Ferdinando M. Ametrano

ferdinando@ametrano.net
www.ametrano.net
Mobile: +39 3358470410

@Ferdinando1970
https://github.com/fametrano
https://www.linkedin.com/in/ferdinandoametrano
https://scholar.google.com/citations?user=dFSSrwwAAAAJ

❖ Executive Director of the Digital Gold Institute, I teach "Bitcoin and Blockchain Technology" at Politecnico di Milano and Milano-Bicocca University. Former Head of Blockchain and Virtual Currencies in Intesa Sanpaolo bank, I have been member of the Scaling Bitcoin Planning Committee and I have been Chairman of Scaling Bitcoin 2016 in Milan.

❖ Fintech innovator, technologist, and open source developer, I am author of scientific publications and contributor to multiple media outlets. Appreciated professor, speaker, panelist, lecturer, and instructor, I have been invited to events about bitcoin at the United Nations, central banks, the Italian Parliament, universities, conferences, and workshops.

❖ I am also founder and co-administrator of the QuantLib project, a comprehensive free/open-source software framework for quantitative finance. Interest Rate Derivatives Adjunct Professor at the Milano-Bicocca University, I have relevant publications on this subject and have headed trading, quantitative, and risk-management teams in Banca IMI (Intesa Sanpaolo), Banca Caboto and Monte Paschi Asset Management; he has also been co-founder and managing partner of RiskMap (now StatPro Italia).

PROFESSIONAL EXPERIENCE

OCTOBER 2018	**Digital Gold Institute (www.dgi.io).**
PRESENT	Executive Director.
OCTOBER 2016	**Politecnico di Milano – Master Program in Mathematical Engineering.**
PRESENT	**Milano-Bicocca University – Master Program in Economics & Finance.**
	Adjunct professor: "Bitcoin & Blockchain Technologies".
OCTOBER 2013	**Milano-Bicocca University – Master Program in Economics & Finance.**
PRESENT	Adjunct professor: "Interest-Rate Derivatives".
JULY 2016	**Banca IMI (Intesa Sanpaolo Group).**
DECEMBER 2017	Cash digitization proof-of-concept using the bitcoin protocol for a private distributed blockchain: Full network deployed, including iOS/Android/Windows wallet and web block-explorer. Bank of Italy was informed of our progresses.
JANUARY 2016	**Intesa Sanpaolo Group – Chief Innovation Office.**
JUNE 2016	Head of Blockchain and Virtual Currencies.
NOVEMBER 2007	**Banca IMI (Intesa Sanpaolo Group) – Financial Engineering Team.**
DECEMBER 2015	Executive managing director. Head of Rate Curves and Clearing Tools.
JANUARY 2006	**Banca Caboto (now Intesa Sanpaolo) – Financial Engineering Team.**
OCTOBER 2007	Executive managing director, Head of Front Office Quantitative R&D.
	Gradually reshaped existing office with additional internal resources and prestigious external consultants, resulting in a small (5+2) international (Italy, France, Belgium, UK, Australia) team strongly focused on fixed income.
JANUARY 2004	**Monte Paschi Asset Management SGR – Head of special projects.**
DECEMBER 2005	**Reporting to CEO. Lead the development of web-apps for tactical/strategic asset allocation, personal financial planning, and risk management. The 16 people international team developed data layer, optimization engines, and UI.**
FEBRUARY 2002	**Monte Paschi Asset Management SGR – Risk Management Office.**
DECEMBER 2003	Valuation of derivative and structured products.
MAY 2000	**RiskMap (now StatPro Italia) – Co-founder, managing partner.**
JANUARY 2002	Head of R&D team (7 people). Managed personnel selections, coached junior team members, supervised system development, and set up application-level user support.
JUNE 1999	**Banca Caboto (now Intesa Sanpaolo) – Interest rate junior trader.**
MAY 2000	Interest rate option desk: risk analysis, pricing, hedging, sales support.
NOVEMBER 1996	**Banca Caboto (now Intesa Sanpaolo) – Front Office Quantitative Analyst.**
MAY 1999	Progressed up to Head of Fixed-Income team. Focused on real-life trading floor model usage, developed numerical tools for exotics pricing/hedging.

PROJECT MANAGEMENT

❑ 2015-2016, Intesa Sanpaolo: acquainted the bank group with bitcoin and blockchain technology. Started the blockchain internal practice. Joined the just created Innovation Office, then moved back to business.

- 2015-2016, Banca IMI: pioneered the rate curve basis modelling, with effective and parsimonious *abcd* parameterization. Jumps and ON idiosyncratic peculiarities were properly considered.
- 2012-2014, Banca IMI: led the development of a web-app for the clearing brokerage business, starting with LCH interest rate products. Managed small international team of exceptional professionals.
- 2010-2011, Banca IMI: implemented tools for structuring and pricing basis-spread driven bond portfolio managed funds. This was a new business line with large volumes.
- 2008-2009, Banca IMI: reviewed and assessed EUR rate curves bootstrapping after summer 2007 credit/liquidity crisis. Devised basis spread approach for sound estimation of smooth forward EONIA and Euribor rates and developed discounting framework. Deployed the solution in a constrained IT/Trading environment. Conference speaker, consultant and trainer for Banca IMI top clients.
- 2006-2007, Banca Caboto: coordinated Market Model framework development, in cooperation with Mark Joshi. Implemented displaced log-normal Libor, co-terminal swap, and CMS market models. Callable product valuation using LS, Anderson, Amin-Joshi schemes. Greek calculation with Joshi-Fries partial proxy schemes. Smooth simultaneous calibration to caplets and co-terminal swaptions. Published paper.
- 2006, Banca Caboto: implemented Hagan swaption-replica approach for CMS valuation. Performed vega-weighted SABR calibration, with beta calibrated to CMS market prices.
- 2006, Banca Caboto: built Fixed Income analytic library from scratch extending QuantLib code base. Created object-oriented QuantLibXL Excel addin using ObjectHandler; automated deployment using the QuantLibXL Launcher. Adopted efficient software development practices.
- 2004-2005, Monte Paschi Asset Management SGR: development of a web *Advisory Tool* platform for asset allocation, risk management, and commercial strategy: investor risk profiling, strategic & tactical asset allocation (Black-Litterman model), risk & value management. Originally created for Institutional Investors, and then extended to Private Banking and Upper Affluent clients.
- 2002-2003, Monte Paschi Asset Management SGR: assessment of derivative and structured product usage, development of pricing and risk management tools, compliance and reporting procedures.
- 2000-2001, RiskMap: developed on-line trading/banking option pricing, risk management (VAR), and asset allocation systems for Dresdner Kleinwort Wasserstein, Monte Paschi Finance, et al.
- 1999, Banca Caboto: leading role for the integration of the Numerix library into Caboto's own proprietary systems. Managed international consultants, recruitment of additional internal resources. Complete C++ re-writing of existing legacy code. Worked closely with trading desks, risk management, and IT functions.
- 1997-1998, Banca Caboto: developed proprietary IRD risk and pricing system: more than €10B managed with this system. Developed algorithmic trading system for the Government Bond and Strips.

SKILLS

- Bitcoin and blockchain technologies. Technical leadership on financial projects; academic research on crypto-economics price stability, advocating automated non-discretionary elastic monetary policy for a new generation of cryptocurrencies (Hayek Money).
- Interest Rate Derivatives: state-of-the-art bootstrapped ibor/ON curves, fitted Treasury curves. Linear and non-linear products; margining, collateralization and clearing; rate and volatility modelling.
- Equity Derivatives: exotic options, local volatility, fair knowledge of stochastic volatility models.
- Value at Risk, Average Shortfall, and risk measures; Asset Allocation: MPT, CAPM.
- Numerical Methods: PDE, finite differences, trees. Monte Carlo and (Randomized) Quasi MC.
- Programming and development tools: Python, C++ (STL/Boost), Excel/VBA, UnitTest, git, SVN, etc.

PAPERS

- "Bitcoin, Blockchain, and Distributed Ledgers: Between Hype and Reality" (2017). https://goo.gl/Z9OeHt
- with Ballabio, Luigi and Mazzocchi, Paolo, "The ABCD of Interest Rate Basis Spreads" (2015). http://ssrn.com/abstract=2696743
- "Hayek Money: The Cryptocurrency Price Stability Solution" (2014). http://ssrn.com/abstract=2425270
- with Bianchetti, Marco, "Bootstrapping the Illiquidity: Multiple Yield Curves Construction for Market Coherent Forward Rates Estimation". INTEREST RATE MODELLING AFTER THE FINANCIAL CRISIS, Massimo Morini and Marco Bianchetti, ed., Risk Books, Incisive Media, June 2013. http://ssrn.com/abstract=1371311
- with Bianchetti, Marco, "Everything You Always Wanted to Know About Multiple Interest Rate Curve Bootstrapping but Were Afraid to Ask". April 2013. ssrn.com/abstract=2219548
- with Joshi, Mark S. "Smooth simultaneous calibration of the LMM to caplets and co-terminal swaptions" (2008), Quantitative Finance, vol.11 (4), pp.547-558. ssrn.com/abstract=1092665
- with Bianchetti, Marco, "Bootstrapping the Illiquidity: Multiple Yield Curves Construction for Market Coherent Forward Rates Estimation". MODELING INTEREST RATES, F. Mercurio, ed., Risk Books, Incisive Media, May 2009. http://ssrn.com/abstract=1371311

EDUCATION

- Ansaldo Energie fellowship: superconducting magnets simulation at INFN Milan and CERN Geneva.
- Physics Laurea: Università degli Studi di Milano, **110/110** *cum laude*.
- *Maturità Classica*: Liceo Classico "M. Morelli" in Vibo Valentia, **60/60**.