Total Return Asset Manager: Powering Portfolio Strategies with Native Python-based Analytics

INTRODUCTION

Our client is a North American total return asset management group that invests in fixed income markets and rates and FX derivatives. The front office team needed a flexible and powerful framework to backtest trading and investment strategies for combined portfolios of cash and derivative instruments.

THE CHALLENGE

The fund's portfolio managers were charged with boosting risk-adjusted investment returns by increasing their use of derivatives overlays. They needed to model and backtest new strategies at the instrument and portfolio levels before putting "real money" to work. They also wanted to calculate intraday P&L for their portfolio.

They were limited by their existing valuation platform, which didn't cover many of the derivatives they needed, and couldn't manage portfolios that combined cash and derivative instruments. Excel spreadsheets closed some of the valuation gaps, but suffered from their usual limitations around scalability, documentation, and modeling.

Given their requirements and the constraints of the existing environment, the team decided on a wholesale upgrade of their pricing and valuation system. Team members were comfortable coding in Python and wanted to leverage its flexibility and power to adjust the modeling of individual instruments.

At the same time, as portfolio managers their core task was generating alpha for their clients. They did not want to be distracted by the need to program extensively in Python. Therefore, they required pre-built pricers and accurate representations of the market "out of the box", i.e., without requiring extensive calibration and adjustment to cover their investment universe.

SOLUTION

Following a thorough vendor evaluation process, the team selected FINCAD Python, a native Python framework combined with a state of the art object-oriented library. FINCAD was ultimately chosen based on its:

- **Native Python framework,** which allowed users to leverage all of the program's power and flexibility, as well as to tap into the extensive public ecosystem of Python applications.

- **Pre-built calibrated pricers,** with established, accurate representations of the market that allow pricing of instruments by only writing a few lines of code.

- **Ease of market data and trade connectivity,** enabling the client to "bring their own market data," as well as trade details, into FINCAD's world class valuation environment.

- **Flexibility to create user applications,** in the client's case, an intraday P&L with risk metrics, customized to meet their unique requirements.

- **Portfolio analytical framework** capable of handling combined holdings of cash and derivatives instruments.

- **Expert support and extensive documentation** to minimize on-boarding and start-up costs.

THE KEY DIFFERENTIATOR - "READY-TO-PRICE" NATIVE PYTHON ANALYTICS LIBRARY

There are many derivatives libraries on the market, but only FINCAD offers a "ready-to-price" fixed income cash and derivatives library with calibrated market models that is also simple to use and implement. Thus, for sophisticated market practitioners looking to quickly take advantage of the full power of Python, FINCAD Python is the obvious choice. Clients also benefit from FINCAD's world class analytics library and the support of a seasoned team of financial engineers and quantitative analysts.

THE RESULTS

The installation of FINCAD Python was followed by connecting the client's market and reference data and trade records to the pricing library. Also implemented were pricer functionality and the underlying model calibrations to build curves and price each instrument type in the portfolio. Once these functions were up and running, the team had the required framework in place to set up their P&L reporting environment, as well as backtest and execute new investment strategies in a manner that enabled them to increase returns while controlling risk.

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