CME Group
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INTEREST RATE PRODUCTS

The New Environment and Financial Risk Management

Interest Rate Futures for the Corporate Treasurer

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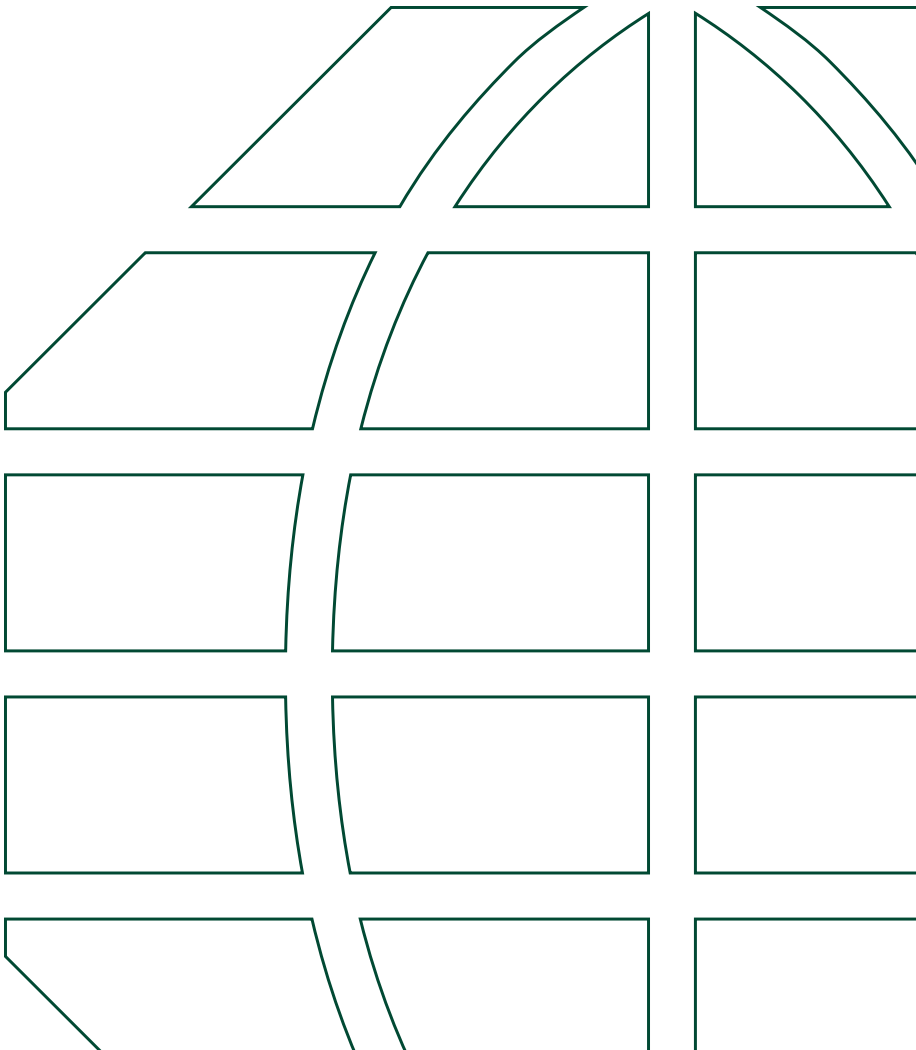

This article discusses how the CME Group suite of interest rate futures and options offers corporate treasurers and CFOs transparent, cost-efficient and secure alternatives while alleviating counterparty risk concerns.

Routine financial risk management has become challenging at best, with credit markets entering perhaps a permanent era of sharply rationed liquidity and capacity. Many over-the-counter (OTC) interest rate hedging solutions that corporate treasurers and CFOs routinely employed in more placid times have become quite costly. This is due to restrictions on counterparty credit lines, transaction valuation concerns, and mutual concerns over banks and companies as counterparties to risk management transactions.

For at least two reasons among many, these circumstances make the CME Group suite of interest rate products (CME and CBOT contracts) attractive alternatives. First, because these contracts are backed by CME Clearing's unrivalled system of financial safeguards, they enable the corporate treasurer to achieve the company's financial rate risk management goals, transparently and cost-effectively, without increasing his counterparty risk management burdens.

Second, in many instances the corporate treasurer will find that he can substitute CME and CBOT interest rate futures and options for OTC risk management products with no operational or procedural disruption – usually while continuing to do business with his current relationship bankers.

Risk Management in a Credit Drought

Until recently, any company with reasonable access to bank lines of credit could manage its financial risk by entering into OTC derivative contracts with its bankers. Since mid-2008 this has grown difficult, however, for both the bankers and their corporate customers.

> With capital dear, bankers are hesitant to take on the incremental credit risk of their corporate clients as counterparties to risk management transactions such as interest rate swaps. What credit capacity is available now tends to be allocated to balance sheet needs and basic lending. The corporate treasurer may find that little to no credit capacity is left for other purposes, such as risk hedging programs, on terms at all attractive.
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Corporate treasurers have become more wary about taking on the counterparty credit risk of their banks through OTC derivative transactions.

In consequence, the cost associated with seemingly basic hedge transactions has ballooned in at least three ways:

Credit Surcharges

Consider a corporate CFO wanting to enter a fixed-payer interest rate swap. Whereas in the past she might have paid an added credit charge of a few basis points (bps) per annum over the basic plain-vanilla market swap rate, today such charges may run to 10, 25 or 50 bps or more per annum. These add-ons are hefty in any case, but they are especially conspicuous when intermediate- and long-term interest rates are at historic lows. For example, for a 3-year swap at a basic market rate of 1.75 percent, a 25 bp credit surcharge pushes the rate to 2.00 percent.

Position Adjustment Costs

Consider a corporate treasurer wishing to unwind a hedge, i.e., to lift a hedge position that he had established earlier to control the risks of a financial transaction that has since occurred, such as a debt issuance or an asset pricing. He is apt to find that his bank will assess significant charges to terminate the hedge. From the banker's standpoint, this is simply fair compensation for the funding cost of having to pay out cash to the corporate customer in an environment where capital is scarce. Sadly, these unwind costs become yet another source of financial uncertainty for the corporate treasurer, insofar as they typically vary with the specifics of each situation, e.g., the magnitude of the hedge's market value, its remaining term to maturity, or market quotes on the corporate customer's or the bank's credit spread.

Impacts Upon Financial Performance

Corporate financial accounting standards often require the CFO to haircut the value of her hedge positions, both to account for the credit risk exposure of the corporation's bank counterparties and to reflect the financial risks inherent in market conditions. Lately, moreover, corporate accounting and audit departments are apt to insist that financial statements should be adjusted to reflect the uncertainty of cost to the corporation for unwinding a hedging transaction – the uncertainty of realizable value.

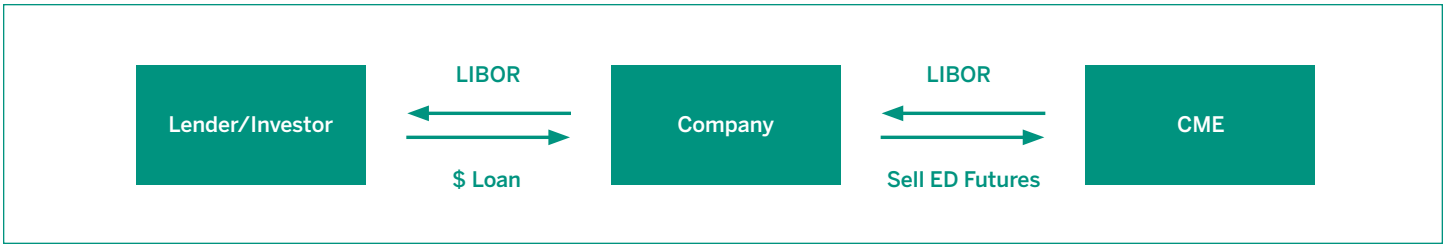
How Interest Rate Futures and Options Can Help

Fortunately, the corporate treasurer can use one of the CME Group family of interest rate contracts to achieve virtually the same financial results as an OTC swap. Indeed, these are the means of risk layoff that commercial banks and bank derivative dealerships use most frequently to hedge their own interest rate risk exposures and their OTC hedges with customers. In this discussion, we will focus on the Short-Term Interest Rate (STIR) futures contracts and Swap futures.

Exhibit 1: Interest Rate Hedging Products and Applications for Corporations and Financial Institutions

Objective:	Manage risk on floating rate debt or diversify interest rate exposure from fixed to floating
Solutions:	• Eurodollars futures and options
	• 30-Day Fed Funds futures and options
	• One-Month LIBOR futures
	• 3-Month Overnight Index Swap (OIS) futures and options, and new 3-Year T-Note futures
Objective:	Hedge interest rate risk occurring at an upcoming point in time; perform asset/liability management – manage duration or "gap" risk
Solutions:	• 2-Year, 5-Year, 10-Year T-Notes and 30-Year T-Bond futures and options
	• 5-Year, 7-Year, 10-Year and 30-Year Interest Rate Swap futures
Objective:	Manage credit spread risk of a future debt issue or in a fixed income portfolio
Solutions:	• Treasury vs. Swap Spreads
	• CME Barclays U.S. Aggregate Bond Index futures vs. Treasury futures
Objective:	Manage or replicate the characteristics of a fixed income portfolio
Solution:	• CME Barclays U.S. Aggregate Bond Index futures

Exhibit 2: Locking in Interest Costs with Eurodollar Futures



Eurodollar (ED) Futures, the most prominent of STIR products, reflect market expectations for future values of the 3-month London Interbank Offered Rate (LIBOR). For example, the 5-year ED futures "strip" is the money market's premier price discovery mechanism for expectations of 3-month LIBOR for each of 20 consecutive quarters into the future. These interest rate futures prices are the basis for the fixed equivalent of LIBOR, commonly known as swap rates. In the same way, 30-Day Federal Funds Rate futures indicate market expectations of future monthly average levels of the daily effective federal funds rate.

Thus, the corporate treasurer who wants to lock in today's market expectations of LIBOR for some future interval can sell ED futures covering that period of time. For example, consider a company paying interest on a 5-year floating rate bank loan that is priced off 3-month LIBOR. By selling a 5-year bundle of ED futures – a bundle being one each of the nearest 20 quarterly contract expirations – the company can effectively fix its interest cost. Changes in market expectations regarding the LIBOR rates that are to be realized at each of the loan's reset dates would be reflected in corresponding changes in the value in the futures hedge position. For example, increases in future LIBOR that produce higher interest payments on the floating rate bank loan would be offset by gains on the short futures position, and vice versa.

As Exhibit 2 above illustrates, by employing this basic strategy, the company can effectively lock in its interest costs at an average futures contract rate for terms ranging from one to at least five years.

Conversely, a company wanting to alter the cash flows of a fixed rate asset or liability to produce a variable yield or funding cost would simply buy a strip of ED futures contracts covering that period of time.

Swap Futures are also excellent tools with several applications for corporate treasurers. Swap futures are standardized forward starting interest rate swap futures contracts with maturities of 5, 7, 10 or 30 years. (A 3-year contract is coming soon.) Financial risk managers will recognize these products as similar to OTC forward starting swaps that fit anticipatory hedging or asset/liability matching needs. Applications for a debt issuer include hedging the funding cost risk ahead of an upcoming financing transaction and for a portfolio manager or finance company matching the duration of assets and liabilities or managing "gap" risk.

The exchange traded and cleared model can be extraordinarily cost effective. Exhibit 3 illustrates an example cost analysis framework that can illustrate potentially millions of dollars in cost savings available per transaction depending on the size and credit charges involved by choosing exchange traded and cleared solutions compared to OTC solutions. The example illustrates a minimum of over $100,000 in savings for a 3-year $100 million notional hedge when OTC credit charges are 10 bp per annum.

Exhibit 3: Economics of OTC Swaps vs. Eurodollar Futures

Analysis will show that many risk managers, regardless of the actual credit charges they incur, will discover exchange traded and cleared solutions are more cost effective than OTC hedging products, and provide full transparency, valuation confidence and eliminate counterparty risk.

The example below compares the cost of hedging floating rate exposure with an OTC swap carrying 10 basis points of credit charges, with using Eurodollar futures assuming a worst case market move requiring the maximum margin requirement.

Assumptions

- Notional $100 million
- Hedge exposure = 3 yrs
- Mkt 3-year swap rate = 1.75%
- Initial OTC credit charge = 10 bp
- Corp cost of funds = LIBOR + 2%

OTC Swap – Credit Charges

10 bp x $100 million x 3 yrs = **$300,000**

Eurodollar Futures – Initial Performance Bond

Initial Posting

- ED contract notional = $1 million
- Approx number of contracts = 100 x 4 per yr for 3 yrs

  Hedge = Sell 1,200 contracts
- Initial margin = $1,100 per contract
- Total initial margin = 1,200 contracts x $1,100 = **$1.32 million**

Average Posting During 3-Yr Hedge Interval

Assume straight-line decline from $1.32 million at beginning to zero at end of 3 yrs:

$1.32 million/2 = **$660,000**

Average Funding Cost

$660,000 x 2% x 3 yrs = **$39,600**

Eurodollar Futures – Worst-Case Variation Margin

- Assume ED contract position synthetic yield = 1.75%
- Assume all ED contract rates (essentially, LIBOR) go to zero immediately after execution and stay at zero for 3 years.

Initial Variation Margin Posting

Approx 175 bps x 1,200 ED contracts x $25 per bp = **$5.25 million**

Average Variation Margin Posting During 3-Yr Hedge Interval

Assume straight-line decline from $5.25 million at beginning to zero at end of 3 yrs:

$5.25 million/2 = **$2.625 million**

Average Funding Cost

$2.625 million x 2% x 3 yrs = **$157,500**

Eurodollar Futures Hedge Funding-Cost of Initial Performance Bond plus Worst-Case Variation Margin

$39,600 + $157,500 = **$197,100**

Cost Savings of Eurodollar Futures Hedge vs OTC Swap

$300,000 - $197,100 ≈ **$100,000**

Note: If LIBOR averages higher than 1.781 for the period, on average the company would have no Variation Margin requirement.

Other Benefits of Interest Rate Futures for the Corporate CFO

CME and CBOT futures and option contracts are virtually identical in every respect to their OTC brethren such as short term spot and forward starting interest rate swaps, yet with several advantages, in addition to lower cost:

Standardization	→	Enhanced liquidity; confidence in execution
Transparency	→	Valuation integrity at execution, for carry value and at unwind
Administrative Ease	→	Simple to administer; no ISDA; Level 1 hedging transaction
Capital Efficiency	→	No credit risk obviates need to reserve significant capital against a hedging book

Price Transparency and Financial Reporting

Any hedge position constructed with exchange listed futures contracts qualifies as a value-transparent Level 1 financial product transaction. This means no valuation haircut is needed for financial reporting purposes, which eliminates the administrative costs and burden of determining these haircuts.

The valuation integrity of our futures and options is of utmost importance to market participants. The exchange holds no proprietary positions in the financial contracts for which we provide settlement. Daily marks-to-market are fully transparent and are based on the settlement prices of actual, identical trades in the same instruments by a variety of market participants.

Lower Cost of Documentation

Unlike OTC interest rate derivatives, no ISDA documentation is required for exchange-listed futures.

Ease of Market Access

To gain access to our interest rate hedging tools, the corporate treasurer simply needs to establish a customer account with a futures commission merchant (FCM) who is a CME Clearing Member Firm. The FCM acts as agent on behalf of the customer, generally executing the company's transactions through the futures market central order book, i.e., either through the CME Globex electronic trading platform or in open outcry trading on the floor of the Exchange. The FCM also handles the collection and payments of performance bond funds into and out of the customer's margin account. The exchange model also provides equivalent access to the futures and options markets for all participants: all dealers, all investors, all issuers and all risk managers – regardless of size.

Conveniently, many of the corporate treasurer's larger relationship banks are likely to have FCMs as subsidiaries. Thus, the corporation might use its banker's FCM, or it might opt to use an independent FCM.

To see a roster of CME Clearing Member Firms, please visit: www.cmegroup.com/clearing and click on the Clearing Firms link.

Virtually No Counterparty Credit Exposure

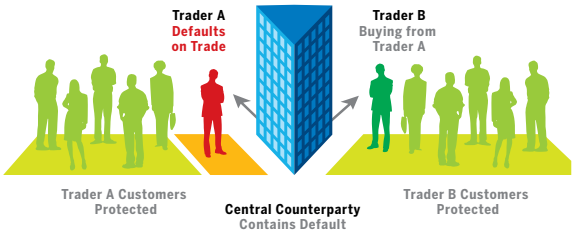
Perhaps most important today to the corporate treasurer in the exchange model is the guarantee of CME Clearing – the counterparty to every contract. Think of the CME Clearing as "the buyer to every seller and the seller to every buyer." CME Clearing as the company's counterparty is comparable to the strongest fully cash secured counterparty credits in the OTC market. Not only do the CME Group family of interest rate contracts benefit from the financial safeguards of the CME Clearing guarantee, but also from the safety inherent in twice daily marks-to-market. Contract position holders, whether long or short, must post an initial performance bond to the CME Clearing (via their clearing member firms). Subsequently, they also must post variation and maintenance margin on the basis of the marks-to-market. While daily marking-to-market and posting of the initial performance bond may seem unattractive relative to the unsecured nature of OTC swaps, if unsecured, cost-effective lines of credit are even available to the company, three benefits are worth noting:

- First, unlike OTC interest rate derivatives, ad hoc credit charges do not enter into the transaction, neither when the hedge position is established nor if it is unwound.
- Second, in many cases the corporate treasurer may be pleasantly surprised to find that the funding cost of maintaining performance bond funds in margin account is a fraction of the credit surcharges and other transaction costs that she incurs with OTC interest rate swaps. This is illustrated in Exhibit 3 on page 5.
- Third, the corporate treasurer benefits directly from the performance bond funds that it collects into its account if the hedge position produces a mark-to-market gain.

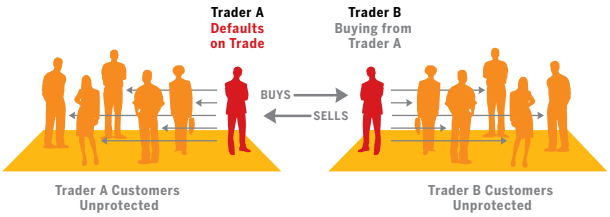
Interestingly, it is these characteristics of the exchange model which explains the elimination of the liquidity and systemic risks inherent to the OTC derivative model.

How Clearing Models Manage Risk

With a central counterparty model, the clearing house is the buyer to every seller and the seller to every buyer. So, if Trader A defaults, the default is contained between Trader A and the clearing house, protecting everyone in the green circles below.



The over-the-counter market's bilateral model works differently. If Trader A defaults, neither Trader A, Trader B, nor the others they transact business with are protected from the default, leaving everyone in the orange circles at risk.



For more details on CME Clearing's Financial Safeguard system, please visit: www.cmegroup.com/company/risk.

For additional information contact the CME Group Interest Rate Products Team at 866-501-3646 or interestrates@cmegroup.com.

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