

MSCI'S SUITE OF STRESS TESTING SOLUTIONS FOR CCAR

The Comprehensive Capital Analysis and Review (CCAR) is an assessment mandated by the United States' Federal Reserve to determine whether large Bank Holding Companies (BHC's) have sufficient capital to continue operations throughout times of economic and financial stress as well as a robust, forward-looking capital-planning process that accounts for their unique risks.

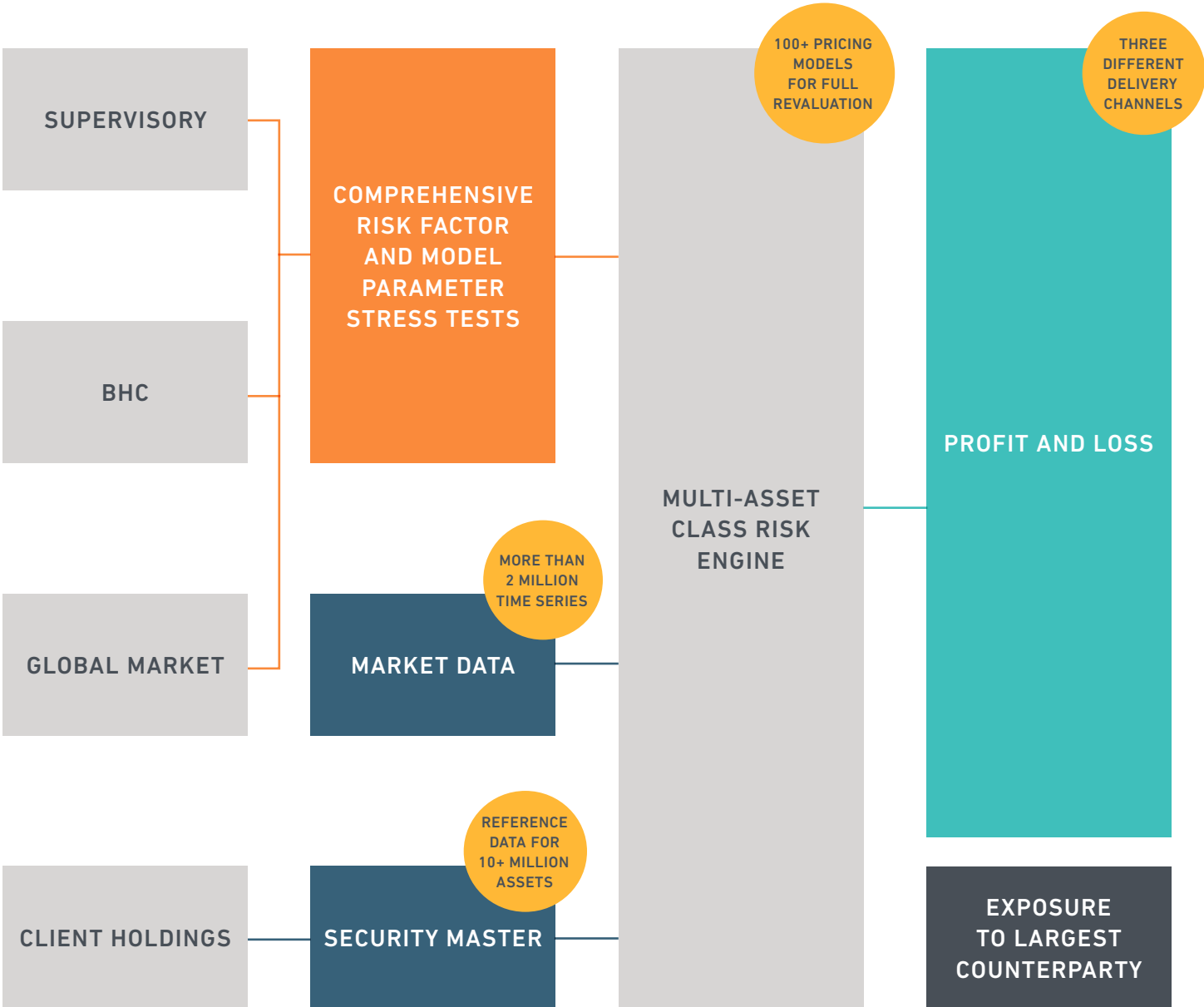
CCAR covers all aspects of a BHC's operations through the implementation of various stress scenarios:



MSCI's research team has designed a comprehensive set of granular risk factor and model parameter stress tests to support firms in **calculating Trading Book Profit and Loss and Stressed Counterparty Exposure** under various regulatory scenarios.

MSCI's regulatory stress testing solution can be **deployed in an exceptionally short time frame** because of its built-in Security Master and Market Data Repository.

Firms may choose to **outsource the complete operational workflow to MSCI**. That includes implementing client specified stress tests, executing required calculations and producing reports, allowing risk management teams to spend their time on designing BHC scenarios and analyzing results.



CALCULATING TRADING BOOK PROFIT AND LOSS AND STRESSED COUNTERPARTY EXPOSURE

MSCI also offers a comprehensive set of risk factor and model parameter stress tests designed for the explicit Global Market scenarios and the derived market risk shocks from the Supervisory and BHC scenarios.

RISK FACTOR STRESS TESTS*

- Equity, commodity prices and FX rates
- Interest, basis swap and credit spread curves
- Break even inflation and commodity curves
- FX, Equity, Interest Rate and Commodity Volatilities

MODEL PARAMETER STRESS TESTS*

- Dividend Yield
- OAS and OAS Term shift
- Implied Volatility
- Jump to Default

* List is not exhaustive

The Profit and Loss and Counterparty Exposure are calculated using a comprehensive set of stress tests that include an exhaustive range of pricing models and full re-pricing of the firm's individual holdings for all scenarios.

The set of 100+ pricing models include models for:

- Exchange traded instruments, complex and hybrid assets
- Equity, FX, commodity, interest rate and credit derivatives
- Structured and securitized products



EASY DEPLOYMENT AND OUTSOURCING OF THE COMPLETE OPERATIONAL WORKFLOW

Clients may decide to outsource the complete operational workflow to MSCI. In this case, MSCI would:

- Use the standard Global Market scenarios or receive market risk shocks for the Supervisory and BHC scenarios from the client
- Transform the scenarios into risk factor and model specific stress tests
- Calculate Profit and Loss and Counterparty Exposure for the client-provided portfolio
- Produce a defined set of reports on a regular frequency chosen by the client

By selecting MSCI, clients can leverage the built-in Security Master with reference data for over 10 million assets, a market data repository with more than 2 million time series and hosted infrastructure. This allows a client to deploy the CCAR stress testing solution in a short time frame, without the need to build and maintain an in-house risk infrastructure. These benefits also make MSCI's solution the ideal challenger model for regulated institutions using their own internal models.

Find out more about MSCI's CCAR stress testing tools by contacting your MSCI representative or emailing us at enquiries@msci.com.

ABOUT MSCI

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