Fixed Income Group A Division of RJ O'Brien

Situational Complexity in Sep'22 Treasury Futures Delivery Cycle & Associated Roll

1) **The "big deal" this roll will center on the 7yr auction on 8/25. If that new coupon is 3.5% or higher, TYU2/TYZ2 roll spread (dv'01 neutral) will go bid.**
2) **FVU2 will see delivery on First Delivery Date—early delivery.**

Most of our clients will roll from Sep'22 to Dec'22 (U2/Z2) well before first delivery date. That will not change. This delivery cycle, though, is a confluence of numerous factors rarely (if ever in my career) seen simultaneously. It's a mighty cool opportunity to learn a bunch more about the delivery process with real-time examples.

For those with interest, "what happens?" after first delivery notice day ('1st notice' is 8/31/22), is a near-complete tutorial in delivery situations, timing and potential 'wild card' option plays. The FOMC on 9/21 –mid-delivery cycle—is a rare ''anticipatable" volatility event that will catalyze the decisions and outcomes.

Early delivery in its simplest form is motivated by 'negative carry'. Broadly, when the coupon on the 'cheapest-to-deliver' ("CTD") cash Treasury is less than O/N repo, Treasury futures are in 'negative carry'. Negative carry motivates 'deliver cash into futures ASAP'.

Current Conditions 8/14/2022	TUU2	3YU2	FVU2	TYU2	UXYU2	USU2	TWEU2	WNU2
CTD	T 3 06/30/24	T 2.875 06/15/25	T 1.25 11/30/26	T 2.875 04/30/29	T 2.875 05/15/32	T 4.375 02/15/38	T 3.125 11/15/41	T 3 02/15/48
Coupon	3%	2.875%	1.25%	2.875%	2.875%	4.375%	3.125%	3%
SOFR Today	2.28%	2.28%	2.28%	2.28%	2.28%	2.28%	2.28%	2.28%
Negative Carry?	N	N	YES	N*	N	N	N	N
Will be Delivd on 1st Deliv Date?	N	N	YES	N*	N	N	N	N
Will be Delivd Last Delv Dt?	YES	YES	N	YES***	YES	YES	YES	YES

Fed Raises 50bps 9/21	TUU2	3YU2	FVU2	TYU2	UXYU2	USU2	TWEU2	WNU2
New SOFR	2.780%	2.780%	First	2.780%	2.780%	2.780%	2.780%	2.780%
Negative Carry after +50?	N	Maybe	Delivery	Maybe***	Maybe	N	N	N
Will be Delivd on 9/21 after +50?	N	Probably	Date	Probably***	Probably	N	N	N

Fed Raises 75bps 9/21	TUU2	3YU2	FVU2	TYU2	UXYU2	USU2	TWEU2	WNU2
New SOFR	3.030%	3.030%	First	3.030%	3.030%	3.030%	3.030%	3.030%
Negative Carry after +75?	YES	YES	Delivery	YES***	YES	N	Maybe	YES
Will be Delivd on 9/21 after +75?	YES	YES	Date	YES***	YES	N	Probably	YES

*** TYU2 has a further potential influence: New 7y being issued on 8/25. If 7-yr rates rise by about 30bps between now and 8/25 auction AND the New 7yr is awarded a coupon of 3.375%, it is potentially CTD and could change all of the above. Additionally, if rates were to rise enough to award a 3.5% coupon to the New 7yr, it would become CTD and be delivered on last delivery date. A switch to 'a new 3.5% coupon' should cause the U2/Z2 Roll Spread to strengthen/'go bid'.

Maybe/Probably We are using SOFR as a proxy for 'O/N repo' because it is visible and simple. Repo post-Fed may be a bit higher than SOFR+50 or SOFR+75. Additionally, there are costs and balance sheet usage considerations. For those reasons and others, what appears to be marginally positvie carry using SOF$ may still result in delivery on 9/21. All of 3Y, TY & UXY have a CTD with 2.875% coupon-- the coupons that will be very close to repo post a +50bps move by the Fed.

The 'wild card' option value, amplified by low conversion factors, will have varied impacts on holding the basis through FOMC. For the FVU2 Treasury future, would a trader 'eat' the

negative carry for a chance at a wild card option play? In the case of the Ultra 10yr (UXYU2), a very small conversion factor portends potential as well.

The Wild Card is often discussed and rarely fully explained. It is one of the goofier structural options embedded in Treasury futures. On and after First Delivery Date (9/1), the futures short gets a 2-hour option, each day.

The futures delivery price is established at the 2pm CT futures close. But the cash market continues to trade. If the CTD price rises enough in those last two hours (say, late equity market crash, etc.), the futures short may 'exercise' the Wildcard option—and deliver cash into the futures USING THE 2PM FUTURES PRICE.

Let's examine this in using specifics for UXYU2.

UXYU2 Conversion Factor: 0.7762

For the basis trader (long CTD/short UXYU2), their position is:

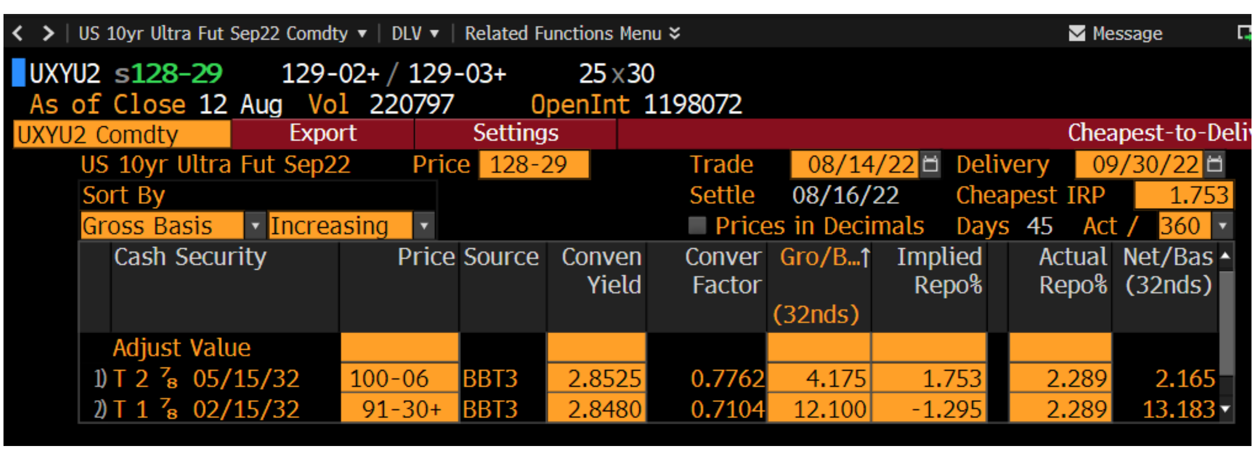
Long $100mm T 2.875 5/15/32

Short 776 UXYU2 Futures

The futures position determines the notional to be delivered. If we have 776 UXY, delivery will be for $77.6mm of T 2.875 5/15/32. It is the 'tail' or excess cash of $22.4mm that drives the wild card option value.

The viability/exercisability of the wild card is determined by 'how much' the cash CTD tail ($22.4mm) appreciates in price between 2pm CT and 4pm CT. Why? Because the trader needs only to deliver 77.6% of notional, if gains on the tails exceed the gross basis (remaining carry to delivery), the trader will: 1) notify the exchange of intent to deliver, 2) deliver $77.6mm of T 2.875 5/15/32, and 3) Sell, in the cash market, the excess tails ($22.4mm). If the gain in the tails is greater than the total remaining carry to delivery, the trader should exercise this option every time (adjusting for slippage on liquidating the tails).

We'll run the hypothetical from today's basis levels.



Gross basis is 4.175/32s

The question, then, is: "How much would the tails have to move to exceed the total basis P&L to delivery?"

4.175/(100-CF) = 4.175/0.224 = 18.64/32s

If we were in the delivery window and the gross basis was where it is today, T 2.875 5/15/32 would have to rally by 19ish ticks after 2pm CT on a trade day after first notice day.

Of course, if the CTD were to rally more than the 19/32s, there would be a windfall to the trader. That is the Wild Card option.

In volatile periods, the option value (basis net of carry) can grow quite large; even for a 2-hour option.

JC- for the Fixed Income Group at R.J. O'Brien