OTC Derivatives Valuation and Data Services
Technology-enabled solutions for derivatives and complex instruments
Gain the clearest view into OTC derivatives markets

Capitalize on the industry’s highest quality market data and independent valuations encompassing the widest range of OTC derivatives and cash markets.

We inform your trading, valuations, risk analysis and collateral management with trusted data and services used by thousands of firms globally.
Our next-generation services are built on three core pillars:

**Data**
We draw on a wide variety of real-time data sources to gather a full picture of the market and use them to build proven pricing models to meet the evolving needs of clients.

**Technology**
Our sophisticated technology is the engine that powers our data services. We have built our innovative tools with an emphasis on transparent methodology and flexible delivery.

**People**
Our team of OTC derivatives experts brings unique insight to the asset classes that we cover. We offer clients direct access to our valuation experts and an excellent customer service experience.
Comprehensive coverage
Price, value and validate across all asset classes

We have an extensive track record of sourcing, enriching and delivering critical financial data and analytics in OTC markets. We offer flexible solutions built around clients, including independent hosted valuation services, data feeds and associated value-added services.

Multiple channel access to high-quality OTC derivatives and cash market data:

1. **INDEPENDENT HOSTED VALUATION**
   Access an extensive range of valuations through our service – including complex and illiquid products, vanilla and exotic derivatives, private equity investments, structured notes and cash products – with integrated pricing data feeds and valuations comparison tools for greater insight.

2. **DATA SERVICE**
   Directly access our independent, flexible cross-asset data feeds with premium quality, multi-sourced curve and volatility data delivered via multiple intraday snaps to support regional closes. We also offer trusted data and price verification services for market-makers in vanilla and exotic derivatives.
Complementary Services

We offer aligned services to help clients operate more efficiently with our data and valuations:

- **Trade data connectivity:** Confirmed trade economics are automatically captured for interest rate, equity and credit derivatives, essential for calculating mark-to-market valuations.

- **Risk Analytics:** Get an accurate view of market and credit risk in a seamless and integrated hosted post-trade valuations and risk analysis service encompassing standard and stressed market data scenarios.

- **Collateral Management:** Our secure cloud-based system offers real-time reporting on all collateral positions, including counterparty, clearing broker and CCP margin activity.

- **Regulatory Compliance:** Leverage our data to meet a full range of global regulatory requirements, including CDS liquidity data for SEC 22e-4 compliance, Transaction Cost Analysis (TCA) information required by PRIIPs, and bid/ask spread data for RG 97.

See more of the world’s markets, with round-the-clock coverage and frequent snap times:

- **Currencies/FX**
  - 460+ currency pairs including vanillas and exotics
  - Historical data from 2013

- **Equities**
  - 2500+ index, stock and underlying ETFs
  - Vanillas, variance, exotics and structured products
  - Historical data from 2009

- **Commodity Derivatives**
  - 600+ underlying commodities markets
  - Historical data from 2006

- **Structured Notes**
  - Custom valuation of structured credit, aligned with our CDS data service:
  - 2400+ Entity tiers
  - 9000+ Curves

- **Interest Rates**
  - 60+ yield curves and basis swaps across 30 currencies
  - 50+ swaption and cap/floor surfaces
  - 100+ repos
  - 20+ inflation indices
  - Historical data from 2007

- **Structured Credit and CDS**
  - Corridor/Knockout Variance/Volatility Swaps
  - Bespoke Knockout / Binary Options
  - Dual Digital Options
  - ELN’s / Structured Notes
  - Asian / Lookback Options

In addition to our derivatives data, IHS Markit provides pricing and reference data for 2.5M+ bonds, cash instruments, securitized products and syndicated loans.
Designed around clients
Stay ahead of ever-changing regulations with tools built around your workflows

IHS Markit’s financial data ecosystem empowers you to adapt effectively with an informational advantage derived from accurate, deeply detailed valuations for a broad variety of use cases.

As an independent partner, we empower decision-makers, traders, compliance officers and risk managers to confidently price assets across the enterprise with accurate insight into valuation and transparent methodologies.

Transparency into market data, methodology and results

Inputs
Methodology
Result

Derivatives
Market Data
Bootstrapping, Cashflows
Price
Rates, forwards, volatilities
Greeks, sensitivities

Bootstrapped curves and market quotes used as valuation inputs for OTC derivatives can be viewed through a web interface, including interest rate, credit and inflation curves, as well as equity and FX volatility surfaces. Direct access to the full term structure and instruments from which the curves are constructed gives a greater understanding of how our prices are generated, enabling investigation and resolution of price challenges. Detailed pricing inputs, market context, liquidity and instrument-level reference data give you deeper insight into markets, risk and opportunity.
Products and Services

**NAV Calculation and Model Validation**
Capitalize on our industry-recognized technology, pricing expertise, quality market data and dedicated client support. We use consensus data to calibrate proprietary pricing models and provide fair values for a range of liquid and illiquid securities, structured products and derivatives. Clear methods have withstood SOC-1 and SSAE Type 2 audits affording you the confidence of defensible prices that hold up to regulatory scrutiny.

**Auditor Verification**
Simplify the audit verification process by accessing independent and transparent valuations. Our hosted service offers independent mark-to-market valuations and risk analytics for vanilla and exotic OTC derivatives, private equity and illiquid debt investments, structured notes, and fixed income cash products.

**Counterparty Risk**
Analyze unique risk characteristics of each counterparty with our flexible and near-real-time counterparty credit risk analytics. Our Counterparty Credit Risk (CCR)/xVA Solution Suite supports regulatory capital calculations and pricing valuation adjustments on a single, modular platform.

**Sell-Side Price Verification**
Validate your asset valuations against independent prices. Totem delivers consensus market prices across a broad range of asset classes and provides high quality, independent mark-to-market prices to support risk management and product control functions. It delivers prices across the asset class spectrum.

**Risk Analysis Services**
Get an accurate view of market and credit risk exposure across your portfolios with our hosted post-trade valuations and risk analysis service. Our platform uses IHS Markit’s mark-to-market valuations, calibrated to dealer consensus data and pricing models, and offers a robust risk simulation engine.

**Credit, Debit and xVA Valuations Services**
Meet international accounting standards and employ best practices with simulation-based valuation approaches and market-implied default probabilities from counterparty CDS curves. Our service combines independent CDS data, hosted valuations and a risk simulation engine for OTC derivatives. Flexible workflow and configuration tools allow for customization to meet your requirements.

**Collateral Management**
Manage operational, legal and liquidity risk using Collateral Manager, IHS Markit’s hosted, cloud-based system. Our platform makes counterparty, clearing broker and CCP margin activity readily available for real-time reporting. Automated workflow tools cover every aspect of the collateral management cycle in a secure, hosted environment.

**Initial Margin Calculation**
Meet regulations around initial and variation margin exchange with a Standard Initial Margin Model (SIMM) calculation solution built into our existing Portfolio Valuations product. Our service is integrated with a full ecosystem of products to support compliance, including Margin Xchange™ for legal repapering.
Service-driven culture
Service defined by and designed around client needs

Draw on an experienced staff of over 130 OTC derivatives experts worldwide who ensure our pricing methodologies are always aligned with markets. Experience a culture of service excellence from a global team of experienced analysts, providing rapid support on queries, price challenges and deep dive reviews.

Key client benefits

**OPERATIONAL EFFICIENCY**
Self-service user interfaces provide automatic turnaround of valuation requests and price inquiries, reducing time spent on verification processes.

**SCALABILITY**
Access to valuations for multiple clients in segregated accounts on a single platform, with services that adapt to your needs.

**FLEXIBILITY**
Customizable snap times, report frequencies/formats, and output fields as well as integration and connectivity with MarkitSERV and other third party platforms.

**QUALITY CONTROL**
Valuations are monitored by specialists for consistency and unexpected P&L movements. Customers benefit from improved NAV calculations, reduced errors and fewer reconciliation breaks.

**SERVICE STATISTICS FOR OUR VALUATIONS SERVICE**

- **4.4** hours average resolution time for price challenges and confirmations
- **99.9%** queries answered within one business day
- **0.05%** challenges and confirmations result in valuation adjustments
Our Process

Multi-source data gives you informed insight

Our technology sets us apart: we gather and organize more data, empowering our analysts with extensive data in the OTC derivatives market. Robust data collection and organization empowers us to value almost any instrument, from vanilla to exotics across all asset classes.

Our connections to hundreds of major market participants, exchanges and dealers make us a strong independent partner for our clients. We use advanced computing power and deep global expertise to extract and organize a huge dataset on derivatives markets, offering you a window to see the largest volume of data inputs, methodology, and assumptions.

Data Sources

<table>
<thead>
<tr>
<th>Source Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major OTC market participants</td>
<td>120</td>
</tr>
<tr>
<td>Leading exchanges</td>
<td>All</td>
</tr>
<tr>
<td>Yield curves</td>
<td>50+</td>
</tr>
<tr>
<td>CapFloor surfaces</td>
<td>15+</td>
</tr>
<tr>
<td>Equity datasets</td>
<td>1800+</td>
</tr>
<tr>
<td>Swaption surfaces</td>
<td>25+</td>
</tr>
<tr>
<td>Inflation curves</td>
<td>8</td>
</tr>
<tr>
<td>FX datasets</td>
<td>140+</td>
</tr>
</tbody>
</table>

Data collected on 1.5M+ OTC instruments to derive:

- Credit: 4.2M+
- Equity: 10M+
- Cash: 2.4M+
- Rates: 660k+
- Commodity: 189k+
- FX: 27k+

Total 17.6M+
Flexible delivery options

Convenient and intuitive access to data

IHS Markit offers flexible delivery approaches designed around our clients’ needs. Our growing list of integration partners makes it easier for complex firms to use our data throughout the organization.

DELIVERY

We always strive to make our data solutions more flexible and easier to use through enterprise-grade APIs and web portals. We provide flexible delivery options, with flat file delivery, web-based UIs, integrated pricing data feeds, third-party integrations and valuations comparison tools that give insight into inputs and methodologies.

DATA SECURITY

Our stringent policies and operational controls are designed to comply with applicable standards, laws, regulations and contractual requirements. We strive to maintain high standards in safeguarding client data.

INTEGRATED PRODUCTS

<table>
<thead>
<tr>
<th>Collateral Manager from IHS Markit</th>
<th>EDM and thinkFolio for trade capture and valuations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valuations Manager for aggregated multi-bank counterparty position and valuations data comparison</td>
<td>CCP Connectivity provides cleared prices through integrations with major central counterparties</td>
</tr>
<tr>
<td>MarkitSERV for trade capture, post trade affirmation</td>
<td>Pricing Data for fixed income and CDS valuations</td>
</tr>
</tbody>
</table>
The dashboard page for the Portfolio Valuations web portal shows an overview of your positions, queries and accounts.

Interactive tools allow you to view trade details and edit information about individual accounts.
About IHS Markit

IHS Markit (Nasdaq: INFO) is a world leader in critical information, analytics and solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 key business and government customers, including 85 percent of the Fortune Global 500 and the world’s leading financial institutions. Headquartered in London, IHS Markit is committed to sustainable, profitable growth.

AMERICAS
T +1 212 931 4900

EUROPE, MIDDLE EAST, AFRICA
T +44 20 7260 2000

ASIA PACIFIC
T +65 6922 4200

E sales@ihsmarkit.com

ihsmarkit.com