Q23 in the FEMR Consultation Document: "What additional changes could be made to the design, construction and governance of benchmarks?"

Over the last 30 years interest rate swaps have traditionally been traded - either directly or via voice brokers - over the phone. This has meant that suitable reference pages utilised by issuers when pricing a debt issuance have always been based on indicative prices provided by brokers. Such indicative prices represent the mid between a suggested – rather than firm - bid and offer.

The criticality of a trusted, reliable and accurate mid-swap reference price can best be illustrated by the size of the global debt issuance market. According to the Bank of International Settlements outstanding debt issued by corporates, supras and sovereigns in 2013 totaled almost USD 23 trillion (see Appendix). Absent an efficient debt issuance market real economies are unable to operate in changing macroeconomic environments.

For issuers, the quality of the reference pricing page they use against any issuances they carry out, is of great important to ensure that their bond is issued at the correct market level, and as such investors receive their bonds at the correct, market yield. When a company issues debt it often looks to hedge all or part of its interest rate risk on debt issuance by swapping out that risk, leaving the issuer only exposed to the issuer's own credit. The flaws of using indicative reference pages is that they fail to validate whether a trade can actually be done at that price as the pricing is not firm and the depth of available liquidity is far from clear. It may in fact be the case that there is no willing buyer at the price indicated on such pages. Furthermore the spread that the issuer has to cross between the bid and the offer may mean that an issuer has to pay a large premium in order to hedge its risk profile.

However the market is now evolving. With the growth of electronic trading in interest rates swaps a more reliable and accurate data reference methodology can be used.

Since late 2010, banks have started to trade interest rate swaps between themselves on electronic platforms (CLOBs), allowing voice and electronic price provision to co-exist and complement each other. This much improved quality and quantity of information combines the tried and trusted methods of voice with firm electronic pricing. These platforms receive irrefutable prices from eleven of the largest banks in the world across all liquid tenors all day every day. Removing any guesswork, this new model enables the market to actually know, not only the accurate pricing level and spread between the bid and offer, but also the depth of liquidity on either side of the mid. Having this reliability allows the CLOB to then provide this pricing on to its reference screens used by issuers and their syndicate managers.

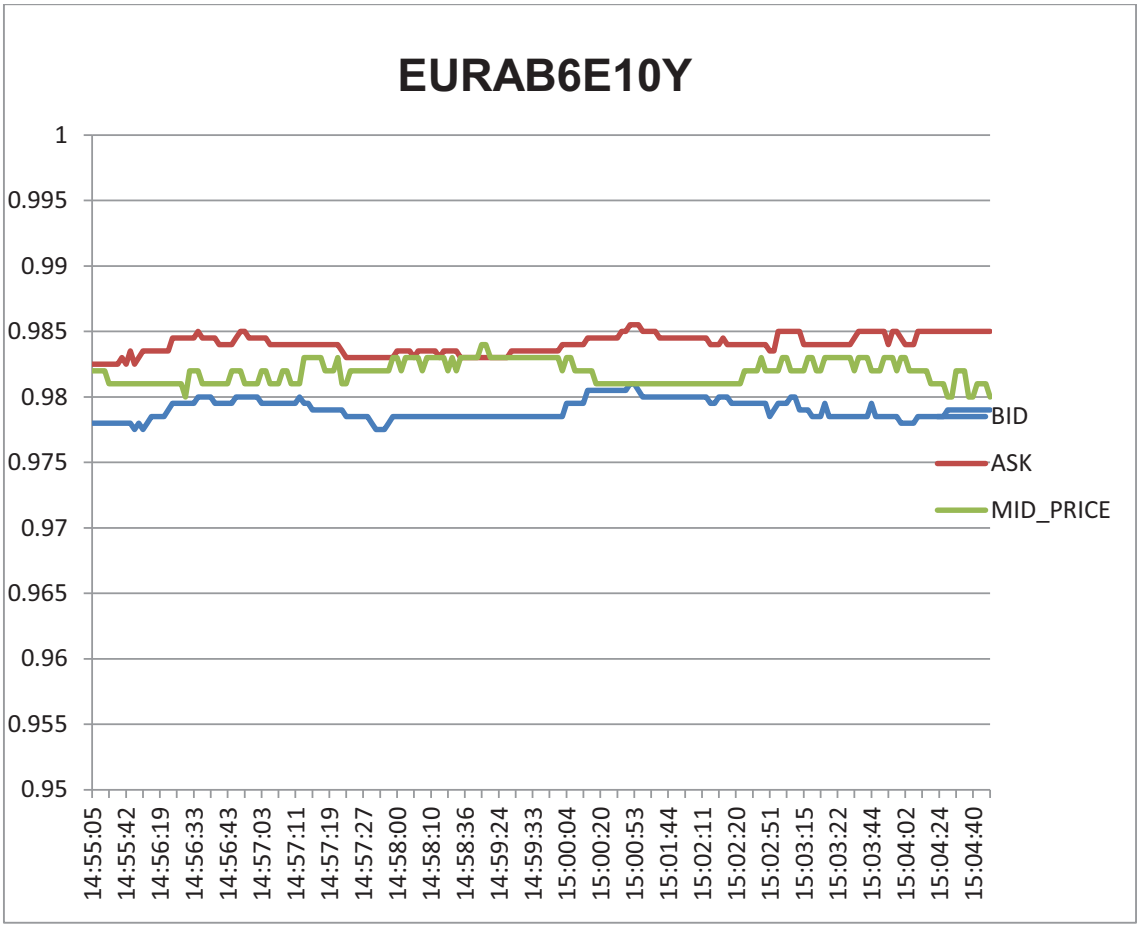
This evolution of electronic trading has moved on considerably since the introduction of the CFTC's SEF rules under the Dodd Frank Act. Now a wider group of US market participants must trade the most liquid interest rate swaps on platforms by virtue of an execution mandate which requires execution on an RFQ or CLOB basis. Tradition (via its SEF Platform) now executes 95% of its IRS business through the Trad-X CLOB[1] executing on firm, irrefutable prices displayable to its customer base via screens, API access and interaction with experienced voice brokers.[2] In essence the imposition of the Dodd Frank Act and associated SEF rules have made the CLOB pre-eminent, with the voice broker as subordinate contributor to the liquidity pool, thereby solidifying the firm price displayed on the screen as the market price. The existence of such firm, irrefutable pricing

[1] Trad-X is registered in the EU as an MTF and is part of the Tradition SEF in the US
[2] around 50% of non-block SEF-traded volume in the US is now traded on CLOBs

accompanied by significant volumes means that, in essence, the utilisation of reference screens based on an indicative view of the market by voice brokers is outmoded and outdated.

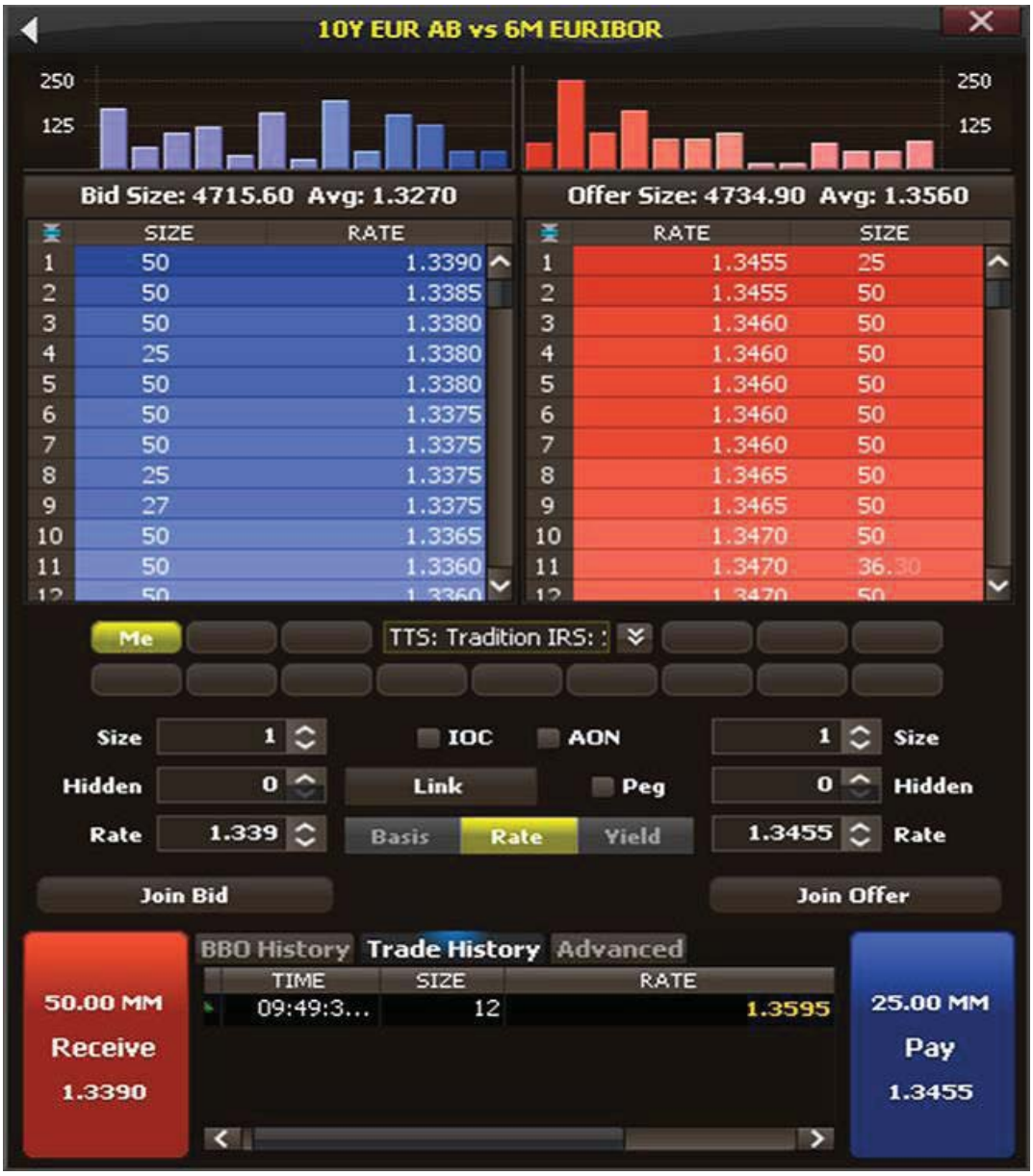
CLOBs provide certainty of execution as well as a transparent, reliable reference price. Such reliability can be backed by a full audit trail extracted at any point in time. Accordingly, an issuer can request the price movements over a period of time surrounding the time of issue. This order book 'replay' would provide best bid and offer and full depth of pricing to enable such issuer to see the real market price. It would also provide any syndicate management team and/ or the relevant swap desk executing the swap with full validation for any price it agreed with the issuer or swapped in to the market.

Below is an illustration of an order book replay derived directly from the Trad-X CLOB. This shows the movement in the €10y IRS between 14.55 – 15.05 on a date, late last year. The graph shows the bid, mid, ask over the 10 minute period. Bid and ask is from Trad-X and the mid is from our reference page calculated from the former using a methodology where only 25k DV01[3] (duration weighted notional) minimum orders (market size) can affect the mid.



[3] DV01 is the monetary change in bond price for 1 basis point change in interest rates (by default it is usually expressed as price change for 1bp increase in interest rates).

To illustrate further, the liquidity available on the platform is very deep and we regularly see 300 levels of price contribution. At any given time there is typically €5bn either side, bid/ask, of the interest rate swap €10y. Below is an extracted stack box showing the bids and offers and market depth available to participants on a click and trade basis. The executable liquidity available is €4.7156bn on the bid and €4.7349bn on the offer side. The spread at best bid and offer is 1.339 v 1.3455. This information directly feeds the reference page available to the market as a whole.



There is now a parallel within the market relating to the movement of ISDAFix: from a bank-submitted basis to a snapshot of the submission of irrefutable pricing from MTF (regulated multi-lateral trading facility) CLOBs. ISDAFix is now administered by the Ice Benchmark Administrator (IBA). In February it will start snapshotting at the relevant ISDAFix time for the covered currencies

and aggregate of streams provided by the 5 submitting MTF CLOBs. In essence, ISDAFix will be moved from an indicative view as to what the level in the market is (which by its nature is open to manipulation) to a firm, irrefutable aggregated reference price. IBA and the submitting MTF CLOBs will have full audit trails of any submitted streams which will be designed to rebuild the confidence of the market in this benchmark. In essence, reference pricing pages are real time versions of ISDAFix, operating at all times and snapshotting mid-swap prices at any selected time of issuance.

Movement of reference screens from singular voice-indicative screens – of which one has become the market standard – to an aggregated irrefutable CLOB-submitted reference screen, is a natural and obvious next step. It would give the market at large confidence of the entire level of pricing of a debt issuance and any subsequent swap. It would provide a depth of liquidity unparalleled and unproven in the voice market and remove any ability to manipulate the mid-swap price. It would provide regulators with a level of transparency and audit capability to enable them to understand this market and have confidence in primary debt issuance and the secondary swap market. The technological barriers are low and the volume of trading now supports the quality of the pricing. It is hard to understand why the FEMR would not recommend a regulatory requirement to move reference pricing to this proposed model.

Appendix - Global Debt Issuance Statistics provided by the Bank of International Settlements

Table 11A: International debt securities - all issuers

All maturities, by residence of issuer

In billions of US dollars

Countries	Amounts outstanding				Net issues					
	Dec 2012	Dec 2013	Jun 2014	Sep 2014	2012	2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014
All countries	**21,945.7**	**22,785.5**	**23,148.0**	**22,318.9**	**732.9**	**511.3**	**232.3**	**53.9**	**295.0**	**223.9**
Developed countries	**17,389.2**	**17,772.5**	**17,855.0**	**17,028.5**	**79.3**	**44.8**	**98.7**	**–67.3**	**145.9**	**88.3**
Australia	591.7	624.0	644.9	616.5	44.3	43.1	15.3	1.3	14.0	–4.7
Austria	332.2	344.7	329.0	299.6	–15.9	1.3	–2.2	–16.6	3.0	–6.9
Belgium	168.9	192.3	185.8	172.2	–2.2	16.2	3.5	–3.9	–1.1	–0.2
Canada	709.8	761.6	782.8	783.0	39.5	64.8	27.1	8.4	13.0	16.1
Cyprus	11.1	8.5	12.1	9.1	–7.0	–2.9	–3.7	2.7	1.0	–2.4
Denmark	147.9	142.2	135.6	128.7	3.6	–8.9	0.4	–3.7	–2.3	1.6
Finland	139.1	162.9	176.1	168.4	23.8	21.6	5.4	6.7	6.9	2.7
France	1,656.7	1,695.2	1,721.0	1,624.6	–6.8	–13.9	1.3	21.5	12.2	15.4
Germany	1,365.4	1,356.7	1,341.8	1,280.1	1.3	–31.6	–2.2	–15.7	1.2	12.0
Greece	171.1	155.6	154.5	143.0	–48.6	–21.8	0.5	–1.1	1.5	0.7
Iceland	19.0	18.7	18.2	18.4	–5.9	–0.8	–0.2	–0.2	–0.3	0.9
Ireland	1,058.8	1,053.7	1,014.1	929.3	–11.1	–41.4	1.2	–34.1	–1.1	–18.6
Italy	938.2	993.5	981.9	887.8	–59.9	15.8	16.7	–7.9	4.5	–21.7
Japan	181.5	203.0	226.8	233.8	14.3	36.4	4.0	7.2	13.6	14.1
Luxembourg	508.0	573.4	595.1	566.7	43.1	54.2	9.9	14.0	9.3	–0.6
Netherlands	2,085.0	2,172.3	2,172.1	2,030.8	97.2	30.5	–18.0	3.5	5.1	–10.3
New Zealand	21.7	23.7	20.8	20.1	2.4	2.1	0.8	–3.2	0.2	–0.3
Norway	273.8	292.3	286.8	275.2	35.0	21.4	10.1	0.3	–6.1	1.5
Portugal	110.8	104.3	91.0	88.1	–15.3	–10.8	–0.1	–3.5	–8.8	4.0
Slovakia	15.4	20.8	20.9	19.5	3.5	4.7	2.5	0.6	–0.3	–
Spain	804.2	793.8	763.5	692.0	–10.5	–41.9	1.2	–25.6	1.7	–15.8
Sweden	461.7	496.7	502.1	481.6	59.4	29.9	–7.6	0.6	7.7	6.4
Switzerland	26.8	37.3	45.5	46.9	4.4	10.0	5.7	–0.4	8.6	3.3
United Kingdom	3,469.7	3,460.7	3,486.9	3,375.6	–46.2	–91.8	14.6	–26.1	12.7	50.1
United States	2,106.6	2,065.9	2,116.9	2,110.1	–64.5	–45.9	12.4	1.4	46.1	41.4
Offshore centres	**1,710.1**	**1,836.4**	**1,932.8**	**1,958.8**	**142.6**	**138.0**	**36.3**	**28.5**	**63.5**	**50.4**
Aruba	6.1	3.9	4.0	3.8	0.3	–1.5	–	–	–	–
Bahamas	13.9	12.7	11.1	12.0	2.0	–1.0	–0.2	0.0	–1.6	1.2
Bermuda	86.2	94.8	94.9	93.8	5.0	8.5	0.6	2.6	–2.6	–0.7
Cayman Islands	1,202.1	1,247.6	1,299.4	1,301.5	68.7	55.8	17.7	13.3	35.0	19.0
Curacao	13.5	13.4	10.2	9.6	9.5	0.1	–0.9	–2.7	–0.5	–0.3
Hong Kong SAR	119.1	158.0	183.1	196.1	31.4	38.5	9.4	9.7	15.4	14.2
Lebanon	34.8	36.6	37.1	37.0	5.9	1.8	–	–	0.5	–
Panama	13.2	15.0	16.8	18.0	1.0	1.9	0.3	0.2	1.6	1.3
Singapore	83.7	105.3	113.6	120.4	18.7	21.8	2.4	3.0	4.7	8.3
West Indies UK	58.3	79.3	98.2	105.4	16.7	21.0	9.8	3.6	15.3	7.4
Developing countries	**1,495.1**	**1,707.1**	**1,793.4**	**1,807.4**	**227.0**	**214.4**	**74.3**	**23.4**	**62.5**	**44.0**
Africa & Middle East	**193.2**	**214.4**	**230.1**	**232.6**	**24.7**	**21.8**	**7.2**	**3.7**	**12.1**	**5.3**
Israel	27.9	26.1	29.2	28.7	5.9	–1.9	–0.8	1.6	1.6	–0.0
Qatar	33.8	36.2	34.3	32.9	4.6	2.5	0.7	0.0	–1.9	–1.3
South Africa	31.4	31.1	28.9	30.1	2.0	0.4	1.3	0.7	–2.8	1.9
Tunisia	3.2	3.0	3.1	3.4	0.6	0.0	–	–	–	0.5
United Arab Emirates	67.2	73.9	81.8	79.9	7.5	6.4	1.6	1.4	6.6	–0.9
Asia & Pacific	**387.2**	**443.0**	**470.9**	**474.3**	**51.5**	**59.5**	**15.7**	**13.7**	**13.3**	**8.1**
China	39.2	49.9	55.2	57.6	13.2	10.0	4.3	1.9	3.6	2.4
Chinese Taipei	9.0	9.3	8.7	9.4	0.0	0.3	–1.2	0.5	–1.1	0.7
India	19.4	22.8	25.4	28.8	–6.6	3.5	–	0.6	1.9	3.6
Indonesia	42.6	51.7	55.3	58.8	11.8	9.4	0.2	2.7	0.8	3.9
Korea	159.5	176.4	178.9	174.2	12.3	19.7	9.5	3.0	–1.3	–1.4
Malaysia	32.6	36.5	37.6	36.5	5.5	4.0	0.7	0.5	0.6	–0.9
Philippines	44.6	45.2	45.6	44.9	3.9	1.1	0.5	–0.2	0.6	–0.5
Thailand	8.9	9.3	10.7	10.3	2.4	0.7	–0.3	0.3	1.0	–0.3
Europe	**388.9**	**455.6**	**455.7**	**445.5**	**90.6**	**62.2**	**26.9**	**–5.2**	**6.5**	**4.5**
Croatia	11.7	15.4	16.3	15.8	3.0	3.4	1.8	–	1.0	–
Hungary	35.5	41.7	41.6	36.6	–1.2	5.2	3.0	1.6	–1.5	–3.4
Poland	74.4	74.8	73.1	68.7	12.1	–1.1	2.5	0.9	–2.3	–0.1
Russia	107.7	128.0	116.4	115.3	38.3	20.3	4.1	–11.7	0.3	1.2
Turkey	70.9	90.2	102.0	106.2	16.4	19.6	8.5	1.1	10.8	5.6
Latin America & Caribbean	**525.9**	**594.1**	**636.6**	**655.0**	**60.2**	**70.9**	**24.5**	**11.2**	**30.6**	**26.1**
Argentina	52.4	53.0	53.7	51.6	–1.1	–0.3	–0.2	–0.1	1.0	–0.3
Brazil	148.6	152.3	161.3	170.6	15.1	5.0	2.6	1.6	6.8	11.1
Chile	33.2	42.6	44.6	49.5	5.8	9.6	3.6	0.1	1.8	5.3
Colombia	32.7	37.9	41.6	43.5	4.9	5.8	0.1	1.0	2.5	2.0
Mexico	138.5	173.8	192.4	192.6	25.8	36.0	15.3	7.1	11.2	3.6
Peru	27.1	32.5	34.6	36.4	6.1	5.8	0.7	1.1	1.1	1.8
Uruguay	10.0	11.5	13.3	13.0	0.1	1.9	–	–0.0	2.0	–0.3
Venezuela	59.1	58.0	57.6	57.5	–0.2	–1.2	–	–0.3	–	–
Int. organisations	**1,351.2**	**1,469.5**	**1,566.8**	**1,524.3**	**284.1**	**114.1**	**23.0**	**69.3**	**23.0**	**41.3**