Derivatives Valuations in Practice Checklist

Have You Got All Your OIS Bases Covered?

In our experience helping clients implement OIS discounting, asking (and answering!) the following questions will ensure you've really thought through all the ways OIS discounting can materially impact your business. Helping people get this right is part of what we do, so we welcome your comments and are happy to answer any questions you'd like to ask us.

Curves: Can your curve construction handle differences in quoted data?

You not only need to know how your data points are discounted (see next section) but also how to incorporate those differences in your curve construction. If you can't accommodate the differences, then your yield curves won't truly reflect the market.

- [ ] Can you build an OIS curve?
- [ ] Are you able to mix OIS rates and Fed Funds versus LIBOR swap spreads to extend your OIS curve beyond 5/10Y?
- [ ] Can you capture tenor spread adjustments to build a multi-curve environment?
- [ ] Can you perform dual curve stripping to capture the impact of OIS discounting in the LIBOR swap quotes?
- [ ] Can you also apply dual curve stripping of the tenor spread curves and basis spread curves?
- [ ] Can you capture the impact of multi-currency OIS curves in cross currency spread adjustments?
- [ ] Can you calibrate your interest rate models with the discounting method incorporated in the market quotes & reference instruments?
- [ ] Can you imply OIS based volatilities from LIBOR based volatility quotes? Visa-versa?

External Data Sources: Do you know how your reference rates & benchmarks are being discounted?

The impact of OIS discounting isn't completely contained by your decisions. It sneaks in via many of the market data source for prices, rates, volatilities and other quotes you receive.

- [ ] How are the LIBOR swap rates you use for curve construction discounted? OIS or LIBOR?
- [ ] What about tenor basis spreads, how are they discounted? Cross-currency spreads?
- [ ] How is this different for each currency you require?
- [ ] How are your Cap/Floor and Swaption volatilities quoted? OIS or LIBOR?
- [ ] How does OIS discounting relate to your broker prices?
- [ ] What are the OIS assumptions behind your counterparty marks?

Valuations: Do you have all the models you need in place?

Don't be fooled into thinking that the behavior of OIS discounting is easy to predict or follows a known pattern. Different curve environments interact with changing maturities, optionality and moneyness in surprising ways.

- [ ] Which items in your portfolio will be subject to OIS discounting?
- [ ] How will you value your linear based interest rate swaps and derivatives using OIS discounting?
- [ ] How will you support daily valuations for collateral call calculations?
- [ ] How will you value your investments, debt, and non-OIS designated derivatives using the OIS–adjusted LIBOR forward and discount curves?
- [ ] How is OIS discounting incorporated into the interest rate option models used to value structured derivatives?
- [ ] How will the models capture different discounting methods between the option and the underlying on cancellable swaps and swaptions?
- [ ] What portion of your derivatives can you not value with OIS discounting using your existing systems?
- [ ] How will you incorporate OIS discounting into both prospective and retrospective hedge effectiveness testing (HET)?
- [ ] How will you need to adapt your HET to address the 2013-10 update to ASC 815 to incorporate the OIS swap rate as a benchmark interest rate for hedge accounting purposes?

Analysis: Do you know all the places OIS could impact your portfolio?

Even with this checklist in hand, there's still a lot of work to do to answer these questions and prove materiality (or lack thereof).

- [ ] How will you compare differences across time and types of curve environments?
- [ ] How will you perform and track comparisons between OIS and LIBOR discounting? For an instrument? For a whole group?
- [ ] How will you isolate the different contributing factors of OIS discounting impact (e.g. discounting curve and dual curve stripping)?
- [ ] How will you show the impact of OIS discounting on the projected cashflows and discounting factors for your derivatives?
- [ ] What will you need and how will you perform your model validation?

Risk Exposures: Are you able to capture the new sensitivity?

Switching to OIS discounting introduces new market and credit risk requirements into the equation.

- [ ] How will you know which instruments have the most sensitivity to OIS-LIBOR spreads?
- [ ] How will you assess the impact of OIS discounting on your hedge-01 / DV01 risk measure?
- [ ] How will your duration analysis capture the duration extensions introduced by OIS discounting?
- [ ] How will you know how shocks to the OIS-LIBOR spread will impact valuations?
- [ ] How will you run different scenarios so you can spot the potential for hedge ineffectiveness?
- [ ] How will you manage the OIS risks? How can you analyze your hedges in terms of OIS exposure?
- [ ] How streamlined of a process will that be?
- [ ] How much manual intervention will be needed?

Operational Controls: Can you manage it all easily? Will your auditors think so too?

You may have a handle on OIS discounting through copious spreadsheets and burning the midnight oil. You'll need to get that streamlined into something that is sustainable for the business as well as durable and fool-proof enough for your auditors.

- [ ] Can you easily turn OIS discounting on and off as needed?
- [ ] Can you apply different discounting methods for hedged items versus hedging items?
- [ ] Can you apply OIS discounting to just the product types that require it?
- [ ] Can you automatically sweep through your portfolio and easily see what is and isn't discounted with OIS?
- [ ] Will you be able to perform parallel and back testing of the change to OIS discounting prior to 'go-live'?
- [ ] Can you show you have controls in place to audit when discount method changed or to enforce it for certain product types?
- [ ] Can you control the date the discount method is applied? Can you easily move back and forth in time as needed?
- [ ] Can your back-office and accounting systems support the new valuation standards for OIS discounting?

PRINCIPIA

Derivatives Valuations in Practice

Do You Know the Implications of OIS?

We've been working closely with our clients over the past few years as they implement OIS. If we could sum it up in a phrase, it would be "the devil is in the detail". OIS discounting may seem superficial or insignificant at first glance but it is highly nuanced and the impact can be material. Are you aware of all the implications?

Do you think: OIS discounting only impacts your collateralized and centrally cleared derivatives?

This is the most common misperception we come across. In actual fact, the market's move to OIS discounting changes curves used in the valuation of *any instrument* in your portfolio - regardless of how you may discount them. These changes exist in your primary LIBOR curve used to project and discount cashflows. It extends to basis spread curves, tenor spread curves, cross currency basis curves and is critically tied to market volatility assumptions used for option valuations. Contrary to what many people believe, this impact is material.

Do you think: Because spreads have shrunk to pre-crisis levels that OIS discounting is immaterial?

This is an understandable assumption until you really dig into the detail. Even as the market settles into a new norm of tighter spreads between LIBOR and OIS rates, the consequences of these changes are subtle and involved and, depending on the shape of the yield curve, more material now than even at the peak of the crisis.

Do you think: That your accounting and reporting will only require OIS discounting?

Again, in our experience, most back offices require valuations with *both* LIBOR and OIS discounting. This has further implications when you consider how you *know* a valuation has been discounted with a particular curve, and how that information can be audited and controlled.

We discuss these implications and provide specific examples in a series of papers that examine the practical valuation considerations and impacts of this move to a multi-curve environment with OIS discounting. These are all available at:

www.ppllc.com/Principia_DerivativesValuation.htm

About Principia

A practical solution

Principia SFP provides clients with a multi-curve valuation and risk management environment to forecast using appropriate tenor LIBOR forward curves and to select the relevant discounting curves for accurate, independent valuations.

Beyond valuations, the system is an end-to-end operational platform for derivatives portfolios allowing users to perform detailed impact analysis, risk management and the full operational implementation of OIS discounting into daily mark-to-market and hedge effectiveness processes. Principia also provides and automates delivery of extensive daily market data and curves as standard, for precise valuations, proven to closely match the interdealer market.

In a world moving towards central clearing, Principia users have the tools to implement industry best practices in the analysis, trading and risk management of vanilla and complex derivatives. With this single coherent platform, clients can streamline derivatives operations from trade capture and risk, through to accounting and central clearing.

For more information please visit:
www.ppllc.com

The full whitepaper series will be published online at:
www.ppllc.com/Principia_Derivatives_Valuation.htm

PRINCIPIA

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Principia Partners LLC (Principia) provides a comprehensive single platform solution for the end-to-end management of structured finance and derivative investments. Global financial institutions and independent asset managers have used the award winning Principia Structured Finance Platform since 1995 to unify investment analysis, portfolio management, risk surveillance, accounting and operational control across the breadth of structured credit assets, fixed income investments and complex derivatives.

Dedicated support and continued development of functionality for credit and fixed income instruments is accompanied by a proven and fully integrated derivative valuation framework. This overall credit investment and market risk solution delivers the robust backbone necessary for deeper investment analysis, proactive risk surveillance and operational control across the credit investment and derivatives business.

Principia is based in New York, with an office in London and a technology center in Conshohocken, Pennsylvania.