

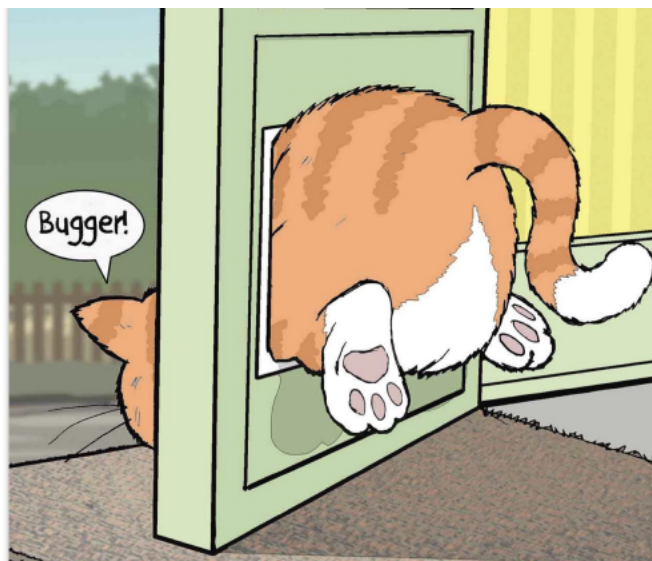
Convexity Maven

...it's always about character

A Commentary by Harley Bassman

October 13, 2026

"A Fat Cat in a Small Door"



On the Home page of my [Convexity Maven](#) site I propose:

It is Always about character, and;
It is Never different this time.

Thus, I will remind you that at times of financial panic, Negative Convexity is almost always ["Lurking at the Scene"](#) (March 16, 2021).

More specifically, for the first time since early 2007, the nearly \$200bn UST Bond futures contract has become significantly Negatively Convex.

As I will reprise from ["CBOT Delivery Shift"](#) (January 17, 2008), the construction of the listed futures contract can strangely create a **Convexity Vortex** in the Treasury market (similar Mortgage-backed Securities), and has likely been a contributor to the recent rapid increase in interest rates as so many Fat Bond Traders simultaneously try to squeeze through a Small Liquidity Door.

NOTE: *This is super nerdy; financial "civilians" can advance to page 6.*

The Uncertainty of Delivery Shift

Hark back to that boring chapter on bond Duration and Convexity you skimmed over at the start of your investment education. You may recall that non-callable fixed-coupon bonds exhibit Positive Convexity. This is manifest as the Dv01 (Dollar value of a basis point) increasing as rates decline (prices up) and shrinking as rates rise (prices down).

Pull up any Treasury security on a Yield Analysis screen, alter the rate, and notice the "Value at Risk" (Dv01) changes. It will adjust by roughly the Convexity number quoted on that same screen.

There are three inputs to calculate Duration:

- 1) Coupon
- 2) Time to Maturity
- 3) Yield Level

It is this third factor, Yield Level, that creates the Convexity in a fixed-coupon bond; this must be the case since the Coupon and Maturity cannot be altered.

[For further information, please read: "Inside the Yield Book" by Homer and Leibowitz. This 1972 classic is the bond bible and the only book I recommend.]

Financial futures contracts were created in 1976 to provide an active and transparent market for Interest Rate trading. To facilitate liquidity, the contract was designed to accept a wide variety (basket) of securities for delivery. Since bonds have different Coupons and Maturity dates, a process was created to make them somewhat equivalent.

Thus, the creation of "Conversion Factors". Each eligible bond delivered to the Exchange would receive the contract price times the Conversion Factor (similar to how different grades of Wheat are delivered to CBOT silos). This is known as the **Invoice Price**. The Conversion Factors are created via a fixed two-factor matrix of Coupon and Time to Maturity – **irrespective of the Yield Level**.

Bond arbitrageurs, sometimes referred to as **Basis Traders** in the popular press, buy and sell various bonds and futures contract pairs in an effort to optimize the Invoice Price if they choose to deliver bonds to the CBOT Exchange at the expiry of the futures contract.

The bond with the best Invoice Price is referred to as the **Cheapest to Deliver (CTD)**; the CTD is almost always the bond with the smallest net basis (the spread between the bond's invoice price and the future's price).

Here is the conversion table for the “basket” of bonds eligible for delivery into the CBOT December 2026 Bond Futures Contract. The meaning of the various colored lines will be detailed shortly.

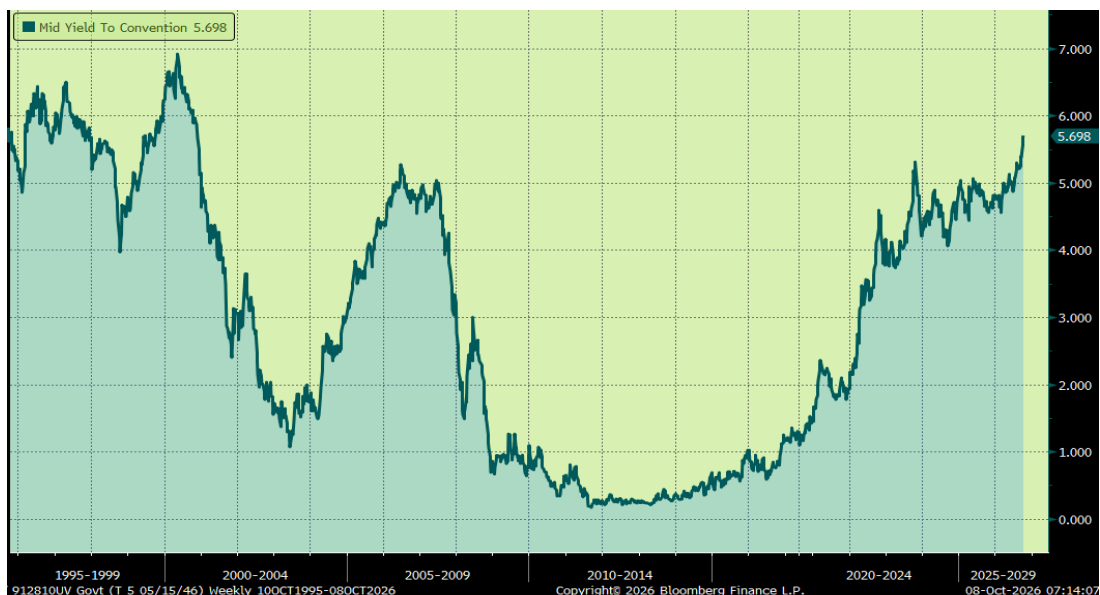
U.S. TREASURY BOND FUTURES CONTRACT

Coupon	Issue Date	Maturity Date	Cusip Number	Issuance (Billions)	Dec. 2026
1 1/4	05/15/20	05/15/50	912810SN9	\$60.0	0.4086
1 3/8	08/17/20	08/15/50	912810SP4	\$72.0	0.4213
1 5/8	11/16/20	11/15/50	912810SS8	\$75.0	0.4499
1 7/8	02/16/21	02/15/51	912810SU3	\$75.0	0.4789
1 7/8	11/15/21	11/15/51	912810TB4	\$69.0	0.4716
2	02/18/20	02/15/50	912810SL3	\$52.0	0.5045
2	08/16/21	08/15/51	912810S22	\$75.0	0.4900
2 1/4	08/15/16	08/15/46	912810RT7	\$39.0	0.5723
2 1/4	08/15/19	08/15/49	912810SJ8	\$51.0	0.5403
2 3/8	02/28/22	02/15/42	912810TF5	\$51.0	0.6447
2 3/8	11/15/19	11/15/49	912810SK5	\$51.0	0.5532
2 3/8	05/17/21	05/15/51	912810SX7	\$75.0	0.5399
2 1/2	02/17/15	02/15/45	912810RK6	\$42.0	0.6179
2 1/2	02/16/16	02/15/46	912810RQ3	\$39.0	0.6064
2 1/2	05/16/16	05/15/46	912810RS9	\$39.0	0.6036
2 3/4	08/15/12	08/15/42	912810QX9	\$42.0	0.6750
2 3/4	11/15/12	11/15/42	912810QY7	\$42.0	0.6718
2 3/4	08/15/17	08/15/47	912810RY6	\$39.0	0.6195
2 3/4	11/15/17	11/15/47	912810RZ3	\$39.0	0.6171
2 7/8	05/15/13	05/15/43	912810RB6	\$42.0	0.6784
2 7/8	08/17/15	08/15/45	912810RN0	\$42.0	0.6536
2 7/8	11/15/16	11/15/46	912810RU4	\$39.0	0.6412
2 7/8	05/15/19	05/15/49	912810SH2	\$51.0	0.6189
3	05/15/12	05/15/42	912810QW1	\$42.0	0.7029
3	11/17/14	11/15/44	912810RJ9	\$42.0	0.6750
3	05/15/15	05/15/45	912810RM2	\$42.0	0.6699
3	11/16/15	11/15/45	912810RP5	\$42.0	0.6650
3	02/15/17	02/15/47	912810RV2	\$39.0	0.6533
3	05/15/17	05/15/47	912810RX8	\$39.0	0.6510
3	02/15/18	02/15/48	912810SA7	\$42.0	0.6445
3	08/15/18	08/15/48	912810SD1	\$48.0	0.6403
3	02/15/19	02/15/49	912810SF6	\$51.0	0.6362
3 1/8	02/15/12	02/15/42	912810QU5	\$42.0	0.7182
3 1/8	02/15/13	02/15/43	912810QZ4	\$42.0	0.7069
3 1/8	08/15/14	08/15/44	912810RH3	\$42.0	0.6911
3 1/8	05/15/18	05/15/48	912810SC3	\$45.0	0.6572
3 1/4	05/31/22	05/15/42	912810TH1	\$45.0	0.7277
3 3/8	08/31/22	08/15/42	912810TK4	\$39.0	0.7375
3 3/8	05/15/14	05/15/44	912810RG5	\$42.0	0.7202
3 3/8	11/15/18	11/15/48	912810SE9	\$51.0	0.6834
3 5/8	08/15/13	08/15/43	912810RC4	\$42.0	0.7534
3 5/8	02/18/14	02/15/44	912810RE0	\$42.0	0.7491
3 3/4	11/15/13	11/15/43	912810RD2	\$42.0	0.7642
3 7/8	02/28/23	02/15/43	912810TQ1	\$39.0	0.7834
3 7/8	05/31/23	05/15/43	912810TS7	\$39.0	0.7813
4	11/30/22	11/15/42	912810TM0	\$39.0	0.7980
4 1/8	09/03/24	08/15/44	912810UD8	\$42.0	0.7986
4 3/8	08/31/23	08/15/43	912810TU2	\$42.0	0.8313
4 1/2	02/29/24	02/15/44	912810TZ1	\$42.0	0.8415
4 5/8	05/31/24	05/15/44	912810UB2	\$42.0	0.8534
4 5/8	12/02/24	11/15/44	912810UF3	\$42.0	0.8510
4 5/8	12/01/25	11/15/45	912810UQ9	\$42.0	0.8464
4 5/8	03/02/26	02/15/46	912810UT3	\$42.0	0.8454
4 3/4	11/30/23	11/15/43	912810TW8	\$42.0	0.8690
4 3/4	02/28/25	02/15/45	912810UJ5	\$42.0	0.8635
4 7/8	09/02/25	08/15/45	912810UN6	\$42.0	0.8753
5	06/02/25	05/15/45	912810UL0	\$42.0	0.8899
5	06/01/26	05/15/46	912810UV8	\$42.0	0.8867
5 1/8	08/31/26	08/15/46	912810UX4	\$29.0	0.9002
Number of Eligible Issues:					59
Dollar Amount Eligible for Delivery:					\$2,712.0

The listed US Bond contract is stipulated as a 6% coupon security and will accept delivery of bonds that mature from 15 and 25 years (2041 to 2051) hence.

Because **Yield Level** is not considered, the CTD can shift as rates change. As such, when 20yr interest rates are higher than the 6% coupon rate, the CTD will be the longest maturity bonds in the delivery basket. Conversely, when the 20yr rate is below the 6% coupon, the shortest bonds to maturity will be the CTD.

From late 2008 until recently, the **-malachite line-** twenty-year UST rate had been well below 6%, thus the CTD was mostly certain as one of the shortest maturity bonds in the basket. There was little risk of a “CTD shift”.



When the UST 20yr rate was near 5% in early July (right column) with a futures price of 111.26, the **-amazonite line-** bond had a “net basis” of zero marking it as the CTD. This is the **-chrysoprase shaded-** bond on the conversion table above.

With rates below 5%, there was little uncertainty about which bond would be the CTD, so this contract was effectively a single bond with a Duration of 11.03. In fact, from late 2007 until this summer, there was rarely CTD uncertainty.

USZ @ 102.25			91.48	97.12	102.25	106.78	111.26	
			6.38%	6.03%	5.68%	5.33%	4.98%	
UST Security	Price	Yield	up 70bp	up 35bp	unchanged	down 35bp	down 70bp	Duration
			Net Basis	Net Basis	Net Basis	Net Basis	Net Basis	
T 4 ¼ 11/15/43	90.047	5.67%	3.073	1.458	0.415	0.122	0	11.03
T 4 ¼ 02/15/45	89.211	5.71%	2.546	1.054	0.145	0	0.044	11.63
T 2 ½ 02/15/45	63.531	5.74%	1.075	0.315	0	0.259	0.685	13.24
T 1 ¾ 11/15/50	46.570	5.74%	0.037	0	0.363	1.228	2.31	16.84
T 1 ¾ 08/15/50	43.688	5.74%	0	0.034	0.449	1.341	2.443	17.47

The Delivery Option

After nearly twenty years, it is back to “fun times” for Wall Street’s Bond trading.

When the **-rhodonite line-** US Bond Futures Contract was trading above 110, the CTD and its Duration and Convexity was known. But once the price dipped below that level, suddenly the **Delivery Option** became valuable.



The Delivery Option is owned by the seller (shorts) of the futures contract. They have the option to delivery any of the eligible bonds in the “basket” (page 3).

As such, the owner (longs) of the futures contract suddenly does not know their risk exposure to interest rate changes. Making matters MUCH worse, the construction of the two-factor Conversion table creates significant Negative Convexity for the futures contract once the Delivery Option becomes “live”.

The **-charoite line-** bond became the CTD once the contract was near 106.78; with a concomitant Duration of 11.63. A bit longer, but still manageable.

With the **-sodalite line-** 20yr rate currently near 5.68% (102.25), the CTD has shifted to a 13.24 Duration bond, fully 20% longer than only a few weeks ago. This means that portfolio managers who seek to maintain a certain risk level need to shed (or hedge) 20% of their fixed-income risk.

The nightmare scenario would be the 20yr rate crossing 6.0% and the CTD fully extending to the **-carnelian/jasper lines-** with a Duration exceeding 17.

Back of the envelope, such a delivery switch would be equivalent to the **Treasury auctioning \$110bn 20yr bonds** over the course of four months.

A Lesson in Negative Convexity

As a reminder, Convexity can be defined as “unbalanced leverage”.

Let's assume a 10yr bond yields 5% at par, and for simplicity say it will move up 8 points to 108 if rates decline to 4% and down 8 points to 92 if rates rise to 6%. This is balanced leverage, or zero Convexity.

If I can buy a bond that goes up 10 points and only down 7 points for equal rate moves, that is Positive Convexity. Since I would always prefer this bond, I should accept a lower yield, perhaps 4.75% for the better return profile.

Another bond only goes up 6, but down 12 points. This bond is Negatively Convex, and I would need a much yield higher than 5% as risk compensation.

Mortgage-backed Securities (MBS) have this sort of performance profile, which is why they trade 75bp to 100bp higher in yield than 10yr US Treasuries.

The -chalcopryite line- current CTD bond has a Duration of 13.24. But a 70bp decline in rates will shorten its Duration to 11.03, while a 70bps increase in rates will extend its Duration to 17.47.

When near a CTD shift, the bond contract will go down faster and up slower; and portfolio managers who want to maintain a risk exposure need to buy bonds as prices rise and sell bonds as prices fall. **Always trading the wrong way.**

Since these are super-safe risk-free US Treasury bond futures; it is possible buyers did not fully appreciate this challenging risk profile.

Thus, I might propose that the recent swift increase in interest rates may be linked to CTD extension and the hedging activity of slow-footed risk managers (a notion supported by the significant decline in CFTC reported positioning).

It is important to note that Negative Convexity is often pro-cyclical. Here, as bond prices decline the CDT switches to a longer Duration bond. Ensuing hedge selling pushes rates further and prompts another CDT shift to an even longer Duration bond. Lather, Rinse, Repeat.

One should consider 6% on the UST 20yr rate to be a bubbling Convexity Vortex.

Finally, the professional “basis traders” at the large Hedge Funds may soon closeout their positions by selling US Treasuries, adding additional sell pressure.

The last time the 20yr rate breached 6% was November 1999 - Good times.

Macro Comments....

As detailed in my Commentary "[In Fed We Trust](#)" – September 8, 2026, we have a problem of "Trust", not inflation. A Ten-year (inflation protected TIPS) Real Rate of 2.90% is the market waving the "white flag" that we have a Fiscal problem, not a Monetary problem.

The solution is a medium-term **defined path** to narrow our current 6.2% Fiscal deficit, which could include:

- 1) Lifting the \$184,500 cap on the Social Security tax (similar to Medicare)
- 2) Raising the "retirement" age
- 3) Means testing SS and Medicare
- 4) Eliminating the "step up basis" for the Estate Tax
- 5) Reviving some version of Simpson-Bowles
- 6) Passing "middle path" Immigration reform (and other 70/30 issues) as proof that our political class can still function.

Bonus: My recent Alpha Exchange Podcast -
<https://www.youtube.com/watch?v=8Zii9xl-Md8>

Special Heads Up: Stay tuned for an announcement from my good friend and partner Michael Green ([@Profplum99](#)) about a new ETF listing that monetizes the "alpha factor" of the Passive Investment paradigm (I may join him).

Remember: For most investments, sizing is more important than entry level.

Harley S. Bassman
October 13, 2026

Follow me on Twitter: [@ConvexityMaven](#)
Your comments are always welcome at: harley@bassman.net

If you would like to be added to my distribution, just ping me.

To become better educated on macro-economic fundamentals and policy, I urge you to connect with my good friend, Michael Green, aka, [@profplum99](#).

For reference literature on the financial markets - particularly about options and derivatives - I will immodestly direct you to my educational archive at:

<https://www.convexitymaven.com/classroom/>

If you still have kids in the house, please take a vacation that is more interesting than the Four Seasons, Costa Rica – life is not a dress rehearsal. The graveyards are full of irreplaceable people.

Turn off the Crackberry (did I just date myself ?) and explore with the family. You don't need to break the bank, rent an RV and see the U.S. We traveled with our four kids on five incredible RV trips.

<http://bassman.net>

Special credit to [Gerard Minack](#), the best macro analyst on the planet.

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