Investing Basics for all

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UD – Osher Lifelong Learning Institute

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Disclaimer in plain language

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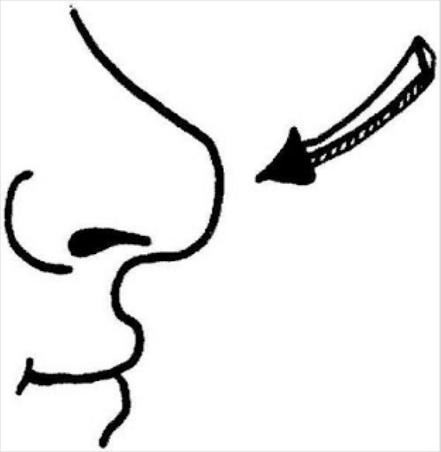


Opinions are like noses, everyone has one !

You are going to see mine in this course !!

I am simply sharing my perspective.

This is not investment advice or recommendation.

Rajeev is not a financial advisor.

This course is for educational purposes only.

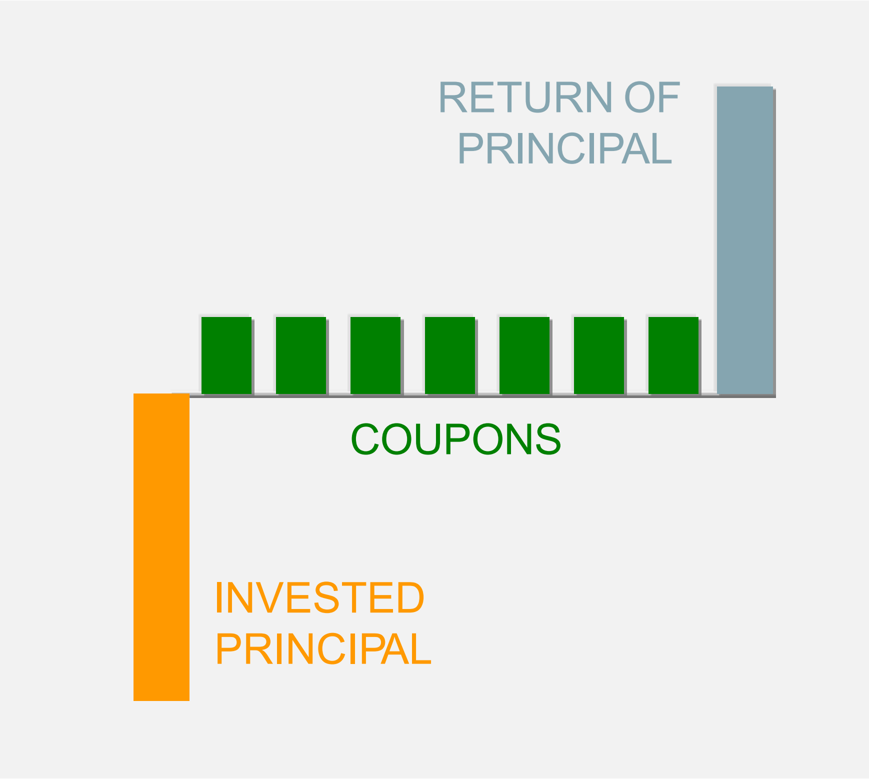
Form your own opinion, make your own investment decisions.

Session 3 – April 16th

- Investing in Bonds

What is a bond?

- Investor loans money to an issuer under a contract
  - Defined interest rate
  - Defined duration.
- Issuer pays contracted interest to the investor periodically.
- Issuer pays back the invested principal to the investor upon maturity



Bond Definitions - resource

- U.S. Treasury Bond
  - https://www.investopedia.com/terms/t/treasurybond.asp
- Corporate Bond
  - https://www.investopedia.com/terms/c/corporatebond.asp
- Municipal Bond
    - https://www.investopedia.com/terms/m/municipalbond.asp
  - General Obligation Bond
    - https://www.investopedia.com/terms/g/generalobligationbond.asp
  - Revenue Bond
    - https://www.investopedia.com/terms/r/revenuebond.asp

Why do most people buy Bonds ?

- They want Relative Safety (vs. stocks for example)
- They want less Volatility
- They want “Fixed Income” (regular income)
    - Predictable, stable income from the bond coupon
- They want tax-efficiency
- They want to preserve capital
- They want to minimize big losses
- They want better annualized yields than savings accounts

Types of bonds and Bond Ratings

Increasing Effort needed to manage risk

US Govt Treasury bonds

Moody's		S&P		Fitch		Rating description	
Long-term	Short-term	Long-term	Short-term	Long-term	Short-term		
Aaa	P-1	AAA	A-1+	AAA	F1+	Prime	Investment-grade
Aa1		AA+		AA+		High grade	
Aa2		AA		AA			
Aa3		AA−		AA−			
A1		A+	A-1	A+	F1	Upper medium grade	
A2		A		A			
A3	P-2	A−	A-2	A−	F2		
Baa1		BBB+		BBB+		Lower medium grade	
Baa2	P-3	BBB	A-3	BBB	F3		
Baa3		BBB−		BBB−			
Ba1	Not prime	BB+	B	BB+	B	Non-investment grade speculative	Non-investment grade AKA high-yield bonds AKA junk bonds
Ba2		BB		BB			
Ba3		BB−		BB−			
B1		B+		B+		Highly speculative	
B2		B		B			
B3		B−		B−			
Caa1		CCC+	C	CCC	C	Substantial risks	
Caa2		CCC				Extremely speculative	
Caa3		CCC−				Default imminent with little prospect for recovery	
Ca		CC					
		C					
C		D	/	DDD	/	In default	
/				DD			
				D			

Increasing Risk

Increasing yield Spread over US T-bill

US Treasuries

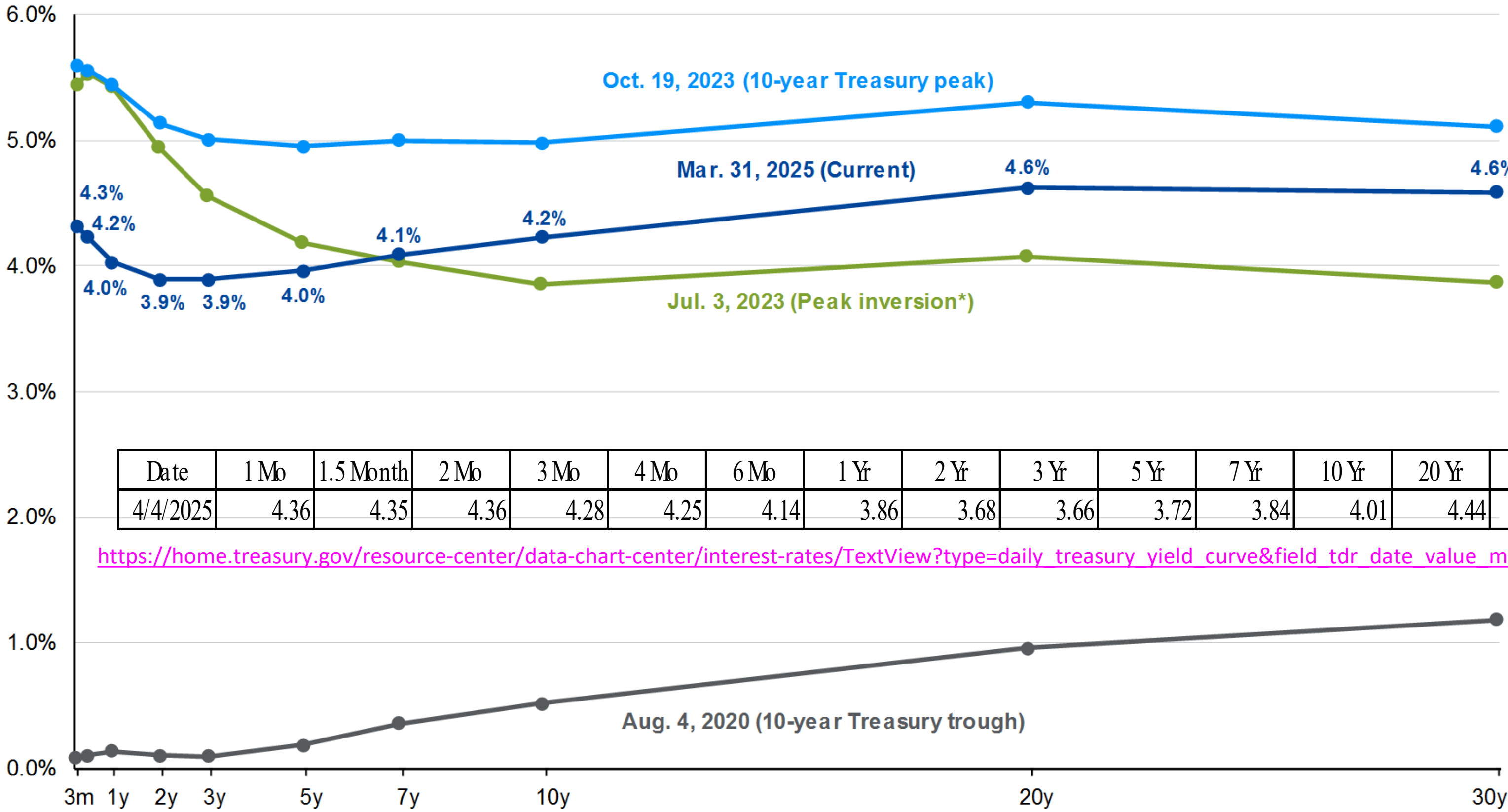
- Bills – short term one year or less
  - Zero coupon Bonds
- Notes – medium term 2 to 10 years
  - Interest paid semianually
- Bonds – long term 10+ years
  - Interest paid semianually
- All interest is taxed federally
  - Tax free in most states including NY
- Muni bond interest is tax free federally and in the state the muni lies in
- Corporate bond income is taxed both federally and in states

https://am.jpmorgan.com/us/en/asset-management/adv/insights/market-insights/guide-to-the-markets/

Yield curve

Fixed Income

U.S. Treasury yield curve



Date	1 Mo	1.5 Month	2 Mo	3 Mo	4 Mo	6 Mo	1 Yr	2 Yr	3 Yr	5 Yr	7 Yr	10 Yr	20 Yr	30 Yr
4/4/2025	4.36	4.35	4.36	4.28	4.25	4.14	3.86	3.68	3.66	3.72	3.84	4.01	4.44	4.41

https://home.treasury.gov/resource-center/data-chart-center/interest-rates/TextView?type=daily_treasury_yield_curve&field_tdr_date_value_month=202502

Source: FactSet, Federal Reserve, J.P. Morgan Asset Management. Analysis references data back to 2020. *Peak inversion is measured by the spread between the yield on a 10-year Treasury and 2-year Treasury.
Guide to the Markets – U.S. Data are as of March 31, 2025.

J.P.Morgan
ASSET MANAGEMENT

Current Fixed Income Yields – 3/3/2025

Schwab website data

S&P 500 dividend yield = 1.3%

	3MO	6MO	9MO	1YR	18MO	2YR	3YR	4YR	5YR	10YR	20YR	30YR+
CDs	4.22	4.04	4.01	4.25	3.87	4.25	3.65	3.60	4.15	4.30	--	--
Bonds												
U.S. Treasuries	4.25	4.12	3.94	3.88	3.82	3.75	3.74	3.78	3.84	4.14	4.67	4.59
U.S. Treasury Zeros	--	--	--	3.66	3.63	3.67	3.74	3.81	3.90	4.31	4.84	4.52
Government Agencies	--	3.91	3.87	3.85	3.92	4.50	4.75	4.47	5.00	5.35	5.68	5.38
Corporates (AAA)	--	--	--	--	3.91	4.01	4.08	4.25	4.29	4.85	5.01	5.59
Corporates (AA)	2.46	--	--	3.97	4.11	4.15	4.14	4.25	4.52	5.52	5.51	5.95
Corporates (A)	4.00	4.25	4.24	4.35	4.41	4.36	4.48	4.79	5.03	5.53	6.05	6.07
Municipals (AAA)	3.12	3.07	3.10	3.06	4.08	3.38	3.30	3.40	3.49	4.61	4.82	4.70
Municipals (AA)	3.29	3.22	3.22	3.76	4.08	3.60	4.17	4.15	3.87	4.80	5.19	5.02
Municipals (A)	3.59	3.22	3.22	3.76	4.08	3.60	4.17	4.15	4.29	4.80	5.19	5.02

Powered by BondSource™ | Ratings by Standard & Poor's

Bond Price?

- Investor pays par value to an issuer under contract
  - Defined interest rate
  - Defined duration.
- Value of the bond at issue is typically the par value.

- Some time later, if the investor tries to buy or sell the bond, the bond price can be different.
- Factors that affect bond price
  - Interest rates
  - Financial condition of the issuer
  - Accrued interest and transaction fees
- Investor can have capital gains or losses in buying bonds in the aftermarket.

Risks in a Bond

- Prepayment risk - The possibility that a bond issue will be paid off earlier than expected is known as prepayment risk. This often occurs through a call provision.
  - Reinvestment Risk – Low in a rising rate environment.
  - Loss of premium over call price
- Default Risk - The possibility that a bond issuer will not be able to make interest or principal payments when they are due.
- Interest Rate risk - Interest rate risk is the possibility that interest rates will be different than expected. If interest rates decline significantly, you face the possibility of prepayment as firms exercise call features. If interest rates rise, you risk holding a bond with below-market rates that may lose value.

Bond values & Interest Rates

- Suppose you bought a bond last year with a coupon rate of 5%, when market rate of interest was also 5%, and you paid $1,000 per bond.
- If this year, market rate of interest has risen to 6%.

  Obviously, a buyer would not pay $1,000 for a bond yielding 5% when the buyer could buy new $1,000 bonds with current coupon rates of 6%. The buyer would expect to get at least 6%, which means that this bond will sell at a discount (less than $1,000) in order to be competitive with current bonds.

- Conversely, if market rates of interest fall to 4%.

  Obviously, a seller would not sell the bond for $1,000 for a bond yielding 5% when the buyer would have to pay $1000 to buy new bonds with current coupon rates of 4%. The seller would expect to get at least 5%, which means that this bond will sell at a premium (more than $1,000) in order to be competitive with current bonds.

https://am.jpmorgan.com/us/en/asset-management/adv/insights/market-insights/guide-to-the-markets/

The Fed and interest rates

Fixed Income

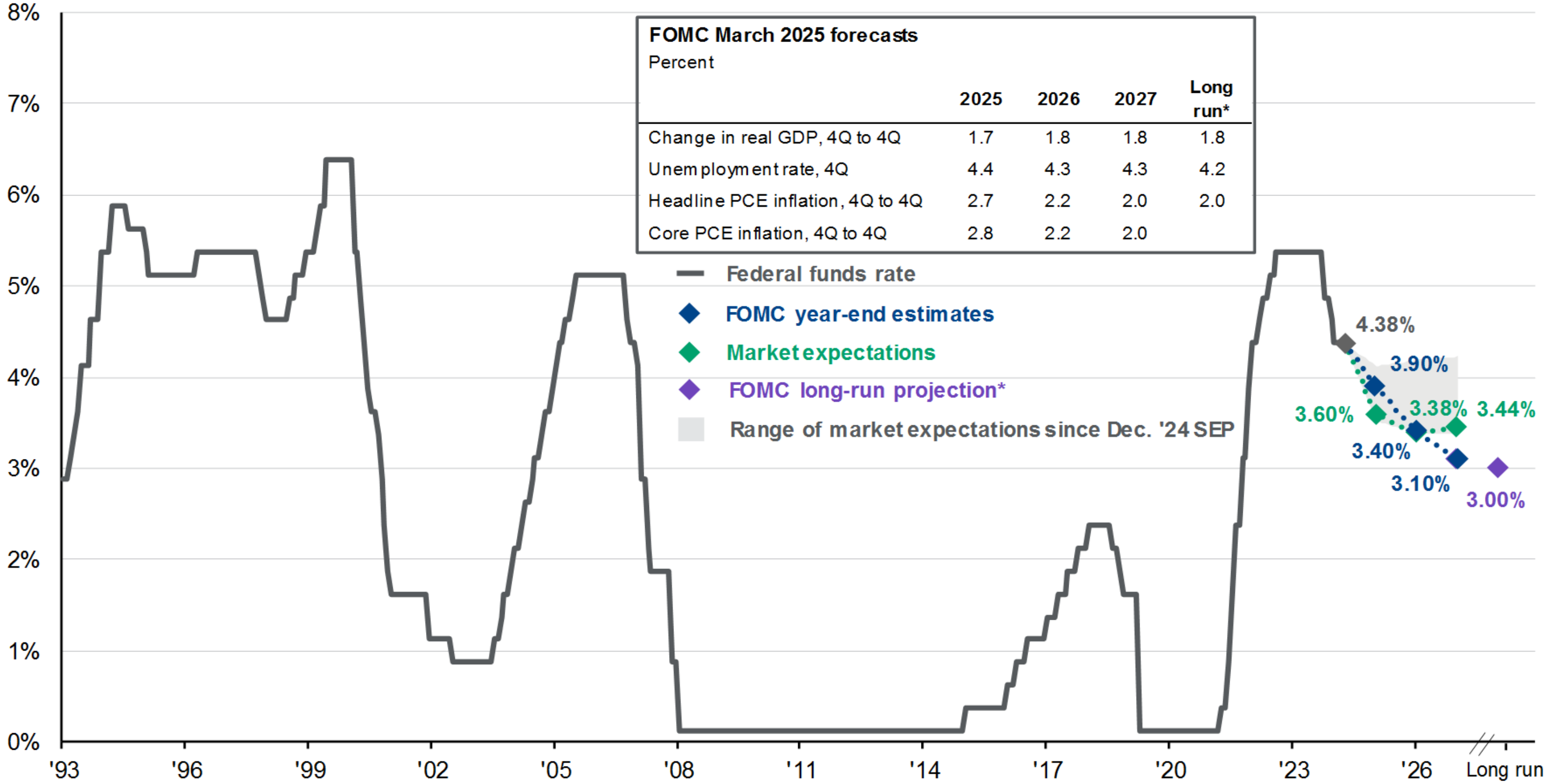
Federal funds rate expectations

FOMC and market expectations for the federal funds rate

FOMC March 2025 forecasts

Percent

	2025	2026	2027	Long run*
Change in real GDP, 4Q to 4Q	1.7	1.8	1.8	1.8
Unemployment rate, 4Q	4.4	4.3	4.3	4.2
Headline PCE inflation, 4Q to 4Q	2.7	2.2	2.0	2.0
Core PCE inflation, 4Q to 4Q	2.8	2.2	2.0	



Source: Bloomberg, FactSet, Federal Reserve, J.P. Morgan Asset Management.
Market expectations are based off of USD Overnight Index Swaps. *Long-run projections are the rates of growth, unemployment and inflation to which a policymaker expects the economy to converge over the next five to six years in absence of further shocks and under appropriate monetary policy. Forecasts are not a reliable indicator of future performance. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecasts, projections or other forward-looking statements, actual events, results or performance may differ materially from those reflected or contemplated.
Guide to the Markets – U.S. Data are as of March 31, 2025.

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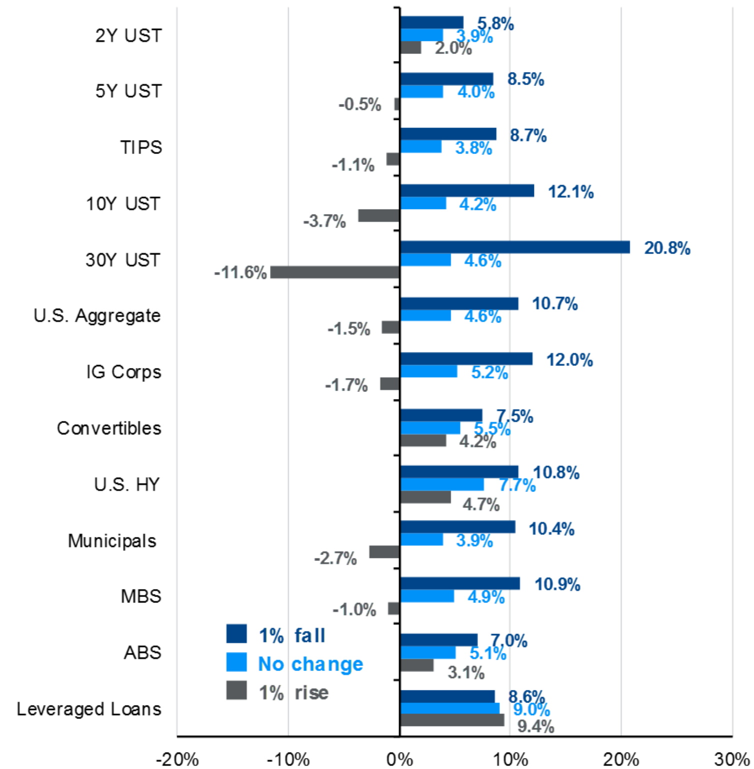
https://am.jpmorgan.com/us/en/asset-management/adv/insights/market-insights/guide-to-the-markets/

Fixed income market dynamics

	Yield		Return			
U.S. Treasuries	**3/31/2025**	**12/31/2024**	**2025**	**Avg. Maturity**	**Correlation to 10-year**	**Correlation to S&P 500**
2-Year	3.89%	4.25%	1.59%	2 years	0.74	0.01
5-Year	3.96%	4.38%	3.00%	5	0.94	-0.02
TIPS	1.62%	2.13%	4.17%	7.3	0.74	0.34
10-Year	4.23%	4.58%	3.99%	10	1.00	-0.07
30-Year	4.59%	4.78%	4.28%	30	0.93	-0.10
Sector						
U.S. Aggregate	4.60%	4.91%	2.78%	8.4	0.90	0.26
IG Corps	5.15%	5.33%	2.31%	10.6	0.69	0.47
Convertibles	5.54%	6.13%	-1.29%	-	-0.03	0.86
U.S. HY	7.73%	7.49%	1.00%	4.7	0.10	0.79
Municipals	3.85%	3.74%	-0.22%	13.4	0.73	0.27
MBS	4.92%	5.27%	3.06%	7.7	0.81	0.26
ABS	5.08%	5.38%	1.70%	2.2	0.42	0.24
Leveraged Loans	9.03%	8.68%	0.48%	4.7	-0.22	0.62

Fixed income returns in different interest rate scenarios

Total return, assumes a parallel shift in the yield curve



Source: Bloomberg, FactSet, Federal Reserve Bank of Cleveland, Standard & Poor's, U.S. Treasury, J.P. Morgan Asset Management. Sectors shown above are provided by Bloomberg unless otherwise noted and are represented by – U.S. Aggregate; MBS: U.S. Aggregate Securitized - MBS; ABS: J.P. Morgan ABS Index; IG Corporates: U.S. Corporates; Municipals: Muni Bond; High Yield: Corporate High Yield; Leveraged Loans: J.P. Morgan Leveraged Loan Index; TIPS: Treasury Inflation-Protected Securities; Convertibles: U.S. Convertibles Composite. Convertibles yield is as of most recent month-end and is based on U.S. portion of Bloomberg Global Convertibles Index. Yield and return information based on bellwethers for Treasury securities. Yields shown for TIPS are real yields. TIPS returns consider the impact that inflation could have on returns by assuming the Cleveland Fed's 1-year inflation expectation forecasts are realized. Sector yields reflect yield-to-worst. Leveraged loan yields reflect the yield to 3Y takeout. Correlations are based on 15-years of monthly returns for all sectors. ABS returns prior to June 2012 are sourced from Bloomberg. Past performance is not indicative of future results.
Guide to the Markets – U.S. Data are as of March 31, 2025.

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Bond Yields (data on 4/7/2025 from C Schwab website)

US Treasury examples – similar maturities 2044 - 2045

Different COUPON
(annual interest paid)

Similar Yield to Maturity

Action	Description	Coupon	Maturity	Quantity	Price	Min	Max	YTM	YTW1	Accrued Ir	Estimated Total
Buy	US Treasury 2.875% 08/15/2045, 912810RN0	2.875	8/15/2045	300	76.45117	300	8000	4.682	--	1,238.95	230,592.47
Buy	US Treasury 2.5% 02/15/2045, 912810RK6	2.5	2/15/2045	300	72.01953	300	8000	4.679	--	1,077.35	217,135.95
Buy	US Treasury 3% 05/15/2045, 912810RM2	3	5/15/2045	40	78.357	40	1000	4.672	--	477.35	31,820.15
Buy	US Treasury 3% 11/15/2044, 912810RJ9	3	11/15/2044	200	78.71484	200	3000	4.669	--	2,386.74	159,816.43
Buy	US Treasury 4.625% 11/15/2044, 912810UF3	4.625	11/15/2044	250	100.0595	250	4000	4.62	--	4,599.45	254,748.20
Buy	US Treasury 4.75% 02/15/2045, 912810UJ5	4.75	2/15/2045	250	101.7344	250	12000	4.615	--	1,705.80	256,041.74
Buy	US Treasury TIP 0.75% 02/15/2045, 912810RL4	0.75	2/15/2045	100	74.57813	100	3000	2.361	--	145.49	100,858.03

CUSIP

Different prices

WHY? In the orange highlighted bond, annual yield is mostly from interest, small capital loss at maturity.

In the blue highlighted bond, annual yield from interest is smaller, but a big portion of yield comes from capital gain at maturity.

https://tradingeconomics.com/united-states/5-year-tips-yield

US 5-year TIPS

- Principal is adjusted by CPI rate annually.
- Earn coupon on higher principal value.
- Phantom tax – best in IRAs
- Less liquid than normal treasuries
- Do not have the same $10K per year limit as I-bonds
- Great sources for information on tips
  - Investopedia
  - Treasurydirect.gov
  - TIPSladder.com
  - Your brokers website?

Buying Individual bonds

- Manage interest rate sensitivity / risk.
- Manage taxation
- Timing of maturities and income

- ✓ CD
- ✓ US govt. treasuries / bonds
- ✓ Muni bonds
- ✓ Investment grade Corp bonds
- Non-investment (junk, HY) corporate bonds
- Mortgage backed securities
- Foreign govt bonds
- Foreign non-govt bonds

Generally speaking

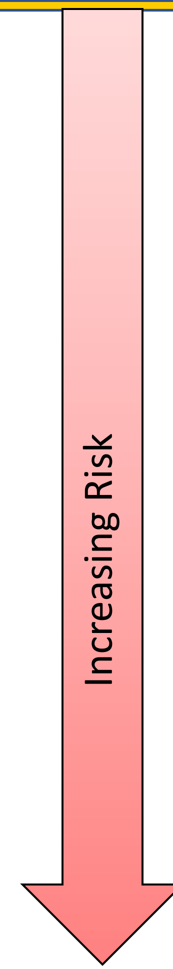
- *Yield and risk go together .. High yield .. High risk*
- *Longer term bonds have more interest rate risk*
- *Foreign bonds have currency risk*
- *Use your broker's bond desk*
- *Diversify – industry groups, time frames*

Bond Ladder
Bond maturing in 2030
Bond maturing in 2029
Bond maturing in 2028
Bond maturing in 2027
Bond maturing in 2026
Bond maturing in 2025

Spend / Reinvest
in 2030 bond / Reinvest in
alternative assets

No Lazy Cash

- CDs – Bankrate.com – latest rates approx. ~ 4.5% https://www.bankrate.com/cd.aspx
- Money Market Accounts
  - Almost all brokers offer them
- High Yield savings accounts
  - American Express, Goldman Sachs … many others
  - Limited transactions per month
- Short term US bonds – zero coupon
- Money Market Mutual Funds
  - Charles Schwab and other brokers have many. Most yield > 4%
- ETFs that act like money market funds
  - MINT, BIL, JPST … many others



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Thank You !!