



REDEXE

risk into opportunity





WE ARE SOCIAL



www.facebook.com/Redexe



twitter.com/RedexeFinance



www.youtube.com/user/RedexeRiskManagement



it.linkedin.com/in/RiccardoDonati

The image displays three overlapping screenshots of Redexe's online presence:

- Facebook:** Shows the community page for "Redexe Risk Management & Finance". It features a red line chart on the cover photo, a status update about a "history tester" named MatRix™, and a post from Riccardo Donati.
- YouTube:** Shows a video titled "Redexe Risk & Finance" featuring a presentation on a screen. The video description includes a link to a "history tester" named MatRix™.
- LinkedIn:** Shows the profile of Riccardo Donati, M.D., Redexe "Risk Management & Finance" at Venice Area, Italy | Financial Services. It includes a photo, a recent post about MatRix™, and a summary of his professional experience.

FOUNDING MEMBER

Riccardo Donati

- Born in 1972. Recommendations, skills, publications and connections are always updated on LinkedIn

 > it.linkedin.com/in/RiccardoDonati

- Graduated in Physics. The degree thesis «*A Lattice Spin Model for Asset Management*» blends Physics together with Finance to model market dynamics

> www.redexe.net/docs/TesiDonati.pdf (Italian)

«Gestori del rischio made in Italy: quattro **storie di successo**. (...) Riccardo Donati, 39 anni, Risk Manager a Redexe, società di consulenza finanziaria (...) nonostante la perdita complessiva del valore del mercato azionario, **attraverso l'applicazione di nuovi modelli di rischio** ha inserito nel portafoglio titoli dei clienti **attivi che hanno consentito un aumento di valore degli stessi.**» Effetto crisi: si punta sui financial risk manager, 1/1/2012, *// Sole 24 ORE*

> www.redexe.net/docs/Risk24.jpg (Italian)

"I know Riccardo since 2003; he is very professional and knows very well the financial market and its dynamics. He is a team leader who knows how to manage and motivate his team." September 19, 2008 *Arcangelo Barletta, Director of Italy and Ticino at Ignis Asset Management*

"Riccardo is a **highly skilled** analyst, extremely focused on financial markets and models but also **very creative, a real eclectical person!**" September 15, 2008 *Licia Megliani, Direttore Generale Italia at Allfunds Bank*.

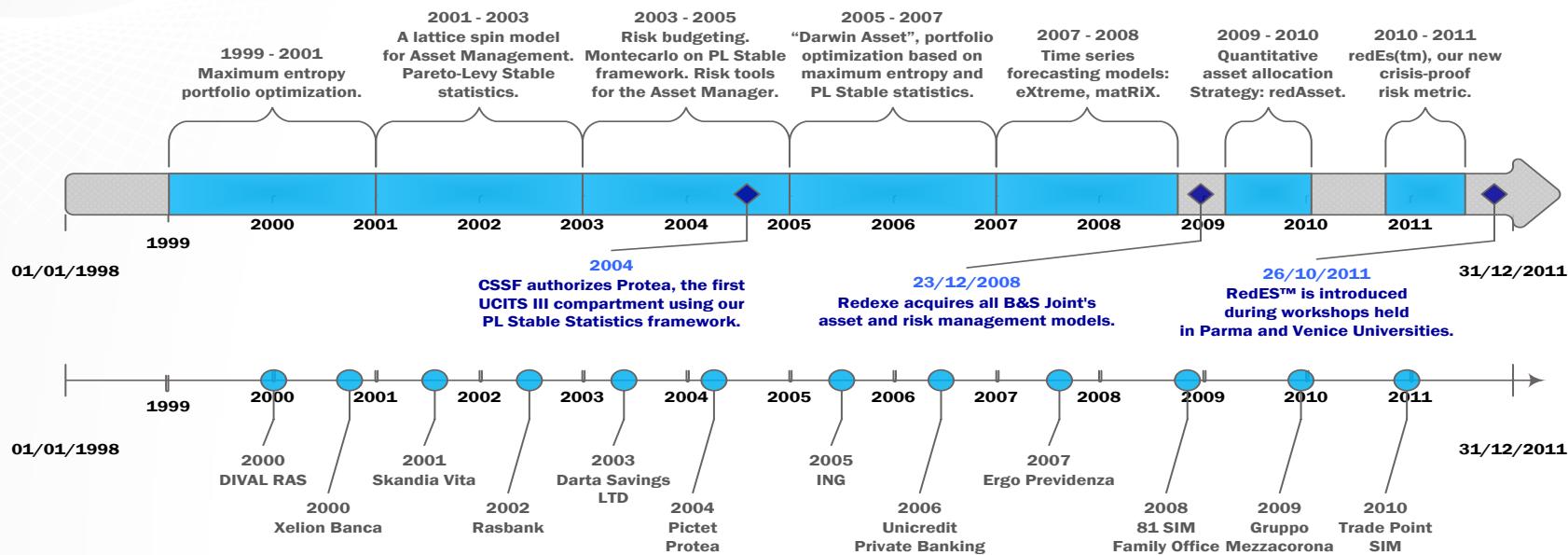
"I had some lively discussions with Riccardo dating back to his early times at B&S, and I witnessed the process that led from his **innovative ideas about Risk Management** to the foundation of RedExe. I can confidently say that Riccardo is **very competent, resolute, and trustworthy person**, who can effectively focus on targets. Moreover, as I realised when he came and gave a seminar to Parma University, he is a **very good communicator as well.**" January 8, 2011, *Gino Favero, Prof., Università Bocconi*

"I met Ricccardo Donati in the late 2007. Since then, what I appreciated about him is the capabilities: 1) to abstract from the various every day financial phenomena in order to detect general explanatory rules; 2) to use such rules in order to develop and to implement effective risk management tools. In particular, Riccardo builds all his instruments conjugating his financial feeling and knowledge with his rigorous grounding in mathematics and in physics. This leads to tools able to **satisfactory perform also in never seen before crisis periods.**" March 30, 2012, *Marco Corazza, Prof., University Ca' Foscari of Venice*

COMPANY

Heritage

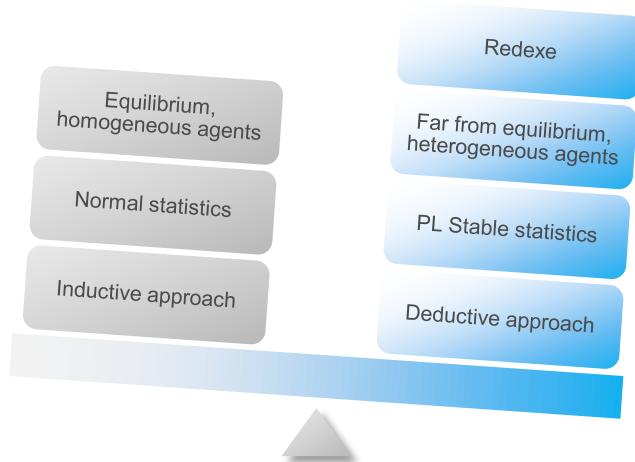
- Established on November 13, 2008 in Vicenza, Redexe is a spinoff of B&S Joint, a financial advisory company for which Riccardo worked as R&D Manager since 1998.
- Cooperates with Parma and Venice (Ca' Foscari) Universities
 - www.redexe.net/riskmanagement/workshop2011
 - [introducing Redexe in 30 seconds youtube.be/sIKvMovRLM0](https://www.youtube.com/watch?v=sIKvMovRLM0) (Italian)
- The mission is *Risk Planning, Portfolio Optimization and Trading Systems*, leveraging Physics to study Financial systems... for Institutions and B2B only!



PHILOSOPHY

Physics for Finance

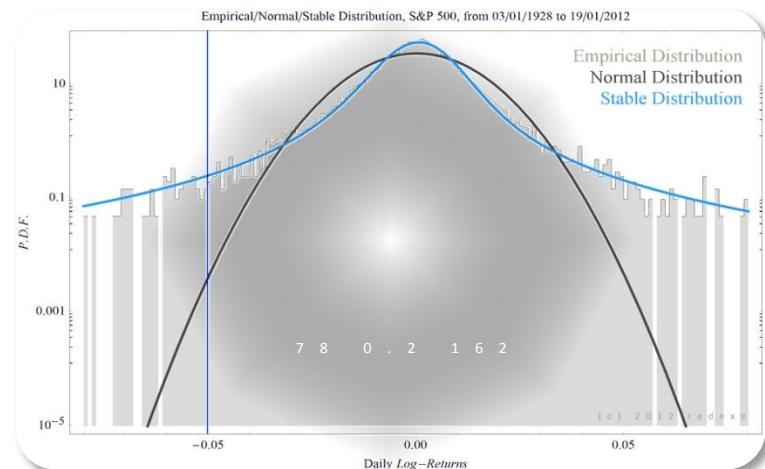
- Physics + Finance = Passion
 - Riccardo Donati's degree thesis www.redexe.net/docs/tesidonati.pdf (Italian) on a ferromagnetic SPIN model for Asset Management.
- We use *theories, models and tools coming from Physics* to study financial complex systems
 - fractals and Pareto-Lévy Stable distributions to correctly measure Risk, taking into account of "fat tails" and "black swans";
 - optimization in a P.L. Stable framework, to build rock-solid portfolios;
 - SPIN models to describe market dynamics and build profitable trading system...
- This approach was *eventually recognized by academics*, starting the interdisciplinary research field called *Econophysics*.
- Deductive thinking allows us the *formulation of models that will not fail changing the boundary conditions*.
- It not only explains the past, but also *gives information useful for the future*.



IN ACTION!

An example of our Philosophy in action, Pareto-Lévy Stable statistics

- Normal statistics, even if still the core of most financial metrics and models, such as Volatility, Markowitz, CAPM, Black & Scholes, should be abandoned, as it dramatically underestimates ruin probability and rare events.
- When a rare event occurs, log-normal fans talk about “black swans” and unpredictable conditions, but they are just relying on a far from empirical evidence statistics.
- We think in a deductive way, making this hypothesis
 - financial time series are invariant under time scaling, i.e., you can't say if data sampling is daily or weekly.
- It follows that returns should be Pareto-Lévy Stable distributed
 - www.redexe.net/riskmanagement/workshopStableStatistics
 - [normal statistics failure](https://youtu.be/sT9TXV1E8W8) youtu.be/sT9TXV1E8W8 (Italian)
- For example, consider the sessions of S&P 500 losing more than 5%. History says they are 78, normal statistics thinks they are 0.2 whereas PL Stable view predicts 162!



RISK PLANNING & REPORTING

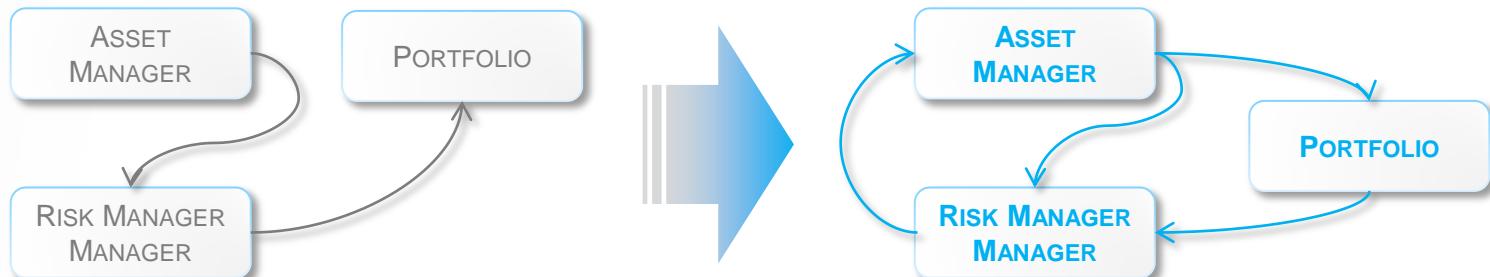
Risk and asset management embedded together

- Our Risk Management & Reporting service is intended to *help the Asset Manager making a true risk planning*, allowing for planned underexposure or overexposure times.
- It is *based on Pareto-Lévy Stable statistics and proprietary models*, such as **RedES™** and **RedShield™**, that are able to *take into account of fat tail, black swans and market shocks*



- **RedES™** youtu.be/FGuIthVO89Y (Italian)
- **RedES™** on 75% World cap. equity stocks www.redexe.net/docs/RedEsTable.pdf

- In spite of mathematical complexities, we leverage easy-to-understand, *colorful charts and tables*, in order to *let the Asset Manager fully understand the message*.
- This way, the Asset Manager “interiorizes” the idea of risk, rather than just suffering it, so realizing a *truly embedded risk management process*.



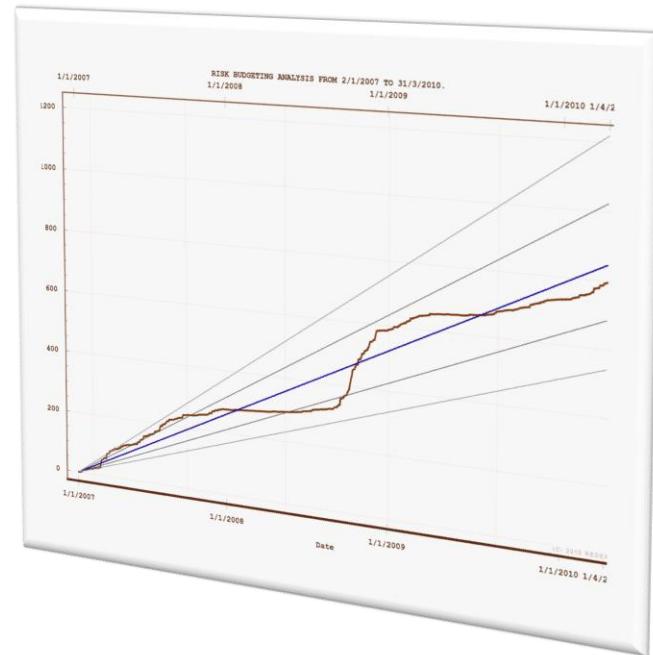
Traditional Risk Management

Redexe Risk Planning

RISK BUDGETING

Managing portfolio volatility

- Our proprietary model, based on Pareto-Lévy Stable Statistics, is exposed through an *intuitive graphical representation*.
 - The Asset Manager has a risk budget that grows of one risk unit per-day, in blue.
 - When he decides to invest in risky assets, he uses a part of the accumulated risk budget, according to the effective risk assumed, in brown.
 - We help the Asset Manager to plan the risk usage, calculating the historical risk consumption of the candidate portfolio and suggesting effective risk strategies.
- The Asset Manager is not forced to enter into mathematical details and is *free to focus on risk planning, according to his investment ideas*.
- This method *protects not only against an excessive risk usage, but also against risk waste*, commonly seen in VAR-centric risk frameworks.



PERFORMANCE PLANNING

Managing portfolio performance

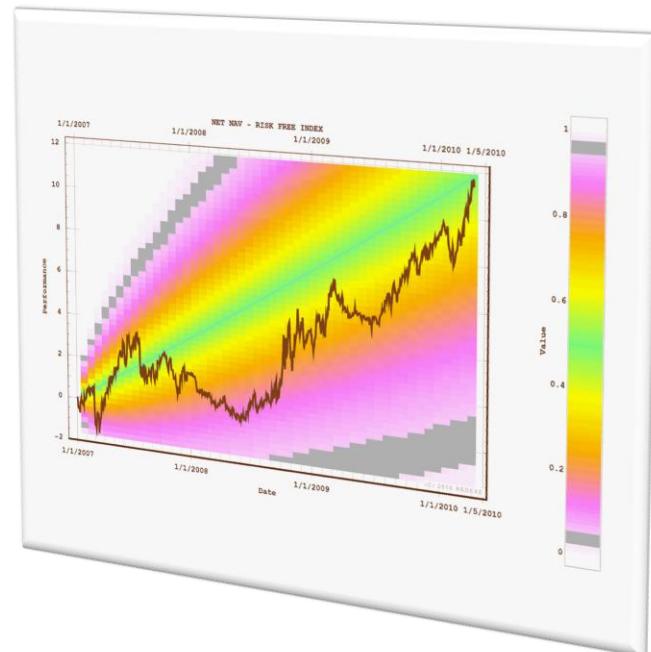
- Our technique allows for *visually comparing the achieved performance to the attended one.*

- We start from a simplified investment model, based on PL Stable Statistics, that is able to estimate the probability of having a certain performance at a given time.
- Such probability is represented using relevant colors in a performance vs. time plane.
- We eventually lay the achieved performance upon the colored plane. The green area indicates that the performance is on target, yellow and orange area raises an alert, purple zone suggests reviewing the investment process and grey stripe says to stop and think!



- [an investment agreement youtu.be/FzBCjXQ7fVE](https://youtu.be/FzBCjXQ7fVE) (Italian)

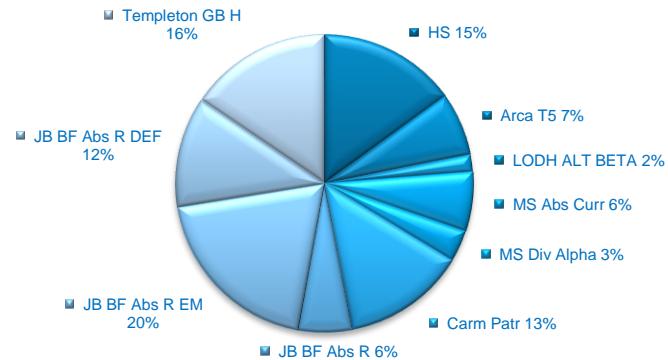
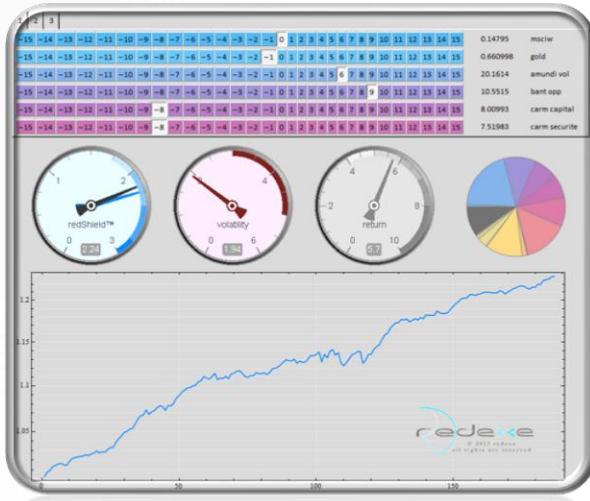
- The Asset Manager is able to check out his performance and quantify the magnitude of the shift, if any. He will actually be able to plan an action in both under and over-performance scenarios. Furthermore, the chart is a true investment agreement with the Investors, so they may know "a-priori" what to expect from the investment itself.



REDASSET™ PORTFOLIO OPTIMIZATION

Portfolio optimization in a Pareto-Lévy Stable framework

- Our technique is based on a proprietary **Pareto-Lévy Stable framework**, taking into account of “fat tails” and “Black Swans”.

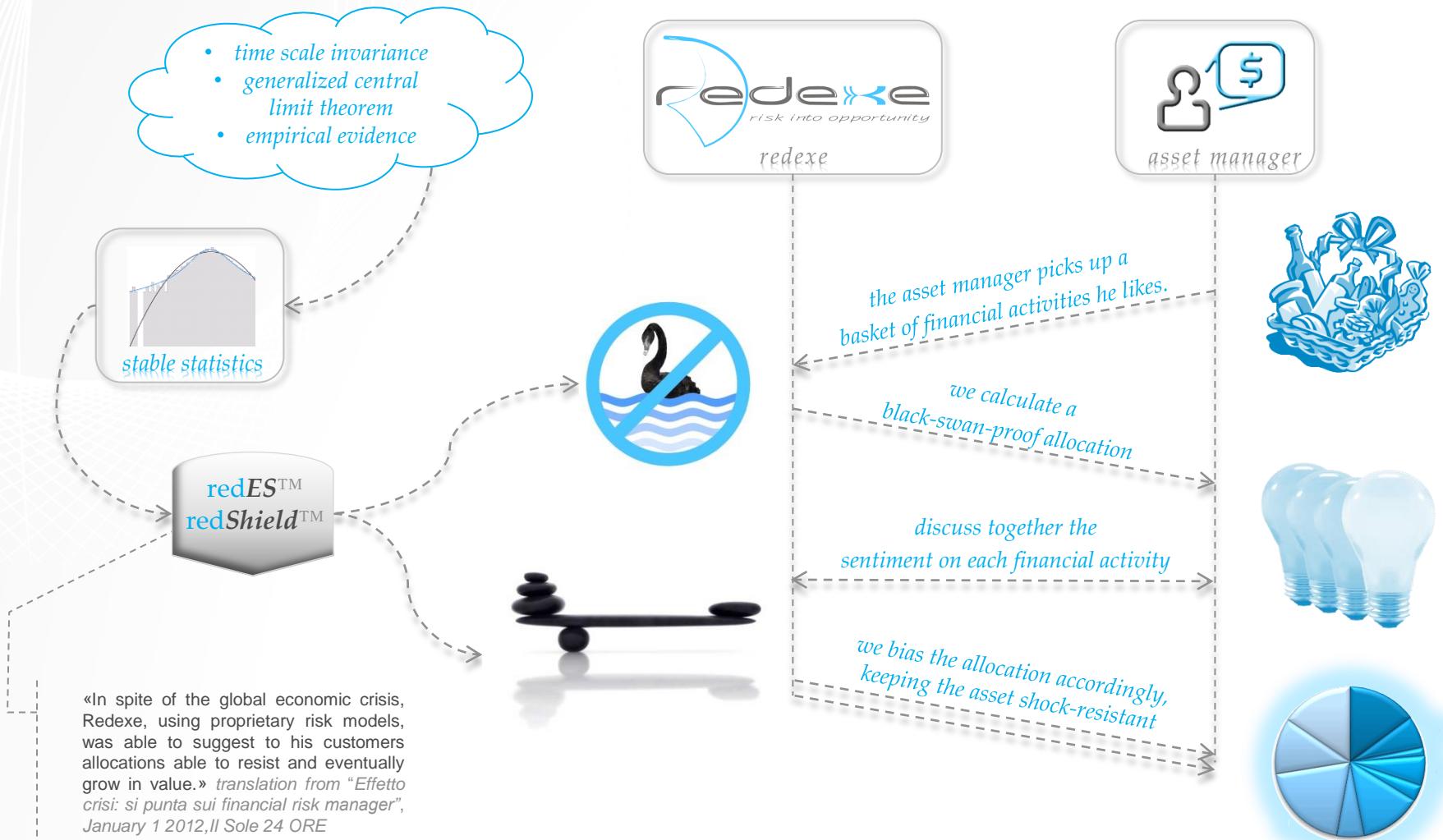


- In this way, we build rock-solid portfolios, that do not fear market shocks
 - www.redexe.net/docs/4x4optimization.pdf
 - [optimization in a PL Stable framework youtube.be/vwqtAGqIYdw](https://www.youtube.com/watch?v=vwqtAGqIYdw) (Italian)
- The Asset Manager selects the most interesting items, according to his thought; than, we calculate the best weights using our model, in an fully interactive process.



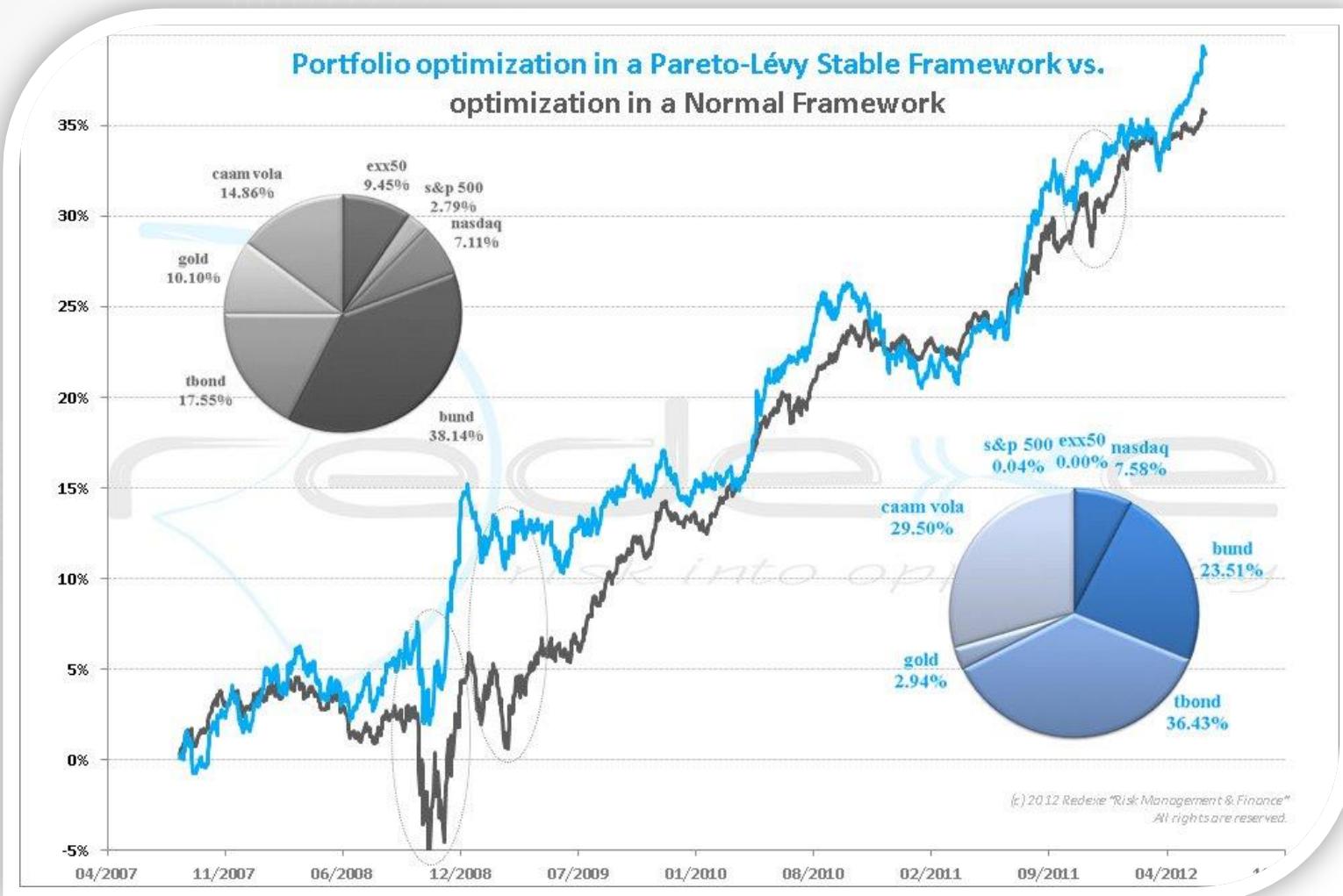
OPTIMIZATION PROCESS

Optimization Process in our Pareto-Lévy Stable Framework... for Asset Managers only!



OPTIMIZATION EXAMPLE

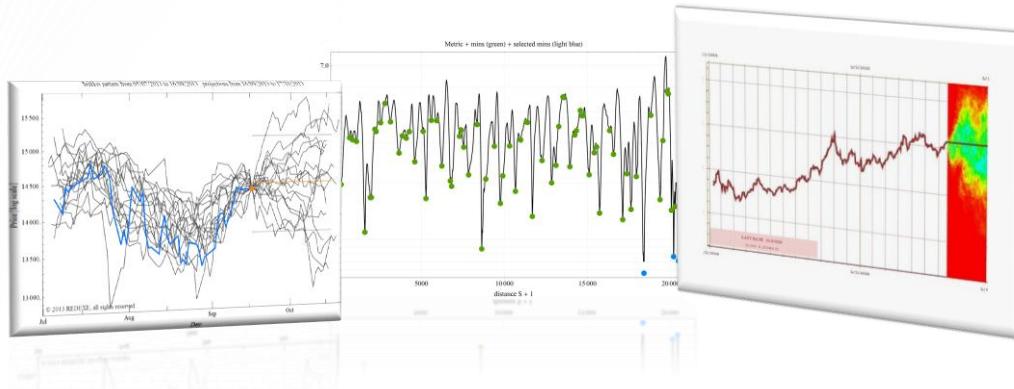
Our PL Stable Optimization vs. Markowitz Optimization in a Normal Framework



eXtreme™ AND MatriX™

Quantitative models for time series “forecasting”

- We developed several quantitative models to *help the Asset Manager* making his daily work easier and use them to *write profitable Automatic Trading Strategies*, too.



- For example, **eXtreme™** leverages PL Stable statistics to point out *reversal conditions*
 - www.redexe.net/docs/Extreme.pdf
 - [eXtreme™ youtu.be/78cwLa0U76o](https://youtu.be/78cwLa0U76o) (Italian)
- Another example is **MatriX™**. It looks at history to find out *price patterns* close to the last one. If you believe in Technical Analysis, this is your tool!
 - www.redexe.net/docs/Matrix.pdf
 - [MatriX™ youtu.be/q0Fjn1F07OM](https://youtu.be/q0Fjn1F07OM) (Italian)



www.redexe.net/docs/Matrix.pdf

[MatriX™ youtu.be/q0Fjn1F07OM](https://youtu.be/q0Fjn1F07OM) (Italian)

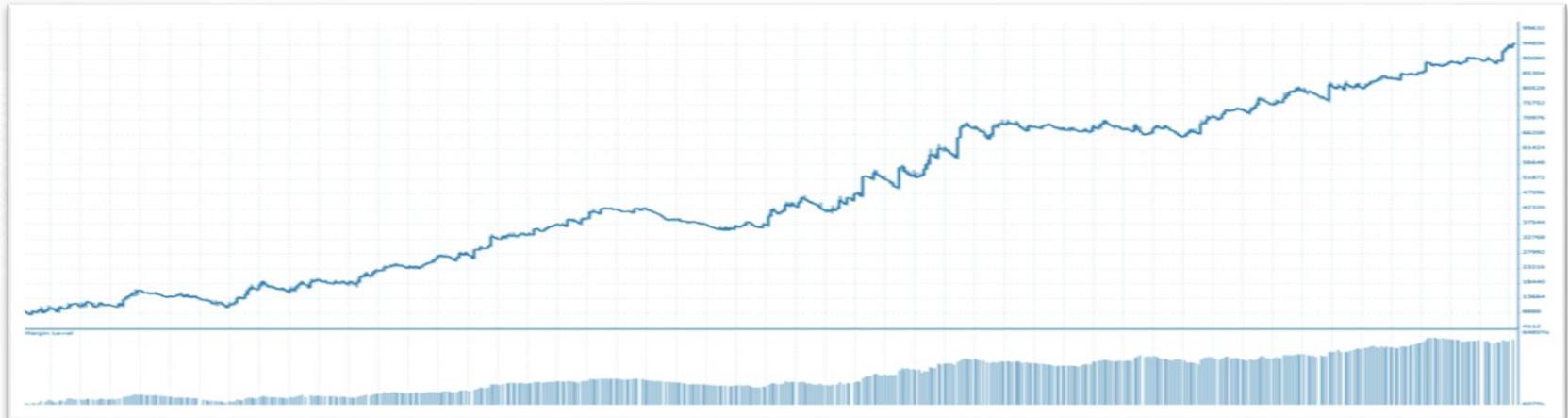
BEATIT™ TRADING ROBOT

Automatic Trading Strategies based on Physics

- Starting up from the quantitative models we developed, we wrote many profitable trading strategies, focusing on **Forex** market and the trading platform **Meta Trader 5**.
- For example, **BeatIT™** is a trading robot that comes from Physical Science and looks at microstructure to find out imitative phenomena, as if the Market were a large Ising SPIN Model. It is weakly optimized, just a “critical temperature” parameter involved.



> <http://www.youtube.com/playlist?list=PLmDsftMfQZ6OQ-EKHcbVT6fVnF9UXMy05>
(Italian)



- We often **publish the trades in Real Time**: like and follow us on



www.facebook.com/Redexe



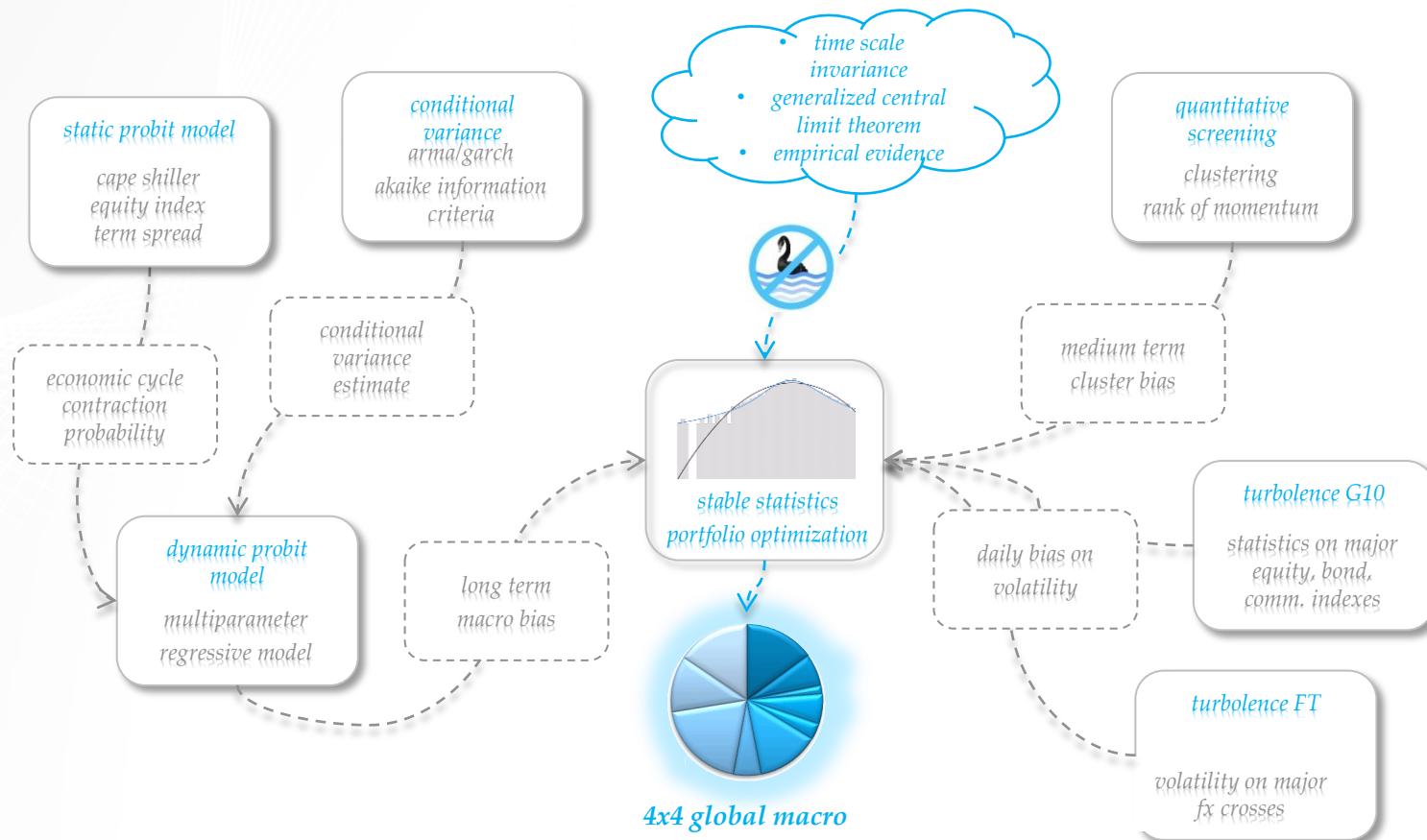
twitter.com/RedexeFinance

REDEXE'S 4x4 GLOBAL MACRO™

Our world-wide, quantitative, real growth focused, black-swan proof investment model.

■ Our edge.

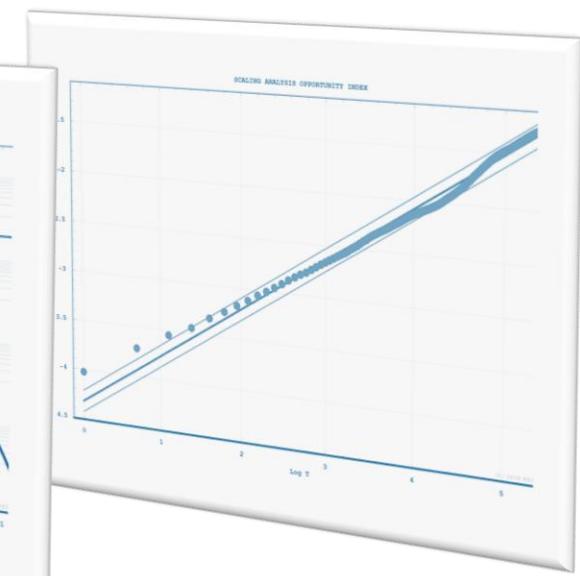
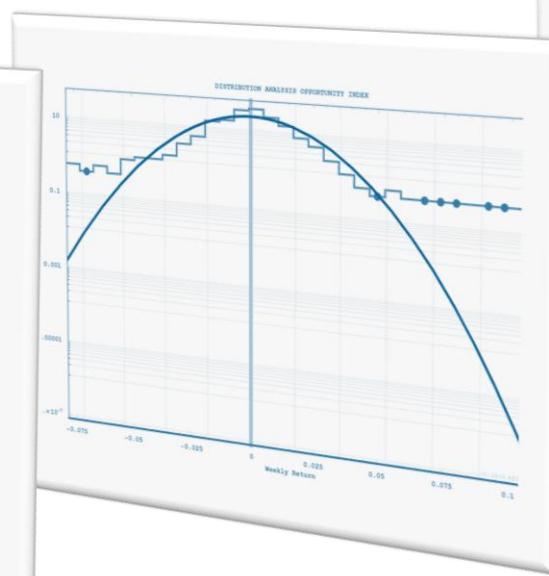
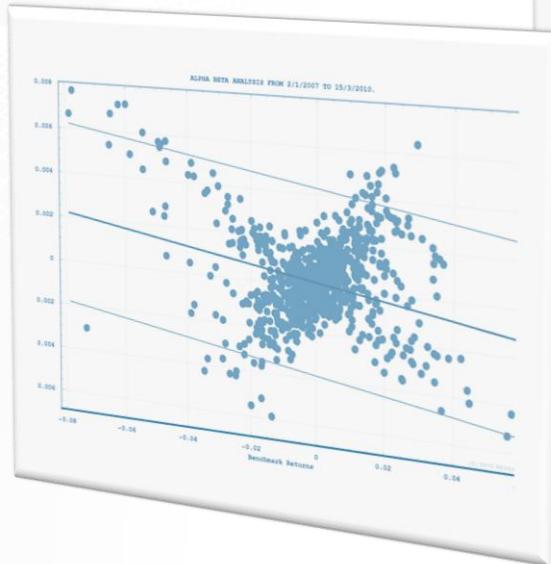
- www.redexe.net/docs/4x4model.pdf (Italian)



BEHIND THE SCENES

Redexe develops all the software in-house

- All the software is developed in-house.
- Thousands lines of code are working behind the scenes, growing day by day.
- We leverage the high level programming framework *Mathematica®*, written by Physicists for scientific computation, to get error-free results.
- In this way, our models are implemented with maximum precision.
- Outcomes are so accurate to be used in academic research, too.





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