

Advanced Concepts in Investment Analytics

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January 15, 2020
Claremont, CA

Risk Evaluation and Return Measurement

Key Concepts:

Market Evaluation

Duration (Modified and Effective)

Convexity

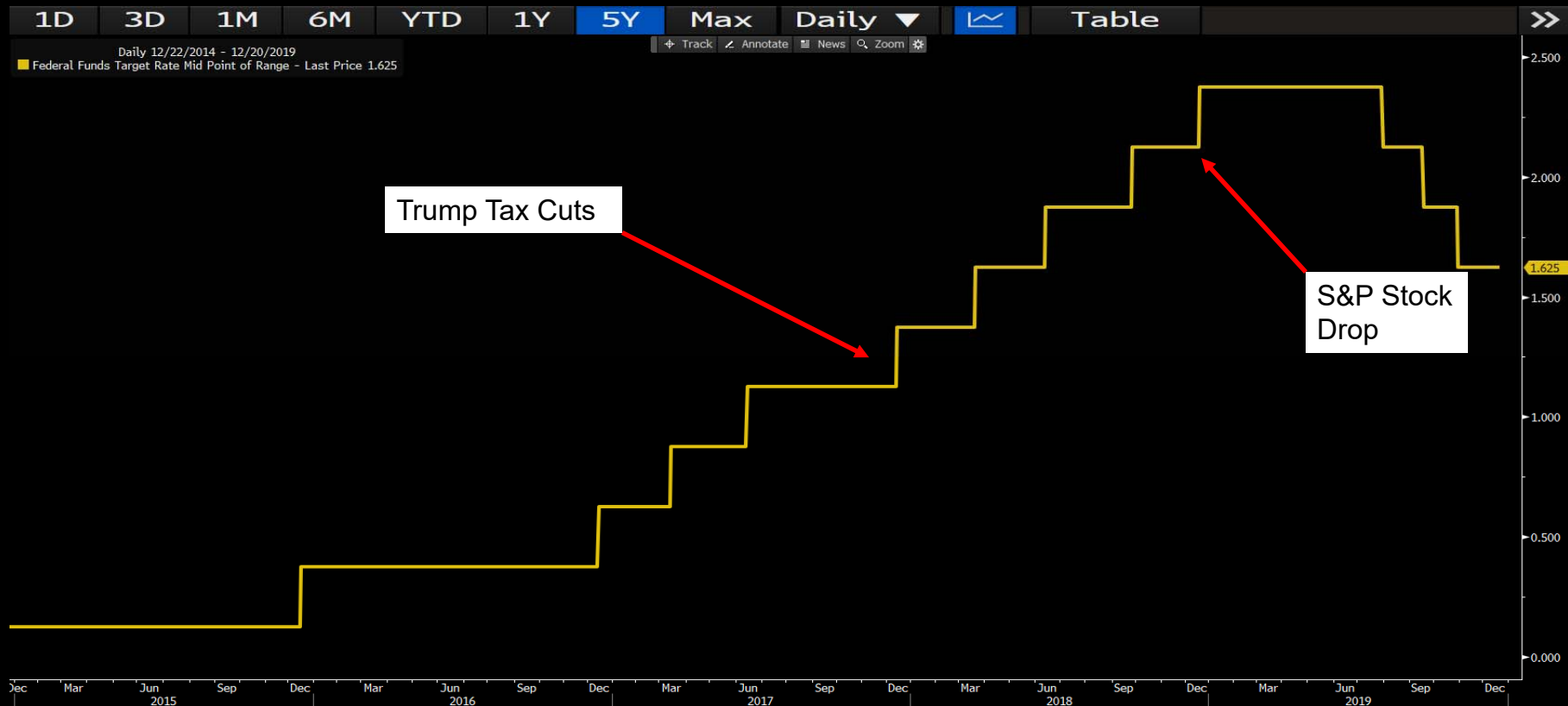
Dollar Value of an 01

Spread Duration

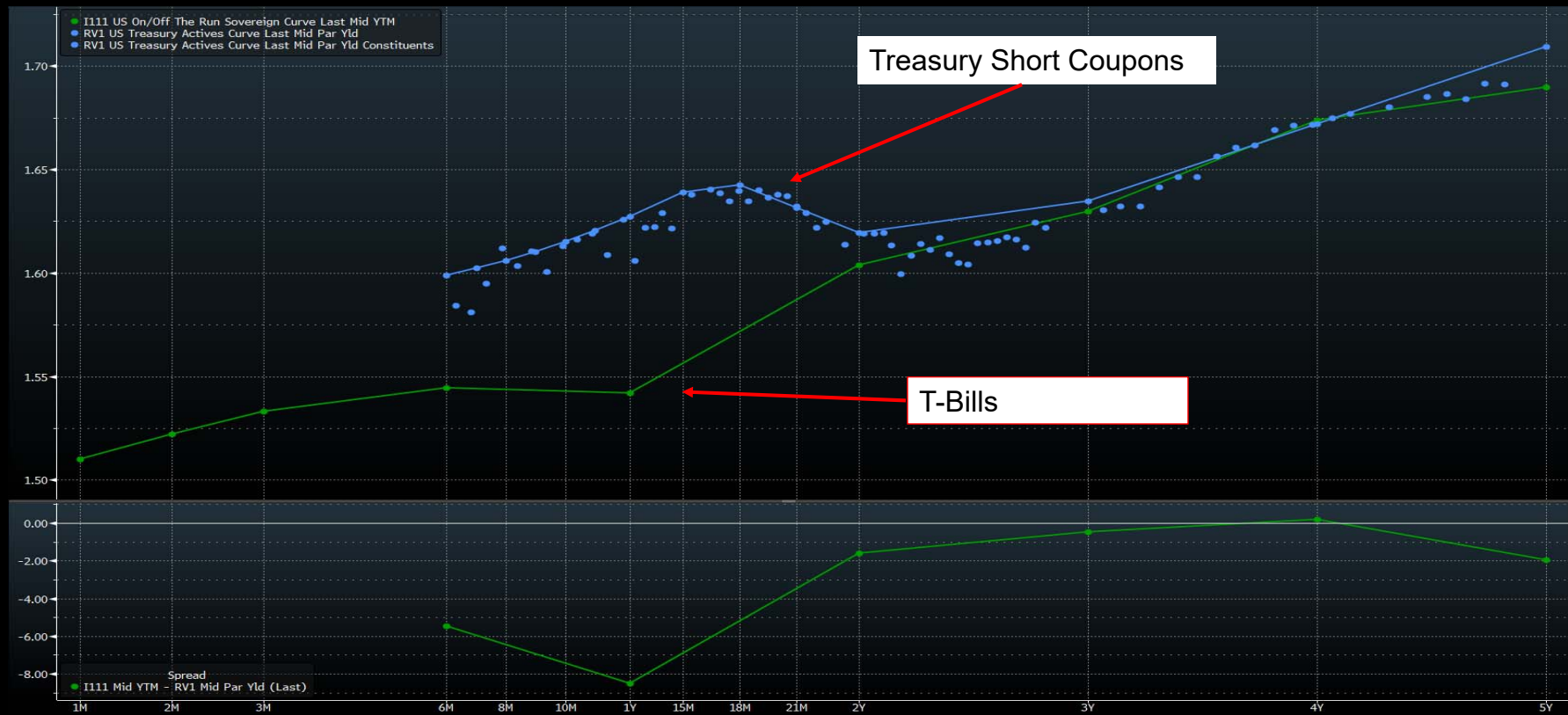
Horizon/Scenario Analysis

Option Adjusted Spread Analysis

Current Market Environment: Fed Funds



Treasury Yield Curve: Bills Expensive

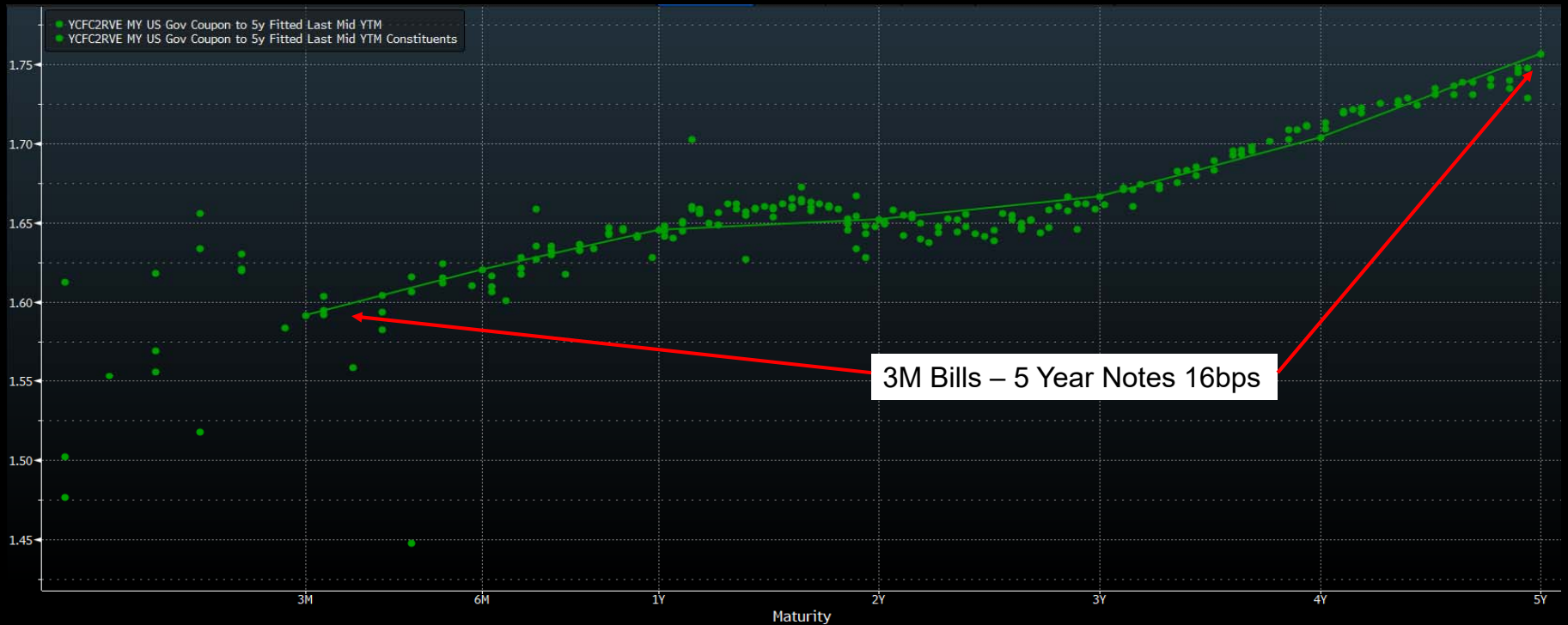


Question #1

What is the spread between 3 month T-bills and 5 Year Government Bonds?

Where has this spread been over the past 3 years?

Treasury Yield Curve: Fairly Flat



Curve Id	3M	6M	1Y	2Y	3Y	4Y	5Y
11) ■ YFC2RVE	1.591	1.620	1.645	1.652	1.667	1.704	1.757

● All Tenors ● Key Tenors

Treasury Yield Curve: YTD Change



Fed Funds, 3M Bills and 2 Year Government Yields



3M Bills, 2 Year and 5 Year Government Yields



3M Bills, 2 Year and 5 Year Spreads

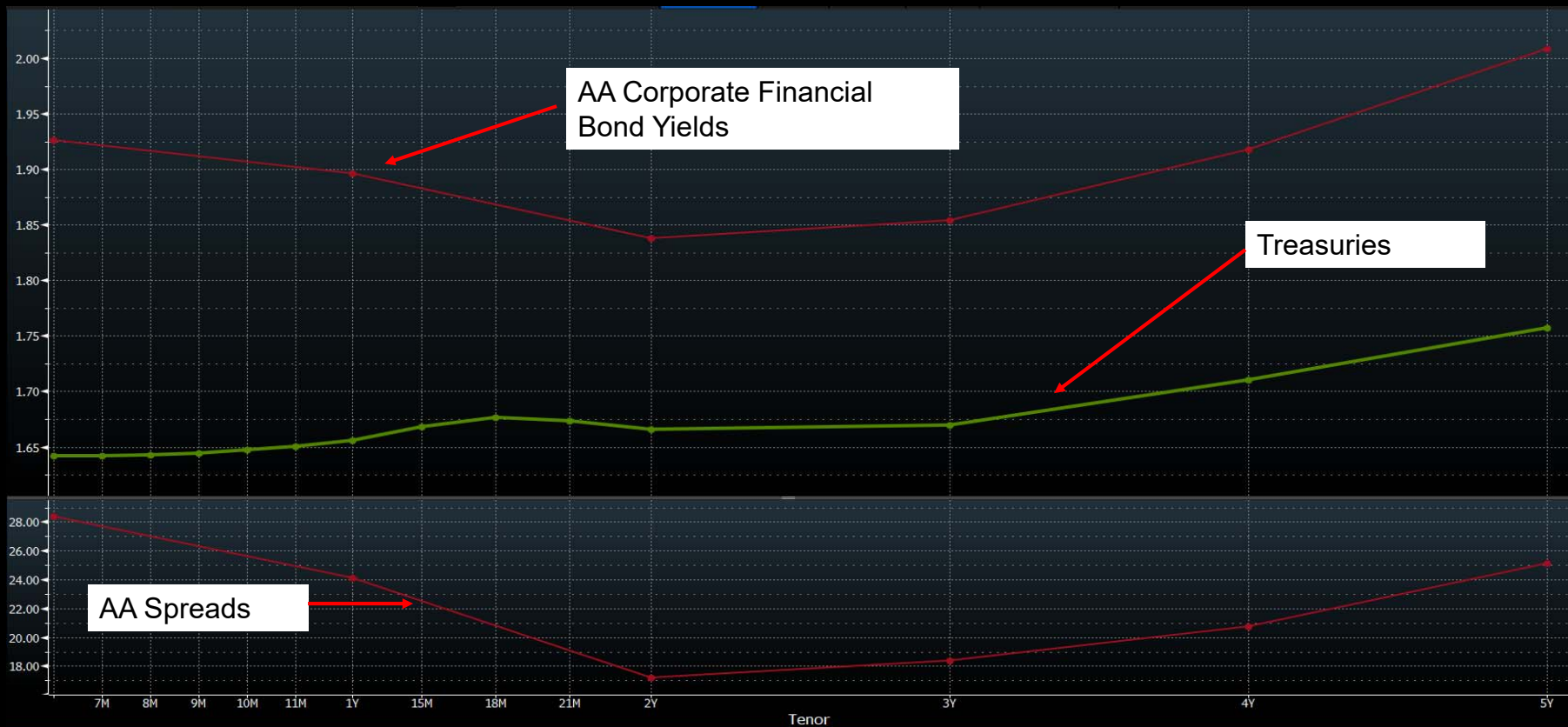


Question #2

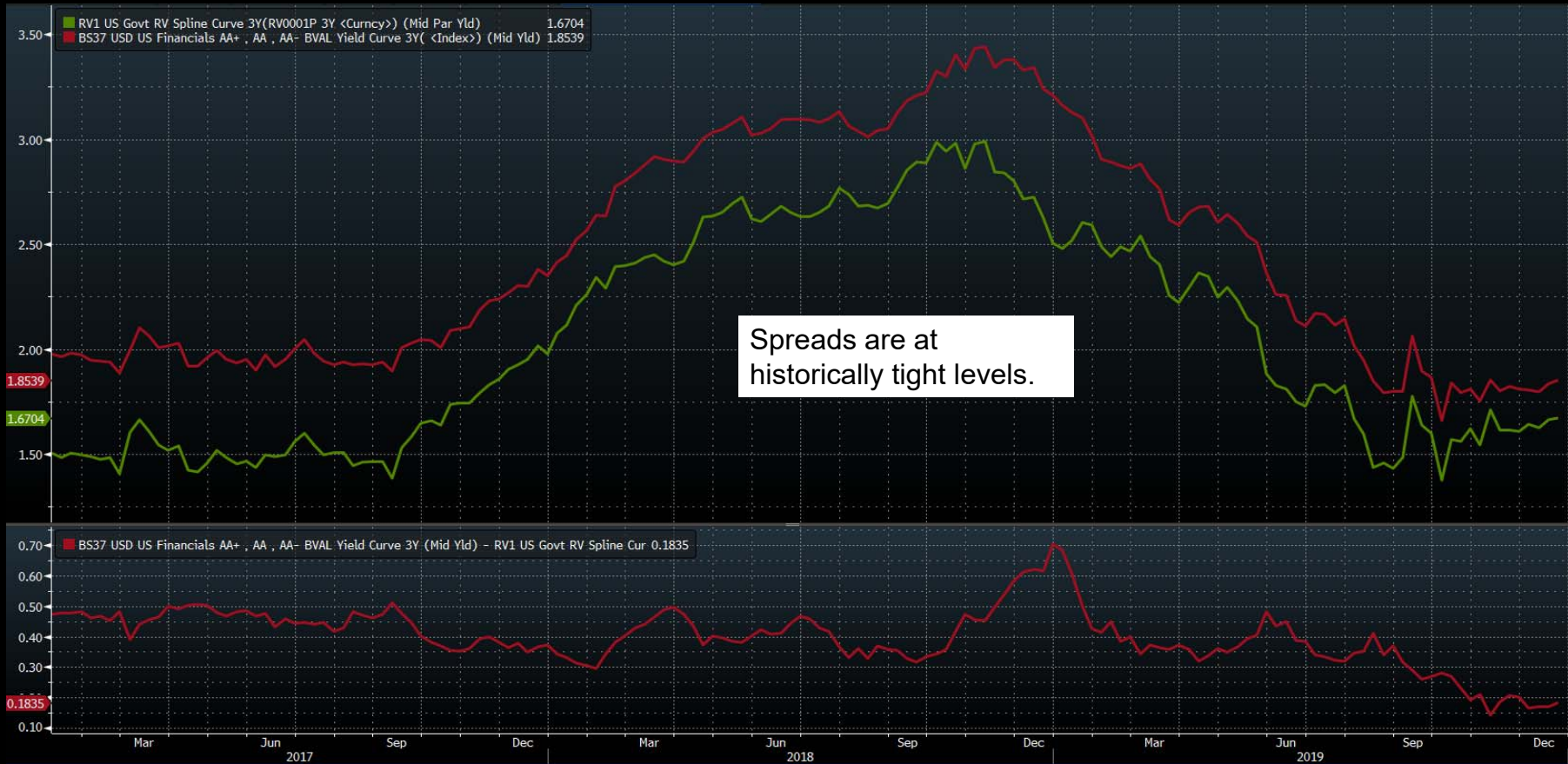
How much in yield can you pick up by buying AA Corporate Bonds?

How have corporate bonds spreads changed over the past 3 years?

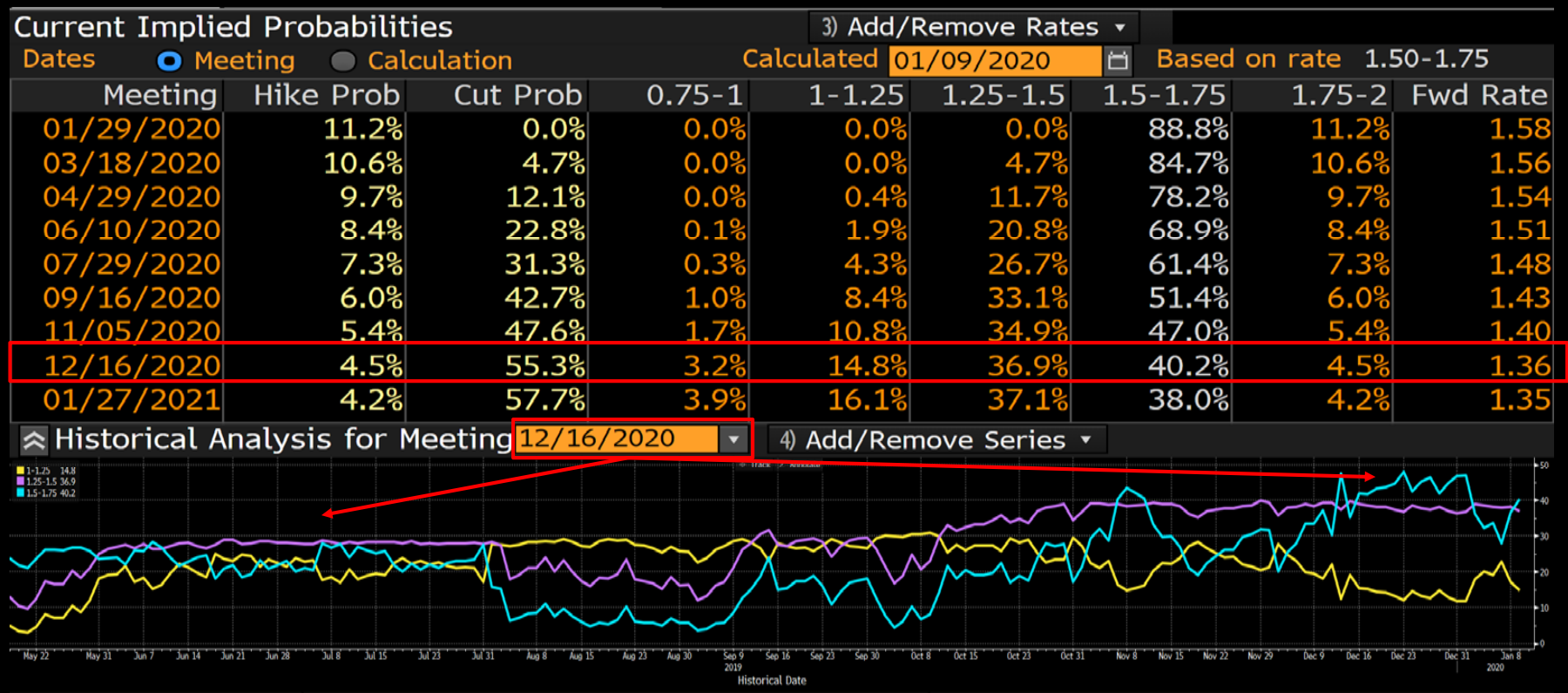
AA Corporate Bonds vs Treasury Coupons



AA Corporate Financial Bonds 3 Year Spreads



Current Market Expectations



What does this all mean in terms of returns?

Comparing Returns:

3 Month Money Market Returns

1-3 Treasury Note

3-5 Year Corporate Bond

Question #3

What were the returns of the following indices during the past year?

3 Month Treasury Returns

1-3 Treasury Note

3-5 Year Corporate Bond

Quantifying Returns: Bills/1-3 Govies/3-5 Year Corp

Range	12/31/2018	-	12/23/2019	Period	Daily	N
Security	Currency	Price Change	Total Return			
1) SPBDUB3T Index	USD	2.17%	2.17%			
2) LT01TRUU Index	USD	3.39%	3.39%			
3) BUS3TRUU Index	USD	8.49%	8.49%			
4)						
5)						
6)						

Range	12/30/2014	-	12/23/2019	Period	Daily	N
Security	Currency	Price Change	Total Return			
1) SPBDUB3T Index	USD	5.19%	5.19%			
2) LT01TRUU Index	USD	6.97%	6.97%			
3) BUS3TRUU Index	USD	18.18%	18.18%			
4)						
5)						
6)						

Annualized Equivalents: 1.00%
1.35%
3.40%

Quantifying Returns: Bills/1-3 Govies/3-5 Year Corp

Range	01/31/2000	-	12/23/2019	Period	Daily	No. of Period	7266 Day(s)	Table
Security	Currency	Price Change	Total Return	Difference	Annual Eq			
1) SPBDUB3T Index	USD	38.79%	38.79%	-36.59%	1.66%			
2) LT01TRUU Index	USD	75.38%	75.38%	--	2.86%			
3) BUS3TRUU Index	USD	172.30%	172.30%	96.92%	5.16%			
4)								
5)								
6)								



Portfolio Management = Risk Management

Key Concepts:

Price/Yield (to worst, to maturity to average life)

Duration (Modified and Effective)

Dollar Value of an OI

Spread Duration

Convexity

Cost of Carry

Option Adjusted Spread Analysis

Horizon and Scenario Analysis

Question #4

What is price? (Quoted Price)

Bills, Discount Notes and Commercial Paper

Fixed Rate Bonds

Floating Rate Securities

Money Market vs Bond Equivalent Day Counts

1) Yield & Spread		2) Yields		3) Graphs		4) Pricing		5) Description		6) Custom		
T 2 ½ 05/31/20 (912828400)						Risk						
Price	100.391	(100.390625)		Duration			0.429					
Settle	12/26/19	Maturity	05/31/2020		Modified Duration			0.426				
				Risk			0.428					
Street Convention				1.580	Convexity			0.004				
Treasury Convention				1.580	DV	01	on 1MM		42.85			
True Yield				1.570	PV	0.01		0.00428				
Equiv 1 /Yr Compound				1.588	Invoice							
Japanese Yield (Simple)				1.585	Face	1,000		M				
Mmkt (Act/360)				1.545	Principal	1,003,910.00						
Current Yield				2.490	Accrued (26 Days)	1,775.96						
					Total (USD)	1,005,685.96						
After Tax (Inc 40.800 % CG 23.800 %)				0.936								
Issue Price = 99.826. Bond Purchased with Premi...												

Callable Bonds: YTC/YTW/YTM

25) Bond Description		26) Issuer Description	
Pages		Issuer Information	
11) Bond Info	Name FREDDIE MAC	Identifiers	
12) Addtl Info	Industry Government Owned, No Guarantee (B...	CUSIP 3134GUP61	
13) Reg/Tax	Security Information	ISIN US3134GUP614	
14) Covenants	Mkt Iss Domestic MTN	ID Number ZP2044094	
15) Guarantors	Country US Currency USD	Bond Ratings	
16) Bond Ratings	Rank Unsecured Series	Moody's Aaa	
17) Identifiers	Coupon 1.850000 Type Fixed	Fitch AAA	
18) Exchanges	Cpn Freq S/A	Composite AAA	
19) Inv Parties	Day Cnt 30/360 NON-E... Iss Price 100.00000	S&P NA	
20) Fees, Restrict	Maturity 06/30/2023	Issuance & Trading	
21) Schedules	CALL 12/30/20@100.00	Amt Issued/Outstanding	
22) Coupons	Iss Sprd	USD 25,000.00 (M) /	
Quick Links	Calc Type (1)STREET CONVENTION	USD 25,000.00 (M)	
32) ALLQ Pricing	Pricing Date 12/23/2019	Min Piece/Increment	
33) QRD Qt Recap	Interest Accrual Date 12/30/2019	1,000.00 / 1,000.00	
34) TDH Trade Hist	1st Settle Date 12/30/2019	Par Amount 1,000.00	
35) CACS Corp Action	1st Coupon Date 06/30/2020	Book Runner JOINT LEADS	
36) CF Prospectus	Security created by firm INCAPITAL LLC	Reporting TRACE	
37) CN Sec News			
38) HDS Holders			
66) Send Bond			

Callable Bonds: YTC/YTW/YTM

Settlement Date	12/30/19	Price	100.25	<input checked="" type="checkbox"/> Blend <input checked="" type="checkbox"/> Full Screen		
YTC (3134GUP61)	Date	Price	Yield	Risk	% Called \$ Called (MM)	
Yield to Maturity	06/30/2023	100.00	1.776	3.384		
Yield to Custom	12/30/2020	100.00	1.597	0.990	100.00 25.0	
Yield to Next Call	12/30/2020	100.00	1.597	0.990		
Yield to Worst Call	12/30/2020	100.00	1.597	0.990		
May be called quarterly starting 12/30/2020						
Additional Call Scenarios						
Risk-weighted Blended Average Yield to Custom			1.597			
Date	Price	Yield	Treas Crv	Spr	Adj Dur	Risk
12/30/20	100.0000	1.5970	1.523	0.074	0.988	0.990
03/30/21	100.0000	1.6479	1.547	0.101	1.231	1.234
06/30/21	100.0000	1.6805	1.572	0.109	1.474	1.478
09/30/21	100.0000	1.7049	1.596	0.109	1.715	1.719
12/30/21	100.0000	1.7223	1.621	0.102	1.956	1.961
03/30/22	100.0000	1.7367	1.625	0.111	2.195	2.200
06/30/22	100.0000	1.7474	1.630	0.117	2.433	2.439
09/30/22	100.0000	1.7568	1.635	0.122	2.670	2.677
12/30/22	100.0000	1.7641	1.640	0.124	2.907	2.914

Callable Bonds: Option Adjusted Spread

b1q64-****-X- **OPTION-ADJUSTED SPREAD ANALYSIS**
 FREDDIE MAC FHLMC 1.85 06/23 100.024/100.067 (1.824/1.779) BVAL

Calculate **Price** **OAS (bp)** **Volatility**
 (P,O,V) P) **100** **0** **-13.08** **V38.70**

Cusip / ID# 3134GUP61 Option Px Value: -1.29
 Settle **1/13/2020** Bench settle **1/13/2020** Vega: 0.00
 Spread **28.0bp vs2Y** **T 1 5/8 12/31/21 Govt@100-3 3/8 (1.570)**

2) Customize
 Curve **I111** Semi
 US on/off The Run
 Dated **1/10/2020**
 Settle **1/13/2020**
 B BLP Par Curve
 Shift **+0(bps)**

Yield Adjust

3m	1.531	-2.2
6m	1.542	-2.5
1y	1.519	-2.6
2y	1.570	0.3
3y	1.583	0.0
4y	1.614	0.2
5y	1.632	0.1
7y	1.740	0.2
10y	1.820	0.4
20y	2.128	4.3
30y	2.279	0.4

88) REFRESH

{NUM}<GO> for:
 3) Call Schedule

	OAS Method	Option Free	To Call on 12/30/2020	To Mty
12/30/20			1.466	1.850
3/30/21			-13.2	35.5
6/30/21	M Dur	2.01	0.95	3.34
9/30/21	Risk	2.02	0.95	3.34
12/30/21	Cnvx	-1.21	0.01	0.13
3/30/22				
6/30/22				
9/30/22				
12/30/22				
3/30/23				

Model L=Lognormal
 Exercise Premium **0.00**

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
 Japan 81 3 4565 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2020 Bloomberg Finance L.P.
 SN 490369 PST GMT-8:00 H215-4449-0 10-Jan-2020 15:47:58

Corporate Bond Evaluation: Price/Yield/Spread

AAPL 2.4 05/03/23 (037833AK6)				Risk	
Spread	22.10 bp	vs	5yT 1 1/2 11/30/24	Workout	OAS
Price	101.518		99-00+ 11:08:46	<input checked="" type="radio"/> M.Dur <input type="radio"/> Dur	3.198 3.199
Yield	1.930	Wst	1.709011 S/A	Risk	3.258 3.259
Wkout	05/03/2023 @	100.00	Consensus Yld 3/6	Convexity	0.121 0.121
Settle	12/27/19		12/26/19	DV 01 on 1MM	326 326
				Benchmark Risk	4.682 4.691
				Risk Hedge	696 M 695 M
				Proceeds Hedge	1,028 M
Spreads		Yield Calculations		Invoice	
1) G-Sprd	27.7	Street Convention	1.930	Face	1,000 M
2) I-Sprd	22.0	Equiv 1 /Yr	1.939	Principal	1,015,180.00
3) Basis	-3.9	Mmkt (Act/360)		Accrued (54 Days)	3,600.00
4) Z-Sprd	24.0	True Yield	1.929	Total (USD)	1,018,780.00
5) ASW	24.0	Current Yield	2.364		
6) OAS	27.9				
After Tax (Inc 40.80% CG 23.80%)				1.064	

Floating Rate Bonds: Price/Yield/Discount Margin

AAPL Float 02/09/22 (037833CN8)				M/M Equiv to Next Fix		Floater Cpn History	
Price	100.807	Settle	12/27/19	<input checked="" type="radio"/> ACT/360	<input type="radio"/> ACT/365	Date	Rate
DM (bp)	12.018645	to Wst		Price at Refix	100.752836	11/09/19	2.40138
Workout	02/09/2022	@	100.00	on 02/09/2020	44 Days	02/09/20	0.00000
		Trade	12/24/2019	Mmkt	1.936397		
Neutral Price			100.752836	Risk			
Adjusted Price			100.738134				
Adjusted Simple Margin (bp)			15.597			To 02/09/20	OAS
Adjusted Total Margin (bp)			14.171	Mod Duration		0.123	2.054
Spread For Life (bp)			12.297	Risk		0.124	2.077
				Convexity		0.000302	0.05307
				DV 01 on 1MM		12	208
Floater Information				Invoice			
Benchmark	US0003M	Assumed Rt d	1.94663	Face		1,000	M
Quoted Margin	50.00	Coupon	2.40138	Principal		1,008,070.00	
Next Pay	02/09/2020	Coupon Freq	Quarterly	Accrued (48 Days)		3,201.84	
		Refix Freq	Quarterly	Total (USD)		1,011,271.84	
Index to	02/09/2020	1.81621066	d				
Repo to	02/09/2020	1.81621					

Fixed Income Risk Evaluation

Duration (Modified vs Effective)
Dollar Value of an OI
Convexity
Option Adjusted Spread Analysis
Spread Duration

Duration Definitions

Macaulay's Duration is the present value weighted average maturity of a bond.

Modified Duration is the percentage price change of a security for a given change in yield.

And is calculated as: $\text{Macaulay Duration} / [1 + (\text{IRR}/M)]$

where: IRR is the internal rate of return.

M is the number of compounding periods per year.

Effective Duration is a duration calculation for bonds with embedded options. Effective duration takes into account that expected cash flows will fluctuate as interest rates change. The OAS Effective Duration represents the change in price for a 1% parallel shift of the OAS curve.

Bullet Security: Modified and Effective Similar

AAPL 2.4 05/03/23 (037833AK6)				Risk	
Spread	22.10 bp	vs	5y T 1 1/2 11/30/24	Workout	OAS
Price	101.518		99-00+ 11:38:54	<input checked="" type="radio"/> M.Dur <input type="radio"/> Dur	3.198 3.199
Yield	1.930	Wst	1.709011 S/A	Risk	3.258 3.259
Wkout	05/03/2023 @ 100.00	Consensus	Yld 3 6	Convexity	0.121 0.121
Settle	12/27/19		12/26/19	DV 01 on 1MM	326 326
				Benchmark Risk	4.682 4.691
				Risk Hedge	696 M 695 M
				Proceeds Hedge	1,028 M
Spreads		Yield Calculations		Invoice	
1) G-Sprd	27.7	Street Convention	1.930	Face	1,000 M
2) I-Sprd	22.1	Equiv 1 /Yr	1.939	Principal	1,015,180.00
3) Basis	-4.0	Mmkt (Act/360)		Accrued (54 Days)	3,600.00
4) Z-Sprd	24.1	True Yield	1.929	Total (USD)	1,018,780.00
15) ASW	24.1	Current Yield	2.364		
16) OAS	27.9				
After Tax (Inc 40.800 % CG 23.800 %)				1.064	

Callable Security: Modified and Effective Diverge

FHLMC 1.85 06/30/23 (3134GUP61)				Risk	
Price	100.000			Duration	0.995
Settle	12/30/19			Modified Duration	0.986
Workout	12/30/2020	@	100.00 Wst	Risk	0.986
				Convexity	0.015

FHLMC 1.85 06/30/23 (3134GUP61)				Risk	
Price	100.000			Duration	3.405
Settle	12/30/19			Modified Duration	3.374
Workout	06/30/2023	@	100.00 Mty	Risk	3.374

Callable Bonds: Option Adjusted Duration (Eff.)

b1q64-****-X- **OPTION-ADJUSTED SPREAD ANALYSIS**
 FREDDIE MAC FHLMC 1.85 06/23 100.024/100.067 (1.824/1.779) BVAL

Calculate **Price** **OAS (bp)** **Volatility**
 (P,O,V) P) 100 0 -13.08 V) 38.70

Cusip / ID# 3134GUP61 Option Px Value: -1.29
 Settle 1/13/2020 Bench settle 1/13/2020 Vega: 0.00
 Spread 28.0bp vs2Y T 1 5/8 12/31/21 Govt@100-3 3/8 (1.570)

2) Customize
 Curve I111 Semi
 US on/off The Run
 Dated 1/10/2020
 Settle 1/13/2020
 B BLP Par Curve
 Shift +0(bps)

	OAS Method	Option Free	To Call on 12/30/2020	To Mty
Yld		1.466	1.850	1.850
Sprd		-13.2	35.5	25.2
M Dur	2.01		0.95	3.34
Risk	2.02		0.95	3.34
Cnvx	-1.21		0.01	0.13

Yield Adjust

3m	1.531	-2.2
6m	1.542	-2.5
1y	1.519	-2.6
2y	1.570	0.3
3y	1.583	0.0
4y	1.614	0.2
5y	1.632	0.1
7y	1.740	0.2
10y	1.820	0.4
20y	2.128	4.3
30y	2.279	0.4

{NUM}<GO> for:
 3) Call Schedule
 12/30/20 100.00
 3/30/21 100.00
 6/30/21 100.00
 9/30/21 100.00
 12/30/21 100.00
 3/30/22 100.00
 6/30/22 100.00
 9/30/22 100.00
 12/30/22 100.00
 3/30/23 100.00

Model L=Lognormal
 Exercise Premium 0.00

88) REFRESH

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 Japan 81 3 4565 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2020 Bloomberg Finance L.P.
 SN 490369 PST GMT-8:00 H215-4449-0 10-Jan-2020 15:47:58

Callable Security: Modified vs Effective Duration

Risk	Workout	OAS
<input checked="" type="radio"/> M.Dur <input type="radio"/> Dur Risk Convexity DV ▾ 01 on 1MM Benchmark Risk Risk Hedge Proceeds Hedge	0.986 0.986 0.015 98.63 1.960 503 M 1,000 M	2.103 2.103 -1.260 210 1.963 1,071 M

Floating Rate Bonds: Spread/OAS Duration

AAPL Float 02/09/22 (037833CN8)				M/M Equiv to Next Fix	Floater Cpn History	
Price	100.807	Settle	12/27/19	<input checked="" type="radio"/> ACT/360 <input type="radio"/> ACT/365	Date	Rate
DM (bp)	12.018645	to Wst		Price at Refix	11/09/19	2.40138
Workout	02/09/2022 @ 100.00	Trade	12/24/2019	on 02/09/2020	02/09/20	0.00000
				44 Days		
Neutral Price			100.752836	Mmkt		
Adjusted Price			100.738134		1.936397	
Adjusted Simple Margin (bp)			15.597	Risk		
Adjusted Total Margin (bp)			14.171		To 02/09/20	OAS
Spread For Life (bp)			12.297	Mod Duration	0.123	2.054
				Risk	0.124	2.078
				Convexity	0.000302	0.05308
				DV 01 on 1MM	12	208

Evaluation of Bonds in Non-Static Scenarios

Cost of Carry

Scenario/Horizon Analysis

Convexity

Cost of Carry: Calculating Value

AAPL 2.4 05/03/23 (037833AK6)			
Spread	25.83 bp	vs	T 1 ⁵ / ₈ 12/15/22
Price	101.814	↻	100-04 ³ / ₄ 09:41:45
Yield	1.831	Wst	1.572654 S/A
Wkout	05/03/2023 @	100.00	Contributed Yld 3 6
Settle	01/14/20		01/13/20

FPA			
Repo Rate	1.25	Days	30
		Amt (MM)	1
Fwd Prc	101.727446	Money At	
Price Drop	0.086784	Settle	1,022,875.63
Yld Drop (bp)	1.39	Term	1,023,941.13
Constant Price		Carry P&L	867.84

Question #5

If interest rates remain unchanged during the next two years.

Which security would you prefer to own?

1. US Treasury 1 ½ Maturing 11/30/24 yielding 1.71%
2. FHLB 1.80% Maturing 11/30/24 callable 11/30/22 at 100.00

Scenario Analysis and Curve Rolldown

T 1 ½ 11/30/24	B	1,000	12/26/19	99-00 ¹ / ₄	1.710680	W	4.68		
<Add Security #2>									
<Add Security #3>									

Scenario Results

Reinvestment Rate 1.711%

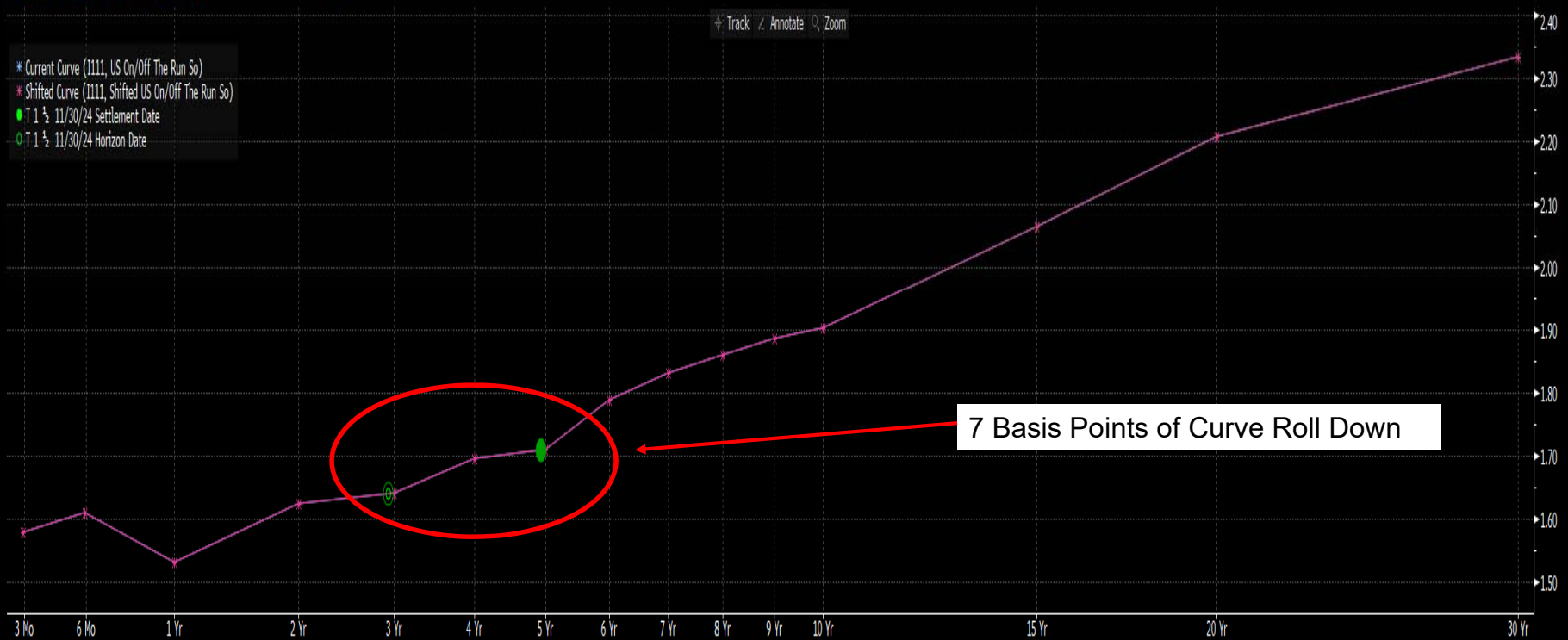
Horizon Date Multiple

Horizon 12/26/2021

Scenario Name	Total Return %	HPR %	Horizon Yield	Net P&L (USD)	B/E Yield
+ Target Horizon Yields	10				
+ Historical Yield					
- Curve Shifts (I111)	3) Edit Benchmark Curves				
Zero Shift	1.809	3.667	1.640	36,350	2.948
+10 bps Shift	1.669	3.381	1.740	33,513	2.948
Steepener	1.777	3.602	1.663	35,705	2.948
Implied Fwd Curve	1.625	3.291	1.772	32,615	2.948

Scenario Analysis and Curve Roll Down

Scenario Name Zero Shift



Convexity

When is having a more convex bond bad?

Answer: Never

Portfolio Analysis and Risk

Aggregating Risk

Monitoring Sector Concentrations

Quantifying the Impact of Yield Curve Shifts

Monitoring Current Mark-to-Market

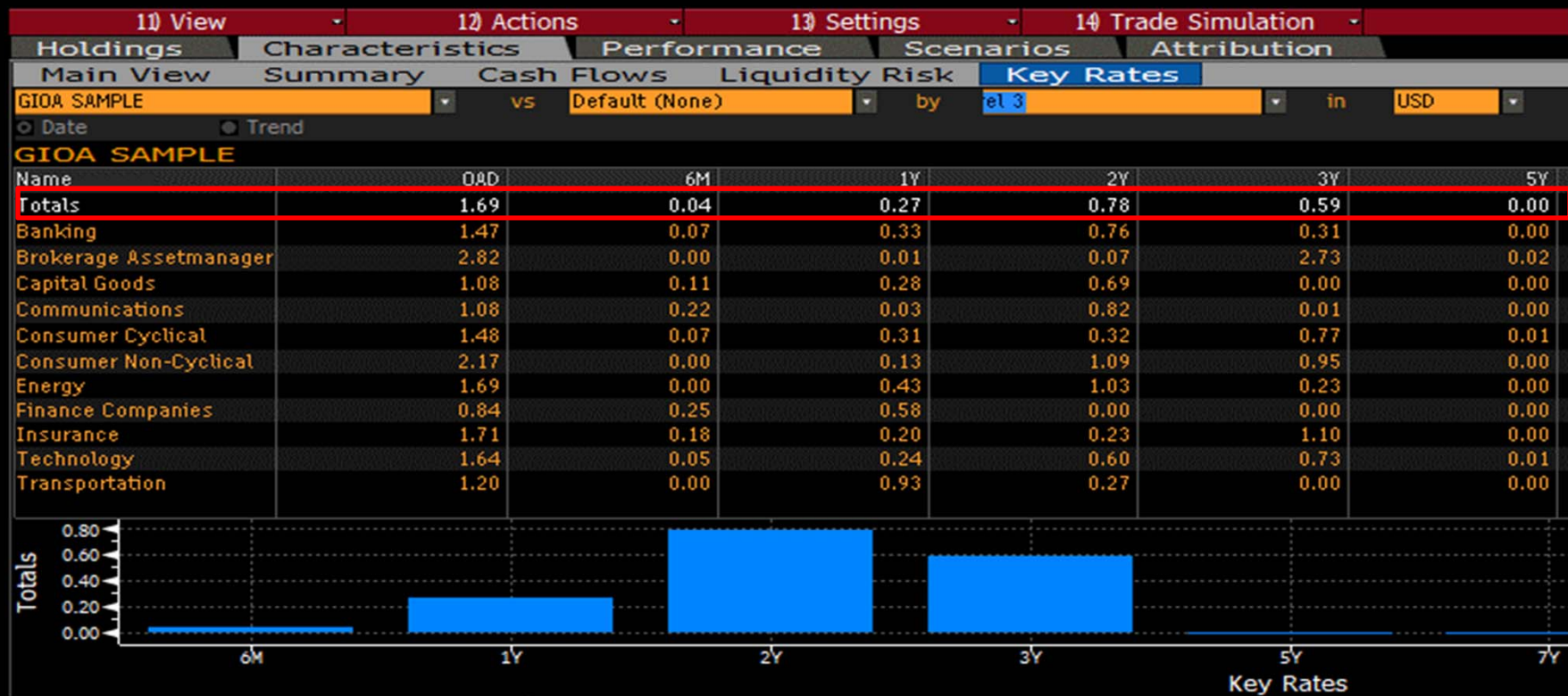
Characteristics Analysis

GIOA SAMPLE vs Default (None) by Bloomberg Ba in USD As of 12/24/19

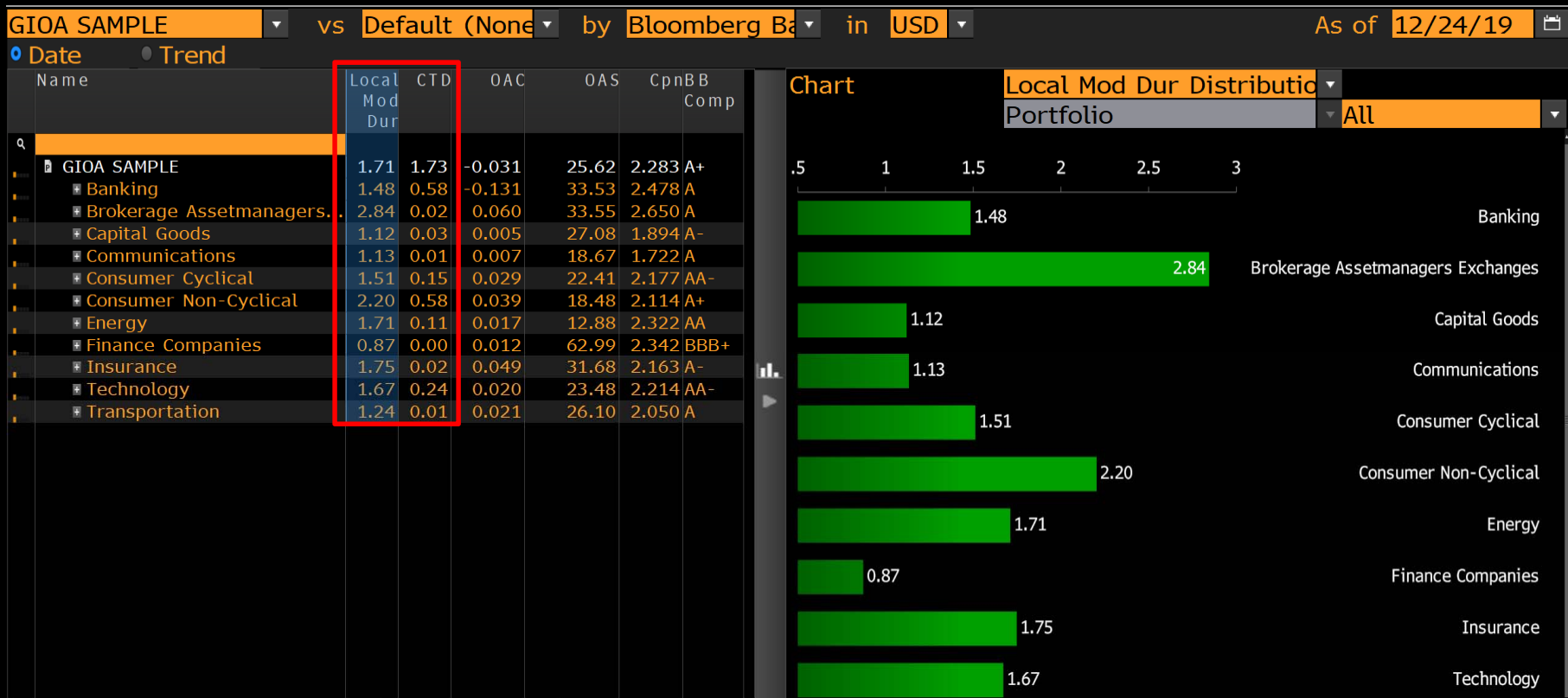
Date Trend

Name	Px Close	Wgt	Pos	Eff Mty (Yrs)	Local Yield	Local Yield to Mat	Local Mod Dur	CTD	OAC	OAS	CpnBB	Comp
GIOA SAMPLE		100.00	162,350,000.00	1.78	1.93	1.95	1.71	1.73	-0.031	25.62	2.283	A+
Banking		37.92	61,900,000.00	1.54	2.00	2.05	1.48	0.58	-0.131	33.53	2.478	A
Brokerage Assetmanagers...		0.57	900,000.00	3.00	2.01	2.03	2.84	0.02	0.060	33.55	2.650	A
Capital Goods		2.39	3,900,000.00	1.15	1.94	1.94	1.12	0.03	0.005	27.08	1.894	A-
Communications		0.55	900,000.00	1.17	1.85	1.85	1.13	0.01	0.007	18.67	1.722	A
Consumer Cyclical		9.61	15,570,000.00	1.57	1.89	1.89	1.51	0.15	0.029	22.41	2.177	AA-
Consumer Non-Cyclical		26.12	42,280,000.00	2.28	1.86	1.86	2.20	0.58	0.039	18.48	2.114	A+
Energy		6.51	10,500,000.00	1.77	1.80	1.82	1.71	0.11	0.017	12.88	2.322	AA
Finance Companies		0.55	900,000.00	0.90	2.30	2.30	0.87	0.00	0.012	62.99	2.342	BBB+
Insurance		0.99	1,600,000.00	1.82	1.98	1.98	1.75	0.02	0.049	31.68	2.163	A-
Technology		14.31	23,100,000.00	1.74	1.90	1.91	1.67	0.24	0.020	23.48	2.214	AA-
Transportation		0.49	800,000.00	1.27	1.93	1.93	1.24	0.01	0.021	26.10	2.050	A

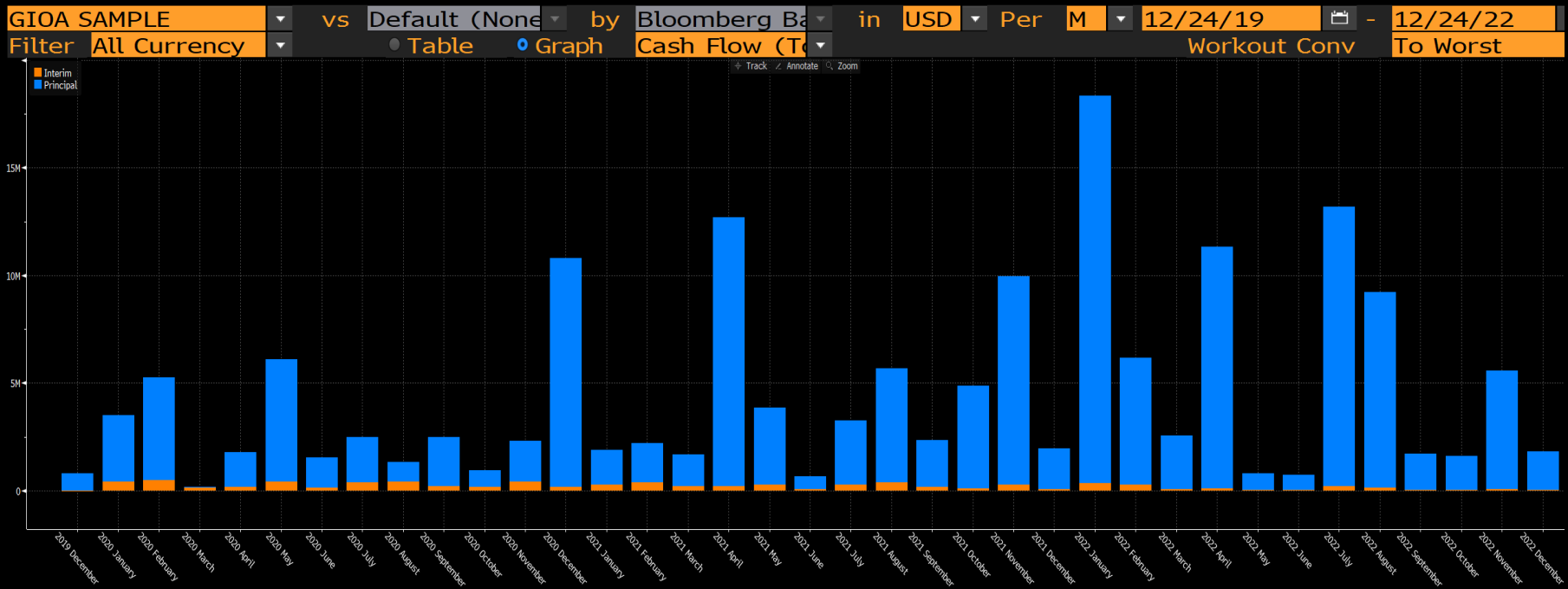
Key Rate Durations



Monitoring Portfolio Duration Risks



Cash Flow Reporting/Monitoring



Tracking Historical Performance

GIOA SAMPLE vs Default (None) by Bloomberg Ba in USD As of 12/23/19

Unit Percentage

Name	% End Wgt	Tot Rtn YTD	Tot Rtn 1D	Tot Rtn 1W	Tot Rtn 1M	Tot Rtn 1Q	Tot Rtn 1Y
GIOA SAMPLE	100.00	4.81	-0.01	0.05	0.16	0.60	5.14
Banking	38.22	4.80	-0.01	0.04	0.18	0.65	5.12
Basic Industry		1.54	0.00	0.00	0.00	0.00	2.03
Brokerage Assetmanagers...	0.56	7.14	-0.01	0.05	0.12	0.69	7.68
Capital Goods	2.38	4.03	-0.02	0.04	0.21	0.63	4.29
Communications	0.55	4.35	-0.01	0.04	0.12	0.57	4.71
Consumer Cyclical	9.57	4.20	-0.01	0.08	0.17	0.51	4.52
Consumer Non-Cyclical	25.98	5.18	-0.04	0.04	0.10	0.56	5.49
Energy	6.48	5.32	0.05	0.15	0.24	0.65	5.84
Finance Companies	0.55	6.09	0.02	-0.05	0.25	0.89	6.52
Insurance	0.98	4.54	-0.03	0.02	0.12	0.60	4.89
Technology	14.24	4.54	-0.02	0.03	0.14	0.55	4.88
Transportation	0.49	4.17	-0.03	-0.01	0.13	0.68	4.49

Portfolio Scenario Analysis

GIOA SAMPLE		vs	Default (None)	by	Bloomberg Ba	in	USD	As of 12/24/19		
Scen	Up 25bps (a)								Horizon	Instant
Name	P&L (Up 25bps (all curves))	P&L% (Up 25bps (all curves))	Stress MV (Up 25bps (all curves))	Mkt Val	Pos	% Wgt				
GIOA SAMPLE	-709,361.14	-0.43	163,013,025.86	163,722,387					100.00	
Banking	-237,147.72	-0.38	61,841,166.26	62,078,314					37.92	
AXP 2 1/4 05/05/21	-6,446.41	-0.32	2,007,038.39	2,013,485	2,000,000.00				1.23	
AXP 2.2 03/03/20	-943.85	-0.05	2,012,766.25	2,013,710	2,000,000.00				1.23	
AXP 2.7 03/03/22	-10,417.36	-0.51	2,037,264.60	2,047,682	2,000,000.00				1.25	
BAC 2 5/8 04/19/21	-8,113.10	-0.32	2,524,198.80	2,532,312	2,500,000.00				1.55	
BAC 2.503 10/21/22	-10,425.29	-0.51	2,014,147.02	2,024,572	2,000,000.00				1.24	
BK 2.05 05/03/21	-1,615.97	-0.32	500,830.24	502,446	500,000.00				0.31	
BK 2.6 02/07/22	-2,527.37	-0.49	509,233.57	511,761	500,000.00				0.31	
BK 2.95 01/29/23	-3,705.44	-0.71	515,505.95	519,211	500,000.00				0.32	
C 2 1/8 10/20/20	-1,360.14	-0.19	702,119.66	703,480	700,000.00				0.43	
C 2.1 06/12/20	-545.53	-0.11	500,026.47	500,572	500,000.00				0.31	
C 2.85 02/12/21	-785.50	-0.26	305,427.33	306,213	300,000.00				0.19	
FITB 2 1/4 06/14/21	-3,139.40	-0.35	900,768.11	903,908	900,000.00				0.55	
FITB 2.2 10/30/20	-794.97	-0.20	401,203.40	401,998	400,000.00				0.25	
JPM 2.295 08/15/21	-2,078.39	-0.23	907,181.02	909,259	900,000.00				0.56	
JPM 2.4 06/07/21	-3,081.45	-0.34	903,520.35	906,602	900,000.00				0.55	
JPM 2.972 01/15/23	-4,945.83	-0.53	923,912.28	928,858	900,000.00				0.57	
KEY 2.3 09/14/22	-5,939.92	-0.65	907,474.17	913,414	900,000.00				0.56	
MTB 2.05 08/17/20	-3,013.06	-0.15	2,012,722.25	2,015,735	2,000,000.00				1.23	
PNC 2 05/19/20	-787.50	-0.10	800,820.56	801,608	800,000.00				0.49	
PNC 2 1/2 01/22/21	-19,037.57	-0.25	7,705,179.68	7,724,217	7,600,000.00				4.72	
PNC 2 5/8 02/17/22	-38,914.75	-0.50	7,726,331.48	7,765,246	7,600,000.00				4.74	
PNC 2.15 04/29/21	-2,240.52	-0.32	701,812.62	704,053	700,000.00				0.43	
PNC 2.45 07/28/22	-4,323.00	-0.60	710,430.69	714,754	700,000.00				0.44	
PNC 2.55 12/09/21	-3,721.44	-0.46	806,788.56	810,510	800,000.00				0.50	