
An Analytical Guide To Interest Rate Futures Spreads: The NOB, MOB and TED

Futures & Options Strategy Series

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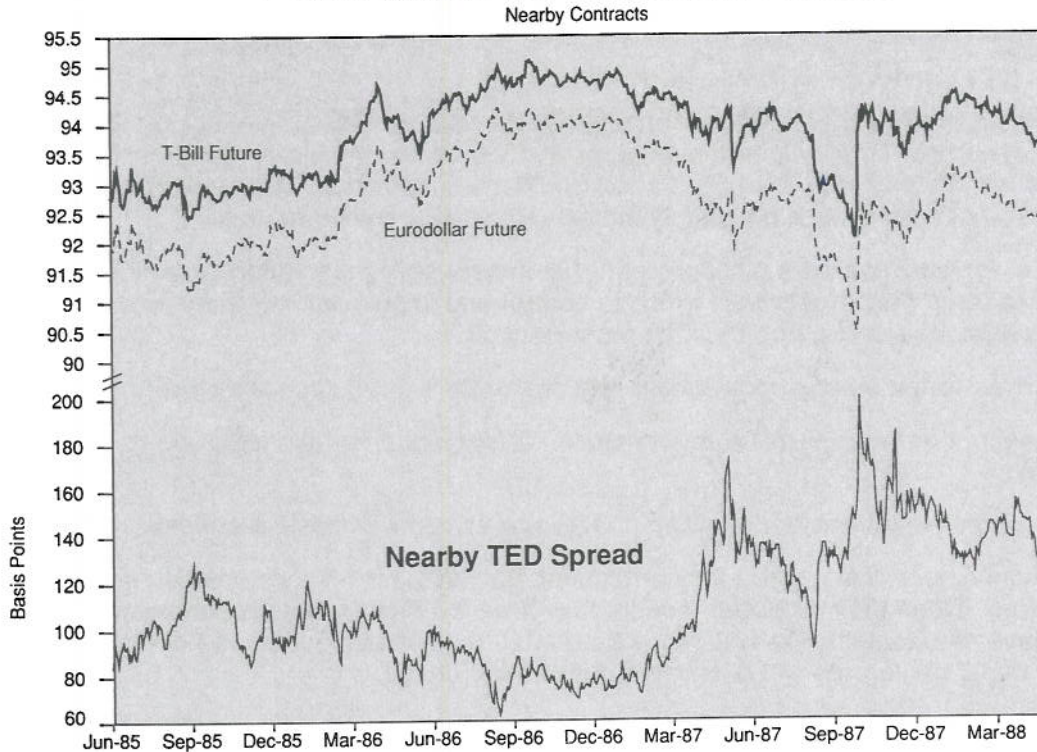
The TED Spread

The long TED spread (T-bill over Eurodollar futures) is created when one buys the T-bill future and simultaneously sells the Eurodollar future. Since the maturity of the underlying securities is the same, and since there are enough market participants in the cash market to potentially arbitrage away any intermarket mispricing, one would expect the futures spread to remain constant. The futures do however, get mispriced relative to the underlying cash markets. If, for example, one of the legs of the trade is rich to cash while the other is cheap, one could say that the spread is mispriced and execute a trade. **The primary reason for trading the TED, however, is to take advantage of "flight to quality" or confidence sentiment regarding other markets or the banking system.**

The TED Spread		
TED Spread	=	T-Bill Future - Eurodollar Future

FIGURE 18

T-Bill Futures vs. Eurodollar Futures



The Confidence Spread

“Flights to quality”—to T-bills from other financial assets, such as equities—usually occur when there is fear of market deterioration. Such was the case in October of 1987. T-bills are the natural haven for frightened money, and this will cause the TED to widen.

A reduction of confidence in the banking system also affects the TED spread. If a bank fails or is going to fail, people who hold Eurodollars will liquidate them, as they are not insured deposits, and buy T-Bills, which are of a much higher quality. In addition, banks that are in trouble increase their borrowing in Eurodollars to dress up their balance sheets, by offering higher rates, thus lowering prices on Eurodollar futures. This phenomenon also occurs at year end due to financing pressures, when both corporate and bank Euro rates tend to go up. These issuers also hedge in T-Bills, which help to increase T-Bill prices. All this makes the TED narrow as Eurodollar rates rise to attract money.

Differences in Liquidity Cause a Directional Play

Eurodollar futures are much more liquid than T-Bill futures contracts, having vastly greater open interest, and are the preferred way to trade the futures on the short end of the yield curve. As a result, in the event of a long bond rally (i.e. a flattening of the yield curve), the Eurodollar future will underperform the T-Bill future as people sell the short end and buy bonds. This results in a widening of the TED. During a bond market decline, when the yield curve steepens, investors rush out of bonds into short term Euros, and this results in the Eurodollar future outperforming the T-Bill future, thus leading to a narrowing of the TED. This can be summarized as follows: **the TED spread tends to move inversely with long term interest rates.**

T-Bill Supply and Fed Monetary Policy

T-Bill supply is also an important consideration in trading the TED. If the Treasury decides to reduce the amount of T-bills outstanding by auctioning less than are currently maturing, T-bill rates are likely to fall as supply shrinks and demand picks up. This is likely to make the TED widen. **Conversely, if bill supply increases, the TED should narrow.**

The Federal Reserve System’s management of monetary policy also affects the TED spread. The Fed has three major tools with which to control and implement monetary policy. It manipulates bank reserves, and thus the money supply, by:

- adjustments to the reserve requirement rate on deposits at all depository institutions,
- variations in the discount rate that it charges for temporary loans of reserves to commercial banks
- through open-market operations when it buys and sells government securities.

Reserve requirement changes are very infrequent, as they have a very dramatic effect on money supply. When they do occur, though, they have a direct impact on Eurodollar rates, and a reserve requirement hike will cause Euro rates to increase relative to T-bill rates, with the result that T-bill futures will outperform Eurodollar futures.

Discount rate cuts or hikes are more frequent, but are not very effective, as the initiative to borrow reserves comes from the banks, and cannot be controlled by the Fed. The most important way the Federal Reserve alters bank reserves is by open-market operations. Open market operations do not necessarily affect interest rates. Since they can be used in small doses when the Fed is fine tuning, there is often no impact on financial markets. When the

Fed uses open market operations to implement a change in policy, interest rates generally change. The Federal Reserve's purchase of government securities via open-market operations will typically have two effects.

- The total supply of T-bills in the marketplace will diminish, and T-bill prices should rise, while rates will go down.
- Total bank reserves go up. Banks can thus lend more money, and do not need to attract new deposits. CD rates, which typically have a constant spread to Treasuries, all else being equal, will likely fall by an equal amount. But Eurodollar rates, which are linked to CD rates via reserve requirements, should fall by a greater amount.

Thus significant open-market purchases should cause Eurodollar futures to outperform T-bill futures, leading to a decline in the TED. Similarly, open-market sales of securities by the Fed tend to cause the TED to widen, as short-term interest rates rise.

<u>Fundamental Factors</u>	<u>Expected Reaction of TED</u>
"Flights to Quality"	Widen
Reduction of Confidence in the Banking System	Widen
Euro financing increases	Widen
Yield Curve Flattens	Widen
Yield Curve Steepens	Narrow
T-bill Supply Increases	Narrow
T-bill Supply Decreases	Widen
Fed raises Reserve Requirements	Widen
"Significant" Open Market Security Purchases	Narrow
"Significant" Open Market Security Sales	Widen

Additional information is available upon request.

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