

LDI Strategies: Transparent Scenarios for Full Visibility into Risk

Get precise valuation and risk analytics with full visibility into how your strategy will perform under different market environments.

Overview

A low interest rate environment has made liability-driven investing (LDI) more challenging than ever. Though firms are seeing reduced returns, they must still try to find ways of ensuring they have sufficient assets to cover their liabilities. To ease the complexity, it's vital to have the right LDI technology in place.

While the approach to LDI is similar amongst investment managers, there are some deviations in how they operate and how their various mandates are structured. For this reason, an LDI system must offer the flexibility to match a firm's specific investment and risk management processes.

The system should properly handle assets and liabilities, provide accurate valuations, cash flow projections and risk numbers. Granular scenario analysis is also important, as it provides visibility into how your strategy will perform under different market environments. To be successful with a given LDI strategy, your systems should have the following components.

Risk Analysis

The primary risks LDI managers face today are interest rate, duration, and inflation risk. These are out-of-the-box features that come standard in FINCAD's enterprise software solution for LDI. In addition, FINCAD provides granular level risk, with basis point exposures to all tenors of any curve. There are many other essential risk features FINCAD offers, which are outlined below.

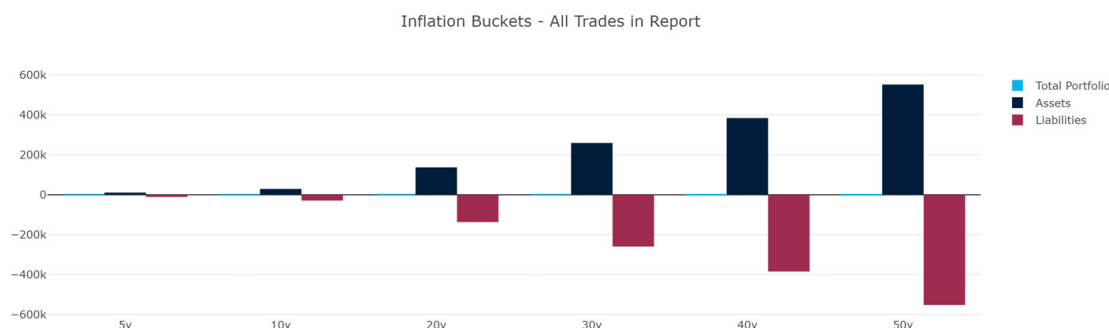
Hedging

Because hedging strategies are often structured in relation to key rate exposures, an effective LDI system also needs to bucket the various exposures in accordance with how investment and hedging processes are structured. This is the exact approach that is taken in the FINCAD solution.

Many legacy systems rely on pre-set duration buckets, weighting methodologies, or lack low level exposures. With FINCAD, you get complete flexibility to choose the approach that best fits your mandates and investment process.

Any FINCAD analytics can be produced on either instrument or book level. The ability to leverage various trade states and custom portfolios also enables you to see the what-if impact from hedges before they are booked.

Group	Trade Name	Trade Summary	Inf15y	Inf10y	Inf20y	Inf30y	Inf40y	Inf50y	Aggregated L...	Currency
▼ Euro_A&L_Inflation (15)			(48.22)	(69.23)	175.20	(43.64)	(442.38)	(103.38)	(531.65)	
▼ EuroInflAssets (10)			10,861.78	29,045.47	137,077.83	259,279.15	383,960.20	551,850.85	1,372,075.28	
> Bond (4)			0.00	0.00	0.00	0.00	0.00	0.00	0.00	
▼ Inflation Swap (6)			10,861.78	29,045.47	137,077.83	259,279.15	383,960.20	551,850.85	1,372,075.28	
	ZCInflationSwap-...	EUR Pay 0.019 0 54.4...	0.00	0.00	0.00	2,363.99	380,303.40	0.00	382,667.38	EUR
	ZCInflationSwap-...	EUR Pay 0.019 0 52.3...	0.00	0.00	0.00	0.00	3,656.81	551,850.85	555,507.66	EUR
	ZCInflationSwap-...	EUR Pay 0.018 0 58.5...	0.00	0.00	1,776.74	256,915.16	0.00	0.00	258,691.90	EUR
	ZCInflationSwap-...	EUR Pay 0.017 0 54m...	0.00	843.37	135,301.08	0.00	0.00	0.00	136,144.45	EUR
	ZCInflationSwap-...	EUR Pay 0.013 0 25.6...	427.27	28,202.10	0.00	0.00	0.00	0.00	28,629.37	EUR
	ZCInflationSwap-...	EUR Pay 0.0107 0 20...	10,434.51	0.00	0.00	0.00	0.00	0.00	10,434.51	EUR
> EuroInflLiabilities (5)			(10,910.00)	(29,114.70)	(136,902.62)	(259,322.79)	(384,402.59)	(551,954.23)	(1,372,606.93)	



FINCAD's LDI solution analyzes inflation exposures for assets, liabilities, and the combined portfolio. Buckets can be defined to line up with internal hedging and risk processes.

Credit Risk

Credit risk is another key part of LDI, and one that is often related to bonds, but can also be linked to counterparty exposure on derivatives used for overlay. It is important to have a system that can easily aggregate, simulate and illustrate your various exposures across credit ratings, issuers, and counterparties.

Value at Risk (VaR)

Some LDI managers rely on Value-at-Risk (VaR) or Expected Shortfall (ES) to illustrate instrument and book level exposures. This is supported out-of-the-box in FINCAD. Not only does the solution provide sensitivities for all market data points and various VaR measures, but also a powerful scenario engine with the ability to perform fine-grained scenario analysis and capture all simulation paths as part of the output.

When all these distinct risk analyses are combined, teams are empowered to understand the aggregate impact of different risk factors on portfolios, and thus make better informed decisions.

Cash Flow Representation of all Instrument Types

The ability to view your cash flows is key to understanding the risk involved with meeting your funds liability obligations. Being able to model cash flows provides LDI managers with the information necessary to model risks that must be hedged including rate, equity, inflation and credit-linked components.

FINCAD offers the ability to model all instrument types as streams of cash flows where flows can be indexed to any market observable component helping you compute hedging strategies that best meet your liabilities on an ongoing basis.

Custom Data Integration

FINCAD not only helps you calculate a wide range of analytics, but also enables you to integrate internal or third-party data. A large range of data types can be integrated, such as custom trade classifications, issuer level exposure, limits on book level and much more.

LDI Optimizers

Bridging the gap between data and analytics is key to running a successful LDI strategy. FINCAD provides seamless integration into Python, enabling you to make full use of the data analytics toolstack, including Numpy, Scipy, Pandas and scikit-learn. At FINCAD we strive to provide users with functionality that is ready to go. Leveraging JupyterLab environments is only one of many ways we get you started right away. Sharing information across the organization is also made easy using FINCAD's Python Microservices.



Unified Assets and Liabilities

A unified view of assets and liabilities can help you understand the interrelationship between them, without adding additional layers of effort for performing ad-hoc analysis. FINCAD can price based off zero rates, par rates, or pre-built curves. This offers you a fine-grained approach to managing risks while also providing an efficient workflow to manage asset and liability portfolios for on-demand LDI analysis.

FINCAD offers 30 years' experience in pricing and valuation, and native support for all instruments from vanilla to complex. While structured products are less common on the asset side in LDI mandates, liabilities sometimes have embedded optionality, which can easily be scripted using a flexible contract description language that permits the capture of any kind of structured deal.

Powerful Curve Building Capabilities – IBOR Transition

Flexible curve building is essential to coping with changing market practices and regulations. For example, many financial firms have shifted to OIS discounting and the inclusion of collateral in investment decisions. Curve-building flexibility will continue to be imperative to meet the upcoming changes to IBOR and transition to new risk-free rates.

FINCAD offers the ability to build curves across multi-asset and multi-currency portfolios, while including components such as OIS discounting and CSA multi-curve discounting. FINCAD also provides detailed customization capabilities for volatility modelling. This gives you utmost flexibility to customize your curve-building all the way from the organization level to individual teams and team members.

Furthermore, FINCAD allows for custom conventions, a long list of interpolation methods and smoothing techniques, and the ability to use any preferred instrument to build curves. This means you will ultimately be less dependent on where liquidity lies during the IBOR transition.

FINCAD Technology Scales for Enterprise-Wide Analysis

In addition to the criteria above, the FINCAD LDI solution provides mark-to-market and portfolio attribution capabilities, helping you better understand both liability and asset-based drivers of risk and valuation.

For larger computation demands, FINCAD can enable computationally intensive operations such as CVA, VaR and profit and loss to be scaled across on-premise and cloud computing grids.

[Learn more about how FINCAD can help you optimize your LDI strategy.](#)

Schedule a Conversation with a Solutions Expert Today



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