Andrea Odetti **Curriculum Vitae**

Citizenship:	Italian
Marital Status:	Married
Date of Birth:	21/12/1974
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Education and Qualifications

Sept 2000 **DEA Probabilites et Finance** (Post Master Diploma)
University **Pierre et Marie Curie** (Paris VI)
Directed by *Marc Yor* and *Nicole El Karoui*
Grade: *bien*

March 1999 **Bocconi University,** Milan
Degree: Laurea in Economics, grade 110/110 *cum laude*
Bachelor of Economics Science
Final Thesis: *Volatility Estimation for Diffusion Processes*

July 1993 **High School,** San Donato Milanese

Work Experience

Mar 15 – present Quantitative Analyst for the Automated Bond Trading desk at **Royal Bank of Scotland** (London)

Automated quoting of client requests taking into account: fair price, hedging costs, bid offer spread based on existing and target portfolio.

Markets: main European government bonds with extension to IRS.

Development & implementation of methodologies used in the Libor submission process.

Aug 13 – Mar 15 Head of SAF Risk Engine Simulation at **Royal Bank of Scotland** (London)

Selected projects:

- Compress large portfolios of vanilla interest rate products
- Automated bond trading: calibration, hedging and quoting
- Cross asset and cross library rearchitecture of market data and pricing stack
- EPE and CVA interfaces to abstract from concrete trade types and pricer implementations

Dec 09 – Aug 13 Equity Quantitative Analyst at **Royal Bank of Scotland** (London)

Selected projects:

- Redesign the equity library based on programming best practices (e.g. immutability, RAII, modular design)
- Integration of equity library within the global market data framework
- Design of Monte Carlo engine (common handling of stochastic rates, quanto correction, brownian bridge for continuous barriers, dividend treatment, jumps) able to work with the range of existing scripted payoff languages
- Implementation of Monte Carlo methods for standard models (Local volatility, Heston, Copula based, scriptable stochastic volatility)
- Creation of PDE-based scripting language (with user defined path-dependent state and boundary conditions)
- Uniform implementation of backward and forward finite difference solvers (consistent solution, preserving invariants)
- Analysis of the impact of stochastic interest rates on vol target strategies

Information technology:

- Setup and maintenance of the port to gcc/Linux with related tools (CI, valgrind, static analysis, code coverage)
- .NET interface (via C++/CLI)

Feb 04 – Dec 09 Quantitative Analyst at **Commerzbank Securities** (London)

Tasks: modelling of exotic products on equity and hybrid (equity - FX, equity - interest rates)

Selected projects:

- Local volatility model (correct handling of dividends and term structure of implied volatility)
- Calibration and simulation of stochastic volatility model (Scott-Chesney)
- Implied volatility surface (arbitrage free parametrization & interpolation, correct dividend handling)
- Dividend treatment (mixture of absolute and proportional dividends, impact on variance swaps, inclusion in PDEs)
- Jump Diffusion Model
- American options (implementation of a term structure consistent binomial tree)
- Correlation skew (via stochastic correlation or common jumps)
- Analytics for correlation matrices (consistent partial shift, generation of missing data, bounds for missing values)
- Pricing via PDEs with hedging constraints (gamma)
- Continuous barriers in Montecarlo
- Convertible Bonds (approximation of SoftCall features)

- Equity models with jumps to default (stochastic and local hazard rate)
- Optimisation algorithms (improved treatment of linear and non linear constraints)
- Scripting language (2nd pass compilation of the Abstract Syntax Tree to linearised Reverse Polish Notation)

Information technology:

- Setup and maintenance of the port to gcc/Linux
- Java interface (via JNI)

Jun 03 - Jan 04 Quantitative Analyst at **Banca Aletti** (Milan), investment bank of Banco Popolare di Verona e Novara

Mar 02 - May 03 Quantitative Analyst at **Banco Popolare di Verona e Novara** (Milan)

Development of a *Front Office pricing library* (C++) for Equity and Interest Rates Derivatives.

Selected projects:

- implementation of *Malliavin Calculus* and variance reduction techniques for the computation of sensitivities in a multi-asset setting
- Generic Finite Difference engine for multi-asset products
- Risk Management: implementation of a *VaR engine* (delta-gamma approach) for market and volatility risks.

Apr 00 - Sep 00 Internship at **Murex** (Paris) in the fixed income quants team. Designed an interest rates option pricing module, based on trees and Monte Carlo simulations (models implemented: HW, BDT, BGM).

Feb 99 - Sep 99 Internship at **UniCredito** (Milan) in the quantitative research department for the Euroland Fixed Income Market.

Nov 96 - Jun 98 Tutor of Mathematics and Statistics at **Bocconi University**

Key Qualifications

Programming	C++ (in a professional context for 11 years), Java
Systems	Windows, Linux
Languages	Italian (mother tongue), English (fluent), French (fluent), Greek (basic)

Conferences

MathFinance 2014	Solving PDEs Using Continuous Time Markov Chains http://www.odetti.it/andrea/pdf/CTMC.pdf
MathFinance 2008	High Performance Computing Techniques in Finance http://workshop.mathfinance.de/2008/papers/shukla/slides.pdf