

Single Security 2019: *Will You Be Ready?*

The Single Security Initiative Conference

Hosted by: Fannie Mae and Freddie Mac

May 14, 2018

Intercontinental Hotel-Times Square

New York City



Fannie Mae

FreddieMac

Infrastructure Update



Single Security 2019: *Will You Be Ready?*

Broadridge Financial Solutions

Mike Acevedo



Fannie Mae



Freddie Mac

The Broadridge Solution

In 2016, Broadridge started working with various industry participants such as FNMA, FHLMC, SIFMA, eMBS, to arrive at a solution for our diverse client base

- Created a client working group to identify scope of this far reaching industry initiative
- As things progressed, addressed with the larger client community
 - Fannie Mae & Freddie Mac participated in this kick off meeting
- Timeline:
 - Q3 2018 - Development Complete
 - Q4 2018/Q1 2019 – Testing
 - Q2 2019 – Production Ready

Broadridge Changes

- Process new aligned Disclosure files
- Display new data from agency disclosures across application
- Release control on clearance for client exchanges
- Support of float compensation
- Updates to product code descriptions (relabeling)
- Load and process daily and cumulative exchanges files
- Reporting – New and updates to existing Report Suite

Single Security 2019: *Will You Be Ready?*

aladdin[®]

by BLACKROCK[®]

Aanchal Arora



Fannie Mae[™]

FreddieMac

Single Security Initiative in Aladdin

Under the direction of FHFA, BlackRock market practitioners and Aladdin experts have been actively engaged with Fannie Mae, Freddie Mac and SIFMA

- This involvement has enabled us to design an Aladdin solution that incorporates our in-depth knowledge of the mortgage market evolution and expertise in mortgage analytics and trading.
- Our solution *reflects both practitioner insight and feedback gathered from our Aladdin clients* – a community of 80+ industry leading organizations.
- It allows an *end-to-end TBA Life Cycle Support* for Uniform Mortgage-Backed Security.

Aladdin's Single Security solution	
Mortgage Data and Analytics	Trading Capabilities
<ul style="list-style-type: none"> • Consumption of new single security disclosure data and data conversion • Expanded product scope for Analytics, MBS Relative Value Package and Risk Reporting • One set of CUSIPS-based benchmarks and pricing data from external vendors 	<ul style="list-style-type: none"> • New uniform single security UMBS trading ticker to be used for trading and operations workflows • Ability to capture exchange of Legacy 45-day Freddie PCs into 55 – day PCs in the transaction workflow • Mechanism to facilitate adoption of changes in investment guidelines or constraints
Mortgage Operations	Best Execution
<ul style="list-style-type: none"> • Allow both FNMA and FHLMC issued Uniform MBS and exchanged FRE mirror securities deliverable into Single TBA contract • Connectivity with FICC Services for EPN and Novation Services • Support of end-to-end post trade workflows for UMBS 	<ul style="list-style-type: none"> • Account for client specific workflows • Data Reporting for transactions, positions, security indicative data and many more • Enhanced interfaces to support new data points, extracts and downstream workflows

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Road to Readiness

Larry Gioia



Fannie Mae



Freddie Mac

Changes to support the Single Security Initiative: Overview

- Support Freddie Mirror Securities
- Support Fannie move to aligned formats, including convert-back to current formats
- Modify eMBS Database to support UMBS

Freddie Mac Mirror Support Freddie formats and eMBS DB

- Exchange Mapping
- Daily and Cumulative Exchange Activity
- Float Compensation Data
- Add fields for convert-back clients: Prefix, Factor, and Balance on DNI, Prefix on Factor

Fannie Mae Aligned-Format Support

- Receive and Provide test files
- Modify eMBS Distribution and Validations
- Run through eMBS systems & compare
- Provide feedback to Fannie Mae on results
- Provide test data in eMBS Database format
- Convert-back Fannie Data to current and earlier formats

eMBS Database Changes

- Add new Freddie UMBS Prefixes (CL, CI, CT, CN,...) and Products
- Populate new mirror securities beginning in August (CollType 'POOL')
- New Mirror exchange tables (daily activity, cumulative, float comp)
- Populate collateral (IssColl) rows for mirror securities and update daily
- Add prepay aggregations of 55-day Freddie loan-backed UMBS
- Summarize available supply of UMBS (Freddie & Fannie)
- Change Fannie TBA Agency designation from FNM to UMB
- Modify TBA->Pool association for UMBS TBAs to reflect that Fannie and Freddie 55-day pools are eligible
- SUPER Summary: new table by SUPER showing % Fannie and % Freddie by current balance. Also display on eMBS screens

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Bloomberg Preparation for UMBS

Jackie Jozefek



Fannie Mae



Freddie Mac

Bloomberg Mortgage Cashflow Structured Products

The Uniform MBS initiative will impact Bloomberg syntax, screen applications, and other ancillary businesses throughout Bloomberg including:

- Pools
- Generics
- TBAs and Electronic Trading
- Analytics
- Excel API and Enterprise Products
- Indices

Bloomberg Mortgage Cashflow Structured Products

Legacy and Mirror pool changes:

Attribute	Legacy Pool (45 day)	Mirror (55 day)	Note:
Pool Number	FGQ35354	FNZJ1234	<ul style="list-style-type: none"> - New 55 day pool prefix – FN(TBA) / FR(NonTBA) - Mirror Pool #s to be assigned - Legacy pool link on Mirror DES page
CUSIP	3132QR5Q9	123456789	New CUSIP to be assigned
Pool Type	Q3	CL	Adopt Fannie TBA Pool Types. New codes for Non TBA
Issue Date	8/1/2015	8/1/2018	New Issue Date to be assigned
Delay Days	45	55	Delay to match Fannie Mae
Servicer	Firstbank	SCR Mirror	“SCR Mirror” will display for all Mirrors
Generic	FGLMC	FNCL	TBA eligible Mirror pools will migrate to the FNCL generics as exchanges occur

Bloomberg Mortgage Cashflow Structured Products

Fictitious Sample Mirror Pool:

Fictional 55 day pool

FN ZJ1234 Mtge		98 Export		Page 1/3		Security Description						
FNCL 3.5 N		4.140(326)30		CUSIP 123456789		Pool Level Buy Sell						
1) Summary		2) Exchanges		3) Comments								
Pool	FN ZJ1234 Mtge	16) Seasoning	FNCL 3.5 N	As Of	02/2018							
Type	(CL) Conventional Conv 30 years	17) Vintage	FNCL 3.5 2015	Issue Date	08/01/2018							
Traits	30/360	18) UMBS Orig	FG Q35354	Maturity Date	08/01/2045							
11) Seller	SCR Mirror											
12) Pool Information												
Coupon	3.500	WAC	4.140	Orig WAC	4.132	Balance						
		WARM	326	Orig WAM	360	Factor	0.70017406					
		WALA	30			Orig Amt	25,792,039					
						Curr Amt	18,058,917					
13) Collateral Information												
WAOLTV	86	AOLS	284,657	Orig TPO	15.81	Prepay	CPR PSA					
WAOLTV-HPI	78	WAOLS	303,220	Curr TPO	20.40	1 Month	0.2 3					
WAOCLTV	86	MAXLS	417,000			3 Month	4.8 83					
WAOCS	757	WAOLT	360			6 Month	5.2 94					
						1 Year	6.8 139					
14) # Loans	67	Delay	54	(24)		18) States %UPB						
						Alabama	24.7					
						Tennessee	15.1					
						Georgia	7.8					
TRACE Eligible												
15) Paydown Information (PDI PERF) * Value calculated by Bloomberg												
Prepay History	Feb18	Jan	Dec	Nov	Oct	Sep	Aug	Jul	Jun	May	Apr	Mar17
1 Month CPR	0.2	13.5	0.2	15.4	0.2	0.2	0.2	11.2	12.5	23.7	0.2	0.1
3 Month CPR	4.8	9.9	5.5	5.5	0.2	4.0	8.1	16.0	12.6	8.7	11.8	11.8
6 Month CPR	5.2	5.2	4.8	6.8	8.4	8.4	8.4	13.9	12.2	16.0	24.0	24.0
12 Month CPR	6.8	9.7	8.6	11.5	16.6	16.6	19.5	22.5	21.8	20.9	19.1	20.5
1 Month PSA	3	232	4	285	3	3	5	243	284	563	5	4

Source: Bloomberg Finance L.P.

Bloomberg Mortgage Cashflow Structured Products

- For any additional questions regarding Single Security details on Bloomberg please contact:

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Single Security 2019: *Will You Be Ready?*



The Yield Book

by FTSE Russell

Barry Pavel

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Fannie Mae



Freddie Mac

Current TBA View

Fannie Mae June TBA

Search to Buy		RecallQ	Clear	Notes	Copy	Owned Amount (M)	
Domain:		Personal and FIDB			None		
Ticker/Query		Org Trm	Coupon	-- Amortization Term --			
FNMA		30	4.5000	29	Yrs 0	Mos	
Description		Source		Cusip			
30-YR FNMA-TBA PROD JUN		SALOMON		01F042665			
4.989	0.489	FNMA	0	Yr 10	Mo 54	CPR PSA	
--Prepd Life--		Adj OrgLnSz	Adj CurLnSz	Pool ID			
0	Yr 0	Mo 307,385	299,177				
%Refi	%InvP	FICO	HARP	SATO	AdjSATO	LTV	AdjCLTV
48.9	28.8	705	0.0	83.5	83.5	79.0	73.6
Security Type		FHTBA					

Freddie Mac June TBA

Search to Buy		RecallQ	Clear	Notes	Copy	Owned Amount (M)	
Domain:		Personal and FIDB			None		
Ticker/Query		Org Trm	Coupon	-- Amortization Term --			
FHLG		30	4.5000	29	Yrs 0	Mos	
Description		Source		Cusip			
30-YR FHLG GOLD-TBA PROD JUN		SALOMON		02R042660			
4.954	0.454	GOLD	0	Yr 10	Mo 44	CPR PSA	
--Prepd Life--		Adj OrgLnSz	Adj CurLnSz	Pool ID			
0	Yr 0	Mo 315,983	308,969				
%Refi	%InvP	FICO	HARP	SATO	AdjSATO	LTV	AdjCLTV
45.6	31.9	713	0.0	79.0	79.0	80.0	74.4
Security Type		FHTBA					



Source: FTSE Russell. For illustrative purposes only. – Disclaimer on slide 38

New UMBS TBA View

- UMBS will retain Fannie Mae Ticker and CUSIP
- Deliverable basket will be a mix of Fannie and Freddie
- Freddie TBA will be available as long as trading continues

Ticker/Query	Org Tm	Coupon	-- Amortization Term --	
FNMA	30	4.5000	29	0
Description		Source		
30-YR UMBS-TBA PROD JUN		SALOMON		
		Cusip		
		01FD42665		
--- Coupon ---				
Gross	Svc Fee	Call Type	Loan Age	Delay
4.989	0.489	UMBS	0 Yr 10 Mo	54
Prepd Life		Adj OrgLnSz	Adj CurLnSz	Pool ID
0 Yr 0 Mo	307,385	299,177		
%Refi	%InvP	FICO	HARP	SATO
48.9	28.8	705	0.0	83.5
AdjSATO	LTV	AdjCLTV	Prepay Experience	
83.5	79.0	73.6	CPR	PSA
Security Type				
TBA				
Geogr Detail		-User Bond-		Prepay Hist
		Add/Updt Option Delete		Act/Proj

Ticker/Query	Org Tm	Coupon	-- Amortization Term --	
FHLG	30	4.5000	29	0
Description		Source		
30-YR FHLMC GOLD-TBA PROD JUN		SALOMON		
		Cusip		
		02R042660		
--- Coupon ---				
Gross	Svc Fee	Call Type	Loan Age	Delay
4.954	0.454	GOLD	0 Yr 10 Mo	44
Prepd Life		Adj OrgLnSz	Adj CurLnSz	Pool ID
0 Yr 0 Mo	315,983	308,969		
%Refi	%InvP	FICO	HARP	SATO
45.6	31.9	713	0.0	79.0
AdjSATO	LTV	AdjCLTV	Prepay Experience	
79.0	80.0	74.4	CPR	PSA
Security Type				
FHTBA				

Freddie Mirror Securities

- Freddie Pools will be assigned pool IDs beginning with Q-Z (Fannie A-I,M)
- 55 Day TBA eligible Mirror pools will have Fannie Prefixes (CT = 20 Year)
- Mirror pools will be linked to each other

Freddie Released sample 55-day Mirror Pool

Individual Securities
Indicative Data - Fixed Income

Search **GeoDtl** **Pool Coll** **Loan Coll** **Ppay/Delq** **Act/Proj** **Discd**

Recall/Q Clear **PVY** **ROR** **Lock Up** **Quartiles** **Roll Info** **WAC Hist**

Agency: **FHLMC** Pool ID: **UZI1674** Code: **CT** Description: **UMBS 20 YEAR FIXED** CUSIP: **31327U2G**

Issuer Name: **BANK OF AMERICA, N.A.** State: **NY** Type: **LEV** Delay: **54**

Max Orig	Pct	FICO	%Refi	%InvP	Cur LnSize	Wtd OrgLnSz	Wtd CurLnSz
CA	45.86	773	95.97	0.00	174,079	230,632	216,494

Net Cpn: **3.000** Grs WAC: **3.788** -WAM-: **17 yr 7 m** Reported Age: **2 yr 1 m** Orig Ln Term: **20 yr** SATO: **43.2** Adj SATO: **43.2** LTV: **63.00** CLTV: **50.72**

Amount Issued: **14,083,538** Issue Date: **04/01/16** WAM Date: **12/01/35** Stated Mat: **04/01/36** Servicer: **BANK OF AMERICA, N.A.**

Factor Date	1Mo	3Mo	12Mo	Life
04/01/2018	10	11	140	119

Factor: **0.87427195** Balance: **12,312,842**

Delinquencies Through 04/2018: 30D (%): **0.00**, 60D (%): **0.00**, 90D (%): **0.00**, 120D (%): **0.00**

Table of Contents Turn to: 2.3 Curve Analysis PY Calc The Yield Book by FTSE Russell Kwr Setup Pricing Setup Scenario Setup Cash Flow Setup Report Display

Delete Report Folder: HOME Home Folder List Reports Sort View Print & Export

Description	Save	Start	Settle	Corp	Settle	Rm	Date	Total
base collateral		05/08/2018	05/08/2018		05/7/2018			

Portfolio Description: **UZI1674** As Of Date: **5/7/2018** Portfolio ID: **UZI1674** Template: **COLL.RPT**

THE YIELD BOOK
Collateral Detail Report

Pool	Agency	Number	CUSIP	Net Coupon	Gross WAC	WPM	Age	Year	Stated Maturity	Cur Pct	Outstanding Balance	Face Balance	(Deal Iss) Factor	1Mo	3Mo	12M	CP
TOTALS	1		3132LPX79	3.000	3.788	17.6	25	2016	04/01/36	100.0	12,312,842	14,083,538	0.87427195	0.5	0.5	5.1	



Freddie 45 to 55 Exchange Values

- Modify pay date or delay for any bond
- Use OAS constant to calculate fair value
- Available on single bond or universe of bonds

Pools

Ch 2 Pg 2 Individual Securities User Bond

Exit User Bond ROR Clear Add Update

Ticker/Query: FHLG Org Trm: 30 Coupon: 4.5000 Amortization Term: 27 Yrs 7 Mos

Description: FHLMC GOLD 30YR CASH ISSUANCE Source: YBQAW9 Cusip: 3132L7NL9

--- Coupon ---

Gross	5.133	Svc Fee	0.633	Coll Type	GOLD	Loan Age	2 Yr 4 Mo	Delay	44
Prepd Life	0 Yr 0 Mo	Adj OrgLnSz	320,646	Adj CurLnSz	310,692	Prepay	Thru Mar '18		
%Refi	48.5	%InvP	24.4	FICO	662	HARP	0.0	SATO	113
				AdjSATO	113	LTV	81.0	AdjCLTV	66.8

Security Type: MPGOLD

CMO Cohorts

Ch 2 Pg 3 Individual Securities Indicative Data - Agency CMO

Search Structure P/Y ROR CashFlows Color WAL Sens Act / Proj

Deal: FHL 30 4.50 12 Class: GEN Delete - PO - Reset Save Strip

Pay Day: 25

Mod: 05/07/18 Pdwn: 05/15/18 ModClass Residual Left Right

Description	At Issue	Payment	GEN	IO	PO	LLB
Total	57					
Coupon	4.500	4.500	0.000	4.500		
Cpn Type	FIX	FIX	FIX	FIX		
Bond Type	PT	PT	PT	PT		
Prin Type	REG	IO/NTL	PO	REG		
Cur PAC Range						
Curr Amt	734,767,581	(734,767,581)	734,767,581	109,065,534		
Orig Amt	1,922,273,117	(1,922,273,117)	1,922,273,117	221,367,695		
Factor (Pdwn)	0.38223891	0.38223891	0.38223891	0.49268948		

New Fannie Mae Disclosures

- Sample Fannie pool post go live
- Loaded Freddie Pool and disclosures and modified to Fannie
- Used for model testing as well as commingling

Ch 2 Individual Securities
Pg 2 Indicative Data - Fixed Income

Search GeoDtl Pool Coll Loan Coll Ppay/Delq Act/Proj Discl
RecallQ Clear P/Y ROR Lock Up Quartiles Roll Info WAC Hist

Agency	Pool ID	Code	Description	CUSIP	FIGI
FNMA	UAB0003	CI	UMBS 15YR CASH ISSUANCE	YB000003	

Issuer Name: QUICKEN LOANS INC. State: Type: Delay: LEV: 54

Max Orig	Pct	FICO	%Refi	%InvP	Cur LnSize	Wtd OrgLnSz	Wtd CurLnSz	Adj	New
NY	11.81	707	93.21	32.37	92,563	98,498	92,520		

Net Cpn	GrS WAC	- WAM -	Reported Age	Ln Term	SATO	Adj SATO	LTV	Adj CLTV
4.000	4.381	13 yr 3 m	1 yr 1 mo	14 yr 6 m	87.8	87.8	67.00	59.01

Amount Issued	Issue Date	WAM Date	Stated Mat	Servicer
5,978,913	04/01/17	08/01/31	05/01/32	QUICKEN LOANS INC.

Factor Date	Factor	Balance
04/01/2018	0.89256948	5,336,595

Pool	PSA	1Mo	3Mo	12Mo	Life
Generic					

Tckr Cpn Mat	OrigYr	Eff Date

Delinquencies through 04/2018	
30D (%)	1.84
60D (%)	0.00
90D (%)	0.00
20D (%)	0.00
Cashout	68.40
Non-Cashout	24.81

Co-Mingling

- Commingled Fannie and Freddie Remic
- Commingled Fannie and Freddie in Super
- Commingled Fannie and Freddie Super in Remic
- Other Combinations

Ch 2 Pg 3 Individual Securities Indicative Data - Agency CMO

Search Structure P/Y ROR CashFlows WAL Sens Act / Proj
 Recall Clear Pool Coll Loan Coll Coll Summ Geo Dtl Coll Hist Geo Ppay
 History Hist Data Cmts Prosp Coll Analy Modify Coll Coll Strats

Abbrev UCOMINGLE Type CMO UCOMINGLE Save All To DB
 Manager CITG Issue Date 04/28/2018 Original Amt 35,252,024 Current Amt 35,252,024 Crncy USD PCode U#CL

As Of 04/01/2018 PqUp PqDn Total 1 Dtl PP.Def Thru Mar'18
 (Generic) CPR PSA

Type	GrsCpn	NetCpn	WAM	Age	Pct	1 Mo	0.1
UMBS30 - N	4.970	4.500	29- 3	9	80.0	3 Mo	3.8
UMBS30 - F	4.950	4.500	29- 3	9	20.0	12 Mo	7.3
						24 mo	11.4
						Life	

Mod 05/07/18 Pdwn 04/28/18 ModClass Residual Left PgUp Right
 PgDn

Description At Issue Payment

Total	1	A1		
Coupon	4.500			
Cpn Type	FIX			
Bond Type	PT			
Prin Type	REG			
Cur PAC Range				
Curr Amt	35,252,024			
Orig Amt	35,252,024			
Factor (Pdwn)	1.00000000			

Feedback & Support

- Testing ongoing as test files become available
- Living document going up on our website in June
- Table outside with Citi to answer questions
- Help Desk and Account Managers available through transition

Single Security 2019: *Will You Be Ready?*

TRADEWEB Implementation

Courtney Van Fechtmann



Fannie Mae



Freddie Mac

TRADEWEB TIMELINE - 3 KEY DATES:

- 1. **TESTING** – November 2018
- 2. **TRADING** – March 2019
- 3. **SETTLEMENT** – June 2019



Source: Tradeweb. For illustrative purposes only. – Disclaimer on slide 38

90 DAYS PRIOR TO FIRST SETTLEMENT DATE (JUNE 2019) FNMA, UMBS and PCGLD will show on Tradeweb:

2.5	FNMA / UMBS	PCGLD	GNMA II
Apr	92 - 22 / 25	92 - 17+ / 22+	93 - 26 / 30
May	92 - 18+ / 21 +	92 - 14 / 19+	93 - 23+ / 27+
Jun	92 - 18 / 19		93 - 24 / 26
Apr/May	032 / 042	027 / 044	031 / 032
May/Jun	03 / 043		025 / 026

60 DAYS PRIOR TO FIRST SETTLEMENT DATE (JUNE 2019)

FNMA, UMBS and PCGLD will show on Tradeweb, with PCGLD transitioning off the main screen:

2.5	FNMA / UMBS	PCGLD	GNMA I I
May	92 - 22 / 25	92 - 17+ / 22+	93 - 26 / 30
June	92 - 18+ / 21 +		93 - 23+ / 27+
July	92 - 18 / 19		93 - 24 / 26
May/June	032 / 042		031 / 032
June/July	03 / 043		025 / 026

30 DAYS PRIOR TO FIRST SETTLEMENT DATE (JUNE 2019).
 FNMA and PCGLD disappear, just UMBS will show on Tradeweb:

2.5	UMBS	GNMA I I
Jun	92 - 22 / 25	93 - 26 / 30
Jul	92 - 18+ / 21 +	93 - 23+ / 27+
Aug	92 - 18 / 19	93 - 24 / 26
Jun/Jul	032 / 042	031 / 032
Jul/Aug	03 / 043	025 / 026

Tradeweb Mortgages 30 Year TBA MBS				2.540	3.045	3.550	4.055	4.560	5.065	
2.5				UMBS	GNMA	GN2 vs UMBS	3.5			
Jun	99-20+/23+	99-20+/23+	0-19 / 24	104-20+/23+	104-20+/23+	0-29+ / 30				
Jul	99-15 /18	99-15 /18	0-13+ / 19+	104-15 /18	104-15 /18	0-30 / 31				
Aug	99-07+/10+	99-07+/10+	0-10+ / 16+	104-07+/10+	104-07+/10+	0-29+ / 30+				
Jun/Jul	053/06	053/06	08+ / 10+	053/06	053/06	047 / 05				
Jul/Aug	072/073	072/073	085 / 105	072/073	072/073	045 / 046				
3.0				UMBS	GNMA	GN2 vs UMBS	4.0			
Jun	99-20+/23+	99-20+/23+	0-29+ / 30	104-20+/23+	104-20+/23+	0-19 / 24				
Jul	99-15 /18	99-15 /18	0-30 / 31	104-15 /18	104-15 /18	0-13+ / 19+				
Aug	99-07+/10+	99-07+/10+	0-29+ / 30+	104-07+/10+	104-07+/10+	0-10+ / 16+				
Jun/Jul	053/06	053/06	047 / 05	053/06	053/06	08+ / 10+				
Jul/Aug	072/073	072/073	045 / 046	072/073	072/073	085 / 105				
2 yr	99-282/28+	-0-01+	0.811-807	Roll Analysis		UM	Jun-Jul	Financing @		0.81
3 yr	99-20+/23+	-0-02	0.965-963	Cpn	CPR	Drop	B/E Drp	B/E Rt	B/E CPR	
5 yr	100-156/16	-0-01+	1.272-270	2.5	0.810	0-053	0-046	0.5	47.3	
7 yr	100-15+/16	+0-002	1.551-549	3.0	0.810	0-070	0-05	0.1	-18.8	
10 yr	98-28 /28+	+0-01+	1.748-746	3.5	0.810	0-051	0-05	0.7	14.5	
30 yr	98-12 /12+	+0-13	2.578-577							
Main 30 15 Rolls FNMA UMBS PCGLD GN1 GN2 Sw30 Sw15 Basis Fut BFLY Pools Queue										

Source: Tradeweb. For illustrative purposes only. – Disclaimer on slide 38

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