Accounting for Investments: Part 2

GIOA Webinar

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

Topics for Discussion

- Book Earnings Components and Calculations
- Trade Date vs. Settlement Date Accounting
- Accounting Method Breakdown and the Journal Entry Process

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/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.

Calculating Daily Accrual

30/360

Represents 30 days for each month and 360 days per year.

Example (Using Excel)

5MM - FHLB 2.55 05/30/2023

1) Calculate Daily Accrual

	A	B	C	D	E
1	First Settlement Date	Par Amount	Coupon		
2	2/20/2019	5,000,000.00	2.55%		
3	CF Date	Days in Period	Annual Interest Days	Coupon Frequency	Daily Accrual Rate
4	5/30/2019	100	360	2	=B2*(C2/C4)

=$354.16667

2) Calculate Days in Period and Total Accrual/Payout for Period

	A	B
1	First Settlement Date	Par Amount
2	2/20/2019	5,000,000.00
3	CF Date	Days in Period
4	5/30/2019	=DAYS360(A2,A4)

	A	B	C	D	E	F
1	First Settlement Date	Par Amount	Coupon			
2	2/20/2019	5,000,000.00	2.55%			
3	CF Date	Days in Period	Annual Interest Days	Coupon Frequency	Daily Accrual Rate	Interest Expected
4	5/30/2019	100	360	2	354.1666667	=E4*B4

=$35,416.67

Calculating Daily Accrual

Example Continued(Using Excel)
5MM - FHLB 2.55 05/30/2023

Repeat Process For Each Period

	A	B	C	D	E
1	First Settlement Date	Par Amount	Coupon		
2	2/20/2019	5,000,000.00	2.55%		
3	CF Date	Days in Period	Annual Interest Days	Coupon Frequency	Daily Accrual Rate
4	5/30/2019	100	360	2	354.1666667
5	11/30/2019	180	360	2	=B2*(C2/C5)

=$354.16667

	A	B
1	First Settlement Date	Par Amount
2	2/20/2019	5,000,000.00
3	CF Date	Days in Period
4	5/30/2019	100
5	11/30/2019	=DAYS360(A4,A5)

	A	B	C	D	E	F
1	First Settlement Date	Par Amount	Coupon			
2	2/20/2019	5,000,000.00	2.55%			
3	CF Date	Days in Period	Annual Interest Days	Coupon Frequency	Daily Accrual Rate	Interest Expected
4	5/30/2019	100	360	2	354.1666667	35,416.67
5	11/30/2019	180	360	2	354.1666667	=E5*B5

=$63,750.00

Calculating Daily Accrual

Example Continued(Using Excel)
5MM - FHLB 2.55 05/30/2023

	A	B	C	D	E	F
1	First Settlement Date	Par Amount	Coupon			
2	2/20/2019	5,000,000.00	2.55%			
3	CF Date	Days in Period	Annual Interest Days	Coupon Frequency	Daily Accrual Rate	Interest Expected
4	5/30/2019	100	360	2	354.1666667	35,416.67
5	11/30/2019	180	360	2	354.1666667	63,750.00
6	5/30/2020	180	360	2	354.1666667	63,750.00
7	11/30/2020	180	360	2	354.1666667	63,750.00
8	5/30/2021	180	360	2	354.1666667	63,750.00
9	11/30/2021	180	360	2	354.1666667	63,750.00
10	5/30/2022	180	360	2	354.1666667	63,750.00
11	11/30/2022	180	360	2	354.1666667	63,750.00
12	5/30/2023	180	360	2	354.1666667	63,750.00

Bloomberg CSHF Function
5MM - FHLB 2.55 05/30/2023

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

Price 100.000000 Settlement 02/20/19 Issue 02/20/2019 Maturity 05/30/2023
Yield 2.550492 to Maturity 05/30/23 @ 100.00000 Face Amt 5000 M

Payment Date	Interest	Principal	Total
05/30/2019	35,416.67	0.00	35,416.67
11/30/2019	63,750.00	0.00	63,750.00
05/30/2020	63,750.00	0.00	63,750.00
11/30/2020	63,750.00	0.00	63,750.00
05/30/2021	63,750.00	0.00	63,750.00
11/30/2021	63,750.00	0.00	63,750.00
05/30/2022	63,750.00	0.00	63,750.00
11/30/2022	63,750.00	0.00	63,750.00
05/30/2023	63,750.00	5,000,000.00	5,063,750.00

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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, 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

	A	B
1	Last CF Date	Par Amount
2	1/31/2023	5,000,000.00
3	CF Date	Days in Period
4	2/28/2023	=DAYS360(A2,A4)

=28

	A	B
1	Last CF Date	Par Amount
2	1/31/2023	5,000,000.00
3	CF Date	Days in Period
4	2/28/2023	=DAYS360(A2,A4)+2

=30

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Calculating Daily Accrual

ACT/360

Most commonly used for Money Markets. Yankee CD's (Bills, Discos and CP will also likely be ACT/360 but there is no coupon so no interest calc necessary. You will need this calc type for accretion info only)

Represents Actual days for each month and 360 days per year. ***For ACT/365, Annual Interest Days=365***

Example (Using Excel)

5MM - NORHNY 3.99 05/10/2023 (Nordea Bank NY Yankee CD Pays at Maturity)

1)

	A	B	C	D	E
1	First Settlement Date	Par Amount	Coupon		
2	9/20/2022	5,000,000.00	3.99%		
3	CF Date	Days in Period	Annual Interest Days	Coupon Frequency	Daily Accrual Rate
4	5/10/2023	232	360	2	=B2*(C2/C4)

=$554.16667

2)

	A	B
1	First Settlement Date	Par Amount
2	9/20/2022	5,000,000.00
3	CF Date	Days in Period
4	5/10/2023	=A4-A2

	A	B	C	D	E	F
1	First Settlement Date	Par Amount	Coupon			
2	9/20/2022	5,000,000.00	3.99%			
3	CF Date	Days in Period	Annual Interest Days	Coupon Frequency	Daily Accrual Rate	Interest Expected
4	5/10/2023	232	360	2	554.1666667	=E4*B4

=128,566.67

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Calculating Daily Accrual

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

	A	B	C	D	E	F
1	First Settlement Date	Par Amount	Coupon			
2	9/20/2022	5,000,000.00	3.99%			
3	CF Date	Days in Period	Annual Interest Days	Coupon Frequency	Daily Accrual Rate	Interest Expected
4	5/10/2023	232	360	2	554.1666667	128,566.67

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

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

Price 100.000000 Settlement 09/20/22 Issue 09/20/2022 Maturity 05/10/2023
Yield 3.990000 to Worst 05/10/23 @ 100.00000 Face Amt 5000 M

Payment Date	Interest	Principal	Total
05/10/2023	128,566.67	5,000,000.00	5,128,566.67

Calculating Daily Accrual

ACT/ACT

Convention mainly used for Treasury securities with coupons.
Represents Actual days for each month and Actual days per year.
**Since coupon is split evenly between periods, we don't actually need to know number of days in the year*

Example (Using Excel)
5MM - T 2.875 10/31/2023

	A	B
1	First Settlement Date	Par Amount
2	10/31/2018	5,000,000.00
3	CF Date	Days in Period
4	4/30/2019	=A4-A2

	A	B	C	D
1	First Settlement Date	Par Amount	Coupon	
2	10/31/2018	5,000,000.00	2.875%	
3	CF Date	Days in Period	Coupon Frequency	Daily Accrual Rate
4	4/30/2019	181	2	=(B2*(C2/C4))/B4

=$397.09945

	A	B	C	D	E
1	First Settlement Date	Par Amount	Coupon		
2	10/31/2018	5,000,000.00	2.875%		
3	CF Date	Days in Period	Coupon Frequency	Daily Accrual Rate	Interest Expected
4	4/30/2019	181	2	397.09945	=D4*B4

=71,875.00

Calculating Daily Accrual

Example Continued(Using Excel)
5MM - T 2.875 10/31/2023

	A	B	C	D	E
1	**First Settlement Date**	**Par Amount**	**Coupon**		
2	**10/31/2018**	**5,000,000.00**	**2.875%**		
3	**CF Date**	**Days in Period**	**Coupon Frequency**	**Daily Accrual Rate**	**Interest Expected**
4	4/30/2019	181	2	397.09945	71,875.00
5	10/31/2019	184	2	390.62500	71,875.00
6	4/30/2020	182	2	394.91758	71,875.00
7	10/31/2020	184	2	390.62500	71,875.00
8	4/30/2021	181	2	397.09945	71,875.00
9	10/31/2021	184	2	390.62500	71,875.00
10	4/30/2022	181	2	397.09945	71,875.00
11	10/31/2022	184	2	390.62500	71,875.00
12	4/30/2023	181	2	397.09945	71,875.00
13	10/31/2023	184	2	390.62500	71,875.00

Bloomberg CSHF Function
5MM - T 2.875 10/31/2023

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

Price 100-00 Settlement 02/20/19 Issue 10/31/2018 Maturity 10/31/2023
Yield 2.874445 to Maturity 10/31/23 @ 100.00000 Face Amt 5000 M

Payment Date	Interest	Principal	Total
04/30/2019	71,875.00	0.00	71,875.00
10/31/2019	71,875.00	0.00	71,875.00
04/30/2020	71,875.00	0.00	71,875.00
10/31/2020	71,875.00	0.00	71,875.00
04/30/2021	71,875.00	0.00	71,875.00
10/31/2021	71,875.00	0.00	71,875.00
04/30/2022	71,875.00	0.00	71,875.00
10/31/2022	71,875.00	0.00	71,875.00
04/30/2023	71,875.00	0.00	71,875.00
10/31/2023	71,875.00	5,000,000.00	5,071,875.00

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Amortization and 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

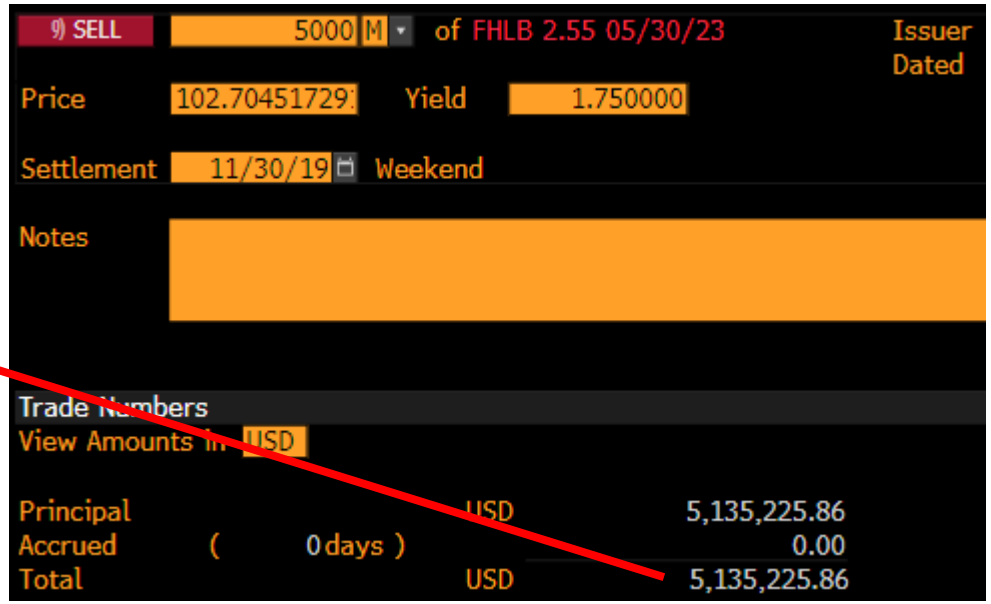
J	K	L	M	N	O
	Purchase Price	**Principal Paid**	**Settlement Date**	**Coupon**	**Purchase Yield**
	103.2848149381	**5,164,240.75**	**2/20/2019**	**2.550%**	**1.750%**
CF Date	**Beg Book Value**	**Interest Earned on Yield**	**Actual CF Paid**	**Amount Amortized**	**Ending Book Value**
5/30/2019	5,164,240.75	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

Amortization and 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 and 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 and Accretion

Selecting Amortization/Accretion Dates

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 Note on 8/9/2022 @ 100			
Bond settles on 8/11/2022			
Trade Date Accounting:			
8/9/22	Debit Bond Account	$6,000,000	
	Credit Payables Account		$6,000,000
8/11/22	Debit Payables Account	$6,000,000	
	Credit Cash Account		$6,000,000
Settlement Date Accounting:			
8/11/22	Debit Bond Account	$6,000,000	
	Credit Cash Account		$6,000,000

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).

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
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

Modified 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

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
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	
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

Modified Cash 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
Interest Earnings (Income)	5/2/2022		22,500.00	Interest Income Received	4/30/22 Is a Saturday
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

Modified Cash 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	
Interest Earnings (Income)	10/31/2024		22,500.00	Interest Income Received	
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>Cash Method (Cash Interest – No Amortization/Accretion)</u>
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
- Will force fund to take gain or loss at redemption for premium or discount paid
- Creates constraints to not buy secondary issues that have purchase accrued
- Creates constraints to not buy premiums to avoid big losses at redemption
- Pools can be gamed by participants avoiding low cash payment months
- Pools can be gamed by participants to avoid months with heavy redemptions
- Can create a volatile return number month over month
- Makes it easy to handle pool/participant payouts.

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Accounting Methods

Cash 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	
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					
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
Interest Earnings (Income)	5/2/2022		22,500.00	Interest Income Received	4/30/22 Is a Saturday
Cash 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	
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

T 0 ⅛ 08/15/23 Govt | Settings | Yield and Spread Analysis

No Notes | 95) Buy | 96) Sell

1) Yield & Spread | 2) Yields | 3) Graphs | 4) Pricing | 5) Description | 6) Custom

T 0 ⅛ 08/15/23 (91282CAF8)

Price	97.491345 (97.4913453)		
Settle	05/23/22	Maturity	08/15/2023
Street Convention	2.200000		
US Government Equivalent	2.198779		
True Yield	2.200000		
Equiv 1 /Yr Compound	2.212100		
Japanese Yield (Simple)	2.220000		
Mmkt (Act/ 360)	2.190769		
Current Yield	0.128		

After Tax (Inc 40.800 % CG 23.800 %) 1.329024

Issue Price = 99.839. OID Bond with Market Disc...

Risk	
Duration	1.231
Modified Duration	1.218
Risk	1.188
Convexity	0.021
DV 01 on 1MM	119
YV 0.031	0.02631
Invoice	
Face	1,000 M
Principal	974,913.45
Accrued (97 Days)	334.94
Total (USD)	975,248.39

SP 0 08/15/23 Govt | Settings | Yield and Spread Analysis

No Notes | 95) Buy | 96) Sell

1) Yield & Spread | 2) Yields | 3) Graphs | 4) Pricing | 5) Description | 6) Custom

SP 0 08/15/23 (912803BC6)

Price	97.429336 (97.4293359)		
Settle	05/23/22	Maturity	08/15/2023
Street Convention	2.125000		
Treasury Convention	2.123861		
True Yield	2.125000		
Equiv 1 /Yr Compound	2.136289		
Japanese Yield (Simple)	2.144000		
Mmkt (Act/ 360)	2.115494		
Current Yield	0.000		

After Tax (Inc 40.800 % CG 23.800 %) 1.261966

Issue Price = 0.000. Non OID Bond with Mkt Disc...

Risk	
Duration	1.232
Modified Duration	1.219
Risk	1.188
Convexity	0.021
DV 01 on 1MM	119
YV 0.031	0.02631
Invoice	
Face	1,000 M
Principal	974,293.36
Accrued (97 Days)	0.00
Total (USD)	974,293.36

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

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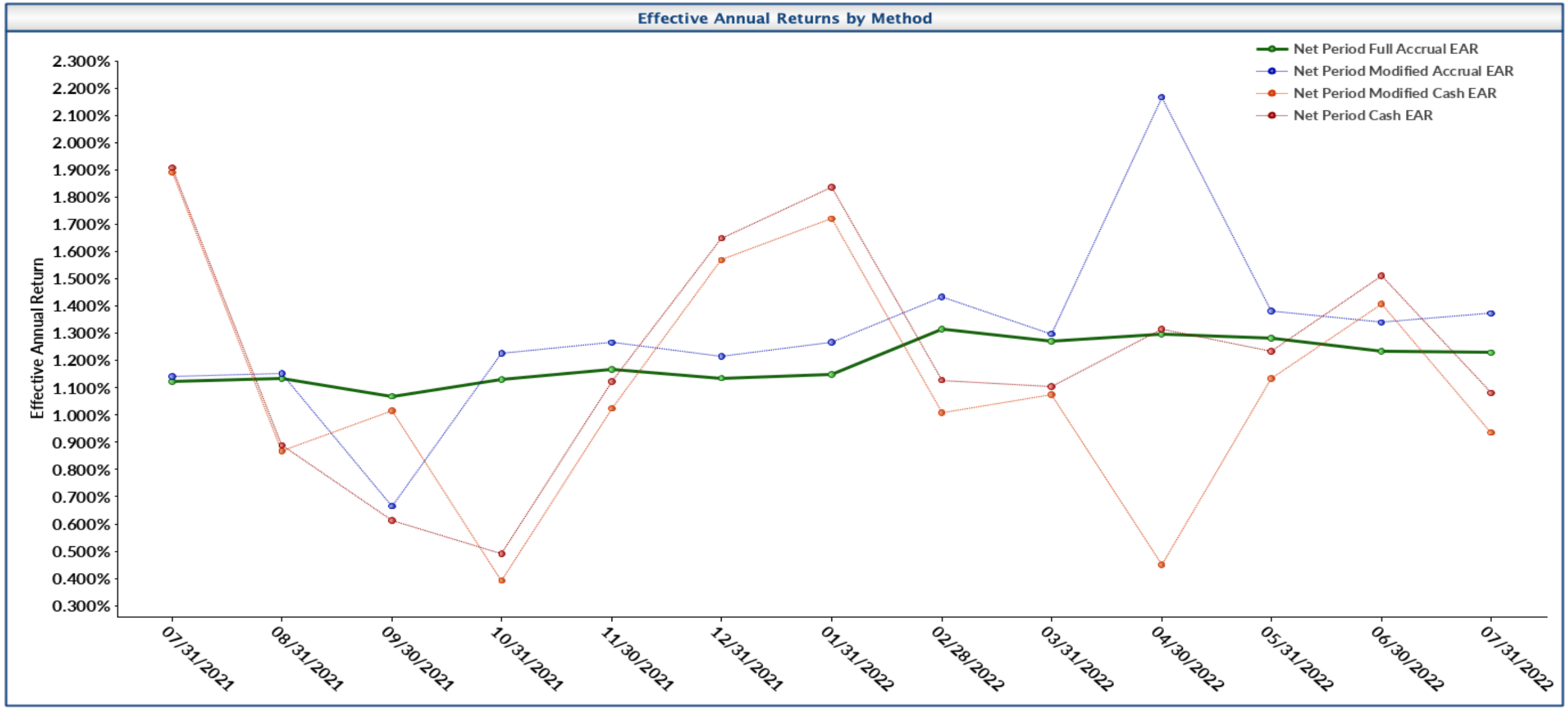
Accounting Methods Over Time



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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 I would be happy to discuss.

Thank you for attending!

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