

INTERNATIONAL FINANCE - SPRING 2013

LIBOR: GOVERNANCE

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Introduction and Questions

We have been considering the interactions between regulation limited by reference to geography and financial activity which crosses geographic borders. This material is a case study which allows us to think about these issues in a new context. Different domestic regulators have taken enforcement action with respect to banks’ participation in the Libor-setting process. Do you think that the capacity of multiple national regulators to take enforcement action with respect to such activity risks excessive sanctions? What does the case study suggest with respect to co-operation between regulators? ²

Libor became especially significant as a transnational benchmark because of standardization. Does this mean that standardization is a financial stability issue?

Does this case study change your views about the need for government regulation? About the possibility for self-regulation? About the need for particular types of regulation? For harmonization of regulation across geographic borders? For new methods of ensuring compliance with regulation?

The case study illustrates the intersections between private market activity and Government regulation. Why do you think the GFMA, a trade association, published principles

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² Note that both the US and the UK are interested in prosecuting Tom Hayes, a former UBS trader. David Enrich & Evan Perez, U.S. and U.K. in Tussle Over Trader at <http://online.wsj.com/article/SB10001424127887324392804578358383917948760.html>

relating to benchmarks?

Note how the EU Commission defines the subject of its study more broadly than the UK Government did. Why do you think this is? Is this a good idea?

BBA LIBOR

The British Bankers' Association (BBA) standardized procedures for the fixing of Libor. This is how BBA Libor describes the Libor-setting process in outline:

bbalibor stands for 'London InterBank Offered Rate'. It is produced for ten currencies with 15 maturities quoted for each - ranging from overnight to 12 months - thus producing 150 rates each business day. bbalibor is a benchmark giving an indication of the average rate at which a LIBOR contributor bank can obtain unsecured funding in the London interbank market for a given period, in a given currency. Individual bbalibor rates are the end-product of a calculation based upon submissions from LIBOR contributor banks, which are then averaged under a "trimmed mean" methodology.

Definition

Every contributor bank is asked to base their bbalibor submissions on the following question:

“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?”

Therefore, submissions are based upon the lowest perceived rate at which a bank could go into the London interbank money market and obtain funding in reasonable market size, for a given maturity and currency.

bbalibor is not necessarily based on actual transactions, as not all banks will require funds in marketable size each day in each of the currencies/ maturities they quote and so it would not be feasible to create a full suite of LIBOR rates if this was a requirement. However, a bank will know what its credit and liquidity risk profile is from rates at which it has dealt and can construct a curve to predict accurately the correct rate for currencies or maturities in which it has not been active.

“Reasonable market size” is intentionally left broadly defined: it would have to be constantly monitored and in the current conditions would have to be changed very frequently. It would also vary between currencies and maturities, leading to a considerable amount of confusion.

The current definition was adopted as the standard after a review in 1998. Up until this point, submissions from panel members were based upon the following: “At what rate do you think interbank term deposits will be offered by one prime bank to another prime bank for a reasonable market size today at 11am?” The new definition enables accountability for the rates.

All bbalibor rates are quoted as an annualised interest rate. This is a market convention. For example, if an overnight Sterling rate from a contributor bank is given as 2.00000%, this does not indicate that a contributing bank would expect to pay 2% interest on the value of an overnight loan. Instead, it means that it would expect to pay 2% divided by 365.

What is bbalibor used for?

bbalibor is the primary benchmark for short term interest rates globally. It is written into standard derivative and loan documentation such as the ISDA terms, and is used for an increasing range of retail products such as mortgages and college loans. It is used as a barometer to measure strain in money

markets and as a gauge of market expectation for future central bank interest rates. It is also the basis for settlement of interest rate contracts on many of the world's major futures and options exchanges.

Selection of Contributors

Contributor banks have been selected for currency panels in line with three guiding principles:

Scale of market activity

Credit rating

Perceived expertise in the currency concerned

Calculation of bbalibor

Thomson Reuters is the designated calculation agent for BBA LIBOR. Data submitted by panel banks into the bbalibor process is received and processed by Thomson Reuters and the data is calculated using guidelines provided by the "LIBOR Panel Banks and Users Group" ("LPBAUG").

Each LIBOR contributor bank has an application installed allowing that institution to confidentially submit rates. Each morning between 1100 and 1110 each panel bank formulates their own rates for the day and inputs them into this application, which links directly to a rate setting team at Thomson Reuters. A bank cannot see other contributor rates during the submission window - this is only possible after final publication of the BBA LIBOR data. Thomson Reuters run a collection of automated and manual tests on the submitted rates before they are sent to the calculation engine, and after calculation the data is released to the market via Thomson Reuters and other licensed data vendors.

Libor Processes

Every bbalibor rate produced by Thomson Reuters is calculated using a trimmed arithmetic mean. Once Thomson Reuters receive each submission they rank them in descending order and then exclude the highest and lowest 25% of submissions - this is the trimming process. Details of this are shown in the table below. The remaining contributions are then arithmetically averaged to create a bbalibor quote. This is repeated for every currency and maturity, producing 150 rates every business day.

| No. of Contributors | Methodology | No. of Contributor rates averaged |
|---------------------|--|-----------------------------------|
| 18 Contributors | top 4 highest rates, tail 4 lowest rates | 10 |
| 17 Contributors | top 4 highest rates, tail 4 lowest rates | 9 |
| 16 Contributors | top 4 highest rates, tail 4 lowest rates | 8 |
| 15 Contributors | top 4 highest rates, tail 4 lowest rates | 7 |
| 14 Contributors | top 3 highest rates, tail 3 lowest rates | 8 |
| 13 Contributors | top 3 highest rates, tail 3 lowest rates | 7 |
| 12 Contributors | top 3 highest rates, tail 3 lowest rates | 6 |
| 11 Contributors | top 3 highest rates, tail 3 lowest rates | 5 |
| 10 Contributors | top 2 highest rates, tail 2 lowest rates | 6 |
| 9 Contributors | top 2 highest rates, tail 2 lowest rates | 5 |
| 8 Contributors | top 2 highest rates, tail 2 lowest rates | 4 |
| 7 Contributors | top highest rate, tail lowest rate | 5 |
| 6 Contributors | top highest rate, tail lowest rate | 4 |

The trimming of the top and bottom quartiles allows the exclusion of outliers from the final calculation.³

BBA LIBOR's definition of Libor is as follows:

LIBOR is defined as:

"The rate at which an individual contributor panel bank could borrow funds, were it to do so by asking for and then accepting interbank offers in reasonable market size, just prior to 11.00am London time."

This definition is amplified as follows:-

The rate at which each bank submits must be formed from that bank's perception of its cost of unsecured funds in the London interbank market. This will be based on the cost of funds not covered by any governmental guarantee scheme.

Contributions must represent rates at which a bank would be offered funds in the London interbank market.

Contributions must be for the specific currency concerned and not the cost of producing the currency by borrowing in a different currency and obtaining the required currency via the foreign exchange markets.

The rates must be submitted by members of staff at a bank with primary responsibility for management of a bank's cash, rather than a bank's derivative book.

The definition of "funds" is: unsecured interbank cash or cash raised through primary issuance of interbank Certificates of Deposit.⁴

BBA LIBOR has a FAQ which contains the following question and answer:

Why is the bbalibor standard important?

bbalibor is important because:

it is long established

it reflects the largest range of international rates

it has a wide commercial use

it has a wide international dissemination

it has a transparent calculation mechanism⁵

In 2008 commentators began to criticise the arrangements for fixing BBA LIBOR, because, although it was clear that banks were reluctant to lend to each other, BBA LIBOR did not increase to reflect this fact. People speculated that banks quoting as part of the BBA's contributor panels were unwilling to reveal through the quotes they submitted to the Libor fixing process that other banks had lost confidence in them and were raising the rates they were

³ <http://www.bbalibor.com/bbalibor-explained/the-basics>. Note that bbalibor is clear that bbalibor is a benchmark rate rather than an interest rate: "LIBOR is not an interest rate; it is a benchmark used by banks, securities houses and investors to gauge the cost of unsecured borrowing in the London interbank market." See <http://www.bbalibor.com/bbalibor-explained/faqs>

⁴ <http://www.bbalibor.com/bbalibor-explained/definitions>.

⁵ <http://www.bbalibor.com/bbalibor-explained/faqs>.

demanding to lend money. If contributor banks were submitting inaccurate quotes then Libor quoted by the BBA would also be inaccurate as a reflection of actual rates of interest lenders might be expected to pay. The BBA responded to these concerns by reviewing its procedures and by strengthening the governance arrangements for the Libor fixing process. A consultative paper published in June of 2008⁶ was followed by a paper describing the new arrangements in November 2008.⁷ The Foreign Exchange and Money Markets Committee (“FX & MM Committee”), responsible for the operation and development of BBA LIBOR, would have two sub-committees: a Fixings Sub-committee to scrutinize the fixings process and an Oversight Sub-committee. Membership of the FX & MM Committee had not been disclosed and the members sat as individuals. The 2008 governance changes involved a move to Committee Members being individuals representing their firms, with a responsibility “to act in the best interests of the LIBOR benchmark and the markets it serves.”⁸ Membership of the Committee would for the future include “[a] representative of a (currently) non-contributing US bank that is active in the money markets..[a] representative of a (currently) non-contributing European bank that is active in the money markets.. [a] representative from Liffe and one from the Chicago Mercantile Exchange (CME) [and t]wo “rate takers”: one from the fund management industry and one from the Association of Corporate Treasurers.”⁹

The Problem

In June 2012 the US Department of Justice,¹⁰ the CFTC,¹¹ and the UK’s Financial

⁶ BBA, Understanding the Construction and Operation of BBA LIBOR - Strengthening for the Future (Jun. 10, 2008) available at http://www.aciforex.org/docs/markettopics/20080610_BBA_comments_on_Libor_fixing.pdf.

⁷ See BBA, LIBOR Governance and Scrutiny - Proposals agreed by the FX & MM Committee (Nov. 17, 2008) at <http://www.bbalibor.com/download/4025>

⁸ *Id.* at 6.

⁹ *Id.*

¹⁰ Department of Justice, Barclays Bank PLC Admits Misconduct Related to Submissions for the London Interbank Offered Rate and the Euro Interbank Offered Rate and Agrees to Pay \$160 Million Penalty (Jun. 27, 2012) at <http://www.justice.gov/opa/pr/2012/June/12-crm-815.html> .

¹¹ CFTC Orders Barclays to pay \$200 Million Penalty for Attempted Manipulation of and False Reporting concerning LIBOR and Euribor Benchmark Interest Rates (Jun. 27, 2012) at <http://www.cftc.gov/PressRoom/PressReleases/pr6289-12> ; Order at <http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfbarclaysorder062712.pdf> (“Over a period of several years, commencing in at least 2005, Barclays PLC, Barclays Banle and Barclays Capital, by and through their agents, officers and employees located in at least New York, London and Tokyo, repeatedly attempted to manipulate and made false, misleading or knowingly inaccurate submissions concerning two global benchmark interest rates, the British Banleers' Association's ("BBA") London Interbanle Offered Rate

Services Authority¹² announced settlements of enforcement actions against **Barclays Bank** with respect to manipulations of Libor and Euribor rates. Barclays submitted quotes to the US dollar Libor and Euribor setting processes based on requests of its interest rate derivatives dealers, tried to influence the submissions of other banks to the Euribor (and to some extent to the Libor) setting process, and made submissions to the Libor setting process which were designed to reduce negative media perception. The Financial Services Authority said that Barclays did not have any specific systems or controls relating to the Libor and Euribor setting processes until December 2009. Before these announcements with respect to enforcement much speculation in the press about abuses of the Libor setting process had focused on the financial crisis, and the idea that during the crisis banks were reluctant to quote accurate rates for Libor because this would suggest that other market participants lacked confidence in their financial health. However, Barclays derivatives traders made requests to those responsible for making rate submissions going back as far as the beginning of 2005. The FSA's final notice cited emails and instant messages by the traders, and tracked the extent to which submissions seem to have followed the email requests.

Here is an excerpt from the FSA's Final Notice:

Liquidity issues were a particular focus for Barclays and other banks during the financial crisis and banks' LIBOR submissions were seen by some commentators as a measure of their ability to raise funds. Barclays was identified in the media as having higher LIBOR submissions than other contributing banks at the outset of the financial crisis. Barclays believed that other banks were making LIBOR submissions that were too low and did not reflect market conditions. The media questioned whether Barclays' submissions indicated that it had a liquidity problem. Senior management at high levels within Barclays expressed concerns over this negative publicity.

Senior management's concerns in turn resulted in instructions being given by less senior managers at Barclays to reduce LIBOR submissions in order to avoid negative media comment. The origin of these instructions is unclear. Barclays' LIBOR submissions continued to be high relative to other contributing banks' submissions during the financial crisis....

On numerous occasions between January 2005 and June 2009, Barclays' Derivatives Traders made requests to its Submitters for submissions based on their trading positions. These included requests made on behalf of derivatives traders at other banks. The Derivatives Traders were motivated by profit and sought to benefit Barclays' trading positions. The aim of these requests was to influence the final benchmark LIBOR and EURIBOR rates published by the BBA and EBF.

The misconduct involving internal requests to the Submitters at Barclays was widespread, cutting across several currencies and occurring over a number of years. The Derivatives Traders discussed the requests openly at their desks. At least one Derivatives Trader at Barclays would shout across the euro Swap Desk to confirm that other traders had no conflicting preference prior to making a request to the

("LIBOR") and the European Banking Federation's ("EBF") Euro Interbank Offered Rate ("Euribor"). "

¹² Barclays fined £59.5 million for significant failings in relation to LIBOR and EURIBOR (Jun. 27, 2012) at <http://www.fsa.gov.uk/library/communication/pr/2012/070.shtml>.

Submitters.

Requests to Barclays' Submitters were made verbally and a large amount of email and instant message evidence consisting of Derivatives Traders' requests also exists. At times, requests made by email alone were sent by the Derivatives Traders nearly every day. For example, requests were made by Barclays' US dollar Derivatives Traders on 16 out of the 20 days on which Barclays made US dollar LIBOR submissions in February 2006 and on 14 out of the 23 days on which it made US dollar LIBOR submissions in March 2006.

The FSA has identified that:

- i. between January 2005 and May 2009, at least 173 requests for US dollar LIBOR submissions were made to Barclays' Submitters (including 11 requests based on communications from traders at other banks);
- ii. between September 2005 and May 2009, at least 58 requests for EURIBOR submissions were made to Barclays' Submitters (including 20 requests based on communications from traders at other banks); and
- iii. between August 2006 and June 2009, at least 26 requests for yen LIBOR submissions were made to Barclays' Submitters.

At least 14 Derivatives Traders at Barclays made these requests. This included senior Derivatives Traders. In addition, trading desk managers received or participated in inappropriate communications on, at least, the following occasions:

- i. on 22 March 2006, Trader A (a US dollar Derivatives Trader) stated in an email to Manager A that Barclays' Submitter "submits our settings each day, we influence our settings based on the fixings we all have". Manager A took no action as a result of this email;
- ii. on 5 February 2008, Trader B (a US dollar Derivatives Trader) stated in a telephone conversation with Manager B that Barclays' Submitter was submitting "the highest LIBOR of anybody [...] He's like, I think this is where it should be. I'm like, dude, you're killing us ". Manager B instructed Trader B to: "just tell him to keep it, to put it low ". Trader B said that he had "begged " the Submitter to put in a low LIBOR submission and the Submitter had said he would " see what I can do "; and
- iii. in July 2008, euro Derivatives Traders sent emails to Manager C indicating that they had spoken to Barclays' Submitter about the desk's reset positions and he had agreed to assist them. This followed instructions from Manager C for the traders to speak to the Submitter.

Barclays' Derivative Traders would request high or low submissions regularly in emails, for example on 7 February 2006, Trader C (a US dollar Derivatives Trader) requested a " High 1m and high 3m if possible. Have v. large 3m coming up for the next 10 days or so". Trader C also expressed his preference that Barclays would be "kicked out " of the average calculation. Trader C's aim was therefore that Barclays' submissions would be high enough to be excluded from the final average calculation, which could have affected the final benchmark rate.

On Friday, 10 March 2006, two US dollar Derivatives Traders made email requests for a low three month US dollar LIBOR submission for the coming Monday:

- i. Trader C stated " We have an unbelievably large set on Monday (the IMM). We need a really low 3m fix, it could potentially cost a fortune. Would really appreciate any help";
- ii. Trader B explained "I really need a very very low 3m fixing on Monday –preferably we get kicked out. We have about 80 yards [billion] fixing for the desk and each 0.1 [one basis point] lower in the fix is a huge help for us. So 4.90 or lower would be fantastic ". Trader B also indicated his preference that Barclays would be kicked out of the average calculation; and
- ii. On Monday, 13 March 2006, the following email exchange took place: Trader C: "The big day [has] arrived... My NYK are screaming at me about an unchanged 3m libor. As always, any help wd be

greatly appreciated. What do you think you'll go for 3m?" Submitter: "I am going 90 altho 91 is what I should be posting".Trader C:"[...]when I retire and write a book about this business your name will be written in golden letters [...]".Submitter:"I would prefer this[to]not be in any book!"

The number of requests and the period of time over which they were made indicate that the Derivatives Traders made requests on a routine basis. Specific emails also indicate the requests were made regularly. For example, the following email exchange took place on 27 May 2005: Submitter:"Hi All, Just as an FYI, I will be in noon'ish on Monday [...]".Trader B:"Noonish? Whos going to put my low fixings in? hehehe" Submitter:"[...] [X or Y] will be here if you have any requests for the fixings".

Trader D set calendar entries on at least 4 occasions in 2006 to remind him to make requests for EURIBOR submissions: "Ask for Low Reset Rate" and "Ask for High 6M Fix".

The routine nature of the requests demonstrates that the Derivatives Traders considered Barclays took their requests into account when determining its submissions.

Responses from Barclays' Submitters

Barclays' Submitters stated to the Derivatives Traders contemporaneously on numerous occasions that they would take their requests into account. Submitters sent positive responses to Barclays' Derivative Traders on a regular basis. Examples are set out below. Certain examples record expressly that the Submitters' judgement in determining Barclays' submissions was influenced by the Derivatives Traders' requests.

In response to a request from Trader C for a high one month and low three month US dollar LIBOR submission on 16 March 2006, a Submitter responded: " For you...anything. I am going to go 78 and 92.5. It is difficult to go lower than that in threes, looking at where cash is trading. In fact, if you did not want a low one I would have gone 93 at least".

Trader C requested low one month and three month US dollar LIBOR submissions at 10:52 am on 7 April 2006 (shortly before the submissions were due to be made); " If it's not too late low 1m and 3m would be nice, but please feel free to say "no"... Coffees will be coming your way either way, just to say thank you for your help in the past few weeks ". A Submitter responded "Done...for you big boy ".

On 29 June 2006, a Submitter responded to Trader E's request for EURIBOR submissions "with the offer side at 2.90 and 3.05 I will input mine at 2.89 and 3.04 with you guys wanting lower fixings (normally I would be a tick above the offer side)".

On 6 August 2007, a Submitter even offered to submit a US dollar rate higher than that requested: Trader F: "Pls set 3m libor as high as possible today" Submitter:"Sure 5.37 okay?"Trader F: "5.36 is fine"

Evidence from certain Submitters confirms that Barclays took the Derivatives Traders' requests into account when determining its submissions. One of the Submitters adjusted Barclays' submissions one or two basis points up or down in order to comply with the requests. The numbers he submitted taking into account the Derivatives Traders' requests were different to the numbers he would have submitted absent the requests and were not consistent with the LIBOR definition. However, he thought Barclays could still have raised money at the rates submitted. Another Submitter considered it possible to justify Barclays' submissions by reference to market data even on occasions when he may have taken the Derivatives Traders' requests into account. Another Submitter denies taking the Derivatives Traders' requests into account.

The FSA considers that the routine nature of Barclays' Submitters' responses to the Derivatives Traders, the language used in the responses and the evidence obtained from the Submitters during the course of the investigation demonstrates that Barclays took the Derivatives Traders' requests for US dollar LIBOR and EURIBOR submissions into account on numerous occasions when determining its submissions....

On the majority of occasions where Barclays' Submitters were contacted by Barclays' Derivatives Traders with requests, Barclays' submissions (for US dollar LIBOR and EURIBOR) were consistent with those requests...

The examples given above relate to requests that were made by Barclays' Derivatives Traders to benefit their own trading positions. However Barclays' Derivatives Traders also made internal requests for EURIBOR and US Dollar LIBOR submissions based on the trading positions of traders at other banks who had asked them to pass requests on to Barclays' Submitters..

At least 12 of the US dollar LIBOR requests made to Barclays' Submitters were made on behalf of external traders that had previously worked at Barclays and were now working at other banks (although those banks did not contribute US dollar LIBOR submissions).

For example, on 26 October 2006, an external trader made a request for a lower three month US dollar LIBOR submission. The external trader stated in an email to Trader G at Barclays "If it comes in unchanged I'm a dead man". Trader G responded that he would "have a chat". Barclays' submission on that day for three month US dollar LIBOR was half a basis point lower than the day before, rather than being unchanged. The external trader thanked Trader G for Barclays' LIBOR submission later that day: "Dude. I owe you big time! Come over one day after work and I'm opening a bottle of Bollinger".

At least 20 of the EURIBOR requests made by the Derivatives Traders were made on behalf of traders at other banks that contributed EURIBOR rates. Barclays' Derivatives Traders passed on the requests of these other traders to Barclays' Submitters, even blind copying in the external traders to their emails in order to demonstrate they had done so.

For example, on 6 September 2006, an external trader at another bank (Panel Bank 1) contributing EURIBOR submissions sent an instant message to Trader E at Barclays requesting a low one month submission: "I seriously need your help tomorrow on the 1mth fix". The next day, Trader E passed on the request to Barclays' Submitters, blind copying in the external trader.

On 1 February 2007, the same external trader sent several messages to Trader E requesting a low one month EURIBOR submission. Trader E in turn made a request for a low one month submission to a Submitter, who sent a positive response.

Barclays' Submitters also received 11 requests for sterling LIBOR submissions from an external trader at another bank (who had previously worked at Barclays). These requests were not taken into account....

On 10 June 2008, the BBA published a consultation paper in response to concerns being raised about the accuracy of LIBOR rates at that time. The paper sought comments on certain proposals to modify LIBOR, including in response to concerns about negative media perception of high LIBOR submissions: "the BBA proposes to explore options for avoiding any stigma whilst maintaining transparency". The BBA's paper stated that contributors were continuing to make submissions in accordance with the LIBOR definition "at the rate their cash desks perceive they can raise cash in the specified currency". Barclays was one of the institutions that provided comments to the BBA in response to this paper. Barclays' response did not explain that Barclays had not been making submissions in accordance with the LIBOR definition. Liquidity conditions had eased during the consultation period. Barclays' response to the BBA was made by Manager D, who had given instructions to Barclays' Submitters to reduce Barclays' LIBOR submissions from November 2007 onwards. Compliance was not involved in Barclays' response.

The BBA published a 'Feedback Statement' on its consultation paper on 5 August 2008. The paper stated: "In conclusion, all contributing banks are confident that their submissions reflect their perception of their true costs of borrowing at the time at which they submitted their rates. They are therefore prepared to continue with their individual quotes being published with the day's LIBOR rates. As there

was no real support for any of the proposals to limit stigmatisation, the FX & MM Committee has therefore decided to retain the existing process”.

At the same time as publishing this Feedback Statement, the BBA first published guidance which amplified the definition of LIBOR. This amplification stated “ the rate at which each bank submits must be formed from that bank’s perception of its cost of funds in the interbank market.

When liquidity conditions deteriorated in September 2008 (following Lehman Brothers’ insolvency filing) Barclays again factored senior management’s concerns about negative media attention into its LIBOR submissions process. Even after the BBA review, on which Barclays’ commented, Barclays’ Submitters continued to receive instructions to reduce their LIBOR submissions.

For example, on 18 September 2008, a Submitter stated in a telephone conversation with Manager D that he would put in a one month US dollar LIBOR submission of 4.75 because that was where he had obtained money in the market. Barclays’ two month and three month submissions were also discussed. The Submitter agreed to lower Barclays’ one month LIBOR submission to 4.50. The next highest submission was 50 basis points lower than Barclays’ submission on that day.

On 8 October 2008, a Submitter was asked about Barclays’ LIBOR submissions during a telephone conversation. He responded that “[Manager E]’s asked me to put it lower than it was yesterday ... to send the message that we’re not in the shit”. Barclays’ submission the day before had been 5.05, which was 25 basis points higher than the next highest contributor. Barclays’ submission on 8 October 2008 was still the highest submission, but equal with one other contributor.

During this period, Barclays continued to believe that other banks were making LIBOR submissions that were too low and did not reflect market conditions. Submitters continued to make comments indicating that Barclays’ submissions were being made taking concerns about negative media comment into account until May 2009 (although relevant communications were more sporadic after October 2008).¹³

UBS

UBS settled enforcement proceedings with FINMA of Switzerland,¹⁴ the CFTC¹⁵ and

¹³ FSA, Final Notice to Barclays Bank plc (Jun. 27, 2012) at <http://www.fsa.gov.uk/static/pubs/final/barclays-jun12.pdf>

¹⁴ LIBOR: FINMA Concludes Proceedings Against UBS and Orders Disgorgement of Profits (Dec. 19, 2012) at <http://www.finma.ch/e/aktuell/Pages/mm-ubs-libor-20121219.aspx> .

¹⁵ CFTC Orders UBS to Pay \$700 Million Penalty to Settle Charges of Manipulation, Attempted Manipulation and False Reporting of LIBOR and Other Benchmark Interest Rates (Dec. 19, 2012) at <http://www.cftc.gov/PressRoom/PressReleases/pr6472-12>. See also Order at <http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfubsorder121912.pdf> .

FSA¹⁶ in December 2012.¹⁷ The FSA's Final Notice¹⁸ stated:

UBS's Traders routinely made requests to the individuals at UBS responsible for determining its LIBOR and EURIBOR submissions to adjust their submissions to benefit their trading positions ("Internal Requests"). During the Relevant Period, more than 800 documented Internal Requests were made in respect of JPY LIBOR. During the same period more than 115 Internal Requests were also made in connection with UBS's GBP, CHF, EUR and USD LIBOR submissions and EURIBOR submissions. More than 40 individuals were directly involved in these Internal Requests.

8. At times, a single Internal Request was made that covered a sustained period of time. For example, on 24 January 2007 in response to a Trader's request about three month and six month JPY LIBOR submissions, Manager A, who was overseeing the Trader Submitter responsible for determining the submissions, replied: "standing order, sir."

9. Across the separate currencies for which UBS made LIBOR submissions, the practice of making Internal Requests is broken down as follows across the Relevant Period:

- a. In relation to JPY LIBOR, at least 800 documented Internal Requests were made, directly involving at least 17 individuals, four of whom were Managers;
- b. In relation to GBP LIBOR, at least 90 documented Internal Requests were made, directly involving at least nine individuals, three of whom were Managers;
- c. In relation to CHF LIBOR, UBS routinely rounded all of its CHF LIBOR submissions by between 0.25 and 0.5 of a basis point to favour the bank's trading position (the "Rounding Adjustment"). Furthermore, at least six documented Internal Requests were made, directly involving at least three individuals, one of whom was a Manager;
- d. In relation to EUR LIBOR, at least eight documented Internal Requests were made, directly involving at least six individuals, three of whom were Managers; and
- e. In relation to USD LIBOR, at least two documented Internal Requests were made, directly involving at least four individuals, one of whom was a Manager¹.

10. In relation to EURIBOR, at least 13 documented Internal Requests were made, directly involving at least eight individuals, five of whom were Managers.

11. In addition, Traders and Trader-Submitters routinely discussed their trading positions and made Internal Requests orally. Trader-Submitters also influenced the submissions they made to suit their own trading positions.

12. Given the widespread and routine nature of making Internal Requests and the nature of the control failures identified in this Notice, every LIBOR and EURIBOR submission in currencies and tenors in which UBS traded is at risk of having been improperly influenced...

13. UBS, through four of its Traders, colluded with interdealer brokers to attempt to influence the JPY LIBOR submissions of other banks ("Broker Requests"). The Brokers were in regular contact with

¹⁶ FSA, UBS fined £160 million for significant failings in relation to LIBOR and EURIBOR (Dec. 19, 2012) at <http://www.fsa.gov.uk/library/communication/pr/2012/116.shtml>.

¹⁷ Japan's Financial Services Agency took action against UBS in December 2011. FSA, Administrative Actions against UBS Securities Japan Ltd and UBS AG, Japan Branches (Dec. 16, 2011) at <http://www.fsa.go.jp/en/news/2011/20111216-3.html>

¹⁸ FSA, Final Notice to UBS AG (Dec. 19, 2012) at <http://www.fsa.gov.uk/static/pubs/final/ubs.pdf>.

various Panel Banks that contributed JPY LIBOR submissions. During the Relevant Period, the UBS Traders (one of whom was a Manager) were directly involved in making more than 1000 documented requests to 11 Brokers at six Broker Firms.

14. UBS, through one of its Traders, also colluded with individuals at Panel Banks to make submissions in relation to JPY LIBOR that benefited UBS's trading positions ("External Requests"). During the Relevant Period, UBS, through this Trader colluded with these individuals in his attempt to influence the JPY LIBOR submissions of four other banks by making more than 80 documented External Requests, as well as making such requests orally.

15. Broker Requests and External Requests were co-ordinated with Internal Requests. In the course of one campaign of manipulation, a UBS Trader agreed with his counterpart that he would attempt to manipulate UBS's submissions in "small drops" in order to avoid arousing suspicion. The Trader made it clear that he hoped to profit from the manipulation and referred explicitly to his UBS trading positions and the impact of the JPY LIBOR rate on those positions. He offered to "return the favour" and entered into facilitation trades and other illicit transactions in order to incentivise and reward his counterparts. UBS, through one of its Traders:

a. sought to secure the co-operation of traders at other Panel Banks by entering into facilitation trades that aligned their respective commercial interests so that both sides would benefit from the intended JPY LIBOR manipulation; and

b. together with another UBS Trader, entered into "wash trades" (i.e. risk free trades that cancelled each other out and which had no legitimate commercial rationale) through two Broker Firms in order to facilitate corrupt brokerage payments to brokers as reward for their efforts to manipulate the JPY LIBOR submissions of Panel Banks. For example, on 18 September 2008, a Trader explained to a Broker: "if you keep 6s [i.e. the six month JPY LIBOR rate] unchanged today ... I will fucking do one humongous deal with you ... Like a 50,000 buck deal, whatever ... I need you to keep it as low as possible ... if you do that ... I'll pay you, you know, 50,000 dollars, 100,000 dollars... whatever you want ... I'm a man of my word". UBS entered into at least nine such wash trades using this Broker Firm, generating illicit fees of more than £170,000 for the Brokers.

16. In addition, UBS made corrupt payments of £15,000 per quarter to Brokers to reward them for their assistance for a period of at least 18 months.

17. The nature of the relationship and total disregard for proper standards by these Traders and Brokers is clear from the documented communications in which particular individuals referred to each other in congratulatory and exhortatory terms such as "the three muscateers [sic]", "SUPERMAN", "BE A HERO TODAY" and "captain caos [sic]"....

18. A number of UBS managers knew about and in some cases were actively involved in UBS's attempts to manipulate LIBOR and EURIBOR submissions. In total, improper requests directly involved approximately 40 individuals at UBS, 11 of whom were Managers. At least two further Managers and five Senior Managers were also aware of the practice of the manipulation of submissions to benefit trading positions.

19. Furthermore, the practice of attempts to manipulate LIBOR and EURIBOR submissions to benefit trading positions was often conducted between certain individuals in open chat forums and in group emails, which included at least a further 70 individuals at UBS.

20. UBS sought to manipulate LIBOR and EURIBOR in order to improve the profitability of trading positions....

133. As mentioned in paragraph 119 above, The Wall Street Journal published an article in April 2008 about differences between USD LIBOR submissions and other market measures of the borrowing costs

of certain Panel Banks, including UBS. The article also referred to a report published by the Bank for International Settlements highlighting that “banks might have an incentive to provide false rates to profit from derivatives transactions”. The Wall Street Journal followed up with an article in May 2008 commenting that: “... banks face a dilemma. If any bank submits a much higher rate than its peers, it risks looking like it’s in financial trouble. So banks have an incentive to play it safe by reporting something similar - which could cause the reported rates to cluster.”

134. On 10 June 2008, the BBA published a consultation paper about the future operation of the benchmark. At section 3.3 of the paper, the BBA explained how the LIBOR rate is calculated, explaining that: “The trimming process removes any outlying data as well as preventing any individual bank from attempting to influence the rates”. The paper also amplified the LIBOR definition by prescribing that: “The rates must be submitted by members of staff at a bank with primary responsibility for management of a bank’s cash, rather than a bank’s derivative book”.

135. Prompted by media attention (and potential regulatory proceedings) UBS’s Legal and Compliance department commenced a limited review of its LIBOR processes and procedures (the “2008 Review”). The 2008 Review concluded on 7 August 2008 and included consideration of the management of potential conflicts of interest in UBS’s LIBOR submission process, specifically, the risk of submissions being influenced to benefit trading positions. In the course of the 2008 Review, UBS became concerned about its submissions such that by 24 June 2008, it anticipated imminent regulatory action and/or civil litigation arising from the risks associated with its involvement in LIBOR submissions.

136. As part of the 2008 Review, a sample correlation analysis was performed by Trader-Submitter E, for the period 1 December 2007 up to and including March 2008 for three and six month USD LIBOR submissions and the published LIBOR rate against net open derivative positions. The purpose of the analysis was to demonstrate that there was no correlation between UBS’s USD LIBOR submissions and trading positions.

137. However the 2008 Review was inadequate because:

- a. Its scope was limited to USD LIBOR submissions, because that was the LIBOR currency that was the subject of media attention at the time. It did not consider whether there was any linkage between derivatives trading positions and the manipulation of submissions on other currencies;
- b. Trader-Submitter E had been responsible for determining UBS’s USD submissions in the four month period December 2007 to March 2008. UBS took no account of the risks inherent in asking an individual to investigate their own submissions;
- c. When performing the analysis, Trader-Submitter E did not report that he had in fact received and rejected an Internal Request from Trader E in the review period that he was analysing;
- d. At least two of the Managers and one Senior Manager who were involved in the 2008 Review were aware of the practice of manipulating LIBOR submissions to benefit trading positions; and
- e. The 2008 Review did not take into account the fact that submissions may be being manipulated to benefit particular trading positions of particular Traders. Such misconduct would not necessarily be detected by merely looking at net open derivative positions, because Traders’ positions could “offset” the positions of other Traders.

138. UBS concluded that Trader-Submitter E’s analysis gave rise to no suspicion of any inappropriate manipulation of the USD LIBOR submissions. UBS did not consider making any enquiries into any other LIBOR currencies or benchmark rates, in particular EURIBOR.

139. The 2008 Review culminated in the preparation of formal procedures and guidelines on 7 August 2008 (the “2008 Procedures”). Amongst other matters, the 2008 Procedures:

- a. Identified management who were responsible for the integrity and monitoring of the submission

process, as well as senior management to whom unresolved issues and concerns should be escalated; and b. Introduced a weekly exception reporting regime whereby a comparison was undertaken between UBS's LIBOR submissions and its weighted daily average cost of funds and/or the published rate for the relevant day, with explanations to be sought for deviations. The responsibility for conducting this analysis lay with those Managers who had oversight of the submission process and this information was to be submitted to the division's Compliance department in the form of a report (an "Exception Report" for their independent review).

140. The 2008 Procedures were inadequate in design because:

- a. They were based on the 2008 Review, which was itself inadequate;
- b. Despite anticipating imminent regulatory action and/or civil proceedings arising from its involvement in LIBOR submissions and having identified a conflict of interest in its LIBOR submission process, the 2008 Procedures did not address the cause of the conflict namely the combination of submission and trading responsibilities;
- c. They did not provide any practical guidance to LIBOR submitters or compliance in determining rates;
- d. No specific training was provided to those involved in the LIBOR submission process;
- e. The tolerance level for exception reporting was set at ten basis points and no subsequent consideration was given as to whether this level was appropriate, or if it needed to be adjusted for each currency;
- f. Of the four Managers given responsibility for the integrity and monitoring of the submissions process under the 2008 Procedures, all were aware of the ongoing manipulation namely, Senior Manager B, Senior Manager D, Manager C and Manager D; and
- g. They did not direct Traders and Trader-Submitters that it was improper to attempt to manipulate LIBOR to benefit trading positions.

141. The 2008 Procedures were inadequate in operation because:

- a. The primary tool available to senior management during the Relevant Period to monitor, identify and resolve issues with the determination of LIBOR submissions was the exception reporting regime. Despite the widespread abuse, it failed to detect a single instance of submission manipulation.
- b. Exception Reports were required to be submitted on a monthly rotational basis for JPY, CAD, AUD, SEK and DKK. However, save for a single report on AUD, no Exception Reports were actually prepared for those five currencies throughout the Relevant Period;
- c. Contrary to what the procedures stipulated, Exception Reports for the USD overnight tenor submissions were not always prepared; and
- d. The 2008 Procedures were premised on the business taking responsibility for the Exception Reports, with Compliance performing an independent secondary review. In practice, Compliance assumed the first line of defence role for the review of the Exception Reports, which was not what was intended and for which they were not appropriately skilled.

142. In any event, whilst Exception Reports were regularly produced, because of an oversight, UBS never actually circulated the 2008 Procedures beyond those involved in their preparation.

143. Even after the introduction of the 2008 Procedures, Traders remained able to make their Internal Requests to influence submissions and were not constrained from doing so by any of UBS's systems and controls...

144. On 2 July 2008 and 15 September 2008, the FX & MM Committee prepared draft Terms of Reference for LIBOR panel banks. The draft proposed that: "[the rate should not be] set in reference to information supplied by any individual or institution outside that area of the contributing bank that has the primary responsibility for managing that bank's cash".

145. UBS Legal and Compliance explained its concern to the Committee on 24 July 2008 and again on

28 October 2008, namely that its wording did not reflect the reality of the situation and that as a practical matter, it would be impossible for the cash desk to analyse the source of all the information on which its good faith perception of UBS's cost of borrowing was based. UBS Legal and Compliance suggested alternative wording (which the FX & MM Committee subsequently adopted) in order to deal with this concern, explaining that it understood what the BBA was seeking to achieve, namely "that the cash desk takes full responsibility for the submitted rate and that this should not be contributed or unduly influenced by other areas of the bank or outside institutions."

146. Therefore, when making its representations to the Committee, UBS was aware of the concerns of the BBA and the FX & MM Committee about inappropriate influences on LIBOR submissions and the inherent conflict of interest in its own LIBOR submission function.

147. Furthermore, when making its representations UBS (through a number of Senior Managers and Managers) was aware that it was manipulating submissions itself to benefit its trading positions....

RBS

In February 2013 the CFTC announced the settlement of enforcement proceedings against RBS with respect to charges of manipulation, attempted manipulation and false reporting of yen and Swiss franc LIBOR.¹⁹ The UK FSA announced it had fined RBS for misconduct relating to Libor.²⁰ The CFTC Order stated:

Commencing in at least mid-2006 and continuing through 2010, RBS made hundreds of attempts to manipulate Yen and Swiss Franc LIBOR and, on numerous occasions, made false LIBOR submissions to benefit its derivatives and money market trading positions. At times, RBS also aided and abetted other panel banks' attempts to manipulate those same rates. This misconduct involved more than a dozen RBS derivatives and money market traders, one manager, and multiple offices around the world, including London, Singapore and Tokyo. Sometimes, RBS was successful in manipulating Yen and Swiss Franc LIBOR.

The ways in which RBS conducted this scheme all followed a similar theme. The profitability of RBS's Yen and Swiss Franc derivatives positions, such as interest rate swaps, depended on Yen and Swiss Franc LIBOR, as did certain of RBS's money market positions. RBS traders would ask their colleagues to make false submissions that were beneficial to RBS's trading positions. The traders' requests were either for falsely high submissions or falsely low ones, whatever was needed to turn a profit. The submitters often accommodated those requests by making false submissions. The statement of an RBS trader at the time makes their motivation clear: "[I]ts [sic] just amazing how libor fixing can make you that much

¹⁹ CFTC Orders The Royal Bank of Scotland plc and RBS Securities Japan Limited to Pay \$325 Million Penalty to Settle Charges of Manipulation, Attempted Manipulation, and False Reporting of Yen and Swiss Franc LIBOR (Feb. 6, 2013) at <http://www.cftc.gov/PressRoom/PressReleases/pr6510-13>. See also Order at <http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfrbsorder020613.pdf>.

²⁰ FSA, RBS fined £87.5 million for significant failings in relation to LIBOR (Feb. 6, 2012) at <http://www.fsa.gov.uk/library/communication/pr/2013/011.shtml>.

money."

RBS created an environment for a number of years that eased the path to manipulation inasmuch as RBS sat derivatives traders and submitters together on the same desk, heightening the conflict of interest between the profit motives of the traders and the responsibility of submitters to make honest submissions. When derivatives traders and submitters eventually were separated (for business, not compliance reasons), the misconduct continued through Bloomberg chats and an internal instant messaging system ("instant messages") rather than by one trader merely turning in his chair to speak to his colleague on the desk. Some of these submitters were even traders themselves, and skewed their LIBOR submissions to drive the profitability of their own money market and derivatives trading positions.

RBS derivatives traders also unlawfully worked in concert with a trader from a UBS AG subsidiary ("UBS"), also a LIBOR panel bank, in attempts to manipulate Yen LIBOR, and with a trader at another panel bank in attempts to manipulate Swiss Franc LIBOR. RBS also aided and abetted UBS's attempts to manipulate Yen LIBOR by executing wash trades (trades that result in financial nullities) in order to generate extra brokerage commissions to compensate two interdealer brokers for assisting UBS in its unlawful manipulative conduct. On at least one occasion, RBS also requested the assistance of an interdealer broker to influence the submissions of multiple panel banks in an attempt to manipulate Yen LIBOR. RBS engaged in its attempts to manipulate Yen and Swiss Franc LIBOR despite the questions that arose in the media in 2007 and 2008 about the integrity of banks' LIBOR submissions, LIBOR reviews and guidance by the British Bankers' Association in 2008 and 2009, and the Commission's request in April 2010 that RBS conduct an internal investigation relating to its U.S. Dollar LIBOR practices. In fact, certain RBS employees involved in the misconduct were aware of the CFTC LIBOR investigation, and nonetheless continued their manipulative conduct while at the same time trying to conceal those efforts by not using Bloomberg chats or instant messages.

RBS's traders were able to carry out their many attempts to manipulate Yen and Swiss Franc LIBOR for years because RBS lacked internal controls, procedures and policies concerning its LIBOR submission processes, and failed to adequately supervise its trading desks and traders. RBS did not institute any meaningful controls, procedures or policies concerning LIBOR submissions until in or about June 2011. During this time, RBS was experiencing significant growth on its Yen and Swiss Franc trading desks, generating revenues for RBS that were multiplying over the years...

Responsibility for making RBS's LIBOR submissions was assigned to certain London based money market traders until March 2012. RBS money market traders were responsible for ensuring that the bank met its funding needs each day in all currencies, including Yen and Swiss Franc. To do so, RBS money market traders engaged in both intra-bank and inter-bank borrowing and lending transactions. RBS money market traders also traded derivatives products that were indexed to, and therefore valued based on, LIBOR, including Yen and Swiss Franc LIBOR. One money market trader was primarily responsible for making both the Yen and Swiss Franc LIBOR submissions ("Primary Submitter").

The Primary Submitter considered certain market information in determining RBS's Yen and Swiss Franc LIBOR submissions, such as RBS's funding needs, money market transactions, futures and other derivatives prices, "market color" communications with derivatives traders, information from interdealer brokers, arbitrage transactions, and synthetic cash deposits in various currencies. But the Primary Submitter also improperly considered requests to benefit derivative traders' positions or his own positions. At times, the Primary Submitter skewed the LIBOR submissions to benefit those positions. After considering these factors, the Primary Submitter or his backups determined a rate for each tenor and input the rates into a spreadsheet that was then submitted to Thomson Reuters shortly before 11:00 a.m. London time....

In October 2006, RBS senior management decided to facilitate more communication between derivatives traders and money market traders, some of whom were also LIBOR submitters, by locating them on the same RBS currency trading desks. This co-location plan was known as the Short-Term Markets Desk ("STM"). One of the express purposes of STM was to encourage derivatives and money market traders to communicate about the relevant market conditions that could impact trading and funding decisions. The seating arrangement, however, magnified the preexisting conflict of interest between the profit motive of traders and the responsibility of LIBOR submitters to assess honestly RBS's costs of borrowing unsecured funds in the London interbank market. RBS did not provide any guidance or controls over what constituted appropriate communications between the derivative traders and money market traders who were the LIBOR submitters. The result was an environment where the RBS Yen and Swiss Franc traders had increased opportunities to attempt to manipulate Yen and Swiss Franc LIBOR to RBS's benefit.

RBS's Yen and Swiss Franc derivatives traders quickly took advantage of this new arrangement. Sitting with the Primary Submitter, the traders not only shared their views of market conditions, or "market color," but they also told him what their trading positions were and encouraged him to make submissions that would make their positions more profitable. At times, if the Primary Submitter was not at the desk, the traders made written requests via Bloomberg chats or instant messages.

If the Primary Submitter was absent, junior derivatives and money market traders determined RBS's Swiss Franc LIBOR submissions, and a London-based derivatives trader ("Yen Trader 1 ") made the Yen LIBOR submissions. The substitute submitters took advantage of those opportunities to ensure that the Yen and Swiss Franc LIBOR submissions were beneficial either to those of other RBS traders, or at times positions held in RBS 's Yen or Swiss Franc money market trading book.

STM was in place formally until mid-2008 and continued informally for Yen and Swiss Franc traders into 2009. In the spring of 2009, the trading floor was reorganized, and the derivatives traders and submitters were separated onto different desks. The seating change did nothing to slow the scheme. When they were no longer in close proximity to the submitters, the traders increased their use of Bloomberg chats and instant messages to continue making requests for beneficial submissions, which were frequently accommodated...

RBS Yen traders knew that they were engaging in wrongful conduct and that Yen LIBOR was being manipulated to benefit trading positions throughout the market. As the Senior Yen Trader, Yen Manager, and other Yen traders coordinated their requests for beneficial LIBOR submissions with the Primary Submitter, they discussed at times how the Yen LIBOR panel was a "cartel" in which rates were being "manipulated." RBS traders, including the Senior Yen Trader, also discussed how the UBS Yen Trader was attempting to manipulate Yen LIBOR, including by coordinating with others. Despite the recognition that manipulation was occurring, at least one RBS trader welcomed having the UBS Yen Trader in the market because his aggressive trading brought increased liquidity, allowing traders, such as the RBS traders, to take on larger positions and potentially obtain greater trading profits...

On a number of occasions from at least early 2007 through at least mid-2009, RBS, through two traders, colluded with the UBS Yen Trader in coordinated attempts to manipulate Yen LIBOR. Another RBS derivatives trader engaged in wash trades with UBS to generate brokerage commissions to compensate interdealer brokers for assisting UBS's attempted manipulations. That same RBS derivatives trader also attempted to manipulate Yen LIBOR at least once by coordinating with an interdealer broker to influence the submissions of other panel banks.

Beginning in early 2007 through at least late 2008, the UBS Yen Trader, who was a former employee of RBS, exploited his friendship with an RBS derivatives trader, Yen Trader 2, in his many attempts to

manipulate Yen LIBOR to his advantage. Frequently, the two traders discussed how changes in Yen LIBOR could benefit their respective trading positions. Through written communications, the UBS Yen Trader asked Yen Trader 2 to make requests of the RBS Primary Submitter for certain Yen LIBOR submissions that would benefit the UBS Yen Trader's positions. Yen Trader 2 often agreed to and did make the requests of the Primary Submitter. The Primary Submitter accommodated some of those requests....

RBS, through its derivatives traders and submitters, knew it was improper to consider derivatives trading positions in determining the bank's LIBOR submissions. A bank's financial derivatives trading positions are not legitimate or permissible factors on which to base a bank's daily LIBOR submissions. By basing its Yen and Swiss Franc LIBOR submissions on rates that benefited RBS's or any other bank's derivatives positions, RBS's submissions were not made in accordance with the BBA definition and criteria for LIBOR submissions. Instead, RBS knowingly conveyed false, misleading or knowingly inaccurate reports that its submitted rates for Yen and Swiss Franc LIBOR were based on and solely reflected its assessment of the costs of borrowing unsecured funds in the relevant interbank money markets.

Accordingly, RBS regularly attempted to manipulate, and at times succeeded in manipulating the official Yen and Swiss Franc LIBOR fixings in particular tenors, and knowingly delivered false, misleading or knowingly inaccurate reports concerning Yen LIBOR and Swiss Franc LIBOR, commodities in interstate commerce...

In 2008 and again in 2009, after the media questioned the integrity of LIBOR and the panel banks' submissions, the BBA reviewed its LIBOR submissions process and issued new guidance governing how banks should make LIBOR submissions. RBS participated in the reviews and sat on the FX & MM and Steering Committees for the BBA. In April 2010, RBS received the Commission's request that it conduct an internal investigation of its U.S. Dollar LIBOR practices. Yet RBS did not implement policies or internal controls until March 2011, and RBS's traders and submitters continued to attempt to manipulate LIBOR into late 2010 and other benchmark interest rates well into 2011. For example, throughout the relevant period, RBS failed to provide its benchmark interest rate submitters with any training or supervision related to the setting of LIBOR, factors to be considered in the setting of LIBOR, or the LIBOR submission process in general. RBS also did not require documentation of its submitters' LIBOR determinations. Finally, RBS failed to provide its employees with any training regarding appropriate communications between derivatives traders and LIBOR submitters. This lack of supervision and training permitted RBS employees to knowingly make repeated false Yen and Swiss Franc LIBOR submissions for years....

Section 9(a)(2) of the Act²¹ makes it unlawful for any person "knowingly to deliver or cause to be delivered for transmission through the mails or interstate commerce by telegraph, telephone, wireless, or other means of communication false or misleading or knowingly inaccurate reports concerning crop or market information or conditions that affect or tend to affect the price of any commodity in interstate commerce " 7 U.S.C. § 13(a)(2) (2006); *United States v. Brooks*, 681 F.3d 678, 691 (5th Cir. 2012); *United States v. Valencia*, 394 F.3d 352, 354-355 (5th Cir. 2004); see also *CFTC v. Johnson*, 408 F. Supp. 2d 259, 267 (S.D. Tex. 2005) (same).

On a daily basis, RBS, through the transmission of an electronic spreadsheet to the service provider of the BBA, who calculates their official fixings (i.e., Thomson Reuters), knowingly delivered or caused to be delivered its Yen and Swiss Franc LIBOR submissions through the mails or interstate commerce. RBS's submissions were also caused to be delivered through the mails or interstate commerce through the

²¹ The Commodity Exchange Act codified at 7 USC Chapter 1.

daily dissemination and publication globally, including into the United States, of the panel banks' submissions as well as the daily official benchmark interest rates by at least Thomson Reuters on behalf of the BBA and other third party vendors. The panel banks' submissions are used to determine the official published rates for LIBOR which are calculated based on a trimmed average of the submissions. RBS's daily LIBOR submissions contained market information concerning the costs of borrowing unsecured funds in particular currencies and tenors, the liquidity conditions and stress in the money markets, and RBS's ability to borrow funds in the particular markets. Such market information affects or tends to affect the prices of commodities in interstate commerce, including the daily rates at which Yen LIBOR and Swiss Franc LIBOR are fixed. At times, during the periods relevant to the conduct described herein, RBS's submissions for certain tenors of Yen and Swiss Franc LIBOR were false, misleading or knowingly inaccurate because they were based in whole or in part on impermissible and illegitimate factors, specifically RBS's derivatives and money market trading positions. By using these impermissible and illegitimate factors in making its LIBOR submissions, RBS at times conveyed false, misleading or knowingly inaccurate information that the rates it submitted were based on and related solely to the costs of borrowing unsecured funds in the relevant markets and were truthful and reliable. Moreover, RBS traders, submitters and at least one manager knew that certain RBS LIBOR submissions contained false, misleading and knowingly inaccurate information concerning the submitted rates. By such conduct, Respondents violated Section 9(a)(2) of the Act, 7 U.S.C. § 13(a)(2) (2006)...

Together, Sections 6(c), 6(d), and 9(a)(2) of the Act prohibit acts of manipulation or attempted manipulation. Section 9(a)(2) of the Act makes it unlawful for "[a]ny person to manipulate or attempt to manipulate the price of any commodity in interstate commerce, or for future delivery on or subject to the rules of any registered entity " 7 U.S.C. § 13(a)(2) (2006). Section 6(c) of the Act authorizes the Commission to serve a complaint and provide for the imposition of, among other things, civil monetary penalties and cease and desist orders if the Commission "has reason to believe that any person ... is manipulating or attempting to manipulate or has manipulated or attempted to manipulate the market price of any commodity, in interstate commerce, or for future delivery on or subject to the rules of any registered entity, ... or otherwise is violating or has violated any of the provisions of [the] Act " 7 U.S.C. § 9 (2006). Section 6(d) of the Act is substantially identical to Section 6(c). See 7 U.S.C. § 13b (2006).

Manipulation under the Act is the "intentional exaction of a price determined by forces other than supply or demand." Frey v. CFTC, 931 F.2d 1171, 1175 (7th Cir. 1991). The following four elements must be met, by a preponderance of the evidence, to show a successful manipulation has occurred:

- (1) the [respondent] had the ability to influence market prices;
- (2) the [respondent] specifically intended to do so;
- (3) artificial prices existed; and
- (4) the [respondent] caused an artificial price.

In re Cox, [1986-1987 Transfer Binder] Comm. Fut. L. Rep. (CCH) 123,786, at 34,061 (CFTC July 15, 1987). The test for manipulation, however, is a practical one: We think the test of manipulation must largely be a practical one if the purposes of the Commodity Exchange Act are to be accomplished. The methods and techniques of manipulation are limited only the ingenuity of man. The aim must be therefore to discover whether conduct has been intentionally engaged in which has resulted in a price which does not reflect basic forces of supply and demand. Cargill v. Hardin, 452 F.2d 1154, 1163 (8th Cir. 1971). "[I]ntent is the essence of manipulation." Indiana Farm Bureau Cooperative Ass'n, Inc., [1982-1984 Transfer Binder] Comm. Fut. L. Rep. (CCH) 121,796, at 27,282 (CFTC Dec. 17, 1982). The manipulator's intent separates "lawful business conduct from unlawful manipulative activity." !d. at

27,283. To prove the intent element of manipulation, it must be shown that RBS "acted (or failed to act) with the purpose or conscious object of causing or effecting a price or price trend in the market that did not reflect the legitimate forces of supply and demand." !d.

The Commission has observed that "intent must of necessity be inferred from the objective facts and may, of course, be inferred by a person's actions and the totality of the circumstances." In re Hohenberg Bros., [1975-1977 Transfer Binder] Comm. Fut. L. Rep. (CCH) 120,271, at 21,477 (CFTC Feb. 18, 1977). "[O]nce it is demonstrated that the alleged manipulator sought, by act or omission, to move the market away from the equilibrium or efficient price - the price which reflects market forces of supply and demand - the mental element of manipulation may be inferred." Indiana Farm Bureau Cooperative Ass'n, Inc., [1982-1984 Transfer Binder] Comm. Fut. L. Rep. (CCH) at 27,283. "It is enough to present evidence from which it may reasonably be inferred that the accused 'consciously desire[d] that result, whatever the likelihood of that result happening from his conduct.'" !d. (quoting *United States v. United States Gypsum Co.*, 438 U.S. 442,445 (1978)). A profit motive may also be evidence of intent, although profit motive is not a necessary element of an attempted manipulation. See In re DiPlacido [2007-2009 Transfer Binder] Comm. Fut. L. Rep. (CCH) ~ 30,970, at 62,484 (CFTC Nov. 5, 2008) (citing In re Hohenberg Bros. Co., (CCH) ~ 20,271, at 21,478)), *aff'd*, 364 Fed. Appx. 657, No. 08-5559-ag, 2009 WL 3326624 (2d Cir. 2009).

An artificial price (also termed a "distorted" price) is one "that does not reflect market or economic forces of supply and demand." In re Cox, [1986-1987 Transfer Binder] Comm. Fut. L. Rep. (CCH) at 34,064; Indiana Farm Bureau Cooperative Ass'n, Inc., [1982-1984 Transfer Binder] Comm. Fut. L. Rep. (CCH) at 27,288 n. 2. As the Commission noted with approval in DiPlacido, ~ 30,970, at 62,484 (quoting Indiana Farm Bureau Cooperative Ass'n, Inc., [1982- 1984 Transfer Binder] Comm. Fut. L. Rep. (CCH) at 27,300 (Commissioner Stone concurring)), a Commissioner has commented: "[t]his is more an axiom than a test." In determining whether an artificial price has occurred: [O]ne must look at the aggregate forces of supply and demand and search for those factors which are extraneous to the pricing system, are not a legitimate part of the economic pricing of the commodity, or are extrinsic to that commodity market. When the aggregate forces of supply and demand bearing down on a particular market are all legitimate, it follows that the price will not be artificial. On the other hand when a price is effected by a factor which is not legitimate, the resulting price is necessarily artificial. Thus, the focus should not be as much on the ultimate price as on the nature of the factors causing it. Indiana Farm Bureau Cooperative Ass'n, Inc., [1982-1984 Transfer Binder] Comm. Fut. L. Rep. (CCH) at 27,288 n.2. See also In re DiPlacido [2007-2009 Transfer Binder] Comm. Fut. L. Rep. (CCH) at 62,484 (finding that the placement of uneconomic bids or offers results in artificial prices because those prices are not determined by the free forces of supply and demand on the exchange).

Causation of artificial prices is established when it is demonstrated that artificial market prices resulted from the conduct of a trader, or group of traders acting in concert, rather than legitimate forces of supply and demand. See *Cargill, Inc. v. Hardin*, 452 F.2d 1154, 1171-72 (8th Cir. 1971) (price squeeze "intentionally brought about and exploited by Cargill"); In re Cox, [1986-1987 Transfer Binder] Comm. Fut. L. Rep. (CCH) at 34,067 (proof of causation requires the Division to show that "the respondents' conduct 'resulted in' artificial prices").

There can be multiple causes of an artificial price. In re DiPlacido [2007-2009 Transfer Binder] Comm. Fut. L. Rep. (CCH) at 62,485. The manipulator's actions need not be the sole cause of the artificial price. "It is enough for purposes of a finding of manipulation in violation of Sections 6(b) and 9 of the Act that respondents' action contributed to the price [movement]." In re Kosuga, 19 A.D. 603, 624 (1960); see also In re Cox, [1986-1987 Transfer Binder] Comm. Fut. L. Rep. (CCH) at 34,066 (recognizing there can

be multiple causes of an artificial price and holding that a charge of manipulation can be sustained where respondents' acts are a proximate cause of the artificial price).

Here, as a member of the BBA's Yen and Swiss Franc LIBOR panels, RBS made daily submissions that purported to reflect its assessments of the costs of borrowing unsecured funds in the London interbank market for Yen and Swiss Franc LIBOR across tenors. The official LIBOR fixings are calculated using a trimmed average methodology applied to the rates submitted by the panel banks. By virtue of this methodology, RBS had the ability to influence or affect the rate that would become the official Yen and Swiss Franc LIBOR for any tenor. As evidenced by the extensive communications and other facts set forth above, in making the false Yen and Swiss Franc LIBOR submissions, several RBS derivatives traders and submitters specifically intended to affect the daily Yen and Swiss Franc LIBOR for certain tenors, including one-month, three-month, and six-month. Their intent is also made clear by the evidence that the derivatives traders and submitters' motives were to benefit RBS's derivatives and at times money market trading positions, or, at times, the derivatives trading positions of other panel banks with whom certain RBS derivatives traders colluded.

On certain occasions, RBS's false, misleading or knowingly inaccurate Yen and Swiss Franc LIBOR submissions were illegitimate factors in the pricing of the daily Yen and Swiss Franc LIBOR fixings and affected the official Yen and Swiss Franc LIBOR for certain tenors, resulting in artificial Yen and Swiss Franc LIBOR fixings. Thus, RBS' s actions were a proximate cause of the artificial Yen and Swiss Franc LIBOR fixings. Accordingly, on certain occasions, RBS manipulated Yen and Swiss Franc LIBOR for certain tenors, commodities in interstate commerce, in violation of Sections 6(c), 6(d), and 9(a)(2) of the Act.

Fixing the Problem

After the Barclays announcements the UK Parliament engaged in a frenzy of fact finding. Executives at Barclays resigned, and UK MPs and regulators began to debate whether there were problems with the culture of banking. A Parliamentary Commission on Banking Standards was established in the UK.²²

During this period the Bank of England published communications which took place between Tim Geithner, then President of the Federal Reserve Bank of New York and Mervyn King, then Governor of the Bank of England in May 2008 with respect to ideas for changes to the BBA governance arrangements.²³ We have seen that Libor and the euromarkets originated as an offshore phenomenon, so it is interesting that the then President of the Federal Reserve Bank of New York should be seeking to affect the way in which Libor is calculated. Of course, by 2008 Libor had become standardized and had moved back into the US as a rate of interest used in domestic US transactions. However, the idea of federal reserve/central bankers in the UK and US

²² See

<http://www.parliament.uk/business/committees/committees-a-z/joint-select/professional-standards-in-the-banking-industry/>

²³ See <http://www.bankofengland.co.uk/publications/Documents/news/2012/nr068.pdf>

co-operating over the governance of Libor is interesting. Geithner proposed some sensible-seeming governance suggestions, for example that Bank auditors be expected to attest to the accuracy of banks' Libor rates, and an idea of establishing random sampling of rates submitted by an expanded set of contributor banks to minimize misreporting. But he also argued that more US banks should be involved in Libor fixing, and that there could be a second fixing after the US markets open because this would be more indicative of conditions while the US market was open. King replied that the Bank of England would ask the BBA to include Geithner's suggestions in its consultation document. Ben Bernanke gave evidence to the Senate Committee on Banking, Housing and Urban Affairs in which he commented unfavorably on the lack of responsiveness of Libor to the US suggestions for governance changes and suggested that transaction based measures of interest rates were preferable.²⁴ Others were arguing for transaction based systems for setting rates, such as the DTCC GCF Repo Index and AFMA's bank bill swap reference rate.

The Wheatley Review

In July 2012 the UK Treasury established the Wheatley Review of Libor. Martin Wheatley, charged with the review, was the Managing Director of the FSA and Chief Executive-designate of the UK's Financial Conduct Authority. The Final Report was published in September 2012.²⁵ Here are the Key Conclusions and Recommendations of the Report:

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

²⁴ Binyamin Appelbaum, Cautious on Growth, Bernanke Offers No Hint of New Action, NY Times (Jul. 17, 2012) at <http://www.nytimes.com/2012/07/18/business/economy/bernanke-testifies-before-senate-panel.html?hp>

²⁵ The Wheatley Review of LIBOR: Final Report (Sep. 2012) at http://cdn.hm-treasury.gov.uk/wheatley_review_libor_finalreport_280912.pdf. In December 2012 the FSA published a Consultation Document on the regulation of benchmarks. FSA, the Regulation and Supervision of Benchmarks (Dec. 2012) at <http://www.fsa.gov.uk/static/pubs/cp/cp12-36.pdf>., CP12/36

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... 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....

1.18 Drawing on these three fundamental conclusions, this report presents the Wheatley Review's ten-point plan for the 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..

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...

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 ...

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...

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....

Immediate improvements to LIBOR

6 The BBA 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

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 ...

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...

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..

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

The BBA acknowledged that it would cease to act as Libor administrator,²⁶ and consulted about eliminating Libor quotes for currencies and tenors which were unsupported by transaction data.²⁷ Responses to the consultation commented that the proposed timescale for the changes was too fast and the BBA made some adjustments.²⁸ HM Treasury established the Hogg Tendering Advisory Committee for LIBOR and the Committee opened the tendering process for a new

²⁶ See, e.g., BBA statement on conclusions of Wheatley Review into LIBOR (Sep. 28, 2012) at <http://www.bbalibor.com/news-releases/bba-statement-on-conclusions-of-wheatley-review-into-libor>; HM Treasury, The Hogg Tendering Committee for LIBOR (Feb. 26, 2013) at http://www.hm-treasury.gov.uk/libor_tender.htm (“The work of the Committee is able to progress following the passage of a Resolution by BBA members, voted upon at an Extraordinary General Meeting of the BBA held on 25 February. “)

²⁷ BBA, Strengthening LIBOR – proposal to implement recommendation number 6 of ‘The Wheatley Review of LIBOR’ (Nov. 2012) at <http://bba.bladonmore.com/download/8425>.

²⁸ Strengthening LIBOR – proposal to implement recommendation number 6 of ‘The Wheatley Review of LIBOR’: Feedback Statement (Dec. 2012) at <http://bba.bladonmore.com/download/8545>.

Libor administrator in February 2013.²⁹

The UK's Financial Services Act 2012³⁰ contains provisions relating to benchmarks. Activity relating to the setting of benchmarks is defined as a regulated activity under section 7 (amending 22 of FSMA 2000) and s. 91 specifically addresses manipulation of benchmarks:

91 Misleading statements etc in relation to benchmarks

(1) A person ("A") who makes to another person ("B") a false or misleading statement commits an offence if—

(a) A makes the statement in the course of arrangements for the setting of a relevant benchmark,

(b) A intends that the statement should be used by B for the purpose of the setting of a relevant benchmark, and

(c) A knows that the statement is false or misleading or is reckless as to whether it is.

(2) A person ("C") who does any act or engages in any course of conduct which creates a false or misleading impression as to the price or value of any investment or as to the interest rate appropriate to any transaction commits an offence if—

(a) C intends to create the impression,

(b) the impression may affect the setting of a relevant benchmark,

(c) C knows that the impression is false or misleading or is reckless as to whether it is, and

(d) C knows that the impression may affect the setting of a relevant benchmark.

(3) In proceedings for an offence under subsection (1), it is a defence for the person charged ("D") to show that the statement was made in conformity with—

(a) price stabilising rules,

(b) control of information rules, or

(c) the relevant provisions of Commission Regulation (EC) No 2273/2003 of 22 December 2003 implementing Directive 2003/6/EC of the European Parliament and of the Council as regards exemptions for buy-back programmes and stabilisation of financial instruments.

(4) In proceedings brought against any person ("D") for an offence under subsection (2) it is a defence for D to show—

(a) that D acted or engaged in the conduct—

(i) for the purpose of stabilising the price of investments, and

(ii) in conformity with price stabilising rules,

(b) that D acted or engaged in the conduct in conformity with control of information rules, or

(c) that D acted or engaged in the conduct in conformity with the relevant provisions of Commission Regulation (EC) No 2273/2003 of 22 December 2003 implementing Directive 2003/6/EC of the European Parliament and of the Council as regards exemptions for buy-back programmes and stabilisation of financial instruments.

(5) Subsection (1) does not apply unless the statement is made in or from the United Kingdom or to a person in the United Kingdom.

²⁹ See *supra* note [26](#).

³⁰ Financial Services Act 2012, 2012 C. 21 at <http://www.legislation.gov.uk/ukpga/2012/21/contents/enacted> .

- (6) Subsection (2) does not apply unless—
- (a) the act is done, or the course of conduct is engaged in, in the United Kingdom, or
 - (b) the false or misleading impression is created there.

EU Commission Consultation on the Regulation of “Indices”

In September 2012 the EU Commission published a consultation document on the regulation of “indices,” which included Libor and Euribor.³¹ Whereas the UK focused on fixing Libor, the EU Commission initiated a wider-ranging study:

The integrity of benchmarks is critical to the pricing of many financial instruments, such as interest rate swaps and forward rate agreements, and commercial and noncommercial contracts, such as supply agreements, loans and mortgages. They also play an important role in risk management. Doubts about the accuracy and integrity of indices may undermine market confidence, cause significant losses to consumers and investors and distort the real economy. It is therefore essential that steps are taken to ensure the integrity of benchmarks and the benchmark setting process.

The Commission has already moved to amend the proposals for the market abuse Regulation.. and the criminal sanctions for market abuse Directive..to clarify that any manipulation of benchmarks is clearly and unequivocally illegal and can be subject to administrative or criminal sanctions.

However, changing the sanctioning regime alone may not be sufficient to improve the way in which benchmarks are produced and used. Sanctioning does not remove the risks of manipulation arising from the inherent conflicts of interest linked to the production and governance of benchmarks in their current form. This consultation seeks to assess how to improve the production and governance of benchmarks. Benchmarks should accurately reflect the economic realities that they are intended to measure and should be used appropriately. This consultation paper is aimed at identifying the key issues and shortcomings in production and use of benchmarks in order to assess the need for any necessary changes to the legal framework to ensure the future integrity of benchmarks.

Work is required at a Union level due to the global nature of benchmarks. Member States acting without an EU framework in this area could lead to a patchwork of rules, could create an unlevel playing field within the single market, result in an inconsistent and un-coordinated approach and reduce the Union's ability to influence outcomes and achieve an internationally consistent regime at a global level..

A number of initiatives have already been launched, including the Wheatley Review of LIBOR..., the work of IOSCO.. on oil price reporting agency oversight, the meeting of central banks on the 9th of September and further discussions at FSB and G20 level.

³¹ EU Commission, Consultation Document on the Regulation of Indices: A Possible Framework for the Regulation of the Production and Use of Indices serving as Benchmarks in Financial and other Contracts (Sep. 5, 2012) at

http://ec.europa.eu/internal_market/consultations/docs/2012/benchmarks/consultation-document_en.pdf.

Against that background, the Commission services have identified a number of areas, set out in the following 5 chapters, on which stakeholder input is welcomed.

1. Indices and Benchmarks: What they are, who produces them and for which purposes.
2. Calculation of Benchmarks: Governance and Transparency.
3. The Purpose and Use of Benchmarks.
4. Provision of Benchmarks by Private or Public Bodies.
5. Impact of Potential Regulation: Transition, Continuity and International Issues....

1.1 TYPES OF INDEX

A wide variety of underlying assets or prices may be referenced in an index. These include:

- **Interbank interest rates:** In addition to LIBOR, EURIBOR, TIBOR, CIBOR etc. which are based on banks estimates of borrowing rates, there are a whole range of similar indices such as Eurepo, which uses as its base repo rates, Euroswap, which uses Swap rates and EONIA which uses actual overnight transaction rates as its base.
- **Other financial instruments:** There are a number of well-known indices that use equities as their base such as the FTSE 100 index or Dow Jones Industrial Average. Others such as NASDAQ OMX fixed income have bonds as their base. There are other financial indices such as SovX which provides a measure of sovereign risk or volatility indices, and VIX, which measures the implied volatility of S&P 500 index options.
- **Commodities indices:** A number of indices that use commodity prices as their underlying data are long established and include commodities such as agricultural products (e.g. cocoa LIFFE London), metals (e.g. Gold COMEX) or oil (e.g. Brent oil ICE). There are also aggregate commodity indices which represent broadly diversified investment in commodities, such as the CRB which comprises prices of 19 commodities in different sectors.
- **Price Indices:** Macroeconomic indices may measure prices such as consumer price index (CPI), the GDP deflator, the producer price index (PPI). They are widely used for financial, commercial and non-commercial purposes. Typically these indices are calculated by public bodies.
- **Real Estate Price Indices:** These include Standard & Poor's Case-Schiller Home Price Index, which measures the price of property in the United States.
- **Pensions:** A range of indices are important for the calculation of pensions, including the Limited Price Indexation (LPI Index) for pension increases, and for insurance, notably actuarial tables.
- **Other Indices:** There is a whole range of other indices such as weather indices ("UBS-GWI" UBS-Global Warming Index) used for damages and parametric weather contracts. Other indices, such as the PMI, Purchasing Managers Index measure business sentiment.

1.2 PRODUCERS OF INDICES

Indices are produced by a number of different types of organisations, including:

- **Public entities,** such as the ECB, which calculates the EONIA rate, national statistical authorities that calculate consumer price indices, or multilateral organisations such as the World Bank and IMF which publish commodity indices or National Central Banks of euro and non-euro countries calculating benchmark indices.
- **Trade organisations** such as the British Banking Association (BBA) which calculates LIBOR, the European Banking Federation (EBF) which calculates EURIBOR and UK repo indices, and the Danish Bankers' Association which produces the Danish Swap Index and CIBOR.
- **Exchanges** such as NYSE Euronext which produces the Euronext 100 Index and the Next 150 Index among others, the CME (Chicago Mercantile Exchange) which produces indices such as the Dow-Jones

Industrial Average, the London Stock Exchange which produces the FTSE100 (jointly with the Financial Times) and Deutsche Börse AG which produces indices such as the Euro Stoxx 50 Index.

- Price Reporting Agencies which are responsible for calculating international commodity prices, such as Platts and Argus Media which calculate and publish prices for oil, natural gas, coal, energy, metals, and emissions.
- Other commercial organisations such as independent index providers, banks, and asset managers also calculate a variety of indices. For example, the CDS Index published by Markit or GSCI commodity index produced by Standard & Poors.

1.3 METHODOLOGIES

A range of different methodologies are used with respect to the underlying data. The methodology of a benchmark specifies who contributes the data, how it is collected and how the index is calculated. The choice of methodology depends, amongst other things, on what is practicable, what the index is used for as well as precedent.

1.3.1 Underlying data The underlying data may be actual prices or transaction values, historical data, estimated data, or in certain other instances, actual and actionable bids or offers or quotes. In cases where actual figures are used, the data can be considered to be objective and verifiable. For example EONIA is calculated using actual values for all overnight unsecured lending transactions in the interbank market. However, other indices use less objective or verifiable underlying data, usually because actual transaction data is not available. LIBOR is calculated on the basis of banks' estimates of "The rate at which an individual contributor panel bank could borrow funds, were it to do so by asking for and then accepting interbank offers in reasonable market size, just prior to 11.00am London time".. This rate is a subjective estimate, but it may be verifiable to the extent that the bank has engaged in actual transactions that correspond to the definition. EURIBOR is calculated on the basis of what the panel bank "believes one prime bank is quoting to another prime bank for interbank term deposits within the euro zone"... This is again a subjective estimate which is even less verifiable since it relates to a notional "prime bank". Similarly the Purchasing Managers Index is a measure of business sentiment and uses purchasing managers' estimates or opinions.

1.3.2 Gathering of data & contributors The underlying data may be collected in a variety of ways. In some instances all the data may be available because for instance it is mandatory to report all transactions to a particular entity. All overnight lending by the relevant panel banks is cleared by the ECB and as a result it has available all the necessary data to calculate the EONIA index of the overnight interbank lending rate..Where reporting is not complete or mandatory, index calculators have broadly two options to gather the data. They may rely on a panel of contributors to report the data, for example the ISDAFIX benchmark for average mid-market swap rates is calculated based on contributed data from a panel of 6 to 18 banks. Alternatively they can survey the relevant markets – either actively by contacting participants or passively by relying on participants to report data to them. This is the approach typically adopted by commodity index providers. In both cases the contributions are voluntary and the results may not be complete. Finally for some benchmarks, the role of the contributors is limited because the underlying data is freely available – for example stock indices may gather the closing prices from publically reported data.

1.3.3 Calculation Methodology An index is then calculated from this underlying data using a formula, typically an average. However this calculation is often more complex, may vary depending on circumstances and in particular involves the exercise of discretion. The application of a formula normally involves rules on which data to include, how they are weighted, and how other information is taken into

account when computing the final figure. Stock indices are one of the best known and most straightforward indices. The Dow Jones Industrial Average was at its outset in 1896 calculated as a simple arithmetic average of 12 leading industrial stocks. While the choice of these 12 was discretionary, the calculation itself involved no judgment or discretion. However over time some of these 12 stocks became less important and new industrial leaders arose. As a result, the index became less representative of the leading industrial companies and so the component stocks had to be changed, a total of 48 times in its 116 year history.. . Even amongst stock indices the calculation methods differ – the Dow Jones is a price weighted index whereas others are volume weighted. For these volume weighted indices, further adjustments such as the free float adjustment in the FTSE 100 are also required. For other indices, the methods used to calculate may be more complex and discretionary. The VIX10 index is calculated using a complex model. An oil index may be calculated by using a sample of actual reported prices. However, if the index is produced daily and prices are not available on that day (either because no trades occurred or none are reported) the index may be calculated using a proxy – for example the transaction price for a comparable grade of oil, appropriately adjusted. Some interest rate indices may normally be based on actual transaction data, but if this data is not available on a particular day the index may revert to an estimate based value.

Other indices may incorporate non-quantitative information. For example, an oil benchmark provider may have to incorporate an important announcement into the value of a benchmark, such as an announcement by OPEC. This announcement may have occurred after any actual transactions took place, but before the benchmark is published. In some circumstances, if the news is particularly important, this may mean that actual transactions are ignored and superseded by an estimate in light of this new information.

The methodology that is used is typically made transparent to all users, and even to the public. For example, for equity indices such as FTSE Global Equity Index Series a comprehensive Guide to Calculation Methods incorporating a statement of principles has been published by the producer..

1.4 USES OF INDICES

1.4.1 Benchmarks for Financial, Commercial and Non Commercial Purposes

One of the most important uses of indices is as benchmarks. An index may be used as a reference price for financial transactions or instruments, e.g. EURIBOR and LIBOR may be used to price interbank loans or as a reference benchmark for interest rate swaps. However they are not only used for financial transactions. For example, they may be used to price a commercial contract or be the reference interest rate in a retail mortgage or consumer credit contracts. Similarly many commodity indices such as Natural Gas – NYMEX were developed to price commercial spot contracts. However with the increased development of financial instruments they may be increasingly used for financial purposes such as pricing derivatives and hedging instruments. One of the critical issues here is that the use of the index may be very different from the purpose it was originally developed for.

1.4.2 Uses other than as a benchmark Aside from their use as benchmarks, indices serve a variety of other purposes. A benchmark may be used for performance management – for example an asset manager's performance may be evaluated against a stock index such as the FTSE 100. Benchmarks are also an important measure of sentiment or general economic conditions – the FTSE 100 is reported in the news daily as a measure of economic conditions. Indices are also used for research purposes and to reveal new information – the LIBOR-OIS spread was used as a measure of financial stress¹² during the recent economic crisis.

1.5 DEFINING INDICES & BENCHMARKS

The Commission has proposed a definition of benchmarks in the amended proposals for a Regulation..

and Directive .. on market abuse, to clearly prohibit the manipulation of benchmarks. These amended proposals define benchmarks as (a) indices or published figures calculated through the application of a formula to underlying data that are (b) used as a benchmark or reference price for financial instruments: "Benchmark" means 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." This definition is intended to be broad and includes within its scope most of the indices and benchmarks outlined in this chapter. While the scope of the market abuse rules is limited to benchmarks which affect the price of financial instruments, the scope of any additional regulation may need to be broader, and also extend to benchmarks which are used to price other contracts.

...2.1 OVERVIEW

Producing an index from underlying data is not simply a mechanical mathematical exercise but may require the exercise of judgement and discretion at various stages.

The calculation of an index starts with the collection of underlying data. This may be objective or verifiable data such as real prices - for example the closing price of shares used to calculate the Dow Jones Index. Alternatively, the inputted data may be more subjective or less verifiable, such as the estimates of a prime bank's borrowing rate used to calculate EURIBOR. In those cases where the underlying data is not objective, a degree of discretion rests with the contributor of the data. If this discretion is not exercised appropriately, this will impact the integrity of the index.

The second stage is the calculation of the index from the underlying data. Prima facie this may be a relatively straightforward and objective exercise but again discretion often needs to be exercised. The calculator will first need to decide who should contribute the underlying data. Second, they may need to discard some of the input data that are outliers or give more weight to some data than others. How this discretion is exercised will also affect the integrity of the benchmarks.

Therefore the extent to which discretion is applied either in the production or calculation of the underlying data influences its accuracy. Conflicts of interest will arise where someone exercising this discretion also has an interest in the value of the benchmark. Any resulting inappropriate, dishonest or incompetent exercise of this discretion will harm the integrity of the index, undermine confidence in markets and result in losses to stakeholders.

If the exercise of discretion is unavoidable, a suitable framework is necessary to ensure the appropriate exercise of any discretion, in particular to mitigate against any conflicts of interest and make certain that users of the benchmark understand how any discretion is being exercised.

Increasing the transparency of any input data and the calculation of the index - in particular where discretion is exercised - will increase confidence in benchmarks, reduce the scope for abuse and ensure that users are adequately informed to make any decisions about whether and how to use an index. In addition the level of transparency should increase in line with the amount of judgment exercised...

2.2 USE OF ACTUAL TRANSACTION DATA

The integrity of indices is vulnerable wherever discretion is exercised. The nature and quality of the underlying data determines the degree of discretion required, and thus the size of these risks. However if an index is based on actual transaction or other verifiable data, the contributor of the data does not generally need to exercise discretion. Therefore requiring that indices only use objective and verifiable data may help ensure the integrity of benchmarks. The possibility to construct an index based on actual transaction data is dependent on that data being available on a consistent basis. The choice of which underlying data a benchmark uses typically depends on the information available, the needs of those

using the benchmark and its purpose and how regularly the benchmark needs to be produced. For some markets, it may suffice to have quarterly or annual data, while others need daily or even hourly prices. LIBOR was, for example, developed based on estimates because there were not enough interbank lending transactions at longer maturities to produce an index on a daily basis. Estimates and quoted rates are therefore used precisely because objective data is not readily available. Changing an index from one based on estimates of underlying data to transaction based data may raise difficulties due to a lack of data, or the inappropriateness of what data is available.

Similarly where the hard data is gathered through a survey, as occurs for example with oil price indices, there is still discretion with the submitters as to whether and what data to contribute. As a result the requirement to use hard data would not necessarily entirely remove the issue of integrity for these types of index.

One solution could be to change the index, by reducing its frequency, scope or basis. Where the use of the index allows, frequency could be reduced from daily to weekly which could make the use of actual data possible.

Changing the scope of an index is another option. For instance, maturities that are quoted for LIBOR could be limited to the most liquid such as 3 month and 6 month rates.

Alternatively the base of a benchmark could be changed to align with markets that are more likely to provide actual transaction data. For interest rate benchmarks, this could allow using data for repos or overnight lending where actual transactions are more commonplace.

However, changing the base, scope or frequency of a benchmark fundamentally changes the benchmark and this may mean it no longer meets its intended purpose and therefore might not be useful to the present users of the benchmark.

An alternative may be to construct a hybrid system, for example requiring the producer of a benchmark to use actual transaction data where available, but substituted with alternative measures when actual transactions are unavailable. This could follow a tiered approach, where contributors of data are required to submit actual transaction data, provided that it is available. If it is no longer available, then any submission should be based on models using appropriate data. The specification and use of this model should be documented and made transparent. Finally, if appropriate data is not available and it is otherwise not possible to use a model, judgement may be exercised but this judgement should be well founded and the basis for this judgement should be documented and made transparent. Finally, where no judgement can be exercised, the contributor of data should be entitled to refuse to make a submission. This approach is similar to the methodology used by some price reporting agencies to set commodity prices based on different levels of transaction data available....

2.3. Governance and Transparency of Underlying Data

Whenever discretion is exercised, conflicts of interest may distort the production of data if the contributor of the data has a financial or other interest in the use of the benchmark. For example, the LIBOR contributing banks had derivative contracts priced by reference to LIBOR which may have created an incentive to make submissions which would move the benchmark in a favourable direction. Appropriate measures to mitigate actual or apparent conflicts should therefore be considered for those submitting data to benchmarks.

A framework to address these issues could include:

- Adequate management systems and effective controls to ensure the integrity and reliability of submissions. Policies and guidance governing the process. Any submissions should be made with due skill, care and diligence.
- Controls and procedures to prevent improper influence or communications, including Chinese walls. If

conflicts cannot be managed, stopping any activities or relationships that create the conflicts or desisting from making conflicted submissions.

- Ensure that submissions are based on a rigorous, honest and independent assessment of relevant information, calculated in accordance with the rules, principles and aims of the benchmark and not influenced by any internal or external conflicts of interest or other extraneous factors. Continuously to identify, evaluate and use effective methodologies to determine submissions.
- Relevant personnel should have the appropriate skills, experience and training and be subject to appropriate management and supervision. Any compensation structures should not create actual or potential conflicts of interest. A credible whistleblowing policy and complaints procedure.
- Appropriate reporting, cooperation and communications with relevant supervisor, auditors and authorities. Proper standards of market conduct.
- Auditing of contributing process and outcomes. Monitoring and reviews of submissions, including ongoing monitoring, periodic internal and external audits.
- Documentation and records of communications in relation to submissions to be kept for an appropriate period of time and made available as necessary.
- Appropriate transparency, including reports to the public, market and authorities of the facts, information and issues relevant to the integrity of any submissions, including basis for making submissions, results of any audits, complaints and evaluations.
- The activity of making a contribution and the personnel or entities making submissions could be regulated.

Another possible solution could be to impose incentives to provide the best or most sincere estimates. For instance, parties could be mandated to trade on the prices that they quote for the purposes of calculating a benchmark as for example occurs under WIBOR where quoting banks are obliged to conclude transactions at the prices submitted by them for a short period of time. However, these types of requirements may reduce the incentive to participate and be exploited for profit opportunities. Elements in the calculation may also reduce the impact or incentives for poor inputs. EURIBOR, LIBOR, ISDAFIX and EUREPO have mechanisms that exclude outliers which are in part intended to reduce the impact of, and hence also the incentive to submit, excessively high or low estimates. Other alternatives that have been suggested include random sampling.. of the inputs and the use of the medians rather than trimmed means.. A regime that sanctions the submission of inaccurate data to a benchmark, as the Commission has proposed under the market abuse framework, is clearly part of the solution to this issue.

With respect to transparency, by submitting information, market participants reveal information about themselves and if this is published it may give the market insight into their strategies or otherwise adversely affect them. For example, the submission by contributing banks to LIBOR may have entailed the bank displaying to the market an implicit credit assessment of itself. This introduces a credit signalling risk, which created an incentive to submit inaccurate data. It has therefore been suggested.. that this means that certain risks could be best addressed with greater anonymity. For instance, credit signalling risks would be diminished by allowing for anonymous or delayed publication of individual banks' submissions. On the other hand, in the current interest rate benchmark cases, individual panel member submissions for the benchmarks were not published for some periods and this non-transparency might have increased the risk of manipulation of the benchmark rate. ..

2.4. THE CONTRIBUTORS OF THE DATA

The integrity and usefulness of a benchmark depends not only on the underlying data but also on who the

data contributors are. The way the contributors are selected may vary from a fixed panel of contributors to a survey – where either the index provider selects the sample of contributors or the contributors select themselves. But in both cases the index provider is typically dependent on voluntary contributions. This raises two issues: the representativeness of the sample and the influence the contributors have on the index and its impact on their behaviour, i.e. conflicts of interest. It is important that any dataset is representative of the market or metric that the index measures. This is particularly important for survey based benchmarks which depend on voluntary contributions. Benchmarks for oil prices are normally based on actual transactions or bids and offers in the oil market. However since there is no mandated reporting of these transactions, market participants are surveyed or otherwise voluntarily submit details of transactions. Such benchmarks are therefore based on a sample of transaction data. However this sample is self-selecting which raises the question of whether the data is representative and how discretion is exercised by the contributors in deciding whether to submit data and which data to submit.

Mandatory participation of market participants is often cited as a solution to ensure the representativeness or completeness of the underlying data. If mandatory reporting is not possible or beneficial then it may be important to ensure that where contributors can choose whether to submit data and what data to submit, that this is done on an objective and consistent basis.

Where there is a fixed panel of contributors to the benchmark, the choice of the panel will affect the representativeness and integrity of the benchmark. Representativeness means that any panel should be made up of market participants who play an active role in, and therefore also have a stake in, and knowledge of the market and so an incentive to contribute. However problems may arise either because the panel is not representative or the contributors are not best placed to provide the best estimates.

Further the fixed composition of the panels may give the contributors undue influence or the ability to manipulate the market.

In this context, it is not just the contributing entities that are relevant, but also their organisation and governance. In some financial institutions, the responsibility for submissions is placed on staff protected from conflicts through 'Chinese walls'; in others it is not. In addition the remuneration of the contributing staff and those personnel who are able to or might seek to influence them may create or accentuate conflicts of interests.

It may therefore be necessary to set appropriate provisions to ensure that the composition of any panel is subject to adequate safeguards and independent review. This could include an auditing – which requires adequate record keeping.

It may also be necessary to ensure that any framework mandates that panels are representative and not susceptible to manipulation. One possible solution is to ensure that the panel is of sufficient size to ensure that no individual member is able to influence the index; the more panel members there are, the more difficult it is for them to coordinate to manipulate the benchmarks. Therefore requirements about panel size and composition, and membership may be necessary.

2.5. INDEX CALCULATIONS

The calculation of an index is normally a relatively straightforward mathematical exercise which simply involves taking an average of the underlying data. However, for most indices some judgement or discretion also needs to be exercised. This is necessary for a variety of reasons including rebasing and quality and consistency checks.

When calculating an index like a stock index, it may be necessary to re-base the index to give more weight to the largest stocks – which may involve a degree of discretion. Similarly when the underlying data is unavailable or poor, the index calculator needs to make a judgement about how or whether to continue to produce the index. For example, gas indices are used to price daily gas supply contracts but

on many days there may be no transactions to produce the index. Again the way in which this discretion is exercised is critical to ensuring the integrity of the index.

Responsibility for the accuracy of the underlying data does not rest solely with the contributors of the data. The calculator of the index may be best placed to determine whether, for instance, the data conforms to the requirements of the index. The index calculator must therefore check input data on an on-going basis – validating that it conforms to the rules of the index. They may also audit the accuracy of the data periodically and change the contributors as necessary. An example of this could be the data compilation, validation, consolidation and publishing exercise carried out by statistics offices to calculate indices such as the CPI, where a degree of discretion concerning the data sample and quality needs to be exercised.

However, the ability to validate accuracy depends on the nature of the index. For indices where the submissions are based on estimates it may be difficult to find a comparator. Indices that rely on estimates typically do so because hard data are not available, so comparing estimates to hard data will not be straightforward. In some cases discretion needs to be exercised as part of the calculation itself rather than simply to check the validity of the underlying data. For some commodity benchmarks, subjective discretion may be exercised to determine how much weight to give to particular transactions or how to incorporate news or other non-quantitative information into the index e.g. a benchmark provider may have to incorporate an important announcement into the value of a benchmark if it has occurred after any actual transactions but before the benchmark is published.

This discretion creates the risk that it may be exercised on an inadequate or inconsistent basis – estimates may be made without proper attention to their accuracy or ensuring that they are based on the best evidence. Where discretion is subject to conflicts of interest, the estimates may be made with the explicit aim of manipulating the benchmark itself. A framework to address these issues could include:

- Clear and transparent rules regarding the submission of data and calculation and dissemination of the index, through a code of conduct for instance. This should be underpinned by an appropriate disciplinary procedure.
- Clear and transparent specification of what the benchmark measures, how its accuracy can be evaluated, what its shortcomings are and what it should and should not be used for. This could include a justification of why the benchmark represents the best estimate of economic reality. Appropriate provisions regarding the licensing of benchmarks may be necessary.
- Continuously to identify, evaluate and use effective methodologies for the benchmark. Make appropriate and timely adjustments where necessary. A clear policy about the circumstances in which the benchmark may no longer be fit for particular or any purposes and appropriate policies regarding the actions to be taken in these events, including discontinuing the production of the benchmark.
- Similar governance, systems and controls, conflicts and transparency requirements as were outlined in section 2.3. However the benchmark provider should have obligations in respect of ensuring the integrity not just of the calculation and dissemination of the index but also oversight of the process of submitting the underlying data. In addition more rigorous conflicts provisions may be necessary to ensure independence.
- The activity of developing, calculating and disseminating a benchmark and the personnel or entities calculating benchmarks could be regulated....

4.1 PROVISION OF BENCHMARKS BY PRIVATE BODIES

The recent allegations concerning the manipulation of benchmarks have emphasized the public interest in ensuring their integrity and highlighted that some benchmarks have many of the characteristics of public goods.

At present, indices are produced by a variety of entities varying from private commercial firms to trade bodies. Trade organizations such as the EBF and BBA calculate EURIBOR and LIBOR. In this case the responsible organization is governed by banks who are the sole providers of the underlying data and are one of the principal users of the benchmarks. Banks and investment firms may produce indices which are used as the benchmark for exchange traded funds. Independent index providers produce indices which are licensed for a profit. However, conflicts of interest and commercial incentives may mean that these trade bodies and commercial entities are less motivated to question submissions or impose stringent audit trails and otherwise ensure the integrity of their index.

4.2 PROVISION OF BENCHMARKS BY PUBLIC BODIES

Indices are also produced by public sector entities, such as national statistical authorities that calculate price indices, and the ECB which calculates the EONIA rate. Public institutions may be better placed to address conflicts of interest and some of the other issues discussed in this consultation paper. They may have the best access to the relevant underlying data and be better placed to implement mandatory reporting if necessary. Public providers may also suffer from fewer conflicts of interest and be better able to manage those that exist. Given these factors, consideration should be given to whether and which important indices should be provided by public bodies or whether public bodies should closely supervise their calculation, provision and governance....

5.1 TRANSITION AND CONTINUITY

Changing the nature or terms of a benchmark or switching from one benchmark to another raise a number of issues. Firstly, benchmarks are often used to price transactions of a long duration and as a result the old benchmark will still be needed to price the legacy stock of transactions. This may necessitate the continued production of the old index for a certain period of time.

Secondly any transition to a new index needs to be appropriately managed. The use of a particular index is a matter of private contract between two parties and it will be their decision about whether to replace an index or provide for the substitution of a new index in the case of non-availability. Contracts referenced to the existing benchmark will not necessarily transfer to any new benchmark. Any change to an existing benchmark may create uncertainty in the market, as contracting parties may disagree over whether or not to terminate existing contracts, incorporate the new or another benchmark and also the need for new contract terms. In addition, any new benchmark may not be appropriate for all parties. Network inertia may impede the adoption of any new benchmark. Some of the most widely used benchmarks have existed for a considerable period of time and despite shortcomings have continued to be used. This may be a result of both the costs to users of moving to a new benchmark as well as network effects which encourage the use of the most widely used benchmarks.

Benchmarks have changed without such intervention in the past – for example the nature of LIBOR was changed in 1998. Some have also been replaced – for example, EURIBOR replaced the various relevant national benchmarks that were used prior to the adoption of the Euro. The composition and calculation of commodity and equity indices are also frequently modified in order to better represent the economic reality they measure. Therefore, transitional issues do not appear insurmountable.

5.2 IMPACT OF CHANGES

Any change may also have wider economic impacts; a new or substituted index will produce different values and so change the prices of any contracts referenced to it. This may result in the transfer of value between the counterparties to any contracts in an uneven and unforeseen way.

In addition, the transition may lead to inefficiencies and mismatches where, for example assets may be priced by reference to the old benchmark and liabilities to the new for some part of the transition period. There may also be differences in the accounting treatment. For the most widely used indices, such as the

interest rate benchmarks, this could have an impact on consumers and investors, changing for example the interest rates payable on variable rate mortgages.

Given freedom of contract, it will be up to stakeholders to consider the impact regulatory changes have on their contracts, and to change their terms accordingly, or terminate the contracts where desired...

5.3 INTERNATIONAL ASPECTS

In developing a framework, one of the most important characteristics of benchmarks is their global nature. Indices may be produced anywhere in the world, based on data sourced from different jurisdictions, and used by contracting parties in different countries. Even an index relating to purely national economic variables may be based on inputs from other countries, and be used by parties based elsewhere as a benchmark.

This international dimension creates a number of issues. First, it may be easy to substitute one index for another, which could mean that actions in one jurisdiction could move production of an index or contributions to an index overseas. Inappropriate regulation of production of benchmarks could also encourage the use of unregulated benchmarks. On the other hand regulating their use, for example by mandating or encouraging the use of benchmarks that conform to certain standards and principles may overcome this.

Secondly, there is the risk of different rules applying to different stages in the production of a benchmark, as well as of different rules applying to different contributors to the same benchmark. Equally, different international regulatory interventions could lead to contracting parties who reference the same benchmark being subject to different rules. This could result in an inefficient and ineffective framework. Where action is needed, it would therefore be desirable to ensure a consistent and coordinated approach at the international level. Measures at an international level are already being discussed by bodies such as IOSCO and the FSB.

EU Parliament: Economic and Monetary Affairs' Public Consultation on Market Manipulation: Lessons and Reform Post LIBOR/EURIBOR³²

The Economic and Monetary Affairs Committee of the EU Parliament carried out a consultation with the following questions (inviting responses by 17 September 2012):

TOPIC 1: TACKLING THE CULTURE OF MANIPULATION

Q1: How widespread is the problem? Are there other financial instruments, markets and/or benchmarks vulnerable to potential manipulation?

What action should be taken to ensure these forms of market abuse are tackled?

Q2: What action should be taken to ensure the integrity and quality of all benchmarks, financial instruments and markets?

a. Do both benchmarks and those entities that input into the setting of the benchmark need to be regulated?

b. Are traded rates as opposed to offered rates a better basis for input? Or should a 'hybrid' approach be adopted?

c. Should the posters of rates be granted anonymity? What would be the potential downside to such an approach? Would such a status add or diminish the integrity of prices?

³² See <http://www.europarl.europa.eu/committees/en/econ/subject-files.html?id=20120820CDT49762>

d. What kind of powers should regulators of the financial sector be given to set and introduce criminal sanctions for attempted or actual manipulation of benchmarks?

TOPIC 2: ESTABLISHING INTEGRITY AND TRUST POST LIBOR/EURIBOR

Q3: What specific measures should be taken at European/Global level to improve investor confidence?

How can cooperation between global regulators be improved?

How can legislators ensure continuity between existing contracts which rely on Libor/Euribor (some \$500 trillion of contracts) and future contracts?

Q4: What specific measures could be taken to enhance transparency and information quality in the financial sector?

Q5: What future action could be taken to achieve better governance in order to prevent future manipulation and establish integrity, trust and fairness in the financial services industry?

GFMA Principles for Financial Benchmarks³³

Two days after the Commission published its consultation document GFMA published a set of principles for financial market benchmarks:

Financial benchmarks are widely used as references for determining payments under a variety of financial instruments and many have a significant impact on market activity globally. The integrity of these benchmarks is critical to the effective functioning of markets and investor confidence. Recent events have placed the integrity of some of the most significant benchmarks into question and have contributed to public distrust in the financial industry. These events have prompted policy-makers to study enhancements to the benchmark-setting process. For instance, the United Kingdom's Chancellor of the Exchequer commissioned The Wheatley Review to focus on the reforms to the framework for setting the London Interbank Offered Rate. The International Organization of Securities Commissions has been reviewing the need for such principles in the crude oil markets.

A broadly accepted set of best practice standards for conducting benchmark price assessment processes ("benchmark process") would serve to enhance confidence in such assessments and, more generally, promote both the integrity and efficiency of the global financial markets.

In this context, the Global Financial Markets Association² ("GFMA") is issuing these Principles for

³³ GFMA Principles for Financial Benchmarks (Sep. 7, 2012) at <http://www.gfma.org/Initiatives/Market-Practices/GFMA-Provides-its-Principles-for-Financial-Benchmarks-to-the-Global-Regulatory-Community/>. GFMA is the Global Financial Markets Association, a trade association. See <http://gfma.org/about/> ("GFMA brings together three of the world's leading financial trade associations to address the increasingly important global regulatory agenda and to promote coordinated advocacy efforts. The Association for Financial Markets in Europe (AFME) in London and Brussels, the Asia Securities Industry & Financial Markets Association (ASIFMA) in Hong Kong and the Securities Industry and Financial Markets Association (SIFMA) in New York and Washington are, respectively, the European, Asian and North American members of GFMA.")

Financial Benchmarks (the “Principles”). Our objectives in doing so are the following:

- To draw attention to the need for international standards that apply to the issuance of financial benchmarks;
- To offer the Principles as a basis for crafting such international standards; and
- To urge the adoption of the Principles by organizations responsible for developing and issuing benchmarks.

The Principles recognize that benchmarks and their data inputs necessarily vary by market and reference asset type, and that many benchmarks inevitably rely on voluntary contributors and their judgment. Nonetheless, sponsors and their agents are encouraged by the Principles to solicit sufficiently deep or broad-based reference data while maintaining the integrity of the submission process and resulting benchmark price assessment.

SCOPE AND DEFINITIONS

The types of financial benchmarks vary widely, both in terms of the participants involved in developing and issuing benchmarks and in the uses and significance of the benchmarks.

For the purposes of the Principles, a benchmark will be defined as a commercial or published price assessment, distributed regularly to third parties and primarily intended for use as a reference in determining the pricing of, or the amount payable pursuant to, a financial instrument or contract. Thus, benchmarks may be established from the market prices or rates for transactions in debt or equity securities, the foreign exchange, money and commodity markets, or derivatives of any of these.

For clarity, the Principles are not intended to apply to benchmarks meeting one or more of the following exclusion criteria:

1. Use

Indices that are primarily used for purposes other than pricing financial instruments or contracts are out of scope.

Examples include indices that are used primarily for the purpose of evaluating the returns or other performance characteristics of asset portfolios, and economic or market sentiment indices produced by private sector organizations.

2. Scale

Customized indices used for pricing bespoke bilateral or similar transactions among a limited number of counterparties are out of scope.

Examples include customized or privately-negotiated indices, reference portfolios or baskets, defined in connection with specific issuances of structured notes, with bespoke transactions to effect investment strategies, or with similar bilateral or limited arrangements, for which no third parties contribute data directly and for whose use no license fee is charged.

3. Public Source

Indices issued by public sector entities are out of scope.

Examples include economic indicators or other statistics published by government entities, even if some, such as inflation indices or weather data, are widely used in the pricing of financial instruments. These examples would also be excluded under the use test.

Although operating models for designing, operating and publishing benchmarks vary considerably across markets, the Principles are intended to apply to as broad a variety of models as practicable over the range of benchmarks within scope. The common elements of operating models generally comprise:

- Sponsor - an entity or group that develops and issues a benchmark.
- Calculation Agent - an agent of the sponsor responsible for conducting a benchmark price assessment.
- Contributor - an entity that provides data to the sponsor or the calculation agent for the purpose of

conducting a benchmark price assessment.

The calculation agent may be an internal division of the sponsor or a third party contracted by the sponsor. A division of the sponsor may also act as a contributor. The Principles recognize such variation in operating models by allowing for various governance, control and conflict management mechanisms to be implemented as appropriate to the particular process or operating model.

PRINCIPLES FRAMEWORK

The overall responsibility for the benchmark process lies with the sponsor. The Principles are grounded in three fundamental sponsor obligations, which should be applied in a manner commensurate with the significance of the benchmark:

- Governance: A sponsor should ensure that there is an appropriate governance structure for oversight of the benchmark;
- Benchmark Methodology and Quality: A sponsor should employ sound design standards in devising the benchmark and ongoing processes related to its operations; and
- Controls: A sponsor should ensure that there is an appropriate system of controls promoting the efficient and sound operation of the benchmark process and should implement such a system of controls. The Principles are grouped into three sections under the above headings accordingly.

THE PRINCIPLES

1. GOVERNANCE

PRINCIPLE I: OVERALL RESPONSIBILITY

A sponsor is ultimately responsible for the quality and integrity of a benchmark.

A sponsor should appoint and appropriately empower a governance body accountable for the development, issuance and operation of the benchmark. The nature of the governance body may vary depending on the benchmark and may comprise a formal board, a dedicated committee or an individual manager. In all instances, however, it is essential that there be a single identifiable authority with specific accountability for the sound operation of the benchmark. The responsibilities of the governance body include overseeing the benchmark methodology, the control framework, and the relationships between the sponsor and any third parties. The governance body should oversee the management responsible for operation of the benchmark, take appropriate measures to remain informed about material issues and risks related to the benchmark, and commission periodic independent internal or external reviews to oversee that the benchmark continues to operate in accordance with the Principles.

PRINCIPLE II: CLEAR ROLES AND RESPONSIBILITIES

A sponsor should define clearly the roles and responsibilities of the participants in the benchmark process. A sponsor may enter into an agreement with a third party to act as its agent in calculating the price assessment, distributing the price assessment data, or licensing the benchmark. A sponsor should establish clear roles and responsibilities for any third party charged with acting on the sponsor's behalf. In addition, in the case where the process relies upon contributors to provide the sponsor or sponsor's agent with market data or estimates, the sponsor should ensure that there are clear standards for contribution of data or estimates and ensure transparency regarding the nature of such participation for the end users of the benchmark. Such standards for contributors should be specified by the sponsor in a documented Contributor Code of Conduct, as described in Principle IX.

Where one or more of the functions in the benchmark process are carried out within a broader organization, the sponsor should ensure that there are policies and procedures to identify and manage conflicts of interest arising either between the various benchmark functions or between the benchmark

functions and the activities of the broader organization.

PRINCIPLE III: TRANSPARENCY

A sponsor should operate with transparency with respect to benchmark development and changes, taking due account of impacts on process participants and anticipated end users. Specifically, the sponsor should make the methodology for determining a benchmark available to those parties that the sponsor can identify as being affected by the benchmark, provide such parties with notice of any proposed amendments to the methodology for determining a benchmark price assessment and ensure that there is a process for receiving and responding to any comments on these proposed amendments.

The sponsor should also ensure that there are procedures for the communication, management and timely resolution of complaints related to the benchmark process. The sponsor should make available the complaint procedures to those parties that the sponsor can identify as being affected by the benchmark. In the case of benchmarks using contributor data, the sponsor should provide a contributor with appropriate notice if the sponsor determines that a contributor is violating the Contributor Code of Conduct. Any disputes should be handled in accordance with an appropriate dispute resolution process.

The sponsor should also make available the policies and procedures, required under Principle VI, for identifying and managing conflicts of interests to those parties that the sponsor can identify as being affected by the benchmark.

2. BENCHMARK METHODOLOGY AND QUALITY

PRINCIPLE IV: METHODOLOGY

A sponsor should ensure that there is a methodology for conducting the benchmark price assessment that relies on sound data and accurately reflects market conditions.

This methodology should:

- Define clearly the technical specifications for the benchmark;
- Be clearly documented;
- Describe the manner in which the sponsor determines the benchmark, including the responsibilities of any third parties, such as calculation agents and contributors, as well as the procedures and criteria for the application of judgment by sponsor personnel in determining the benchmark price assessment and for addressing periods where the quantity or quality of data falls below the standards set by the methodology;
- Use sound and transparent data. Where feasible, a sponsor's methodology for determining a benchmark price assessment should give significant weight to data reflecting either executed transactions into which unrelated counterparties acting at arm's length have entered in such sizes and upon such other terms as the sponsor may define, or executable bids and offers to enter into such transactions.

Where such information is sparse or unavailable, a sponsor may rely on other methods for assessing prices, including dealer quotes, mathematical models that predict prices based on the observed prices of other products, good faith estimates, contributor surveys, or other methods. The sponsor's benchmark process should not be overly reliant on data from a narrow range of contributors, and should be sufficiently resilient to allow for a benchmark price assessment in the event of limited liquidity in the underlying market or market segment. Under such circumstances of limited liquidity, the sponsor should have particular regard to transparency obligations in identifying how the benchmark assessment is reached.

- Permit the sponsor or the calculation agent to exercise appropriate judgment in respect of data analysis, modeling and calculation methods to promote the integrity of the assessment.

PRINCIPLE V: BENCHMARK QUALITY

To promote the quality of a benchmark over time, a sponsor should follow best practice design elements. Those elements include the following:

- There should be sufficient trading activity in the underlying or closely-related markets on which the benchmark is based to allow a reasonable and regular price assessment to be made.
- The trading activity in the underlying market should be conducted in such a manner and among a sufficiently broad group of participants so as to allow for transparent price discovery.
- The terms of contracts and participants to the underlying transactions upon which the benchmark is based should share sufficiently similar characteristics to minimize idiosyncratic distortion to the benchmark over successive assessments.
- While the sponsor cannot control all of the uses for which a benchmark may be employed by third parties, the design of the benchmark should reflect the broad terms of financial instruments and contracts for which it is generally intended to be used as a reference rate.

The sponsor should periodically review the benchmark design and calculation methodology, as well as the nature of activities in the underlying market, to promote continued adherence to sound design elements and reflection of market conditions.

3. CONTROLS

PRINCIPLE VI: CONTROL FRAMEWORK

A sponsor should ensure that there is an appropriate control framework for conducting and maintaining the benchmark process and for distributing the benchmark price assessment.

At a minimum, this framework should cover:

- The engagement of suitably qualified and experienced personnel to carry out the sponsor's responsibilities;
- Appropriate periodic training, including technical and ethics training;
- Policies and procedures relating to the identification and management of conflicts of interest (including through disclosure). Such policies and procedures should take into account conflicts arising from the other activities of the sponsor, the calculation agent, or contributors;
- Policies and procedures for safeguarding confidential information, including confidential information received from contributors, and controls to prevent the premature, unauthorized or preferential disclosure of information concerning a benchmark price assessment;
- Policies and procedures for receiving, investigating, reporting, and documenting complaints or potential errors with the sponsor's benchmark price assessment, including a process for escalating complaints, as appropriate, to the sponsor's governance body;
- Policies and procedures to ensure that emerging issues that may affect market integrity are brought promptly to the attention of the appropriate regulators;
- Policies and procedures applicable to violations of the sponsor's procedures by the sponsor's personnel or agents, or of the Contributor Code of Conduct by contributors. Such procedures should include appropriate reporting mechanisms to the sponsor's governance body;
- Policies and procedures for identifying anomalous data received from contributors, excluding such data from the benchmark process, and taking appropriate remedial actions to minimize the possibility of recurrence;
- Procedures to notify end users promptly of errors and corrections in a benchmark price assessment;
- An infrastructure, with appropriate resiliency, reflecting the significance and criticality of the benchmark to the marketplace, and a process for the periodic testing of this infrastructure; and
- A contingency plan for conducting the benchmark price assessment due to the absence of data from contributors, market disruptions, failure of critical infrastructure, or other factors.

PRINCIPLE VII: RECORD-KEEPING AND INDEPENDENT REVIEW

A sponsor, or by delegation, the sponsor's calculation agent, should maintain documentation and keep records (for a period defined by the sponsor commensurate with the significance of the benchmark) showing all inputs to the benchmark price assessment, the application of these inputs to determine the final benchmark price assessment, and the methodology utilized, as appropriate.

Such documentation should include an explanation for the sponsor's or the calculation agent's exercise of judgment, the disregard, if any, of observed transaction or contributor data, and descriptions of any pricing models defined in the methodology.

The process and methodology documentation, and the regular operational records, should be subject to a periodic review by a party independent of the benchmark process. Such reviews, commissioned by the sponsor's governance body, may be conducted by a sponsor's independent internal control function, by the sponsor's external auditor or by an independent third party, as appropriate to the scope of the benchmark and organization structure of the sponsor.

The independent review should assess the sponsor's adherence to the established methodology for determining the benchmark and the control framework relating to the benchmark in light of the Principles. The sponsor should be able to confirm that periodic independent reviews have been conducted, that any necessary remedial measures have been taken and that appropriate parties have been advised as needed of matters arising from the review.

PRINCIPLE VIII: DATA COLLECTION

A sponsor should ensure that there are appropriate controls over the process for collecting data for use in a benchmark price assessment.

Where a sponsor uses data collected directly from a contributor, these controls should include a process for selecting the contributor, collecting data from the contributor, protecting the confidentiality of the contributor's data, evaluating the contributor's data submission process, and removing or applying other sanctions for non-compliance against the contributor, where appropriate.

PRINCIPLE IX: CONTRIBUTOR CODE OF CONDUCT

Where the benchmark price assessment requires the submission of data by a third party contributor, a sponsor should ensure that there are standards for contributions, specified in a Contributor Code of Conduct, and contributors should employ appropriate controls over data submissions.

The Contributor Code of Conduct should cover, at a minimum, the following:

- The existence of a governance structure that promotes integrity among the contributor and its personnel and associated policies and procedures governing the data submission process;
- Policies and procedures relating to the identification and management of conflicts of interest (including through disclosure), including protections against insider trading, segregation of responsibilities where practicable, and informational firewalls, as appropriate;
- Policies and procedures prohibiting the coordination of, or sharing of information regarding, contributor data submissions with other contributors;
- The engagement of suitably qualified and experienced personnel, including supervisors, to carry out the contributor's responsibilities;
- The clear definition of roles and responsibilities for contributor personnel associated with the data submission process;
- Appropriate periodic training, including technical and ethics training;
- An appropriate monitoring and testing process for reviewing that data communicated to a sponsor or a calculation agent are consistent with the sponsor's methodology and the contributor's policies and procedures;

- Policies and procedures for receiving, investigating, reporting, and documenting complaints relating to the contributor's data submissions;
- Policies and procedures applicable to violations of the contributor's policies and procedures relating to the contributor's role in the benchmark process. Such procedures should include appropriate reporting mechanisms to the contributor's governance body;
- Controls for the protection of confidential information;
- An infrastructure, with appropriate resiliency, to support the timeliness and accuracy of submissions, and periodic testing of this infrastructure;
- A contingency plan for submitting data due to a failure in the infrastructure or other factors, where practicable;
- A process for retaining records relating to data provided to a sponsor, including documentation deemed the most relevant by a contributor in its assessment, in a form which facilitates subsequent review; and
- A periodic independent internal or external review of the contributor's data submissions and control framework.

IOSCO Benchmarks Consultation

Also in September 2012, IOSCO announced the establishment of a "Board Level Task Force on Financial Market Benchmarks" to be co-chaired by Martin Wheatley of the FSA (responsible for the UK's Wheatley Review) and Gary Gensler of the CFTC. The press notice announcing the review stated that "Other international organizations and national regulators, such as the European Commission, UK Treasury, (Wheatley Review), Central Bank Governors of the Bank for International Settlement and the Global Financial Market Association, are also undertaking work on the benchmark issue."³⁴ IOSCO published a Consultation Report on Financial Benchmarks in January 2013:³⁵

IOSCO has an important role in creating an overarching framework of principles for Benchmarks used extensively in financial markets, as recognized by the G-20 and the Financial Stability Board. Regular co-ordination and co-operation with other related regional and international initiatives on financial Benchmarks is vital to achieve a robust and effective framework. The Task Force, together with the Chairman of the Board, will represent IOSCO in other international work initiatives on Benchmarks. Key work streams include:

- Regulatory: the European Commission's Consultation on the regulation of indices, 5 the European Securities and Markets Authority's Consultation on principles for Benchmark-setting processes, and the BIS Board of Governors Economic Consultative Committee.⁶ The Task Force and IOSCO Chairman will engage with these work streams as appropriate to ensure coordination and consistency.
- Industry: a proposal by Argus Media, ICIS and Platts for a price reporting code for independent price reporting agencies (IPRO), and best practice standards for conducting Benchmark price assessments

³⁴ IOSCO, IOSCO Creates Board Level Task Force on Financial Market Benchmarks (Sep. 14, 2012) at <http://www.iosco.org/news/pdf/IOSCONEWS250.pdf> .

³⁵ IOSCO, Financial Benchmarks: Consultation Report (Jan. 2013) at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD399.pdf> .

issued by the Global Financial Markets Association (GFMA)...

The Task Force notes that a significant proportion of global financial activity is linked to Benchmarks and the universe of Benchmarks is large and diverse. To inform its work, the Task Force has reviewed a selection of Benchmarks, representing a number of asset classes and jurisdictions....

The review focused on risks to the credibility of Benchmarks, or risks to users arising from the Benchmark's Methodology, transparency and governance arrangements. The issues identified in the Task Force's review and Consultation are likely to be relevant to most Benchmarks and across most asset classes. Whilst the forthcoming principles should be applicable to all Benchmarks and asset classes, we expect IOSCO members to assess the applicability, monitoring or oversight of such principles to Benchmarks determined or used in their domestic jurisdictions.

The Task Force did not consider Benchmark Administration by public bodies to be in scope. However, Benchmarks where a public body acts as mechanical Calculation Agent, as defined in Annex A, are within scope...

In line with IOSCO's objectives of ensuring that markets are fair, efficient and transparent, the Task Force considers Benchmarks should have the following characteristics in order to be credible:

- Representative: a Benchmark should clearly convey the economic realities of the underlying interest it seeks to measure to its users;
- Reliable: the data relied upon to construct the Benchmark should be sufficient to represent that interest and the data should be bona fide;
- Transparent: there should be sufficient transparency over the Methodology, calculation and inputs to allow users to understand how the Benchmark is derived and its potential limitations; and
- Subject to clear governance and accountability mechanisms...

The range of different Methodologies reflects the varied nature of the underlying interests represented by Benchmarks. Methodologies differ in their respective strengths and weaknesses. In particular, some Methodologies are less prone to conflicts of interest, some are more able to provide an accurate and stable representation of the market, and others provide more resilience to market stresses.

No Methodology is immune from attempts to manipulate the Benchmark - especially where the conflicts of interests are not mitigated, and the Benchmark setting process lacks transparency. A key element of any Benchmark Methodology is the selection of inputs...

A.2 Vulnerability of Data inputs

For each input type, the following vulnerabilities should be considered and addressed:

Voluntary submission of inputs to an individual fixing or determination: Many Benchmarks rely on voluntary submissions by Market Participants. In some cases, submitting entities self-report to Administrators and can choose whether to participate in the submission process and to what extent. For example, hedge fund indices rely on voluntary reporting by fund managers on investment strategy and performance.

Partial or selective reporting of data or gaps in availability of submissions may undermine the credibility of the Benchmark as a representation of the underlying interest and the resilience of the Benchmark to market stress. For example, the selective reporting of data may also skew or bias the Benchmark. In the IOSCO Report on Principles of Oil Reporting Agencies, IOSCO strongly encouraged Submitters to submit all their market data so as to ensure the representativeness of the inputs.

To mitigate these concerns, Administrators should develop procedures and policies governing submission discipline and frequency for contributing entities.

Continuity of participation: Another significant risk posed by voluntary submission of inputs, is that Submitters may cease to participate in the Benchmark altogether. As identified in the Wheatley Review,

the representativeness, and in extremis, the viability and continuity of the Benchmark itself could be threatened if a sufficient number of Submitters are no longer willing to contribute to the Benchmark setting process.

Encouraging or requiring submissions could be an option in certain cases...The UK FSA's Consultation Paper on the regulation and supervision of Benchmarks discusses requiring firms to participate in submission.

Administrator discretion: Administrators may also exercise discretion in the selection and composition of inputs and (where applicable) over when the composition of inputs is rebalanced. For example, Administrators may be able to alter the algorithms used to compile stock or other indices to rebalance the weighting or the composition of components or choose which inputs to use on the basis of other information or judgments.

Composition of Submitting Panels (where applicable): Traditionally, Panels are composed of active Market Participants or market makers; some Benchmarks produced by trade associations rely solely on the input from their member firms. Other Benchmark Panels have further eligibility criteria, which may involve some compliance with ethical standards, market size, geographic coverage, or rules on adequate market behavior.

Participation in Panels may also be selective. For example, some families of indices use inputs from a self-selected group of Market Participants. This may give rise to conflicts of interest e.g. where these participants have large positions in the instruments referenced by the Benchmark, an incentive to participate is created.

The size and composition of a Panel may undermine a Benchmark's integrity if it is not representative of the underlying market. For example, active participants may have a more informed view of the market and thus may be able to give better estimates of its level. However, these participants may also have greater incentive to adjust Benchmark levels in favorable directions. In cases where Submitters also own, control or are represented by the Benchmark Administrator, conflicts of interest may be particularly acute if robust governance safeguards are absent.

Administrators should consider how to balance measures to encourage regular participation whilst ensuring that conflicts of interest arising from the composition of the Panel are identified and subject to controls (see sections C and E).

Panel inclusion criteria should consider at least the following factors:

- Whether Panel members follow requirements set out by the Administrator.
- Whether Panel members are subject to any regulatory provisions with respect to submitting inputs to the Benchmark.
- Any jurisdictional issues relating the location of the Submitters (if different from location of Administration).
- Provisions for changes in Panel composition (noting that this may alter the nature of the Benchmark).

A.3 Verification of submissions

Because inputs may be subject to error or deliberate manipulation, the Administrator should seek to verify the accuracy and plausibility of the inputs. This could take the form of identifying and, if appropriate, seeking clarification over outliers.

The effectiveness of controls and verification processes will depend on the existence and complexity of underlying data that can be used to corroborate inputs, the availability of supporting records and adequate Audit Trail, as defined in Annex A, and the ability of the Administrator to monitor irregularities. Where submission of inputs is selective, it is important to consider how the Administrator would be able to access non-submitted data and records, or compare inputs against each other or the final Benchmark

figures.

Some Benchmarks reviewed by the Task Force monitored submissions for non-deliberate errors ('fat-finger errors') but did not indicate whether they checked submissions beyond this. This lack of review may leave Benchmarks vulnerable to potential manipulation. Some Administrators reserve the right to query submissions, but in order to be effective, Administrators need to implement clear and consistent policies to that effect.

It is important that both Administrators and Submitters find ways to ensure the quality of their submissions by using supporting data in underlying or related markets, and monitor submissions to detect for possible manipulation. The Task Force also believes that Administrators should communicate regularly with the relevant regulatory authorities to communicate any misgivings or suspicions regarding the submissions they monitor.

Bona Fide

The integrity of the Benchmark Methodology may suffer if the input data is not bona fide or binding. For example, for transaction or committed quote-based Benchmarks, Submitters should have executed or have been prepared to execute an arm's-length transaction. Greater scrutiny may be needed for inter-group/affiliate transactions to ensure their bona fide nature.

Sample size

Inputs may not effectively represent the underlying interest if the sample size is inadequate. Overall the size of the input sample should be sufficiently broad to be representative of the underlying interest being measured and to ensure that attempted manipulation of the Benchmark inputs is made much more difficult.

A.4 Calculation options

Benchmarks rely on various calculation and compilation methods, which aggregate the inputs to create a single Benchmark.

Some Benchmarks rely on averaging processes; however simple averages can be skewed by outlier submissions and so many Benchmarks mitigate this risk by using medians or trimmed averages whereby the top and bottom quartiles are eliminated before averaging.

To avoid giving undue influence to smaller trades, most transaction-based rates use some form of volume-weighted averages. Some other Benchmarks use randomly selected prices or inputs at the end of the trading day.

Trimmed averages have the advantage of being easily understood, transparent and easy to replicate. Another advantage is that averages smooth volatility compared to randomised approaches, and therefore may be more appropriate for certain markets.

The algorithms for averaging can be more complex, involving smoothing mechanisms and interpolations. CDS indices, for instance, use such a smoothing mechanism to interpolate prices for non-liquid individual components. The exact calculation Methodology might not always be transparent in these cases.

Some strategy indices use more sophisticated methodologies to calculate the input weights or input values for the Benchmark. Volatility indices, for example, use the variance calculation based on the price of a sample set of data. As above, the calculation Methodology might not always be transparent.

Some Benchmarks use estimated data and backfilling in their calculation. The exact degree of discretion in the calculation and the precise calculation Methodology itself might not always be transparent to users in these cases.

Administrators should consider the potential for different calculation methodologies to create incentives that enhance the integrity of the input data. Trimmed averages reduce the individual incentive to try to

manipulate Benchmarks by large amounts, while the incorporation of a Methodology with an element of commitment by the Submitter (as described in A1) may increase the incentive to provide accurate inputs. It is important to distinguish between Benchmarks that rely on averaging of inputs, and those that interpolate between inputs to provide a continuous Benchmark time series. The former is prevalent for interbank rates, and the latter for markets with lower liquidity such as Jet Fuel. In general, methods that rely on averages involve the exercise of less discretion by the Administrator than those that rely on interpolation. On the other hand, methods that incorporate interpolation may be more robust to illiquidity or the unavailability of input data than averages.

A.5 The use of third parties

Some Administrators rely on third parties for part or all of the compilation process. This can include calculation, data collection and/or dissemination of the Benchmark. In these cases, the roles and responsibilities of each party should be clear.

Even assuming the use of a third party, responsibilities and obligations cannot be outsourced and the Administrator should retain ultimate responsibility for the Benchmark setting process and should therefore verify that adequate systems and controls exist in relevant third parties involved in the Benchmark-setting activity.

Some Benchmarks may incorporate the output of another Benchmark or index as one of its constituent variables. Where the relevant component is calculated by another Administrator, the suitability and reliability of the 'component Benchmark' should be considered....

C. Governance

Credible Benchmarks should be supported by a governance framework that addresses conflicts of interest and incorporates an oversight committee or other independent body to oversee the production of the Benchmark and all other relevant activities.

C.1 Conflicts of interest

Conflicts of interest can arise at the level of the Submitter, between Submitters at different entities, and between Submitters, Administrators, Calculation Agents and other third parties due to economic incentives and the relationship between Market Participants.

Private economic incentives

The Wheatley Review notes that the need for judgement on the part of a Benchmark Submitter involves discretion, and that that discretion can be misused. In the case of LIBOR, some contributing banks sought to exploit the conflicts of interest that arose from their respective roles as Submitter to the Benchmark, user of the Benchmark, and wider participant in the market.

Submitters may be financial institutions that operate multiple business lines which include trading on their own behalf in addition to trading on behalf of their clients. In these circumstances, tackling the forms of alleged conflicts reported in the context of the interbank reference rate investigations requires addressing the existence of incentives that staff within such financial institutions may have to collude to favour a particular trading exposure.

An effective control framework should be able to identify and mitigate potential internal and external conflicts to the extent possible. For example, it may be appropriate to implement Chinese walls or physical separation between Submitters and traders within a submitting entity. Similarly, controls could exist to prevent improper communication between Submitters at different entities, and between Submitters, Administrators, Calculation Agents and other third parties. The control framework in place should be transparent and its effectiveness should be monitored (for example by an oversight committee, or audit or compliance functions).

The Task Force notes that for certain financial institutions, the broader framework of existing or planned

national and regional bank structure reforms aims to minimise conflicts of interest between banks and their clients through separating, reducing and/or prohibiting certain types of business practices. Whilst not designed to target conflicts of interest with respect to participation in Benchmark setting, these structural reforms may address some of the conflicts outlined above.

Individuals may have a financial incentive to manipulate the level of the Benchmark where their remuneration reflects the performance of a Benchmark-linked asset or liability, or where they trade in instruments, the performance of which is affected by the level of the Benchmark, in a personal capacity. As an example, a trader seeking to manipulate a price might attempt to influence other staff within his or her organisation that are responsible for inputting submissions to the Administrator.

Individuals may be offered gifts, hospitality or other incentives by other Market Participants to influence the Benchmark. In formulating remuneration and ethics policies Administrators and Submitters should be mindful of incentives for Benchmark manipulation, and take steps to reduce them.

Ownership and control of Administrators

A number of different entities may perform the role of Administrator and/or Calculation Agent – some examples are set out below. Often, but not exclusively, this is determined by the market.

- Trade associations. Notable examples include the BBA (British Bankers' Association), EBF (the European Banking Federation) and the Australian Financial Markets Association (AFMA).
- Public entities.
- Regulated exchanges or other trading platforms.
- Price reporting agencies, such as those responsible for calculating international commodity prices.
- Regulated firms such as banks or asset managers.
- Other commercial organisations such as data providers (e.g. Thomson Reuters, Markit) or news agencies.

The governance framework should identify and manage the inherent conflicts of interest posed by ownership structures where Administrators are wholly or partially owned, controlled or influenced by Market Participants who:

- subscribe or contribute to the Benchmark;
- structure financial contracts or instruments that reference the Benchmark;
- are active participants in the underlying market of the Benchmark; or
- carry large positions on products linked to the Benchmark.

For example, Administrators who are commercial entities may have an economic interest in maintaining the publication of the Benchmark even when the quality or representativeness of the Benchmark is in question. Trade bodies which act as Benchmark Administrators are also owned by, and represent the interests of, their members. Trade body members are typically the most active participants in the underlying markets and often carry large positions on products linked to the Benchmark, which may influence the way the trade body discharges its role as Administrator.

Conflicts of interest can also exist within a financial institution that is involved (on a stand-alone basis or through one or more affiliates) in administering an index and simultaneously in structuring and marketing financial products that are linked to the performance of a proprietary Benchmark.

For example, the financial institution may engage in trading and market-making activities and may hold long or short positions in the index, its components and other instruments or derivative products based on or related to the index for its proprietary account or for other accounts under its management. It may also issue – directly or through an affiliate – other securities in respect of the index or its components, or issue derivative instruments in respect thereof.

To the extent that the financial institution, directly or through its affiliates, serves as issuer, agent,

manager, sponsor or underwriter of such securities or other instruments, its interests with respect to such index may be adverse to those of the investors in, or users of, such index.

The financial institution may also undertake proprietary activities, including hedging transactions, which may affect the market price, rate, index or other market factors and, consequently, the index or its component.

Conflicts of interest may be present when there is direct involvement of public bodies in the administration process. There are only a few examples of a public body taking full ownership of the fixing process. However there are several examples of public bodies acting in some capacity, primarily that of compilation or Calculation Agent.

Where a public body takes responsibility for producing a Benchmark, a perception may be created that all risks (e.g., reputational, operational, litigation and conduct risk from the process and potential prudential risks from the resulting rate) are solely borne by the public body. This may undermine the rigour of efforts by the Submitter to ensure the quality of the Benchmark (e.g., by scrutiny of submissions), potentially undermining the quality and integrity of inputs.

Secondly, there may be conflicts of interest where a public body acts as Administrator and has other duties, e.g., supervision of firms involved in the Benchmark process or financial stability objective. In times of heightened stress, these obligations may conflict with its duties as an Administrator.

C.2 Oversight Committee

Whilst the Administrator is ultimately responsible for its governance framework, an external oversight committee (or other independent body) could play an important role in identifying, mitigating and managing the conflicts of interest.

Administrators could establish an oversight committee from a range of Market Participants and other stakeholders to scrutinise the production of the Benchmark, which could enhance the transparency and credibility of a Benchmark. The range of stakeholders on the oversight committee (or other independent body) should comprise a balance of Submitters, users as well as other key stakeholders (such as exchanges if relevant). The committee's composition and rules should ensure that it is independent, not subject to conflicts of interest and effective. The role of the oversight committee (or other independent body) could be to contribute to the technical aspects of Benchmark scrutiny and governance arrangements (including scrutiny of submissions, consideration of changes to the Methodology, development and monitoring of the code of conduct for Submitters, scrutiny of the Administrators' internal procedures). Any such committee would benefit from regular meetings, and transparent procedures regarding its membership, processes and decisions.

The oversight committee (or other independent body) could review the appropriateness of the Benchmark definition and Methodology. In particular, as markets evolve, the committee could regularly re-assess if the definition of key terms and inputs is still representative of the underlying interest it seeks to measure. The review may also consider the validity of data used to corroborate inputs.³⁶

³⁶ The excerpt focuses only on part of the IOSCO document.