

BLOOMBERG BFIX

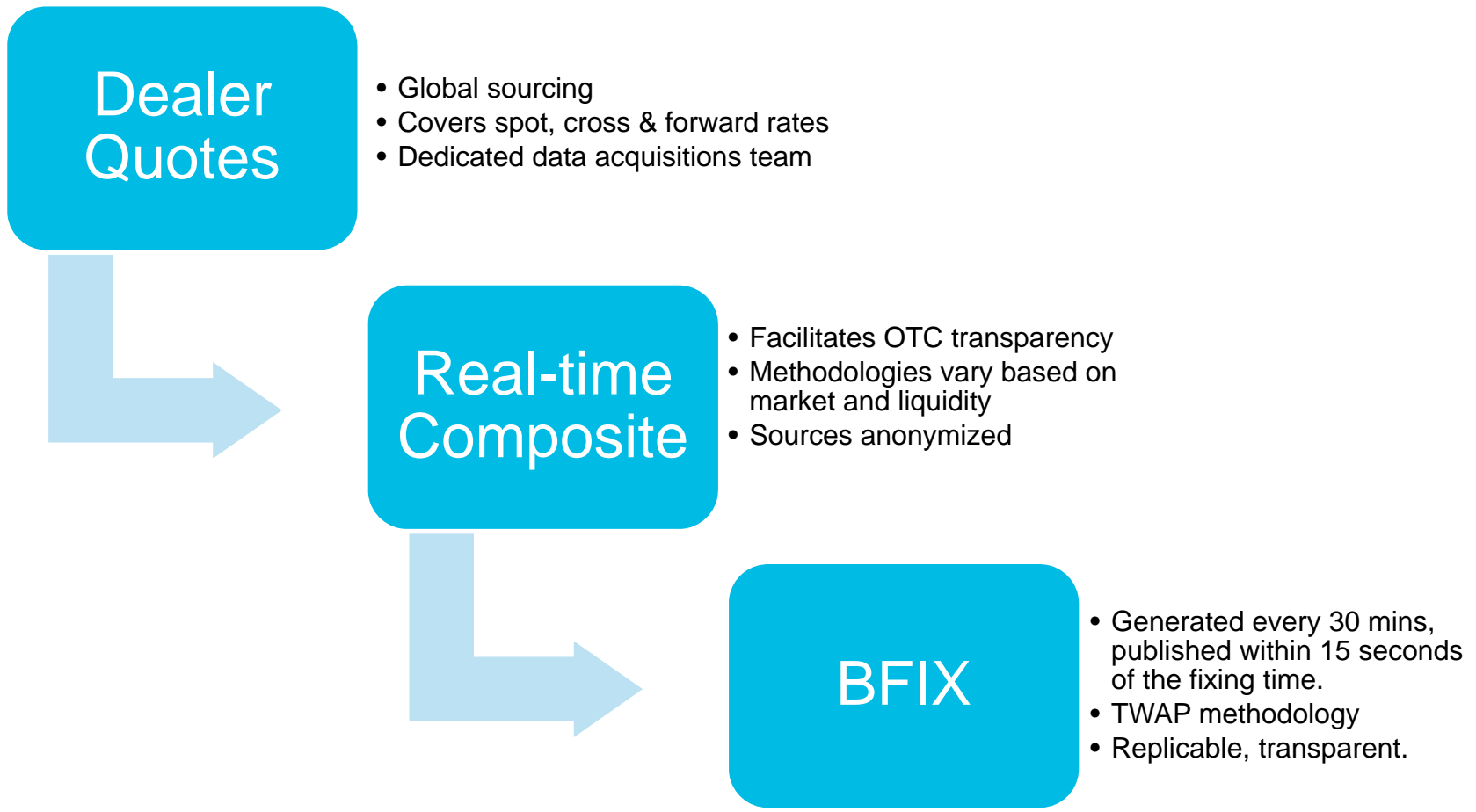
Methodology Overview & Planned Oversight

April 2016

EXECUTIVE SUMMARY

- **BFIX is built on our widely-used BGN composite**
- **BGN is designed to provide bid ask rates**
 - From selection of Bloomberg FX price sources
 - Sources have met criteria including consistency frequency and quality
- **BFIX is time-weighted average of BGN, with transparent methodology and is easily replicable.**
 - Results are published on the terminal to a dedicated screen BFIX<GO>
 - Selected Rates published on the website (ECB Fixes)
- **Sensitivity analysis shows that BFIX is robust to changes in**
 1. Unilateral price skewing
 2. Multiple dealers skewing
 3. Dealers halting pricing
 4. These findings are robust across a variety of currencies.

GENERAL CALCULATION FLOW

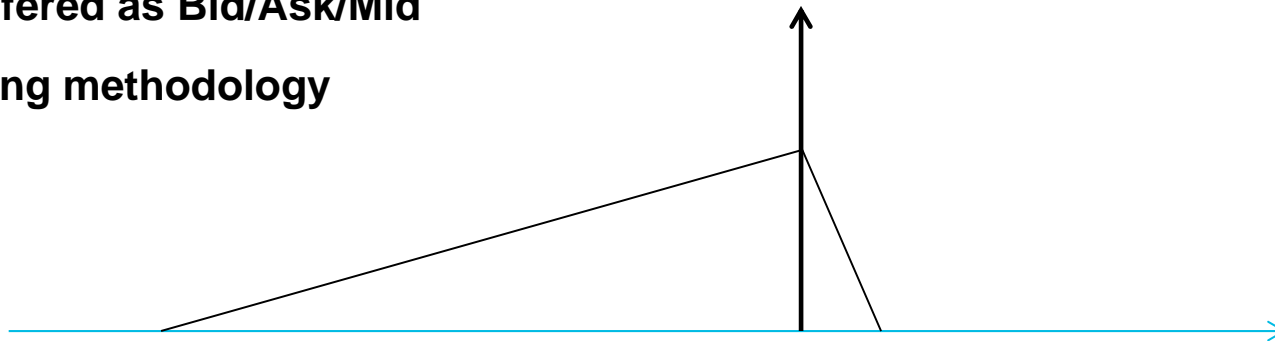


BGN OVERVIEW

- **Goals of BGN are :-**
 - Find consensus
 - Be Robust
- **Price Inputs are run through a proprietary algorithm**
 - Algorithm generates a market reflective bid ask price for each currency or metals pair
 - Algorithm includes features such as spike detection, age out, crossing prevention
 - Price inputs only considered valid if a bid and ask are contributed.
- **Coverage & History**
 - BGN provides very broad coverage of spot and spot cross rates for currencies and metals
 - FX forward rates including NDF's.
 - BGN has been available as a price source since 2007

BFIX METHODOLOGY

- Time-weighted average of BGN.
- Computed every 30 minutes, provided BGN frequency conditions are met
- Published within 15 seconds of fixing time to Bloomberg.
- Fully automated process from end to end
- **TWAP details:**
 - Window can be 5, 10 or 15 minutes, and includes a few seconds *after* the fixing time
 - 10% of the weight is the BGN value at the fixing time
 - The remaining is linearly weighted:
 - Easily replicable
- **BFIX offered as Bid/Ask/Mid**
- **Rounding methodology**



IOSCO COMPLIANCE

- **Bloomberg is committed to the Benchmark Business**
 - Recently announced Purchase of Barclays Index Business
- **Currently manages IOSCO compliant benchmarks**
 - Bloomberg Index IN <GO> (FI, Commodity, Currency)
 - FX is an important part of our benchmark ambitions
- **BFIX IOSCO compliance process is in advanced stages**
 - Compliance affirmation expected end Q2
 - External auditors are engaged.

‘Barclays Plc agreed to sell the indexing business built around former Lehman Brothers benchmarks to Bloomberg LP for about 520 million pounds (\$781 million),’

Bloomberg Index Browser						
9) Export						
1) Fixed Income 2) Commodity 3) Currency						
11) Global Agg 12) USD Agg 13) Pan-Euro Agg 14) Asia-Pac Agg 15) AusBond 16) Canada Agg 17) Global HY 18) EMG						
View Returns Projected Tree Chart As of 04/15/16						
Index Name	Ticker	1D Rtn	MTD Rtn	YTD Rtn	Members	Mkt Val
Global Agg family						
Main Indices						
Global Tsy	BGSV	0.462%	1.039%	8.323%	1,098	24.07T
By Maturity						
-Global Tsy 1-3 Yr	BGSV13	0.218%	0.649%	4.236%	265	5.62T
-Global Tsy 1-5 Yr	BGSV15	0.251%	0.663%	4.780%	453	10.26T
-Global Tsy 1-7 Yr	BGSV17	0.276%	0.636%	5.120%	588	13.27T
-Global Tsy 1-10 Yr	BGSV110	0.317%	0.686%	5.830%	749	16.91T
-Global Tsy 3+ Yr	BGSV3	0.537%	1.159%	9.617%	833	18.44T
-Global Tsy 3-5 Yr	BGSV35	0.290%	0.680%	5.421%	188	4.64T
-Global Tsy 3-7 Yr	BGSV37	0.318%	0.627%	5.763%	323	7.64T
-Global Tsy 3-10 Yr	BGSV310	0.366%	0.704%	6.627%	484	11.29T
-Global Tsy 5+ Yr	BGSV5	0.620%	1.321%	11.155%	645	13.80T
-Global Tsy 5-7 Yr	BGSV57	0.360%	0.544%	6.317%	135	3.00T
-Global Tsy 5-10 Yr	BGSV510	0.419%	0.720%	7.517%	296	6.65T
-Global Tsy 7+ Yr	BGSV7	0.692%	1.539%	12.582%	510	10.80T
-Global Tsy 7-10 Yr	BGSV710	0.468%	0.866%	8.523%	161	3.65T
-Global Tsy 10+ Yr	BGSV10	0.807%	1.886%	14.772%	349	7.15T
By Country						
-Global Tsy xUS	BGSX	0.570%	1.341%	10.377%	848	17.21T
-Global Corp	BCOR	0.309%	0.544%	5.657%	9,833	7.32T

DELIVERY MECHANISMS

- <http://www.bloomberg.com/markets/currencies/fx-fixings>
- BFIX <GO>
- Enterprise delivery mechanisms

