

SPECIALIZED SOLUTION FOR CONVERTIBLES TRADING

MONIS ANALYZER



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MONIS ANALYZER IS A SPECIALIZED FRONT-OFFICE SYSTEM FOR CONVERTIBLES

The convertibles market is a specialized market. Trading, managing, and hedging convertible securities, in all their complexity and variety, takes a specialist equipped with a specialized system. Non-specialist front-office systems cannot meet users' requirements to encompass the wide variety of different structures found in the convertibles market or to deploy the industry-level analytics in the search for trading opportunities. Nor are they sophisticated enough to analyze the hybrid risk exposures of convertible securities and cross-asset-class positions where a convertible security is combined with equity, credit, interest rate and FX hedge trades. Monis Analyzer, by contrast, is a specialized industrial-strength system designed precisely to meet the needs of convertibles traders.

ANALYZER CAN HELP YOU:

- Use Monis' market-leading analytics to value and measure the hybrid risks of convertible securities, with comprehensive coverage of convertible types and features including zeros, preferences, mandatories, payment in kinds, cross-currency, exchangeables, resets, CoCos, CoPays and floating coupons
- Manage cross-asset-class strategies covering convertible bonds, equity, vanilla equity and FX options, barrier, digital and cliquet equity and FX options, credit default swaps, convertible asset swaps, interest rate swaps, interest rate futures, index futures, bond futures, nth to default, CDO, FX forwards, vol and var swaps and equity swaps
- Integrate with your existing database of convertible terms & conditions, or use Monis' comprehensive convertibles data; and manage your subscriptions to live market data such as prices and volatilities
- Identify trading opportunities by searching the shared database of terms, conditions and market data, and by monitoring customized watchlists
- Manage your positions in real-time, including flexible portfolio structures to view by accounts, strategies and portfolios, with fully customizable views for different requirements
- Monitor your positions and risk using reports, which can be run at any level (e.g. strategies, accounts, portfolios) in an integrated way across all asset classes and currencies. Reports include sensitivity, risk and rho bucketing
- Run market making books with multiple orders across many individual bonds, and track dollar nuke equivalents and compare them back to the current house price. Easily filter orders based on various criteria including client, bond name and order date.
- Install Monis Analyzer on your chosen technology platform and integrate it with your existing front-office, trade entry or processing systems

INDUSTRY-LEADING ANALYTICS

Convertible arbitrage traders need leading-edge analytics in order to evaluate trading opportunities and manage their positions. Analyzer fully exploits the capabilities of Monis' industry-standard convertible bond model.

Monis' convertible models were first developed in 1986. They have become an industry standard for the global convertibles market, now being used by over 400 organizations. Our daily interactions with the world's leading issuers, dealers and funds continuously drive up the sophistication and feature richness of the models. Monis Analyzer deploys these models to maximum effect.

Model Highlights

- Optimized trinomial trees with up to three stochastic factors, for equity, default risk and interest rates
- Time steps of variable length enable much more accurate valuation of the many contractual cash flows and dates, and correctly take account of closely sequential events
- Hull-White model of stochastic interest rates, complete with calibration tools for IR Volatility and Mean Reversion (or enter the parameters directly)
- Flexible yield curve handling including choice of treasury and swap curves
- Structured dividend options, including continuous dividend yield, absolute dividends with growth, proportional yield, and dividend loss (e.g. for French and Taiwanese dividends)
- Optional term structure of equity volatility, plus "dual volatility" model for mandatories
- Advanced PDE solution with increased stability for Greeks
- PDE grid returns multiple results for different stock levels for single run

Advanced Credit Default Treatment

- Poisson process to model the issuer's default
- Handles the different impact of default risk on convertible vs exchangeable bonds
- Dual recovery rates specified by the user
- Optional term structure of credit spreads
- Option to model credit risk using credit spread or credit default swap premium
- Implied default probability output

The optional equity-linked spread model allows the user to specify the credit spread as a function of stock price. By incorporating the effect of a stock price collapse on the bond floor, this model captures the phenomenon of rising delta and negative gamma as the share price falls into the credit-sensitive region (see below). The equity-linked spread model can optionally be calibrated to the current market credit spread.



Monis' equity-linked spread configuration accurately models the impact that a fall in the issuer's share price can have in reducing the "bond floor", which is really "shoulder-shaped" – not flat, as simpler models suggest.

Outputs of the Model

Monis Analyzer generates a wide range of market standard outputs. They may be viewed in the portfolio grid, or in the Convertible Bond Quick Pricer. The smart design of the Quick Pricer allows easy data entry, what-if analysis and rapid generation of results.

The most important model outputs include:

- Fair value
- Implied volatility
- Implied credit spread

Greeks:

- Delta, Gamma, Vega, Rho, Theta, Phi
- Credit Greeks: Omicron (credit spread) and Upsilon (recovery rate)
- Chi (sensitivity to the FX rate for cross-currency bonds)

All Greeks are available in a number of formats and scalings. First of all, they may be calculated on either a theoretical basis (based on the fair value) or a market basis (using the market price and the implied volatility or implied spread). Second, they may be normalized for the option on one share, or scaled for the convertible bond price (taking into account the conversion ratio, for example). Position Greeks and Portfolio totals are also available for all the major risk measures allowing users to view exposure per asset position and aggregated across the entire strategy or portfolio.

Other outputs:

- Parity and premium measures
- Current accreted value
- Running yield and yield advantage
- OAS, duration and convexity to next put date and to maturity
- Yield to maturity, call and put
- Call protection indicator
- Break-even
- Risk-neutral probabilities and fugit (expected life)

The screenshot displays the 'Olam International 6.000% 15-Oct-2016' model configuration in the Monis Analyzer software. The interface is divided into several sections:

- Summary:** General information (Name, Stock, Type, Currency, Status), Summary (Valuation date, Last conversion date, Share price, Market price), and Bond data (Quote format, Denomination, Settlement delay, Ex. coupon period, Flat coupon %, Perpetual bond).
- Model configuration:** Model (Tree), Credit risk factor (Unconditional), Exchangeable (Convertible), Interest rate factor, Volatility type (Flat), Flat volatility % (30), Credit risk type (Credit Spread), Curve type (Flat), Credit spread (bp) (800), Calendar, Risk-free curve (From Currency), and Currency discount curve (USD Swap (ICAP)).
- Selected outputs:** A table showing various metrics and their values.

Metric	Value	Metric	Value
Fair value	109.66	Delta	0.76105
Imp. vol. %	33.01	Gamma	0.12223
Imp. spread		Contract delta	24.45313
Dirty price	110.06	Contract rho	
Conv. premium	15.7	Bond only	72.67
Accrued interest	0.4	Contract vega	
Accreted value	100	Next coupon date	15-Apr-2010
		Parity	86.43
		Points/parity	24.75
		Premium/parity %	28.64
		Bond floor	72.67
		Mod. dur. to put	4.9
		Convexity to put	35.05
		Market points/bond floor	38.52

The interface also includes a 'Price Edit Interface' at the bottom, showing the date '4-Nov-2009 2:06:27 PM'.

Price Edit Interface

Asset Swap Valuation

Correct valuation of convertible asset swaps requires modeling the behavior of the underlying convertible bond, as well as incorporating the details of the swap transaction. Monis' asset swap analytics are based on the convertible bond pricing model. The probability and timing of the issuer's call helps determine the timing of the decision to exercise the asset swap. The recall price is modeled as a function of the embedded cancelable interest rate swap. The resulting valuation incorporates

the combined equity and credit optionality of the asset swap structure.

Monis' asset swap functionality includes:

- Ability to model all sorts of asset swap positions, including holding the option or the credit
- Full Greeks and risk measures for the asset swap
- Output of the current recall price based on the embedded swap
- Cross-asset-class analysis of strategies consisting of convertible, equity and asset swap positions

COMPREHENSIVE CROSS-ASSET-CLASS COVERAGE

Convertible arbitrage traders need systems that cope with the many different types of convertible securities found in the global market, along with all the trades used to hedge the hybrid risk exposures of their convertible positions. Analyzer provides comprehensive coverage of the many different types and features of convertible securities, as well as all the main hedge trades such as equity, options, credit default swaps and asset swaps.

Wide Range of Convertible Instruments and Features

The Monis model has been refined and developed over many years to incorporate all the significant innovations that have taken place in the global convertibles market.

Main types of convertible securities:

- Convertible bonds
- Exchangeable bonds (both secured and unsecured)
- Zero coupon convertibles
- Mandatory convertibles (e.g. PERCS, PEPS)
- Convertible preferred securities
- PIK (payment in kind) convertibles
- Reverse convertibles

Convertible features covered:

- Structured calls including soft & hard

calls, call adjustment using parity or confidence interval, triggers in share or bond currency, accreting calls and triggers, user-defined probability of call (Japanese market) and screw clauses

- Cross-currency (with correlations)
- Contingent conversion (CoCos)
- Contingent payment (CoPays)
- Equity resets, including multiple upward and downward resets, mandatory conversion by tranches, and price within averaging period
- Make-wholes
- Structured coupons, including floating coupons, step-up or down, broken-dated coupons, short and long first coupons, guaranteed coupons
- Structured puts including cast and stock delivery, knock-out puts and tranche puts
- Premium redemptions and tranche redemptions
- Structured conversion options, including choice of entering conversion ratio or price or premium, cash payments on conversion, mandatory conversion, different exercise patterns including American, European, delayed, seasonal and irregular
- Dividend protection, including cash payment or ratio adjustment. Trigger levels may be entered as yield, cash amount, accreting dividend or a table of specified dates and payments.

Hedging Across Multiple Asset Classes

Hedge funds and arbitrageurs require systems that can handle the complexity of multiple asset classes. Even the simplest positions require users to hedge and leverage using instruments across multiple asset classes, in particular equity, credit and interest rates.

Most equity and option-based systems often deal with only one asset class. Not only does the Monis Analyzer model accurately cover a wide range of instruments needed to hedge and leverage any convertible position, it also makes it easy to analyze, monitor and report upon those instruments, both individually and combined with other instruments in positions, strategies and portfolios.

Apart from the many different varieties of convertible securities, the other asset classes covered in Monis Analyzer are:

- Equity
- Equity call and put options
- Vanilla corporate bonds
- Credit default swaps
- Convertible asset swaps
- Interest rate swaps
- Bond futures

All these asset classes incorporate Monis' industry-leading analytics. The outputs are designed to be consistent with those for the convertible securities. This means that Greeks, risk measures and other outputs can be compared and aggregated across multi-asset-class strategies and portfolios.

Credit Default Swap Pricing and Hedging

The Monis model for CDS is similar to the Jarrow-Turnbull approach, with extensions to handle accruing, convertible, exchangeable and cross-currency deliverable bonds including identification of the cheapest-to-deliver bond. Valuations can be derived either from bond or asset swap credit spreads or from CDS premium quotes.

If used in combination with Monis' equity-linked spread model, the CDS model also produces an "equity delta" for a CDS position. This allows consistent analysis of a credit-hedged convertible position, showing how much lighter the correct delta-neutral equity hedge is after taking into account the CDS protection.

The first table shows a convertible bond strategy evaluated using a "flat bond floor" model, so that the hedge ratio takes no account of the relationship between the share prices and credit risk.

	Delta %	# Shares
Convertible Bond	46.3	18, 539
CDS	-	-
Required Equity Hedge		(18, 539)

The second case shows the same convertible bond evaluated using the equity-linked spread model, which gives a higher delta because of the added impact of the share price on the credit spread and hence on the bond floor. The equity-linked spread model is also used to evaluate the Credit Default Swap, giving the correct delta-neutral equity hedge taking into account the impact of the credit protection.

	Delta %	# Shares
Convertible Bond	58.7	23,502
CDS	(27.8)	(11,111)
Required Equity Hedge		(12,391)



MANAGING STATIC AND REAL-TIME DATA

Monis Analyzer works with a shared database that contains convertible bond terms and conditions as well as information on the underlying equities, options and other assets.

If you already have a database, Monis will be able to integrate third-party data (in any standard database format) into Analyzer. Alternatively, we provide our own high-quality data on convertible terms and conditions, pre-formatted for Analyzer and easy to use. This is a turn-key solution, which critically assists clients such as those who may be only just starting up their trading operation.

Terms and Conditions Data

Monis uses its contacts and experience to collect, compare and clean data from a variety of sources and deliver these pre-formatted for Analyzer. Monis' extensive global client-base are the main suppliers of terms sheets for new convertible bond issues.

Integrated Data

Pre-formatted data can be accessed from www.monis.com or via FTP. Monis Data Service provides information on terms & conditions and related data for over 2,000 convertible

bonds from all markets. This data seamlessly integrates into Analyzer so that its users can work with the latest information.

New Issues Data

Continuous contact with our client base enables Monis to provide a unique intra-day service for pricing new convertible issues. This new issues data is made available to clients whenever Monis receives news of indicative and final terms.

Real-Time Data Management

Monis Analyzer has comprehensive market data management, providing easy-to-use administration and automated management to optimize the use of your third-party market data. It is able to connect simultaneously to multiple data distribution platforms, for example Bloomberg and Reuters, as well as internal sources via a simple file based data feed or more sophisticated API route.

Market data management can include rules for failover where data is unavailable and also decay based throttling to prioritize larger price movements.

IDENTIFYING TRADING OPPORTUNITIES

Analyzer has a querying system to search the database on any combination of terms and conditions, model output or risk number plus the ability to set up watchlists that can be filtered and sorted on any attribute including those updated in real time.

Find Instruments

Convertibles traders and other market participants must often search for instruments with particular characteristics, whether within portfolios or across the convertibles universe.

Normally this is a laborious task, but Monis Analyzer's powerful querying functionality makes it trivial to perform. You can specify any mix of terms and calculated data to generate shortlists of instruments, which can then be actioned or further queried.

Queries provide a fast and efficient search function. For example:

- A fund may wish to scan the Japanese domestic market for cheap volatility. The query would select all Japanese domestic bonds where the implied volatility is more than 5%, less than the 100-day historical volatility of the underlying equity
- A sales desk may have a client who is looking for solid European bonds offering reasonable income and modest equity upside potential. The sales desk can quickly search the database for European issues, with a spread less than 250bp and a coupon yield of 3% or over - and in seconds present the selection to the client
- A US investor with a bearish view can look for premium expansion opportunities, where the premium on the convertible expands as the stock falls. He can search for USD convertibles, where the premium over Parity is under 5%

Watchlists

While executing other tasks, convertibles traders must remain alert to changes in the market. Monis Analyzer lets them define watchlists, which may be organized by market, name or investment characteristics. These will update on demand and keep users continually aware of the latest position. Visual indicators such as arrows indicate the latest changes to prices on live feeds.

In addition to defining watchlists on the basis of instrument terms in the database or Analyzer's many calculated outputs, users can

also make use of an unlimited number of user-defined fields that they define for themselves. These could be set up to calculate cheapness, risk exposures, carry cost or anything else that may be relevant.

For example, a user-defined field can be set up to find the minimum volatility from a range of historic and implied vols on the same equity. This can then be compared to the implied volatility on the convertible bond, and the watchlist can be sorted on the difference between the two. A similar exercise can be carried out on spreads and CDS premiums on the same name.

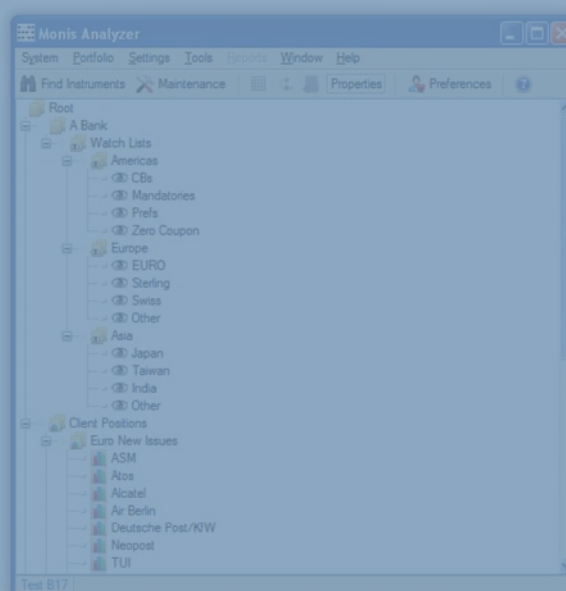
MANAGE PORTFOLIOS IN REAL TIME

Managing a convertibles book is a complex task requiring constant monitoring of many aspects of the positions. Analyses and reports need to be run across multiple currencies and asset classes, and on hierarchies of portfolios, accounts, strategies, positions and trades. Monis Analyzer's portfolio structure, which includes a flexible hierarchy and customizable views, provides users with total control of their portfolios.

Portfolio Hierarchy

Analyzer's flexible portfolio functionality lets you configure and manage complex portfolio structures with ease. There is no limit to the number of levels of sub-portfolio in the hierarchy. The portfolio tree can easily be collapsed or expanded, while analysis and reports can be run at any level of the hierarchy e.g. at book, account or even firm-wide level.

A user can choose which book or books to display and analyze, from single strategies or subportfolios to several books – for example, to analyze and report on individual accounts within these books, or to aggregate the books in order to generate a firm-wide report.



Collapse and expand elements in the portfolio. Each of them can be subjected to different views or analyses.

Country	Strategy	Name	Currency	Amount	Market Bid	Market Offer	Theoretical Value	Value	Position Delta	Net Delta Shares	Position Credit01	Position Gamma	
France	Alcatel	Alcatel 4.750% 1-Jan-2011	EUR	100,000.00	16.56	16.66	17.02	1,661,000.00	0.92	0.35	-184.00	4.31	
		Alcatel-Lucent 5.000% 01-Jan-2015 OCEANEs	EUR	800,000.00	3.72	3.73	3.51	2,979,200.00	473,704.97	1,254,844.46	473,704.97	-639.54	342,713.38
		Alcatel-Lucent SA	EUR	-474,000.00	2.65	2.65		-1,255,626.00	-474,000.00	-1,255,626.00	0.00	0.00	0.00
	L-Total(EUR)						3,384,574.00	-780.62	-294.68	822.25	14,810.94		
	Alto	Alto SA	Alto SA	EUR	-23,700.00	31.50	31.50		-746,431.50	-746,431.50	-23,700.00	0.00	0.00
			Alto SA 2.500% 01-Jan-2016	EUR	50,000.00	48.02	48.02	47.52	2,401,100.00	745,997.94	23,686.23	27,534.14	-880.78
	L-Total(EUR)						1,654,668.50	-433.56	-433.56	880.78	12,061.94		
	Neopost	Neopost SA	Neopost SA	EUR	-5,300.00	60.04	60.04		-318,212.00	-318,212.00	-5,300.00	0.00	0.00
			Neopost SA 3.750% 01-Feb-2015	EUR	20,000.00	84.95	85.10	84.45	1,699,485.00	318,787.41	5,309.58	-559.50	14,963.16
	L-Total(EUR)						1,381,288.00	575.41	575.41	-882.01	27,534.14		
L-Total(EUR)						6,420,516.50	-638.77	-638.77	2,362.04	385,214.99			
Germany	Air Berlin	Air Berlin	EUR	-402,000.00	3.65	3.65		-1,467,300.00	-1,467,300.00	-402,000.00	0.00	0.00	
		Air Berlin 1.500% 11-Apr-2027	EUR	20.00	69.88	69.88	64.33	1,267,500.00	1,067.79	276.11	-279.99	1,548.83	
		Air Berlin 4.00C Jun 2010	EUR	-5,000.00	0.20	0.20	0.20	-100,000.00	-718,300.00	-196,794.55	0.00	-649,083.26	
		Air Berlin 9.000% 25-Aug-2014	EUR	50.00	102.31	103.31	102.40	2,570,275.00	2,181,971.49	597,800.41	45.28	102,848.95	
	L-Total(EUR)						2,270,475.00	-2,620.81	-2,620.81	-326.27	-744,585.58		
	Deutsche PostKW	Deutsche Post Ag	Deutsche Post Ag	EUR	-96,000.00	11.79	11.79		-1,131,360.00	-1,131,360.00	-96,000.00	0.00	0.00
			Deutsche PostKW 1.500% 30-Jul-2014	EUR	30.00	113.14	113.64	104.51	3,401,670.00	1,131,018.87	95,971.05	-646.34	166,235.73
	L-Total(EUR)						2,270,310.00	-341.13	-341.13	166,235.73	-905.90	17,889.14	
	TLI	TLI 5.500% 17-Nov-2014	TLI	EUR	40,000.00	59.25	59.75	58.33	2,380,160.00	1,872,376.53	373,727.85	48,438.27	4,278.99
			Touristik Union International	EUR	-373,000.00	5.01	5.01		-1,868,730.00	-1,868,730.00	-373,000.00	0.00	0.00
L-Total(EUR)						511,430.00	3,646.53	3,646.53	48,438.27	-122.50	4,278.99		
L-Total(EUR)						5,052,215.00	684.59	684.59	199.15	229,682.89			
Netherl.	ASM	ASM International 6.500% 06-Nov-2014	EUR	150.00	100.00	100.00	100.63	7,500,000.00	3,541,190.38	257,816.27	-1,461.55	38,057.71	
		ASM International N.V.	EUR	-258,000.00	13.73	13.73		-3,542,340.00	-3,542,340.00	-258,000.00	0.00	0.00	
	L-Total(EUR)						3,957,660.00	-1,146.62	83.73	-1,451.55	229,682.89		
	Wereldhave	Wereldhave 4.375% 16-Sep-2014	Wereldhave	EUR	30.00	113.17	114.17	114.57	1,705,065.00	689,612.10	10,225.54	-488.29	17,597.54
Wereldhave Nv			EUR	-10,200.00	67.44	67.44		-687,888.00	-687,888.00	-10,200.00	0.00	0.00	
L-Total(EUR)						1,017,177.00	1,724.10	1,724.10	-488.29	17,597.54			
L-Total(EUR)						4,974,837.00	574.48	574.48	-1,940.83	238,280.43			

Client accounts showing strategies within each account, and positions within each strategy

Strategy Management

Convertible Analyzer enables users to aggregate any positions as a "Strategy" for tracking purposes.

Even the most basic convertible arbitrage strategy will combine multiple instruments – say, a long convertibles position and a short equity hedge. There are no limits on the

currency or number of different positions that may be managed within a Strategy, including credit, volatility and interest rate hedges if required.

Strategies can be grouped into accounts and layers of portfolios and subportfolios. Calculating risk exposures, for example, can also be done by strategy or at a higher level.

Book	Client	Strategy	Name	Amount	Market Bid	Market Offer	Theoretical Value	Value	Net Delta Shares	Position Delta	Position Gamma	Position Prio	Position Vega
Client Posit	Euro New I	Alcatel	Alcatel 4.750% 1-Jan-2011	100,000.00	16.56	16.66	17.02	1,661,000.00	0.35	6.92	4.31	-184.00	0.95
			Alcatel-Lucent 5.000% 01-Jan-2015 OCEANEs	800,000.00	3.72	3.73	3.51	2,979,200.00	473,704.97	1,254,844.46	342,713.38	-639.26	14,810.89
			Alcatel-Lucent SA	-474,000.00	2.65	2.65		-1,255,626.00	-474,000.00	-1,255,626.00	0.00	0.00	0.00
	L-Total(EUR)						3,384,574.00	-294.68	-780.62	342,717.69	822.25	14,810.94	
	Alto	Alto SA	Alto SA	-23,700.00	31.50	31.50		-746,431.50	-746,431.50	-23,700.00	0.00	0.00	0.00
			Alto SA 2.500% 01-Jan-2016	50,000.00	48.02	48.02	47.52	2,401,100.00	745,997.94	23,686.23	27,534.14	-880.78	12,061.94
	L-Total(EUR)						1,654,668.50	-433.56	-433.56	880.78	12,061.94		
	Deutsche P	Deutsche Post Ag	Deutsche Post Ag	-96,000.00	11.79	11.79		-1,131,360.00	-1,131,360.00	-96,000.00	0.00	0.00	0.00
			Deutsche PostKW 1.500% 30-Jul-2014	30.00	113.14	113.64	104.51	3,401,670.00	1,131,018.87	95,971.05	-646.34	166,235.73	-905.90
	L-Total(EUR)						2,270,310.00	-341.13	-341.13	166,235.73	-905.90	17,889.14	
TLI	TLI 5.500% 17-Nov-2014	TLI	40,000.00	59.25	59.75	58.33	2,380,160.00	1,872,376.53	373,727.85	48,438.27	4,278.99	4,278.99	
		Touristik Union International	-373,000.00	5.01	5.01		-1,868,730.00	-1,868,730.00	-373,000.00	0.00	0.00	0.00	
L-Total(EUR)						511,430.00	3,646.53	3,646.53	48,438.27	-122.50	4,278.99		
Wereldhave	Wereldhave 4.375% 16-Sep-2014	Wereldhave	30.00	113.17	114.17	114.57	1,705,065.00	10,225.54	689,612.10	17,597.54	-488.29	9,762.83	
		Wereldhave Nv	-10,200.00	67.44	67.44		-687,888.00	-687,888.00	-10,200.00	0.00	0.00	0.00	
L-Total(EUR)						1,017,177.00	1,724.10	1,724.10	-488.29	17,597.54			
L-Total(EUR)						12,730,637.46	2,665.70	2,665.70	823,206.26	-4,658.68	96,861.55		
Strategy	Aberdeen M	Aberdeen Asset Mgmt 4.5% 10-Mar-10	Aberdeen Asset Mgmt 4.5% 10-Mar-10	150.00	119.67	119.67	121.00	1,795,080.00	1,303,239.54	1,702,030.97	9,119.26	-4.09	1,155.31
			Aberdeen Asset Mgmt Pfc	-2,400,000.00	130.60	130.60		-3,134,400.00	-2,400,000.00	-3,134,400.00	0.00	0.00	0.00
			Aberdeen Asset Mgt 3.500% 17-Dec-2014	50.00	94.41	95.41	94.72	4,745,300.00	1,104,895.93	1,442,994.09	17,380.93	-1,448.66	28,321.80
	L-Total(GBP)						3,405,980.00	8,135.57	10,625.06	26,500.19	-1,452.75	27,476.91	
ITV	ITV 4.000% 09-Nov-2016	ITV pic	100.00	95.25	95.75	95.28	4,775,000.00	4,169,614.72	1,798,475.75	15,308.38	-1,507.83	23,697.56	
		ITV	-4,170,000.00	43.13	43.13		-1,798,641.93	-1,798,641.93	0.00	0.00	0.00	0.00	
L-Total(GBP)						2,976,358.07	385.28	-166.18	15,308.38	-1,607.63	23,697.56		
Sainsbury	Sainsbury (J) Pic	Sainsbury 360C Jun2010	-143,000.00	327.00	327.00		-467,610.00	-143,000.00	-467,610.00	0.00	0.00	0.00	
		Sainsbury 4.250% 16-Jul-2014	20.00	117.62	118.92	109.30	1,182,730.00	107,319.97	350,936.29	1,578.96	-307.06	5,500.78	
		Sainsbury	1.00	16.00	16.00	15.62	160.00	35,044.94	114,596.97	1,808.69	5.08	923.61	
L-Total(GBP)						715,280.00	635.09	-2,076.74	3,187.64	-301.98	6,424.40		
L-Total(USD)						7,097,618.07	8,382.14	44,996.22	-3,362.35	57,568.86			
L-Total(USD)						29,434,043.61	17,487.79	1,223,500.34	-12,027.51	229,806.74			

View the Aggregation by Strategy

Sales Trading Functionality

Monis Analyzer enables the building of order books to keep track of multiple client orders on any individual bond or group of bonds.

The order grid helps the trader to monitor orders and potential trades. For each order, the original bid (or offer) and reference details (for example, for equity or delta) are dollar nuked to provide a clear and consistent

comparison against the current house price. For ease of matching and generating client contact points, the grid can be formatted to return signals that indicate a trade is possible.

Tracking orders across numerous instruments becomes simple with clear filtering based on selectable fields such as issue, trader or client. This enables the user to easily identify the trades of interest, and can be quickly changed to pull up the specific data required.

Name	Client	Order Date	Order State	Order Size	Salesperson	Order Type	Order Notes	Share Ref	Ref Buy Price	Ref Sell Price	Ref Delta	Select Basis	Share Price Selected	Over ride Price	Nuke Buy	Nuke Sell
Actelion 0.000% 22-Nov-2011	House	13-Aug-20...	House Quo...	1,000,000	GeoffW	On Swap	Morning Prices	45.00	102.50	103.00	0.40	Last	45.00		102.50	103.00
Actelion 0.000% 22-Nov-2011	Tulleys	13-Aug-20...	Broker Quote	2,000,000		On Swap	Firm for Day	45.50	103.00	107.00		Last	45.00		102.66	106.66
Actelion 0.000% 22-Nov-2011	Newton	13-Aug-20...	Order	2,000,000	IanT	Outright	Firm for Day		103.00			Last	45.00		103.00	
Actelion 0.000% 22-Nov-2011	GLG	12-Aug-20...	Order	2,000,000	IanT	On Swap	Firm for Day	46.00	102.00		0.50	Last	45.00		101.08	
Actelion 0.000% 22-Nov-2011	Jabre	12-Aug-20...	Order	2,000,000	IanT	On Swap	Working Order	46.00		103.25	0.45	Last	45.00			102.42
Air France / KLM 2.750% 1-Apr...	House	13-Aug-20...	House Quo...	1,000,000	GeoffW	On Swap	Better Buyer	9.50	19.70	19.95	0.20	Last	10.845		19.98	20.23
Air France / KLM 2.750% 1-Apr...	JPMAM	13-Aug-20...	Order	1,000,000	IanT	On Swap	Indicative only	9.60		20.00		Last	10.845			20.28

The order grid helps the trader to monitor orders and potential trades.

User Defined Views

Analyzer has a flexible portfolio grid that can be manipulated to generate multiple views based on the user's needs.

- Create new portfolio views with user-defined preferences such as different columns and sort keys, and save them for future use
- Change between portfolio views instantly, even using two views simultaneously of the same portfolio
- Get "dollar nuke" updates on every market tick and theoretical recalculations on demand
- Use multiple currencies. The portfolio grid is structured to accommodate a totally multi-currency system with position values and sensitivities reported in local, strategy or base currency
- Quickly re-aggregate your book to examine risk and exposure. All instrument types have commonly defined sensitivity measures such as dollar delta, delta shares, dollar rho, etc, which can be aggregated at any level from strategy to firm-wide
- Customize each portfolio view with your own preferences, such as choosing between theoretical, bid and ask prices, or different credit models



RISK ANALYSIS AND REPORTING

Most risk systems are unable to analyze convertibles appropriately, let alone deal with risk in multiple asset classes or currencies. Monis Analyzer analyzes risk in an integrated fashion, allowing multiple outputs to be generated and charted together. This is achieved by a combination of features of the portfolio grid and view functionality:

- A flexible aggregation methodology allows data to be sliced and diced to suit the user: run pre-canned reports across any instrument, position, strategy, account or book
- Monis' comprehensive range of analytics calculate Greeks and other outputs consistently across asset classes and currencies
- Users can vary one or two factors in stress tests and set up scenarios such as a market-wide volatility decline or a credit crunch
- Analyzer produces outputs of special interest for risk
- Monis Analyzer makes it easy to link to both enterprise-wide and spreadsheet-based risk systems
- Analyzer permits near-real-time risk and position management

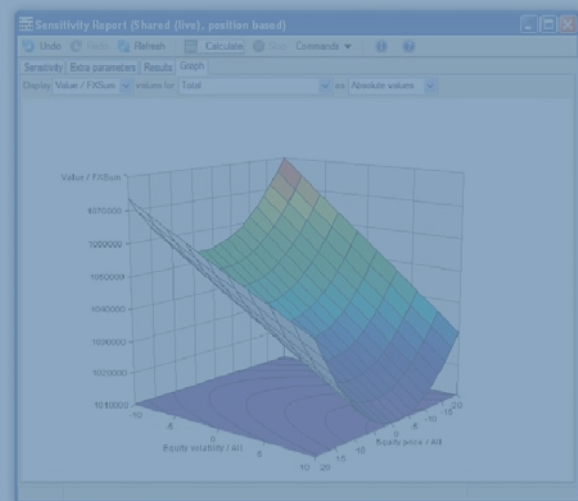
Powerful Reporting Tools

In addition to its real-time reporting functionality, Monis Analyzer also contains a series of pre-canned reports. While portfolio systems allow the user to generate on-screen

and hard copy reports, few can match Monis Analyzer's ability to report by individual instrument, strategy or any level of portfolio – across asset classes. All information contained in portfolio and reporting screens can be exported to a static csv file or in html format for further customized reporting by the customer.

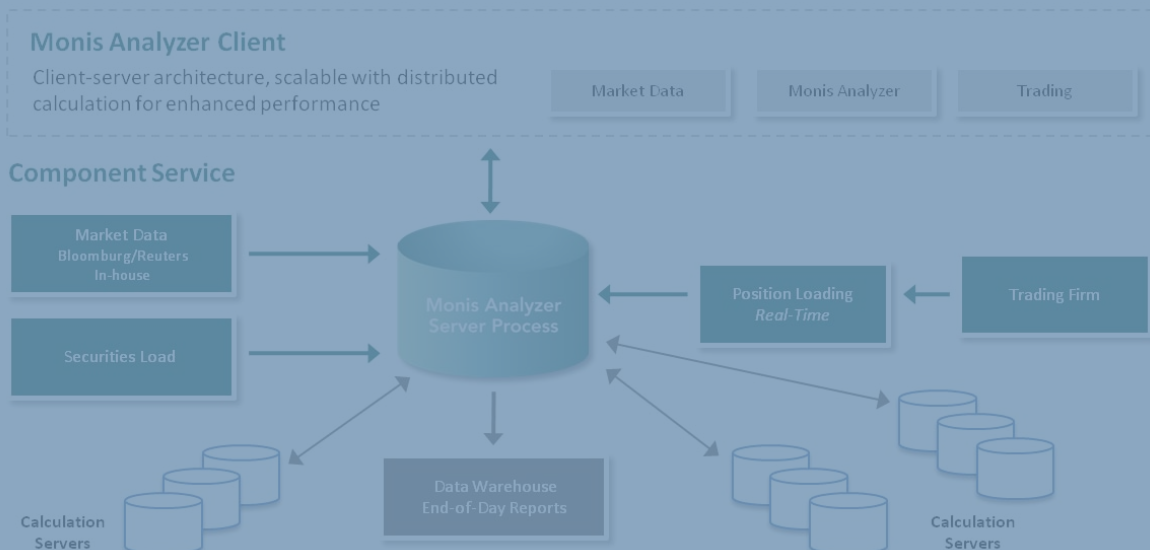
Pre-defined reports include:

- Sensitivity Analysis
- Events
- Rho Bucketing
- Credit Bucketing
- Vega Bucketing



Monis Analyzer enables users to generate two and three dimensional sensitivity reports

TECHNOLOGY AND INTEGRATION



Architecture

The Analyzer design is based around its need to quickly process the large numbers of analytic calculations that users require to be competitive in today's marketplace.

Analyzer has a three-tier distributed architecture, which leverages the cost effective combination of Microsoft Windows and Intel's multi-processor/core hardware along with TCP/IP and http/s communication.

Analyzer can be implemented in either virtual or physical environments and a x64-bit version is available for large scale implementations.

All data is stored in a Microsoft SQL Server database.

The Analyzer Client is light-weight; all processing and calculation is done server-side. Communication over wide area networks is supported, which allows for a multi-region shared system.

The central server process is multi-threaded and is responsible for marshalling all the Client calculation requests with market, static data and position information; managing the distribution of these calculations to the distributed calculation servers; and the returning of aggregated data to the Client.

Integration to Other Systems

Providing a flexible solution that can integrate with other systems enables firms to adapt to the current and future needs of their business. Monis Analyzer has been designed specifically with this mind, and is supplied out of the box with interfaces for position loading and market data feeds, as well as providing a scripting tool for the manipulation, loading and reporting of any aspect of the system. For more technical

users, APIs of varying levels of complexity are available.

These interfaces and APIs are supported with documentation and tutorials to enable quick and easy use, and our knowledgeable support consultants enable projects to be completed in a timely, cost effective and risk averse manner.

The Monis market interface provides integration with real-time market data, from sources such as Bloomberg, Reuters or SunGard's MarketMap. Combined with ticker information supplied by the Monis Data Service, the system is ready for real-time linkage upon initial install.

The Monis position interface allows real-time and automatic synchronization of your portfolios in Analyzer with an external trading system or master portfolio, to keep a position based view of the current trade books. Many differing systems have been successfully integrated using this method, including SunGard's VPM and Front Arena.

The Analyzer scripting tool (DTT) satisfies most other integration and reporting needs, and can be accessed from your desktop, or directly into Excel. This graphical user interface (GUI) based program operates around a script and csv file basis and can be used for all aspects of data management, including creating and updating reference data, securities, and time series; as well as reporting on static data and calculated outputs under both simple and complex scenarios.

For users with complex bespoke integration needs and access to development resources, the Analyzer APIs provide a code-based level of integration. These APIs are the backbone of the system and are used internally to deliver all the interfaces described above. They are delivered as Microsoft .NET libraries.



THE MONIS FAMILY OF PRODUCTS

Monis Data Service

Through continuous contact with convertibles markets participants, Monis Data Service ensures customers have the latest, high quality data on convertible bonds and other equity-linked securities in an optimized and easy to use format. Monis Data Service provides new issues, terms & conditions, and historical time series data for a global universe of over 2,000 convertible securities.

Monis XL & LIB

Monis XL is a spreadsheet-based convertibles analysis and management system, which deploys Convertibles LIB, a similar analytics library to Analyzer in an Excel environment. Apart from the quality of its analytics, XL's distinguishing feature is its user-friendly interface, which goes beyond traditional calculator-style templates and superimposes on top of Excel the most highly developed interface in the add-in market.

Monis XL's uniquely ergonomic design makes work easier, faster and more intuitive - while still retaining all the power and flexibility of Excel.

Monis Equity Options XL

This spreadsheet-based system includes option types like Bermudan, Asian, Barrier, Path-dependent, Compound, Spread, Quanto, Ladder and many others. Allows you to calibrate to the volatility surface and use term structures of yield curves, volatilities and dividends.

Uses analytical and numerical solutions as well as fast Monte Carlo simulation models (single and multiple assets). Outputs include full Greeks, implied volatility, break-even, leverage factor, probability of hitting barriers and forward prices.

Monis Generalized Monte Carlo XL

For those wanting even more power in path-dependent options, we've developed a fast Monte Carlo engine with an easily customizable payoff language that enables you to price and hedge virtually any type of option; for example, basket options with 100+ assets, corridors, fluffy barriers, range accruals and quanto cliquets.

Monis Interest Rates XL

For pricing, hedging, modeling and risk managing Interest Rate/Fixed Income derivative instruments and portfolios including Caps, Floors, FRAs, IRGs, Swaps and Swaptions, as well as a whole range of interest rate exotics including Bermudan and Barrier Swaptions, Average Rate and Ratchet Caps, Diff Swaps and more. This sophisticated program offers Black, Hull White/Extended Vasicek and Heath Jarrow Morton pricing models. It also provides a complete calibration module to allow you to derive your volatility data from a universe of caps, swaptions and futures options.

Monis FX Options XL

Monis FX Options XL is a powerful collection of routines running within the familiar Excel front end. This enables you to evaluate a wide range of FX option types, including Standard, Bermudan, Asian, Barrier, Lookback, Ladder, Compound, Spread and many others.

Try the program!

Why not try the program and see for yourself how powerful it is? We supply a 14 day complimentary package ready to install, along with comprehensive documentation and support. Contact us at monis.sales@sungard.com or at the contact details which follow.

www.sungard.com/monis/learnmore

For more information,
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