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North America Fixed Income Strategy
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Why we should all care about Treasury futures basis

- Treasury cash/futures basis has come under significant pressure in recent days
- In normal and even reasonably stressed times, these positions exhibit very low MTM volatility and have near-arbitrage terminal payoffs …
- … and have therefore historically been held broadly and in large size as a combination of relative value and balance sheet allocation maintenance strategy
- Recent pressure combined with operational risk considerations raises the risk of a significant unwind of these positions
- As that occurs, some real money investors will be highly incentivized to shift allocations away from other short-term products, including CP and FX forwards, in favor of earning higher unlevered returns from long futures basis positions
- This creates a rather direct channel between stress in futures and other funding markets.
- We believe the Fed has the tools to manage repo, but if this accelerates it could put more pressure on FRA/OIS and FX basis
- The potential for an escalation of this futures basis unwind is a potentially potent driver of other broader funding markets, and could keep some spreads elevated even if rates stabilize from here

US Fixed Income Strategy

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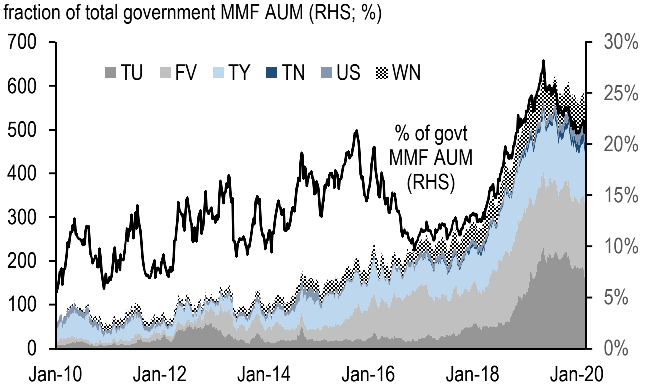
Why we should all care about Treasury futures basis

In recent days, all eyes have turned to the Treasury cash/futures basis. As we noted in a recent publication, times of stress can frequently reveal formerly neglected corners of the market that reveal themselves to be a key pain point (see *When market risk meets operational risk*, J. Younger et al., 3/10/20)—the past few sessions have done just that. Treasury futures basis has generally been viewed as a niche trading strategy, dominated by relative value-oriented active managers. The past few days (hours really) have revealed the ability of this corner of the market to potentially affect broader funding conditions.

Before we continue, a brief primer. Basis trading strategies are designed to police the relationship between Treasury futures contracts and the bonds that meet their criteria for delivery. **At its most basic, one can monitor the price differential between a given futures contract and the cheapest-to-deliver (CTD) bond**. Because the short futures leg determines when and what bond to deliver the long, as long as they hold the position to expiry they can be assured of a sale at a known price and a time of their choosing (at least within the deliverable month). When the cash CTD bonds are cheap, for example, buying them (often levered using overnight or term repo) and selling the futures offers a near-arbitrage payoff—albeit for a relatively small P/L of a few 32nds of a percent.

Exhibit 1: In the current environment, as much as $600bn in Treasury cash/futures basis positions have an undesirable mix of operational and market risk characteristics …

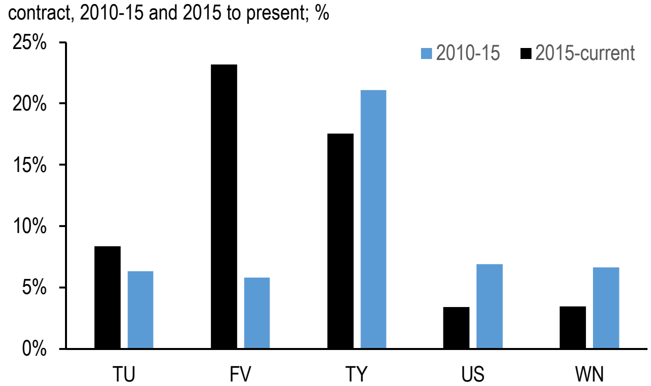
Notional of gross levered fund shorts by contract (LHS; $bn) as well as that as a fraction of total government MMF AUM (RHS; %)



Source: J.P. Morgan, Reuters

Exhibit 2: … and they are likely most concentrated in TU, US and WN, where gross levered fund shorts are least sensitive to price action

Correlation of weekly % change in gross levered fund shorts and price returns by contract, 2010-15 and 2015 to present; %



Source: J.P. Morgan, CFTC

Because these trades are near-limited downside and low P/L volatility, they can be held in very large size. But they can also serve another purpose. Regulatory constraints on balance sheet has led dealers to plan their allocations to clients well in advance. **This has naturally led to a "use it or lose it" framework, in which the end-users of balance sheet (hedge funds, active asset managers) are highly incentivized to consistently fill their allocation so as not to have it reduced**. Until recently, Treasury futures basis is ideal for that purpose for having low P/L volatility and near-arbitrage payoffs (or equivalently, limited downside) all while making heavy use of dealer balance sheet to fund the long in CTD cash bonds (or others in the deliverable basket). The relative price insensitivity of gross shorts also held by

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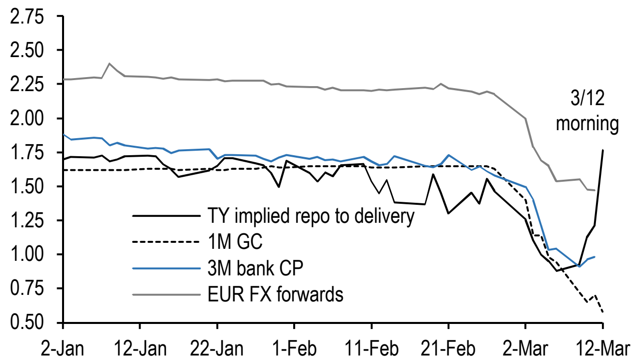
levered funds suggests this is a reasonable proxy for trying to estimate the size of this exposure: it could be as large as $650bn, though we would imagine it is not likely more than half of that in practice (**Exhibit 1**). Based on the sensitivity of these shorts to price returns, we would argue they are likely most concentrated in TU, US, and WN (**Exhibit 2**)—though with significant exposure across contracts (see also discussion *US Treasury Market Daily*, J. Barry & J. Hunter, 2/25/20).

Exhibit 3: As the cash//futures basis has cheapened, these positions have become competitive with other short-term investments, including bank CP, even on an unlevered basis

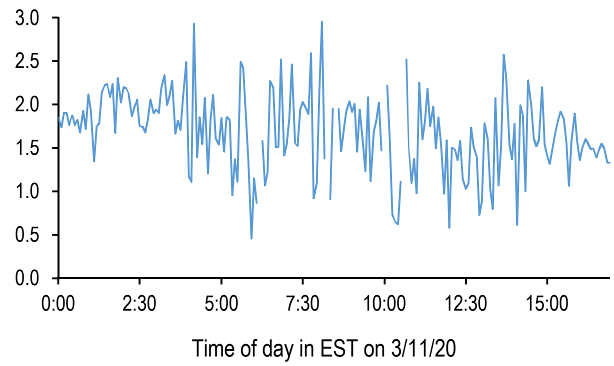
Yield on various short-term products in comparison to unlevered returns from the rolling front (as of first notice) TY cash/futures basis; %



Source: J.P. Morgan, DTCC

Exhibit 4: Implied repo has been extremely volatile intraday, offering even more attractive opportunities to unlevered investors than closing levels might suggest

TYM0 implied repo in 5-minute increments; %



Source: J.P. Morgan, Bloomberg

Near-arbitrage terminal payoffs do not, of course, ensure low MTM volatility. Though these positions were quite stable in practice for many years, that all changed over the past few weeks, and especially over the past couple of days. Why did this happen? To start we believe this was likely the result of liquidity tiering among rates products amidst a breakdown in market microstructure: by offering the lowest transaction costs, futures naturally led the move to lower rates, richening versus their cash CTDs and other off-the-run Treasuries. More recently, however, we believe operational risk management considerations have come to the fore, as split-location and work-from-home arrangements raise the risk that these operationally intensive positions are more trouble than they are worth—or at a minimum not the best use of balance sheet (see *When market risk meets operational risk*, J. Younger et al., 3/10/20).

So far this likely sounds like yet another wonky analysis of derivative market structure and small pricing discrepancies. Which it is. But **we should all care about what is going on in Treasury futures basis**. These positions, in addition to being a relative value trading strategy, can also be used for short-term cash management. Futures pricing implies a repo rate that can diverge from the cash market, and when that happens buying the basis unlevered (i.e., not using repo to fund the CTD leg) can be seen as a risk-free competitor to 1- to 3-month investment for real money.

When the implied repo is high enough, these positions start to look more attractive than other products. This does not occur often, since relative value trading and dealer activity will tend to enforce implied repo close to cash repo, and both much lower than those with credit or FX risk. Recent moves have, however, turned that relationship somewhat upside down. Futures basis in TY, for example, is now quite a bit more attractive than 3-month bank CP and close to carry on 3-month EUR forwards (**Exhibit 3**). It is also important to note that even better levels were

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possible intraday this past Wednesday (**Exhibit 4**). At these levels, the incentives are quite strong for real money to reallocate away from these markets and into nearly risk-free basis positions at a higher yield. **In that sense, there is a rather direct channel between stress in the futures basis market and a wide range of other asset classes, including but not limited to unsecured bank funding—and by extension, Libor—as well as FX forwards**. It is important to note, however, that the unconstrained short-term bond funds best positioned to do this trade (it is not 2(a)7 eligible) are not particularly large compared with the futures basis market, though other real money investors could in principle fill the gap. That could have something to do with the degree of stress observed in those markets in recent days.

The issue here is one of magnitude. **Treasury futures positions are so large, that it would take a significant reallocation of funds to offset a large-scale unwind. In other words, it would be a sizeable delivering event**. The Fed of course has the tools to deal with the repo side, and we believe they remain effective. The most recent operation, for example, led to a sharp compression in GC spreads despite being significantly oversubscribed today (~1.7x in the new 25-day maturity and nearly 2x for 14 days). Longer maturities (even beyond 1-month) are particularly helpful to the extent that operational risk management is driving some of the selling of futures basis. It does not, however, address two key factors. First, dealer balance sheet capacity, which when it is quite limited can lead to significant volatility on off-the-run Treasury pricing and substantially cheaper securities versus longer-maturity GC. Second, the futures themselves are clearly not directly affected by Fed activity, and depending on the timing of the flows could richen further—particularly intraday.

What stage of this process we are in is not clear. However, **a key theme to bear in mind going forward is that implied repo in Treasury futures is now a key barometer to track**. And that if it remains here, and especially if it moves higher, we could see additional stress in other markets. Fed liquidity support keeps us rather sanguine on repo itself. However, other front-end spreads are a different story. We retain received positions in EUR/USD 2Yx1Y cross-currency basis, originally initiated based on relative value considerations but a good expression of the above dynamic as well (see *There is one market where USD funding stress could reemerge*, H. St John et al., 2/20/20). We had previously had a bearish bias in FRA/OIS, and believed most recent moves were largely mechanical and relative to simply the decline in rates, this new channel raises the risk of a more fundamental widening. T-Bill supply dynamics do not help the situation: as of colleagues in Treasuries recently pointed out, some policy options recently floated by the Administration (a payroll tax cut, delaying Tax Day) could keep supply net positive for longer (see *US Treasury Market Daily*, J. Barry & J. Hunter, 3/11/20). However, **we believe the potential for an escalation of this futures basis unwind is a much more potent driver, and could keep spreads elevated even if rates stabilize from here**.

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