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Don‘t Let Accounting Practices Hamstring Your Portfolio

California Debt and Investment Advisory Commission
Public Funds Investment: Strategy in Practice
January 25, 2023 – Montebello, CA

Without reflection, we go blindly on our way, creating more unintended consequences, and failing to achieve anything useful. – *Margaret Wheatley*

Investment Accounting Survey

What basis of accounting are you using?
- Accrual Basis (60%)
- Cash Basis (21%)
- Modified Approach (19%)

The basis used was determined by:
- Investment personnel (23%)
- Accounting/Finance personnel (75%)
- Other (2%)

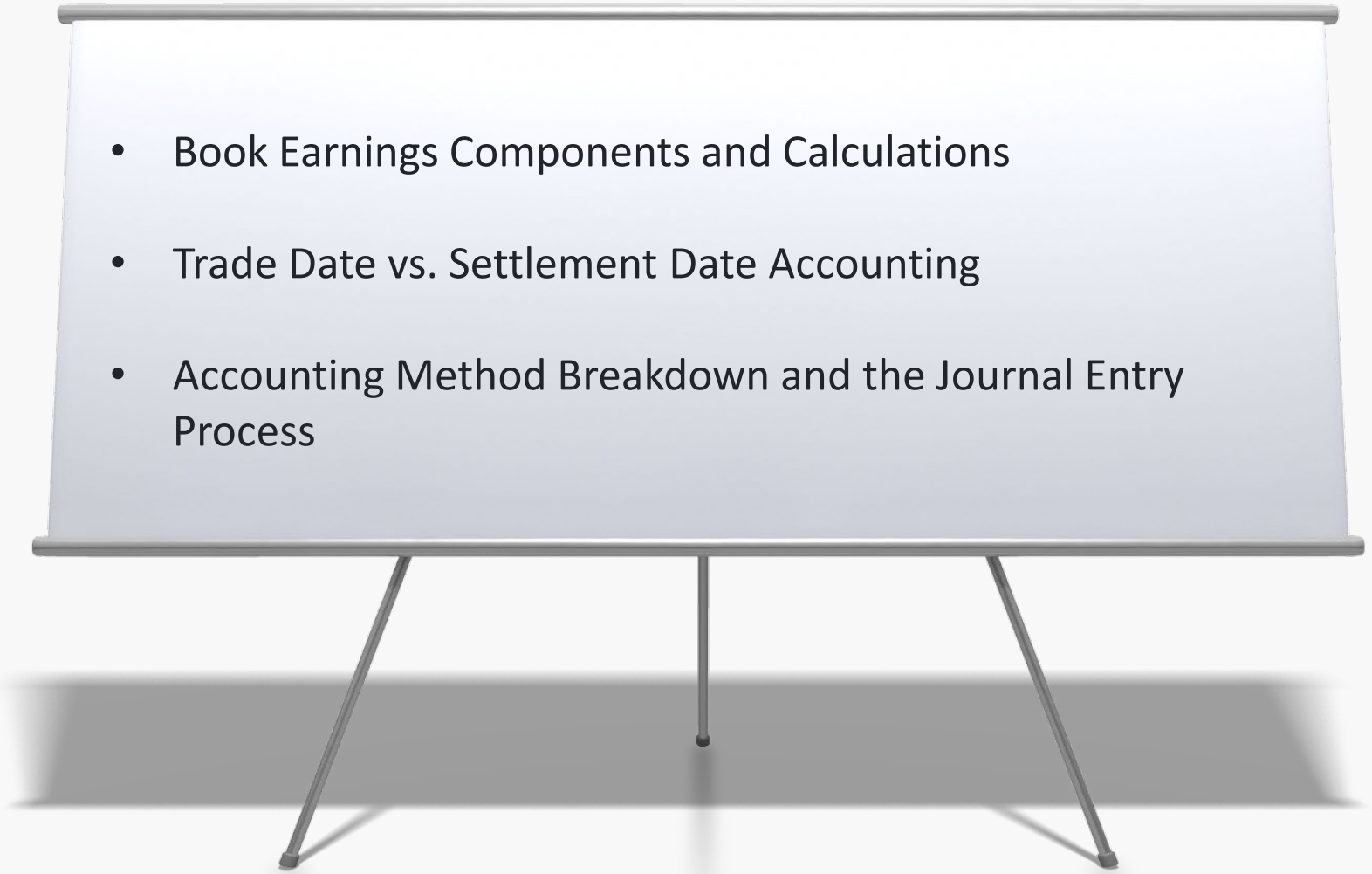
Has it always been the basis?
- Yes (88%)
- No (12%)

Can the municipality buy a bond at a premium?
- Yes (95%)
- No (5%)

If the municipality can buy a bond at a premium, do you amortize the premium over the life of the bond or simply take a loss at maturity?
- Amortize over the life of the bond (90%)
- Loss at maturity (10%)

Can the municipality buy a bond with accrued interest?
- Yes (95%)
- No (5%)

Topics For Discussion



Day Count Conventions

What are they?

A day-count convention has two components:

1) The first component determines the number of days in a month which in total equals the total number of days in the accrual period

2) The second component defines the total days in a year.

So a day-count convention is presented in the form of “number of days in the accrual period/number of days in the year.

Security Information			
Mkt Iss	US DOMESTIC		
Ctry/Reg	US	Currency	USD
Rank	Unsecured	Series	
Coupon	4.375000	Type	Fixed
Cpn Freq	S/A		
Day Cnt	30/360	Iss Price	99.18275
Maturity	09/13/2024		

Day Count Conventions

30/360

In the 30/360 method, each month in the accrual period is assumed to have 30 days from the beginning accrual date to the end date, but the number of days in the year is assumed to be 360. This method is most commonly used for Agencies, Supras, Corporates and ABS/MBS.

Actual/360

In the Actual/360 method, the actual number of days from the beginning accrual date to the end date is used for the accrual period, but the number of days in the year is assumed to be 360. This method is commonly used by Money-Market instruments.

Actual/365

In the Actual/365 method, the actual number of days from the beginning accrual date to the end date is used for the accrual period, but the number of days in the year is assumed to be 365. This method is commonly used by term Certificates of Deposit.

Actual/Actual

In the Actual/Actual method, the actual number of days from the beginning accrual date to the end date is used for the accrual period and the actual number of actual days in a year. This method is commonly used by U.S Treasuries.

How Bonds Pay

Treasury Bills/Discount Notes/Commercial Paper
- Bills are typically sold at a discount from the par amount (par amount is also called face value)
- When a bill matures, you are paid its par amount. The difference between what you paid and the par amount is your “interest”.
- Day count is Actual/360

Treasury Bonds
- Bonds typically pay interest every six months
- Day Count is Actual/Actual

Government Sponsored Enterprises (GSEs)
- Bonds usually pay interest every six months
- Day count is 30/360

Corporate Medium Term Notes
- Bonds usually pay interest every six months
- Day count is 30/360

Municipals
- Bonds usually pay interest every six months
- Day count is 30/360

Mortgage-Backed and Asset-Backed Securities
- MBS pay monthly
- Day count is 30/360

Calculating Daily Accrual

30/360

Represents 30 days for each month and 360 days per year

Example (Using Excel) – LONG FIRST COUPON

5MM - FHLB 4.50 12/11/2026

1) Calculate Accrual Days in Period

30/360

First Settlement Date	Par Amount
11/7/2022	5,000,000.00

CF Date	Accrual Days in Period
6/11/2023	=DAYS360(A13,A15) =214

2) Total Days in Period = 180

30/360

First Settlement Date	Par Amount	Coupon
11/7/2022	5,000,000.00	4.500%

CF Date	Accrual Days in Period	Total Days in Period
6/11/2023	214	180

3) Calculate Daily Accrual Rate

30/360

First Settlement Date	Par Amount	Coupon
11/7/2022	5,000,000.00	4.500%

CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate
6/11/2023	214	180	2	=($B$8*($C$8/D10))/C10 =$625.00

4) Calculate Total Payout for Period

30/360

First Settlement Date	Par Amount	Coupon
11/7/2022	5,000,000.00	4.500%

CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate	Interest Expected
6/11/2023	214	180.00	2	625.00000	=E15*B15 =$133,750.00

Calculating Daily Accrual

Repeat Process for Each Period

1) Calculate Accrual Days in Period

30/360

First Settlement Date	Par Amount
11/7/2022	5,000,000.00

CF Date	Accrual Days in Period
6/11/2023	214
12/11/2023	=DAYS360(A15,A16) =180

2) Total Days in Period = 180

30/360

First Settlement Date	Par Amount	Coupon
11/7/2022	5,000,000.00	4.500%

CF Date	Accrual Days in Period	Total Days in Period
6/11/2023	214	180
12/11/2023	180	180

3) Calculate Daily Accrual Rate

30/360

First Settlement Date	Par Amount	Coupon
11/7/2022	5,000,000.00	4.500%

CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate
6/11/2023	214	180	2	625.00000
12/11/2023	180	180	2	=($B$13*($C$13/D16))/C16 =$625.00

4) Calculate Total Payout for Period

30/360

First Settlement Date	Par Amount	Coupon
11/7/2022	5,000,000.00	4.500%

CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate	Interest Expected
6/11/2023	214	180	2	625.00000	133,750.00
12/11/2023	180	180	2	625.00000	=E16*B16 =$112,500.00

Calculating Daily Accrual

Example Continued(Using Excel)
5MM - FHLB 4.50 12/11/2026

30/360

First Settlement Date	Par Amount	Coupon			
11/7/2022	5,000,000.00	4.500%			
CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate	Interest Expected
6/11/2023	214	180	2	625.00000	133,750.00
12/11/2023	180	180	2	625.00000	112,500.00
6/11/2024	180	180	2	625.00000	112,500.00
12/11/2024	180	180	2	625.00000	112,500.00
6/11/2025	180	180	2	625.00000	112,500.00
12/11/2025	180	180	2	625.00000	112,500.00
6/11/2026	180	180	2	625.00000	112,500.00
12/11/2026	180	180	2	625.00000	112,500.00

Bloomberg CSHF Function
5MM - FHLB 4.50 12/11/2026

FHLB 4 ½ 12/11/26 Corp | 1) Export | 97) Settings | Cash Flow Analysis

101.792/102.005 3.998/3.940 BVAL@ 08:15 | 95) Buy | 96) Sell

BBID ZN1662412

2) Cash Flows | 3) Present Values | 4) Distressed Analysis

Price 102.005000 Settlement 11/07/22 Issue 11/07/2022 Maturity 12/11/2026

Yield 3.963380 to Worst 12/11/26 @ 100.00000 Face Amt 5000 M

Payment Date	Interest	Principal	Total
06/11/2023	133,750.00	0.00	133,750.00
12/11/2023	112,500.00	0.00	112,500.00
06/11/2024	112,500.00	0.00	112,500.00
12/11/2024	112,500.00	0.00	112,500.00
06/11/2025	112,500.00	0.00	112,500.00
12/11/2025	112,500.00	0.00	112,500.00
06/11/2026	112,500.00	0.00	112,500.00
12/11/2026	112,500.00	5,000,000.00	5,112,500.00

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Calculating Daily Accrual

30/360 EOM

EOM designation means bonds have pay dates that equate to the end of the month
Non-EOM designation means bonds have the same day for each pay period (most common)

**For Days360 calc, in Accrual Days in Period, you must add two days to 2/28 pay and one day to 2/29 date if previous period was EOM*
**For Non-EOM, you must add two days if previous pay date was 2/28 and one day if it was 2/29.*

Example (Using Excel)

5MM – C 3.80 07/30/2023

2) Cash Flows | 3) Present Values | 4) Distressed Analysis

Price 100.000000 Settlement 06/30/22 Issue 06/30/2022 Maturity 07/30/2023
Yield 3.800000 to Worst 07/30/23 @ 100.00000 Face Amt 5000 M

Payment Date	Interest	Principal	Total
07/31/2022	15,833.33	0.00	15,833.33
08/31/2022	15,833.33	0.00	15,833.33
09/30/2022	15,833.33	0.00	15,833.33
10/31/2022	15,833.33	0.00	15,833.33
11/30/2022	15,833.33	0.00	15,833.33
12/31/2022	15,833.33	0.00	15,833.33
01/31/2023	15,833.33	0.00	15,833.33
02/28/2023	15,833.33	0.00	15,833.33
03/31/2023	15,833.33	0.00	15,833.33
04/30/2023	15,833.33	0.00	15,833.33
05/31/2023	15,833.33	0.00	15,833.33
06/30/2023	15,833.33	0.00	15,833.33
07/30/2023	15,833.33	5,000,000.00	5,015,833.33

CF Date	Accrual Days in Period
1/31/2023	30
2/28/2023	=DAYS360(A15,A16)+2 =30

Calculating Daily Accrual

ACT/ACT

Represents Actual days for each month and Actual days per year. This method requires one additional calculation for Total Days in Period (these are static values under the other methods)

Example (Using Excel)
5MM – T 3.875 12/31/2027 (US Treasury)

1) Calculate Accrual Days in Period

ACT/ACT	
First Nominal Period Date	First Settlement Date
12/31/2022	12/31/2022
CF Date	Accrual Days in Period
6/30/2023	=A31-B29 =181

2) Calculate Total Days in Period

ACT/ACT		
First Nominal Period Date	First Settlement Date	Par Amount
12/31/2022	12/31/2022	5,000,000.00
CF Date	Accrual Days in Period	Total Days in Period
6/30/2023	181	=A31-A29 =181

3) Calculate Daily Accrual Rate

ACT/ACT				
First Nominal Period Date	First Settlement Date	Par Amount	Coupon	
12/31/2022	12/31/2022	5,000,000.00	3.875%	
CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate
6/30/2023	181	181	2	=($C$29*($D$29/D31))/C31 =$535.22099

4) Calculate Total Payout for Period

ACT/ACT					
First Nominal Period Date	First Settlement Date	Par Amount	Coupon		
12/31/2022	12/31/2022	5,000,000.00	3.875%		
CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate	Interest Expected
6/30/2023	181	181	2	535.22099	=E31*B31 =96,875.00

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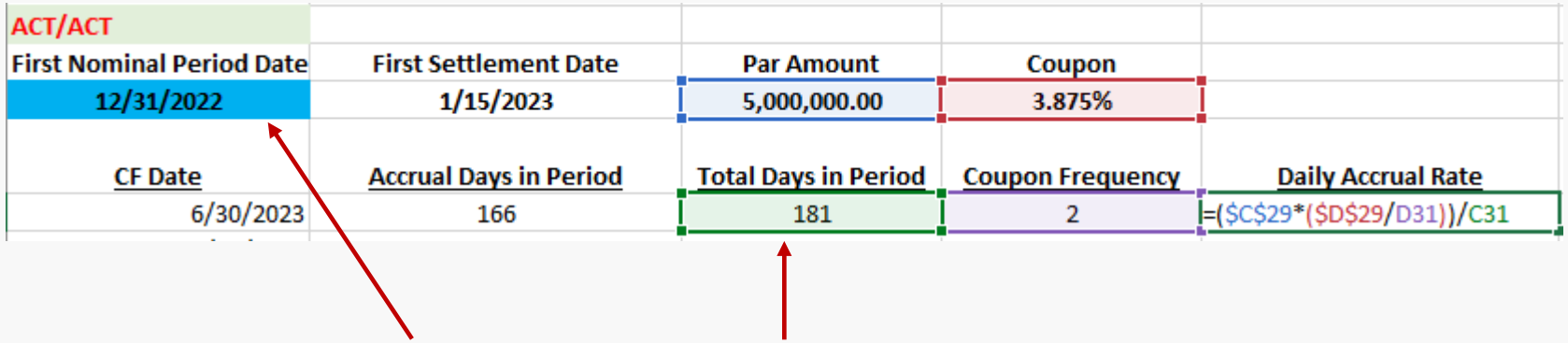
Calculating Daily Accrual

ACT/ACT

long/Short first Coupon



ACT/ACT				
First Nominal Period Date	First Settlement Date	Par Amount	Coupon	
12/31/2022	1/15/2023	5,000,000.00	3.875%	
CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate
6/30/2023	166	181	2	=($C$29*($D$29/D31))/C31

If the bond has a long or short first coupon (First Settlement Date does not create equal period), you must use the Nominal Period date that would make the first cash flow an equal period. For example, if our First Settlement Date was instead 01/15/2023, we would use the Nominal Period Date input of 12/31/2022 in the Total Days in Period calculation. This is because 12/31/2022 creates the equal period to the first cash flow date 0f 6/30/2023.

Calculating Daily Accrual

Example Continued (Using Excel)

5MM – T 3.875 12/31/2027

ACT/ACT					
First Nominal Period Date	First Settlement Date	Par Amount	Coupon		
12/31/2022	12/31/2022	5,000,000.00	3.875%		
CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate	Interest Expected
6/30/2023	181	181	2	535.22099	96,875.00
12/31/2023	184	184	2	526.49457	96,875.00
6/30/2024	182	182	2	532.28022	96,875.00
12/31/2024	184	184	2	526.49457	96,875.00
6/30/2025	181	181	2	535.22099	96,875.00
12/31/2025	184	184	2	526.49457	96,875.00
6/30/2026	181	181	2	535.22099	96,875.00
12/31/2026	184	184	2	526.49457	96,875.00
6/30/2027	181	181	2	535.22099	96,875.00
12/31/2027	184	184	2	526.49457	96,875.00

Bloomberg CSHF Function

5MM – T 3.875 12/31/2027

BBID 91282CGC9

2) Cash Flows | 3) Present Values | 4) Distressed Analysis

Price 100-20¼ Settlement 01/11/23 Issue 01/03/2023 Maturity 12/31/2027

Yield 3.734075 to Worst 12/31/27 @ 100.00000 Face Amt 5000 M

Payment Date	Interest	Principal	Total
06/30/2023	96,875.00	0.00	96,875.00
12/31/2023	96,875.00	0.00	96,875.00
06/30/2024	96,875.00	0.00	96,875.00
12/31/2024	96,875.00	0.00	96,875.00
06/30/2025	96,875.00	0.00	96,875.00
12/31/2025	96,875.00	0.00	96,875.00
06/30/2026	96,875.00	0.00	96,875.00
12/31/2026	96,875.00	0.00	96,875.00
06/30/2027	96,875.00	0.00	96,875.00
12/31/2027	96,875.00	5,000,000.00	5,096,875.00

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Calculating Daily Accrual

ACT/360

Represents Actual days for each month and 360 days per year

Example (Using Excel)

5MM - NORHNY 3.99 05/10/2023

1) Calculate Accrual Days in Period

ACT/360	
First Settlement Date	Par Amount
9/20/2022	5,000,000.00
CF Date	Accrual Days in Period
5/10/2023	=A47-A45 =232

2) Total Days in Period = 180

ACT/360		
First Settlement Date	Par Amount	Coupon
9/20/2022	5,000,000.00	3.990%
CF Date	Accrual Days in Period	Total Days in Period
5/10/2023	232	180

3) Calculate Daily Accrual Rate

ACT/360				
First Settlement Date	Par Amount	Coupon		
9/20/2022	5,000,000.00	3.990%		
CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate
5/10/2023	232	180	2	=($B$45*($C$45/D47))/C47

=$554.16667

4) Calculate Total Payout for Period

ACT/360					
First Settlement Date	Par Amount	Coupon			
9/20/2022	5,000,000.00	3.990%			
CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate	Interest Expected
5/10/2023	232	180	2	554.16667	=E47*B47

=$128,566.67

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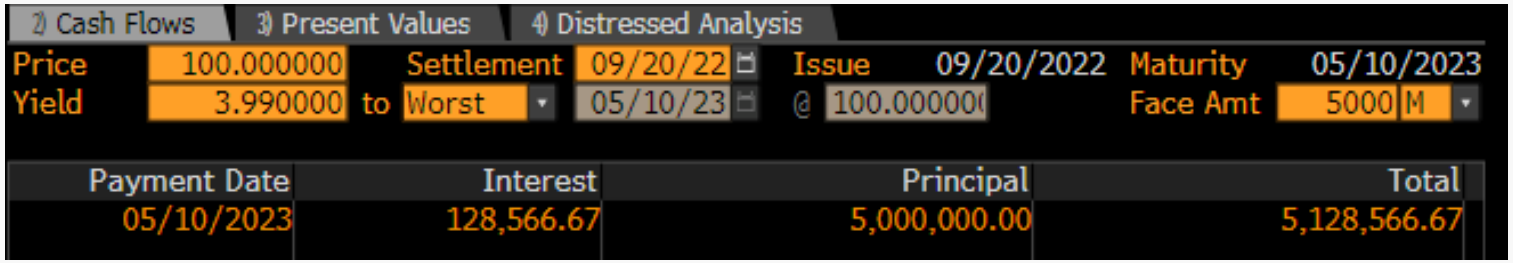
Calculating Daily Accrual

Example Continued (Using Excel)
5MM - NORHNY 3.99 05/10/2023

ACT/360					
First Settlement Date	Par Amount	Coupon			
9/20/2022	5,000,000.00	3.990%			
CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate	Interest Expected
5/10/2023	232	180	2	554.16667	128,566.67

Bloomberg CSHF Function
5MM - NORHNY 3.99 05/10/2023



Calculating Daily Accrual

ACT/365

Represents Actual days for each month and 365 days per year

Example (Using Excel)
5MM - HSBC USA 1.30 05/07/2025
(HSBC Bank Negotiable CD)

1) Calculate Accrual Days in Period

ACT/365	
First Settlement Date	Par Amount
5/7/2020	5,000,000.00
CF Date	Accrual Days in Period
11/7/2020	=A63-A61 =184

2) Total Days in Period = 182.5

ACT/365		
First Settlement Date	Par Amount	Coupon
5/7/2020	5,000,000.00	1.300%
CF Date	Accrual Days in Period	Total Days in Period
11/7/2020	184	182.5

3) Calculate Daily Accrual Rate

ACT/365				
First Settlement Date	Par Amount	Coupon		
5/7/2020	5,000,000.00	1.300%		
CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate
11/7/2020	184	182.5	2	=($B$61*($C$61/D63))/C63

=$178.08219

4) Calculate Total Payout for Period

ACT/365					
First Settlement Date	Par Amount	Coupon			
5/7/2020	5,000,000.00	1.300%			
CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate	Interest Expected
11/7/2020	184	182.5	2	178.08219	=E63*B63

=$32,767.12

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Calculating Daily Accrual

Example Continued (Using Excel)

5MM – HSBC USA 1.30 05/07/2025

ACT/365					
First Settlement Date	Par Amount	Coupon			
5/7/2020	5,000,000.00	1.300%			
CF Date	Accrual Days in Period	Total Days in Period	Coupon Frequency	Daily Accrual Rate	Interest Expected
11/7/2020	184	182.5	2	178.08219	32,767.12
5/7/2021	181	182.5	2	178.08219	32,232.88
11/7/2021	184	182.5	2	178.08219	32,767.12
5/7/2022	181	182.5	2	178.08219	32,232.88
11/7/2022	184	182.5	2	178.08219	32,767.12
5/7/2023	181	182.5	2	178.08219	32,232.88
11/7/2023	184	182.5	2	178.08219	32,767.12
5/7/2024	182	182.5	2	178.08219	32,410.96
11/7/2024	184	182.5	2	178.08219	32,767.12
5/7/2025	181	182.5	2	178.08219	32,232.88

Bloomberg CSHF Function

5MM – HSBC USA 1.30 05/07/2025

2) Cash Flows | 3) Present Values | 4) Distressed Analysis

Price 94.071000 Settlement 05/07/20 Issue 05/07/2020 Maturity 05/07/2025

Yield 2.570583 to Maturity 05/07/25 @ 100.00000 Face Amt 5000 M

Payment Date	Interest	Principal	Total
11/07/2020	32,767.12	0.00	32,767.12
05/07/2021	32,232.88	0.00	32,232.88
11/07/2021	32,767.12	0.00	32,767.12
05/07/2022	32,232.88	0.00	32,232.88
11/07/2022	32,767.12	0.00	32,767.12
05/07/2023	32,232.88	0.00	32,232.88
11/07/2023	32,767.12	0.00	32,767.12
05/07/2024	32,410.96	0.00	32,410.96
11/07/2024	32,767.12	0.00	32,767.12
05/07/2025	32,232.88	5,000,000.00	5,032,232.88

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Amortization & Accretion

- “Due to price volatility, valuing investments at their current price is necessary to provide a realistic measure of a portfolio’s true liquidation value”
- GFOA recommends that state and local government officials responsible for investment portfolio reporting determine the market value of all securities in the portfolio on at least a quarterly basis
- It is recommended that the written report include the market value, book value, and unrealized gain or loss of the securities in the portfolio

Amortization & Accretion

- Amortization and Marked-to-Market Reporting
  - Market Closing Price at June 30, 2021: 104-23 5/8 (104.73828125)
  - Market Value: $10,473,828.13
  - June 30, 2021:
    - Original Cost: $10,540,625.00
    - Amortized Cost (approximately): $10,483,356.04
    - Market Value: $10,473,828.13
    - *Unrealized* Loss at 6.30.21: ($10,473,828.13 - $10,483,356.04 = $9,527.91)
  - Market Closing Price at June 30, 2022: 99- 24 3/16 (99.755859375)
  - Market Value: $9,975,585.94
  - June 30, 2022
    - Original Cost: $10,540,625.00
    - Amortized Cost (approximately): $10,241,922.10
    - Market Value: $9,975,585.94
    - *Unrealized* Loss at 6.30.22: ($9,975,585.94 – 10,241,922.10 = $266,336.16)

Amortization & Accretion

Constant Yield/Effective Interest Method

This method utilizes the book yield and book value at purchase to create the amortization or accretion for each period through the Purchase to Worst (Workout) date.

This method is more complex than straight-line and is usually done using sophisticated programs.

Period Beg Book Value X Purchase Yield X Time in Period (where full year =1)
5,153,879.42 X .0175 X .5 = $45,096.44

Example (Using Excel)
5MM - FHLB 2.55 05/30/2023
Workout Date = Maturity Date

J	K	L	M	N	O
	Purchase Price	Principal Paid	Settlement Date	Coupon	Purchase Yield
	103.2848149381	5,164,240.75	2/20/2019	2.550%	1.750%
CF Date	Beg Book Value	Interest Earned on Yield	Actual CF Paid	Amount Amortized	Ending Book Value
5/30/2019	5,164,240.75	25,055.34	35,416.67	10,361.33	5,153,879.42
11/30/2019	5,153,879.42	45,096.44	63,750.00	18,653.56	5,135,225.87
5/30/2020	5,135,225.87	44,933.23	63,750.00	18,816.77	5,116,409.09
11/30/2020	5,116,409.09	44,768.58	63,750.00	18,981.42	5,097,427.67
5/30/2021	5,097,427.67	44,602.49	63,750.00	19,147.51	5,078,280.16
11/30/2021	5,078,280.16	44,434.95	63,750.00	19,315.05	5,058,965.12
5/30/2022	5,058,965.12	44,265.94	63,750.00	19,484.06	5,039,481.06
11/30/2022	5,039,481.06	44,095.46	63,750.00	19,654.54	5,019,826.52
5/30/2023	5,019,826.52	43,923.48	63,750.00	19,826.52	5,000,000.00

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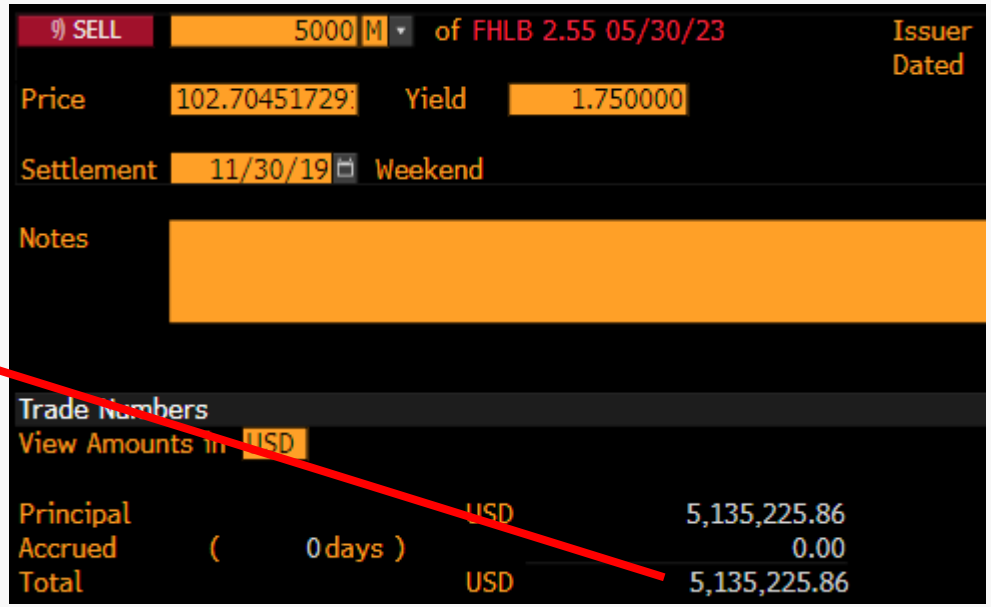
Amortization & Accretion

Constant Yield/Effective Interest Method

Example (Using Excel)
5MM - FHLB 2.55 05/30/2023
Workout Date = Maturity Date

J	K	L	M	N	O
	Purchase Price	Principal Paid	Settlement Date	Coupon	Purchase Yield
	103.2848149381	5,164,240.75	2/20/2019	2.550%	1.750%
CF Date	Beg Book Value	Interest Earned on Yield	Actual CF Paid	Amount Amortized	Ending Book Value
5/30/2019	5,164,240.75	25,055.34	35,416.67	10,361.33	5,153,879.42
11/30/2019	5,153,879.42	45,096.44	63,750.00	18,653.56	5,135,225.87
5/30/2020	5,135,225.87	44,933.23	63,750.00	18,816.77	5,116,409.09
11/30/2020	5,116,409.09	44,768.58	63,750.00	18,981.42	5,097,427.67
5/30/2021	5,097,427.67	44,602.49	63,750.00	19,147.51	5,078,280.16
11/30/2021	5,078,280.16	44,434.95	63,750.00	19,315.05	5,058,965.12
5/30/2022	5,058,965.12	44,265.94	63,750.00	19,484.06	5,039,481.06
11/30/2022	5,039,481.06	44,095.46	63,750.00	19,654.54	5,019,826.52
5/30/2023	5,019,826.52	43,923.48	63,750.00	19,826.52	5,000,000.00



***Slight rounding errors could be present between Excel and Bloomberg**

Amortization & Accretion

Straight Line Method

This method simply takes the total amount to be amortized or accreted and applies an even amount across each period being measured

This method is easy to compute and is the primary method utilized by public entities.

Total to be Amortized /
Days360(Settlement Date , Workout Date)
164,240.75 / 1540 = $106.6498377

Example (Using Excel)
5MM - FHLB 2.55 05/30/2023
Workout Date = Maturity Date

J	K	L	M	N
	Purchase Price	**Principal Paid**	**Total to be Amortized**	**Settlement Date**
	103.2848149381	**5,164,240.75**	**164,240.75**	**2/20/2019**
CF Date	**Days in Period**	**Annual Interest Days**	**Daily Amortization Rate**	**Amount Amortized**
5/30/2019	100	360	106.6498377	10,664.98
11/30/2019	180	360	106.6498377	19,196.97
5/30/2020	180	360	106.6498377	19,196.97
11/30/2020	180	360	106.6498377	19,196.97
5/30/2021	180	360	106.6498377	19,196.97
11/30/2021	180	360	106.6498377	19,196.97
5/30/2022	180	360	106.6498377	19,196.97
11/30/2022	180	360	106.6498377	19,196.97
5/30/2023	180	360	106.6498377	19,196.97

Amortization & Accretion

Selecting Amortization/Accretion Dates (Best Practices)

Bullet Structures (No Call Option or Busted Call)

** Amortize/Accrete to the maturity date.*

Callable Structures (Call Option is Present)

**Premium callables amortize to the next call date.*

**Discount callables accrete to maturity.*

Step Coupons Structures (Callable or Non-Callable)

**Amortize/Accrete to date corresponding to the yield-to-worst. This could be next call, next step, maturity or something in-between. YTC function in Bloomberg will give this date so you should obtain it from your broker.*

Floating Rates (SOFR, Prime, Fed Funds, 3MoCMT, etc.)

**Floaters should generally be amortized to maturity as that is typically how DM/Yield is reported. Other methods could be applied (to index reset, to coupon date)*

ABS/MBS

**To Weighted Avg Life principal window. In theory, it is best practice to adjust amortization rate each period by the adjusted principal window provided by changing prepayment rate speeds (labor intensive to say the least).*

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Trade Date vs Settlement Date Accounting

What Are They?

The trade date of a security is the date the agreement is entered into where elements of the transaction including the security description, quantity, price, and delivery terms are set.

The date the securities must be delivered and payment received is referred to as the settlement date.

The method you choose affects when the purchase or redemption of a security is recorded and whether a receivables (redemption) or payables (purchase) account must be created.

Purchase 6MM of a security on 08/09/2022 @ 100			
Bond Settles on 08/11/2022			
		Debit	**Credit**
Trade Date Accounting:			
8/9/2022	Bond Account	6,000,000.00	
	Payables Acccount		6,000,000.00
8/11/2022	Payables Acccount	6,000,000.00	
	Cash Account		6,000,000.00
Settlement Date Accounting:			
8/11/2022	Bond Account	6,000,000.00	
	Cash Account		6,000,000.00

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Trade Date vs Settlement Date Accounting

Does It Matter What Method You Choose?

GASB has made it pretty clear that Trade Date Accounting is the method that public entities should be using.

6.28 Display in the Change Statement

6.28.1. *Q*—Should investment transactions be accounted for based on the trade date (the date the order to buy or sell the investment is placed) or the settlement date (the date that the cash and investment instrument are exchanged)? ~~(Q&A31-66) [Amended 2013]~~

A—Investment transactions should be accounted for based on the trade date. The trade date is the date on which the transaction occurred and is the date the government is exposed to (or released from) the rights and obligations of the ownership of the instrument. This guidance is consistent with paragraph 20 of Statement 25, as amended, and paragraph 18 of Statement 67.

However, under FASB, which maintains U.S. GAAP, ASC 320 allows either method unless you are a depository or lending institution, broker-dealer, or investment company (CFA GIPS follows suit by mandating GIPS compliant firms to using Trade Date).

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Trade Date vs Settlement Date Accounting

Does It Matter What Method You Choose?

Despite the GASB advisory, Settlement Date accounting is still utilized by many public institutions.

The justification for this may come from several fronts.

1) U.S. GAAP does not require Trade Date accounting for general institutions not falling under the financial institution category.

2) Trade Date accounting roots are in mark-to-market and measuring potential value changes.
   - This can occur in securities classified as Trading or Available For Sale under U.S. GAAP, however public institutions generally carry securities as a Held-to-Maturity category.

   - GASB 31 requires mark to market only once a year so valuation changes would likely not be recorded for each purchase or redemption regardless of method.

3) Financial regulators have sought better technology to minimize time between trade date and settlement date. In 2017 they moved most transactions from T+3 to T+2 and there are talks that may move to T+1 in the near future. This would create virtually no benefit to Trade Date accounting.

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Accounting Methods

<u>Full Accrual Method (Accrued Interest – Amortization/Accretion)</u>
This accounting method measures interest as it is earned and amortizes/accretes any premiums or discounts paid at purchase.

- Primary method used in both corporate and government accounting
- Represents the most accurate way to measure return
- Labor intensive requiring more journal entries than all other methods
- Can cause accounting headaches when dealing with pool/participant payouts. (e.g. can't payout cash you haven't received yet)

Accounting Methods

Full Accrual Basis (ACT/ACT) Security
Purchase 3MM of T 1.50 10/31/2024 @ 101.617
Settlement on 12/31/2021 - Dec 2021 Entries

Account	Date Posted	Debit	Credit	Activity	Notes
Treasury (Asset)	12/31/2021	3,000,000.00		Investment Purchase	
Purchased Premium (Asset)	12/31/2021	48,510.00		Premium Paid at Purchase	
Purchased Accrued Interest (Asset)	12/31/2021	7,582.87		Accrued Paid at Purchase	
Cash (Asset)	12/31/2021		3,056,092.87	Investment Purchase	
Accrued Interest (Asset)	12/31/2021	124.31		Accrued Interest	Daily Rate = 124.30939
Interest Earnings (Income)	12/31/2021		124.31	Accrued Interest	Daily Rate = 124.30939
Amortization Expense (Income)	12/31/2021	46.87		Amortization	Daily Rate = 46.86956
Treasury (Asset)	12/31/2021		46.87	Amortization	Daily Rate = 46.86956

Full Accrual Basis (ACT/ACT) Security
First Coupon Since Purchase - May 2022 Entries
4/30/22 Pay Date is a Saturday

Account	Date Posted	Debit	Credit	Activity	
Cash (Asset)	5/2/2022	22,500.00		Interest Income Payment	4/30/22 Is a Saturday
Accrued Interest (Asset)	5/2/2022		14,917.13	Interest Income Received	4/30/22 Is a Saturday
Purchased Accrued Interest (Asset)	5/2/2022		7,582.87	Interest Income - Purchase Adjustment	4/30/22 Is a Saturday
Accrued Interest (Asset)	5/31/2022	3,790.76		Accrued Interest	Daily Rate = 122.28261
Interest Earnings (Income)	5/31/2022		3,790.76	Accrued Interest	Daily Rate = 122.28261
Amortization Expense (Income)	5/31/2022	1,452.96		Amortization	Daily Rate = 46.86956
Treasury (Asset)	5/31/2022		1,452.96	Amortization	Daily Rate = 46.86956

Full Accrual Basis (ACT/ACT) Security
Redemption on 10/31/2024 - Oct 2024 Entries

Account	Date Posted	Debit	Credit	Activity	
Cash (Asset)	10/31/2024	3,000,000.00		Investment Maturity	
Treasury (Asset)	10/31/2024		3,000,000.00	Investment Maturity	
Cash (Asset)	10/31/2024	22,500.00		Interest Income Payment	
Accrued Interest (Asset)	10/31/2024		22,500.00	Interest Income Received	
Accrued Interest (Asset)	10/31/2024	3,790.76		Accrued Interest	Daily Rate = 122.28261
Interest Earnings (Income)	10/31/2024		3,790.76	Accrued Interest	Daily Rate = 122.28261
Amortization Expense (Income)	10/31/2024	1,452.96		Amortization	Daily Rate = 46.86956
Treasury (Asset)	10/31/2024		1,452.96	Amortization	Daily Rate = 46.86956

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Accounting Methods

<u>Modified Accrual Method (Accrued Interest – No Amortization/Accretion)</u>
This accounting method measures interest as it is earned and does not amortize/accrete any premiums or discounts paid at purchase.

- Decreases journal entries with removal of amortization/accretion
- Will force fund to take gain or loss at redemption for premium or discount paid
- Creates constraints to not buy premiums to avoid big losses at redemption
- Pools can be gamed by participants to avoid months with heavy redemptions
- Can create a volatile return number month over month
- Can cause accounting headaches when dealing with pool/participant payouts. (e.g. can't payout cash you haven't received yet)

Accounting Methods

Modified Accrual Basis (ACT/ACT) Security
Purchase 3MM of T 1.50 10/31/2024 @ 101.617
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Account	Date Posted	Debit	Credit	Activity	Notes
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Modified Accrual Basis (ACT/ACT) Security
Redemption on 10/31/2024 - Oct 2024 Entries

Account	Date Posted	Debit	Credit	Activity	
Cash (Asset)	10/31/2024	3,000,000.00		Investment Maturity	
Treasury (Asset)	10/31/2024		3,000,000.00	Investment Maturity	
Realized Losses (Income)	10/31/2024	48,510.00		Realized Loss at Redemption	
Purchased Premium (Asset)	10/31/2024		48,510.00	Remaining Premium	
Cash (Asset)	10/31/2024	22,500.00		Interest Income Payment	
Accrued Interest (Asset)	10/31/2024		22,500.00	Interest Income Received	
Accrued Interest (Asset)	10/31/2024	3,790.76		Accrued Interest	Daily Rate = 122.28261
Interest Earnings (Income)	10/31/2024		3,790.76	Accrued Interest	Daily Rate = 122.28261

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Accounting Methods

<u>Modified Accrual Method (Cash Interest – Amortization/Accretion Included)</u>
This accounting method measures interest as it is paid and does amortize/accrete any premiums or discounts paid at purchase.

- Decreases journal entries with removal of accrued interest
- Purchased interest is usually counted against current month earnings
- Creates constraints to not buy secondary issues that have purchase accrued
- Pools can be gamed by participants avoiding low cash payment months
- Can create a volatile return number month over month
- Makes it easy to handle pool/participant payouts

Accounting Methods

Modified Cash Basis (ACT/ACT) Security
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Settlement on 12/31/2021 - Dec 2021 Entries

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Cash (Asset)	12/31/2021		3,056,092.87	Investment Purchase	
Interest Earnings (Income)	12/31/2021	7,582.87		Earnings Loss at Purchase	
Purchased Accrued Interest (Asset)	12/31/2021		7,582.87	Remaining Purchase Accrued	
Amortization Expense (Income)	12/31/2021	46.87		Amortization	Daily Rate = 46.86956
Treasury (Asset)	12/31/2021		46.87	Amortization	Daily Rate = 46.86956

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Accounting Methods

Cash Method (Cash Interest – No Amortization/Accretion)
This accounting method measures interest as it is paid and does not amortize/accrete any premiums or discounts paid at purchase.

- Easiest method for JE with removal of accrued interest and amortization/accretion entries
- Purchased interest is usually counted against current month earnings
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Cash (Asset)	12/31/2021		3,056,092.87	Investment Purchase	
Interest Earnings (Income)	12/31/2021	7,582.87		Earnings Loss at Purchase	
Purchased Accrued Interest (Asset)	12/31/2021		7,582.87	Remaining Purchase Accrued	

Cash Basis (ACT/ACT) Security
First Coupon Since Purchase - May 2022 Entries
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Cash (Asset)	10/31/2024	22,500.00		Interest Income Payment	
Interest Earnings (Income)	10/31/2024		22,500.00	Interest Income Received	

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Accounting Methods

Method Selection Definitely Matters

A few months back an account approached me with a peculiar problem. They were looking to do a trade of a full faith and credit bond (Treasury) out around the 1.5yr mark.

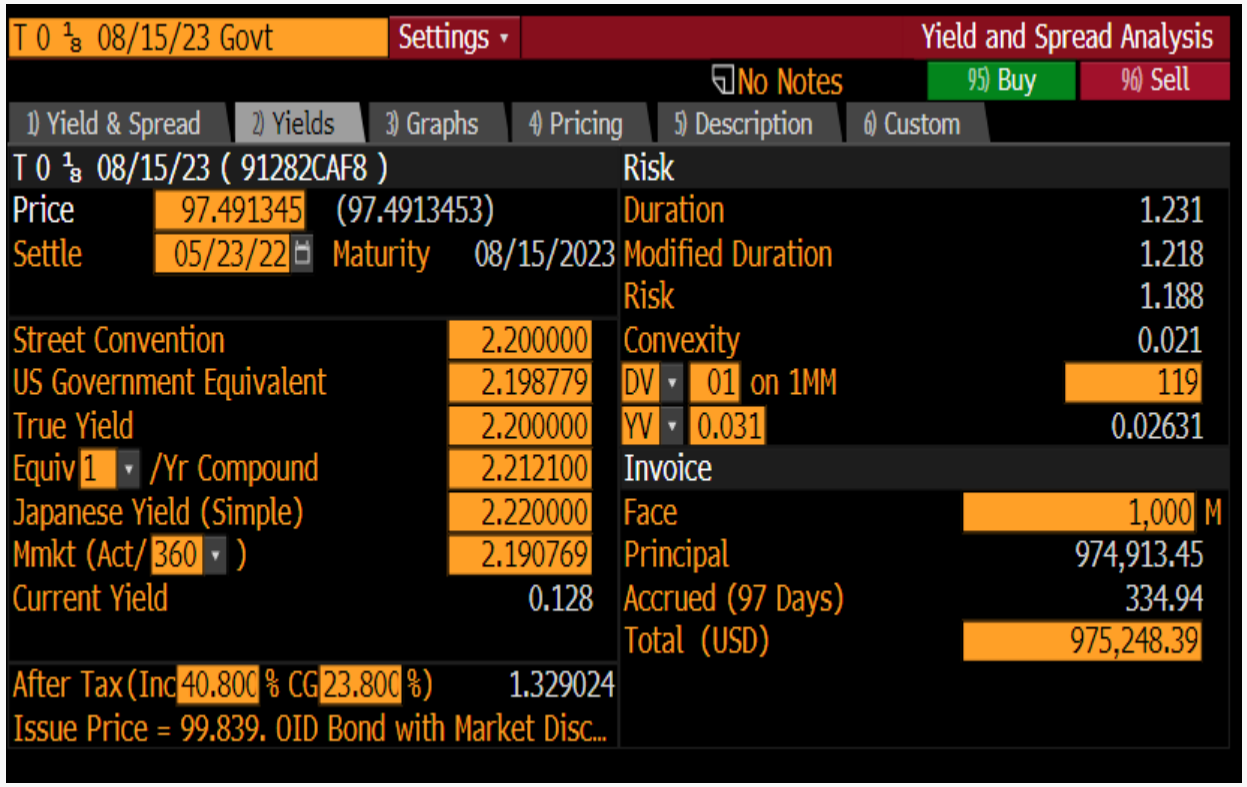
Doesn't sound too complicated, but in this case the account could not buy a bond with accrued interest and they could not buy a bond at a premium. Either component would create a negative hit to earnings as any accrued paid goes against that month's earnings and premiums will be reflected as losses at redemption.

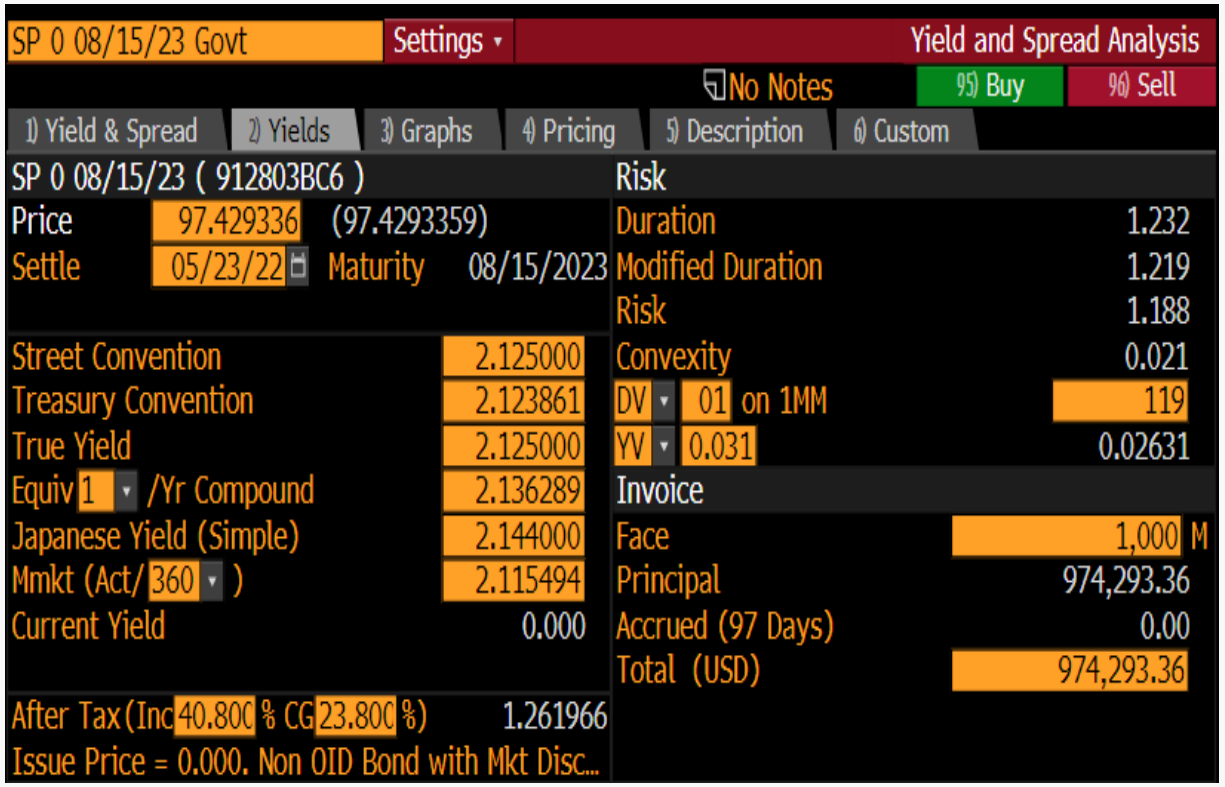
These constraints knocked out the ability to buy a coupon bearing Treasury (all had accrued interest factors) and we couldn't do a zero coupon bill that long. This left us with only being able to buy a Principal Strip (Separate Trading of Registered Interest and Principal of Securities).

The client was forced to buy a lower yielding asset that is less liquid all because of arbitrary accounting policies put in place.

To be fair, this was not the investment manager's fault as they were only working around the constraints placed on them by others.

Accounting Methods





The account stands to miss out on tens of thousands per year in interest all because of this policy.

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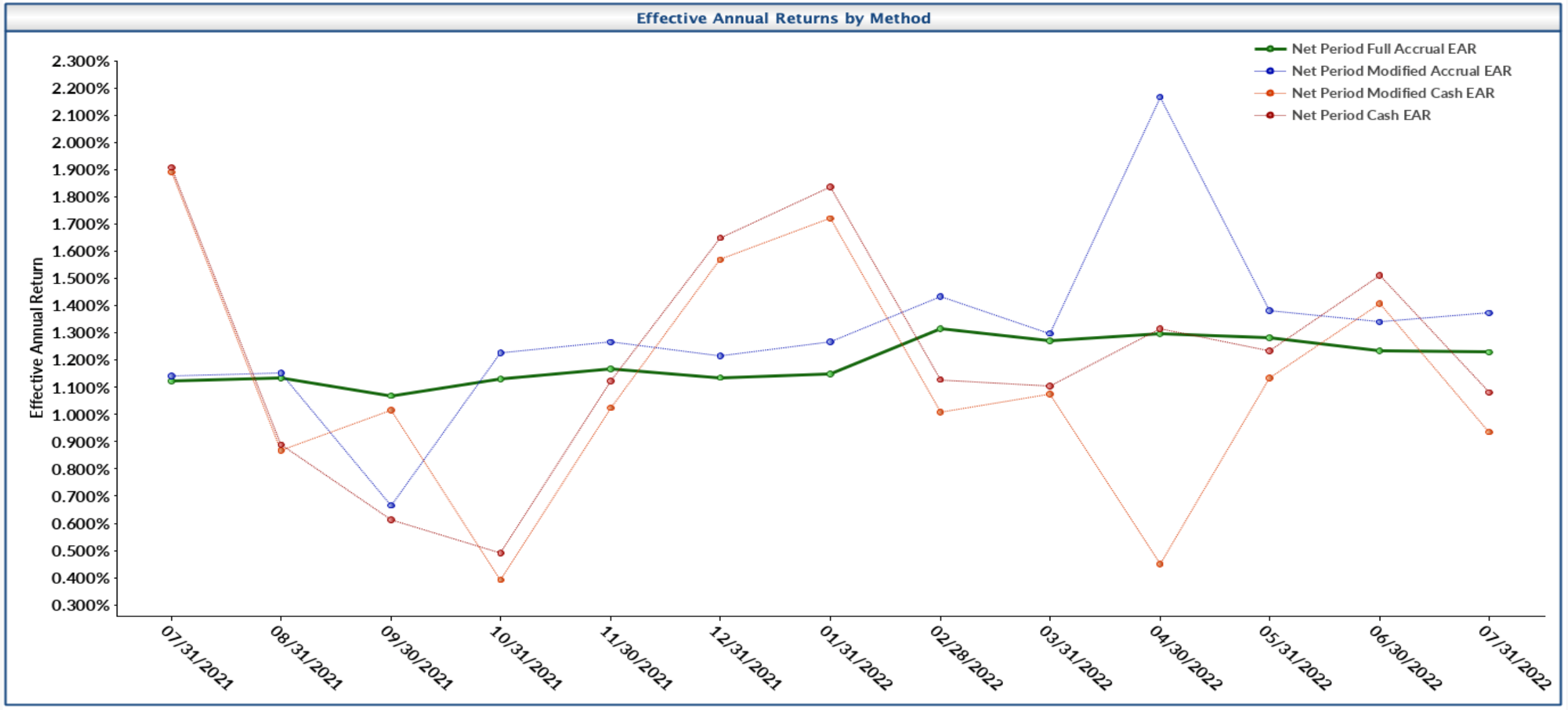
Accounting Methods



Summary

- Methodology has a significant impact on Treasury's ability to function appropriately
- Strive to develop a working relationship between accounting and treasury departments
- "It's just how we do it" is not an out to just keep doing what you are doing
- If you operate under any method besides full accrual, understand the tradeoffs and consider advocating for a change
- If you don't know what is happening in your organization, then do some research. You may be surprised to see your expectations differ from reality.

Thank You!

If you have any questions or comments please reach out and we would be happy to discuss.

Thank you for attending!

Disclosure

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All calculations and results presented are for discussion purposes only and should not be used for making calculations and/or decisions. The data in this presentation is unaudited.

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