The background features a teal gradient with a subtle grid pattern. In the upper left, there are silhouettes of several people standing in a row. In the lower left, a 3D-style globe is positioned, showing the outlines of continents against a dark teal background.

Trade Life Cycle Management in FinPricing: Part 2

FinPricing



Trade Lifecycle

A trade, also called a deal, is an exchange of financial products from one entity to another. The life cycle of a trade is the fundamental activity of exchanges, investment banks, hedge funds, pension funds and many other financial companies.

All the steps involved in a trade, from the point of order placed and trade execution through to settlement of the trade, are commonly referred to as the trade life cycle. Trade life cycle consists of a series of logical stages and steps.

Summary

- Trade Lifecycle Introduction
- Trade Capture in FinPricing
- Trade Valuation and Validation in FinPricing
- Trade Payment Settlement
- Trade Termination

Trade Lifecycle Introduction

- Pre-sale stage: Marketing persons from investment banks, brokers and dealers introduce various financial products and vehicles to clients. Investors or institutional fund managers survey the market and find the most suitable and competitive products.
- Trade execution: After trading negotiations between seller and buyer, an order is placed and the trade is executed. The completion of a buy or a sell order of a financial product is known as Trade Execution.
- Trade Capture: After trade execution, the trade is booked in the Front Office system, Middle Office Risk Management system and Back Office system.

Trade Lifecycle Introduction (cont'd)

- Trade Validation and Confirmation: Back office validates trade attributes and confirms trade settlement. Risk Management checks the valuation, risks and limits.
- Trade Settlement: Any fee or premium needs to be settled. For a periodic cash settlement trade, such as interest rate swaps or bonds, there is a process of simultaneous exchange of cash between parties at each payment date.
- Trade Termination: A trade may be expired at maturity or terminated early. The early termination could be caused by a position sell or triggered by an early termination provision, such as auto call/cancel, knock-out, etc.

Trade Valuation and Validation

- Users can define their own end-of-day (EOD) details. At each EOD, FinPricing will conduct EOD process automatically based on user definition - value and settle all trades and generate reports. Also FinPricing provides a manual interface for what-if analysis on valuation and validation.
- After creating a new trade or loading an existing trade (see details in "How to book a single trade?" above), click the Market Data tab that is beside the Trade Detail tab. Then the user can either click the New button to input new market data or the Load button to extract the existing market data.

Trade Valuation and Validation (Cont'd)

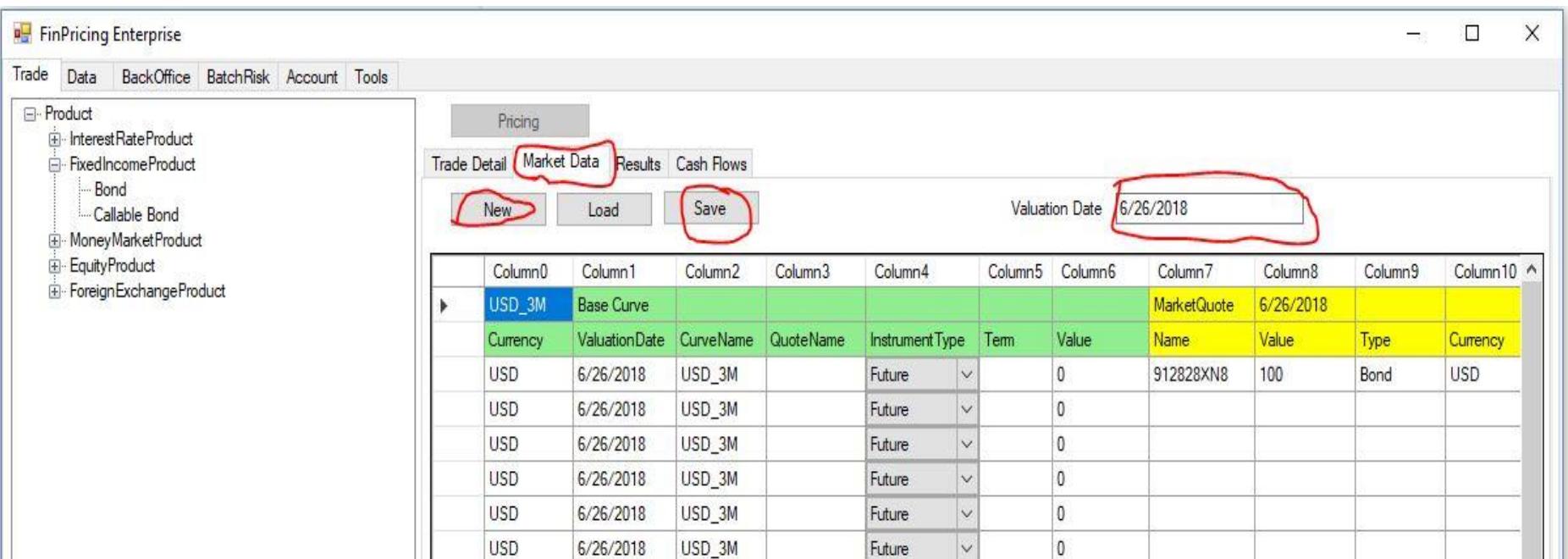
- If the user chooses to input new market data by specifying the Valuation Date and then clicking the New button, the system knows what kind of market data needed for this trade and thus generates market data templates displayed in the main window.
- After filling the market data and then clicking the Save button, an OK windows pops up if all data are in correct formats and value types. That means the new market data are saved into the system and ready to use.



Trade Lifecycle

Trade Valuation and Validation (Cont'd)

- Please note that FinPricing provides some market data to users. However, a user feels free to modify or provide their own market data. Those new or modified market data will be private to the user.



The screenshot shows the FinPricing Enterprise application window. The menu bar includes Trade, Data, BackOffice, BatchRisk, Account, and Tools. The main area has a tree view on the left under Product, listing InterestRateProduct, FixedIncomeProduct (with Bond and Callable Bond), MoneyMarketProduct, EquityProduct, and ForeignExchangeProduct. The central area is titled 'Pricing' and contains tabs for Trade Detail, Market Data, Results, and Cash Flows. The 'Market Data' tab is selected and highlighted with a red box. Below the tabs are buttons for New, Load, and Save, also highlighted with red boxes. To the right is a table with a header row: Column0, Column1, Column2, Column3, Column4, Column5, Column6, Column7, Column8, Column9, Column10. The first row of data shows 'USD_3M' in Column0 and 'Base Curve' in Column1. The second row shows 'Currency' in Column0, 'ValuationDate' in Column1, 'CurveName' in Column2, 'QuoteName' in Column3, 'InstrumentType' in Column4, 'Term' in Column5, 'Value' in Column6, 'Name' in Column7, 'Value' in Column8, 'Type' in Column9, and 'Currency' in Column10. The 'Valuation Date' field in the header is set to '6/26/2018' and is also highlighted with a red box. The table body contains several rows of data for USD currency at 6/26/2018, with 'Future' in InstrumentType and '0' in Value.

Column0	Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10
USD_3M	Base Curve						MarketQuote	6/26/2018		
Currency	ValuationDate	CurveName	QuoteName	InstrumentType	Term	Value	Name	Value	Type	Currency
USD	6/26/2018	USD_3M		Future	▼	0	912828XN8	100	Bond	USD
USD	6/26/2018	USD_3M		Future	▼	0				
USD	6/26/2018	USD_3M		Future	▼	0				
USD	6/26/2018	USD_3M		Future	▼	0				
USD	6/26/2018	USD_3M		Future	▼	0				
USD	6/26/2018	USD_3M		Future	▼	0				

Trade Valuation and Validation (Cont'd)

- If user chooses to load existing market data by inputting a Valuation Date (say, 2/8/2018) and then clicking the Load button, a selection form appears in the main window. The user can select a date from pull-down menus. If all available dates are not what he wants, just select NA (not available). Then click the Extract button at the right of the row.
- Note: the valuation date and the market data date are allowed to be different as sometimes a user conducts what-if analysis at a start-of-day (SOD), when the new market data are still not available. In that case, the user can use yesterday's data.

Trade Lifecycle



Trade Valuation and Validation (Cont'd)

FinPricing Enterprise

Trade Data BackOffice BatchRisk Account Tools

Product

- InterestRateProduct
- FixedIncomeProduct
 - Bond
 - Callable Bond
- MoneyMarketProduct
- EquityProduct
- ForeignExchangeProduct

Pricing

Trade Detail Market Data Results Cash Flows

New Load Save Valuation Date 2/8/2018

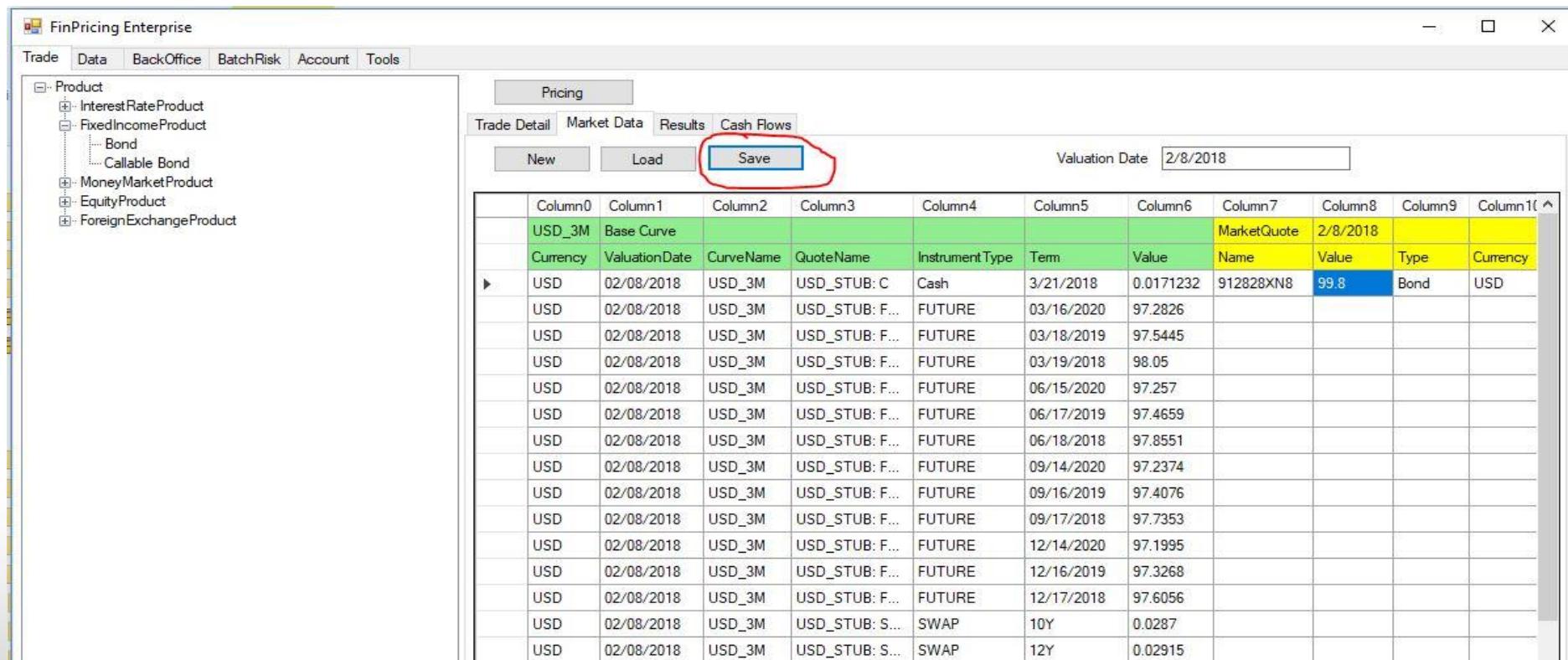
Column0	Column1	Column2	Column3	Extract Data
Interest Rate Curve				Extract
Base	2/8/2018	912828XN8	NA	Extract
*	2/8/2018			
	2/7/2018			
	2/6/2018			
	2/5/2018			
	2/2/2018			
	2/1/2018			
	1/31/2018			
	1/30/2018			
	1/29/2018			
	1/26/2018			
	1/25/2018			



Trade Lifecycle

Trade Valuation and Validation (Cont'd)

- The market data on 2/8/2018 are loaded in the main window.
Again the user can modify and save the market data.



The screenshot shows the FinPricing Enterprise application window. The menu bar includes Trade, Data, BackOffice, BatchRisk, Account, and Tools. The left sidebar displays a tree view of products: Product, InterestRateProduct, FixedIncomeProduct (with Bond and Callable Bond), MoneyMarketProduct, EquityProduct, and ForeignExchangeProduct. The main area has tabs for Pricing, Trade Detail, Market Data, Results, and Cash Flows, with Pricing selected. Below these tabs are buttons for New, Load, and Save, with Save circled in red. A Valuation Date field shows 2/8/2018. The central part of the screen is a grid table with columns labeled Column0 through Column10. The first row contains "USD_3M" and "Base Curve". Subsequent rows show currency (USD), valuation date (e.g., 02/08/2018), curve name (e.g., USD_3M), quote name (e.g., USD_STUB: C), instrument type (e.g., Cash), term (e.g., 3/21/2018), value (e.g., 0.0171232), and other details like market quote (e.g., 912828XN8) and bond type (e.g., Bond).

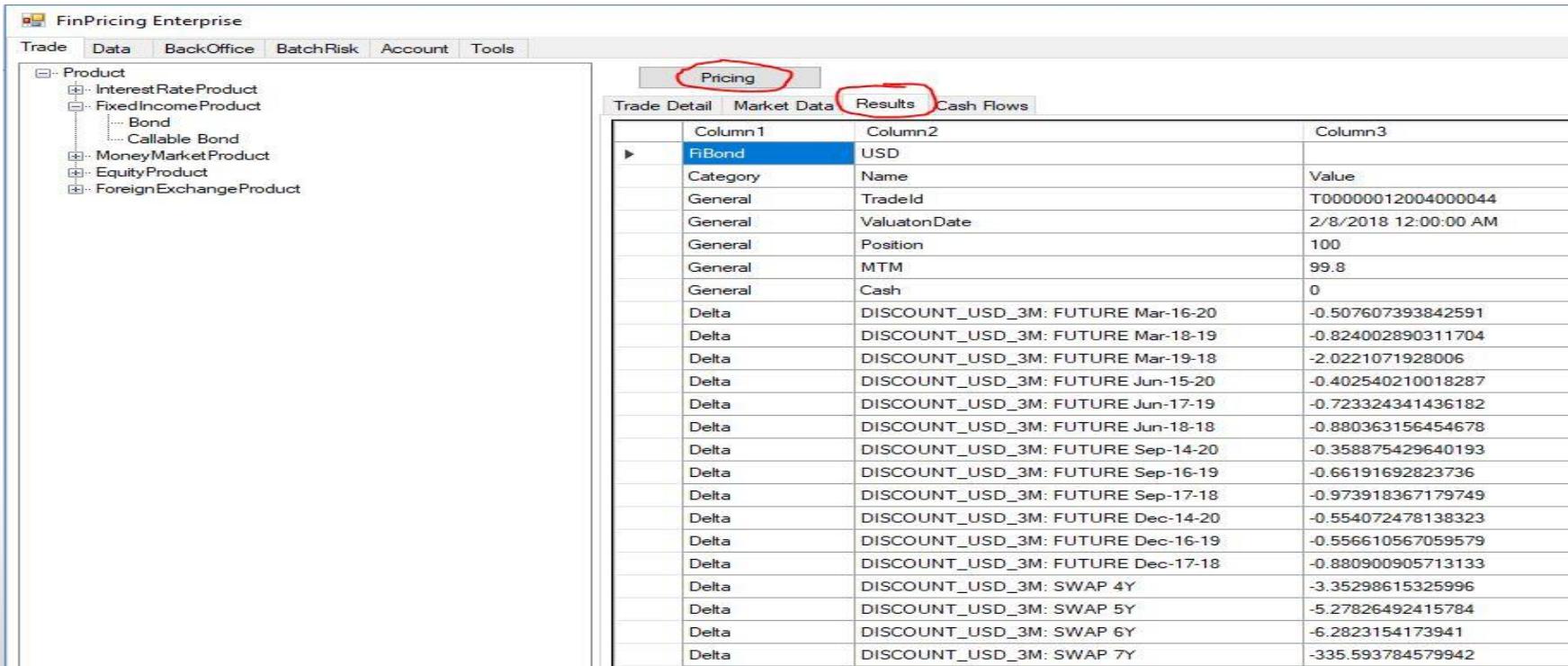
Column0	Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10
USD_3M	Base Curve						MarketQuote	2/8/2018		
Currency	ValuationDate	CurveName	QuoteName	InstrumentType	Term	Value	Name	Value	Type	Currency
USD	02/08/2018	USD_3M	USD_STUB: C	Cash	3/21/2018	0.0171232	912828XN8	99.8	Bond	USD
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	03/16/2020	97.2826				
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	03/18/2019	97.5445				
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	03/19/2018	98.05				
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	06/15/2020	97.257				
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	06/17/2019	97.4659				
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	06/18/2018	97.8551				
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	09/14/2020	97.2374				
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	09/16/2019	97.4076				
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	09/17/2018	97.7353				
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	12/14/2020	97.1995				
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	12/16/2019	97.3268				
USD	02/08/2018	USD_3M	USD_STUB: F...	FUTURE	12/17/2018	97.6056				
USD	02/08/2018	USD_3M	USD_STUB: S...	SWAP	10Y	0.0287				
USD	02/08/2018	USD_3M	USD_STUB: S...	SWAP	12Y	0.02915				



Trade Lifecycle

Trade Valuation and Validation (Cont'd)

- After either new market data saved or existing market data loaded, the user can click the Pricing button. The calculation results will be presented in the Results tab.



The screenshot shows the FinPricing Enterprise application window. The menu bar includes File, FinPricing Enterprise, Trade, Data, BackOffice, BatchRisk, Account, and Tools. The left sidebar has a tree view under Product, with categories like InterestRateProduct, FixedIncomeProduct (which is expanded to show Bond and Callable Bond), MoneyMarketProduct, EquityProduct, and ForeignExchangeProduct. The main area has tabs at the top: Pricing (circled in red), Market Data, Results (circled in red), and Cash Flows. The Results tab is active, displaying a table with columns Column1, Column2, and Column3. The table rows represent various financial instruments and their details, such as FiBond, USD, Name, TradeId, ValuationDate, Position, MTM, Cash, and various Delta values for DISCOUNT_USD_3M futures across different months and years.

Column1	Column2	Column3
FiBond	USD	
Category	Name	Value
General	TradeId	T00000012004000044
General	ValuationDate	2/8/2018 12:00:00 AM
General	Position	100
General	MTM	99.8
General	Cash	0
Delta	DISCOUNT_USD_3M: FUTURE Mar-16-20	-0.507607393842591
Delta	DISCOUNT_USD_3M: FUTURE Mar-18-19	-0.824002890311704
Delta	DISCOUNT_USD_3M: FUTURE Mar-19-18	-2.0221071928006
Delta	DISCOUNT_USD_3M: FUTURE Jun-15-20	-0.402540210018287
Delta	DISCOUNT_USD_3M: FUTURE Jun-17-19	-0.723324341436182
Delta	DISCOUNT_USD_3M: FUTURE Jun-18-18	-0.880363156454678
Delta	DISCOUNT_USD_3M: FUTURE Sep-14-20	-0.358875429640193
Delta	DISCOUNT_USD_3M: FUTURE Sep-16-19	-0.66191692823736
Delta	DISCOUNT_USD_3M: FUTURE Sep-17-18	-0.973918367179749
Delta	DISCOUNT_USD_3M: FUTURE Dec-14-20	-0.554072478138323
Delta	DISCOUNT_USD_3M: FUTURE Dec-16-19	-0.556610567059579
Delta	DISCOUNT_USD_3M: FUTURE Dec-17-18	-0.880900905713133
Delta	DISCOUNT_USD_3M: SWAP 4Y	-3.35298615325996
Delta	DISCOUNT_USD_3M: SWAP 5Y	-5.27826492415784
Delta	DISCOUNT_USD_3M: SWAP 6Y	-6.2823154173941
Delta	DISCOUNT_USD_3M: SWAP 7Y	-335.593784579942

Trade Valuation and Validation (Cont'd)

Some notes on results

- Sometimes, bond prices are available (quoted) in the market. If the bond price is provided, FinPricing will match the model price to the market price by calibrating a credit spread that reflects credit risk and liquidity risk.
- If the market bond price is not given, FinPricing will compute the model price only based on the discount and/or forecast curves provided.

Trade Valuation and Validation (Cont'd)

- FinPricing calculates sensitivities or Greeks based on market observable and liquid instruments, such as LIBOR rates, Eurodollar futures, and swap rates. This is the best market practice and convention as hedge and risk analysis are based on market observables. Most trading systems in the market compute Greeks relying on zero-rates, which is an easy way for convenience.
- To compute Greeks on market instruments, system/model needs to shock each instrument and then reconstruct curve one by one. The calculation is much more complex and time-consuming. But trickery cannot be used to gain advantage.



Thank You

You can find more details at

<https://finpricing.com/lib/CdCreditSpreadCurve.html>