

# **MB Risk Management**

an FSS<sup>®</sup> - Financial Systems Software<sup>®</sup> company

## **What do our 30,000 users know that you don't?**

- **Fast, Inexpensive, Refined and Accurate**
- **Flexibility, Quality and Superb Support**
- **Our 32nd year of business**

**‘MBRM blows all other away from a technical standpoint...  
In fact, every sophisticated desk should have a copy...  
MBRM has built far and away the best package in  
terms of cutting-edge code, technology and models’**

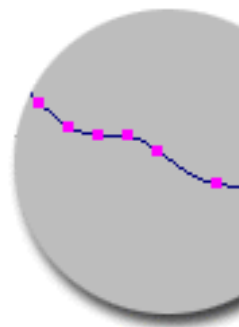
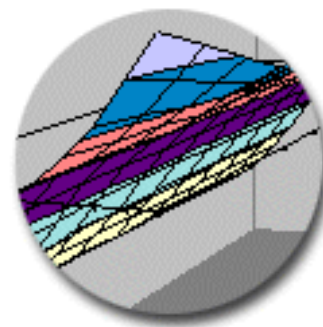
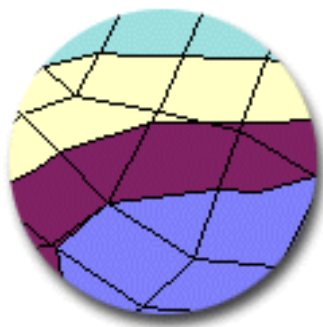
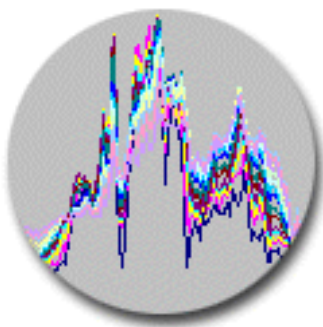
**(Derivatives Strategy Magazine)**

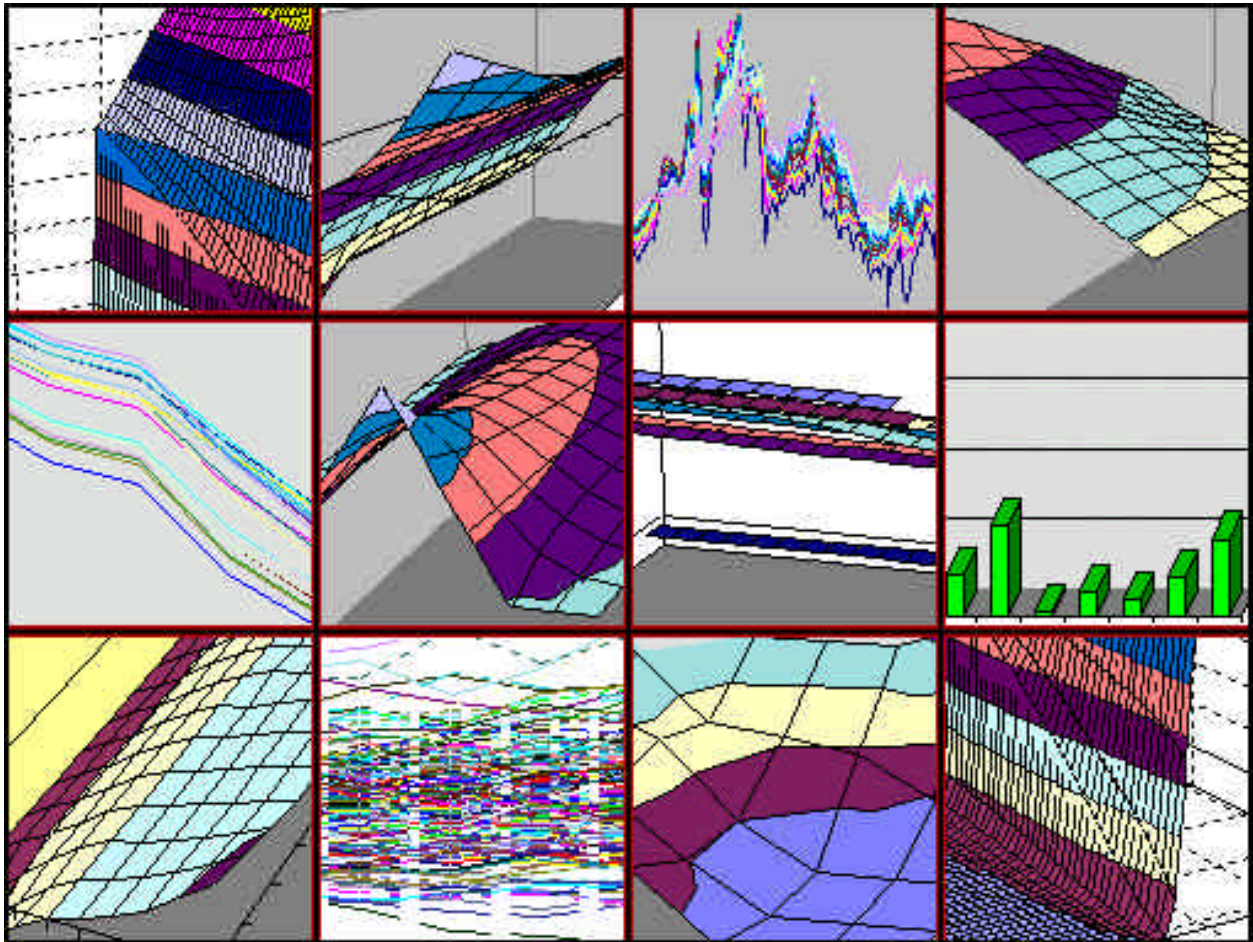
The UNIVERSAL Add-ins<sup>®</sup> are compatible with Excel (including the multi-threaded calculation / MTC feature), Access, VB.NET/Visual Basic/VBA, C/C++/C#, Java, Python, Fortran, etc. running on all major versions of Windows.

UNIX (Solaris, Linux, AIX) static and shared libraries available.

C/C++ source code license also available.

**Convertibles - Bonds - Exotics - Options - Futures - Swaps  
Commodities - Energy - Equities - Fixed Income - FX - MMKTS**





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**MBRM** are developers of the world-famous **UNIVERSAL Add-ins®**. With 30,000+ users world-wide, the UNIVERSAL Add-ins are the most widely-used derivative software for the pricing, risk management, trading, arbitrage, fund management and auditing of securities, options, futures and swaps in the convertible, fixed income, commodities, energy, equities, foreign exchange and money markets. [Links with most real-time feeds create a powerful and dynamic analytical environment.](#) MBRM's software is used world-wide in mission critical applications by most major Investment Houses, Money Managers and Corporate Treasuries.

The UNIVERSAL Add-ins are all implemented as function calls in a Dynamic Link Library (DLL), thus assisting in the ease of use and integration into the user's analytical environment. They can therefore be called from Excel, Access, Visual Basic, C, C++, Fortran etc. This object-orientated building-block approach provides unequalled speed, cost-effectiveness and flexibility. MBRM's technical support is excellent since the software has been designed and implemented in-house. A free fully functional 30 day trial can be downloaded from MBRM's internet web site:

<http://www.mbrm.com>

**MBRM** also provides source code and analytical consultancy to integrate its technology into existing in-house systems. This provides an alternative to either developing the software in-house, or buying in a potentially inflexible third party system. By sharing its analytical techniques with many clients, MBRM can assist you in building a low cost in-house solution with world-beating analytical tools.

Our consultancy service, which combines analytical excellence with technology solutions, whether required by traders, technology or internal audit professionals, could include solving real life challenges which a client is facing.

**MBRM** are pioneers of the financial add-in and toolkit market segments and have been continuously providing leading edge analytical solutions since 1988 and have one of the longest successful track records in the industry. MBRM regard this as essential since every sale is the start of a long term partnership.

**MBRM** was founded in 1988 by Dr. Mamdouh Barakat.

Dr. Mamdouh Barakat was educated at Brighton College and was honoured with the accolade, Old Brightonian of the Month (March 2014). He went on to the London School of Economics (LSE) where he received his BSc (1st class honours) in Management Sciences, MSc (distinction) in Operational Research and PhD in the field of Artificial Intelligence in Simulation Modelling.

Professionally, Dr. Barakat joined international investment bank Drexel Burnham Lambert as a quantitative analyst. He subsequently held the post of Senior Managing Director of the Philadelphia based FNX Limited, who provide global risk management systems to the largest institutions in the world.

In 2003, Dr. Barakat joined the Education and Standards Committee of the Professional Risk Managers' International Association (PRMIA). The Committee is charged with the development of PRMIA's Standards of Practice, Conduct and Ethics (Code of Conduct) and the Professional Risk Manager (PRM) program which is both a certification and professional development program.

## UNIVERSAL Add-ins®

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UNIX (Solaris, Linux, AIX) static and shared libraries available.

C/C++ source code license also available.

## UNIVOPT - Universal Options Add-in

UNIVOPT is regarded by many dealers and risk managers as the industry standard option pricing and risk management system. Amongst the new features are 6 new models. The options add-in calculates option prices and implied volatilities using the Black, Black-Scholes, Garman-Kolhagen, Cox-Rubinstein (binomial) models, as well as proprietary models for normally distributed underlying instruments. UNIVOPT handles European and American style options on bonds, commodities, currencies, futures (including 3M interest rate futures) and shares (including constant dividend streams and discrete dividend payments). It also calculates sensitivities, such as delta, gamma, fugit, kappa (vega), rho, theta and theta2.

UNIVOPT also contains a warrant pricing function which takes into account dilution (which is very useful when analysing warrants about to be issued by companies on their own stock).

UNIVOPT enables the production of pricing matrices, risk return profiles and implied volatility analysis for either individual options or portfolios.

A number of example spreadsheets are supplied free with UNIVOPT, which enable the user to price and risk manage option portfolios “straight out of the box” without any programming or “spreadsheet” work.

## UNIVEXOT - Universal Exotics Add-in [requires UNIVOPT]

The exotics add-in calculates prices, sensitivities and implied volatilities of Exotic options, including Average price (Asian), Barrier and double Barrier (Knock-out and Knock-ins), Quanto Basket Asian options, Digital, Compound, Contingent, Ladder, Lookback and one and two Touch options on bonds, commodities, currencies, futures and shares (including constant dividend streams and discrete dividend payments). Windows Barriers are also supported (windows can be up front, in middle or at end). For maximum flexibility and sensitivity testing, it allows the user to choose either a numerical (e.g. binomial tree) algorithm or a flexible Monte Carlo simulation algorithm. Smoother

handling of barriers are implemented to improve accuracy of numerical models.

With a single function call, UNIVEXOT calculates the full sensitivities of Spread and Power options. UNIVEXOT also analyses two asset Rainbow options where any user specified pay off formula can be entered.

When UNIVEXOT is combined with UNIVOPT, you have a formidable combination for most standard and exotic options in an easy to use package.



## UNIVINT - Universal Interpolating Add-in

The interpolating add-in contains a number of interpolating lookup functions (straight line, cubic splining, exponentials and polynomial least squares fit etc.) which have a wide variety of uses, including performing lookups on one or two dimensional volatility smiles and surfaces, forward commodity rates, forward FX points etc. The two-dimensional

lookup capability is especially useful for looking up swaption volatilities.

The interpolating add-in can be used by itself or with any (or all) of our other add-ins, thus providing the ability to create complex term structure models.

## UNIVYLD - Universal Yield Add-in

The yield add-in is the finest global yield add-in available. Its lightning speed, range of instruments handled and extensive analytics gives the user a competitive edge. It handles international fixed income products including MTNs, deferred, long or short first coupon bonds as well as bonds callable between coupon payment dates. In addition to the standard market convention yields, the calculator calculates exact TRUE yields (taking into account weekends and holidays), money market yields on all instruments (which can be compared directly with Libor), forward prices (e.g. for repos or bond options), hedge ratios and sensitivities (e.g. duration and convexity) consistent for instruments which have a different number of payments per annum (since using 'standard' unadjusted duration numbers could lead to unnecessary risk exposure due to inaccurate hedging), conversion factors to convert from yield volatility to price volatility (or vice-versa) and US Treasury Equivalent Yields on all instruments.

The yield add-in enables the setting up of international fixed income portfolios, with consistent yield, duration and convexity analysis, using your familiar spreadsheet, database or programming language. It also has a cash flow analyser for **swaps, projects, loans and esoteric instruments**. For quantitative analysts, it provides the ability to construct risk/return profiles on arbitrage trades as well as models of bond futures. For dealers, it enables the setting up of a very flexible trading system. Its uses are thus endless in the fixed income environment.

UNIVYLD handles virtually every bond market in the world (e.g. for Australian bonds, Canadian bonds, Eurodollar FRNs, Eurosterling FRNs, French government bonds, JGBs, South African Bonds, Spanish Bonds, Swedish money market instruments, UK gilts, US bills, US treasuries, US corporates, yankees etc).

Optional module for **UNIVYLD** users -

## MBRM Bond Futures “Cheapest To Deliver” (CTD) Analyser

This module calculates conversion factors and then analyses the deliverable bonds, including calculating the gross and net basis for every deliverable, break-even REPO rates, implied price

duration of the future and deliverables, hedge ratios, fair values and identifying the “cheapest to deliver” (CTD) bond. Sample spreadsheet provided: MBRMCTD.XLS

## UNIVSWAP - Universal Swap Add-in

The swap add-in is an interest rate and cross-currency swap add-in. The add-in builds a No-Arbitrage term structure model for interest rates and volatilities (using mean reversion) from any combination of bonds, swaps, bills, deposits and/or futures. This term structure is used to consistently price instruments, including Bonds, Swaps, FRAs, IRGs, Caps, Collars, Floors, Corridors and Digitals. The approach used for volatility modelling is based on the extended Vasicek (Hull-White) models, with a number of proprietary improvements. This gives maximum flexibility to quantify both standard and non-standard transactions. The swap add-in enables the user to

check the prices being quoted by the counterparty, increasing the user's competitive advantage. Multi-currency portfolios are continuously marked to market - improving P&L and Risk monitoring.

**UNIVSWAP - Universal Swap Add-in** incorporates, at no extra charge, full copies of the following four Universal Add-ins :

- UNIVOPT** - Universal Options Add-in
- UNIVEXOT** - Universal Exotics Add-in
- UNIVYLD** - Universal Yield Add-in
- UNIVINT** - Universal Interpolating Add-in

## UNIVCMS - Universal CMS & Swaptions Add-in [requires UNIVSWAP]

This is an optional add-in for users of our **Universal Swap Add-in** who require the pricing and risk management of Constant Maturity Swaps (CMS) and/or European, Bermudan and American style options on Bonds or Swaptions. The CMS Add-in analyses multi-callable amortizing swaps and bonds, including passing in a Constant Elasticity of Variance (CEV) and full Swaption Volatility grid directly to BDT/BK pricing model. Also handles CMS Quanto Caps, Collars, Floors and Corridors. The approach used is based on the Black-Derman-Toy (BDT) and/or extended Vasicek (Hull-White)

interest rate models for implementation of a No-Arbitrage term structure model for interest rates (with mean reversion), and utilises a balanced trinomial tree for increased accuracy. Market standard calculation of swaption prices AND SENSITIVITIES assuming constant "black" volatility are also implemented using a single function call. UNIVCMS also implements a very fast calibration of extended Vasicek (Hull-White) volatility and Mean Reversion term structures without using Excel's Solver.

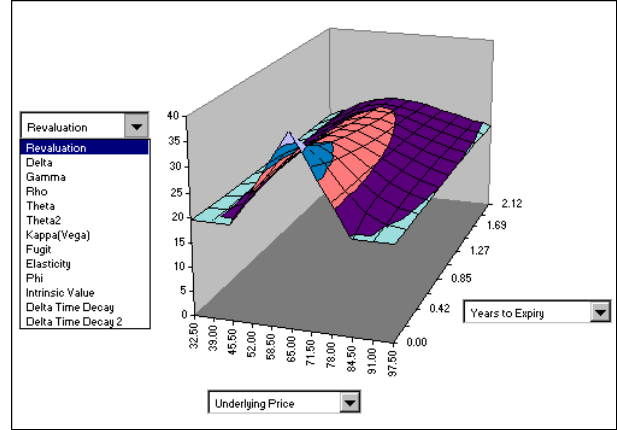
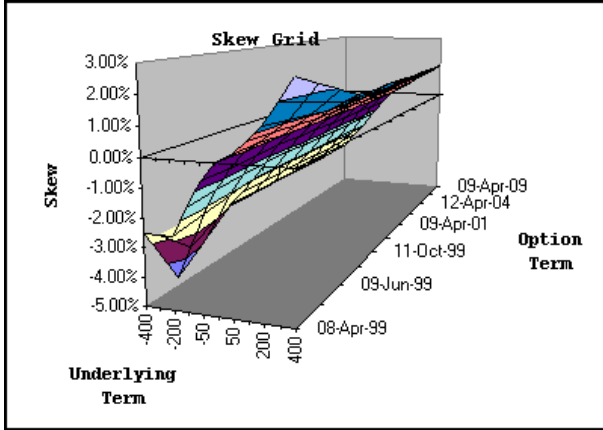
## UNIVLMM - Universal LIBOR Market Model Add-in [requires UNIVSWAP]

UNIVLMM implements the cutting edge multi-factor LIBOR Market Model and "Brace-Gatarek-Musiela" (BGM) model to price and risk manage interest rate derivatives, including multicallable amortizing and accreting Swaptions; Delivery Options in "Cheapest To Deliver" (CTD) Bond Futures; Exotic Interest Rate derivatives such as AutoFlex Caps; Knock-out caps; Reset Caps; Trigger knock-out/knock-in Swaps/inverse floaters; Spread Options; Captions; Options on swaptions; Callable Power Reverse Dual Currency (PRDC) swaps and notes; Callable range accrual dual currency quanto notes; Bermudan Callable CMS

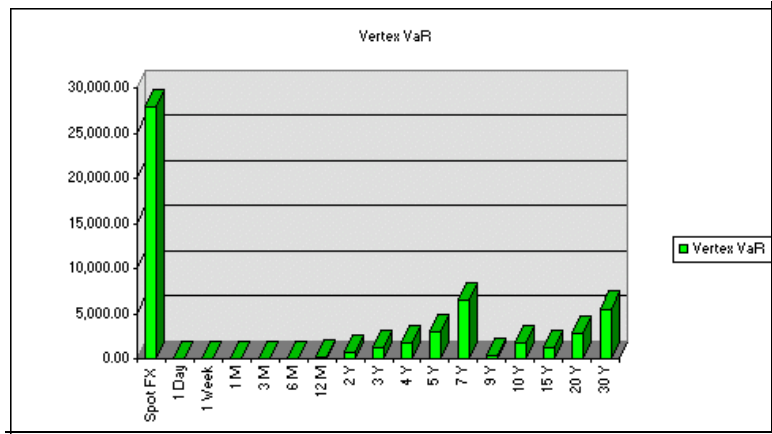
spread bonds; Callable Capped FRNs; Target Redemption Notes (TARNs) and FX Target Redemption Notes (FX-TARNs), including Reverse Floating TARNs; Crescentos / Snowballs / Ladders / Lift notes; ladder inverse floaters; Ratchets and Bermudan callable fixed to floater (flip flop), including step-up fixed rates. UNIVLMM allows you to calibrate the LIBOR Market Model's multi-factor interest rate volatility term structure based on individual CAPLET volatilities and/or market quotes for traded instruments (e.g. swaptions, caps and floors), including fitting expected correlations between different parts of the curve.

**Calibration and pricing are very fast.**

Some examples of the MBRM Universal Add-ins' sample screenshots.

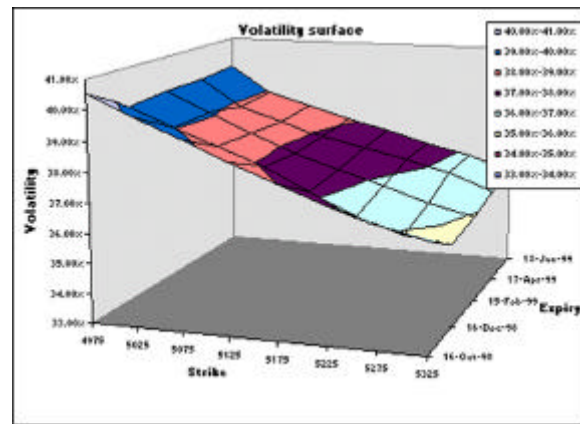
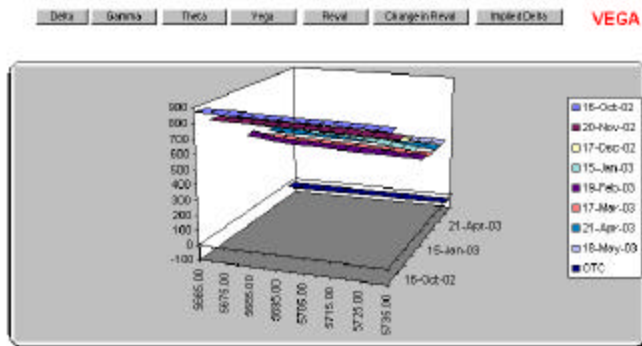


Maturity	Market Quoted			From Zero curve		
	Fwd points	Fwd FX	%PA	Fwd points	Fwd FX	%PA
1M	4	1.6504	0.30%	3	1.65034	0.25%
2M	0	1.65	0.00%	-2	1.64983	-0.06%
3M	-2	1.6498	-0.05%	-3	1.6497	-0.07%
6M	8	1.6508	0.10%	4	1.65045	0.05%
9M	8	1.6508	0.06%	6	1.65058	0.05%
12M	25	1.6525	0.15%	23	1.65233	0.14%
1Y	25	1.6525	0.15%	23	1.65233	0.14%
2Y	160	1.666	0.48%	163	1.66626	0.48%
3Y	470	1.697	0.95%	476	1.69758	0.96%
4Y	665	1.7165	1.01%	663	1.7163	1.00%
5Y	850	1.735	1.03%	842	1.73416	1.02%
7Y	1290	1.779	1.12%	1279	1.77788	1.11%
10Y	1980	1.848	1.20%	1956	1.84557	1.19%



11-Feb-2002	5700.00	154.1	18.90%	189.1	15.90%	217.1	14.90%		
4000	1750.00	0.40	1750.40	0.00	4000	1000.00	0.54	1000.54	0.00
4025	1642.40	0.05	1642.12	0.00	4025	1645.09	0.76	1646.66	0.00
4050	1710.00	0.60	1710.60	0.00	4050	1750.00	0.74	1750.74	0.00
4075	1594.14	0.88	1595.02	0.41	4075	1597.92	1.00	1598.95	0.50
4100	1650.00	0.87	1650.87	0.00	4100	1660.00	1.00	1661.00	0.00
4125	1616.25	1.10	1617.35	0.44	4125	1650.00	1.10	1651.10	0.44

### RISK SUMMARY GRAPH



5396903	Premi	7410897	Break	2222222	Accru	5677934	Delta	5654446	Delta	All sensitivie	9921	991
											9908	990
											9893	989
											9878	987
											9862	985
											9847	984



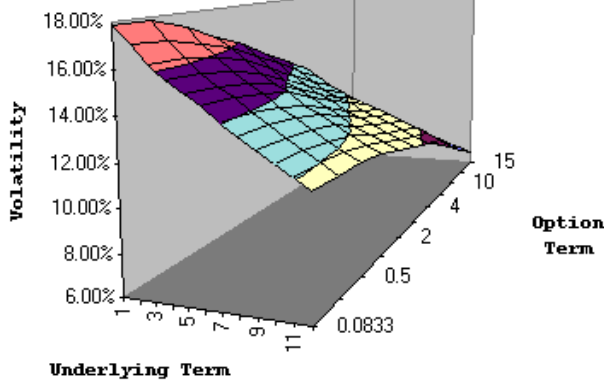
## UNIVSWAP - UNIVERSAL SWAP ADD-IN

### Sensitivity to non-parallel (point) yield shifts of 1% upwards

**BREAKDOWN :**

	Base Valuation	Total Sensitivity	Stub Deposit	FTR Sep-99	FTR Dec-99	FTR Mar-00	FTR Jun-00	FTR Sep-00	FTR Dec-00	SWAP 2Y	SWAP 3Y	SWAP 5Y	SWAP 7Y	SWAP 10Y	SWAP 30Y
<b>SWAPS</b>	680,252	539,520	-3,837	-99	-248	413	420	75	22	-3,337	-109,401	187,280	468,232	0	0
<b>BONDS</b>	12,659,849	-577,421	-2,513	-714	-146	-1,077	-719	-175	-6	330	-6,414	-310,013	-234,300	-21,674	0
<b>Loan/Deposits</b>	89,229	-2,203	-103	-50	-37	-33	-17	-4	0	-240	-581	-876	-261	0	0
<b>IR FTR &amp; OPT</b>	741,743	1,711,987	162,690	59,647	59,622	62,821	70,669	56,140	-2,666	1,243,064	0	0	0	0	0
<b>FRAs</b>	9,781	3,257	-4,848	-2,807	-2,807	-1,841	-4,387	-413	238	20,122	0	0	0	0	0
<b>CAP/CLR/FLR</b>	1,464	7,571	366	10	84	229	93	13	1	2,147	3,698	930	0	0	0
<b>IRGs</b>	2,420	20,660	-521	-469	-469	-563	-3,629	-486	98	10,136	16,565	0	0	0	0
<b>OPTIONS</b>	596,248	-9,944	-1,888	-1,074	-1,074	-1,170	-988	-436	0	-3,314	0	0	0	0	0
<b>TOTAL</b>	<b>14,780,986</b>	<b>1,693,426</b>	<b>149,347</b>	<b>54,443</b>	<b>54,925</b>	<b>58,779</b>	<b>61,442</b>	<b>54,713</b>	<b>-2,315</b>	<b>1,268,908</b>	<b>-96,134</b>	<b>-122,679</b>	<b>233,672</b>	<b>-21,674</b>	<b>0</b>

### ATM Swaption Volatility Grid



### FX OPTIONS CALCULATOR

Today's Date: 01-Apr-99 Pricing(Currency) Currency: USD  
 Spot Settlement Date: 07-Apr-99 Locked up IP: 5.70% Acq/360 Foreign Currency: GBP  
 Option Maturity: 03-Apr-00 1Y Overwrite IP: 5.71% Overwrite IP: 5.64%  
 Option Value Date: 05-Apr-00 2 Use zero curve from Currency Sheet Use zero curve from Currency Sheet

Spot FX (from currency sheets): 1.65 USD/GBP  
 Used Spot FX rate: 1.65 USD/GBP  
 Strike price: USD/GBP: 1.6 USD/GBP  
 1 = Call on GBP (net on USD)

Volatility: 10.45%

Option mode: 1 = Neutral (i.e. Biennial Tric) 2 = Steps in Binomial 100

Exotic Type: 5 = Up-and-out  
 Knock-out barrier: 2  
 Barrier # barrier hit: 0

	USD per GBP	%USD	GBP per USD	%GBP
Price	0.0665202	4.20141796	0.02596432	4.15248222
Delta	0.29894449	0.30904485	-2.26210071	-0.25119089
Gamma	-1.10480259	-0.01750466	-3.19181805	-0.02810746
Pega	0.004894235	0.30524475	-0.00381826	-0.01998022
Theta	-0.095205	-0.00550274	-2.07001205	-0.00412248
Theta2	-7.8395805	-0.00489988	-2.9846405	-0.00475143
Kappa/Vega	-0.00280911	-0.18146468	-0.00198815	-0.17679702
Pega	0.98418056	0.98418056	0.98418056	0.98418056
Elasticity	7.21548833	7.21548833	-6.21548833	-6.21548833
Psi	-0.01081173	-0.00002224	0.001090009	0.28801442
Binomial Value	0.05	3.125	0.01893934	3.0390302
Fwd FX rate	1.652274556	103.2671558	0.00522629	86.63620042

**IMPLIED VOLATILITY ANALYSIS**

Option price	10.45%	4.29	0.826	4.15
Implied Vol	10.45%	10.45%	10.45%	10.45%

Expiration of Option (years)	CALLS			PUTS		
	European	Bermudan	American	European	Bermudan	American
0.5	1.682489	1.682489	1.78231	1.34079	1.34079	1.34787771
1	1.933944	1.933944	2.18189	1.97424	1.97424	2.01943682
2	2.061242	2.383467	2.63512	2.68339	2.80028	2.90458553
3	1.956695	2.614391	2.86495	2.88953	3.28152	3.4123172
4	1.687586	2.779128	2.96227	2.86034	3.59672	3.75145443
4.9	1.380109	2.874227	2.99809	2.66585	3.7987	3.95710259
9	0	3.045125	3.19378	0.85331	4.33084	4.44911696

### UNIVSWAP - UNIVERSAL SWAP ADD-IN

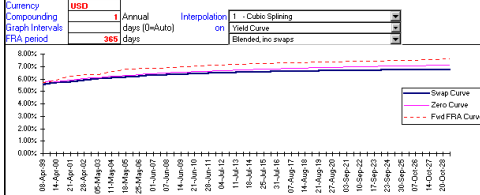
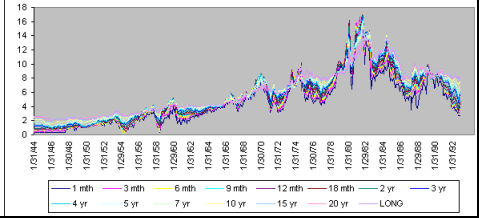
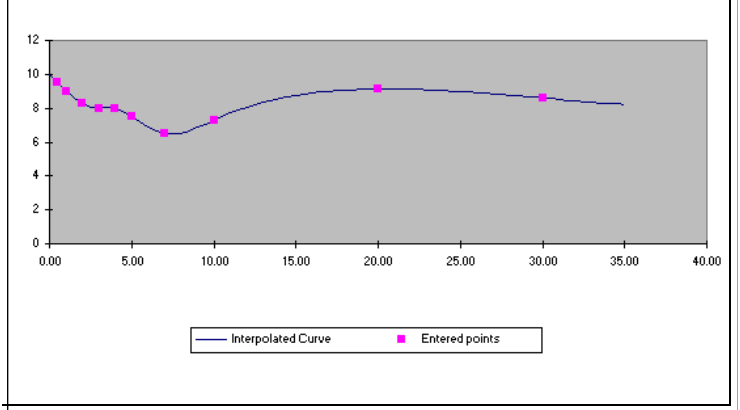


Figure 6.1: US Zero-Coupon Yields from Jan 1994 to Dec 1992



### UNIVINT - UNIVERSAL INTERPOLATING ADD-IN



Constant Maturity Standard Bond (Constant Maturity Standard Par Bond) Constant Maturity

0,000,000 Bond  
 5,000,000 Bond  
 2,000,000 Bond  
 1,000,000 Bond  
 3,000,000 Bond

## UNIVCONV - Universal Convertibles Add-in

The Universal Convertibles Add-in handles portfolios of Convertible Bonds with structured calls, puts and conversion schedules, non-stationary share/bond correlation, time dependent credit spreads, discrete and continuous dividends, cross-currency and multiple conversion ratio resets. The add-in can be linked with most real-time feeds to provide a dynamic analytical environment which continuously marks to market multi-currency portfolios and thereby improves P&L and Risk monitoring.

### General Features:

- 5 different models for assumed equity growth and discounting.
- DECS (Dividend Enhanced Common Stock / Debt Exchangeable for Common Stock) are handled **using a TREE instead of the usually slower and less accurate Monte Carlo Simulation.**
- Simple Resetables and complex Multiple "CHAIN" resetables are handled **using a TREE instead of the usually slower and less accurate Monte Carlo Simulation.** Chain resetables are where there are multiple resets where the maximum or minimum reset price is a function of the previous reset, which is currently unknown.
- Bonds can be defined in terms of explicit cash flows, thereby enabling the analysis of irregular coupon bonds (including step ups, step downs and rollercoasters).
- The ability to calculate the implied credit spread and the implied yield volatility from a convertible bond price.
- Enhanced Dividend escrow handling.

The system has 3 very fast models implemented:

- 1-factor Equity trinomial lattice tree - with variable volatility term structure.
- 1-factor Interest rate trinomial No-Arbitrage lattice tree - with variable volatility and mean reversion term structure. This very efficiently and easily analyses **callable and/or putable bonds, bond options and Bermudan swaptions (constant, amortizing or roller-coaster nominals) using the Black-Derman-Toy (BDT) and/or extended Vasicek (Hull-White) interest rate models.**
- 2-factor (9 node) model. Combines the Equity and Interest rates into a 2-factor tree.

We believe that our convertibles add-in sets a new standard for accuracy, speed AND price which other systems will find hard to beat. The accurate analysis of Convertible Bonds is a very complex area. This is one of the reasons why there are very few software packages available for analysing Convertible Bonds. In our convertibles add-in, we have combined the latest techniques and models from both the fixed income and equity derivative world. We are also constantly enhancing it for the new structures (e.g. make whole payments, reverse convertibles, conversion trigger levels etc).

For increased accuracy and functionality, we strongly recommend that Universal Convertible Add-in be used with our Universal Swap Add-in. Then, instead of passing a single constant interest rate, UNIVCONV can take into account the whole yield curve (utilising UNIVSWAP to calculate the interest rate zero curve term structure from the quoted market rates for deposits, futures, swaps and/or bonds).

## UNIVDRV - Universal Derivatives Add-in

Universal Derivatives Add-in is an inclusive package of:

**UNIVEXOT+** - Universal Analytical Exotics Add-in  
**UNIVFDIF** - Universal Finite Difference Add-in  
**UNIVGARCH** - Universal Garch Add-in

## UNIVEXOT+ - Universal Analytical Exotics Add-in

This module implements the latest research papers on the analytical pricing of exotic options (including continuous and discrete barriers and continuous and discrete lookbacks). When UNIVEXOT+ is

combined with UNIVEXOT, this enables numerical, Monte Carlo and analytical option pricing and risk management.

## UNIVFDIF - Universal Finite Difference Add-in

UNIVFDIF implies the local volatility surface and then prices and calculates the full sensitivities of European, American style and Bermudan variable strike Exotic options (including discrete windowed and double barriers) on bonds, commodities, currencies, futures and shares (including discrete

dividend payments). The add-in uses the finite difference algorithm which is more advanced than standard binomial trees. Full term structure of interest rates and Multi-Dimensional Local Volatility Surface are handled.

## UNIVGARCH - Universal Garch Add-in

UNIVGARCH implements various Garch models (including N-GARCH, E-GARCH, O-GARCH, O-Garch(1,1)-AR(1) and N-Garch(1,1)-AR(1)). Proprietary optimisation techniques are utilised to enable the practical use of Garch models in a trading environment. The Garch model increases the accuracy in the pricing of standard and exotic options (including Windowed Barriers and Windowed one and two touch options) where the underlying does not follow a perfect lognormal distribution (e.g. it has fat tails or non-standard Kurtosis). **The Garch model has been proven more accurate than “Black-Scholes” type models, especially for out of the money options which are close to maturity.**

The Garch model is considered an effective volatility forecaster. UNIVGARCH thus enables the forecast of the forward volatility for any time

period and this volatility forecast can also be used in a standard option pricing model, increasing the accuracy of the standard option pricing model.

Simulations can be carried out with variable step length, including the handling of discrete dividends and a term structure of interest rates. These substantially increase the accuracy and types of options which can be analysed. Advanced variance reduction techniques are also implemented to substantially increase the accuracy/speed ratio.

UNIVGARCH can also be used for the Monte-Carlo pricing of standard and exotic options assuming a constant volatility, therefore increasing the scope of usage to situations where a standard log-normal distribution is desirable.

## UNIVVAR - Universal VaR Add-in “Value-at-Risk”

UNIVVAR calculates a portfolio's exposure to market risk and expresses the exposure in terms of Value-at-Risk (VaR). It also calculates “Incremental VaR” (the incremental effect of a single trade on the whole portfolio's VaR). Cash flows are automatically mapped to multiple vertices. Automatic calculation and comparison of Analytical, Monte Carlo, stress and historical VaR enhances risk management. Whilst the add-in calculates the historical variances and correlations between assets, UNIVVAR also supports historical Garch simulation without variance/correlation matrices, which considerably improves robustness and accuracy.

### Combining UNIVVAR and UNIVDRV - Universal Derivatives Add-in

When UNIVVAR is combined with the UNIVDRV - Universal Derivatives Add-in, you can calculate Delta-Gamma VaR, as well as historical variances and correlations between assets. You can also generate simulations using historical Garch simulations and/or historical returns (without variance/correlation matrices) and display the resultant VaR numbers and return distributions.

### General Features:

- Calculates Value-at-Risk (VaR) for multi asset portfolios.
- Analyses Incremental VaR : the incremental effect of a single trade on total VaR.
- The ability to enter stress testing scenarios and historical (back testing) scenarios.
- Automatic calculation and comparison of :
  - Analytical VaR
  - Monte Carlo Var
  - Stress Testing Scenarios
  - Historical Garch simulation without variance/correlation matrices, which considerably improves robustness and accuracy.
- Assets handled include Commodities, Energy, Equities, Fixed income, Foreign Exchange and Money Markets.
- Useful for the analysis of complex multi asset dependent options and securities portfolios.
- Useful for compliance and regulatory risk management purposes.
- Compatible with JP Morgan's RiskMetrics datasets.

## MBRM Futures/FRAs Arbitrage Module

This is an optional module for Excel users of our **Universal Swap Add-in** who require the analysis of the arbitrage opportunities between interest rate futures, FRAs and Swaps. The module is designed to be used by traders in a fast moving market. Therefore ease of use is maximised. Grids are

calculated and displayed for forward futures, FRAs and Swaps to enable the quick comparison of the arbitrage opportunity between the markets. Trades are entered and the positions are continuously marked to market.

## UNIVCRD - Universal Credit Risk Add-in

UNIVCRD calculates a portfolio's exposure to counterparty risk. A major feature is the use of an analytical methodology which provides a considerable speed advantage over traditional

Monte Carlo approaches and which supports default correlations. Instantaneous calculation of credit risk enables real-time monitoring by traders and risk managers.

## UNIVCDRV - Universal Credit Derivatives Add-in

The Universal Credit Derivatives Add-in prices Credit Default Swaps and Credit Default Options. A protection buyer pays a regular (or one-off) fee and in return, if there is a credit default, he receives a one-off compensation payment. The system can imply the default probabilities (or recovery rates) from traded credit default swaps and/or credit options. In addition, the add-in can revalue credit default swaps and/or credit options after they have been traded in order to calculate a theoretical P&L.

This approach has many advantages over implying the default probabilities from bonds, including the fact that there may not be liquid publicly traded bonds issued by an issuer for all maturities (if at all), whereas the OTC credit derivatives market can trade credit default swaps and/or credit options for any issuer at any maturity. The credit derivatives market, being more specialised and focused than the underlying bond market, is also likely to be a more accurate estimator of default probabilities than the bond market.

For increased accuracy and functionality, Universal Credit Derivatives Add-in requires UNIVSWAP - Universal Swap Add-in. This is because the Universal Credit Derivatives Add-in internally calls UNIVSWAP for interpolation of yield curves and date calculations.

These advanced functions allow for more complex credit derivative analysis, including :

- Fees can be paid in advance or in arrears
- Different credit spreads for the Fee Receiver (Insurer) and the Fee Payer (Insured)
- Amortization Schedule handles rollercoasters (i.e. amortizations & accretion)
- Increased flexibility in the definition of fee payment dates / payment cycles
- Holidays taken into account for fee payment dates and amounts
- Additional accrued types handled
- Additional interest rate interpolation techniques for accuracy
- Automatically links to UNIVSWAP currency sheets

### UNIVSWAP - Universal Swap Add-in

incorporates, at no extra charge, full copies of the following four Universal Add-ins :

- UNIVOPT** - Universal Options Add-in
- UNIVEXOT** - Universal Exotics Add-in
- UNIVYLD** - Universal Yield Add-in
- UNIVINT** - Universal Interpolating Add-in

## MBRM Exchange Traded Options System

### General Features:

- Handling of ETO contracts on most exchanges, including equity derivatives and interest rate futures.
- Evaluation of FTSE options on the LIFFE exchange, including the modelling of early exercise (wild card option).
- Full risk analysis (including scenario analysis). Risk broken down into individual contracts and strikes.
- Graphical modification of volatility skews.
- Pricing sheets can be easily adjusted for different formats.
- Multiple formats for one contract possible.
- Up to eight contracts on one pricing sheet.
- Open system approach enables linking to most real-time feeds.
- Positions from multiple dealers/contracts can be monitored and consolidated centrally.

(NOTE: The **MBRM** ETO System requires **UNIVOPT** and **UNIVINT** to operate)



These pages list some of our clients from around the world.

[This is NOT necessarily an endorsement of our company by the listed institutions]

A B Bankas NORD/LB Lietuva (Lithuania)	ATC Consulting (Geneva)	Barclays Bank Plc (Barbados)	BSI AG (Lugano)
A.Ribaroff (London)	AtosEuronext (Amsterdam)	Barclays Bank Plc (London)	BSI SA (Lugano)
Aargauische Kantonalbank (Aarau)	ATP Huset (Denmark)	Barclays Capital (London)	Buchanan Partners (London)
Abbey Life Investment Services (Bournemouth)	Aussen-Und Devisenhandels-Beratungen (Munich)	Barclays De Zoete Wedd (London)	Bundesaufsichtsamt für das Kreditwesen (Berlin)
Abbey National (London)	Aust-Agder Kraftverk (Norway)	Barclays De Zoete Wedd (Tokyo)	Bundesbank (Frankfurt)
Abbey National Financial & Invest. Services plc	Australian National Industries Limited (Sydney)	Barclays De Zoete Wedd Invest. Mgmt (London)	Bundesministerium Für Öffentliche & Verk (Wien-Abteilung)
Abbey National Treasury Services plc (London)	Aviva Gestion d'Actifs (Paris)	Barclays De Zoete Wedd Nederland (Amsterdam)	Burns Fry (London)
Aberdeen Asset Management (Edinburgh)	AXA BELGIUM (Bruxelles)	Barclays Global Investors (London)	Butterfield Asset Management (Bermuda)
Abitsoft Corporation (Texas)	Axa-Colonia (Köln)	Barclays Metals (London)	BVV Versicherungsverein des Bankgewerbes a.G. (Berlin)
ABN AMRO (Praha)	B.A.V. Direzione Organizzazione e Sistemi (Milan)	Barclays Metals (New York)	BW Bank Ireland (Dublin)
ABN AMRO (Sao Paulo)	BAC (Brussels)	Barclays Private Banking (London)	BW Versorgungsanstalt für Ärzte (Baden- Wurttemberg)
ABN Amro Bank (Dublin)	Backbay Advisors (Boston)	Baring Brothers (London)	C2 Capital Management, LLC (Chicago)
ABN Amro Bank NV (Amsterdam)	BACOB Bank (Brussels)	Baring Capital Investors (London)	Caboto IntesaBci SIM S.p.a. (Milano)
ABN AMRO Financial Products (London)	Bahrain Middle East Bank (Manama)	Baring Properties (London Wall)	Caboto Sim S.P.A. (Milan)
ABN Amro Futures (London)	Balmac International (New York)	Baring Securities (Hong Kong)	Caisse Centrale Desjardins (Montreal)
ABN AMRO Management Services Ltd. (London)	Banca Antonveneta (Padova & Rome)	Baring Securities (London)	Caisse Nationale (Paris)
ABN Amro Securities (London)	Banca Caboto S.p.a. (Milano)	Baring Securities (Singapore)	Caixa Penedes (Barcelona)
ABR Corporate Finance (Johannesburg)	Banca Commerciale Italiana (London)	Baring Securities (Tokyo)	CalPERS (Sacramento)
Abu Dhabi Investment Authority (Abu Dhabi)	Banca Commerciale Italiana (Milan)	Baron, Budge & Domenic (Isle of Houghton)	Calthorpe (London)
ACC Bank (Dublin)	Banca Commerciale Italiana (Zurich)	Bary Callebaut Sourcing AG (Switzerland)	Calyon (London)
Accent Ciroflexe (Amsterdam)	Banca Commerciale Italiana S.p.a. (Milan)	Basis Capital (Sydney)	Cambrian Capital Management Ltd (London)
ACF (Barcelona)	Banca Del Gottardo (Lugano)	Basispoint (Flensburg)	Canada Life Assurance Co. (London)
ACT International (Tokyo)	Banca Della Svizzera Italiana (London)	Basler Kantonalbank (Basle)	Canadian Imperial Bank of Commerce (New York)
Actuaris (Sydney)	Banca Della Svizzera Italiana (Lugano)	Basso GP, LLC (Stamford CT)	Canon Lincoln (London)
Adidas AG (Herzogenaurach)	Banca Della Svizzera Italiana (Zurich)	BAT Cigarettenfabriken (Hamburg)	Cantor Fitzgerald (New York)
Administracion De Cafeteras (Buenos Aires)	Banca delle Marche S.p.A. (Italy)	Bayerische Hypotheken-und Wechsel-Bank (Frankfurt)	Cantor Fitzgerald International (London)
Advance Trading Group (London)	Banca Intesa (Milan)	Bayerische Hypo-und Vereinsbank AG (London)	Capital Market Options (London)
Advantage Data Inc. (Boston)	Banca Intesa SPA (Milan)	Bayerische Landesbank (Frankfurt)	Capital Private Management AG (Switzerland)
AerFi Group PLC (County Clare)	Banca Nazionale del Lavoro (Rome)	Bayerische Landesbank (Paris)	Cargill BV (Amsterdam)
AGAS (London)	Banca Popolare Di Lodi (Lodi)	Bayerische Landesbank (Singapore)	Cargill CMD (Lincoln)
Ahorro Corporacion Financiera (Madrid)	Banca Sella (Italy)	Bayerische Landesbank Girozentrale (London)	Cargill Financial Services (London)
Ahorro Corporacion Gestion S.G.I.I.C., S.A. (Madrid)	BancBoston Robertson Stephens (San Francisco)	Bayerische Landesbrandversicherung AG (Munich)	Cargill Financial Services (Singapore)
AIB Capital Markets (Dublin)	Banco Ambrosiano Veneto (Milan)	Bayerische Vereinsbank (Munich)	Cargill Financial Services Corp. (Minneapolis)
AIM Capital Management, Inc. (Houston)	Banco Comercial Portugues (Lisbon)	Bayerische Vereinsbank Intl. (Luxembourg)	Cargill Grain Trading (Minneapolis)
Airport Authority (Hong Kong)	Banco de Investimento Global (Lisbon)	BB-Data GmbH (Berlin)	Cargill International S. A. (Geneva)
Aktivbanken (Vejle)	Banco EfiSA SA (Lisbon)	BBK (Novi)	Cargill Japan Ltd. (Tokyo)
Albertini & C. Sim (Milano)	Banco Espirito Santo E Com. De Lisboa (London)	Bear River Maritime (London)	Cargill Tarim Sanayi ve Ticaret (Istanbul)
Albingia Versicherings (Hamburg)	Banco Finantia (Portugal)	Bear Stearns International (London)	Carimonte Banca (Modena)
Alcor Trust (Luxembourg)	Banco Frances Del Rio (Buenos Aires)	Bear Stearns International (New York)	Cariplo (Luxembourg)
Alex Ribaroff (London)	Banco Hispano Americano Benelux (Brussels)	Bear Wagner Specialists (New York)	Caris (Netherlands)
Al-Khodari Establishment (Al-Khobar)	Banco Internacional (Mexico)	Behrens Dv-Service Center (Munster)	Carlberg (Copenhagen)
All Options International BV (Amsterdam)	Banco Inversion (Madrid)	Bekaert Coordination Centre (Belgium)	Carlton Brokerage (London)
Allfirst Financial (Maryland)	Banco Urquijo (Madrid)	Belmont Capital Management (Chicago)	Carnegie International (London)
Allianz (Prague)	Banco Zaragozano (Madrid)	Belzberg Technologies Inc. (Toronto)	Carr Futures (London)
Allianz Lebensversicherungs AG (Stuttgart)	Bank Cantrade Switzerland (Jersey)	Bengalo Pty. Ltd. (Sydney)	Carr Indosuez Asia (Hong Kong)
Allied Irish Bank (Dublin)	Bank Foreign Trade of the Russian Fed. (Moscow)	Benito & Monjardin (Madrid)	Casa de Bolsa Inverlat (Mexico)
Allied Irish Bank (New York)	Bank Insinger de Beaufort NV (Amsterdam)	Berenberg Bank (Hamburg)	Cassa Depositi e Prestiti S.p.a. (Rome)
Allied Provincial Securities (London)	Bank J Vontobel (Zurich)	Beta MDR (London)	Castlegrove Capital (London)
Alm Brand Bank (Copenhagen)	Bank Julius Baer (Geneva)	BGC International (London)	Caxton Associates LLC (New York)
Alopec Capital Management (New York)	Bank Julius Baer (New York)	BGG, Banque Genevoise de Gestion (Geneva)	Cedar Street (London)
Alpha Bank - Money Market Division (Greece)	Bank Julius Baer (Zurich)	BHF Bank (Frankfurt)	CEDEF - CCS (London)
Alpha Bank - Risk Division (Greece)	Bank Labouchere NV (Amsterdam)	BHP Billiton (Melbourne)	Centaurus Energy (Houston)
Alpha Strategic Management (Florida)	Bank Mees & Hope (Amsterdam)	Billiton Metals (London)	CEP D'Assegurances Generals S.A. (Barcelona)
Alpine Eagle Investments (London)	Bank of England (London)	Black Kettle International Ltd (London)	CEP Vida De Seguros Y Reaseguros S.A. (Spain)
Altair BV (Netherlands)	Bank of Finland (Helsinki)	Black River Asset Management UK Ltd. (Cobham)	CEPSA (Madrid)
Aluminium Pechiney (London)	Bank of Ireland (Dublin)	Black River Asset Mgmt. (Asia) PTE Ltd (Singapore)	CERG Finance (Paris)
Amadeus Fiduciaire (Geneva)	Bank of Israel (Jerusalem)	Black River Hizmet Ticaret Ltd. (Istanbul)	Ceska Sporitelna (Praha)
Amaranth LLC (Greenwich - CT)	Bank of N.T. Butterfield & Son (Bermuda)	Blue Edge Technologies (Tokyo)	Ceskoslovenska Obchodni Banka (Prague)
AMB Generali Asset Managers KAG mbH (Aachen)	Bank of New Zealand (Sydney)	Blueprint Business Systems (Surrey)	Ch. Tröster Börsenhandel GmbH (Germany)
AMB Generali Asset Managers KAG mbH (Cologne)	Bank of New Zealand (Wellington)	Bluestar Investment (Hong Kong)	Chancellor LGT Asset Mgmt. (San Francisco)
AMB Generali Finanzanlagen GmbH (Cologne)	Bank of Tokyo (Frankfurt)	BMH Options Clearing (Amsterdam)	Charles Schwab & Co., Inc (San Francisco)
AMB Generali Informatik Services GmbH (Aachen)	Bank of Tokyo Mitsubishi (London)	BMO Nesbitt Burns International Ltd. (London)	Charterhouse Bank (London)
Amber Japan (Tokyo)	Bank of Tokyo Mitsubishi Intl. (London)	BMP Wertpapiere Und Optionen (Zurich)	Charterhouse Securities (London)
Ameren Energy (St. Louis)	Bank Rindernknecht (Zurich)	BNE Swedbank (Luxembourg)	Charterhouse Tilney (London)
American Express Bank (London)	Bank Van Haften Labouchere (Amsterdam)	BNL - Banca Nazionale del Lavoro (London)	Chase Manhattan Bank (Geneva)
American Express Bank (New York)	Bankers Trust Asset Management (Sydney)	BNP Paribas Arbitrage (Paris)	Chase Manhattan Bank (London)
American Express Bank (Singapore)	Bankers Trust International (Frankfurt)	Boehringer Ingelheim Coordination Centre (Brussels)	Chase Manhattan Bank (Milan)
Ampega Asset Management GmbH (Hanover)	Bankers Trust International (London)	Boersensmakaler MBH (Dusseldorf)	Chase Manhattan Bank (New York)
Amstel Securities (Amsterdam)	Bankgesellschaft Berlin AG (Berlin)	Bond Center Amsterdam (Amsterdam)	Chemical Bank (Buenos Aires)
Amstel Securities (Brussels)	BankMuscat (Bahrain)	Bond Logistix LLC (San Francisco)	Chemical Bank (Hong Kong)
Amsterdam Exchanges (Amsterdam)	Banque AIG (London)	Boomerang (Brussels)	Chemical Bank Futures & Options (London)
Amtsparekassen Fyn (Odense)	Banque Artesia (Brussels)	Boot Computers Ltd (UK)	Chemical Bank UK (London)
Analysis Group, Inc. (Boston)	Banque Artesia Nederland (Amsterdam)	Booz Allen & Hamilton (Paris)	Cheyne Capital Management Ltd. (London)
Andre & Cie SA (Lausanne)	Banque Cantonale du Valais (Switzerland)	Borghois & Ijema (Amsterdam)	Chicago Mercantile Exchange (Chicago)
Andrea Nencione Consultancy (Turin)	Banque Carnegie Luxembourg S.A. (Luxembourg)	BP America (Cleveland)	Chris Hutton (London)
Angelo, Gordon & Co. (New York)	Banque du Louvre (Paris)	BP Capital (Brussels)	Chun Tsing Holdings (London)
Anheuser-Busch Companies Inc. (St. Louis)	Banque Generale Du Luxembourg (Zurich)	BP Chemicals (London)	CIBC Wood Gundy Inc. (Toronto)
Ansbacher & Co. (London)	Banque Genevoise de Gestion (Geneve)	BP Finance (London)	CIBC World Markets Inc. (New York)
ANZ Investment Bank (Sydney)	Banque Indosuez (Hong Kong)	BP Finance (New York)	CIBC World Markets Inc. (Toronto)
ANZ Merchant Bank (London)	Banque Indosuez (New York)	BP Gas (Houston)	CIC (Paris)
AOT NV (Amsterdam)	Banque Indosuez (Singapore)	BP Italia (Rome)	CIMB (L) Limited (Kuala Lumpur) (Kuala Lumpur)
Aquanaut Investments (Australia)	Banque Indosuez (Tokyo)	BP Nutrition (Amsterdam)	Citibank (Amsterdam)
Arab Bank (Singapore)	Banque Internationale a Luxembourg (London)	BP Oil International (London)	Citibank (London)
Arab National Bank (Riyadh)	Banque Internationale a Luxembourg S.A. (Luxembourg)	BP Oil International (New York)	Citibank (Milan)
Arab Petroleum Investments Corp (Dhahran)	Banque Nationale de Paris (Buenos Aires)	BP Oil International (Singapore)	Citibank (Zurich)
Arbejdernes Landsbank (Copenhagen)	Banque Nationale de Paris (Frankfurt)	BP Oil International (Tokyo)	Citibank AG (Frankfurt)
Arbor (Milano)	Banque Nationale de Paris (Jersey)	BP Oil International (Zurich)	Citibank AG (Hessen)
Arends Options B.V. (Netherlands)	Banque Nationale de Paris (London)	BP Oil UK (London)	Citibank Belgium NA (Brussels)
Argand Capital (Hong Kong)	Banque Nationale de Paris (Mexico City)	BP South Africa (Cape Town)	Citibank Global Asset Management (London)
Arthur Andersen (London)	Banque Paribas (Brussels)	Brandeis Brokers (London)	Citibank N.A. (Paris)
Arthur Consulting (Tokyo)	Banque Paribas (London)	BRED Banque Populaire (Paris)	Citibank NA (London)
Asahi Finance (London)	Banque Paribas Capital Markets (Tokyo)	Bremer Landesbank (Bremen)	Citibank NA (Paris)
Asia Financial (Hong Kong)	Banque SCS Alliance (Geneva)	Brifin (Brussels)	Citicorp (Prague)
Associates Capital Corporation (Slough)	Banque Unigestion (Geneva)	British Petroleum (London)	Citicorp International (Hong Kong)
Association de Frais du Groupe AXA BELGIUM (Bruxelles)	Barclays Bank (London)	British Telecom (London)	Citicorp Investment Bank (London)
AT & T GIS (London)	Barclays Bank (New York)	Brown Simpson Asset Management (New York)	CitiTrust And Banking Corporation (Tokyo)

City & Intl Securities (Isle of Man)	Daiwa SBCM (Tokyo)	Efisa (Lisbon)	Gartmore Investment Mgmt. plc (London)
City Index (London)	Daiwa Securities Hong Kong (Hong Kong)	El Paso Corporation (Houston)	G-Bar Limited Partnership (Chicago)
City University Business School (London)	DAM Dynamic Asset Management (Luxembourg) SA	Elcom Information Services (Langley)	GCR Capital GmbH (Cologne)
CLAL Finance Hedge Funds (Tel Aviv)	Dane Energy (White Plains)	Elf Trading (Geneva)	Gedefi S. A. (Geneva)
Clarkson Wolff (London)	Danske Bank (New York)	Elkins McSherry & Co. Inc. (New York)	Gemina Europe Capital Markets (Luxembourg)
Clearing Corporation (Chicago)	Dapcco Brokerage (New York)	Elliott Associates, L.P. (London)	Gen Re Capital GmbH (Cologne)
Clerical Medical Investment Group (London)	DATALOG Software AG (Munchen)	Elliott Associates, L.P. (New York)	GeneralCologne Re Capital (Dublin)
Clinton Group Inc. (New York)	Datamonitor Plc (London)	Emarat (Dubai)	Genintra (Sur-Sierre)
CLSA Ltd. (Hong Kong)	Datastream (Rotterdam)	Encore Energy (Calgary)	Gerald (London)
Cobalt Capital Management LLC (Chicago)	Datastream International / ICV (London)	Endowment Life Investments (Monaco)	Gerling (Cologne)
Cobalt Capital Management LLC (Pasadena)	David Morgan Futures (London)	Engage Energy U.S. (Houston)	Gerling Zentrale Verwaltungen GmbH (Köln)
Coenen, Smolders & Swatt (Haarlem)	Davy Stockbrokers (Dublin)	Enjay International (Hong Kong)	German Asset Managers AG (Frankfurt)
Cofimo S.I.M. (Milan)	DBS Bank (Singapore)	Enskilda Corporate (London)	German Brokers A.G. (Frankfurt)
Cofiri SIM S.p.A (Rome)	De Beers Holdings Pty Ltd (Johannesburg)	Enterpy Enterprises Inc. (London)	Gerrard & National Inter Commodities (London)
Cogent Investment Operations Ltd. (London)	De Beers S.A (Luxembourg)	Entergy Power Marketing Corp (Texas)	Gesinca Inversiones (Madrid)
Cologne Reinsurance (Cologne)	De Veer Data Communications (Zoetermeer)	Enterprise Oil (London)	Gesticredit (Milan)
Cologne Reinsurance (Dublin)	DebtTraders Ltd. (Hong Kong)	Equitable House Inv. (London)	Gestnord Intermediazione (Milan)
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ComEd (Chicago)	Deloitte Touche Tohmatsu (Sydney)	Euro American Group (London)	Girobank (London)
Comision Nacional Mercado de Valores (Madrid)	Delphi Risk Management (London)	Euro Brokers (London)	Gissing Associates (Bromley)
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Compass Capital Ltd. (London)	Delta Management (Amsterdam)	European Commission (Luxembourg)	Global Investment Advisors (London)
CompuHedge (Jerusalem)	Deminxen (Essen)	European Inv. Management (Rome)	Global investor (Hampshire U.K.)
Comsoft Data Direct (Switzerland)	Den Danske Bank (Copenhagen)	Europtions (Amsterdam)	Global Market Touch (Hamburg)
Concorde Asset Management (London)	Den Norske Bank (New York)	Eurotrust (London)	Globe Strat Asset Management (Boston)
Concordia Advisors (UK) Limited (Bermuda)	Den Norske Bank (Oslo)	Everycard (Milan)	GNI Limited (London)
Concordia Advisors (UK) Limited (London)	Depfa-Bank (Wiesbaden)	Exco International (London)	Godel Aksa (Luxembourg)
Concordia Advisors LCC (New York)	Deriva BV (Den Helder)	Expandia Finance (Prague)	Godsell, Astley & Pearce Capital Markets (London)
Condor Securities, Inc (New York)	Descap Securities (New York)	Exprinter Banco (Buenos Aires)	Goodbody Stockbrokers (Dublin)
Conseq Finance (Prague)	Deutsche Asset Management (London)	F&G Asset Management (Geneve)	Gordian Group (New York)
ConsoB (Rome)	Deutsche Bank (Brussels)	F. Lambert (Shoebryness)	GPA Group (Shannon)
Consors Capital Bank AG (Frankfurt)	Deutsche Bank (Frankfurt)	F. van Lanschot Bankiers N.V. (Netherlands)	Grace Brothers Ltd. (Illinois)
Consorzio Operativo Gruppo MPS (Siena)	Deutsche Bank (London)	Falcon Strategies (Hong Kong)	Grand Metropolitan (London)
Constellation Energy Source (Houston)	Deutsche Bank (Madrid)	Falconwood (New York)	Grange Securities (Perth)
Continental Bank (Chicago)	Deutsche Bank (New York)	FBM Vermögensverwaltung AG (Zurich)	Grantham Mayo Van Otterloo (Boston)
Continental Bank (London)	Deutsche Bank (Tokyo)	Fbs Capital Markets (London)	Greenwich Capital (Greenwich CT)
Continental Bank (New York)	Deutsche Bank (Vienna)	FCT Europe Ltd. (London)	Greenwich Europe Ltd. (London)
Co-operative Bank (London)	Deutsche Bank Capital Markets (Tokyo)	Federal Home Lone Bank of New York (New York)	Greenwich Securities Europe Ltd. (London)
Coopers & Lybrand (Basle)	Deutsche Bank Sharps Pricley (New York)	Federal Home Lone Bank of Seattle (Seattle)	Gregory Sargent (Fairfield - USA)
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Comerstone Equity Advisers, Inc. (New York)	Deutsche Girozentrale (Frankfurt)	Ferrex Capital (London)	Grupo Duro Felguera S.A. (Oviedo)
Corpcapital Bank (South Africa)	Deutsche Lufthansa AG (Frankfurt)	Ferrier - Lullin (Geneva)	GT Management Asia (Hong Kong)
Countrywide Home Loans, Inc. (California)	Deutsche Morgan Grenfell (London)	FHS Investments (Chicago)	Guinness Flight Global Asset Mgmt. (London)
County Natwest Australia (Sydney)	Deutsche Morgan Grenfell (Madrid)	Fidelity Investments (London)	Guinness Mahon & Co. (London)
County Natwest Securities (London)	Deutsche Morgan Grenfell (Tokyo)	FidFund Management S.A. (Suisse)	Gulf International Bank (UK) Ltd. (London)
County Natwest Securities (Zurich)	Deutsche Morgan Grenfell Asia (Hong Kong)	Fimat (Dublin)	GZ Bank (Frankfurt)
Crediop Finance (London)	Dewaay, Servais (Brussels)	Fimat Futures (Chicago)	GZ Bank Ireland (Dublin)
Crediop s.p.a. (Rome)	Dewmont (Gibraltar)	Fimat Futures (London)	Haflund Delta AS (Oslo)
Credit Agricole (Hong Kong)	Dexia (New York)	Fimat Futures (New York)	Halifax plc (Yorkshire)
Crédit Agricole (Suisse) SA (Lugano)	Dexia Asset Management (Brussels)	Fimat International Banque SA (London)	Hambrecht & Quist (New York)
Credit Agricole Indosuez (Lugano)	Dexia Bank (New York)	Fimat SNC (Tokyo Branch)	Hambros (London)
Credit Agricole Indosuez (Singapore)	Dexia Bank Belgium (Brussels)	Finacor Et Associes (Brussels)	Hambros Australia (Sydney)
Credit Communal de Belgique (Brussels)	Dexia Bank Belgium S.A. (Brussels)	Finance Treasury Intl. (Dublin)	Hamburger Sparkasse (Hamburg)
Credit Local de France (Paris)	Dexia Bank Nederland NV (Amsterdam)	Financial Risk Management (London)	Hamburgische Landesbank (Hamburg)
Credit Lyonnais (Japan)	Dexia Banque Internationale a Luxembourg (Luxembourg)	Financial Trading And Consultancy (London)	Hamburg-Mannheimer (Hamburg)
Credit Lyonnais (New York)	Dexia Credit Local (Tokyo)	Finanshuset (New York)	Hamburg-Mannheimer Inv. Trust (Hamburg)
Credit Lyonnais Bank (Hong Kong)	Dexia Hypothekbank Berlin AG (Berlin)	Finanzaria Case Piperno Spa (Rome)	Hannuri Salomon Securities Co (Seoul)
Credit Lyonnais Group Management (London)	DG Bank (Frankfurt)	Finanzaria Iccri-BBL (Milan)	Harris Trust & Savings Bank (Chicago)
Credit Lyonnais Rouse (London)	Diamondback Capital (USA)	FinaTech (Hong Kong)	Harvard Management Company (Boston)
Credit Lyonnais Securities (Hong Kong)	DIB Industriebeteiligung (Grunwald)	Finbanco (Lisbon)	Harvard University Business School (Boston)
Credit Suisse (Frankfurt)	Digital Equipment Com (London)	Finnerty Economic Consulting, LLC. (New York)	Hawkesbury Advisors (Sydney)
Credit Suisse (Geneva)	Dillon, Read & Com (New York)	Finvest Portfolio Management (London)	Hawkesbury Capital Management P L (Singapore)
Credit Suisse (London)	Direct Trading (Texas)	Firma Sulzer Management AG (Switzerland)	HB Capital (Prague)
Credit Suisse (Zurich)	Disbank (Istanbul)	First Continental Trading (Chicago)	HBK Investments (New York)
Credit Suisse Asset Management (London)	Discount Bank and Trust (Switzerland)	First Continental Trading (London)	HBOS plc (London)
Credit Suisse Financial Products (London)	DKR Capital Inc. (Stamford)	First Derivative Traders LP (Pennsylvania)	HBOS Treasury Services (Sydney)
Credit Suisse First Boston (Amsterdam)	Dolmen Butler Briscoe (Dublin)	First Investment Bank (Sofia)	Hedge Options (Netherlands)
Credit Suisse First Boston (Frankfurt)	Donaldson Lufkin & Jenrette (New York)	First National Bank of Chicago (Baltimore)	Heidelberger Druck Meschinen AG (Heidelberg)
Credit Suisse First Boston (London)	Dow Chemical (London)	First National Bank of Maryland (Maryland)	Heidelberger Zement (Heidelberg)
Credit Suisse First Boston (Zurich)	Dresdner Bank AG (Frankfurt)	First Quadrant Limited (London)	Helaba Frankfurt - Hessen-Thuringen (Frankfurt)
Creditanstalt (London)	Dresdner Bank Lateinamerika AG (Hamburg)	Firstcorp Merchant Bank (Johannesburg)	Henderson Administration (London)
Creditanstalt (Vienna)	Dresdner Kleinwort Benson (London)	Flagstone Re. (Bermuda)	Henderson Investors (London)
Credito Molisano (Campobassa)	Dresdner Kleinwort Benson (New York)	Fleet Bank (Boston)	Hessische Landesbank (New York)
Cresvale International Asset Mgmt (London)	Drexel Burnham Lambert (Worldwide)	FNX (Philadelphia)	HFC Bank (Windsor)
Crosby Securities (Hong Kong)	Dreyfus Sohne & Cie (Basle)	Foreign & Colonial Management (London)	Hill Samuel Bank (London)
Cross Asset Management (Sydney)	Drifmann Brsenhandel (Frankfurt)	Formax Finance (London)	Hills Independent Traders (London)
Cross Options Beheer BV (Amsterdam)	DRW Holdings LLC (Chicago)	Fortis Bank (Hong Kong)	Hiram Finance (Paris)
Crossware BV (The Netherlands)	DRW Trading (Chicago)	Fortis Bank (London)	HM Inspector of Taxes (London)
CSFB-Effectenbank (Frankfurt)	Duma Capital Partners (New York)	Fortis Global Arbitrage (Asia) Ltd (Hong Kong)	Hoare Govett (London)
CSR Treasury (Sydney)	Dumas West (London)	Fox-Pitt, Kelton (FPK) (London)	Hofman, Van Der Woude & Assoc (Hoogstraten)
CTC (London)	Duquesne Capital Management (New York)	FP Computer (Frankfurt)	Holford Commercial Ent. (Hong Kong)
Currency Derivatives (Surrey)	Dynagest SA (Geneva)	FP Consult (Paris)	Hong Kong & Shanghai Banking Corp (London)
Currency Management Consultants (London)	DZ Bank AG (Frankfurt)	France Telecom (Paris)	Hong Kong Exchanges and Clearing Ltd. (Hong Kong)
Currency Mgmt. Corporation Plc (London)	Eagle Star Life Insurance (Dublin)	Franklin Capital LLC (New York)	Hospital Plan Insurance Services (London)
Curvalue (London)	Eastern Electricity (Ipswich)	Friends Ivory Sime (London)	Houlihan Lokey Howard & Zuken (New York)
Curvalue Beheer (Amsterdam)	Eaton Vance Corporation (Boston)	Fuji Bank (Schwetz)	HSBC (London)
Curvalue III BV (Amsterdam)	Echosite (London)	Fuji International Finance (Hong Kong)	HSBC Bank USA (New York)
Curvalue Swiss (Zug)	Eclectica Asset Management (London)	Fuji International Finance (London)	HSBC IT Services (London)
D. Carnegie AB (Stockholm)	Econocom (Belgium)	Fulcrum Bank (Johannesburg)	HSBC James Capel & Co (London)
DAB Bank AG (Munchen)	ED & F Man Int. Securities Corp. (New York)	Futech (Sydney)	HSBC Precious Metals (Australia) Ltd
Dai-ichi Kangyo Bank (London)	Edinburgh Fund Managers (Edinburgh)	G.K. Goh Stockbrokers Pte Ltd (Singapore)	HSBC Republic Bank (Suisse) SA (Geneva)
Daimler-Benz (Stuttgart)	EDU Traders B.V. (Amsterdam)	GAN (Brussels)	HSH Nordbank AG (Kiel)
Daiwa Europe (London)	Edwin Robertson (London)	GAN Life Holdings (Harlow)	HSH Nordbank (New York)
Daiwa Futures (Hong Kong)	Effectenbank Stroeve (Amsterdam)	Gandon Securities (Dublin)	HSH Nordbank AG (Hamburg)

HSH Nordbank AG (Kiel)	Jefferies & Co (New Jersey)	LIFFE (London)	Narodna Banka Slovenska (Bratislava)
HSH Nordbank AG (London)	Jefferies International (London)	LIM Advisors Ltd. (Hong Kong)	National & Provincial Building Society (Bredford)
Hugh Stables (London)	Jefferies International (Tokyo)	Linde AG (Wiesbaden)	National Arbitrage (North Carolina)
Hunziker & Associates (Rueschlikon)	JJ Associates (London)	Lionhart Investments (London)	National Bank of Abu Dhabi (Abu Dhabi)
HWh Energiesingling AS (Bergen)	John Busch (Singapore)	Liquid Capital Markets Ltd. (London)	National Commercial Bank (Saudi Arabia)
Hydro Quebec (Quebec)	John Govett & Company (London)	Litchfield Capital Management (London)	National Power (Swindon)
Hyperion (Netherlands)	John Hughes Associates (Dublin)	Lloyds Bank (London)	Nationale-Nederfanden (Hague)
Hypo Public Finance Bank (Dublin)	John Prior (London)	Lloyds Bank (Switzerland)	NationsBanc Montgomery Sec. Inc. (S. Francisco)
Hypo Real Estate Bank International (Dublin)	John Rae Associates (Auckland)	Lombard, Odier & Cie (Geneva)	Natsource Tullett (Europe) Ltd. (London)
Hypo Real Estate Bank International (Luxembourg)	Johnson Fry Asset Managers Plc (London)	London & Global Trading (London)	Natwest Bank (Tokyo)
Hypo Vereinsbank (New York)	JP Morgan Securities Asia Ltd (Tokyo)	London & Manchester Assurance (Exeter)	Natwest Capital Markets (Frankfurt)
Hypo Verinsbank (Hong Kong)	JPMorgan Securities Ltd. (London)	London & Oxford Securities (London)	Natwest Capital Markets (London)
Hypobank Winterthur (Winterthur)	JPT / Van Der Moolen Brokerage (London)	London Bond Broking (London)	Natwest Securities (Edinburgh)
Hypotheek Bank in Essen AG (Essen)	Julius Baer Securities (New York)	London Clearing House (London)	NBS (Bratislava)
IBG Financial Markets (Zurich)	JYP Partnership (London)	London Commodity Exchange (London)	NCB Futures (Dublin)
IBJ International Plc (London)	Kaiser Aluminium & Chemical Corp. (Houston)	London Diversified Fund Management LLP (London)	NCL Investments (London)
IBJ Schroder Bank & Trust (New York)	Kankaku Europe (London)	Long Term Credit Bank of Japan (London)	Nelms Trading Company (London)
IBJ Securities Co (Tokyo)	Kappa Securities (Athens)	Longbow Finance SA (Switzerland)	Nelson Partners (Chicago)
IBJ Whitehall Bank & Trust Company (New York)	KAS Clearing Agent (London)	Louvre Gestion (Paris)	New Japan Sec. Europe (London)
ICI Chemicals & Polymers (Cleveland)	Kaufhof Holding (Cologne)	Lufthansa (Hamburg)	New Star (London)
ICICI Bank (Mumbai)	Kaupthing HF (Reykjavik)	Luxembourg Stock Exchange (Luxembourg)	New Zealand Debt Mgmt Office (Wellington)
IFP Intermoney Financial Products (Lutry)	KBC (Singapore)	Lynx Arbitrage Limited (Hong Kong)	NewSmith Asset Management (London)
IG Index (London)	KBC Bank (Hong Kong)	M.R. Finanzmarktanalysen GmbH (Wurzburg)	Newton Inv. Management (London)
IHAG Handlesbank (Zurich)	KBC Bank NV (Taipei)	M.R. Finanzmarktberatung GmbH (Germany)	Newtrade Financial Group (Amsterdam)
IKOS (London)	KEA (Milan)	MAD Options BV (Amsterdam)	Newtrade V.O.F. (Amsterdam)
IKS KB (Praha)	Kempen & Co (Amsterdam)	Man Financial Inc. (New York)	Nikko Citigroup Service Limited (Tokyo)
IMC (Netherlands)	Kemper Investment Mgmt (London)	Man Financial Limited (London)	Nikko Europe (London)
IMG Holland (Amsterdam)	Kent Ennis (Arizona)	Managed Risk Advisors (Westport CT)	Nikko Salomon Smith Barney (Tokyo)
IMS (Paris)	Keppel Securities (Singapore)	Mandraki Associates (Dublin)	Nippon Credit Intl. (London)
Indea Capital PTE. LTD. (Singapore)	KEV Energy AS (Posebyen)	Mangart Capital Advisors SA (Lugano)	Nissho Iwai Corporation (Tokyo)
Indosuez International Capital Markets (London)	Keybank (Cleveland USA)	Manro Haydan Trading (London)	NM Rothschild (London)
Industrial Bank of Japan (New York)	KGI Asia (Hong Kong)	Manufacturers Hanover (London)	Nmb Postbank Groep (Amsterdam)
Industrial Bank of Korea (Korea)	Kidder, Peabody & Company (Hong Kong)	Manufacturers Hanover Asia (Hong Kong)	Noble Group (Hong Kong)
Inland Revenue (London)	Kidder, Peabody & Company (New York)	Marc Rich & Co (London)	Nomura Bank (Zurich)
Institute For Financial Training (Amsterdam)	Kidder, Peabody Securities (London)	Marcello Rossi (Milan)	Nomura International (Hong Kong)
Int. Derivatives Enterprise B.V. (Amsterdam)	Kildair Service (Quebec)	Marcou Shipping Company (London)	Nomura International (London)
Integro (London)	Kleinwort Benson Capital Mgmt (Pasadena)	MAREX Financial Limited (London)	Nordbanken Trading (Stockholm)
Inter Capital Investment (Korea)	Kleinwort Benson Investment Mgmt (London)	Mark Capital, LLC (California)	Norddeutsche Landesbank (London)
Inter Market Research Services (Channel Islands)	Kleinwort Benson Ltd. (London)	Marshall Wace Asset Management (London)	Norddeutsche Landesbank Girozentrale (Hannover)
Inter Versicherung (Mannheim)	Kleinwort Benson Securities (London)	Martin Brokers (UK) Plc (London)	Norddeutsche Landesbank Luxembourg S.A. (Luxembourg)
Intercapital Brokers (London)	Kline srl (Italy)	Masefield (London)	Nordena (Germany)
Intercontinental - Commodities (London)	KLR GmbH (Germany)	MasterLink Securities (Taiwan)	Nordisk Energiforvaltning asa (Oslo)
Intercontinental Exchange (London)	KNG Securities Ltd (London)	Matra Hachette General (Paris)	Nordiska Fondkommission AB (Sweden)
Interfin Capital Markets (Milan)	Koch (Wichita)	Mayerfair GmbH (Hamburg)	Norinchukin International (London)
Interkraft Trading ASA (Arendal)	Koffman Derivatives Limited (Hong Kong)	Mazin Computer Centre (Bahrain)	North Sound Capital LLC (Old Greenwich - CT)
Intermobiliare (Milan)	Kolnische Ruckversicherungs-Gesellschaft AG (Cologne)	MEAG MUNICH ERGO Asset Mgmt GmbH (München)	Northern Light Management AB (Stockholm)
International Derivatives Enterprise B.V. (Amsterdam)	Komercni banka, a.s. (Praha)	Media One Group, Inc (Englewood)	Norwich Union Fund Management (Norwich)
International Financial Advisers (Kuwait City)	Kommunikredit Austria AG (Vienna)	Mediobanca (Milan)	Norwich Union Investment Mgmt (Norwich)
International Financial Markets Tr. (Hong Kong)	Kore Capital (New York)	MeesPierson (Amsterdam)	Norwich Union Life Insurance (Norwich)
International Financial Markets Trading (London)	Korea Computer Corporations (Seoul)	MeesPierson (London)	Norwich Union Life Services (York)
International Marketmakers Comb. BV (Amsterdam)	Kovell-Caldwell L.L.C. (Chicago)	MeesPierson Global Arbitrage (Hong Kong)	Notis S.A. (Greece)
Intesa Sistemi E Servizi s. c. p. a. (Milano)	KPMG (Gothenburg)	MeesPierson Lease Finance Ltd. (London)	NTLA (Aerdenhout)
IntesaBci S.P.A (London)	KPMG (Stockholm)	Mercati Finanziaria (Milan)	Nuernberger Versicherungsgruppe (Nuremberg)
Intl. Derivatives Enterprise B.V. (Amsterdam)	KPMG Business Advisory Services S.p.A (Rome)	Mercer Capital (Oregon)	NZI Securities Europe (London)
Invercaixa Valores SVB S.A. (Madrid)	KPMG Corporate Finance (Gothenburg)	Merck Finck Invest (Munich)	Oakes Fitzwilliams (London)
Inverlat (London)	KPMG Corporate Finance (Oslo)	Merlin Securities LLC (San Francisco)	OBEX Investments (New York)
Inverlat (Mexico)	KPN Pensioen (Netherlands)	Merrill Lynch (London)	Object Asset Management (London)
Inverlat International (London)	Kraftinvest AS (Norway)	Merrill Lynch Financial Centre (London)	OCA Clearing (Amsterdam)
Invesco (London)	Kredietbank (Brussels)	Metrica Partners LLP. (London)	Oesterreichische Kommunalkredit AG (Vienna)
Invesco NY Inc. (New York)	Kredietbank (Luxembourg)	Metro AG (Köln)	OIS-AM (Frankfurt)
Investcorp International (London)	Kyte Futures (London)	Mettle Europe Ltd. (London)	OK Petroleum (Stockholm)
Investec Asset Management (Cape Town)	L.O.G. International Corp. (Connecticut)	MG Metal & Commodity Corp. (New York)	Olayan Investments Co. Establishment (Athens)
Investec Bank (UK) Plc (London)	L.O.G. International Corp. (New York)	Midland Montagu (London)	Old Mutual Asset Managers (SA) (Pty) Ltd (Cape Town)
Investec Derivatives (London)	Labouchere Clearing (Amsterdam)	Midland Montagu Futures (London)	OLEA Asset Management (London)
Investec Gandon (London)	Lagardere (Paris)	Midway Trading (Chicago)	Olliff & Partners (London)
Investec Merchant Bank (South Africa)	Lambert Brothers Shipbroking (London)	Millennium Global Investments Ltd (London)	OMOX (London)
Investkredit Bank AG (Vienna)	Landau & Associates (New Jersey)	Millennium Partners (New York)	OMV Trading Services (London)
Investors Money Management Corp (Brussels)	Landesbank Rheinland-Pfalz Girozentrale (Mainz)	Milton Partners, L.P. (Greenwich - USA)	Onyx Capital (New York)
IPB (Praha)	Landesbank Schleswig-Holstein Giroz. (Kiel)	Mitsubishi Bank (Frankfurt)	Oolders & De Jong (Amsterdam)
Iris (Netherlands)	Lang & Schwarz Gate GmbH (Dusseldorf)	Mitsubishi Bank (Hong Kong)	Optimum Asset Management (London)
Istituto Bancario San Paolo Di Torino (London)	Lang & Schwarz Wertpapierhandel AG (Düsseldorf)	Mitsubishi Bank (London)	Option Traders Combination BV (Amsterdam)
Istituto Bancario San Paolo Di Torino (Turin)	Larco S. A. (Athens)	Mitsubishi Bank (Zurich)	Options Advisory Office (Amsterdam)
Istobanka (Bratislava)	Lasser Marshall (New York)	Mitsubishi Finance Intl. (London)	Options Advisory Office (Zaandam)
ITG Hoening (New York)	Laurion Capital (New York)	Mitsubishi Securities International plc (London)	Optiver Australia
J.G.W. Agnew & Com (London)	Lazard (London)	Mizuho International Plc. (London)	Orco Bank (Curacao)
J.M. Harwood & Company (London)	LB - Kiel (New York)	Mizuho Securities Co.,Ltd. (Tokyo)	Ord Minnett Securities (New Zealand)
J.P. Morgan (Brussels)	LBBW Bank Ireland (Dublin)	MLT (London)	Orebi Futures (London)
J.P. Morgan (Frankfurt)	LCH. Clearnet Ltd. (London)	Mobil Corp (Fairfax)	Osterreichische Bundesfinanzierungsagentur (Vienna)
J.P. Morgan (Hong Kong)	Leeds & Holbeck Building Society (Leeds)	Mofex (Madrid)	Paerel Trading Partners BV (Amsterdam)
J.P. Morgan (London)	LeggMason investors (London)	Moneco (Bruno)	Paine Webber International (New York)
J.P. Morgan (Madrid)	Lehman Brothers (New York)	Montedison (New York)	Paine Webber Intl. (London)
J.P. Morgan (Milan)	Lehman Brothers Bankhaus AG (Frankfurt)	Monument Derivatives (London)	Paloma Partners Mgmt. Company (Greenwich CT)
J.P. Morgan (New York)	Lehman Brothers Global Asset Mgmt (London)	Moore Capital Management (New York)	Panafon (Athens)
J.P. Morgan (Paris)	Lehman Brothers Intl. (Hong Kong)	Morgan Grenfell Asset Mgmt. (London)	Panmure Gordon Bankers (London)
J.P. Morgan (Singapore)	Lehman Brothers Intl. (London)	Morgan Grenfell Ci (Jersey)	Paribas Asset Management (London)
J.P. Morgan (Sydney)	Lehman Brothers Japan Inc. (Tokyo)	Morgan Guaranty Trust Co (London)	Paribas Capital Markets (London)
J.P. Morgan (Tokyo)	Lehman Brothers Limited (London)	Morley Fund Management (London)	Particuliere Participatie Maatschappij (Amsterdam)
J.P. Morgan (Zurich)	Lenzing AG (Lenzing)	Morish Brothers (London)	Paul Murfin (London)
J.P. Morgan Inv. Mgmt. (London)	Leo Fund Managers Ltd. (London)	MotherRock, LP (New York)	Paulussen Holding B.V. (Amsterdam)
J.P. Morgan Securities (London)	Les Fils Dreyfus & Cie (Basle)	MPS Finance Banca Mobiliare SpA (Siena, Italy)	Paxton & Associates (Hertford)
James Capel (Edinburgh)	Leslie Rahl Associates (New York)	Mrm Securities (Frankfurt)	PCS (London)
James Capel (New York)	Letteau Ltd (Greewich CT USA)	MTL (London)	Peak6 Investments, LP (Chicago)
James Capel Derivatives (London)	Leu Securities (London)	Mubunternehmensbetatung GmbH (Frankfurt)	Peak6 Investments, LP (London)
James Capel Far East Futures (Hong Kong)	LFM AG (Zurich)	Multibanco Comermex (London)	Peregrine Brokerage (Hong Kong)
Javelin Securities (London)	LG Securities Co. (Korea)	Multifinance S. A. (Geneva)	Peregrine Derivatives (Hong Kong)
JCI (Johannesburg)	LG Securities International (London)	N.M. Rothschild & Sons (London)	Peregrine Securities (London)

Perpetual (Oxon)	Royal Bank of Canada (Geneva)	South Bank University (London)	Tullet Prebon Information (London)
Perpetual Investment Management (London)	Royal Bank of Canada (London)	Sparkasse Krefeld (Krefeld)	Tullett & Tokyo International Securities (London)
Perpetual Plc (Henley-on Thames)	Royal Bank of Scotland (London)	Sparkiss AG (Langen)	Tullett Financial Information (C.I.) Ltd. (Channel Islands)
Peter May Associates (Meilen)	Royal Insurance Asset Management (London)	Spectron Energy (London)	Tullett Prebon Information Ltd. (Channel Islands)
Petercam Securities (Brussels)	RPI (Moscow)	Spectron Energy (Oslo)	Tullett Prebon Ltd (London)
Petro Diamond Risk Management (London)	Rubicon Fund Management (London)	Spencer Pacific Corporation (Cupertino)	TXU Europe Power and Energy Trading (Stockholm)
Philadelphia National (London)	Rudolf Wolff & Company (New York)	Spider Rock (Chicago)	UBS Global Equity Derivatives (London)
Philippine National Bank (Manila)	RWE-DEA AG (Hamburg)	Spuetz (Frankfurt)	UFJ International (London)
Pictet International Management (London)	S.G. Warburg Sec. (Hong Kong)	Squelze VB (Netherlands)	UFJ Tsubasa Securities Co., Ltd. (Tokyo)
Pierson ICS (London)	S.G. Warburg Securities (London)	SRB Trading (New York)	Unibank (London)
Pierson, Holding & Pierson (Amsterdam)	S.G. Warburg Securities (Paris)	SRT Capital Management (Australia)	Unibank (New York)
Pipeline Trading (New York)	S.G. Warburg Sodiite (Geneva)	Stadlbauer Holding GmbH (Salzburg)	Unico Investment Fund Mgmt Co. (Luxembourg)
Piraeus Bank Group (Athens)	Sachsen LB (Markkleeberg)	Standard Bank (London)	Unigestion Asset Management (Geneva)
Placements Montrouco Bolton (Montreal)	Sachsen LB Europe plc (Dublin)	Standard Bank of South Africa (Johannesburg)	Unilever (London)
PNC Capital Markets (Pittsburgh)	Saen Options B.V. (Amsterdam)	Standard Chartered Bank (London)	Union (London)
POFIN Financial Services GmbH & Co (Germany)	Sai Investimenti (Turin)	Standard Corporate and Merchant Bank (Johannesburg)	Union Bank of Switzerland (Basle)
Polar Investments (Bumbaby)	Sakura Finance International (London)	Standard Life (Edinburgh)	Union Bank of Switzerland (Geneva)
Pont Data Company (London)	Sakura Global Capital Inc. (New York)	Standard London (Hong Kong)	Union Bank of Switzerland (Hong Kong)
Porsche Gesmbh (Salzburg)	Sakura Securities Co. (Tokyo)	Stark Investments (Mequon)	Union Bank of Switzerland (London)
Portline (Lisbon)	Sal. Oppenheim (Frankfurt)	State of Saxony Anhalt (Saxony Anhalt)	Union Bank of Switzerland (Paris)
Post and Telekom Austria AG (Austria)	Salomon Brothers (London)	State of Baden-Württemberg (Stuttgart)	Union Bank of Switzerland (Singapore)
Poste Italiane S.p.A. (Rome)	Salomon Brothers (New York)	State Street Bank & Trust Company (Boston)	Union Des Assurances Federales (Paris)
Postversicherung AG (Vienna)	Salomon Brothers Asia (Hong Kong)	State Street Bank & Trust Company (London)	Union Europeenne de CIC (Paris)
Potomac Capital (London)	Salomon Brothers Asia (Tokyo)	State Street Bank & Trust Company (Tokyo)	Union Insurance (Vienna)
PPM Vreeland (Amsterdam)	Salomon Brothers International (London)	State Street Elkins McSherry (New York)	UNIQA Finanz-Service GmbH (Wien)
Prebon Yamane (Amsterdam)	Salomon Smith Barney (Hong Kong)	State Street Global Advisors UK Ltd (London)	United Bank of Kuwait (London)
Prebon Yamane (UK) Ltd (London)	San Paolo - IMI S.p.A. (Tokyo)	Sterling Brokers (London)	United Overseas Bank (Singapore)
Price Waterhouse Meyernel (Johannesburg)	San Paolo Bank (Tokyo)	Sterling Valuation Group Advisors, Inc. (New York)	United Saudi Commercial Bank (Riyadh)
PriceWaterhouseCoopers (New York)	Sangamon Trading (Chicago)	Steward and Spencer Service (Dusseldorf)	Universita' di Trento (Treno)
Primark Datastream (London)	Sanwa Financial Products (New York)	Stock Exchange of Hong Kong	US West (Bellevue)
PRO Capital Ltd (London)	Sanwa International (London)	StructuredMarkets, Inc (New York)	Value Capital Plc. (London)
Program Trading (Milan)	Sanwa Securities (New York)	Suburban Energy Services (New Jersey)	Van Der Moolen (London)
Prolific Objective (London)	Sanwa Securities (Tokyo)	Suburban Propane Partners (New Jersey)	Van der Moolen Holding NV (Amsterdam)
Promethean Investment Group (New York)	Sarasin International Securities (London)	Suez Kooijman (Amsterdam)	Veale & Associates (Cincinnati)
Provedor Especializado de Empresas (Mexico)	Sargent Bros. (London)	Sulzer Management (Winterthur)	Vega Pro Trading (Montreal)
Provisional Airport Authority (Hong Kong)	Sask Power (Saskatchewan)	Sumitomo Bank (Tokyo)	Venturi Asset Management LLC (Princeton)
PRP Performa (Liechtenstein)	Saudi American Bank (Riyadh)	Sumitomo Corporation (London)	Vereins-Und Westbank (Hamburg)
Prudential Brokerage Ltd (Hong Kong)	Saudi Basic Industries Corporation (Riyadh)	Sumitomo Finance International Plc (London)	Vereingde Spaarbank (Utrecht)
Prudential Insurance Co (Newark)	Saudi British Bank (Riyadh)	Sun Hung Kai & Co Ltd (Hong Kong)	Verlagsguppe Georg von Holtzbrinck (Stuttgart)
Prudential Investments (Short Hills, NJ)	Saudi Cairo Bank (Jeddah)	Sun Life of Canada (Ontario)	Versorgungsanstalt des Bundes und der Länder (Germany)
Prudential-Bache International Ltd. (London)	Saudi French Bank (Riyadh)	Svenska Handelsbanken (Stockholm)	Victoria Versicherung (Dusseldorf)
Prudential-Bache Securities (London)	Saudi International Bank (London)	Sviluppo Intermediazioni (Milan)	Viking Cereals (Lincolnshire)
Prvni Investicni (Prague)	SBC Warburg Dillon Read (London)	Swap Market Advisors LLC (Parkton)	Vinco (Helsinki)
PTT Pension Fund (Groningen)	SBIM Investment Trust (Tokyo)	Swiss Bank Corp Inv Banking (Netherlands)	Visispres (Zaandam)
Public Financial Management Inc. (USA)	Scandinavian Bank (London)	Swiss Bank Corporation (London)	Vocational Training Council (Hong Kong)
Putnam Investments (Boston)	Schneider Electric (France)	Swiss Volksbank (London)	Voest Alpine Stahl AG (Austria)
PVM Oil Associates Ltd (London)	Schneider Electric Holdings, Inc. (Illinois)	SwitchFix (Singapore)	Volksfuersorge Deutsche Leben (Hamburg)
PVM Oil Futures Ltd (London)	Schroder Securities (Tokyo)	Sydan & Co (Chicago)	Votech Management (London)
QT Optec (Zug)	Schroder Securities Ltd. (London)	Sydbank (Aabenraa)	W.I. Carr (London)
Quorum Capital Management (London)	Schwabe Ley & Greiner Gesellschaft MBH (Vienna)	Sydskraft Energy Trading AB (Sweden)	W.I. Carr Far East (Hong Kong)
Quwest (Bellevue)	Schweizerische Bankgesellschaft (Frankfurt)	T.I.R. Currency Management (London)	Wachovia Bank NA (London)
R & B Investment Management (London)	Scotiabancod (London)	Tai Tam Corporation (Hong Kong)	Wako International (London)
R & V Versicherung (Wiesbaden)	Scott Pollard Associates (London)	Taler GmbH (Germany)	Wardley (Hong Kong)
R.W. Day & Co (London)	Scottish Mutual Invest. Managers (Glasgow)	Tamesis (London)	Wardley James Capel (Hong Kong)
R+V Lebensversicherung AG (Germany)	Scottish Widows Investment Mgmt. (Edinburgh)	Tchibo Holding AG (Hamburg)	Wazen Advisory Services (Brussels)
RAB Capital (London)	Scudder, Stevens & Clark (London)	Technosis (Uetersen)	Wesselius Securities (Amsterdam)
Rabobank Deutschland (Frankfurt)	SDS Capital Partners (Greenwich CT)	Technosis GmbH (Hamburg)	West Merchant Bank (London)
Rabobank Nederland (London)	SDS Management (Greenwich CT)	Telefonica (Madrid)	Westdeutsche Landesbank (Dusseldorf)
Rabobank Nederland (Netherlands)	SEB Merchant Banking (Stockholm)	Tenovis GmbH & Co. KG (Frankfurt)	Westdeutsche Landesbank (Vienna)
Raiffeisen Bank (Praha)	Securities Investment Bank (Johannesburg)	Tetral SA (Vaud, Switzerland)	Westend Capital Management (Bermuda)
Raiffeisen Zentralbank Osterreich (Vienna)	Sedgwick Group (London)	Thai Farmers Bank (Bangkok)	Westfalenbank (Bochum)
Raimund Commodities Inc. (New York)	Seligmann, Harris & Com (London)	The Bank Of East Asia Limited (Hong Kong)	WestLB (London)
Ram Options (Amsterdam)	Seneca Funds Management LLC (New York)	The NZ Treasury (Wellington)	WestLB (Tokyo)
Randall Rose and Associates (London)	Sequoia Capital (London)	Thirty Four South Research & Trading Co (Cape Town)	WestLB AG (Dusseldorf)
Rbc Dominion Securities International (London)	SFA (London)	Thomson Financial (London)	WestLB AG (London)
Reemtsma H. F. & H. F. GMBH & Co (Hamburg)	SFR Straus Financial Analyst & Risk Mgmt. (Messe)	TI Group (Oxford)	WestLB Panmure (Dusseldorf)
Refco Group Ltd. LLC (New York)	SG Prague (Prague)	Tiburou Trading Inc. (New York)	WestLB Panmure Limited (London)
Refco HL Securities (Paris)	Shaw & Co. (London)	Timney & Company (Liverpool)	WestLB Securities Pacific (Tokyo)
Refco Overseas Ltd. (London)	Shearson Lehman Hutton (London)	Tokai Bank (Singapore)	Westpac Banking Corp. (London)
Remy Freres & Fils (Brussels)	Shell Asset Management Company B.V. (The Hague)	Tokai Bank Limited (London)	Whitbread & Co (London)
Renaissance Capital (Moscow)	Shell Int. Eastern Trading Company (Singapore)	Tokai Capital Markets (London)	Wiegerinck Serrano Associados (Sao Paulo)
Republic Mase Australia (Sydney)	Shell Intl Trading & Shipping Co. Ltd. (London)	Tokai International (London)	Williams De Broan (London)
Republic National Bank (London)	Shell Pensioenfonds Beheer (Hague)	Tokyo Mitsubishi Finance (London)	Winchester Commodity Group (Winchester)
Republic New York (London)	Shell Trading (Houston)	Tomkins Plc (Denver, Colorado)	Winchmore Capital LLP (London)
Reuters Client Site Systems (London)	Smeets, Verbaet & Com (Antwerp)	Tomkins Plc (London)	Winterlood Securities (London)
Rice Financial Products Company (New York)	Smith Barney Shearson Europe (London)	Tong Yang Securities (Seoul)	Winterthur (Zurich)
Ricken Finanz AG (Switzerland)	Smith New Court (London)	Tosco Corp (Tempe)	WMC Resources Ltd. (Melbourne)
Riyad Bank (Riyadh)	Smith New Court (Tokyo)	Toyot Trust International (London)	Wood Gundy (London)
RM Ravarumaklama (Stockholm)	Smith New Court Far East (Hong Kong)	TPC-Corp (Houston)	Wood Gundy Inc (Toronto)
RMF Trading (Zug)	Societe Generale (Amsterdam)	Tradition Financial Services (Hong Kong)	Woralco (London)
RMI Securities Corporation (New York)	Societe Generale (Praha)	Tradon Commodities (London)	WPZ Bank (London)
RMI Securities Europe (London)	Societe Generale Alsacienne (Brussels)	Trafigura (London)	WR Hambrecht & Co. LLC (San Francisco)
Robert Fleming & Com (London)	Societe Generale Alsacienne (Luxembourg)	Trans-Arabian Investment Bank (Manama)	Wuerttembergische Versicherung (Stuttgart)
Robertson Stephens (San Francisco)	Societe Generale De Belgique (Brussels)	Trebas Capital (London)	Xavantina BV (Holland)
Rocorp & Partners (Amsterdam)	Societe Generale Strauss Turnbull (London)	Trevor Robinson Inv. Consultancy (Oxford - UK)	Yagi Euro Corporation (Tokyo)
Rolle Resources (London)	Societe Nat. De Credit A L'indust. (Brussels)	Trevor Robinson Investment Mgmt. (London)	Yamaichi International (London)
Roman Bauernfeind Verpackungswerk (Obergrunberg)	Socimer International Corp. (New York)	TriCap International (New York)	Yves Schifler Finance (Switzerland)
Ronin Capital (Chicago)	Soditic Finance (Geneva)	Trinkaus & Burkhart (Dusseldorf)	Zeromus Trading BV (Den Helder)
Rothmans Finance (Amsterdam)	SoftSearch Investment, Inc. (Texas)	Trio Equity Derivatives (London)	Zuger Kantonbank (Zug)
Rothschild & Cie Banque (Paris)	Software House International (New Jersey)	TSB Bank (Birmingham)	Zürcher Kantonbank (Zurich)
Rothschild Australia Ltd (Sydney)	SoleProp (Naperville - USA)	Tudor Investment Corporation (New York)	
Rourke Capital Management Ltd (London)	Soliditas (Amsterdam)	Tudor Proprietary Trading (UK)	
Royal & Sun Alliance Investment Mgmt (London)	Soros Fund Management (New York)	Tullett & Spütz (London)	

**WHAT DO THEY KNOW THAT YOU DON'T?**



## Some of the comments that we have received from our clients.

### US Consultant

The flexibility, along with the quality of the models, is what makes your software so appealing. Thanks again for your admirably prompt attention to my questions.

### Major Far Eastern Central Bank

I'm Head of Capital Markets Division at the Central Bank. After all the recommendations that we had from the companies that we work with, it seems your software is one of the best in the market.

### US Hedge Fund

We did not have any problems with MBRM. Your product has worked flawlessly for me every single day. And the support that you personally provided when I needed it is absolutely the finest that I have encountered in my 25 years in the software industry. Your product and service are so superior.

### American Retail Bank

During MBRM's 2 day training course, we had a live amortizing swap deal to price. Using MBRM's calculated values, we were able to negotiate a \$50,000 savings on that one deal alone.

### Swiss Savings Bank

Congratulations, your software is now used for the whole risk management department.

### European Broker

What's excellent about your system is that you can call one function to handle a very wide range of instruments.

### Quantitative Analyst at a UK Investment House

It was nice to talk to you, and I must say I appreciate even more the way your add-ins are structured (specifically the .lib stuff which will prove very useful). This is going to make any development work I might have so much easier.

### Japanese Investment Bank

All merits of BGM which you pointed out were true. We were impressed with that calibration speed. We respect your academic experience and professionalism in finance.

### US Hedge Fund

Your product is working really well. I am very satisfied, especially with your superb support.

### US Energy Derivatives Broker

I have found your UNIVOPT and UNIVEXOT software essential to analyse energy options, including on energy swaps. I will recommend you to all my clients since they do not have very sophisticated systems for derivatives.

### US Software House

We understand MBRM is the leader in risk management and pricing models.

### Major European Central Bank

The decision to use your Excel add-ins at the Central Bank has been made. If Dr. Barakat is ever visiting our city, we would be very pleased to welcome him at the Central Bank.



## American Investment Bank

I read in a book that “there is no commercially available” Finite Difference model that handles skews and term structure of implied volatility and interest rates. I would say that “there is one” by MBRM. Thank you very much for your time and great help.

## US Corporate Treasurer

You guys are great. I love your system.

## Treasury Systems Consultant

It was good to meet you. You have done such a good job of getting your product in front of everyone (hence the long client list), that I hadn't realised that I actually hadn't met you before. In fact everyone I speak to seems to know of you and your product which is quite a feat given this industry.

## Interest Rate Trader at a Major Japanese Investment Bank

In my opinion it does what we want to do and I feel confident that if there are one or two products that is not obvious to me how to price, you will happily advise us or add them to the package in future versions if necessary. Indeed I was really impressed with the prompt response to my queries during the trial period.

## Australian Financial Specialist

Thanks for the fantastic speed of response - do you ever sleep?

## Major US Investment Bank

We have tried a number of option pricing software and found your UNIVOPT the fastest.

## Major European Investment Bank

Your binomial option pricing model is electric. It was instantaneous. We wrote our own but it was too slow when analysing a portfolio.

## US Corporate Treasurer

I am quite impressed with the quality of your product. Your level of sophistication is certainly beyond that of most other add-in type products currently available. I must also thank you for your excellent support and the time you have spent in explaining to me the advanced features and capabilities in your software.

## US Hedge Fund

You have worked very closely with us. If we need something done, we are likely to get it immediately. I don't think you guys sleep.

## Financial Engineer

We were successful in calling your routines from our database system. We currently have our own routines to price the hedges, however, we were looking to your routines for calculation speed and reputation as an industry standard.

## Head of Arbitrage & Future Trading at Major Japanese Investment Bank

I am incredibly pleased by the speed at which you created a customised system for our requirements. I will recommend it to all my friends.

## Major European Investment Bank

One of the major differences between MBRM and other software houses we have dealt with is the personal service we receive. When we have a question, we get straight through to someone who can help us. This is invaluable.

## Major US Investment Bank

You have a really great system.

## Risk Management Consultant

The Universal software is a bloody good system with great functionality. The easiest to use of all the add-ins I have seen. I have used it for so many years that it is second nature to me. I must be your best salesman, I have always recommended you.

## Managing Director of Member Firm of LIFFE

Your system is phenomenal. Your flexible approach to quick customisation is just what we are looking for.

## European Investment Bank

You have a great product.

## Equity Derivatives Trader at a Major London Investment Bank

I feel guilty about using your software successfully for many years since it cost so little. We use it to link with Reuters real time feeds.

## Quantitative Analyst at a Major Energy Corporation

If you keep going like this, you will be putting pricey quants in the City out of work!! I was only kidding! The quants will use your software to build more advanced models. This kind of enhancement of everyone's knowledge and understanding of derivatives will only serve to reinforce the importance of quantitative analysis, rather than to undermine it, and I'm all for it. When are you re-locating to Seattle?

## Senior Treasurer of a Major Corporation

We have been one of your earliest customers and you have always looked after us. We have begun using your new Universal Convertible Add-in and it deserves to be the industry standard.

## German Fund Manager

I think your add-ins are very useful. We use them to price Bermudan options on zero-coupon bonds.

## Major UK Derivatives Broker

It is widely recognised that your software is very good and sold at rock bottom prices.

## Head of Risk Control at a Major International Bank in Switzerland

We have utilised your Universal add-ins to calculate the capital adequacy sensitivities (e.g. deltas, gammas and scenario sensitivities) required by the central bank. Not only are they inexpensive, they are complete and tremendously flexible. They can handle all the instruments and the central bank has approved our system.

## US Investment Bank

Your products are very complete and exactly the kind I was looking for.

## Major International Investment Bank

We found your policy of allowing the use of both the 16 bit and 32 bit versions of your add-ins on the same machine as very useful since we have some dealers using both 16 and 32 bit applications under Windows NT. Some other software houses ask us to buy two different versions of their software, which effectively double their prices when compared to yours.

## Major US Pension Fund Manager

We use your term structure interest rate models to assist us in our asset/liability management since they enable us to model future interest rate movements, together with our contingent cash flows.

## Major European Bank

Your software is very precise and we are very happy.

## Equity Derivatives Desk at a Major Investment Bank

We have been using your UNIVOPT for a number of years. We recently hired a new trader and asked him which system he preferred. He said he has worked for 4 investment houses over the last 9 years and he has only ever used UNIVOPT.

## Head of Global Derivatives at a Major International Fund Management Company


I am very impressed with the professionalism and sophistication of your Convertible Add-in. We do not have the time to implement all it's features in our own in-house model.

## Major Far Eastern Investment Bank

We have looked at your multi-factor convertible model and it looks great. It gives us a competitive edge over the competition who use a single factor convertible model.

## Further feedback from some other users

- Recently I downloaded your new version of the add-ins and was astounded by all the possibilities it has.
- There is only one word that I can say: SUPER !!!!!!!!!!!!!!!!!!!!!
- I really appreciate your quick response. I shall get back to you if I have new questions... or need to go to the next level. Thanks very much.
- You have been very helpful - it certainly seems that you clients are right that your speed of response is definitely one of your major strengths.
- We are setting up a swap and FRA trading desk in Mumbai, India and are looking for a pricing and risk analytics engine. I have heard of your formidable reputation in this field and am writing to inquire if you would be able to provide us a suitable solution.
- Thanks a lot for your rapid answer!
- I was very impressed by the products on your site.
- For me you are genius.
- Thank you for your help with this. I made the changes you recommended and everything seems to be working wonderfully now. I especially appreciate how quickly and thoroughly you have responded to my requests for help. I will strongly recommend MBRM to all my option-trading clients.
- Kudos to you and your programming team! Wonderful job on our UMS system & we are all extremely pleased with your product.

PRICE LIST for 32-bit Client Edition Licenses for Windows. (For Server and UNIX Licenses, please contact our Sales Team for a quote)		One Time Fee Per Machine	Quantity Ordered
<b>UNIVOPT</b> - Universal Options Add-in		£ 999	
<b>UNIVEXOT</b> - Universal Exotics Add-in	[requires UNIVOPT]	£ 999	
<b>UNIVINT</b> - Universal Interpolating Add-in		£ 999	
<b>UNIVYLD</b> - Universal Yield Add-in		£ 999	
<b>UNIVSWAP</b> - Universal Swap Add-in		£ 3,999	
UNIVSWAP incorporates, at no extra charge, full copies of the following four Add-ins: UNIVOPT, UNIVEXOT, UNIVINT, UNIVYLD [saving over £ 3,900]			
<b>UNIVCMS</b> - Universal CMS & Swaptions Add-in	[requires UNIVSWAP]	£ 3,999	
<b>UNIVLMM</b> - Universal LIBOR Market Model Add-in	[requires UNIVSWAP]	£ 9,999	
<b>UNIVCONV</b> - Universal Convertibles Add-in	[requires UNIVSWAP]	£ 5,999	
<b>UNIVDRV</b> - Universal Derivatives Add-in : <i>Inclusive package of</i>		£ 3,999	
<b>UNIVEXOT+</b> - Universal Analytical Exotics Add-in	[individual cost £ 1,999]		
<b>UNIVEDIF</b> - Universal Finite Difference Add-in	[individual cost £ 1,999]		[saving over £ 1,900]
<b>UNIVGARCH</b> - Universal Garch Add-in	[individual cost £ 1,999]		
<b>UNIVVAR</b> - Universal VaR Add-in <b>“Value-at-Risk”</b>		£ 3,999	
<b>UNIVCRD</b> - Universal Credit Risk Add-in		£ 3,999	
<b>UNIVCDRV</b> - Universal Credit Derivatives Add-in	[requires UNIVSWAP]	£ 1,999	
<b>UNIVINFLSWAP</b> - Universal Inflation Swaps/Index Linked Bonds Add-in		£ 3,999	
	[requires UNIVSWAP]		
<b>UNIVRREP</b> - Universal Risk Reporting Add-in		£ 9,999	
<b>MBRM Futures / FRAs Arbitrage Module</b>	[requires UNIVSWAP]	£ 3,999	
<b>MBRM Exchange Traded Options System</b>	[requires UNIVOPT and UNIVINT]	£ 3,999	
<b>MBRM Bond Futures “Cheapest To Deliver” Analysers</b>	[requires UNIVYLD]	£ 1,999	
<b>MBRM Property Derivatives Analyser</b>	[requires UNIVSWAP]	£ 9,999	
<b>MBRM Comprehensive Combined Package</b> [saving over £ 27,000] Inclusive package of the above software packages.		£ 49,999	
<b>Multiple Purchase Discounts</b> (when ordered at the same time)			
<b>No. of Machines</b>	<b>Discount</b>	<b>No. of Machines</b>	<b>Discount</b>
5	20 %	30	50 %
10	25 %	50	58 %
20	43 %	100	67 %
<b>Support/Maintenance Contract</b>		<b>Annually</b>	
Our Support/Maintenance Contract is an integral part of our software package which enables research and development on our side and has multiple free benefits on the user’s side. Our Support/Maintenance Contract entitles you to :			
<ul style="list-style-type: none"> <li>• Free telephone and e-mail support for high-speed query analysis.</li> <li>• Free upgrades to the latest version of our Add-ins at any time.</li> <li>• Free license for your home computer (as long as the office and home machines are not used at the same time).</li> <li>• Access to the MBRM Web Service for license administration, support forums, instant quotes, etc.</li> </ul>		30% of list price <small>(after Multiple Purchase Discounts) at time of renewal</small>	
Therefore the support contract will save you TIME and MONEY in both the short and long term. <b>Users must maintain a valid Support/Maintenance Contract in order to use the software.</b>			

## MBRM Services: Source Code · Customization

- NOTES**
- [a] Regulated institutions are automatically pre-approved for 30 days credit terms.
  - [b] Orders are normally invoiced in British Pounds Sterling (£). Alternatively, we may invoice in a client's local currency, with prices based on our British Pounds Sterling price list and using the FX rate at the time of issue. Future invoices will also be based on our price list and the FX rate at the time of issue.
  - [c] Any locally applicable VAT / sales tax / customs duty will be added at the current rate.
  - [d] Support / Maintenance Contract can be cancelled at a renewal date by giving 30 days advance notice.
  - [e] All orders subject to MBRM's Standard Terms & Conditions (<http://www.mbrm.com/terms.htm>). Prices subject to change without notice.
  - [f] Errors and Omissions Exempted (E.O.E).

PRICE LIST for 64-bit Client Edition Licenses for Windows. (For Server and UNIX Licenses, please contact our Sales Team for a quote)		One Time Fee Per Machine	Quantity Ordered
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<b>UNIVCMS</b> - Universal CMS & Swaptions Add-in	[requires UNIVSWAP]	£ 7,998	
<b>UNIVLMM</b> - Universal LIBOR Market Model Add-in	[requires UNIVSWAP]	£ 19,998	
<b>UNIVCONV</b> - Universal Convertibles Add-in	[requires UNIVSWAP]	£ 11,998	
<b>UNIVDRV</b> - Universal Derivatives Add-in : Inclusive package of		£ 7,998	
<b>UNIVEXOT+</b> - Universal Analytical Exotics Add-in	[individual cost £ 3,998]		[saving over £ 3,990]
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<b>UNIVCDRV</b> - Universal Credit Derivatives Add-in	[requires UNIVSWAP]	£ 3,998	
<b>UNIVINFLSWAP</b> - Universal Inflation Swaps/Index Linked Bonds Add-in	[requires UNIVSWAP]	£ 7,998	
<b>MBRM Comprehensive Combined Package</b> [saving over £ 35,000] Inclusive package of the above software packages.		£ 59,999	

### Multiple Purchase Discounts (when ordered at the same time)

No. of Machines	Discount	No. of Machines	Discount
5	20 %	30	50 %
10	25 %	50	58 %
20	43 %	100	67 %

### Support/Maintenance Contract

Our Support/Maintenance Contract is an integral part of our software package which enables research and development on our side and has multiple free benefits on the user's side. Our Support/Maintenance Contract entitles you to :

- Free telephone e-mail support for high-speed query analysis.
- Free upgrades to the latest version of our Add-ins at any time.
- Free license for your home computer (as long as the office and home machines are not used at the same time).
- Access to the MBRM Web Service for license administration, support forums, instant quotes, etc.

Therefore the support contract will save you TIME and MONEY in both the short and long term.

**Users must maintain a valid Support/Maintenance Contract in order to use the software.**

**Annually**

30% of list price  
(after Multiple Purchase Discounts)  
at time of renewal



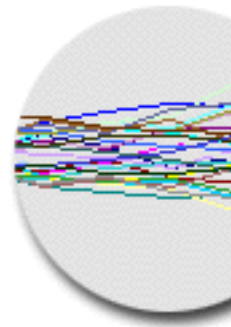
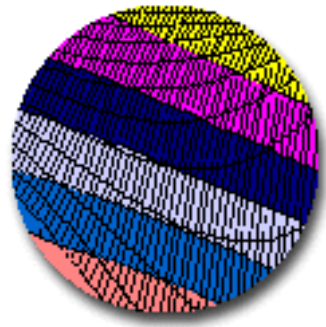
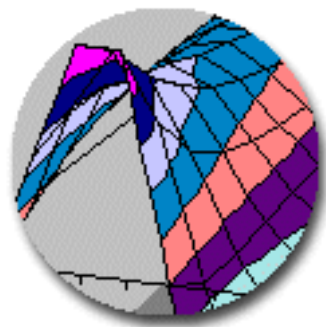
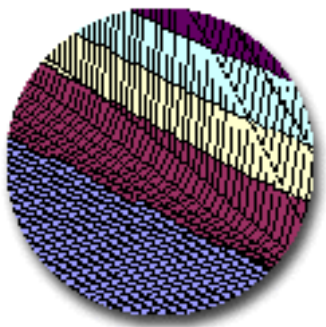
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<https://www.mbrm.com>