



Evento

Matematica ed Imprese

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Market and Financial Risk Management, Intesa Sanpaolo

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Topics to be discussed

- Types of Quants, P vs Q measure
- Pricing models vs risk models
- Dealing with uncertainty
- Skills from math to industry: the toolbox
- ISP selection process
- Other TBD

Types of quants

- **Front Office Quants (typically Q measure)**
 - Role: quant support to trading
 - Choice of models: robust, simple, performant
 - Spirit: fast & furious
- **Risk management quants (typically P measure)**
 - Role: monitor and report risk measures and limits (positions, sensitivities, VaR, counterparty exposure, etc.)
 - Choice of models: historical
 - Spirit: critical, risk control, stress test
- **Other types of quants**
 - Structuring quant
 - Independent pricing model validation quant (Q measure)
 - Research quant
 - Statistical arbitrage (algorithmic trading) quant
 - Quant developer, IT quant
 - Auditing quant
 - Etc.

Pricing models vs risk models

Pricing of financial instruments is performed for (at least) two different purposes

Pricing for trading and accounting

1. IFRS, GAAP
2. Profit & loss
3. Subject to external advisory
4. Fair Value Policy
5. Market data for pricing
6. Prices, sensitivities
7. Pricing model validation.
8. Fair value adjustments (XVA,etc.)
9. IPV
10. Prudent valuation (AVAs)
11. Performance: → next slide
12. Reporting: accounting, external auditors

Pricing for risk management

1. Basel 1234, CRR, EBA RTSS
2. Capital
3. Subject to regulators (ECB)
4. Risk Management policies
5. Market data for risk scenarios
6. Risk measures
7. Risk model validation
8. Risk limits and risk appetite
9. Risk monitoring
10. Stress test
11. Performance: → next slide
12. Reporting: Supervisors (SSM)

Pricing models vs risk models

As a consequence, **pricing models** for trading and fair value accounting may differ w.r.t. pricing models for risk management purposes.

Pricing model for trading and accounting

1. State of the art pricing models
2. In line with tier 1 market participants
3. Good calibration to the market
4. Good hedging
5. Trading: fast and furious
6. Good for Accounting and Advisors

Pricing model for risk management

1. Robust price on scenarios
2. Robust calibration on scenarios
3. Fast
4. Include most important risk factors
5. Approximated as much as necessary
6. Good for Regulators

Dealing with uncertainty

MARKET RISK DEFINITION

The risk of losses in balance-sheet positions arising from movements in market prices. The risks subject to this requirement are:

- The risks pertaining to interest rate related instruments and equities in the trading book;
- Foreign exchange risk and commodities risk throughout the bank.

[BIS, Definition and application for market risk, 2019]



MARKET RISK DEFINITION (revisited)

The risk of losses in balance-sheet positions arising from **uncertain market price changes within a future time horizon**.



Market risk deals with a **distribution of profits and losses** of balance-sheet positions on given time horizon.

- Mild reference to uncertainty
- No explicit reference to time dimension
- Partial reference to risk drivers

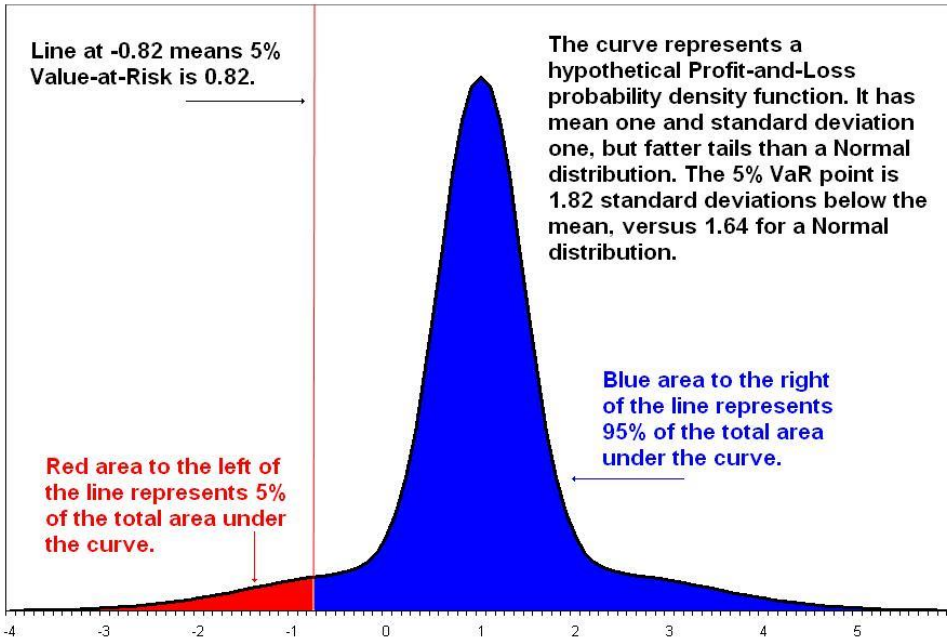
VALUATION RISK DEFINITION

The risk of losses arising from **valuation uncertainties** affecting the fair value of balance-sheet positions **at the valuation date**.



Valuation risk deals with a **distribution of exit prices** of balance-sheet positions at the given valuation date.

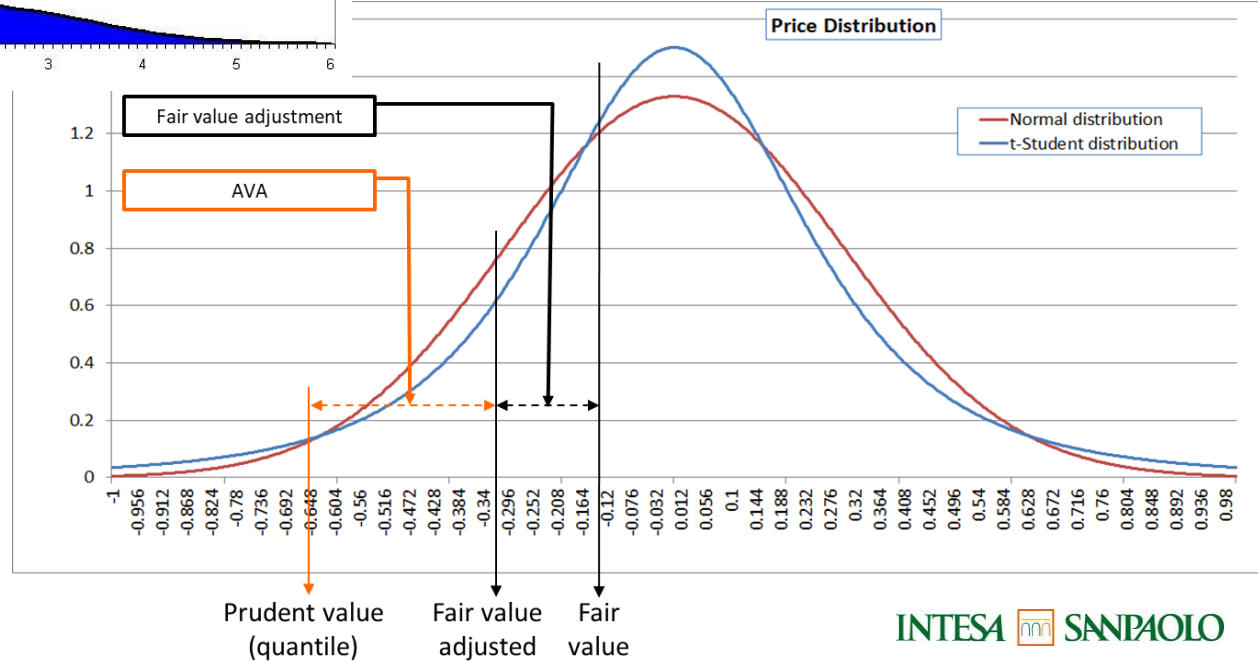
Dealing with uncertainty



Fair value, prudent value and risk measures are different things

Distribution of exit prices at the valuation date

Distribution of profits & losses across a given time horizon
(source: Wikipedia)



ISP Selection Process



RESEARCH AND APPLICATION

Research open positions on our career site and our LinkedIn page and apply to the desired positions



CONTACT

Our recruiters will evaluate your application and will contact you, explaining the selection procedure



SELECTION AND FEEDBACK

Once contacted, you will be evaluated with an interview. You will receive positive or negative feedback at the end of the process



ON-BOARDING

Once you become a member of the Group, the onboarding process will begin



ISP Selection Process

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The Selection interview

Behavioral Event Interview

During the interview we ask candidates to describe past situations and tasks that are relevant to the particular job-relevant knowledge, skills, and abilities required for success.

The assumption is that past behavior is the best predictor of future performance in similar situations.

Technical Interview

During the interview the technical line will ask candidates competences and knowledge related to the vacant position.

So read with attention the job description and remind to ask question about it.

ISP Selection Process

Take a look at our Career Site:
<https://group.intesasanpaolo.com/it/careers>

Join Intesa Sanpaolo



For any questions please do not hesitate to contact us:
recruit@intesasanpaolo.com

Some References and resources

- Attilio Meucci, "P versus Q: Differences and Commonalities between the Two Areas of Quantitative Finance", 2011, <https://ssrn.com/abstract=1717163>
- Mark Joshi, Nick Denson, Andrew Downes, "Quant job interviews, questions and answers", CreateSpace, 2008.
- Mark Joshi, "On becoming a quant", 2015, <https://pdf4pro.com/view/on-becoming-a-quant-mark-joshi-s-home-page-2b3481.html>
- Richard R. Lindsey, Barry Schachter, "How I Became a Quant: Insights from 25 of Wall Street's Elite", Wiley, 2011.
- Paul Wilmott and Emanuel Derman, "The Financial Modelers' Manifesto", Jan. 2009, http://en.wikipedia.org/wiki/Financial_Modelers'_Manifesto
- Dominic O'Connor, Paul Wilmott, "Paul and Dominic's guide to getting a quant job", 2007, https://ieor.columbia.edu/files/seasdepts/industrial-engineering-operations-research/pdf-files/Paul_Dominic.pdf
- Paul Wilmott, "Frequently Asked Questions in Quantitative Finance", Wiley 2006
- Marco Bianchetti, "Dalla fisica alla finanza", 2005
<http://www.bianchetti.org/Finance/IntervistaCareerBook2005-v1.2.pdf>
- Emanuel Derman, "My Life as a Quant: Reflections on Physics and Finance", Wiley, 2004,
- Joseph M. Pimbley, "Physicists in finance", Physics Today, Jan. 1997, http://www.maxwell-consulting.com/Physicists_Finance_low_mem.pdf

- Paul Wilmott forum at www.wilmott.com
- EfinancialCareers, www.efinancialcareers.com
- International Association of Financial Engineers, www.iafe.org
- Etc...