIRs do not, by definition, have a maturity curve, broadly comparable rates for longer maturities can be derived from related markets such as the Overnight Index Swap (OIS) market. OISs are essentially a swap between a floating rate based on the OIR and a fixed interest rate, where the start and end dates can be customised, often to fit around central bank decision dates.

6.31 In theory there are two sources of credit risk in an OIS:

- credit risk in underlying market for overnight unsecured borrowing (e.g. SONIA, EONIA or Fed Funds will include a small premium for credit risk); and
- credit risk arising from the possibility of default of one of the swap counterparties, which will be very small if collateralised.

However both should be relatively small – because the underlying instrument is an interest rate swap, at the repayment date the parties exchange the difference between the fixed and floating rates multiplied by an agreed notional amount; this notional amount ("principal") does not change hands.

6.32 As OIR and OIS do not contain much credit risk, they are not a direct substitute for LIBOR. However it may still be attractive for certain uses. The fixed interest rate that market participants are willing to exchange for a floating overnight rate gives an indication of how the market expects these overnight rates, which are primarily determined by monetary policy, are going to evolve. Therefore it can serve as a proxy for the 'credit risk'-free interest rate, incorporating a measure of market expectations of the future path of monetary policy rates. However, caution needs to be taken when interpreting these curves and a good analysis of the multiple factors influencing OIR and OIS is recommended.

6.33 One disadvantage of OIS is that there is a lack of liquidity, particularly in longer tenors. Another barrier to adoption of OIS as a reference rate is that a standard, widely accepted OIS 'fix' may not exist. Currently cash brokers provide indicative OIS curves as a reference, however in general the brokers are not committed to trade at these quotes.

Short-term government debt

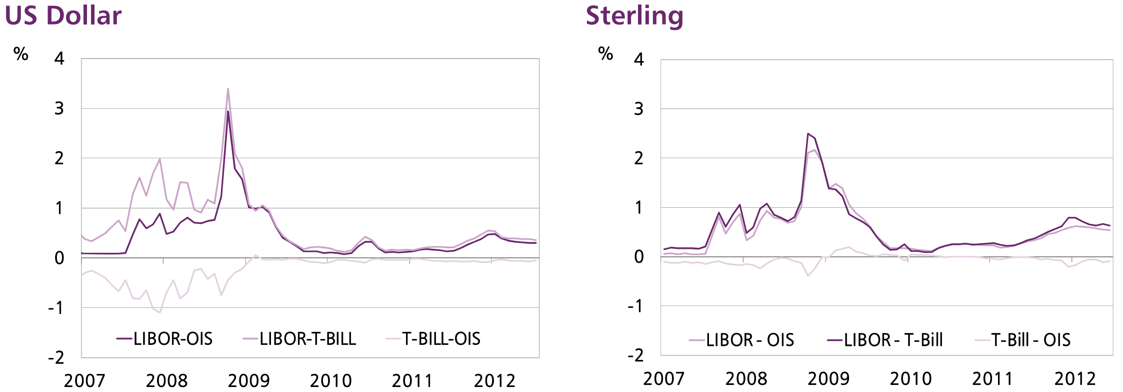
6.34 Another alternative would be to use the yield of high-quality, short-term debt securities, such as short-term government debt. Short-term government debt is defined as having a duration of less than a year.

6.35 In some cases, an established and liquid market for short-term government debt already exists and it is relatively straightforward to create a yield curve from transactions in these currencies. However, this often requires complex interpolation between moving maturity reference points, and these reference points can be influenced by certain idiosyncratic factors.

6.36 In theory short-term government debt is not risk-free. However, in practice, these issuers are seen as being more creditworthy than other issuers. Thus, demand, and therefore yields, can be affected by risk aversion, collateral shortage and flights to quality. In many cases this will be significantly different from, and either negatively correlated, or uncorrelated, with, the credit risk and funding costs of financial institutions. Short-term government debt yields may be negative and it remains unclear whether some markets (such as floating rate notes) are prepared for negative coupons.

6.37 If the rate used does not need to reflect the credit risk of banks then, arguably, OIS rates could be used. The spread between OIS and short-term government debt is largely driven by the relative balance between supply and demand across the two markets. In times of stress, yields on short-term government debt can be driven down by a flight to quality and safe haven flows, or up by concerns about sovereign creditworthiness. Chart 6.A illustrates how OIS rates and short-term government debt yields have moved relative to LIBOR and each other since 2007.

Chart 6.A: Spreads between 3-month LIBOR, OIS and government debt yields (monthly 2007-2012)



Source: Federal Reserve Economic Database (FRED), Bank of England and Bloomberg

Certificates of Deposit and Commercial Paper

6.38 Certificates of Deposit (CDs) and Commercial Paper (CPs) are another way in which institutions can raise short-term unsecured funding. CDs are typically unsecured promissory notes issued by banks to investors in return for depositing funds with the bank for a specified length of time. They may pay fixed or floating rates of interest. As with inter-bank deposits, once the money has been deposited for a period of time, the depositor cannot withdraw the funds without incurring a penalty. However, a key difference between CDs and inter-bank deposits is that they can be negotiable, which means that they can be sold on in the secondary market before the term of the loan is up.

6.39 CPs are similar, with the main difference that they are debt certificates issued as proof of purchase of the issuer's debt, and typically have a duration of up to 270 days (9 months), while CDs are usually for a longer term (usually up to five years, but can in principle be for longer maturities). However, in practice CDs and CPs are most liquid in short tenors up to 3 months.

6.40 In principle, interest rates paid on CDs and CPs issued in the primary market and traded in the secondary market could be used to construct a benchmark. However, they suffer from similar issues to unsecured inter-bank lending, in that:

- the market has come under severe stress in the aftermath of the financial crisis, being adversely affected by heightened perceptions of counterparty credit risk; and
- liquidity beyond short-term is low in both the primary and secondary markets, which may make them less reflective of underlying conditions and potentially vulnerable to manipulation if used as a benchmark.[2]

Secured Lending (Repo Rates)

6.41 Secured lending rates are another alternative based on lending that is collateralised through repurchase agreements (or "repos"). The WMBA publishes a rate for overnight gilt repurchase agreements called the Repurchase Overnight Index Average (RONIA). For longer maturities, the BBA publishes a repo index that is compiled in a similar manner to the LIBOR rates for unsecured inter-bank lending. A transactions-based index, the DTCC General Collateral

[2] For example, in its response to the Review, the International Capital Markets Association (ICMA) noted that "activity in this market segment is concentrated in much the same say as actual market transactions underlying LIBOR."

Finance (GCF) Repo Index, exists in the US, and has to some extent been seen as an alternative to the Federal Funds rate as a reference rate, although not as yet as an alternative to LIBOR.

6.42 Only a few responses to the discussion paper saw repo rates as a direct substitute for LIBOR, since they do not fully reflect bank credit risk. Some issues were also highlighted: for example, it was noted that term repo rates are particularly sensitive to credit and liquidity risks of the underlying collateral, so they could be influenced by factors such as collateral supply and liquidity and the yields of the underlying assets. One solution to this would be to use narrowly defined general collateral (GC) repos. However, GC repo indices have yet to gain wide acceptance from the market. They are concentrated in shorter tenors and are subject to collateral fragmentation.

Synthetic Rate

6.43 For uses in applications that more closely reflect individual banks' cost of funding, it may be that one possible alternative rate is a synthetic rate that combines a risk-free rate (for example OIS) and a bank specific measure of credit risk (perhaps based on bond yields, CDS premia, fixed premia or similar).

6.44 There are a number of advantages and disadvantages of such a model. The advantages include the fact that such rates can be designed to reflect the components desired in the benchmark – for example, risk free rates such as OIS can be combined with benchmarks that may represent credit risk (such as bond yields or CDS prices).

6.45 The disadvantages include the fact that any synthetic rate is only as strong as the components that constitute it. Further, some components may incorporate unrelated elements as well as those that are desirable. Therefore it would be necessary to ensure that all of the respective components are representative and robust – in particular, that the markets underlying them are not illiquid, subject to attempted manipulation and that benchmarks from these markets are fit for purpose.

Summary of alternative benchmarks

6.46 Table 6.A summarises the features of the main alternatives to LIBOR outlined in this chapter and in the discussion paper. Since responses to the Review were consistent with the analysis presented in the discussion paper, this analysis is unchanged from that paper. A synthetic rate is not included in the table because its features would depend on which instruments were used in its design.

Table 6.A: Comparison of alternative interest rate benchmarks

	Term unsecured lending	CB policy rate	Overnight unsecured lending	CDs/CPs	OIS	T-bills	Repo rates
Counterparty risk	●	○	◔	●	○	◔	◐
Liquidity risk/cash usage	●	○	◔	●	○	●	◐
Maturity curve	●	○	○	◐	●	●	●
Transaction volume	◐	N/A	●	◔	●	●	◐
Resilience	◔	●	◕	◔	◕	◕	◐
Standardised terms	●	N/A	●	◐	●	◕	◐
Long data series	●	●	●	◐	◕	●	◕

6.47 Responses to the Review and the analysis above illustrates that each potential interest rate benchmark has advantages and disadvantages, and no one rate is likely to be able to serve as a single benchmark rate for all the current uses of LIBOR. Further, while several responses to the discussion paper were in favour of exploring whether alternatives could be used in the future for certain existing applications of LIBOR, most suggested that the choice of alternatives should be market-led.

6.48 While conclusions and recommendations on these issues are beyond the scope of this Review, it is intended that the issues raised by the Review can serve as a starting point for further discussion by both market participants and international authorities as to the future usage of interest rate benchmarks.

7 Implications for other benchmarks

Box 7.A: Key reforms and specific recommendations

The UK authorities should work closely with the European and international community and contribute fully to the debate on the long-term future of LIBOR and other global benchmarks, establishing and promoting clear principles for effective global benchmarks.

On an international basis, the Wheatley Review welcomes ongoing work by the IOSCO Board Level Task Force and the European Commission on other important benchmarks. The Review recommends that an international organisation should act as a co-ordinator and information-sharing platform for work undertaken globally in relation to benchmarks. The Financial Stability Board (FSB) is well-placed to deliver this.

At a domestic level, the Review recommends that the FSA should review important benchmarks, and apply the recommendations of this Review, including assessing the perimeter of regulation, where appropriate. In doing this, the FSA should act in accordance with internationally agreed principles for regulatory authorities.

Furthermore, the FSA should ensure that sponsors of benchmarks, and other relevant participants, apply the general guidelines developed by international bodies.

7.1 LIBOR is only one of a large number of important benchmarks that are used in contracts around the world. While the nature of these benchmarks may be different to LIBOR, there may be some lessons for these benchmarks from this Review. More generally, it may be possible to develop a set of overarching principles that can be applied to benchmarks more broadly, which could ensure that they are robust and credible.

7.2 Further, many important benchmarks are global in nature, both in that they originate in, and are used across, many different jurisdictions. As a consequence there is likely to be a role for international coordination of work in relation to these benchmarks.

7.3 It is not within the scope or remit of this Review to identify particular benchmarks that should be improved, or recommend particular principles or elements of best practice that seek to ensure benchmarks are robust and credible. Instead, the purpose of this Chapter is to:

- set out some initial thinking on features of credible benchmarks, and recommend further work in this area;
- recommend that, given the global nature of many important benchmarks, further work be undertaken by international organisations, benchmark sponsors,[1] regulators and other relevant participants to ensure that other important benchmarks are appropriately robust and credible; and

[1] The term 'benchmark sponsor' is used here to refer to the organisations that own and administer important benchmarks. In the case of LIBOR, this was the British Bankers' Association.

- recommend further work be taken forward by the UK authorities with respect to benchmarks that are compiled in the UK or otherwise relate specifically to the UK.

Definition of a benchmark

7.4 The term 'benchmark' relates to a standardised reference price, index or rate that can be used to:

- determine financial flows arising from contractual agreements;
- price or value financial products; and
- assess the performance of assets and portfolios.

7.5 There are a wide variety of benchmarks, used across many asset classes and financial markets, which vary in scope and nature. In addition to LIBOR, there are a number of other inter-bank benchmarks, such as EURIBOR and TIBOR. Like LIBOR, these benchmarks are used as a reference rate in international financial markets, including in loans, bonds, derivatives contracts and as benchmark reference rates used in their respective currencies. These inter-bank rates exhibit similar characteristics to LIBOR such as:

- being based on judgement-led surveys, requiring contributing banks to rely on inference and judgement rather than reporting actual borrowing rates; and
- having similar governance structures to that of LIBOR, with relatively low levels of scrutiny of the rate.

7.6 Some of these other benchmarks may be vulnerable to similar conflicts of interest and weak governance issues that have been identified with LIBOR. In the wake of the alleged attempted manipulation of LIBOR, many benchmarks have come under increased scrutiny and investigations into the attempted manipulation of some of these benchmarks are ongoing.

7.7 Further, there are many other benchmarks for other markets and asset classes, including, but not limited to:

- money markets – these are benchmarks that are related to the cost of lending and borrowing in the wholesale money markets. In the UK, the most prominent money market benchmarks are the overnight lending rates (SONIA, EURONIA and RONIA), swap rates (OIS) and inter-bank term borrowing rates (LIBOR);
- equity markets – these are benchmarks that typically reflect the value of baskets of equities. The most widely used London-based equity indices are the FTSE series of UK indices (including, although by no means limited to, FTSE100, FTSE250 and the FTSE All-Share);
- credit markets – credit market benchmarks, whether cash or synthetic, take a variety of different forms, varying from indices that track the price of single names, to those that relate to more complex indices; and
- commodity markets – these can be indices that track, or are based on, the prices of single commodities or baskets.

7.8 In most cases, the purpose of a benchmark is to represent an underlying market. It is important to note that there is no single correct process for determining a benchmark. No benchmark is likely to be a perfect representation of the underlying market; in many cases a number of different processes could deliver a recognised benchmark for a particular market and, in some markets, competing benchmarks already exist.

7.9 Reflecting this, the design of benchmarks varies markedly. Some are based largely on data from actual transactions, while others rely heavily on surveys of market participants. Almost all benchmarks involve an element of judgement, although the degree of judgement varies between benchmarks. Some benchmarks rely on a more formulaic methodology, while others involve a greater degree of discretion and judgement.

7.10 The way in which benchmarks are used also varies: in some markets, the use of benchmarks is fairly standardised (by, for example, ISDA definitions for swaps and OTC derivatives), while others are determined on an ad hoc basis by the counterparties to a specific transaction.

7.11 Given the extensive use of benchmarks in both institutional and retail contracts, it is vital that consumers and markets are confident that these benchmarks are credible, trustworthy and accurate. Widely used benchmarks should also be available to market participants on fair and non-discriminatory commercial terms.

7.12 The credibility of a benchmark can be undermined if the benchmark can be distorted, either by accidental errors in its compilation or calculation, or through the exposure of participants to conflicts of interest or incentives to manipulate the benchmark, or through abuse of a dominant competitive position in the compilation of a benchmark. Different methodologies or types of benchmark are subject to different vulnerabilities, for example:

- where benchmarks are based on transaction data it may be possible to use transactions in the underlying market to manipulate the benchmark; thus, the benchmark may be vulnerable to gaming;
- where benchmarks are based on survey responses or submissions in a market, there may be an incentive for market participants to present inaccurate submissions. Where no commitment to trade is associated with the submission, there is a reduced incentive to provide accurate submissions;
- where benchmarks are subject to intellectual property provisions, there may be an incentive to prevent fair and non-discriminatory access to those benchmarks through licensing agreements. Fair access is particularly important for systemically relevant benchmarks; and
- it is also possible that conflicts of interests may exist at the level of the owner of the benchmark. For example, in some cases the owners or overseers of benchmarks are, or may be influenced by, participants in markets in which those benchmarks are used. This may lead to incentives to compile or rebalance the benchmark in certain ways that may not be the most appropriate, or lead to insufficient incentives to ensure that benchmarks are properly governed.

Features of a credible benchmark

7.13 A set of general principles could be developed to enhance the integrity and credibility of benchmarks. Drawing on the findings of this Review and preliminary work by IOSCO in relation to oil price reporting agencies, these principles could cover aspects of the rate methodology, governance and regulation, with the objective that benchmarks should be:

- representative – the inputs to the benchmark should be a fair reflection of the market that underlies it;
- transparent – the methodology used to turn the inputs into a benchmark should be transparent and consistent, as this will aid the detection of inaccuracies or attempted manipulation. There may be cases where transparency needs to be balanced against other concerns, such as intellectual property, confidentiality or the potential facilitation of manipulation. Benchmarks should have clear rules that are publicly available and which govern administration;

- fair and non-discriminatory access: benchmarks which are systemically relevant should be available to all market participants on a fair and non-discriminatory basis with reasonable commercial terms; and
- subject to credible oversight – the degree of, and balance between, governance and oversight and formal regulation will depend on the type of benchmark and how it is derived. For example, the process surrounding a benchmark that is based primarily on data from transactions in the underlying market could look very different to one that is based on a survey of market participants. However, notwithstanding the precise design of a benchmark, a credible governance and regulation structure should have sufficient independence and powers to ensure that attempted manipulation of the benchmark does not occur.

7.14 Many key benchmarks are international in nature, therefore there is merit in further work at an international level to develop principles for benchmarks, and how these could be taken forward by international organisations, benchmark sponsors, domestic authorities and other relevant participants.

7.15 This work could consider the definition of systemic importance in the context of benchmarks, including the threshold beyond which benchmarks are viewed as such. This could include their impact on financial stability, public policy objectives, wholesale conduct or conduct in relation to retail clients.

Existing and future work to reform benchmarks

7.16 The Wheatley Review recognises the work that is being undertaken by international organisations to review the workings of a number of key systemic benchmarks. In particular, the Review notes the creation of the IOSCO Board Level Task Force, with its goal to review benchmarks and develop principles for them.

7.17 The Review recommends that this work be supported by international authorities and the sponsors of benchmarks. To this end, the Wheatley Review recommends that an international body, such as the Financial Stability Board, takes responsibility for acting as a co-ordinator and information-sharing platform for work undertaken globally in relation to benchmarks.

International work to reform benchmarks

7.18 The discussion paper asked whether there should be an overarching framework for key international benchmarks. There was broad agreement from respondents that such a framework should be developed at an international level, and that organisations such as the Financial Stability Board (FSB) and IOSCO would be well placed to take this forward, drawing on existing work by IOSCO, European authorities and the Global Financial Markets Association (GFMA)[2]. That said, many respondents pointed out that designing such a framework may be challenging, and that there are many fundamental differences between LIBOR and some other benchmarks, and that this would need to be considered in developing such a framework.

7.19 At present there are a number of areas of ongoing work on benchmarks at an international level, some of which are outlined here.

7.20 IOSCO has set up a Board-Level Task Force on Financial Market Benchmarks to look at other benchmarks.[3] It will be chaired by Martin Wheatley, the Managing Director of the FSA and Gary

[2] GFMA is an international trade association consisting of three regional trade associations.

[3] Press release available at: http://www.iosco.org/news/pdf/IOSCONEWS250.pdf

Gensler, the Chairman of the US Commodity Futures Trading Commission (CFTC), and will draw on the significant expertise within IOSCO members. The Task Force has a mandate to:

- identify benchmark-related issues across securities and derivatives and other financial sectors;
- define the types of benchmarks that are relevant to financial markets;
- propose how benchmarks should be scrutinised and overseen; and
- develop global policy guidance and principles, including those related to effective self-regulation.

7.21 The IOSCO Task Force will take into account other relevant initiatives and consider issues related to necessary enforcement powers, information sharing and sanctions regimes. The aim is to produce a consultation report by early in 2013.

7.22 The European Commission has made amendments to the proposals for a Regulation[4] and Directive[5] on insider dealing and market manipulation, including criminal sanctions, initially published on 20 October 2011. These amendments aim to prohibit the manipulation of benchmarks and make attempts at such manipulation a criminal offence. In addition, proposals for a Regulation on Markets in Financial Instruments (MiFIR) include a definition of benchmarks and ensure that licensing arrangements controlling the use of benchmarks are not allowed to frustrate fair and transparent use of benchmarks.

7.23 The European Commission is also conducting a review of other benchmarks. It published a discussion paper on 5 September 2012 that covers many of the same issues as the Wheatley Review; although with a wider remit of indices and benchmarks (see Box 7.B)[6]. The intention is to consult until 15 November 2012.

7.24 The BIS Governors have also agreed to set up a group of senior officials to take forward examination of issues relating to LIBOR and other important financial benchmarks, and to consult with the market in order to provide input into the wider official debate coordinated by the FSB.[7]

[4] Amended proposal for a Regulation on insider dealing and market manipulation, COM(2012) 2011/0295 (COD). Available at http://ec.europa.eu/internal_market/securities/docs/abuse/20120725_regulation_proposal_en.pdf

[5] Amended proposal for a Directive on criminal sanctions for insider dealing and market manipulation, COM(2012) 2011/0297 (COD). Available at http://ec.europa.eu/internal_market/securities/docs/abuse/20120725_directive_proposal_en.pdf

[6] Available at http://ec.europa.eu/internal_market/consultations/docs/2012/benchmarks/consultation-document_en.pdf

[7] Press release available at: www.bis.org/press/p120910.htm

Box 7.B: EU Consultation on Benchmarks in Financial and other Contracts

On 5 September 2012, the European Commission published a consultation on benchmarks in financial and other contracts. That consultation covers many of the same issues as the Wheatley Review, although the scope is significantly broader than LIBOR. Specifically, the consultation covers the use of all benchmarks in contracts, where benchmarks are defined as statistical measures, typically of prices and quantities, calculated from a representative set of underlying data, and which are used in contracts. It raises questions in the following areas:

- governance and transparency – the consultation raises a number of important questions with respect to the governance and transparency of benchmarks. For example, the specific transparency and governance arrangements necessary to ensure the integrity of benchmarks;
- purpose and uses of benchmarks –the consultation discusses the various uses of benchmarks, and considers whether the use of benchmarks for particular purposes should be controlled;
- organisations that produce benchmarks – the consultation raises the question as to whether certain important indices and benchmarks should be provided by public bodies, and the extent to which their calculation, provision and governance should be supervised by public bodies; and
- transition, continuity and international issues relating to benchmarks –the issue of changing existing benchmarks is discussed, which raises the challenges of transition when benchmarks are referred to in legal contracts. The international dimension of many benchmarks is also considered.

The consultation is set to run until 15 November 2012.

7.25 As set out in the Wheatley Review Discussion paper and mentioned above, IOSCO has been asked by the G20 to produce recommendations on improving the functioning and oversight of Price Reporting Agencies (PRAs) by November (see Box 7.C). This work will look at the oil markets in detail, and produce a set of principles for PRAs.

7.26 Further, PRAs have agreed an industry code for Independent Price Reporting Organisations (IPROs)[8], which covers best practice with respect to governance, conflicts of interest and transparency. These responses may be sufficient to ensure credibility in the oil markets, but lessons from this review should be applied to wider benchmarks where appropriate, and any other work on benchmarks that is relevant to oil PRAs should feed back to best practice in this area.

[8] Available at: http://platts.com/IM.Platts.Content/aboutplatts/mediacenter/mediakits/draftiprcode30apr12.pdf

Box 7.C: IOSCO work on Oil Price Reporting Agencies

One area where significant work has already been done is in the oil market. Oil is not an exchange-traded product or a regulated market, and benchmark prices in this market tend to be compiled by third-party Price Reporting Agencies (PRAs). Work in this area is being conducted by IOSCO at the request of the G20. An interim report was published in June, which highlighted a number of areas of potential concern. In particular:

- methodology – the data from which prices are derived should not be susceptible to manipulation or otherwise artificially influenced or distorted;
- judgement – use of judgement will be necessary in some cases, but contributes to the potential for manipulation or gaming. Safeguards might include; having an objective and transparent set of criteria against which judgement is exercised and how the exercise of judgement should be recorded and retained for an appropriate amount of time;
- reporting of submissions - where based on voluntary submissions of trades or quotes, those submitting can chose to represent a partial picture. Potential safeguards may include a process of internal and external controls that validate the veracity of information considered;
- independence and avoidance of conflicts of interest – the need for recommendations that focus on ensuring that the assessment process is made by independent analysts and not tainted by conflicts of interest. Such concerns are typically addressed through written policies setting out requirements for communication barriers ("firewalls"), an internal supervisory process and staff disclosures;
- complaints – the need for a transparent complaint resolution process that recognises the need in some circumstances for price sensitive decisions to be resolved in real-time and that an independent dispute resolution process is available;
- audit trails – to support potential concerns in other areas, one potential safeguard might be to require document retention and disclosure; and
- external accountability – with respect to oil price reporting agencies, there is neither statutory regulation or an external accountability mechanism or entity. Potential solutions include an independent review committee with an oversight function.

Although there will be some differences in particular cases, many of the same issues will be relevant to benchmarks in general, therefore the IOSCO work, together with the Wheatley Review of LIBOR, should serve as a starting point for further work on other benchmarks.

7.27 In addition to this work by international authorities, there are some examples of initiatives by private organisations. For example the GFMA has published a set of principles for financial benchmarks[9], which it offers to draw attention to the need for international standards in relation to financial benchmarks, and as a basis for crafting such standards. The GFMA proposes a definition of the benchmarks that it believes should be within the scope of such principles – based on use in financial contracts, importance in financial markets and whether the indices are produced by public or private entities – and sets out principles under the headings of governance, methodology and quality and controls.

[9] Available at http://www.gfma.org/Initiatives/Market-Practices/GFMA-Provides-its-Principles-for-Financial-Benchmarks-to-the-Global-Regulatory-Community/

7.28 To ensure that there is consistency between the various ongoing initiatives, and given its international nature, there is merit in international organisations continuing to take forward work on benchmarks, coordinate the work of authorities across a large number of jurisdictions and potentially achieve official endorsement of a set of principles that draws on the work of both public and private organisations.

7.29 Therefore, the Wheatley Review recommends that further work is undertaken on other important benchmarks at an international level. In particular, work should be undertaken to develop and agree an overarching international framework that could be used as a guide for sponsors of benchmarks, regulatory authorities and other relevant participants.

7.30 This work should be taken forward by IOSCO, through the Board Level Task Force, and the European Commission, coordinated by the Financial Stability Board (FSB).

7.31 Further, there would be merit to an international organisation acting as a co-ordinator and information-sharing platform for global work undertaken in relation to benchmarks. The FSB is well positioned to take on this role, given its global reach and capabilities.

Domestic work to reform benchmarks

7.32 As noted earlier in this chapter, it is the view of this review that it is the responsibility of the sponsors of benchmarks, in concert with regulatory authorities, to ensure that their benchmarks are robust and credible and do not raise either financial stability or conduct concerns.

7.33 Some of the governance and regulatory changes appropriate for strengthening LIBOR may also be relevant to other benchmarks. In some cases the proposals in the preceding chapters can be implemented such that they cover other benchmarks as well as LIBOR. For example, the recommendation to make contribution to, and administration of, benchmarks a regulated activity could be done such that primary legislation enables specific benchmarks to be defined either in secondary legislation or within FSA rules. UK authorities should also consider the recommendations arising from other international work.

7.34 Therefore the Review recommends that the FSA review important benchmarks, and apply the recommendations of this Review, including assessing the perimeter of regulation, where appropriate. In doing this, the FSA should act in accordance with internationally agreed principles for regulatory authorities.

7.35 Furthermore, the FSA should ensure that sponsors of benchmarks, and other relevant participants, apply the general principles developed by international bodies.

A Analysis of other reform options

A.1 The initial discussion paper set out a number of options that could be considered as part of a package of reforms to the LIBOR process. Some of these options and other ideas were represented by respondents to the Review, either through written responses or in the course of bilateral discussions.

A.2 The Review has decided not to take forward some of these options. This Annex outlines an assessment of these potential options and presents the reasons for not making these specific recommendations.

"Prime bank" definition of LIBOR

A.3 LIBOR is a benchmark intended to be a contributor banks' assessment of the market for inter-bank deposits. As such, contributors are required to provide a submission based on that particular banks' cost of borrowing unsecured cash for specific currencies and maturities, by answering the question below.

> *"At what rate could you borrow funds, were you to do so by asking for and then accepting inter-bank offers in a reasonable market size just prior to 11am?"*

A.4 Chapter 3 of the discussion paper proposed amending the definition of LIBOR away from the current definition above, back to definition used for LIBOR prior to 1998, which was an assessment of the cost of borrowing between two hypothetical "prime" banks, as defined by answering the separate question below:

> *"At what rate do you think inter-bank term deposits will be offered by one prime bank to another prime bank for a reasonable market size today at 11am?"*

A.5 A significant number of respondents were in favour of this approach, noting that a similar definition applies for EURIBOR. A key motive for most respondents was to expand the set of contributors to LIBOR, as under a "prime bank" definition the set of eligible contributors to LIBOR can be expanded beyond banks.

A.6 However, a key conclusion of this Review is that submissions should be based on expert judgement, supported by underlying transactions in the inter-bank deposit and other relevant markets. This in turn allows the corroboration of LIBOR submissions, which should ensure the integrity of submissions and establish a link to realised transactions.

A.7 By definition, assessment of deposit rates at a "prime bank" does not facilitate this approach for two reasons: Firstly, there would likely be uncertainty in precisely defining the nature of a "prime bank", without leading to confusions with interpretation or implicitly referring to existing banks. Secondly, due to the hypothetical nature of the assessment, there is an increased reliance on inference and subjectivity when determining submissions, reducing the ability to effectively corroborate or base submissions where possible on transactions.

A.8 As a result, the Review has concluded that while a "prime bank" definition of LIBOR could be used to increase the number and type of contributors to LIBOR, there would be a significant reduction in the ability to corroborate and support submissions to LIBOR with relevant transaction data.

Broadening the scope of the definition of LIBOR

A.9 A key issue identified by the initial discussion paper was the low transaction volume in the inter-bank deposit market, particularly for longer maturities and less-used currencies. In order to expand the set of transactions relevant to the construction of LIBOR, one option set out in the discussion paper was to widen the definition of LIBOR beyond inter-bank deposits, to include deposits from other wholesale and international sources.

A.10 For example, it has been proposed that the definition of LIBOR could be expanded to include funding from sources such as corporate and local authority deposits, money market funds and so on. The justification of such an approach was to expand the set of relevant and observed transactions to assist with the determination of appropriate LIBOR submissions, as well as to improve the independent corroboration of those submissions.

A.11 However, in the final analysis, the Review has concluded that the potential risks to the legal validity of some contracts that reference LIBOR are too great to make this an appropriate recommendation. Respondents to the Review were largely of the view that preserving the essence of LIBOR was important to ensure legal continuity and the status of the large stock of existing contracts.

A.12 Given that the definition of LIBOR has been understood by market participants to mean the "London Inter-bank Offered Rate" for a considerable number of years, any change to the definition of the rate to a broader wholesale concept may not be within the bounds of this definition, leading to a risk of contractual dispute.

A.13 The Review believes that, while LIBOR should remain representative of inter-bank funding, there are other relevant transactions that can be used to support contributors' assessment of the inter-bank deposit market. As set out in Chapter 4, the Wheatley Review recommends that the rules of LIBOR allow for the use of these other relevant transactions to inform LIBOR submissions.

A.14 The Review has recommended that the role of transaction data within rate determination processes should be outlined precisely within a full code of conduct, subsequently confirmed by the FSA. The Review has also set out submission guidelines, which, without a change in definition, allow for the use of a broader range of transactions to determine submissions, which should be implemented in advance of the code of conduct.

Other calculation formulas

A.15 LIBOR is currently calculated by using a 'trimmed mean' approach. This means that the individual submissions are ranked in numerical order and the highest and lowest submissions are discarded. A mean is then calculated using the remaining submissions to compile LIBOR.

A.16 The discussion paper raised the possibility of amending the calculation formula, by moving away from the current approach towards a median or random selection of submissions from the centre of the distribution.

Use of a median to calculate LIBOR

A.17 A number of responses to the Review voiced support for the use of a median, citing a key advantage that it is less susceptible to influence from outliers. Moreover, as demonstrated by Chart 3.B in the discussion paper, the use of a median could make identification of potentially manipulative submissions easier. Further, moving to a median from the current approach would have a minimal effect on the value of the resulting LIBOR fix and its volatility, as demonstrated in Chart A.1.

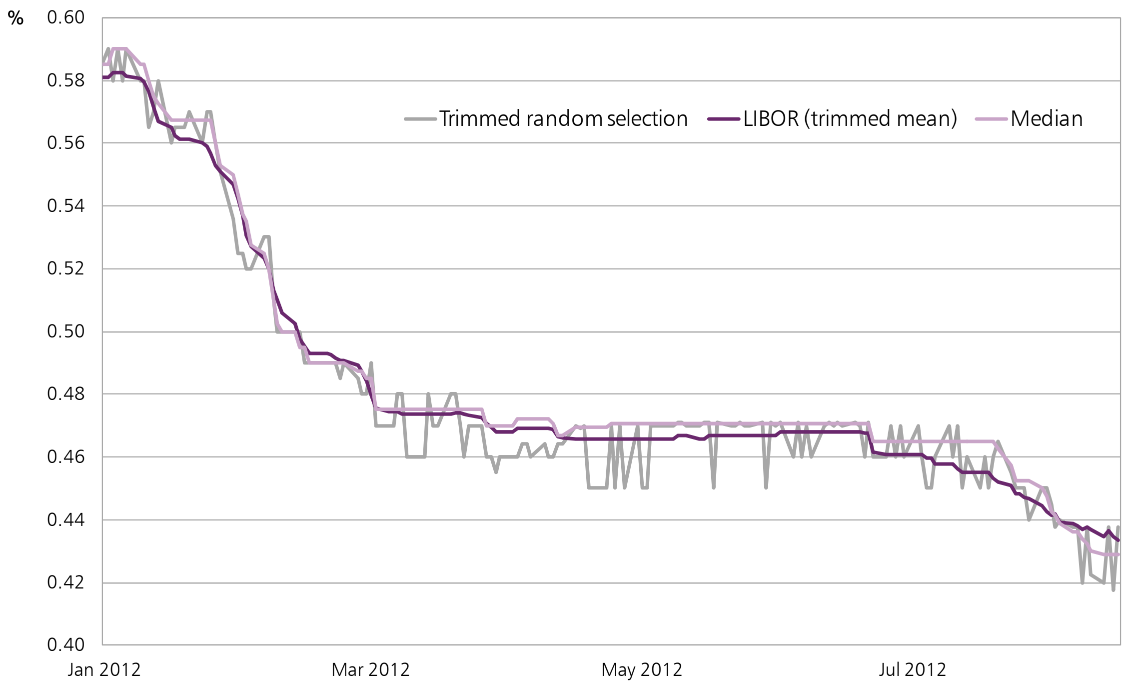
A.18 However, there are a number of disadvantages to amending LIBOR to be calculated using a median. The improvement in the identification of suspicious submissions is a corollary of the fact that individual submissions are more able to move the final LIBOR. Importantly, as the smoothing created by the use of a mean is lost, attempts to manipulate the rate will likely have a greater affect on LIBOR. In turn, the returns from attempting to manipulate by a single institution are higher, which further incentivises those attempts.

Use of a random submission to calculate LIBOR

A.19 In the discussion paper, the review proposed the use of a random submission method to calculate LIBOR. The random submission is selected after discarding the top and bottom quartiles of the submissions. A key benefit of compiling LIBOR using a random submission is that any individual contributor would never be sure that their submission will be used to compile the final rate. This in turn means that any attempt to manipulate LIBOR would be unlikely to succeed.

A.20 A number of respondents shared the view that using a random submission would reduce the ability to manipulate the rate. However, given the small number of contributors to LIBOR, and the relative dispersion of submissions arising from heterogeneity of credit risk within the contributor panels, using a random submission could lead to increased volatility of the final benchmark. This increased volatility is illustrated in Chart A.1.

Chart A.1: US Dollar 3-month LIBOR, simulated median and random submission



Source: Bloomberg and Review calculations

Transaction-based rate

A.21 LIBOR is currently compiled from a daily survey of participating banks, asking for their assessment of the market for inter-bank deposits. The discussion paper also presented a discussion on whether the benchmark could be created mechanically using deposit transaction data.

A.22 Many responses to the discussion paper noted that in an ideal scenario, that the use of transaction data would be the best solution to reforming LIBOR. However, most respondents also recognised that there would be many problems with such an approach, agreeing with our initial analysis.

A.23 In particular, the issues associated with changing the LIBOR mechanism to a rate based on transaction-prices include:

- The number of transactions under the current LIBOR definition of inter-bank lending is particularly thin for certain maturities and currencies.
- Transaction rates may reflect other elements than pure inter-bank borrowing. They may be "bids", or rates that reflect other specific circumstances between the borrower and the lender.
- Difficulties with compiling a benchmark in the absence of sufficient relevant transactions. One solution could be to use the previous day's rate. However, in periods of sustained illiquidity, the benchmark would effectively become fixed, and unreflective of the true state of wider market conditions (not just wholesale funding), which could cause market disruption.
- A transaction data approach is not immune to manipulation. Particularly in a low volume environment, only a small number of transactions at off-market rates would be sufficient to move the final rate fixing. Manipulation of this type may be harder to monitor as it could be attempted by both internal and external parties.
- There may also be operational issues arising from the timing of a fix based on trading data. Overnight cash deposit rates, such as SONIA use data collected throughout the trading day and fixed at the close of the market (approximately 5pm). By contrast, LIBOR fixes at 11am for all currencies and this timing is embedded into most contracts. Use of transaction data means that either:
  - the timing of the fix would have to change;
  - a partial days' transaction data must be used; or
  - or data from two calendar days must be used (24 hour period before 11am).
- Establishing a trade repository would be potentially complex and costly.

A.24 A small number of responses to the Review favoured the removal of judgement entirely from the LIBOR process, advocating a move to a purely transaction-based model. It was noted that in order for this mechanical approach to be successful, the inter-bank deposit market would need to be reinvigorated, potentially through amendments to prudential regulatory requirements.

A.25 The Review has concluded that moving to a transaction-based model is not a viable option in the short-term. However, in the event that the unsecured inter-bank lending market does revive, either due to cyclical influences or due to the economics of unsecured inter-bank lending improving, a transaction-based benchmark could be re-considered.

Committed quote platform

A.26 A further option, noted briefly in the discussion paper, would be to compile LIBOR from a trading platform mechanism, based on tradable quotes by participants, rather than traded prices.

A.27 The platform would be used to transact a nominal, but sizeable, sum between the participants on a daily basis. In essence, participating firms would be required to provide executable bid and offer quotes for that cash sum, plus an interest rate, to the platform. Should those quotes cross then a transaction between the relevant counterparties would occur. LIBOR would then be compiled from the executed price of the transaction, or, in the absence of transactions, the mid-price of the provided quotes.

A.28 This mechanism could provide a robust and transparent market for unsecured deposits, as all quotes and transactions would be visible, but anonymous. A key advantage of a mechanism for compiling LIBOR based on executable quotes is that specific transactions are not necessarily required for all currencies and maturities, provided that executable bids and offers are provided to the platform. A second advantage that would arise, as contributors would bear an economic cost to providing inaccurate quotes (should those quotes be executed). Thirdly, once a platform had been established, other sources of liquidity could be introduced.

A.29 Despite these advantages, there remain a number of shortcomings to using this approach. In particular, contributing banks are potentially able to increase the size of their balance sheet by creating assets and liabilities on a daily basis, as their quotes are executed. Assuming that the nominal size of cash transactions on the platform is $10 million and sixteen banks participate in the platform, a single bank could create up to $150 million in exposures on a daily basis for each individual LIBOR currency and maturity.

A.30 By contrast, participating banks may want to avoid taking on these exposures and subsequently widen their bid and offer quotes to such an extent that their contribution to the platform becomes worthless. To avoid this, the platform may require minimum bid and offer spreads. As a result of the above concerns, it may be very difficult to ensure continued participation by banks. Strong economic incentives may be required to encourage participation in this process, as bank balance sheets may be forced to expand.

A.31 As with a transaction-based model, the Wheatley Review has concluded that moving to a committed quote-based model is not a viable option in the short-term. However in the longer-term, if the economics of unsecured inter-bank lending for banks can be made attractive enough then a committed-quote based system could be re-considered.

Changing the timing or creating a second publication time

A.32 LIBOR is currently published between 11:30am and 12:00pm every London business day. Contributors are asked to provide an assessment of their cost of funding "just prior to 11:00am", as up to one hour is required for verification and calculation procedures. One option that was not raised in the discussion paper was the potential to amend the timing of the publication to later in the day.

A.33 11:00am was chosen historically to maximise the exposure of the benchmark to market conditions in different time-zones. Some respondents suggested that one way to either increase the volume of relevant transactions would be to increase the exposure to the US market by moving the timing of the submission and publication of LIBOR from 11:00am to 2:00pm. Additionally, as this time would be more closely aligned with the opening of the US market, it could allow more US banks to join the LIBOR panels.

A.34 Existing financial contracts that refer to LIBOR do not reference the benchmark in a standardised way. Typically though, a significant number of those contracts refer to LIBOR and the particular time of publication; for example, the rate which appears on the relevant screen (e.g."LIBOR01") at 11:00am, London time.

A.35 Furthermore, London's geographical position means that a benchmark set at 11:00am London time is accessible within working hours in many other locations; moving the LIBOR process to later in the trading day would reduce the ability of Asian markets to make use of the benchmark.

A.36 The Review has therefore chosen not to pursue the option of delaying the publication of LIBOR because of the potential legal difficulties arising from that amendment and in order to preserve the stock of existing contracts.

A.37 One possible alternative would be to create a second LIBOR fixing, which is published later in the day, in addition to the 11:00am publication. However, having separate publication times could potentially cause problems with cross-currency swaps, since these instruments need a benchmark reference which is settled at a single time to avoid undue basis risk. Furthermore, the existence of two fixes could lead to uncertainty, and to the extent that it would be possible to use either LIBOR in different financial instruments, it could potentially fragment the market and lead to lower liquidity.

A.38 One case study of this approach is the New York Funding Rate (NYFR) benchmark, sponsored by ICAP ltd, which was discontinued in August 2012. This benchmark was intended to function as a competitor to LIBOR, compiled by banks based in the USA, publishing a benchmark just after 10:00am EST (equivalent to 3:00pm GMT). NYFR did not gain sufficient market share and liquidity relative to LIBOR, reinforcing the argument that London's geographical location supports LIBOR's global significance.

B Summary of consultation responses

B.1 This annex summarises the main themes that have emerged from responses to the discussion paper. These responses have, in turn, informed the analysis, conclusions and recommendations of the Review.

Chapter 2: Issues and failings with LIBOR

Do you agree with our analysis of the issues and failings of LIBOR?

B.2 Almost all the responses to the Review were in agreement with the analysis of the issues and failings of the current LIBOR framework set out in the discussion paper. A few responses suggested that certain aspects should have been given more or less weight, but none of these respondents contended the issues raised by the discussion paper.

Chapter 3: Strengthening LIBOR

Can LIBOR be strengthened in such a way that it can remain a credible benchmark?

B.3 Responses to the Review were unanimous in the view that there is an immediate requirement to strengthen LIBOR such that it exists as a credible benchmark in order to ensure continuity of existing contracts. Alongside this, almost all responses recognised the difficulties that the large stock of legacy contracts poses, and therefore there was consensus that reforming LIBOR in a way that ensures legal certainty is essential and the immediate priority.

B.4 With regard to the nature of the necessary reform, there was a consensus that repairing LIBOR means that it needs to (a) represent a 'market' interest rate, reflective of the underlying market, and (b) have widespread acceptance and recognition. While there were a variety of views about how to achieve these two objectives, there was a broad consensus that strengthening existing governance and introducing official regulation of some sort would be required as self-regulation of LIBOR has become unviable.

B.5 The appetite for significant changes to the mechanism underlying LIBOR among respondents was limited. This was largely due to a concern about jeopardising existing contracts. There were mixed views on whether LIBOR could remain a benchmark involving judgement in the longer-term. Several submissions advocated a model based on either (a) transaction data, or (b) a committed-quote model.

B.6 Responses in relation to specific options to change the LIBOR mechanism are summarised below.

Corroboration

B.7 There was support for greater collection of data in relation to relevant transactions, and a view that this should be used to corroborate LIBOR submissions, likely with a small time lag. The knowledge that submissions would be subject to scrutiny would incentivise justifiable submissions and detailed record keeping on behalf of the banks. Responses were in favour of a clear and standardised determination process for LIBOR submissions, with some respondents explicitly pointing to the relevant sections of the Commodity Futures Trading Commission (CFTC) undertakings to Barclays. There was more support for decentralised data collection by banks that could be then subject to scrutiny by a regulator or independent corroborator rather than a central trade repository due to concerns about the propriety nature of the data.

The scope of relevant transactions

B.8 There was broad support among respondents for broadening the scope of relevant transactions beyond inter-bank lending to other unsecured wholesale funding. While some suggested that this be done explicitly by changing the question, there was more support for achieving the same result by making clear the range of transactions that should be used to inform submissions, in accordance with the CFTC undertakings, since this would pose less of a threat to existing contracts.

Changing the Panel Size

B.9 The balance was largely in favour of increasing panel sizes, with the caveat that consideration should be given to the fact that increasing the panel does not simply increase the average credit risk or add contributors with limited activity in the relevant markets.

B.10 There were some notable dissenters to this view that argued that quality was as important as quantity: panels may actually be too large given that they already represent such a wide-range of credit risk and that users generally want an index based on banks with similar creditworthiness. Further, many responses recognised that increasing panel sizes might be difficult unless participation were to be mandated based on reasonable criteria, though some suggested changing the timing of the fix may help.

Publication of individual submissions

B.11 Responses were broadly in favour of ceasing or delaying publication of individual submissions, noting that this would reduce the existing conflicts of interest. There were no strong preferences for one over the other. Some respondents did raise a concern that this would be seen as a reduction in transparency, which could have an impact on the credibility of LIBOR. It was pointed out that merely delaying submissions for a period would not necessarily remove the credit-signalling incentive, unless it was sufficiently long. Some responses thought that this reduction in transparency could be offset by producing a regular statistical bulletin on the underlying market, including aggregate transaction volumes by currency and maturity.

Reduction in currencies and maturities

B.12 Due to the limited volume of unsecured term inter-bank transactions, and therefore the difficultly of determining and corroborating accurate LIBOR submissions, most respondents believed that a reduction of LIBOR currencies and maturities, where they can be replaced by local alternatives, would be a positive development. However, some raised concerns about the impact on those contracts that reference these rates and the associated market disruption, suggesting a cautious approach in this respect and that, in each case, an appropriate consultation with the relevant domestic authorities should be undertaken to ensure minimal disruption.

B.13 One submission raised the point that this risks losing a potential corroboration technique since submissions across currencies should be internally consistent, although given that the rates that would be dropped would be those with minimal underlying transactions, it is not clear how useful they would be a corroboration mechanism.

B.14 With regard to currencies, responses mentioned that the ISDA definitions for interest rate swaps do not currently define the Danish Krone (DKK), the Swedish Krona (SKK) and the New Zealand Dollar (NZD), and that there were probably only a relatively small number of contracts referencing Australian Dollar (AUD) and Canadian Dollar (CAD) rates. With regard to maturities, responses generally viewed the 4, 5 and 7-11 month tenors as candidates to be phased out. Tenors of overnight up to 3 months and the 6 month tenor were seen to be important from the perspective of the cash and money markets, and the 3 and 6 month tenors are important for lending, floating rate notes and swaps, with some use of the 12 month rate as well.

Calculation formula

B.15 Of the few responses that mentioned it, the change from the current 'trimmed mean' approach to a median received some support, as it was suggested it would make the LIBOR rate less sensitive to outliers. There were also some suggestions to weight submissions by some relevant criteria, for example, by bank size, and use different techniques to 'clean' the submissions before fixing.

Prime bank question

B.16 Views on returning to the 'prime bank' question were mixed. Some were in favour, arguing that it removed the credit-signalling incentive. It was also noted that a prime bank definition of LIBOR could allow the panels to be enlarged. Others were against, arguing it would increase subjectivity, particularly at a time when the credit risk of banks is heightened. Regardless of whether in favour or against, responses discussing this issue recognised that defining 'prime bank' would be difficult and would have to be done very carefully.

Code of conduct, including standardised & clear submission framework

B.17 Of those that mentioned it, there was almost unanimous support for a code of conduct and a clear framework for rate determination along the lines of the CFTC undertakings, although there was less agreement on the question of who should own the code of conduct; some felt this should be the regulator, while others were in favour of it being industry-led.

Could a hybrid methodology for calculating LIBOR work effectively?

B.18 The meaning of the term 'hybrid methodology' was left ambiguous by the discussion paper and, as a consequence, responses interpreted this question in different ways. In general, 'hybrid' was interpreted as meaning a process that combined judgement with transaction data where it is available and relevant.

B.19 Many responses noted that the ideal model would be based on transaction data; however most of these also recognised that there are problems with such an approach. The balance of responses was in favour of a model where transaction data is used, where possible, augmented by judgement, either at the level of the contributing bank, or a central body.

B.20 A small number were in favour of removing judgement entirely and moving to a pure transaction-based or committed-quote model. This approach was usually combined with suggestions on how to revive the inter-bank lending market, for example, by creating special considerations for the inter-bank market, similar to market-maker exemptions (e.g. capital relief, more relaxed liquidity rules, etc.).

Is an alternative governance body for LIBOR required in the short-term?

B.21 There were mixed views on the future role of the BBA. Many respondents thought that the current position of the BBA is untenable due to its loss of credibility from past involvement in LIBOR and its vested interest in defending the banks. For those respondents that were in favour of, or indifferent to, a continued role for the BBA, significant reform of the existing governance and oversight framework was almost always considered a pre-requisite. This usually included widening participation on the FX&MM committee beyond contributing banks to other parties with an interest in LIBOR, such as significant users and trading venues.

B.22 There were few, if any, concerns about extending the membership of the oversight function beyond banks to other interested parties and increasing transparency of the membership of the oversight committee and the minutes of meetings. Views about representation of the authorities on such a committee were mixed: some were in favour due to the credibility it would bestow, while others thought it would confuse the role of the regulator with the rate owner or provider.

Should the setting of and/or the submission to LIBOR be regulated activities?

B.23 The discussion paper set out the possibility of different roles in the LIBOR process being made regulated activities, thus giving the relevant regulator clearer powers of investigation and sanction in relation to LIBOR setting. The discussion paper suggested that either contributing to LIBOR or administrating LIBOR could be made regulated activities.

Submissions as a regulated activity:

B.24 There was broad consensus that LIBOR submissions – and some argued that the relevant legislation and rules should have the scope and flexibility to cover benchmarks more broadly – should be a regulated activity under FSMA. Where there was opposition to such regulation, it came from responses advocating that judgement be removed from submitting banks. In this case they argued that as LIBOR would involve less judgement, there would be less of a case for making it a regulated activity.

Administration and oversight as a regulated activity

B.25 Most of the responses that addressed this issue were in favour, or at least not against, regulation of the administration and oversight functions. It was suggested that this would ensure that the regulator would be able to make rules requiring organisations that administer benchmarks to have suitable governance and oversight frameworks, as well as transparent and effective benchmark design. One suggestion was that this could potentially be done via the FSA's Service Company Regime.

Market Abuse

B.26 There was consensus that the UK regulatory framework should be consistent with European legislation, including on market abuse (Market Abuse Regulation) and Criminal Sanctions Market Abuse Directive for insider dealing and market manipulation (CS-MAD). Responses noted that it is important to strike the right balance between a clear definition of the sanctions regime and ensuring that the regime is fit for purpose to deal with future market abuse.

B.27 Reponses noted that if the UK opts out of CS-MAD, there may be inconsistencies between the UK and EU criminal regimes and civil market abuse regimes across jurisdictions.

Should the regulator be provided with specific powers of criminal investigation and prosecution in relation to attempted manipulation of LIBOR?

B.28 While it drew some support from certain quarters, many respondents were cautious about criminal sanctions for LIBOR submissions. In particular, concerns were raised about combining criminal sanctions and continued application of judgement by banks. Together, they may act as a significant deterrent to participating in LIBOR panels due to the risk of prosecution.

B.29 There was also concern that amending s.397 of FSMA could unintentionally criminalise a large number of unrelated activities, create overlap with existing fraud offences and legal uncertainty. At least one respondent argued that if criminal prosecution proved difficult to pursue in many cases, the existence of specific criminal sanctions could prove counter-productive as authorities could be criticised for not using available powers. Several responses highlighted the need for further assessment, consultation and careful consideration before introducing or amending legislation relating to criminal sanctions.

B.30 The most common alternative argument was that a combination of (a) appropriately amended civil market abuse legislation (consistent with proposed MAR and CSMAD); (b) bringing LIBOR activities under FSMA as regulated activities, and (c) existing fraud legislation would be sufficient to provide the necessary powers and greater clarity than making LIBOR-related offences criminal, and would therefore not have such deleterious effects on incentives to participate in the LIBOR process.

What role should authorities play in reforming the mechanism and governance of LIBOR?

B.31 There were mixed views on the role of the regulator. Some responses suggest that the authorities should take ownership of the rate, including rate-setting, while others did not believe that this was where the regulator could add value.

B.32 There was some support for compulsory submissions, although few responses were explicit about how this could be done. One suggestion, mentioned by a handful of responses, was to make it a condition of holding a banking license or being an authorised credit institution that, should a bank fulfil certain criteria set out by the authorities, they would be required to participate.

B.33 Where responses were against compulsory participation, it was usually on the grounds that imposing onerous and costly obligations on participants was seen as undesirable.

What degree of change to LIBOR can be accommodated before the existing volume of transactions referencing LIBOR is put at risk?

B.34 Most responses recommended caution with regards to making significant changes to LIBOR, in case it puts existing transactions at risk. There was a general view that the key consideration was preserving the essence of LIBOR. To most respondents, this meant retaining the current definition of an unsecured 'inter-bank offered rate'. There was also a concern that step changes in the rate as a consequence of changes to LIBOR may pose legal difficulties.

Which types of financial contract, if any, would be particularly affected by the risks of a transition from LIBOR?

B.35 Responses to the Review reiterated that LIBOR is used extensively across a number of financial markets, including, but not limited to: interest rate swaps, commercial loans, mortgages, student loans, floating rate notes (including corporate bonds and syndicated loans). There did not seem to be a concern that particular types of financial contracts would be more affected than others from changes to LIBOR.

Chapter 4: Alternatives to LIBOR

Are there credible alternative benchmarks that could replace LIBOR's role in the financial markets?

B.36 There was a consensus that in the short-term there are no obvious candidates to replace LIBOR. Several responses agreed with the sentiment, noting that the weaknesses of LIBOR have been widely discussed for some time, but LIBOR-based swaps have remained the market standard and LIBOR continues to be used as the main reference rate for a wide variety of transactions.

B.37 In terms of specific alternatives, overnight rates (SONIA, EONIA, fed funds effective) and OIS[1] seemed to receive the most support from those that suggested alternatives, although many pointed out this was not without problems – it is similarly a 'snapshot' of a largely OTC[2] market, and thus subject to many of the same issues as LIBOR; some of these responses recommended

[1] Overnight Index Swaps

[2] Over-the-counter

the creation of formal OIS fixes where they do not already exist. There was some, albeit relatively limited, support for a 'synthetic' rate consisting of OIS plus a credit spread.

Should an alternative benchmark fully replace LIBOR, or should it substitute for LIBOR in particular circumstances?

B.38 Several respondents raised questions about the use of LIBOR, either questioning whether a rate based on a small inter-bank market was the appropriate benchmark for a much larger volume of financial contracts or whether a plurality of rates might be appropriate to satisfy the existing range of users. A few responses argued that for at least some floating rate loans and some of the uses of interest rate derivatives, a rate containing a purer measure of interest rate expectations would be more appropriate than a rate including bank credit risk such as LIBOR. One specific example was that for pension funds and insurance companies, which are substantial users of long-dated interest rate swaps, the credit risk element of LIBOR is unnecessary. However, the lack of liquidity in long-dated swaps referencing viable alternatives (e.g. SONIA[3] and EONIA[4]) means switching is difficult at present.

B.39 There was some support for considering the appropriateness of use of LIBOR in products for certain types of investors and customers; for example, whether LIBOR should be excluded from being used in retail products.

Should particular benchmarks be mandated for specific activities?

B.40 A mandatory transition to a new rate, either as a wholesale replacement for LIBOR or in particular applications, was viewed particularly negatively by the majority of respondents. It was seen as the role of the market, rather than that of the authorities, to choose which benchmarks best suit their purposes.

B.41 Some respondents thought that there was a role for the authorities to facilitate transition to other rates and there was some opposition to authorities encouraging and promoting transition. One response suggested that an ISDA protocol for voluntary switching of existing contracts might be helpful.

Over what time period could an alternative to LIBOR be introduced?

B.42 In general, responses to the Review were not of the view that alternatives to LIBOR exist. There was a view that the market should determine the move to any alternative rates. As for the time horizon over which this could take place, the balance of view of those that addressed the issue was that any transition would have to be lengthy, particularly for applications in long-dated swaps (for example, those used by pension funds and insurance companies to manage their long-dated liabilities), and carefully managed.

What role should authorities play in developing and promoting alternatives to LIBOR?

B.43 There was some support for authorities and industry to ensure that there is clarity around the rates are that are referenced in contracts, what contingencies are in place should those rates become unavailable and that the risks around both are well understood by users.

B.44 One suggestion to improve resilience of contracts to attempted manipulation or other disruption was that authorities and organisations such as ISDA[5] and the LMA[6] could work with users to explore whether certain contracts could reference an average of a number of days of LIBOR fixings rather than one day's fixing.

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[3] Sterling Overnight Index Average
[4] Euro Overnight Index Average
[5] International Securities and Derivatives Association
[6] Loan Market Association

Chapter 5: Potential implications on other benchmarks

Are there other important markets or benchmarks that could face similar issues to those identified relating to LIBOR?

B.45 Where responses to the Review raised areas of particular potential concern, the most common references were to EURIBOR, ISDAFix and benchmarks deriving from the commodity and energy markets. More generally, some responses pointed out that characteristics of other reference rates may make them particularly vulnerable to similar issues as LIBOR: for example, other 'polled' rates or those relying on subjective judgement.

Should there be an overarching framework for key international reference rates?

B.46 Of those that addressed the issue, there was broad agreement – though there were one or two notable dissenting views – that an overarching framework for benchmarks should be developed at an international level, and that an organisation such as the Financial Stability Board, drawing on existing work by IOSCO, European authorities and the Global Financial Markets Association, would be well-placed to take this forward. That said, many responses pointed out that designing such a framework may be challenging, and those involved in other markets were keen to point out the many and varied differences between LIBOR and their industries, and therefore that this would need to be considered in developing such a framework; a "one-size-fits-all" approach is to be avoided.

B.47 There was a consensus that co-ordination of the various initiatives on these issues by an international organisation would be valuable.

C The case for reform of LIBOR

C.1 LIBOR is the most frequently utilised benchmark for interest rates globally, referenced in transactions with a notional outstanding value of at least $300 trillion.

C.2 However, LIBOR has a number of significant weaknesses that have eroded its credibility as a benchmark:

- LIBOR is intended to be a representation of unsecured inter-bank term borrowing costs; as this segment of the market has significantly declined, submissions to LIBOR have become increasingly reliant on expert judgement rather than transaction data.
- Banks and individuals working for banks have an incentive to attempt to manipulate the submissions that compile the rate, either to signal their perceived institutional creditworthiness or to support trading positions.
- The mechanism by which LIBOR is administered leaves opportunity for contributors to attempt to manipulate submissions in line with these incentives; submissions are not always based on transactions and the process is self-policing.
- There are weaknesses in governance arrangements for the compilation process, and within contributing banks themselves. Stronger oversight, with greater independence and transparency is needed.

C.3 There are ongoing investigations by a number of global financial regulators and public authorities into alleged attempted manipulation of LIBOR. It is already clear that at least some serious misconduct has taken place relating to LIBOR submissions in recent years.

C.4 Retaining LIBOR unchanged in its current state is not a viable option, given the scale of identified weaknesses and the loss of credibility that it has suffered. Therefore, LIBOR has to be significantly strengthened to take account of these weaknesses, while, in parallel, alternative benchmarks that can take on some or all of the roles that LIBOR currently performs in the market should be identified and evaluated.

The development and use of LIBOR

C.5 LIBOR is an indication of the costs of unsecured borrowing in the London inter-bank markets. In essence it is a benchmark that gauges the interest rate, credit premium and liquidity premium that a leading bank would expect to be offered by another similar institution.

C.6 It was established in the 1980s in order to provide a fair and standardised interest rate benchmark for loans, thereby facilitating the growth of the syndicated loans market. Standardised inter-bank rates were attractive as a benchmark for investors and borrowers as they allowed the lending banks to pass on changes in the funding costs of an average bank over the course of the duration of the loan. The development of LIBOR was also driven, from an early stage, by the growth in new financial instruments such as forward rate agreements, which also required a standardised interest rate benchmark.

Box C.1: Definition of LIBOR

LIBOR is calculated by Thomson Reuters on behalf of the BBA. Contributing banks submit a response to the following question for each currency and tenor:

"At what rate could you borrow funds, were you to do so by asking for and then accepting inter-bank offers in a reasonable market size just prior to 11 am?"

The highest and lowest submissions are discarded, with the remaining submissions averaged to create LIBOR for the given day. For some currencies, more outliers are discarded as there are a higher number of contributing banks.

C.7 Today, inter-bank benchmarks such as LIBOR and EURIBOR are used across the world for a range of financial products by a wide variety of financial market participants, for both hedging and speculative purposes. Table C.1 sets out some of the more common uses for LIBOR, along with an estimate of the notional value of financial products using LIBOR, which is estimated to be at least $300 trillion. No comprehensive source of data on the use of LIBOR exists so this data is drawn from a number of different published sources and relies on a number of assumptions, none of which will be complete or exact. Table C.1 should therefore be treated as indicative rather than comprehensive. A number of other estimates of the value of contracts linked to LIBOR exist in the public domain, ranging from $300 trillion up to $800 trillion.

Table C.1: Use of LIBOR in Financial Contracts

Instrument/Application	Estimated value of contracts with LIBOR as benchmark
Syndicated Loans	~$10 trillion[(a)]
Floating Rate Notes	~$3 trillion[(b)]
Interest Rate Swaps	$165[(c)] – $230 trillion[(d)]
Exchange-traded Interest Rate Futures and Options	$30 trillion[(d)]
Forward Rate Agreements	$25[(d)] – $30 trillion[(e)]
Total	~$300 trillion

Note: Assumption that 50 per cent of contracts reference LIBOR; this list is not exhaustive.

Sources: (a) Oliver Wyman; (b) Dealogic; (c) DTCC; (d) Bank for International Settlements; (e) Trioptima

C.8 Although LIBOR is currently published for ten currencies and fifteen maturities, this was not always the case. LIBOR was originally published for just three currencies – Sterling, US Dollar and Japanese Yen – before growing to cover a total of 16 currencies prior to the introduction of the euro in 2000. Similarly, the number of maturities has increased over time from 12 to 15 – in 1998 the 1-week rate was added, and in 2001 the overnight and 2-week rates were added.

C.9 Although LIBOR is calculated in London, it is based on daily submissions from a number of international banks and is used as a benchmark globally. The increasing global integration of financial markets has meant that contracts have converged to a single internationally recognised benchmark, and LIBOR in particular has benefited from a combination of the rise of the euro markets and the convenient time-zone in which London sits. Additionally, as the prevalence of LIBOR-linked contracts increased, there were network effects that made it more attractive for other products to link to LIBOR: for example, adjustable rate mortgages in local markets moved from being linked to niche measures of cost of funds to the more widely recognised and more easily hedged LIBOR.

Developments in the inter-bank borrowing market

C.10 Inter-bank benchmarks, such as LIBOR and EURIBOR, are an indication derived from information and activity in the market for inter-bank borrowing costs. Therefore the functioning of these underlying markets will have a direct impact on the benchmarks, and consequently on all contracts referenced to them. Unsecured inter-bank markets for term borrowing have come under severe stress and banks have been relying on other sources of funding for a greater proportion of their funds, including secured borrowing, retail deposits and liquidity provided by central banks.

C.11 This has been driven by several factors:

- There has been a significant increase in perceived risk of counterparty default (i.e. credit risk), particularly in the aftermath of the collapse of Lehman Brothers. The spread between inter-bank term interest rates and projected overnight cash rates (derived from OIS) increased sharply around this time, although has since fallen (Chart C.1). Further, regulatory capital charges arising from this increase in counterparty risk have reduced the demand for unsecured funding.
- The introduction of liquidity coverage ratios – in the UK and in Basel III – have modified the demand and supply of inter-bank funding, as banks transition to more longer maturity funding and more secured funding sources.
- There was, and continues to be, a significant increase in liquidity available to banks as a consequence of the exceptional measures taken by major central banks during and after the crisis.

Chart C.1: 3-month LIBOR-OIS Spread

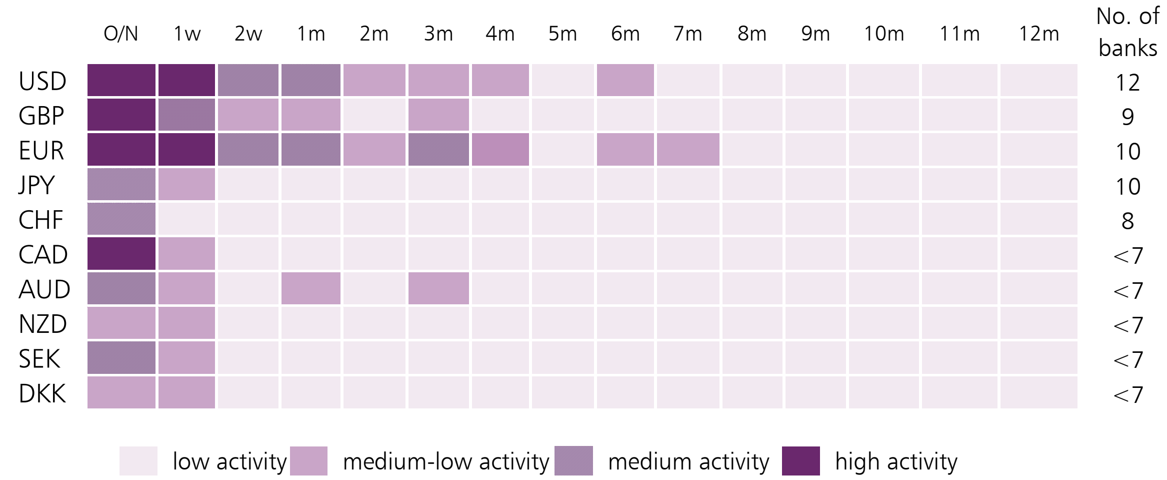
Source: Bloomberg

C.12 The long-term impact of these factors will vary. The increase in perceived counterparty credit risk may be cyclical, although its effect on the inter-bank market may last for longer. The effect of central bank operations has reduced the reliance of banks on private credit facilities.

However, the changing regulatory requirements concerning capital and liquidity – both in the UK, and anticipated at an international level – reflect a permanent structural change, and so might have a permanent effect on the volume of lending in the inter-bank market, and particularly on inter-bank unsecured lending at longer maturities.

C.13 Under the current definition of LIBOR a lower volume of trades is not necessarily a problem since there is no mechanical link from transactions to the LIBOR calculation. However it might make the expert judgement required to determine the appropriate rate submission more difficult. The problem of limited transactions is not uniform. While there is still some inter-bank lending, for many currencies and maturities trading remains very thin (see Chart C.2).

Chart C.2: Unsecured deposit transactions by LIBOR contributing banks, per bank in 2011
Inter-bank deposit transactions



Note: This is based on data from a subset of contributing banks, may not be include all relevant transactions or be entirely representative for all currencies.

Source: Oliver Wyman, Bank of England and Wheatley Review calculations

C.14 Overall, the limited number of transactions means that there are some problems inherent in a widely used benchmark that is nominally derived from unsecured inter-bank term lending. First, determining an appropriate rate for all required points is difficult. Second, a relatively small and illiquid market is used as the basis for determining rates in global loan and derivative contracts that have a nominal outstanding value that is several multiples of the value of the underlying inter-bank transactions.

Table C.2: The use of LIBOR as a reference rate

Interest rate swaps and floating rate notes

	1m	3m	6m	12m	Total
USD	5.6%	52.8%	0.3%	0.1%	59%
EUR	-	-	0.1%	-	0%
GBP	0.4%	2.9%	8.9%	-	12%
JPY	0.1%	3.6%	23.5%	-	27%
CHF	0.1%	0.4%	1.6%[1]	-	2%
AUD	-	-	-	-	0%
CAD	-	-	-	-	0%
NZD	-	-	-	-	0%
SEK	-	-	-	-	0%
DKK	-	-	-	-	0%
Total	6%	60%	34%	0%	100%

[1]Swiss National Bank monetary policy target rate.

Source: Dealogic; Depository Trust and Clearing Corporation

C.15 However the large majority of financial contracts use only a small sub-set of these maturities. In particular, three and six months are used most often, while use of the other tenors in contracts is very limited. And dollar, yen and sterling rates continue to be by far the most widely used, as Table C.2 illustrates this in the case of interest rate swaps and floating rate notes.

C.16 Furthermore, it could be argued that, in the current environment inter-bank lending rates are dominated by credit risk and there is a large dispersion in the perceived creditworthiness of banks. This, together with the low volume of inter-bank unsecured lending transactions, arguably means that the concept of an average inter-bank rate derived from a panel of diverse banks has less meaning as a measure of bank funding costs.

Failures of the current LIBOR regime

C.17 As discussed, LIBOR and similar benchmarks have in recent years come under increasing scrutiny from regulators around the world. In the UK, the issue achieved widespread public awareness with the publication of the FSA's findings against Barclays (see Box C.2). This is only the first of a number of investigations the FSA is carrying out into contributing banks.

C.18 LIBOR is a representation of unsecured inter-bank borrowing costs, and given not all contributing banks need to borrow at all maturities and in all currencies every day, it involves an element of judgement and inference on the part of the contributor.

C.19 The need for judgement on the part of a contributor involves a discretion which can be misused. Some contributing banks have sought to exploit the conflicts of interest that arose from their respective roles as contributor to the rate, user of the rate, and wider participant in the market. There is a risk that submissions may have reflected inappropriate factors, such as the bank's trading position, or concerns as to adverse media comment, as illustrated above.

C.20 There are two types of problem that might arise from these conflicts of interest:

- First, the credit-signalling (or stigma) effect: although a bank's daily LIBOR submission does not necessarily reflect increased counterparty risk, it may be interpreted by external observers as an indication of the creditworthiness of that particular bank. During periods of market stress there is therefore an incentive to lower submissions in order that perception of that bank's relative creditworthiness is not negatively affected.

- Second, there are private economic incentives: contributing banks are both users of and contributors to LIBOR and will therefore have assets and liabilities with substantial sensitivities to changes in LIBOR. This then gives traders within banks a clear incentive to seek to affect the overall LIBOR rate for the benefit of a particular trading exposure. Further, the possibility of collusion between contributing banks exists.

C.21 Whatever the ultimate outcome of the ongoing investigations into alleged attempted manipulation of LIBOR by a number of global banks, it has become increasingly clear that there are a number of potential failings that need to be considered in detail:

- weaknesses in the LIBOR mechanism;
- limitations in the existing governance and regulation framework; and
- whether existing regulatory powers and sanctions are appropriate.

Box C.2: The FSA's Final Notice to Barclays[1]

On 27 June 2012, the FSA fined Barclays Bank plc £59.5 million for significant failings relating to LIBOR and EURIBOR. Barclays' breaches occurred over a number of years. Barclays were found to have breached several of the FSA's Principles for Businesses in relation to its submissions to the LIBOR and EURIBOR setting process. It breached the following Principles:

A firm must observe proper standards of market conduct (Principle 5)

Barclays acted inappropriately and breached Principle 5 on numerous occasions by making LIBOR and EURIBOR submissions which took into account requests made by its interest rate derivative traders. These traders were motivated by profit and sought to benefit Barclay's trading positions.

Further, on numerous occasions Barclays sought to influence the EURIBOR submissions of other banks.

Barclays acted inappropriately and breached Principle 5 on numerous occasions by making LIBOR submissions that took into account concerns over the negative media perception of Barclays' LIBOR submissions, which were seen by some commentators as a measure of their inability to raise funds. Senior management's concerns resulted in instructions being given by less senior managers to reduce LIBOR submissions to avoid negative media comment.

A firm must take reasonable care to organise and control its affairs responsibly and effectively, with adequate risk management systems (Principle 3)

Barclays breached Principle 3 by failing to have adequate risk management systems or effective controls in place relating to its LIBOR and EURIBOR submissions processes. There were no specific systems and controls in place until December 2009. The extent of Barclays' misconduct was exacerbated by these inadequate systems and controls.

A firm must conduct its business with due skill, care and diligence (Principle 2)

Compliance failures meant that inappropriate submissions and inadequate controls persisted. Barclays failed to conduct its business with due skill, care and diligence when considering issues raised internally in relation to its LIBOR submissions, thereby breaching Principle 2. LIBOR issues were escalated to its internal Compliance function on three occasions, and in each case Compliance failed to assess and address them effectively.

As a consequence of these breaches, the FSA fined Barclays £59.5 million, which included a 30 per cent discount under the FSA's executive settlement procedures for agreeing to settle at an early stage. Were it not for this discount, Barclays would have been fined £85 million. Barclays was separately fined $360 million by the US authorities for attempted manipulation of and false reporting concerning LIBOR and EURIBOR benchmark interest rates over a four year period commencing as early as 2005.

There are a series of ongoing investigations by regulatory authorities concerning conduct with respect to LIBOR, and the Barclays settlement is merely the first to conclude.

[1] This box is a summary of the Final Notice issued in respect to the Barclays case. The document is available in full at http://www.fsa.gov.uk/static/pubs/final/barclays-jun12.pdf

Weaknesses in the LIBOR mechanism

C.22 The detailed procedures by which LIBOR is calculated are described in Annex A. In summary terms, contributing banks for each currency submit interest rates for a range of maturities, responding to a hypothetical question. From these submissions, an average is calculated once data points at the top and bottom of the range have been excluded.

C.23 While this seems a relatively straightforward mechanism, specific problems include the following factors:

- The rates that banks submit require expert judgement and inference on the part of the contributor. This allows flexibility when determining rates but can give rise to a risk of manipulation due to conflicts of interest.
- There is currently no standard, regularly employed, procedure to corroborate individual submissions, which can allow contributors to act on the conflicts of interest set out above.
- It is difficult to corroborate individual submissions as the market that LIBOR is intended to provide an assessment of is illiquid and the types of transactions are becoming increasingly less relevant for bank funding. This is particularly the case for less well-used currencies and maturities.
- Knowledge of intended or recent submissions from individual banks can facilitate manipulation and individual submissions to LIBOR are made public on a daily basis.
- The rate definition is for a cost of funds for the contributors own bank. Although it provides transparency and accountability, such information is market sensitive as it can be interpreted as an indicator of a particular bank's creditworthiness.
- The existing LIBOR panels are relatively small. Although they vary in size, even the largest panels have only 18 banks at most. Furthermore, participation is voluntary, so a large group of users benefit from the contribution of a small group of banks.

Limitations of the current governance framework

C.24 The day-to-day running of LIBOR is the responsibility of BBA LIBOR Ltd, a subsidiary of the BBA and run by the LIBOR Manager. A separate company, Thomson Reuters, is responsible for collecting the submissions from contributing banks and submitting them to checks and verification, before publishing the final calculation to the market.

C.25 Clearly, contributing banks should themselves be primarily responsible for the quality of the submissions they make to the LIBOR process. In order to fulfil this responsibility, the management of these banks should ensure that they have robust processes in place, with appropriate systems and controls in place to ensure high quality of submissions. Furthermore, responsibility should be subject to the internal governance provided by the boards of these banks.

C.26 There is also a need for a degree of centralised oversight to ensure the integrity of the benchmark. Oversight of LIBOR is currently the responsibility of the Foreign Exchange and Money Markets Committee (FX&MM). Its remit includes the design of the benchmark and the governance and scrutiny of all data and panel bank contributions. One of the important functions played by FX&MM is to set, and periodically review, the parameters against which submissions are verified by Thomson Reuters. The Fixings and Oversight subcommittees of FX&MM are respectively responsible for investigating issues with submissions, and taking necessary action against contributors.

C.27 These arrangements have a number of potentially significant limitations. First, there appears to be insufficient independence built into these governance structures. There is currently a substantial overlap between the roles of contributing banks in providing the inputs that are used to compile LIBOR, and in overseeing the LIBOR setting process (including technical and procedural standards). Combined with the fact that contributing banks are also users of the benchmark, this overlap suggests that there might be insufficient incentive for those responsible for enforcing standards to do so with complete objectivity and independence. At the very least, the lack of independence does little to enhance the credibility of the governance framework.

C.28 Second, oversight is insufficiently robust – specifically:

- internal compliance and systems and controls within contributing banks, or within BBA LIBOR Ltd, are not systematically overseen in order to provide assurance before any potential misconduct arises; and
- it is not clear that the oversight function carried out by the Oversight subcommittee has either the capacity – in terms of resource and expertise – or the appropriate sanctions to detect, investigate and enforce against misconduct effectively.

C.29 Third, there is an apparent lack of transparency – the oversight and scrutiny provided by FX&MM and its two subcommittees does not appear to be sufficiently open and transparent to provide the necessary degree of accountability to firms and markets with a direct interest in being assured of the integrity of LIBOR. For example:

- the membership of FX&MM and its subcommittees is not publicly known; and
- information regarding referrals of potentially problematic submissions to the LIBOR manager or the Fixings Subcommittee, or relating to any enforcement action taken by the Oversight Committee, is not published.

Regulation of LIBOR-related activities

C.30 The current regulatory and legal framework is not designed to allow the FSA to regulate activities related to LIBOR. First, and most fundamentally, the activities of contributing to or administering LIBOR (or any similar benchmark) are not currently "regulated activities" as defined under the Financial Services and Markets Act 2000 (FSMA).

C.31 While the FSA is currently taking regulatory action in relation to attempted manipulation of LIBOR by firms, this has been on the basis of the connection between LIBOR submitting and other regulated activities, and there is no directly applicable specific regulatory regime covering LIBOR-related activities. Further, as LIBOR setting is not a regulated activity, individual employees of banks involved in the process do not have to be "Approved Persons" under FSMA, restricting the FSA's ability to take disciplinary action against individuals.

C.32 As noted above, a related issue is that participation on a LIBOR panel is currently voluntary. LIBOR provides a significant benefit to a wide variety of market participants including banks, investment banks, credit card and loan providers and investors. However, only small subset of users, made up entirely of major banks, contribute to the setting of LIBOR, while the remainder of users are able to benefit from its availability to the wider market. It could be argued that one of the gaps in the current regulatory regime is the lack of a lever to compel participation in LIBOR panels, given the risks that participants face and the relatively limited rewards.

Sanctions – the market abuse regime

C.33 The civil market abuse regime in the UK is governed by Section 118 of FSMA and provides the FSA with the ability to take civil action against market participants for activities such as market manipulation. Section 118 of FSMA, which implements the EU Market Abuse Directive

2003. However, for a number of reasons, much manipulation and attempted manipulation of LIBOR or other benchmarks is unlikely to be covered by the market abuse regime:

- Inter-bank lending and over-the-counter (OTC) interest rate swaps do not take place on a prescribed market;
- Trading exchange-traded interest rate derivatives are potentially covered, but there might be difficulties showing in particular cases that benchmark manipulation had the requisite effect on a qualifying investment trading on a prescribed market;
- Of the likely motivations for manipulation and attempted manipulation of LIBOR – the desire to avoid negative media coverage of a bank's financial soundness, improving returns in OTC interest rate swaps and improving returns in exchange traded interest rate derivatives, only the last and possibly the first will fall within the scope of the market abuse regime;
- Even in the case of trading in exchange-traded interest rate futures, the s. 118 regime can be used only if one of the subsections applies. Subsection (8) is perhaps the most likely to be apt as it potentially applies if (a) a LIBOR submission is likely to give a regular user of the market a false or misleading impression as to the price or value of qualifying investments, or (b) a LIBOR submission would be, or would be likely to be, regarded by a regular user of the market as behaviour that would distort, or would be likely to distort, the market in such an investment. However, subsection (8) will cease to have effect from 31 December 2014.[2]

Sanctions – criminal offences

C.34 A further issue – as set out in the Review's terms of reference – is whether the criminal sanctions in respect of potential LIBOR manipulation and attempted manipulation are sufficient to provide effective enforcement and deterrence.

C.35 In summary, LIBOR manipulation and attempted manipulation is unlikely to constitute a criminal offence which falls under the prosecutorial responsibility of the FSA. Even the most likely offence in FSMA, concerning misleading statements and practices established by Section 397 of FSMA, is unlikely to apply.

C.36 However, LIBOR manipulation and attempted manipulation may well constitute a criminal offence under the law relating to fraud – for example, fraud by false representation under Section 2 of the Fraud Act 2006 – but this regime is not enforced and prosecuted by the FSA. The Serious Fraud Office (SFO) has announced that it intends to proceed with investigations into LIBOR, but the application of law relating to possible LIBOR-related offences is, for now, untested.

[2] See section 118(9). Subsection 118(8) will cease to have effect from 31 December 2014, as this is a super-equivalent provision in the UK's market abuse regime and is subject to a sunset clause. As the Market Abuse Directive 2003 is being replaced with a directly-applicable Regulation, this provision will not exist under the future MAR.

The Wheatley Review contacts

This document can be found in full on our website: http://www.hm-treasury.gov.uk

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