

# Over-the-Counter Derivatives

## Charles River provides a comprehensive solution with portfolio management, trading, and compliance capabilities for over-the-counter (OTC) derivatives

Investing in OTC derivatives requires specialized capabilities. Global regulatory requirements dictate where certain orders can be executed. Unlike cash, derivatives require trade capture and quoting. Compliance rules and analytics for derivatives are complex and must be handled appropriately. The Charles River Investment Management Solution (IMS) offers buy-side firms a platform tailored towards the needs of OTC investing.

Feature	Benefit
Regulatory indicators	Identify when an OTC order must be executed on an approved trading venue
SEF connectivity	Satisfy Made-Available-for-Trade (MAT) requirements
Approved broker controls	Helps ensure trades are placed only where an ISDA or other agreements are in place
Cleared trade compression	Support for derivative increases and unwind functionality tailored to reflect clearing house's netting
Bilateral quote capture	View order quotes directly in the blotter and allocate directly to accounts
Compliance rules engine	Helps ensure adherence to exposure and other guidelines with custom rule setup
Integrated analytics	Calculate principal, accrued interest, DV01 and other analytics on-the-fly

## Integrated Portfolio Management Capabilities

Charles River's Manager Workbench enables portfolio managers to view and act on risk exposure across listed and OTC derivatives. Advanced views can provide leg-level detail on swap risk exposure and look-through capability to basket and index constituents.

Security	Price	Dur	F	Grand Totals				
				Order Status	Cur Exp %	Exp %	Total Qty	Total Exp
▼ Positions Grand Total		2.620		In Trading	0.85	0.85	10,750,155	
▼ HY01		2.620		In Trading	0.85	0.85	10,750,155	
▼ Deutsche Bank				In Trading	(0.22)	(0.22)	(2,772,497)	
SWAPCDS 9:[CDS] Toys R Us Inc - Payoff Leg	100.00			In Trading	(0.22)	(0.22)	(3,500,000)	
▼ Toys R Us Inc		2.083		In Trading	1.07	1.07	13,522,652	
SWAPCDS 9:[CDS] Toys R Us Inc	105.05			In Trading	0.23	0.23	3,500,000	2,915,364
TOYS R US INC 10.375% 08/15/2017	83.00	2.271			0.41	0.41	8,008,000	5,265,082
TOYS R US INC 7.375% 10/15/2018	70.25	3.034			0.42	0.42	9,600,000	5,342,205

## Extensive Compliance Monitoring Capabilities

Charles River Compliance enables compliance officers to manage risk associated with the complex requirements of the OTC derivative market. Charles River provides a framework to test gross and net exposure, global counterparty exposure, coverage, diversification and the application of netting and hedging considerations. With the evolution of the global regulatory environment, Charles River Compliance supports the recognition of centrally cleared instruments and allows for the creation of custom exposure calculations.

## Compliance and Risk Tools

Charles River IMS provides innovative tools that enable traders to clearly identify when a trade must follow particular regulatory requirements or necessary agreements are not in place.

Accept Quote	Accept	Accept	Accept
Broker	CRDBROKER	TSTBKR00001	TSTBKR00005
Available Notional	9,000,000	8,000,000	1,000,000
Quote Notional	9,000,000	8,000,000	1,000,000
Price	102.9597	102.9702	102.9492
Upfront %	(2.9597)	(2.9702)	(2.9492)
Spread	71.00	70.00	72.00
CDS Principal	266,373.6454	237,616.2019	29,492.136

  

Account	DFA	Target Notional	CRDBROKER	TSTBKR00001	TSTBKR00005
Fund1	US	1,000,000	1,000,000	N/A	1,000,000
Fund2	US	7,000,000	7,000,000	7,000,000	N/A
Fund3	no US	1,000,000	1,000,000	1,000,000	N/A
Totals			9,000,000	8,000,000	1,000,000

An ISDA is not yet in place between Fund 1 and this dealer. Charles River aims to ensure this quote is not allocated to the fund.

Accounts within Dodd-Frank Act (CFTC) jurisdiction are identified.

## Extensive Derivatives Coverage

Charles River IMS supports a large breadth of derivatives, including:

Rates	Credit	Equity
Interest Rate Swap (IRS)	CDS Single Name	OTC Options
IMM Swap	CDS Index	Listed Options
Inflation Swap	CDS Index Tranche	Equity Total Return Swap
Zero Coupon Swap	CDS Swaption	Variance Swap
Overnight Index Swap (OIS)	CDS Basket	Volatility Swap
Basis Swap	Credit Linked Note	Dividend Swap
Asset Swap	Bond Total Return Swap	Futures
Constant Maturity Swap	Asset Swap	Contract for Difference
Mexican TIEE Swap		
Brazilian DI Swap	<b>Commodity</b>	<b>Currency</b>
Interest Rate Swaption	Futures	Currency Swap
Interest Rate Caps/Floors	Index Futures	Currency Forward
Interest Rate and Bond Futures	Commodity Index Swap	FX Options
Forward Rate Agreement (FRA)		Vanilla
		Exotic
		Futures



A State Street Company

## ABOUT CHARLES RIVER

Investment firms, asset owners, wealth managers, hedge funds and insurers in more than 30 countries rely on Charles River's front and middle office investment management platform to manage more than US\$30 Trillion in assets. Together with State Street's middle and back office capabilities, Charles River's software technology forms the foundation of State Street Alpha<sup>SM</sup>. The Charles River Investment Management Solution (Charles River IMS) is designed to automate and simplify the institutional investment process across asset classes, from portfolio management and risk analytics through trading and post-trade settlement, with integrated compliance and managed data throughout. Charles River's growing partner ecosystem enables clients to seamlessly access external data and analytics, applications and liquidity venues that support the unique demands of their product and asset class mix. Headquartered in Burlington, Massachusetts, we serve clients globally with more than 975 employees in 11 regional offices. (Statistics as of October 2019)

---

Charles River Development - A State Street Company is a wholly owned business of State Street Corporation (incorporated in Massachusetts).

This document and information herein (together, the "Content") is subject to change without notice based on market and other conditions and may not reflect the views of State Street Corporation and its subsidiaries and affiliates ("State Street"). The Content is provided only for general informational, illustrative, and/or marketing purposes, or in connection with exploratory conversations; it does not take into account any client or prospects particular investment or other financial objectives or strategies, nor any client's legal, regulatory, tax or accounting status, nor does it purport to be comprehensive or intended to replace the exercise of a client or prospects own careful independent review regarding any corresponding investment or other financial decision. The Content does not constitute investment research or legal, regulatory, investment, tax or accounting advice and is not an offer or solicitation to buy or sell securities or any other product, nor is it intended to constitute any binding contractual arrangement or commitment by State Street of any kind. The Content provided was prepared and obtained from sources believed to be reliable at the time of preparation, however it is provided "as-is" and State Street makes no guarantee, representation, or warranty of any kind including, without limitation, as to its accuracy, suitability, timeliness, merchantability, fitness for a particular purpose, non-infringement of third-party rights, or otherwise. State Street disclaims all liability, whether arising in contract, tort or otherwise, for any claims, losses, liabilities, damages (including direct, indirect, special or consequential), expenses or costs arising from or connected with the Content. The Content is not intended for retail clients or for distribution to, and may not be relied upon by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to applicable law or regulation. The Content provided may contain certain statements that could be deemed forward-looking statements; any such statements or forecasted information are not guarantees or reliable indicators for future performance and actual results or developments may differ materially from those depicted or projected. Past performance is no guarantee of future results. No permission is granted to reprint, sell, copy, distribute, or modify the Content in any form or by any means without the prior written consent of State Street.

The offer or sale of any of these products and services in your jurisdiction is subject to the receipt by State Street of such internal and external approvals as it deems necessary in its sole discretion. Please contact your sales representative for further information.

©2019 STATE STREET CORPORATION