Quant Research
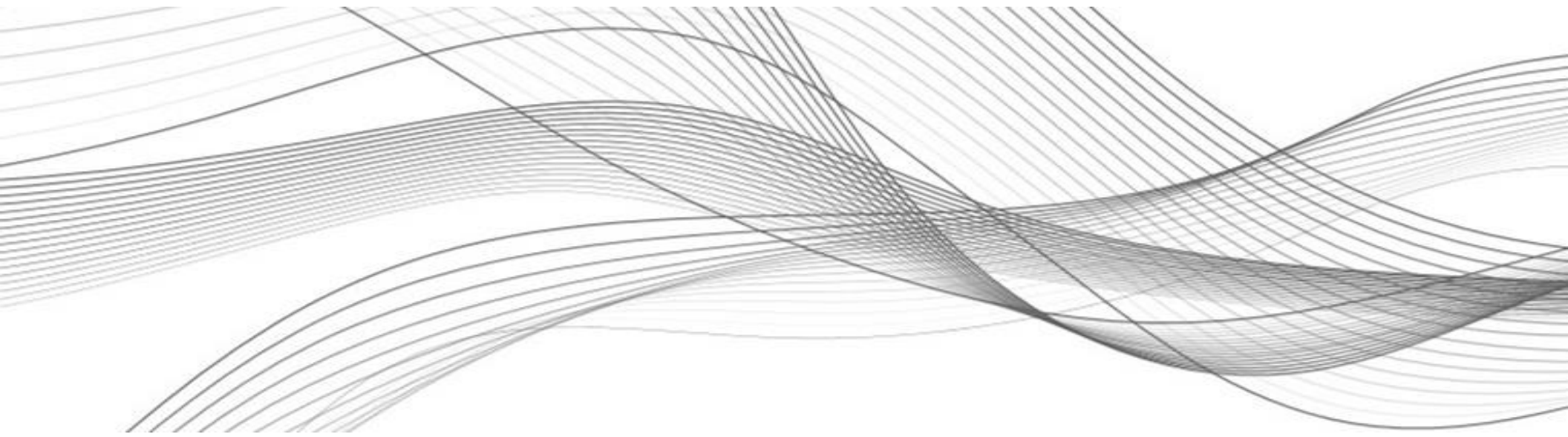
Research, Data and Analytics from the UBS Quantitative Research team

Paul Winter
Head of Global Quant Research
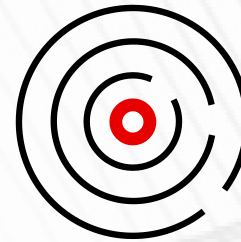
qa@ubs.com

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How can UBS Quant help you?

Manager ABC is a fundamental shop with minimal quant inputs. By using the **UBS Hybrid Risk Model** through **UBS Quant Answers** it was able to identify and mitigate unwanted macro factor exposures. It increased its Sharpe ratio and fund profitability.

Manager XYZ is a large quant shop which read one of our research reports and was able to identify a **unique and proprietary UBS data set** to incorporate into its process. This provided orthogonal inputs to its existing factors and it was able to partner with UBS as one of only a handful of clients using that data.

Manager DEF is a 'quantamental' shop that sees the benefit of both. It was able to **partner** with the UBS Quant team to develop an alpha model incorporating **UBS's carbon stock screens**.

The Quant Team

Global Analysts

Paul Winter
Tel: +61 2 9324 2080
Paul.Winter@ubs.com

Oliver Antrobus
Tel: +61 3 9242 6467
Oliver.Antrobus@ubs.com

Luke Brown
Tel: +61 2 9324 3620
Luke.Brown@ubs.com

Americas Analysts

Michael Gray
Tel: +1 212 713 1313
Michael-F.Gray@ubs.com

Jaiwish Nolan
Tel: +1 212 713 1489
Jaiwish.Nolan@ubs.com

Nicolo Menez
Tel: +1 212 713 3183
Nicolo.Menez@ubs.com

Tongda Che
Tel: +1 212 713 3919
Tongda.Che@ubs.com

Australia Analysts

James Cameron
Tel: +61 2 9324 2074
James-A.Cameron@ubs.com

Ashley Shi
Tel: +61 2 9324 3862
Ashley.Shi@ubs.com

Mat Cranwell
Tel: +61 2 9324 3779
Mat.Cranwell@ubs.com

Hugh Dawson
Tel: +61 2 9324 2093
Hugh.Dawson@ubs.com

Europe Analysts

Claire Jones
Tel: +44 20756 81873
Claire-C.Jones@ubs.com

Ariel Goyeneche
Tel: +49 691 3691275
Ariel.Goyeneche@ubs.com

Christine Vargas
Tel: +44 20756 82409
Christine.Vargas@ubs.com

Daniel Perry
Tel: +44 20756 82416
Daniel.Perry@ubs.com

Amanda Belcaid
Tel: +44 20756 83072
Amanda.Belcaid@ubs.com

Anita Mansbridge
Tel: +44 20756 81872
Anita.Mansbridge@ubs.com

Asia Analysts

Will Stephens
Tel: +852 371 23892
Will.Stephens@ubs.com

Cathy Fang
Tel: +86 213 866 8891
Cathy.Fang@ubs.com

Aaron Guo
Tel: +852 2971 7705
Aaron.Guo@ubs.com
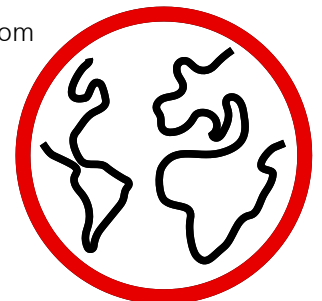
Lynce Wang
Tel: +86 213 866 8638
Lynce.Wang@ubs.com

Jia Li Mok
Tel: +65 649 55772
Jia-Li.Mok@ubs.com

Jessica Su
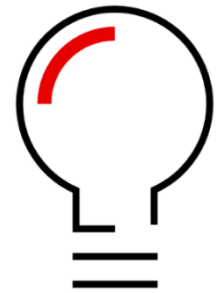Tel: +852 3712 2059
Jessica-Hong.Su@ubs.com

UBS Quant Answers Team: qa@ubs.com

Data Sales: ol-data-service@ubs.com

Data Technical Support: ol-res-quants-tech@ubs.com

Research

Flagship Research

Innovative and Unique Insight over the years

[A Definitive Approach to Crowding](#)

We define a comprehensive UBS crowding factor based on a combination of multiple external and internal data sets. A complementary blend of prime brokerage data, stock loan data, 13F regulatory filings, and proprietary data provides a good overall lens for positioning information.

[Clustering: A Practical Guide](#)

We introduce a clustering framework, agnostic to inputs and problem space, with a high level of process visibility and a focus on decoupling the process to allow any of the component parts to be interchanged. It can be used to address a range of different clustering scenarios.

[Collaborative Intelligence: How to combine human and machine insights to generate alpha?](#)

Machines have an advantage in processing large volumes of historical information and subsequently pricing stocks. Humans have an advantage in understanding how changes in the world will affect the future of a company's earnings and hence the present value of the business. We ask our analysts to contribute their short horizon views.

Quant Insight: Sector Focus

[Banks](#), [Real Estate](#), [Software](#), [Hardware](#)

Working with our fundamental analyst sector teams, we layer a quant approach over their insights. Each of our sector models is developed in collaboration with the relevant team, and the resulting model is individual to their sector or coverage.

[Does your risk model forecast your risk?](#)

UBS Hybrid Risk Models: A good risk model is an important tool for all portfolio managers. Most risk models use either a time series or cross-sectional approach. We argue for a hybrid approach to risk modelling.

[Is there information in the value spread?](#)

Many investors keep track of the value spread on the assumption that it will help them to time their exposure to value. We tested this empirically. The results were disappointing – the simple buy & hold value strategy typically outperformed the timed value strategy.

Latest Research

Innovation and Thought Leadership

|			
Humans vs Machines: Which are better at forecasting earnings growth?	Our new proprietary earnings growth model takes a machine learning approach. Inputs include macroeconomic, sector and quantitative factors to produce forecasts of future earnings (and earnings growth). Back-testing the model suggests that, in the past, it has generally predicted earnings growth more accurately than consensus.	**Overnight Returns**	The overnight returns to a stock are typically larger than the trading session returns. We examine three plausible explanations: market makers avoiding inventory risk, retail investors overpaying for stocks, and the greater risk associated with news released overnight.
Insight into your portfolio: Risk and Performance	We follow the performance attribution framework proposed by Grinold (2011). At its core, the approach suggests that holding any portfolio equates to holding a series of explanatory systematic (factor) portfolios and an idiosyncratic (residual) portfolio. It is then straightforward to identify the sources of return and risk.	**Clustering in China**	Our clustering engine incorporates feature selection, uses an optimised lower layer supplemented by an evolutionary process, and facilitates analyst supervision. Our methodology embraces a 12-month evolution window in contrast to the longer horizon clusters in the US market to account for different dynamics.
Equity Alpha Using Bond Maturities and a Macro Regime Model	Embedding debt maturities into a macro regime model is a topical subject given rates over the last couple of years. We construct an equity factor that encompasses risk of debt that is expiring soon. It is used to build cohorts of stocks that outperform during different interest rate regimes.	**Analyst Upside Rankings**	We systematically capture what each UBS analyst's 'best ideas' may be at any point in time. We use a simple approach that can be used to quickly determine potential high conviction ideas and also offers an interesting way to augment consensus.

UBS
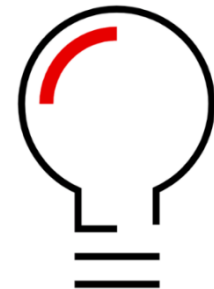
Recurrent Publications

A Look Back with an Eye Ahead

Crowding Monitor Model

Our crowding monitor allows you to view crowding and changes in crowding across regions, sectors and styles. Our crowding factor allows us to track crowding on both the long and the short side, which makes it a useful tool in risk management and alpha implementation.

Sector Rotation Model

Our sector rotation model on United States, Asia ex Japan and Southeast Asia universes. Which sectors does our Quant model prefer?

Style Guides: Global, US, China, Asia, Europe

Our Style Guide covers an extensive range of metrics globally and regionally. It includes the Macro market driver, Style, Factor, Sector and Regional performance, Volatility, Sharpe ratio and hit rate, Valuations statistics, Market Stats and Crowding.

Quant Navigator: Quant Models for Fundamental Investors: Opportunities & Risks

Quantitative tools enable us to analyze large volumes of historical information: test observed historical relationships, build forecasting models, identify sources of risk and rank stocks on favored characteristics. By combining human insights with machine analytics, we're able to address the various sources of return variation.

Opportunities for Active Managers "How are the 'smartest' managers positioned?"

Based on hierarchical clustering and 'peer alpha', we have developed a novel technique to identify the best of the best among asset managers. We model their positioning on macro factors and sectors using a time series approach.

**Factor Performance and Valuations**

In this weekly publication we show how factors have been performing at a regional level and globally. We provide an up-to-date snapshot of how factors have been performing on a short-term horizon based off our daily factor returns database and to track what styles are and are not working.

High Quality Dividends

We use our quantitative models to find stocks that appear high quality compared to their peers, and which pay a dividend and are unlikely to cut it. We choose names to be representative of different regions and sectors. Finally, we ask our UBS sector analysts to further scrutinise each name.

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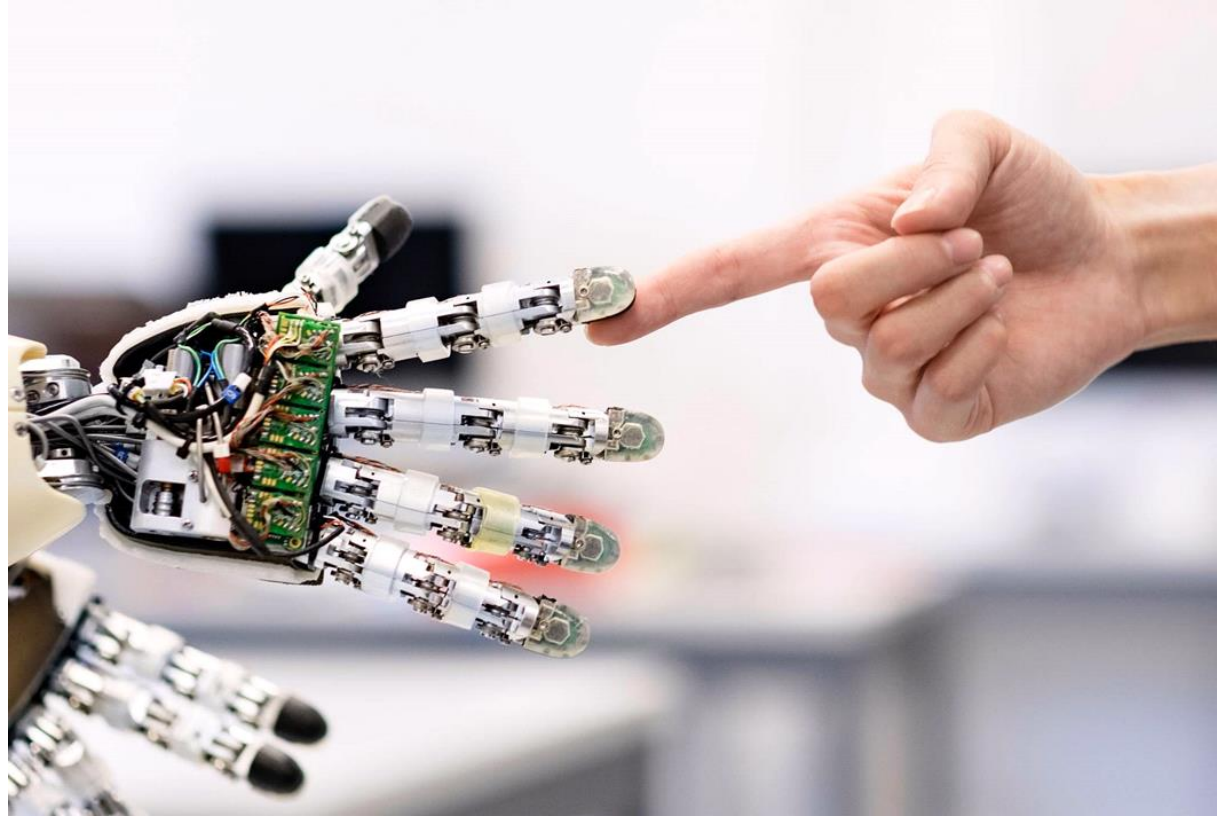
UBS Quant Answers

UBS Quant Answers

UBS Quant Answers is a powerful and broad platform which helps investors interpret and manage their exposures and risks across a wide range of market factors and influences.

QA allows our clients, from quant to fundamental investors, to tap directly into the innovation that is being developed by the Quant team at UBS.

UBS Quant Answers delivers portfolio risk forecasting with the well-known UBS Hybrid Risk Model, portfolio style and fundamental analysis, our successful Style Guide product and several other data and analysis modules, giving a customized offering to our clients.

Delivery

API: OpenAPI standard with token-based authentication.

Excel add-in: Also available for ease of use.

Quant Answers Portfolio Analytics

Full Analysis of Your Equity Portfolio: Risk, Style, Fundamentals and More

Hybrid Risk Model

Portfolio risk analysis with an innovative risk model structure.

Create your own bespoke risk model or use our pre-calculated models.

Clear and concise reporting, no black boxes.

Hybrid model uses a combination of time series regression factors and cross-sectional or 'fundamental' style factors.

Style Analysis

Style Group portfolio exposures. View your portfolio and benchmark positioning.

Composite Carbon Score

Our proprietary carbon emissions score at stock and at portfolio level.

Analyst Ratings

UBS analyst ratings for the stocks in your portfolio, and a view of the proportion of your portfolio held in Buys and Sells.

Liquidity

Uses measures of market turnover for each stock over various time horizons. View the time taken to liquidate your portfolio and the amount remaining over different time horizons.

Aggregate Statistics

Fundamental analysis of the portfolio and benchmark, using analyst forecasts. Essential ratios such as P/E, P/B, Dividend Yield, Earnings Growth and ROE, among others, are included.
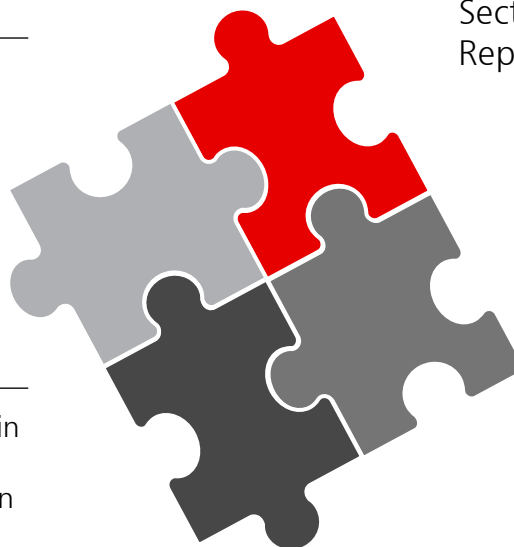
Country and Sector Reporting

Country weights and sector reporting, using GICS sector definitions.

Ownership

Get a view of the stock ownership figures for your portfolio.

Comprehensive Crowding

Quintile positioning in our powerful proprietary crowding score.

Constant Development and Innovation

Portfolio Analytics grows as our quant research team creates new and interesting data sets for our clients.

UBS

Quant Datasets and Models (1)

UBS Quant Data with Unique Proprietary Alpha Sources

Comprehensive Crowding

Our composite crowding factor is based on a combination of multiple external and internal data sets. It is a complementary blend of prime brokerage data, stock loan data, 13F regulatory filings and proprietary data.

Analyst Data: Point in Time and 20 minute feed

A wide range of valuation and accounting data points per stock direct from UBS analysts across the full global universe of coverage of about 2,900 firms. Available back to 2000 or delivered live.

China A Company Visits

We aggregate the number of company visits, as well as the number of visitors by different investor types. This allows users to quantify the institutional investor attention, towards their China A-share portfolios.

China A News Sentiment

The News Sentiment factor integrates the level of domestic investor attention and the direction of sentiment. Users can use this dataset to quantify the domestic sentiment from mass media and retail investors in China across their portfolios.

Ownership

Based on institutional holdings from the FactSet Ownership database, UBS adds proprietary calculation logic to estimate mutual fund and hedge fund investors' current holdings. Users can measure their portfolios against these investors' aggregate active positioning. Institutional holdings of onshore and offshore investors in China are also used.

Intangibles

We have created an enhanced definition of book to price that capitalizes internally developed intangibles: Research & Development Expense and Selling, General and Administrative Expenses.

Composite Carbon

For each stock, we compute the percentile rank of the stock versus its region and sector by three metrics: carbon emissions to sales, to market cap and to earnings. We take the average to get an overall composite carbon score.

Quant Tear Sheets

UBS Quant Answers web page

Quant Datasets and Models (2)

UBS Quant Data with Unique Proprietary Alpha Sources

Sector Fundamental Models	Working with our fundamental analyst sector teams, we layer a quant approach over their insights. Each of our sector models is developed in collaboration with the relevant team, and the resulting model is individual to their sector or coverage.	**Styles**	Styles are at the core of any quantitative process. We have sets of global and regional style indices and we publish regular (monthly and weekly) updates on their performance. These style indices are also part of the Portfolio Analytics module in UBS Quant Answers.
Macro Strategy Regimes	The Equity Strategy team analyses business cycles through the lens of 'regimes' - downturns, recoveries, expansions and slowdowns. We take business cycle analysis several steps further by acknowledging the uncertainty inherent in leading index signals.	**KMV Merton Default Risk**	Our implementation of the Merton distance-to-default model guides as to the relative likelihood of default of companies. The model estimates the proximity of a corporate default event, given the company's level of gearing and equity volatility.
Machine Learning Earnings Growth	Consensus forecasts tend to absorb information slowly, especially further from announcement date. Machine learning models are more likely to generate negative earnings growth forecasts and also adapt to new information more quickly than consensus.	**Market Statistics**	Three broad types of market statistics are available for clients: cross-sectional dispersion of returns, pairwise correlation of returns, and average index volatility.
Factors	Daily factor scores from UBS Quant's extensive generic factor and style factor library. Factors can be used for back-testing, screens or constructing quantitative portfolios.	**MacroSense**	This tool estimates the sector, country and style impact of the macroeconomic scenario given as input by the user. It is built using the UBS Hybrid Risk Model.

Quant Tear Sheets

UBS Quant Answers web page

Bespoke Work

Bespoke Work

Combine Proprietary Data and Innovation

Bespoke studies

This can be anything from back-tests of what works in a specific sector, to how best to construct a portfolio with desirable exposures, to identifying which macro factors drive sector returns.

Collaboration and cooperation

We collaborate with our clients to provide solutions to their unique questions. Our work gives them an independent and unbiased analysis (whether it is running a backtest, constructing portfolios or delving into specific sectors).

Custom alpha models

Our clients are able to tap into the broad knowledge base not only within the quant team but more broadly within UBS.

We turn around requests in a timely manner given our robust infrastructure.

Custom data files

We leverage both commercial and proprietary datasets covering global securities with historical data going back to the 1980s. Files can be customised to our clients' requirements.

Contact information

Paul Winter
Head of Global Quant Research
Paul.Winter@ubs.com

Christine Vargas
Quant Analyst
Christine.Vargas@ubs.com

UBS Quant Answers support: qa@ubs.com

UBS AG London Branch
5 Broadgate
London, EC2M 2QS

+44-20 7567 8000

www.ubs.com

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