## **QUASAR**

**QUA**ntitative Strategies for Absolute Return

#### A Diversified Portfolio of Liquid, Transparent and Scalable Quantitative Absolute Return Strategies

Quasar Capital Management
46 Rue Paul Valery 75116 Paris - France
investor@quasarfunds.com

Jerome Barraquand: +33 1 58 44 00 51

Stephane Castillo-Soler: +33 1 58 44 00 52

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- Management Team
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#### Overview

Combined 35 years of market experience including 19 years of trading experience in fixed income, global macro, statistical trading

Unique portfolio of quantitative strategies spanning statistical trading and global macro

Outstanding expertise and proven track record in quantitative strategies

Battle-tested risk management experience spanning universe of hedge fund strategies

#### **Business Model: Vision**

#### Vision:

 Provide investors with a diversified set of liquid, transparent, and scalable alternative investment styles

#### Rationale:

- Institutional investors need liquidity, transparency and style consistency to conduct meaningful strategic asset allocation
  - Quantitative approach promotes transparency and style consistency
  - Focus on major developed markets provides liquidity and scalability

# Business Model: Scope

#### Market Scope

- Focus on Sovereign Fixed Income, Foreign Exchange, and Equity and Commodity Indices
  - They are the markets were the principals have extensive trading and quantitative modelling experience
  - The liquidity and depth of underlying markets permits to scale the strategies to potentially very large AUM

#### Investment Styles

- Focus on quantitative strategies within the following styles:
  - Statistical Trading
  - Global Macro

### Business Model: Investment Products

- Orion is a Cayman fund investing in the overall portfolio of strategies
  - Started trading on December 8<sup>th</sup> 2008
- Specific strategies can be accessed through managed account structures
  - This enables investors to build customized portfolio of strategies.
  - First managed account was setup November 3<sup>rd</sup>, 2008

## Business Model: Investment Products

Orion (Cayman Fund) with standard master-feeder

Orion Fund Assets	EUR 18MM
Total Firm Assets	USD 31MM
Domicile	Cayman
Liquidity	Monthly
High Water Mark	YES
Redemption fee	NO
Management fee	2%
Incentive fee	20%
Prime Broker	Newedge
Auditor	Ernst & Young
Administrator	GlobeOp
Counsel (Cayman Law)	Maples and Calder
Counsel (French and US law)	Gide Loyrette Nouel

## Business Model: Investment Products

Liquidity platform (to be setup Q2 2009)

Liquidity	Daily
High Water Mark	YES
Redemption fee	NO
Management fee	2%
Incentive fee	20%
Prime Broker	Newedge

# Business Model: Management company

Management Company	Quasar Capital Management SAS						
Jurisdiction	French SAS (Societe par Actions Simplifiee)						
Regulator	French regulator AMF "Autorite des Marches Financiers"						
Compliance Officer	Outsourced to CAPSI-Conseil						
Auditor	Ernst & Young						
Headquarters	Paris, France						
Counsel	Gide Loyrette Nouel						

# **Business Model: Objectives**

- Investment objective for Orion fund
  - Target average annual return:
    - Fed funds + 15% (USD)
    - EONIA + 15% (EUR)
  - Target average annual volatility under 12%
  - Target net Sharpe Ratio above 130%

## Management Team

#### Stephane Castillo-Soler:

- Formerly head of absolute return strategies within structured investment division of BNP Paribas Asset Management.
- Ran personally 2 billion in assets until February 2008, with an excellent track record.
- Previously held both proprietary trading and market making positions on long term interest rates at SocGen and Paribas Capital Markets.
- 16 years of trading experience, extensive experience in quantitative models.
- Master in Finance from University of Paris-Dauphine and a DEA in Finance from Sorbonne University

#### Jerome Barraquand.

- Formerly co-founder of GlobeOp Risk Services, serving the risk management needs of the hedge fund industry globally.
- Previously head of fixed income arbitrage at Sanwa Intl.
- Formerly trader on the bond arbitrage desk at Salomon.
- Combined 19 years experience in quantitative research, risk management, and trading.
- Graduate from Ecole Polytechnique, France, Ph.D. degree in Computer Science from University of Nice-Sophia-Antipolis.

### Investment Strategies: Styles

#### Statistical Trading

- These strategies are based upon statistical time series models of the price dynamics of one or more securities
- We apply those strategies on equity and commodity indices, foreign exchange, and fixed income

#### Global Macro

- These strategies exploit relationships between fundamental macroeconomic variables and market prices
- We apply those strategies on fixed income, foreign exchange, equity and commodity indices

#### **Statistical Trading**

- These strategies are based upon statistical time series models of the price dynamics of one or more securities.
- They attempt to identify statistical opportunities of one or more securities relative to their expected value.
- The positioning decision often depends upon market variables other than the underlying index itself.
- They are low-frequency strategies
  - Typically a single trading signal per day
  - Typical turnover of a few days

- Statistical Trading: Strategy 1
- Volatility alteration model
  - Uses changes in volatility as predictors of market direction
  - Model can be used on all major asset classes
- Example on S&P 500 equity Index (**ST-IVSP**)
- Example on Crude Oil (ST-IVOIL)
  - Outright statistical strategy investing dynamically in the index or commodity futures contracts
  - Uses maximum leverage of 1
  - Simulations below displays P&L net of transaction costs both for S&P500 and Oil

Strategy	Annual volatility	Excess return	Total return	Sharpe ratio	Maximum Drawdown
QUASAR ST-IVSP Nov97-Feb09	20.4%	25.7%	30.1%	126%	27.5%



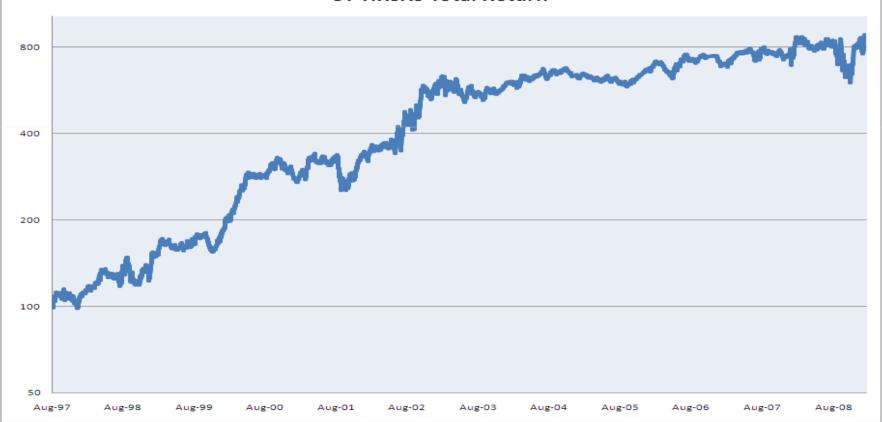
Strategy	Annual volatility	Excess return	Total return	Sharpe ratio	Maximum Drawdown
QUASAR ST-IVOIL Mar06-Feb09	45.6%	62.6%	68.7%	137%	27.9%



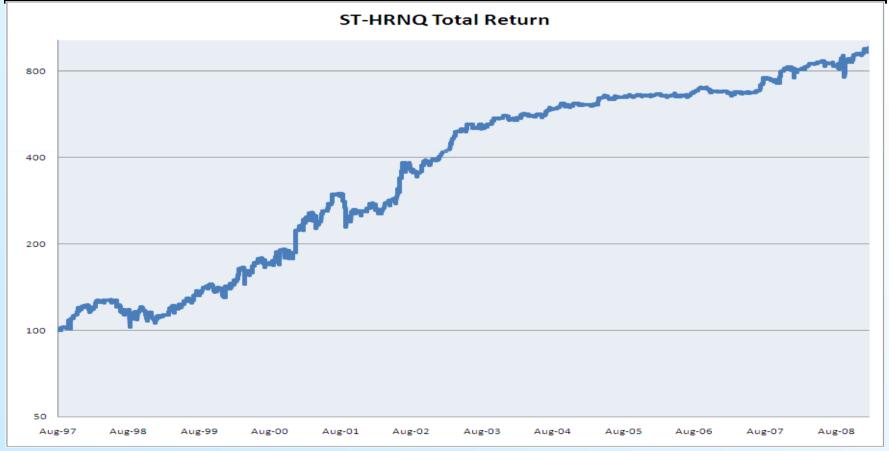
- Statistical Trading: Strategy 2
- A regime change model calibrated on the time series of the underlying market
  - Uses regime change signals as predictors of market direction
  - Model has been tested on various highly liquid equity indices successfully, in particular EuroStoxx, NASDAQ
- Examples on EuroStoxx Index (ST-HRSX5) and NASDAQ (ST-HRNQ)
  - Outright statistical strategy investing dynamically in the index futures.
  - Uses maximum leverage of 1
  - Simulation below displays P&L net of transaction costs

Strategy	Annual volatility	Excess return	Total return	Sharpe ratio	Maximum Drawdown
QUASAR ST-HRSX5 Aug97-Feb09	25.1%	16.5%	20.6%	66%	30.7%

#### ST-HRSX5 Total Return

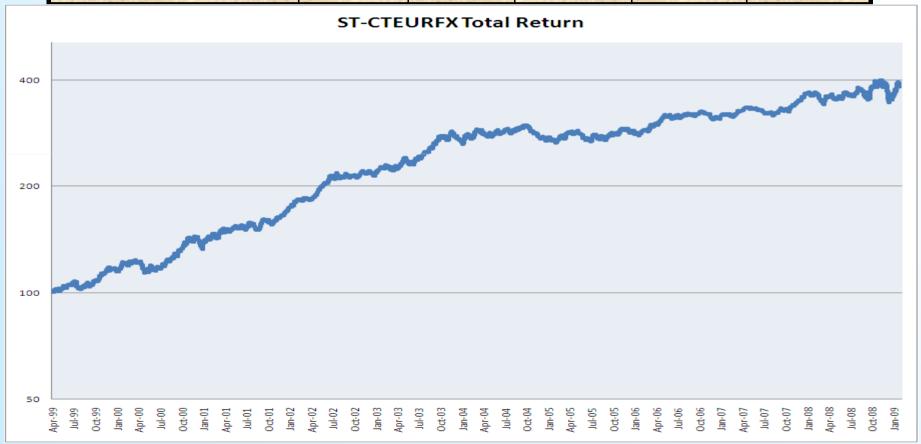


Strategy	Annual volatility	Excess return	Total return	Sharpe ratio	Maximum Drawdown
QUASAR ST-HRNQ Aug97-Feb09	19.0%	17.7%	21.9%	93%	23.8%



- Statistical Trading: Strategy 3
- Contrarian time series model
  - Uses contrarian approach
  - Model has been tested on foreign exchange and commodity markets
- Example on EUR/USD exchange rate (ST-CTEURFX)
  - Outright strategy investing dynamically in the forward market
  - Uses maximum leverage of 1

Strategy	Annual volatility	Excess return	Total return	Sharpe ratio	Maximum drawdown
QUASAR ST-CTEURFX Apr99-Feb09	10.7%	11.1%	14.7%	104%	13.9%



#### Global Macro

- Macroeconomic trading principles
  - Assess probabilities for various future paths of macroeconomic variables
  - Assess corresponding "fair value" paths of related market variables (e.g. bond yields, exchange rates)
  - Enter trades with abnormally high subjective probability of success

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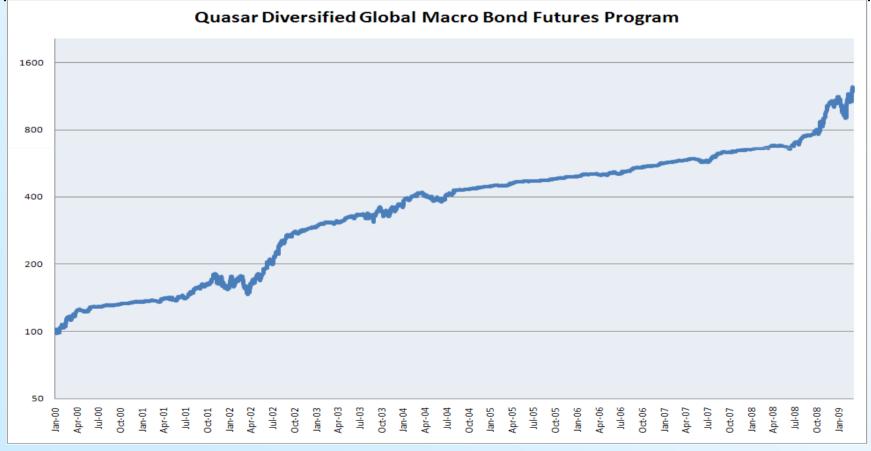
- Some types of macroeconomic trades
- Outright fixed income
- YC steepening/flattening/risk premium
- Outright long term swap spreads
- Intermarket spreads
- Break-even inflation
- Central bank timing
- Outright volatility
- Forward currency
- Outright equity and commodity indices
- Equity versus bond strategies

- Global Macro: Strategy 1
- 10Y Government bond outright strategy
  - Uses proprietary macroeconomic model to assess richness/cheapness of bond versus economic fundamentals (GDP, inflation)
  - Maximum leverage of 2.5
  - Outperforms long-only strategy using standard risk/reward measures in major markets.
- Example on US T Note future (GM-TNOTE)
  - Tested over the whole Greenspan era.
  - Average leverage over the period is 0.5.
  - Maximum leverage during financial crisis (Jul07-Mar09) is 1.6.
- Example on diversified portfolio of major bond futures markets
  - Applies the same strategy with identical leverage on a portfolio of various bond futures markets

Strategy	Annual volatility	Excess return	Total return	Sharpe ratio	Maximum drawdown
QUASAR GM-TNOTE Jan88-Mar09	4.5%	4.3%	8.9%	94%	5.4%



Strategy	Annual volatility	Excess return	Total return	Sharpe ratio	Maximum drawdown
QUASAR DIV. BONDFUTURES Jan00-Mar09	15.4%	27.1%	31%	176%	19.9%

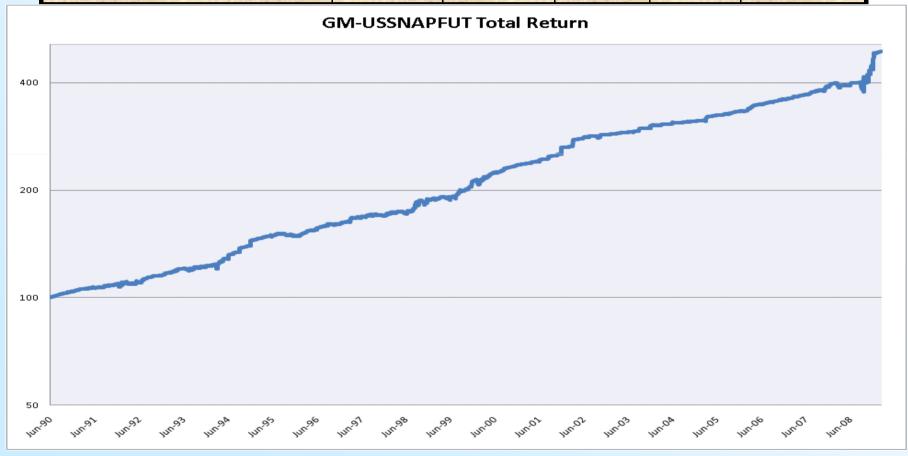


- Global Macro: Strategy 2
- 2/10/30 yield curve snap (barbell) based upon macroeconomic term structure equilibrium model
  - Main model components are:
    - Long term inflation expectation
    - Shape of interest rate cycle
    - Model of central bank behavior
  - Trade is dynamically adjusted as a function of deviation from fair value
  - Trade is always DV01 neutral and slope neutral

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- Global Macro: Strategy 2 continued:
- 2/10/30 bond curve risk premium strategy
- Example on USD bond futures market (GM-USSNAPFUT)
  - Average leverage of 0.85 and maximum leverage of 3.6 on US bond future
  - Maximum leverage during financial crisis is 2.4
- Same model can also be used, together with relevant economic data, to implement steepening/flattening trades on the yield curve

Strategy	Annual volatility	Excess return	Total return	Sharpe ratio	Maximum drawdown
QUASAR GM-USSNAPFUT Jul90-Mar09	4.7%	4.8%	8.8%	101%	6.3%



- Global Macro: Strategy 3
- Foreign exchange macro strategy
- Combines 2 sub-strategies
  - PPP-based dynamic scaling strategy (fundamental)
  - Advanced trend identification program (technical)
  - Maximum leverage of 2.5
- Example on EUR/USD exchange rate (GM-EURFX)
  - Average leverage is 0.44
  - Maximum leverage during financial crisis is 1.6

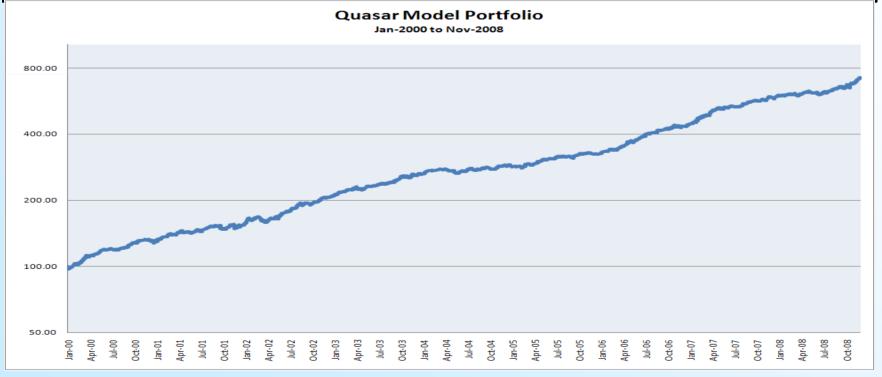
Strategy	Annual volatility	Excess return	Total return	Sharpe ratio	Maximum drawdown
QUASAR GM-EURFX Jan99-Mar09	6.9%	6.4%	9.6%	93%	8.8%



#### **Portfolio analysis**

- A backtesting portfolio of the above strategies displays outstanding performance and diversification benefits
  - From January 2000 to November 2008, the simulated total return net of fees is 24.9% with a Sharpe ratio of 2.8 and a drawdown ratio in excess of 8. The maximum intramonth peak to through drawdown is 6.2%, and the maximum monthly loss is 3.1% (in sep 01)
    - The portfolio beats the S&P500 total return by 30% per year over this period, with almost three times less volatility and a small fraction of the drawdown risk
  - The correlation analysis shows that the portfolio is essentially uncorrelated with the equity market.
  - Additionally, the various strategies show low correlation amongst themselves

Strategy	Annual volatility	Std draw down	Excess return	Total return	Sharpe ratio	Ddown ratio	Max ddown
S&P500 Long Jan00-Nov08	21.4%	23.3%	-8.1%	-5.0%	NA	NA	50.9%
Quasar Portfolio Jan00-Nov08	7.4%	4.0%	20.8%	24.9%	2.81	6.2	6.4%



#### **Correlations**

	<u>Portfolio</u>	ST-IVSP	ST-IVOIL	ST-HRSX5	ST-HRNQ	ST- CTEURFX	GM- TNOTE	GM- DIVBONDFUT	GM- USSNAPFU	GM-EURFX	S&P
Portfolio Portfolio	100%	44%	44%	22%	18%	13%	24%	42%	17%	22%	-3%
ST-IVSP	44%	100%	1%	6%	6%	-1%	-9%	-7%	-1%	0%	10%
ST-IVOIL	44%	1%	100%	0%	1%	1%	-1%	-1%	-3%	0%	-1%
ST-HRSX5	22%	6%	0%	100%	7%	0%	-8%	-7%	3%	-4%	8%
ST-HRNQ	18%	6%	1%	7%	100%	1%	1%	-1%	0%	-1%	6%
ST-CTEURFX	13%	-1%	1%	0%	1%	100%	1%	1%	2%	0%	-2%
GM-TNOTE	24%	-9%	-1%	-8%	1%	1%	100%	62%	6%	-1%	-19%
GM-DIVBONDFUT	42%	-7%	-1%	-7%	-1%	1%	62%	100%	6%	2%	-21%
GM-USSNAPFUT	17%	-1%	-3%	3%	0%	2%	6%	6%	100%	3%	6%
GM-EURFX	22%	0%	0%	-4%	-1%	0%	-1%	2%	3%	100%	-6%
S&P	-3%	10%	-1%	8%	6%	-2%	-19%	-21%	6%	-6%	100%

## Performance prior to December 2008 is simulated (in yellow) Performance thereafter is actual realized performance of the Orion fund

TOTAL RETURN	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2000	29.9%	2.97%	3.03%	5.68%	1.40%	4.77%	1.01%	-0.38%	1.99%	4.31%	3.12%	0.70%	-1.88%
2001	21.1%	4.69%	2.27%	2.03%	0.86%	0.37%	0.37%	4.12%	2.29%	-3.08%	3.92%	-1.10%	2.84%
2002	33.4%	3.96%	1.09%	-3.00%	3.82%	4.72%	2.29%	5.63%	3.02%	-0.57%	3.60%	2.66%	2.25%
2003	26.0%	3.91%	2.30%	3.13%	-1.60%	1.83%	2.44%	0.58%	1.70%	6.42%	-1.43%	1.91%	2.42%
2004	7.9%	3.49%	0.12%	1.51%	-2.05%	-0.78%	2.27%	-1.12%	2.69%	-1.62%	2.16%	2.58%	-1.38%
2005	14.5%	0.24%	1.99%	0.79%	3.09%	1.78%	2.30%	0.47%	-1.79%	3.13%	1.65%	-0.61%	0.66%
2006	36.1%	3.56%	0.54%	3.75%	5.26%	1.84%	5.62%	2.07%	2.28%	2.46%	1.05%	0.78%	2.13%
2007	34.8%	5.81%	3.65%	4.64%	3.19%	0.50%	0.47%	1.53%	3.35%	1.59%	0.50%	3.15%	2.03%
2008	21.7%	1.29%	0.38%	-0.42%	2.96%	-1.48%	0.58%	1.85%	2.87%	1.91%	2.12%	7.88%	0.12%
2009	1.6%	0.94%	0.68%						•				•

Worst month is -3.08% in Sep 2001 Portfolio is up during 84% of the months

#### **Investment Process:**

#### Trade idea generation

#### 1. Existing portfolio of quantitative strategies

Those strategies are continuously monitored using quantitative alerts

#### 2. Permanent research effort

Research Committee meets biweekly to

- Monitor progress of current research activity
- Allocate research tasks
- Brainstorm on new market opportunities
- Reassess validity of existing strategies in light of new market developments

Research on current and/or new strategies is the focus of 50% of the time of portfolio managers

# Investment Process: Asset Allocation Methodology

#### 1) Quantitative strategy allocation:

Each trading strategy represented as random process, using portfolio manager's estimate of risk, return, and correlation

## 2) Compliance to VaR and scenario limits

Amend allocation if concentration, liquidity, or other limits exceeded

#### 3) Qualitative adjustment

Take into account manager's experience of risks not properly modeled in phases 1 and 2

# Investment Process: Asset allocation methodology

- For each trading strategy, Investment Committee uses combination of historical simulation, market consensus data, qualitative judgment, and manager input to assess:
  - Expected return
  - Volatility
  - Probability of extreme drawdown events
  - Level of extreme drawdown events
- And estimate jointly for all strategies
  - Correlation of returns
  - Correlation of drawdown events

# Investment Process: Asset allocation methodology

- Conduct portfolio optimization
  - Maximize expected return
  - Subject to various risk constraints:
    - portfolio drawdown
    - portfolio volatility
    - Other risk management parameters
  - Verify compliance of resulting portfolio to risk concentration limits not taken into account in the constrained optimization
  - Subject resulting portfolio to scenario analysis and qualitative sanity check
- Investment committee defines asset allocation
  - Using a combination of best judgment and portfolio optimization results

# Investment Process: Capital Allocation, Dynamic Scaling, Stop Loss

- Predefined amount of notional capital allocated to each trading strategy
  - Amount defined by Investment Committee
- Dynamic trading schedule predefined as function of future market states
  - Scaling is generally a function of remaining capital allocated to strategy
- Stop loss strategy integral part of dynamic scaling
  - Stop loss predefined by manager on case by case basis in view of capital preservation
  - Typical stop-loss on single trade is under 3% of NAV

## Key Differentiators: Market-Tested Strategies

- Main quantitative models incorporate many years of research and trading practice
- Principals have combined 35 years experience in
  - Proprietary trading and absolute return investment management (19 years)
  - Quantitative investment research
  - Hedge fund risk management and manager style analysis

## Key Differentiators: Replicable Strategies

- Investment styles rigorously defined and therefore replicable
- Investment decisions and risk control based upon quantitative models
- Hence investor has true transparency on past, present, and future nature of investment product
- Testable statistical behavior of P&L

## Key Differentiators: Truly Uncorrelated

- QUASAR investment strategies fundamentally differ from many hedge fund strategies, which often exhibit systematic market correlation:
  - No systematic equity exposure, unlike equity long/short funds
  - No systematic emerging market or credit market exposure, unlike many emerging market funds and credit funds.
  - No systematic exposure to standard currency carry trades, unlike many global macro funds
- QUASAR strategies provide true diversification against systemic risks which affect many hedge fund strategies
  - Performance of strategies during the financial crisis illustrates the point

# Key Differentiators: Passion for Innovation

- Principals are constantly searching for new or improved quantitative models to meet the investment objectives
  - Principals have extensive experience both in academic and applied investment research.
  - Principals have an outstanding and diverse experience in managing a quantitative research process to drive innovation

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- Value-at-Risk/ Expected Shortfall
  - Portfolio-level monitor
  - Trade-level monitor
  - Risk Factor-level monitor
- Stop loss policy
  - Trade level stop loss
  - Portfolio level stop loss

- Scenario risk measures
  - Standard scenarios
  - Historical scenarios
  - Ad-hoc stress-test scenarios
- Leverage measures
  - Accounting leverage
  - Risk-based leverage
- Liquidity measures
  - Asset liquidity
  - Funding liquidity
- Counterparty risk measures

- Portfolio-level VaR/Expected Shortfall monitor (total risk)
  - Target maximum daily 95% VaR below 3.1% of NAV
  - Average daily VaR expected around 1.25%
  - Equivalently, target daily 95% ES below 4%
  - Average daily ES expected around 1.5%
    - Attempt to rapidly bring ES below 4% after unexpected increase, as liquidity permits
- Trade-level ES monitor (trade concentration risk)
  - Target <u>marginal</u> ES of any trade <1% of NAV</li>
- Risk Factor-level ES monitor (market concentration risk)
  - Target <u>marginal</u> ES on any Libor Curve, Credit Curve, Volatility Curve, Equity, Index, Commodity, or Currency below 1% of NAV

#### Trade-level stop loss

- Stop loss predefined by manager on case by case basis in view of capital preservation, as a percentage of allocated capital
- For systematic strategies, stop loss is an integral part of the predefined dynamic trade scaling strategy
- Investment committee then defines the dollar value of the stop loss by setting the capital allocation to the trade
- Typical stop-loss on single trade is under 3% of NAV

- Standard scenarios:
   Sensitivities to risk factors
  - Equity long/short exposures and greeks
  - DV01 and other yield curve greeks
  - Credit DV01 and other credit greeks
  - FX exposure/greeks
  - Volatility exposure
  - Commodity exposure/greeks

- Historical scenarios
  - Assess the impact of past extreme market events on current portfolio
- Ad-hoc stress-test scenarios:
  - Market-specific or trade-specific forward-looking scenarios
  - Assess the impact of potential unusual or catastrophic events
  - Complements historical scenarios by testing combinations of market moves not present in historical data

- Leverage measures
- Accounting leverage: balance sheet/NAV
  - Accounting leverage depends upon maturity of instruments, nature of trades
- Risk-based leverage: leverage of an "equivalent" portfolio either in S&P500 or T-bond
  - Assume 20% vol for S&P500 index
  - Assume 12% vol for T-bond
  - Leverage of 1 versus S&P500 corresponds to 2.1% daily VaR
  - Leverage of 1 versus 30Y T-bond corresponds to 1.25% daily VaR

#### Asset liquidity risk:

- Liquidity function of
  - Market development (bid-ask)
  - Current market volatility
  - Trade size versus trading volume
  - Position size versus open interest

#### Funding Liquidity Risk:

- Ensure that fund market risk remains commensurate with ability to sustain heavy losses without forced liquidation
- Monitoring of market risk versus:
  - Current cash balance
  - Current funding transactions and their horizons
  - Funding agreements (margins, haircuts, thresholds)
  - Guaranteed borrowing capacity

#### Funding Liquidity Risk:

Current funding risk is linked to ratio:

 Risk Capital = Cash+Borrow Capacity-Liquidity Reserve

#### Funding Liquidity Risk:

- <u>Potential</u> funding risk best measured by adhoc funding crisis scenarios:
  - Scenarios must include shocks in
    - Margins
    - Haircut levels
    - Thresholds
  - Scenario details should attempt to represent extent of funding agreements guarantees

#### Counterparty credit risk:

 Counterparties creditworthiness is monitored in real time using 5Y CDS spread

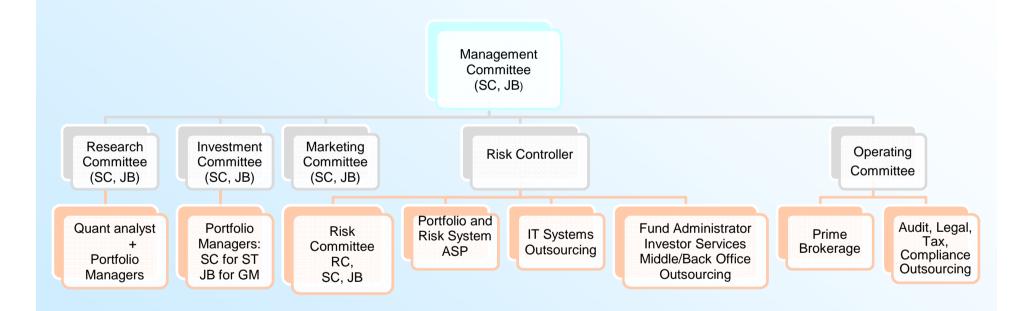
#### Counterparty credit risk:

- Concentration of credit exposure must be mitigated through extensive netting/collateral agreements
  - Monitor for each counterparty the <u>Current</u>
     <u>Exposure</u>, I.e. replacement cost of transactions in case of default
    - If bilateral netting/collateral agreement exists, maximum loss is simply threshold + liquidity reserve +volatility cushion
    - If no bilateral agreement exists, maximum loss is total NPV + liquidity reserve + volatility cushion
  - Monitor <u>Potential Exposure</u> on an ad-hoc basis, for downgraded credits with high or no threshold.

# Operations Technology

- Middle and back office operations outsourced to GlobeOp Financial Services.
- Trade entry, portfolio management, and risk management system outsourced to Imagine Software.
- Proprietary technology is used for strategy identification and dynamic monitoring (C#/Excel/Bloomberg)

# Operations Organization Chart



Management Committee Defines business str

Defines business strategy of management company.

Meets as required and at least monthly

Research Committee

Steers quantitative research effort. Meets biweekly.

**Investment Committee** 

Defines asset allocation. Meets as often as required and

at least weekly

Risk Controller

Conducts daily independent check of compliance to risk management limits and regulatory requirements, oversees

risk management committee.

Controls outsourcing service providers focused on middle office and risk: Administrator, Middle and Back office, Risk

System ASP, IT Support Services

**Marketing Committee** 

Defines and steers management company public profile

and capital raising effort

**Operating Committee** 

Controls all other outsourcing service providers: Prime broker, Auditor, Legal Counsel, Compliance Service

**Quantitative Analyst** 

Build and maintain the quantitative trading analytics used for trading and asset allocation. The junior quantitative analyst maintains the workflow of the trading systems, maintains the time series database, monitors the scheduled processes for any errors or unusual behavior. The portfolio managers maintain the quantitative models.

Portfolio Managers

Conduct the management of their respective portfolios. SC manages the SA investment style, JB manages the GM investment style. They are assisted for systematic trade execution by the junior quant analyst. Additional portfolio managers will be hired in a second stage.

Risk Management Committee

Comprising the operations manager and the 2 founding partners, the risk management committee oversees the definition and maintenance of the risk management procedures and guidelines. The operations manager conducts a daily independent verification of compliance to risk management constraints

IT Systems
Outsourcing

Fund Administrator/ Investor Services

Middle and Back Office Outsourcing

Responsible for IT systems maintenance and all voice and electronic communications with counterparties, prime brokers, service providers. Reports to the Risk Controller.

Responsible for the calculation and publication of NAV, the maintenance of the register of fund shareholders, subscriptions and redemptions, and associated investor services such as AML and shareholder communications. Service provider reports to the Risk Controller.

Responsible for the production of an independent daily P&L, a daily transaction reconciliation with the Prime Broker and the OTC counterparties, a daily position reconciliation, a daily cash account reconciliation. Also responsible for operations functions such as verification of PB cash transaction settlement, cash payments/wires, break resolution with PB or counterparties, collateral management, confirmations, trade life cycle maintenance including OTC resets, terminations, corporate actions, etc.... Service provider reports to the Risk Controller

Prime Broker and Custodian

Provides access to exchanges, funding on transactions, and credit limits taking into account cross product margin calculations. Also can provide give-up agreements to access multiple OTC counterparties with a single agreement. Service provider reports to the Operating Committee

Portfolio and risk ASP

Provides trade entry system, flash P&L calculation engine for reconciliation with administrator/MBO, risk system for input to portfolios managers, risk controller, risk management committee, and investment committee

**Audit firm** 

Provides independent annual audit of the fund records, using the data provided by the management company and the administrator. Service provider reports to the Operating Committee

Legal, Tax, and Compliance Outsourcing

The legal counsel and/or compliance service advises on management company and fund setup, tax issues, contract negotiations with service providers and counterparties, regulatory registration and ongoing compliance matters. Service providers reports to the Operating Committee

## Biographies

#### Stephane Castillo-Soler

stephane.castillo-soler@quasarfunds.com, +33 6 27 57 06 23

- Stephane Castillo-Soler has sixteen years trading experience. Prior to co-founding Quasar, he was running the alternative investment strategies within the structured product division of the asset management arm of BNP Paribas (BNP PAM).
- In 2004 and 2005, he successfully ran a proprietary book in fixed income relative value trading, using his statistical models for BNP Paribas Investment Bank.
- From 1993 to 2004, Mr Castillo-Soler held successive trading positions with Société Générale and Paribas Capital Markets and most recently was Head of zero-coupon and relative-value trading for five years.
- Mr. Castillo-Soler uses an original trading style using statistical models developed over the course of his trading career.
- Mr. Castillo-Soler holds a Master in Finance from the University of Paris-Dauphine and a DEA in Finance from Sorbonne University.

## **Biographies**

#### Jerome Barraquand

jerome.barraquand@guasarfunds.com, +33 6 29 18 44 44

- Jerome Barraquand has nineteen years experience in quantitative research, hedge fund risk management and proprietary trading. Prior to cofounding Quasar, he served from 2000 to 2008 as Managing Director and co-founder of the risk services subsidiary of hedge fund service provider GlobeOp. GlobeOp's risk service clients included some of the world's largest institutional hedge fund investors, managed account platforms, and hedge fund managers.
- Prior to joining GlobeOp, he was a senior vice president and head of fixed income arbitrage trading at Sanwa International Plc, where he set up a proprietary fixed income trading operation and then managed a diversified portfolio of both relative value and macro strategies.
- From 1994 to 1999, he was with Salomon Brothers in London, as head of fixed income derivative research and subsequently as a trader in the fixed income arbitrage group.
- Mr. Barraquand started his career in academic research, at INRIA (France), Stanford University (USA), and most recently at Digital Equipment Corporation (France), where he founded the Computational Finance Group.
- He is a graduate from Ecole Polytechnique, France, and holds a Ph.D. degree in computer Science from University of Nice-Sophia-Antipolis.