

Changes to Derivative Valuation – Implications for the corporate treasurer.

Recently, the international banks have begun valuing certain derivatives using an overnight index swap (OIS) rate, rather than the traditional approach of London Interbank Offered Rate (LIBOR) rate. Derivatives valued using the OIS curve include collateralised derivatives and derivatives cleared through a central clearing house. Treasury, risk management and financial reporting departments will need to assess the impact of the change on systems, processes and the reported financial performance.

Background

Following the financial crisis, the volume of centrally-cleared and collateralised derivatives has increased. In addition, under Basel III, banks must maintain significantly more regulatory capital for non-collateralised derivative positions, increasing the incentive to insist on collateral. Many derivatives dealers believe that the appropriate curve to use in the valuation of collateralised derivatives, which typically earn an overnight interest rate, is a curve that reflects this lower cost of capital due to the lower risk, such as the OIS curve. Their view is that the traditional method of discounting using a LIBOR curve misstates the valuation because it does not appropriately consider the requirement to post collateral.

Prior to the financial crisis, LIBOR moved in tandem with the OIS rates, with spreads between these rates typically about five to ten basis points. Since then, spreads between these rates widened. In addition, many clearing houses, such as LCH Clearnet – the single largest clearing house for interest rate swaps – now uses OIS discounting to compute margin requirements.

Equally, end-users often rely on these dealer quotations for their own valuations and may also be expected to post additional collateral as the new valuations become standard in the market.

How OIS discounting works

LIBOR is the rate at which an individual bank borrows funds by asking for, and then accepting, interbank offers in reasonable market size. OIS, on the other hand, is the fixed rate swapped in exchange for a floating overnight rate. The overnight rate is the interest rate at which a bank lends immediately available funds (through a central bank) to another bank on an overnight basis.

To price a swap, valuation models calculate the cash flows that the counterparties agree to pay each other over the life of the contract. In theory, these cash flows should be discounted by each counterparty at the rate at which it will fund them. That rate has historically been LIBOR, as it was assumed to be the cost of funding. Today, dealers are exploring whether the OIS curve should be used to discount the future cash flows of collateralised derivatives

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rather than LIBOR, even if the swaps cash flows are referenced to LIBOR. That is, even if a collateralised swap requires a counterparty to receive/pay a fixed interest rate and pay/receive LIBOR, the cash flows associated with the swap would be discounted using the OIS curve.

Not all collateralised swaps will be valued using the OIS curve. The collateral received must be liquid collateral that can be re-hypothecated so that the counterparty is able to access funds at a lower cost of financing.

Which derivatives will be most materially affected by the change to the OIS curve

As the valuation of derivatives using OIS curves as discount rates is done on a cash-flow-by-cash-flow basis, it is difficult to determine which derivatives will be most materially affected by the change to OIS discounting. Depending on the spreads between LIBOR and OIS for each currency and each product at each reporting date, certain transactions may be more materially impacted than others. Companies will have to 'run the numbers' on their portfolios to determine the impact of the change.

Equally, companies should consider evaluating whether counterparties to their derivatives have begun using OIS curves for discounting. To the extent that a swap has a fair value when discounted using LIBOR that is other than zero at inception, it may be indicative that the counterparty has changed its method of valuation.

Implications for treasurers

Which products will be valued using the OIS curve – Unfortunately, this remains a moving target as regulatory requirements take effect and valuation models evolve. However, it is reasonable to assume that most valuation systems will not have been designed to differentiate between collateralised and uncollateralised derivatives or parts of derivatives. Additionally, they may not distinguish between those that are exchange-traded versus not exchange-traded. There may be a need to 'bucket' derivative transactions with different characteristics in the treasury management system in order to use different inputs for valuation. However, this could create challenges, as current valuation models may not have been designed to apply different discount curves within the same currency (for example, LIBOR for uncollateralised USD swaps and OIS for collateralised USD swaps).

Difficulties also exist in considering how to value the impact of collateral, based on the terms of the product and the collateral posting requirements. Certain products, such as options, have unique attributes that make OIS valuations difficult. Other agreements permit the use of less liquid collateral.

In short, the evolution of products being valued using OIS discount rates may involve significant systems changes and monitoring.

How to track the collateral requirements for each transaction -

Derivatives are generally transacted under master agreements with counterparties with Credit Support Annexes (CSAs) governing the nature and timing of collateral postings. Specific terms with various counterparties may need to be considered for the valuation of derivative contracts with those counterparties. In some cases, only one party is required to post collateral. Some transactions may be only partially collateralised as collateral is assessed more broadly by counterparty (that is, considering all open positions). While entities often spend a great deal of time monitoring collateral, the impact so far hasn't generally been incorporated into valuation models, except to the extent it impacted counterparty (or company) credit risk adjustments.

How to build an OIS curve - US dollar OIS rates are currently quoted on Bloomberg up to a ten-year maturity. Beyond that, the OIS curve must be built through extrapolation. While dealers have access to other information-gathering sources that quote the OIS rates for longer maturities, questions will arise about how observable such quotes are. It is not clear how much agreement there will be among market participants as to the later points on the curve, which are those rates requiring the most judgement.

Treasury departments will need to develop a process for building the OIS curve, which may be affirmed and evaluated by internal and external auditors.

How will currency risk and OIS discounting interact - The currency of the collateral may differ from the currency of the transaction and is likely to differ from one side of the transaction on a cross-currency swap. There is a question as to whether the OIS curve used for discounting will be the currency of the collateral (as that is the funding source) or the currency of the transaction, if they differ.

What if I use an external pricing service - Some of the challenges of using an external pricing service include whether external pricing services will be prepared with discount rates based on both OIS and LIBOR and how to inform the pricing service if the swaps are collateralised or are centrally-cleared. This will need to consider whether or not the service provider will have the ability to discount using OIS, as well as what additional information they will need (for example, information on collateral agreements).

What about hedging strategies - Companies will need to evaluate and monitor the spreads between LIBOR and OIS to determine if the entity's existing LIBOR-based hedges remain effective. As OIS discounting becomes more commonplace, alternatives to LIBOR based hedges through using basis swaps to convert LIBOR-based swaps to OIS or using OIS-based transactions as hedges from the outset will become more commonplace

Implications for financial reporting

Will there be an income statement impact upon an initial change to OIS discounting for fair value measurements - There may be some earnings volatility upon the initial change to OIS discounting as fair value measurements change. Revised fair value measurements resulting from a change in valuation

technique or its application are typically accounted for as a change in accounting estimate, with the change affecting current and future periods, if applicable.

What is the appropriate fair value measurement for financial reporting purposes - The fair value guidance in IAS 39/FRS 26 defines fair value as the price that would be paid in an orderly transaction between market participants at the measurement date. Management therefore, before using a valuation based on OIS discounting for financial reporting purposes, must consider whether the market participants in the particular market(s) for its derivatives would use the OIS curve or the LIBOR curve for discounting. The use of OIS as the standard for the valuation of collateralised derivatives could differ by jurisdiction and by product or currency.

Where will derivatives valued using OIS fall within the fair value hierarchy - There are three broad levels to the fair value hierarchy of inputs to fair value

- Level 1: Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets;
- Level 2: Inputs other than quoted prices included in Level 1 that are observable for the asset or liability either directly or indirectly; and
- Level 3: Unobservable inputs (for example, a reporting entity's own data).

For an input to be Level 2, the inputs must be observable for substantially the full term of the asset or liability. If it is decided that OIS discounting is appropriate, the liquidity of the OIS curve in the currency of that product and throughout the entire term structure needs to be considered. This assessment is needed to determine whether the level in the fair value hierarchy for those derivatives is changed. For example, if the positions using OIS discounting with maturities beyond the point where OIS rates are quoted represent recurring fair value measurements using significant unobservable inputs (that is, whether such positions are now Level 3 instruments).

Extrapolating short-term data to measure longer term inputs may require assumptions and judgments that cannot be corroborated by observable market data and therefore, may represent a Level 3 input.

What is the impact on intercompany transactions? - Instances could arise in which entities have collateralised swaps with external counterparties (which are valued using the OIS curve) and mirror-swaps with sister companies (usually for tax, accounting or standalone reporting purposes) that may or may not be collateralised. If the external trade is valued using an OIS curve, and the intercompany trade is valued using the traditional LIBOR curve, the values will not offset on the stand-alone financial statements of the entity that has both the external and internal transactions. This will result in some income statement impact in the stand-alone financial statements.

In the consolidated financial statements, these intercompany transactions should be eliminated.

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What are the implications for hedge accounting? - Altering collateralised swap valuations is a market calibration event to more appropriately reflect fair value for these instruments. This event does not reflect a change to the economic hedge strategy, the risk being hedged or the terms of either the hedging instrument or underlying exposure. For both cash flow and fair value hedging, there therefore is no conceptual basis to de-designate or revoke existing hedge accounting relationships. As the hedging strategy has not changed, LIBOR will continue to be the benchmark interest rate for hedge accounting purposes.

A word of warning however. Using a different discount rate to value the derivative (the hedging instrument) versus the hedged item could result in additional ineffectiveness recorded in earnings. Such ineffectiveness could, in certain cases, result in the hedging relationship either not qualifying for hedge accounting at inception or not continuing to qualify at certain reporting dates.

Would a company be required to disclose the change to OIS discounting in its financial statements - IFRS 7/FRS 29 requires robust disclosures about (1) the different classes of assets and liabilities measured at fair value; (2) the valuation techniques and inputs used; (3) the activity in Level 3 fair value measurements; and (4) the transfers between Levels 1, 2 and 3. Additionally, it requires enhanced disclosures of Level 3 inputs including quantitative information about significant unobservable inputs used and a description of the valuation processes in place is now required, along with a qualitative discussion about the sensitivity of recurring Level 3 fair value measurements.

Even if the change in the inputs used in fair value measurements did not result in a move among categories to Level 3, management might consider disclosing the change as material information about the valuation techniques and inputs used.

Given the commercial and economic advantages for derivative dealers in using an OIS basis of valuation, it is enviable that its widespread use will become more commonplace in the short to medium term. As with all major changes, the impacts on typical Corporate Treasury are likely to be extensive and time consuming.

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