

NAME **MARCO COSTANTINO**

NATIONALITY Italian / British

E-MAIL marco@costantino.co

CAREER HISTORY

03/2005 – to date

**ROYAL BANK OF SCOTLAND FINANCIAL MARKETS  
Equity Derivatives Quantitative Development Team.**

I am currently the lead developer of the quant-dev team as well as being responsible for the team. The team is independently placed between the desk (traders and structurers), the quantitative research team and IT. The team shares both the IT and quant group source code and acts as the main interface between the business and IT. The main programming languages used are C/C++/C#, VBA. We are currently actively working on the following projects:

- Design and implementation of the RBS equity derivatives exotics proprietary scripting language used by the desk and the quants for quickly implementing new models and payoffs.
- Implementation in the main quant library of all market data related analytics (interest rate curve, forwards, volatility models, correlations etc.).
- Integration of all quant analytics library into Excel and all equity derivatives systems.
- Implementation of the main equity derivatives risk engine.
- Implementation of the Excel distributed monte carlo pricing analytics (using grid technology) used by the desk for quickly pricing products for clients.
- Quant library rewrite and improvement. This encompasses improving the numerical stability of the code as well as its speed. This involves both re-writing the actual code as well as improving some of the maths in the existing library.
- Regression testing framework for the main analytics library and handling of all quant releases to the desk and IT systems.
- Day-to-day support of the analytics to IT, the business and market risk.
- Specific analytical tools for the traders and structurers, typically in VBA or C#.

08/2004 – 03/2005

**ROYAL BANK OF SCOTLAND  
Quant-Developer - Equity Derivatives.**

- Design and implementation of a new exotics derivatives structuring tool for the Equity Derivatives business. The tool is based on the RBS equity derivatives scripting language which allows to quickly design new products for the desk. The tool is written in C# with C/C++ analytics.

- Design and development of A.P.E.X., Auto Parameterisation of EXchanges. The tool calculates Black & Scholes implied volatilities from option prices chains. Once the volatilities have been calculated, various types of parametric smiles are fitted so that they can be used for pricing within the equity derivatives trading systems. The tool is implemented both as a front-end application used by the traders for intra-day trading and as a server-based application. The server calculates implied volatilities for several hundreds underlyings according to a schedule through out the day. The volatilities are automatically entered in the system for marking the books and running the official end of day PnL.

The tools are currently being implemented in C#.

01/2003 – 08/2004

**ROYAL BANK OF SCOTLAND**  
**Cross Products Analytics**

Hired by RBS to set up the cross products analytics team, positioned between the quantitative research team and IT.

The main responsibilities of the team were:

- Development of analytical tools for the structuring and quantitative sales teams across the following asset classes: IRD, Fixed Income and FX Derivatives. Some of the applications were: Portfolio Analysis including IAS39, BackTesting, complex analytical calculations etc. Main development language, C#.

- Development of the main analytics library of the bank (CAF, Common Analytics Framework) supporting IRD, Fixed Income, Credit Derivatives and FX. Main development language, C++ on both Windows and Unix.

06/2000 – 12/2002

**JP MORGAN, LONDON**  
**Equity Derivatives Trader.**

*Technology Experience:*

- responsible for the design of the Securities Derivatives Trading Platform, including the selection of the quotation systems to be purchased from outside suppliers and interfacing these systems to the internal JPMorgan risk management, middle office and back office systems.

- responsible for the design and implementation of all tactical applications to be used by the traders: VBA applications for pricing competitor warrants; VBA applications for real-time arbitrage of exchange traded options and competitor warrants; web site running Java servlets allowing traders in all locations to communicate their volatility spreads to the securitised derivatives traders in London; web site for charting warrants historical implied volatilities written using Java servlets and Java applets; Excel VBA application for transferring risk across desks interfacing to Sybase databases; Excel VBA spreadsheet for calculating the daily desk's specific marketing PnL and associated provisions etc.

*Business Experience:*

- setting up the Securitised Derivatives Business at JP Morgan for the European Market including Switzerland, Italy, Germany and France;
- designing systems for trading and pricing securitised derivatives quoting on the different exchanges.
- defining and initial pricing of new issues of JP Morgan securitised derivatives for Switzerland, Germany and Italy for retail and institutional investors.
- products include vanilla warrants and plain or discount certificates as well as exotics (barriers, warrants on baskets, reverse convertibles etc.).
- responsible for market making, trading and risk management of the Telecom, Transport, Autos, Airlines and MIB30 equity derivatives books for a total of 60 underlyings and over 500 warrants quoted in Switzerland, Italy and Germany.
- hedging performed through Otc, Exchange Traded options and competitors' warrants (arbitrage).
- pricing and risk management of institutional deals involving plain vanilla and exotic warrants and certificates of several million dollars notional.

01/ 1999 – 06/2000

**JP MORGAN, LONDON, NEW YORK**  
**Equity Derivatives Analytics.**

- design and development of trading tools for the Equity Derivatives Traders in London, New York and Tokyo. The main functionalities of the tools include: analysis of historical and implied volatilities (i.e. cheapest vol underlying, comparison of single stocks volatility against respective country / sector index etc.); analysis of correlation measures (e.g. correlation between underlyings of a specific basket, etc.); calculation of basket prices, historical and implied volatilities, comparison between baskets and single underlyings implied volatilities etc. (Java, VBA).
- Design and implementation of a Sybase Database containing time series of prices and implied volatilities.
- Design and implementation of real-time Perl and Java programs for calculating implied volatilities, dividend predictions etc. for loading into the database.
- Design and implementation of complex analytics in Java and java servlets for retrieving the information (such as historical volatilities, correlations etc.)
- Written several Excel spreadsheets and VB code interfacing Java servlets and Java executables, dynamic SQL and Sybase stored procedures for retrieving and performing additional calculations from the data contained in the database

1997 - 1998

**JP MORGAN, LONDON/NEW YORK**  
**Equity Derivatives Risk Management Support (IT)**

- Heavy use of Sybase SQL code for retrieving information from the equity derivatives databases. - Writing Unix scripts for performing overnight batch jobs for the equity systems (Bourne Shell, C shell).

- Writing Perl scripts for running intr a-day and overnight batch jobs for extracting or calculating additional information.
- Written a high number of Excel spreadsheets containing VB code interfacing to Sybase Databases (using Dynamic SQL or ad-hoc stored procedures) and performing additional calculations.
- produce, ensure correctness and support all equity derivatives prices and the related front-office applications (risk management, delta-gamma sheet, value at risk etc)

1994 - 1997

**UNIVERSITY OF DURHAM, UK**

Part-Time Teacher in the Department of Computer Science

EDUCATION

University of Durham, UK (1997)

**Department of Computer Science**

**Ph.D. in Computer Science**

**Sponsored by the Universities of Durham, UK and Trento, Italy**

Field of research: Information Extraction in Finance

University of Trento, Italy (1994)

**Faculty of Economics and Business Administration**

Laurea (equivalent to a four year **BSc** plus **MSc**) in Economics and Business Administration

Dissertation in Computer Science

Marks: 103/110 (equivalent to **First Class**)

University of Maastricht, Holland (1993)

**Faculty of Economics and Business Administration**

**ERASMUS** exchange student financed by the European Commission

Istituto Tecnico Commerciale of Tione di Trento, Italy (1989)

**Diploma in Accountancy**

Main courses: Mathematics, economics, banking and accountancy.

Marks: 58/60 - (equivalent to "A" levels - Grade A)

PROFESSIONAL  
QUALIFICATIONS

- SFA general representative qualification
- EUREX Trader Examination
- XETRA Trader Examination
- Euronext Trader Examination

LANGUAGES English

(Fluent)

Italian (Mother Tongue)

German (Basic)

Spanish (Basic)