Independent Reference Prices Review

Gilt and Treasury Bill Reference Prices

A consultation document

19 May 2016

The deadline for responding to this consultation paper is 19 June 2016.

Responses to this consultation document, and any enquires, should be sent to:

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1. Introduction

1. The UK Debt Management Office ('the DMO') currently publishes end-of day reference prices for gilts and Treasury Bills on behalf of the Gilt-edged Market Makers Association ('GEMMA') and CREST, specifically:

- all outstanding gilts in issue;
- gilt strips; and
- Treasury bills.

2. The end-of-day gilt prices are known as the GEMMA reference prices. The DMO also provides streamed intra-day prices for gilts which are provided on a DMO Bloomberg page between 8:00am and 4:00pm.

3. On 21 January 2015, the DMO announced that it intended to withdraw in due course from the provision of these prices[1]. There then followed a period of engagement with the market to consider how this could best be achieved. The findings of this exercise were reported in two update papers available on the DMO website[2].

4. In late 2015 it was announced that there would be an independent review ('the Review') into the successor arrangements for the reference prices provided by the DMO. Professor David Miles was appointed as the head of the Review in January 2016.

5. Since March 2016 the Review has engaged with a range of market participants. These have included representatives of the primary dealers – the Gilt-edged Market Makers (GEMMs) - institutional investors, other end users such as FTSE and CREST and trade associations including the Investment Association and the Wholesale Markets Brokers Association. The Review has also met with several firms who have expressed an interest in providing reference gilt prices.

6. It is possible that if the DMO simply ceased producing reference prices then a single alternative source might emerge. However, whether or not that were to happen, and whether or not a single source of data is desirable, it is likely that without some coordination there would be a period of uncertainty and disruption. The Review sees its role as helping to guide the transition to successor arrangements, in the light of the views of all stakeholders, so as to reduce any disruption.

7. The Review will make a recommendation to HM Treasury ministers on successor arrangements to the current DMO provision. It intends to invite firms who are interested in providing reference prices to submit written proposals which will be evaluated against a set of criteria. To inform the selection of these criteria, this paper raises a series of specific questions on which responses are invited. The range of questions is wide and many people will only wish to respond to a subset of these questions.

8. The Review also intends to recommend a road map for transition from the current DMO provision to any future arrangements. This will likely consist of conditions which would need to be met before the DMO ceases provision of reference prices.

[1] DMO Press notice, 21 January 2015. http://www.dmo.gov.uk/docs/gilts/press/pr210115.pdf

[2] 'Interim update', 12 March 2015 and 'Feedback on stakeholder engagement', http://www.dmo.gov.uk/index.aspx?page=PriceProvision/Information

2. Uses and features of the rates

9. There are a variety of uses of the end-of day and intra-day prices currently provided by the DMO and there is a wide group of users both within and outside of the financial services sector. The main uses of the prices by wholesale market participants, which were set out in the DMO's May 2015 feedback statement, include:

- Fair value accounting, including valuing portfolios;
- the valuation of collateral (including by market infrastructure providers);
- use as a reference in derivative contracts for the calculation of payments;
- index construction, in published and custom indices;
- benchmarking and performance measurement in fund management; and
- transition management and portfolio rebalancing.

10. Non-financial firms and many individuals also make significant use of gilt prices: these include retail investors, tax authorities and solicitors; uses of gilt reference prices include the valuation of holdings (e.g. for probate), as well as for research purposes (e.g., by academics).

Q1. How do you make use of end of day: (a) gilt reference prices; (b) strips prices; and (c) Treasury bill prices? How do you make use of the intra-day gilt prices?

Q2. Currently all gilts, strips and Treasury bills have reference prices. How important is it to you that this continues? Could certain prices be discontinued, with focus remaining on 'benchmark' gilts or bills?

2.1 Tradable prices

11. One feature of reference prices is whether they are 'tradable' or 'replicable', in other words whether it is possible to execute a transaction at, or close to, the relevant reference price. Some market participants have stressed the need for reference prices to be tradable either to minimise tracking errors (for example, where the prices are used in benchmarks such as the FTSE Actuaries UK Gilts Index Series) or for hedging (for example where the prices are referenced in total return swaps).

12. Others take the view that having a tradable price can lead to risks of distortions in the reference price and increase risks of manipulation.

Q3. Is it an advantage to be able to trade (a) gilts; and (b) Treasury bills at the reference prices? If so, how important is this?

Q4. What are the risks with having tradable prices? How can these risks be appropriately mitigated?

2.2 Timing of the prices

13. Currently end of day reference prices for gits are calculated at 4:15pm and published 45 minutes later. This is aligned with the determination of settlement prices in the gilt futures markets. The end of day gilt prices are used as inputs into the FTSE gilt indices to determine

the end of day levels of the indices. These indices are also calculated at mid-day based on intra-day prices at this time.

14. Intra-day gilt prices published by the DMO provide continuous pricing of gilts throughout the day. These prices are referenced in gilt indices and are also referenced in a significant proportion of total return swaps. This could suggest a need for continuous pricing information to be provided to the market (e.g., in the form of a composite price as at present), though this could be met by having a small number of fixings throughout the day.

Q5. Is there a need for continuous pricing throughout the day as part of any successor arrangement? Alternatively, (i) are there in existence suitable alternatives to intra-day composite prices; and/or (ii) would a small number of fixings at certain times be sufficient?

Q6. How important is it that the 4:15pm fixing (or a fixing at other key time) represents the market at that point in time, as opposed to being an average price taken across a portion of the day?

2.3 Mid-prices

15. The prices currently provided by the DMO are all mid-prices and there is no estimate of a representative bid-offer spread. In the interests of continuity it would make sense for the successor arrangements to maintain this characteristic.

Q7: Do you agree that the prices should continue to represent mid-prices or would you see value in moving to a rate representing a bid or offer price (or both)?

Q8: What are your views on estimating mid-prices as the average of quoted bids and offers? Would any other method be more appropriate?

3. Input data and methodology

3.1 Current situation

16. At present, the DMO calculates end of day prices on gilts are based on submissions from each of the GEMMs for each of the gilts in which they make markets. The submissions are intended to reflect the GEMM's view of the mid-price of each gilt at 4:15pm. The GEMMs are mandated to make these submissions as a requirement of being primary dealers in gilts although the DMO does not set down any requirements or guidelines as to how the submissions should be made (other than the format and timing of the submissions).

17. The intra-day prices for gilts are calculated by scraping prices quoted by the GEMMs from Bloomberg. They are calculated and published in real time on the DMO's wire services.

18. Treasury bill reference prices are based on a money market yield to maturity calculation priced around prevailing general collateral repo rates, adjusted by a spread reflecting recent Treasury bill tender results and, if applicable, any specific supply and demand factors.

19. There is no requirement that any successor arrangements emulate the present methodology and the Review is considering a range possible sources for input data. These could include:

- direct submissions (e.g., by GEMMs);
- transactions (e.g., as observed on dealer-client platforms, inter-dealer platforms or through reporting either to regulated exchanges or for settlement purposes);
- quotes (both indicative and executable); and/or
- pricing information from related markets (gilt futures, repo).

3.2 Data sufficiency and hierarchy

20. Currently, input data on each gilt is used to calculate the end of day and intra-day prices for each gilt. This requires data to be collected on a gilt by gilt basis. Under a new methodology, potentially based around observed transactions or quotes, it is likely that the data for some gilts will be significantly richer than for others.

21. This is not necessarily a problem unless the data for some gilts is insufficient to calculate a representative reference price. If the data are not seen to be sufficient, for example if there are not many transactions or if there are very few GEMMs streaming executable quotes in significant volumes, then it needs to be clear what steps will be taken in producing reference prices as part of any successor arrangements.

22. One approach could be to widen the set of input data used to determine the reference price. This could involve a 'waterfall' approach with several types of input data ranked into a hierarchy with the highest ranking data being used first and other data being used successively until there is sufficient data to determine the price.

23. Alternatively (or in combination with a waterfall approach), interpolation techniques could be applied to derive a reference price from information relating to other gilts where there is sufficient data to price those gilts.

Q9. What are the key considerations which would need to be addressed for interpolation to be used as a means of calculating reference prices? What considerations should be taken into account in considering how to rank different types of input data into a hierarchy?

Q10. What are the advantages and disadvantages to you of having a methodology which looks to price each gilt individually (as at present)? Would you be comfortable with a methodology which only takes input data on a prescribed set of 'benchmark' gilts and then prices all other gilts relative to the benchmark gilts?

3.3 Direct submissions

24. Basing an index on submissions raises concerns around the stability of the panel of contributors. This is not currently a problem as the DMO mandates submissions. It is not clear if it would be desirable to extend such a requirement to mandate submissions to a third party administrator. It is possible that an administrator would be able to get agreement from a representative sample of GEMMs to contribute data to determine the prices, but the risk would remain that the panel could shrink over time and become unrepresentative.

25. The Review is keen to ensure that successor arrangements are sustainable in the long term. While it remains open minded to all methodologies, it considers that the presence of viable non-submission based input data makes it unlikely that the future arrangements will be based on such a direct submission approach.

Q11. What are the advantages and disadvantages of the successor arrangements maintaining the current submission based methodology for the end of day gilt reference prices?

3.4 Transactions

26. Transaction data are often seen as a reliable basis for the calculation of reference prices and could be a sufficient source of data for the more liquid instruments. Where trading in a particular instrument is quite thin, however, it is not clear that transaction data alone would be sufficient; there may be very few transactions so that one or two could have a significant effect on the reference price.

27. These issues would need to be addressed if transactions were to be the main input data for the successor arrangements. A waterfall approach might be adopted or interpolation methods used, as discussed above. It is not clear that there is sufficient data available to construct a reference prices for Treasury bills using transaction data alone. Due to the lack of real time post-trade transparency (until the introduction of MiFID II requirements that will be implemented from 2018) it does not appear likely that transaction data could be used to create continuous intra-day pricing.

Q12. Do you think that it is feasible to base reference prices for (a) gilts and (b) Treasury bills on transaction data, potentially alongside other data or with interpolation?

28. If transaction data are used as inputs for the construction of the end of day gilt reference prices then it will not be feasible to simply take a snapshot at 4:15pm. It would be necessary to specify a window around the fix in which transactions would be considered. The length of this window would need to be large enough to usually generate sufficient transactions, but short enough to ensure that the transactions represent the state of the market around the fix.

Q13. What would be an appropriate length for such a window? Should windows be the same for each gilt or differ according to factors such as liquidity?

Q14. If transaction data are used then should it be volume weighted and/or time weighted (e.g. with trades closer to the fix having a higher weighting)?

3.5 Quotes

29. Throughout the day, GEMMs stream quotes continuously to dealer-client platforms. Some of these quotes are executable whereas others are indicative. Prices are often tiered depending on the client, which can affect both the spreads of the quotes and also whether the quotes are executable or not.

30. The availability of quotes from dealers makes them a rich source of data, but the natural concern with using quotes is that they may not be representative of the prices at which transactions actually take place. Executable quotes may be better in this regard than indicative quotes since it is possible to trade at the offered prices, but there may still be concerns around the volumes which the quotes are good for.

31. Executable bids and offers are also available on inter-dealer platforms and are another potential source of input data. Several market participants have said that there is less liquidity on these platforms than on the dealer-client platforms and that there are regularly gilts which have no quotes. The requirements the DMO place on GEMMs to make markets only apply in the dealer-client space. The use of data from inter-dealer markets would therefore need to be supplementary to another source of data or might need to make use of interpolation techniques.

Q15 Do you think that it is credible to determine reference prices on the basis of (a) executable quotes; or (b) both executable and indicative quotes?

Q16. Would a snapshot of quotes at 4:15pm (or other fixing time) be sufficient or would a window around the fixing be better? If a window is preferable, how long should it be?

Q17. If quotes are used as input data, would it be preferable to consider all quotes on a particular gilt or only those meeting certain criteria (e.g., executable only, minimum volume, maximum spread)? Would it be appropriate to weight certain quotes differently?

Q18. What are your views on sourcing data from inter-dealer platforms?

3.6 Related markets

32. The data discussed above are all linked to pre or post-trade information in the gilt market. Alternative sources of input data could come from related markets such as the gilt futures or repo markets. The gilt futures market enjoys considerably more liquidity than the underlying gilt market and is used by many market participants for gilt price discovery.

33. Pricing from the gilt futures market would only give information about certain gilts and would require interpolation to determine the other prices.

Q19. What are your views on using the gilt futures markets or other related markets as the source of data for gilt reference prices? Could these markets be the primary source of data?

4. Competition and Access

4.1 Single vs multiple providers

34. Unlike other European sovereign debt markets, the UK market has one widely accepted set of reference prices, namely those provided by the DMO on behalf of GEMMA and CREST for gilts and Treasury bills respectively. A consistent theme in meetings held by the Review has been that while it is not strictly necessary to have a single set of reference prices, there are considerable advantages. Having a single set of robust and reliable prices reduces disagreements around valuation of gilts, in particular when they are used as collateral.

Q20. What are the advantages and disadvantages to you, the government and the market as a whole that there is, as present, a single set of recognised reference prices?

4.2 Pricing

35. At present the prices provided by the DMO are available free of charge (with the intra-day prices available at no additional change to anyone with access to a Bloomberg terminal). This is one reason why the prices are so widely used within the market.

36. The Review is aware that if the provision of successor arrangements is to be performed by a commercial provider then there may be a charge for access to the prices because there will be a cost incurred by the administrator in providing the prices. However, there are a number of users of the current end-of-day prices who would, in all likelihood, not be in a position to pay to access the prices. These include individual retail investors who have invested in government debt and many academics.

37. There is a public interest in such parties continuing to be able to access pricing information for government debt, though such access does not have to be in real time. As with prices in other major markets, one approach could be to have the end-of-day prices available to the public for free after a delay.

Q21. Do you believe the prices should be publically available to all users for free after a delay? If so, what length delay would be appropriate?

4.3 Monopoly concerns

38. A possible concern with having a single set of reference prices used by the majority of the market is the risk of creating a monopoly for the provider. It has been noted in other markets that there is a 'winner takes all' dynamic to benchmarks which leads to one set of rates coming to be the most widely used.

39. On the basis of such considerations, the Financial Conduct Authority published a statement in February 2016[3] setting out that it would create a rule requiring the administrators of the UK's eight regulated benchmarks to supply access to those indices on a fair, reasonable and non-discriminatory ('FRAND') basis. The Review is considering whether this would also be appropriate in this case.

Q22. Should it be a condition of any potential administrator that access to the prices is provided on a FRAND basis to all users? Under what conditions would such a requirement be unsuitable or unnecessary?

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[3] https://www.fca.org.uk/news/ps16-04-access-to-regulated-benchmarks

5. Industry standards

40. It has been noted many times in the meetings which the Review has held that regulatory requirements which will apply to the provision of indices and benchmarks are changing. The DMO noted that *"at a minimum, it was expected that any prices should be prepared in line with the International Organisation of Securities Commissions (IOSCO) principles for financial benchmarks"*[4].

41. The IOSCO Principles for Financial Benchmarks[5] ('the Principles') are widely accepted as industry best practice. It seems natural that any administrator of the successor arrangements would need to provide the prices in a manner aligned with the Principles.

42. IOSCO has been clear that there is not a one-size-fits-all method for implementing the Principles stating that *"the application and implementation of the Principles should be proportional to the size and risks posed by each Benchmark and/or Administrator and the Benchmark-setting process"*. This proportional approach allows administrators flexibility in regards to the policies, systems and controls they put in place. IOSCO also set out that where *"implementation in any way deviates from the Principles, the administrator should explain why it believes it meets the objectives and functions of the Principles, including to the extent they are relying on a proportionate view of the Principles".*

43. The Review does not intend to make a judgement in advance of receiving any proposals as to what is an appropriate level of implementation of the Principles. Rather, any prospective provider would need to make clear how they intend to implement the Principles, where a proportional approach is necessary and the reasons for this.

44. Where proportionality is applied, the Review will consider these reasons carefully and will want to be assured that the objectives of each Principle are not compromised. It is expected that potential providers of any successor arrangements will be prepared to commit resources to comply with the Principles.

45. One way to ensure that the appropriate standards have been met could be that the administrator of any successor arrangements would have an external audit to confirm that they have implemented the Principles in line with their proposal prior to the DMO withdrawing from providing reference prices.

Q23. Do you agree with the approach to regulatory/industry standards outlined above?

Q24. Should there be official representation (for example by HMT, DMO, Bank of England) on any oversight committee which might be established?

[4] 'Feedback from stakeholder engagement' DMO press release, page 3

[5] https://www.iosco.org/library/pubdocs/pdf/IOSCOPD415.pdf

6. Transition

46. Once the successor arrangements have been identified, which is expected to have been achieved by autumn 2016, there will need to be a transition from the present arrangements to a point where the DMO can cease publication of the current prices.

47. This period would need to be sufficiently long to allow the administrator to set up the necessary governance, systems and controls to ensure that the prices are robust and reliable. But, as significant time has elapsed since the original announcement in January 2015, the Review is keen to see the new provider in place without undue delay.

48. From the user side, the transition period will also need to be long enough to amend any existing contracts referencing the current prices, to enter arrangements with the new administrator for access to the prices and to put in place any relevant system changes.

49. From the DMO's perspective, it is important that current reference prices are not discontinued until it is clear that the successor arrangements have been established and are operating to a high standard, meeting all the requirements which the Review intends to set out.

50. As part of the transition process it is possible to have a period where the current and successor arrangements are run in parallel.

Q25. What would be the minimum period you would need for transition to the new arrangements?

Q26. What are the key criteria which would need to be met in order for you to be comfortable that the DMO could cease publishing the current prices?

Q27. If appropriate, would it be beneficial to retain the 'GEMMA' name for gilt reference prices? If so, how important is this?

Annex 1. List of questions

Q1. How do you make use of end of day: (a) gilt reference prices; (b) strips prices; and (c) Treasury bill prices? How do you make use of the intra-day composite gilt prices?

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Q22. Should it be a condition of any potential administrator that access to the prices is provided on a FRAND basis to all users? Under what conditions would such a requirement be unsuitable or unnecessary?

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Q25. What would be the minimum period you would need for transition to the new arrangements?

Q26. What are the key criteria which would need to be met in order for you to be comfortable that the DMO could cease publishing the current prices?

Q27. If appropriate, would it be beneficial to retain the ‘GEMMA’ name for gilt reference prices? If so, how important is this?

Annex 2. Provisional timetable for next steps

Consultation process
(19 May - 19 June)

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Consideration of responses to consulation to determine necessary features of successor arrangements
(Late June)

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Publication of open invitation for potential providers to submit proposals to the Review
(Early July)

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Deadline for proposals to be submitted to the Review
(Early August)

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Evaluation of proposals by the Review team
(August - September)

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Final recommendations made to HM Treasury ministers
(September)