# Aurum

# Quant strategy analytics pack

12 months to December 2022

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# MASTER STRATEGY vs INDICES NET RETURN

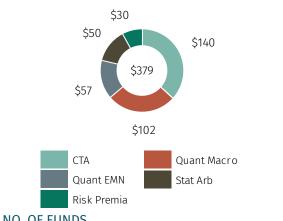


\*HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index. \*\*\*Equities = S&P Global BMI.

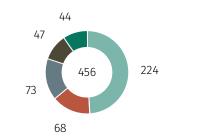
All figures and charts use asset weighted net returns unless otherwise stated. All Hedge Fund data is sourced from Aurum Hedge Fund Data Engine.

For definitions on how the Strategies and Sub-Strategies are defined please refer to https://www.aurum.com/hedge-fund-strategy-definitions/, and for information on index methodology, weighting and composition please refer to https://www.aurum.com/aurum-strategy-engine/

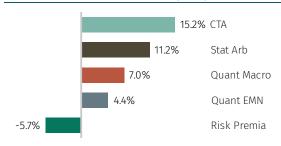
# AUM (\$BN)



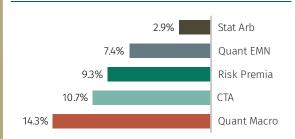
# NO. OF FUNDS



# SUB-STRATEGY NET RETURN (1 YR)



# STANDARD DEVIATION (1 YR)



# AUM CHANGE \$BN (1 YR)



# NET RETURN OF MASTER AND SUB STRATEGIES (1 YR)

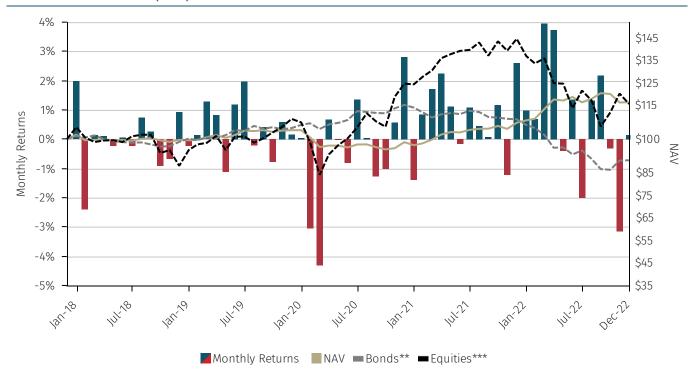
	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	1 YR
Quant	0.98%	0.69%	3.96%	3.73%	-0.40%	1.35%	-2.01%	1.31%	2.17%	-0.32%	-3.15%	0.15%	8.52%
СТА	0.89%	2.24%	6.64%	4.57%	-0.23%	1.33%	-2.84%	2.65%	3.79%	0.32%	-4.64%	0.03%	15.19%
Stat Arb	1.38%	0.29%	2.22%	1.84%	-0.20%	1.32%	1.08%	1.29%	0.56%	-0.55%	0.21%	1.22%	11.15%
Quant Macro	2.75%	0.45%	4.02%	6.21%	-0.63%	3.39%	-3.94%	3.32%	4.46%	-4.08%	-7.46%	-0.71%	7.03%
Quant EMN	-1.24%	-0.94%	2.48%	1.86%	-1.30%	1.32%	-1.57%	-3.04%	-1.09%	3.51%	2.63%	1.91%	4.37%
Risk Premia	-0.41%	-0.14%	0.03%	-1.06%	1.03%	-4.85%	2.53%	-2.68%	-4.14%	4.08%	2.19%	-2.08%	- <mark>5.</mark> 73%
HF Composite*	-1.64%	-0.46%	0.86%	-0.71%	-1.01%	-1.77%	1.24%	0.42%	-1.49%	0.74%	0.94%	0.51%	-2. <mark>42%</mark>
Bonds**	-2.28%	-1.30%	-2.90%	-5.61%	0.22%	-3.28%	1.88%	-3.91%	-5.00%	-0.34%	4.73%	0.16%	-16.69%
Equities***	-5.32%	-2.39%	1.70%	-8.10%	-0.20%	-8.74%	6.89%	-3.63%	-9.86%	5.93%	7.48%	-3.87%	-20.04%

# NET RETURN OF MASTER AND SUB STRATEGIES (5 YR)

Annual Perf	2022	2021	2020	2019	2018	5Yr CAR	5Yr Vol	5Yr Sharpe
Quant	8.52%	8.73%	-5.09%	4.26%	-0.27%	3.09%	5.27%	0.31
СТА	15.19%	8.29%	0.63%	8.59%	-5.62%	5.17%	8.25%	0.46
Stat Arb	11.15%	9.21%	10.15%	3.64%	1.19%	7.00%	3.69%	1.43
Quant Macro	7.03%	5.26%	-4.73%	0.57%	7.59%	3.04%	8.12%	0.22
Quant EMN	4.37%	12.85%	-17.27%	4.23%	2.80%	0.87%	7.84%	-0.05
Risk Premia	-5.73%	13.31%	-7.29%	4.29%	-7.33%	-0.87%	6.92%	-0.32
HF Composite*	-2.42%	7.47%	9.15%	10.11%	-2.44%	4.22%	5.91%	0.46
Bonds**	-16.69%	-5.59%	9.84%	6.19%	-1.20%	-1.95%	6.44%	-0.52
Equities***	-20.04%	16.02%	14.34%	23.65%	-11.84%	2.95%	17.99%	0.16

# Master strategy performance

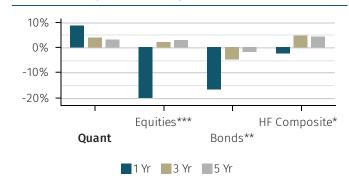
# **NET MONTHLY RETURN (5 YR)**



# COMPARATIVE RETURN VS HF COMPOSITE (1 YR)

# 15% 10% 5% 5% 0% 0% -5% -10% -15% -20% -25% -30% -25% -30% -4 -25% -30% -4 -25% -30% -4 -25% -30% -4 -25% -30% -4 -25% -4 -25% -30% -4 -25% -4

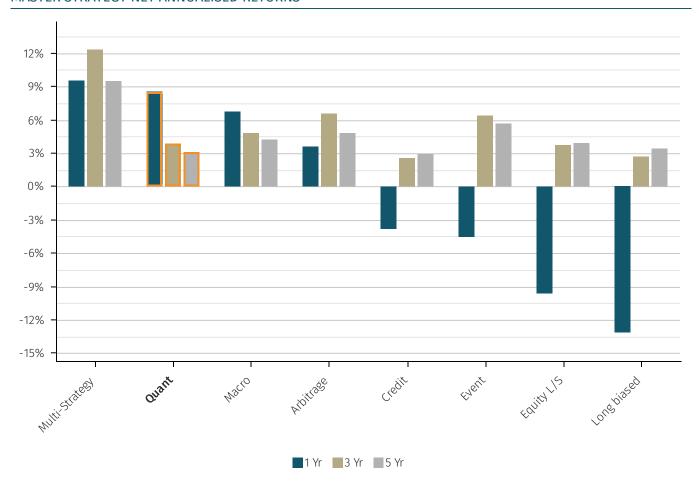
# **NET RETURN (ANNUALISED)**



# **VOLATILITY (ANNUALISED)**



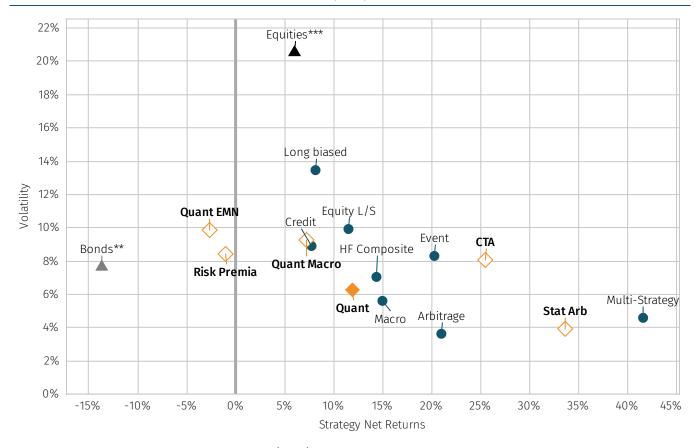
# MASTER STRATEGY NET ANNUALISED RETURNS



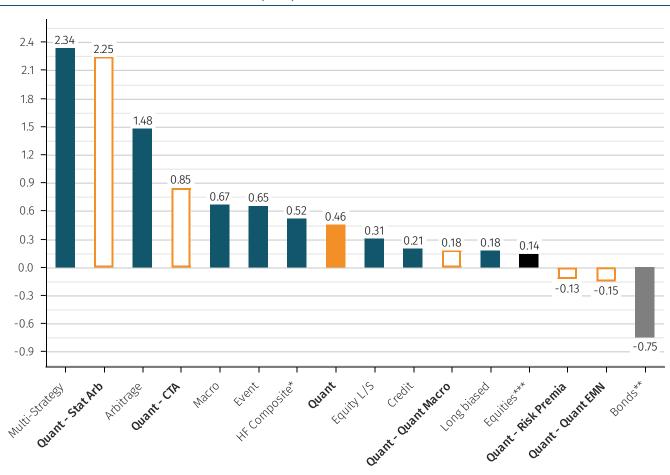
# MULTIPLE PERIOD - HIERARCHICAL ANNUALISED NET RETURN

1 YEAR	3 YEAR	5 YEAR	10 YEAR
Multi-Strategy	Multi-Strategy	Multi-Strategy	Multi-Strategy
9.5%	12.3%	9.5%	8.3%
Quant	Arbitrage	Event	Event
8.5%	6.6%	5.7%	5.8%
Macro	Event	Arbitrage	Equity L/S
6.7%	6.4%	4.8%	5.3%
Arbitrage	Macro	HF Composite*	HF Composite*
3.6%	4.8%	4.2%	4.6%
HF Composite*	HF Composite*	Macro	Long biased
-2.4%	4.6%	4.2%	4.1%
Credit	Quant	Equity L/S	Credit
-3.8%	3.8%	3.9%	4.0%
Event	Equity L/S	Long biased	Quant
-4.5%	3.7%	3.4%	3.5%
Equity L/S	Long biased	Quant	Macro
-9.6%	2.7%	3.1%	3.2%
Long biased	Credit	Credit	Arbitrage
-13.1%	2.5%	2.9%	2.5%

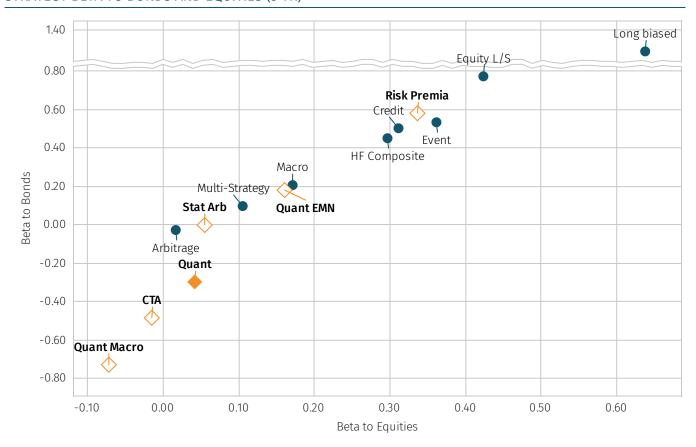
# STRATEGY NET TOTAL RETURN VS ANNUALISED VOL (3 YR)



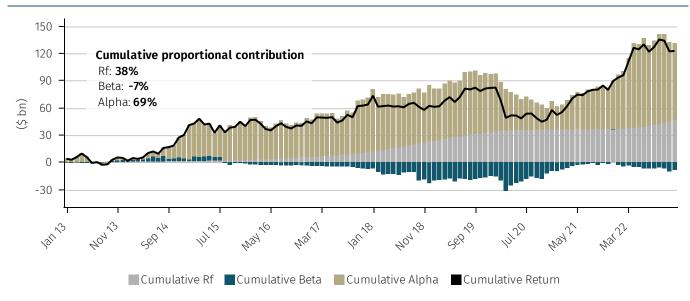
# SHARPE RATIO BY HEDGE FUND STRATEGY (3 YR)†



# STRATEGY BETA TO BONDS AND EQUITIES (3 YR)



# MASTER STRATEGY - DECOMPOSING DOLLAR PERF. INTO ALPHA, BETA AND RISK FREE (RF) COMPONENTS



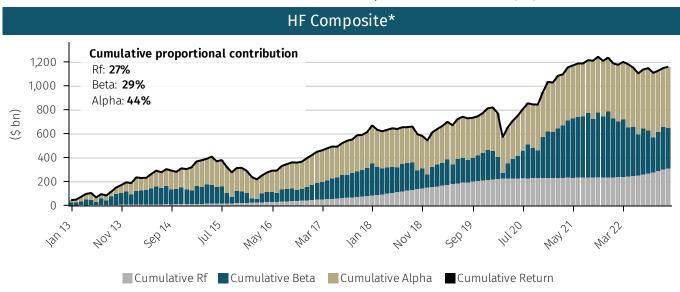
These charts decompose the Hedge Fund Composite dollar returns into beta, alpha and risk free ("Rf") components, as follows: alpha = actual return – Rf – beta \* (market return – Rf).

Where Rf is the risk free rate as defined by a rolling 3m USD Libor, where market return is that of S&P Global BMI ('the market index') and where beta has been calculated with respect to each underlying fund observed on a 24m rolling basis to the market index. The monthly alpha, beta and Rf components are then applied to each underlying fund's dollar performance for a particular month, and then at a master strategy or industry level the individual fund dollar contributions are aggregated up.

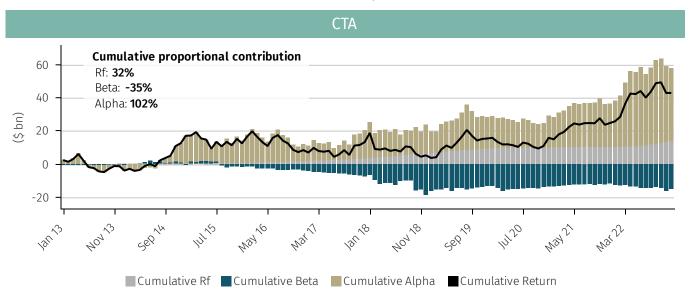
For note, beta can be negative in certain cases, creating negative dollar attributions. These are offset by corresponding positive alpha contributions.

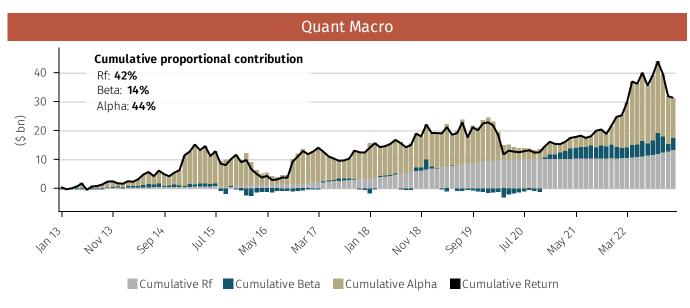


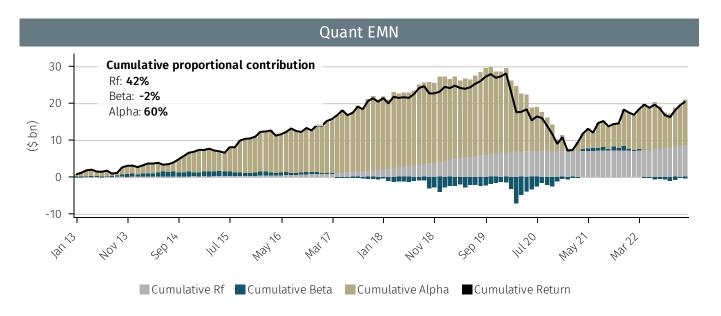
# HF COMPOSITE\* - DECOMPOSING DOLLAR PERF. INTO ALPHA, BETA AND RISK FREE (RF) COMPONENTS

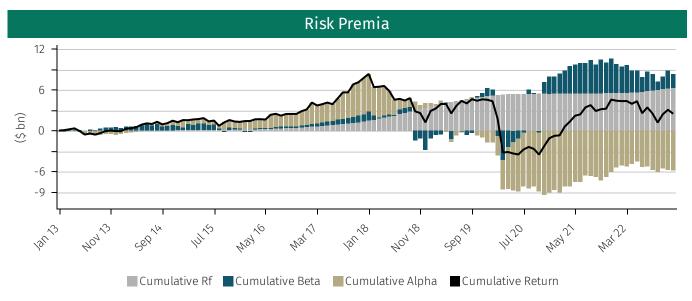


# SUB-STRATEGY - DECOMPOSING DOLLAR PERF. INTO ALPHA, BETA AND RISK FREE (RF) COMPONENTS

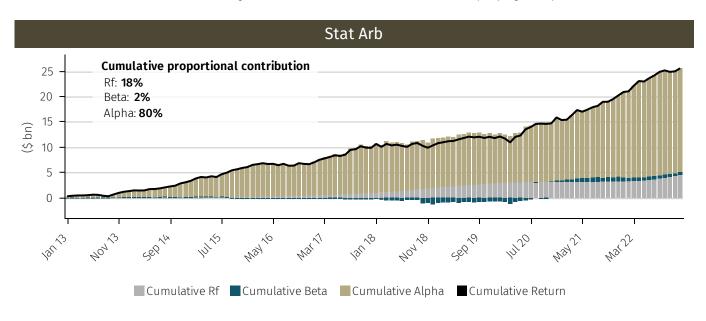






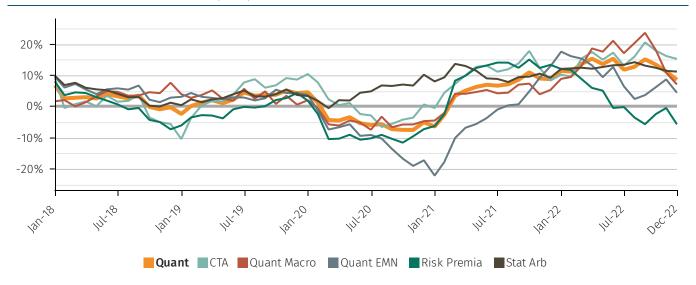


Due to cumulative dollar contribution being less than zero we have removed the accompanying data panel.

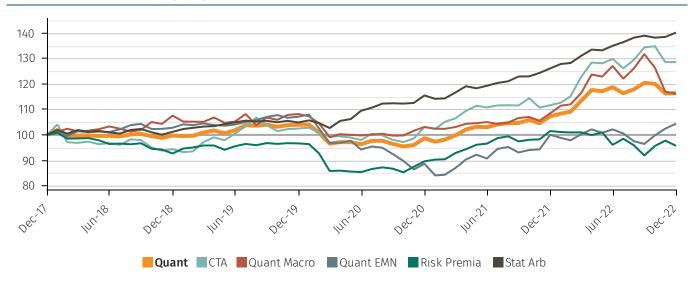


# Sub-strategy performance

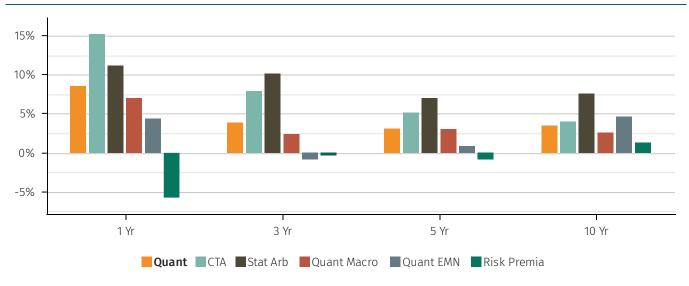
# **ROLLING 12 MONTH NET RETURN (5 YR)**



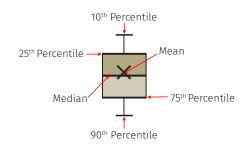
# **CUMULATIVE NET RETURN (5 YR)**



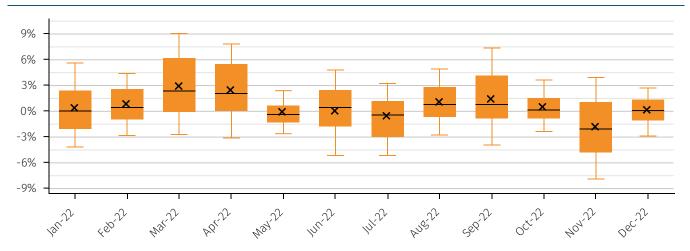
# COMPOUND RETURN (ANNUALISED)



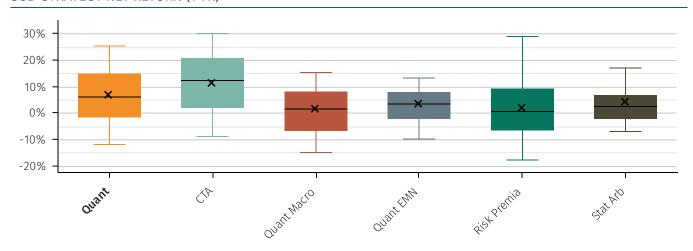
# **Performance dispersion**



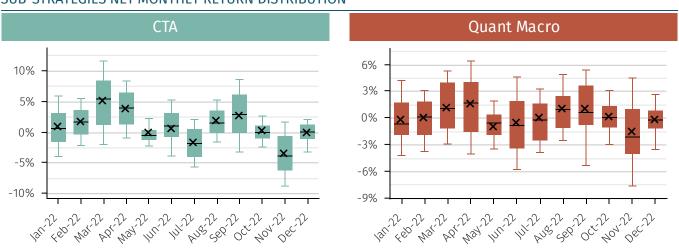
# MASTER STRATEGY NET RETURN DISTRIBUTION

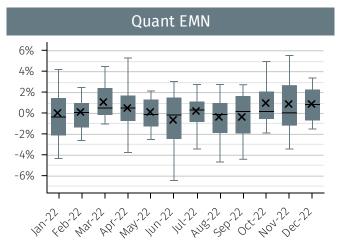


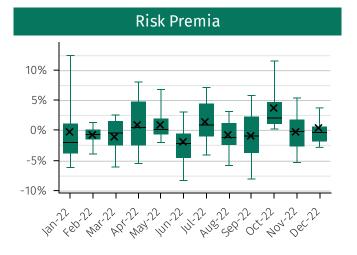
# SUB-STRATEGY NET RETURN (1 YR)

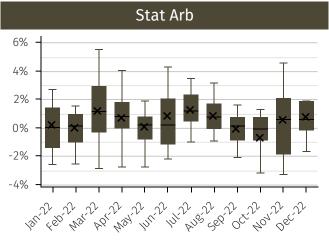


# SUB-STRATEGIES NET MONTHLY RETURN DISTRIBUTION

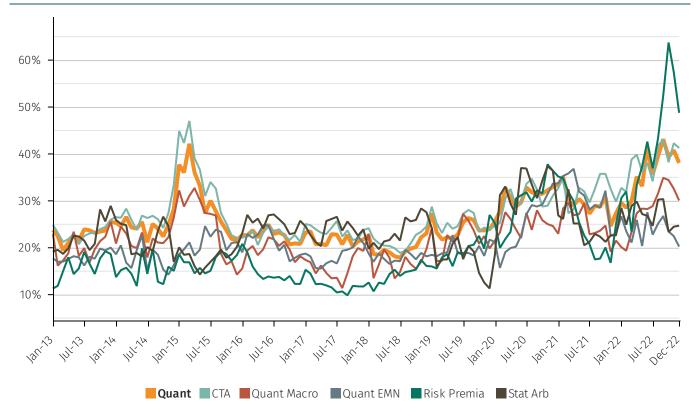




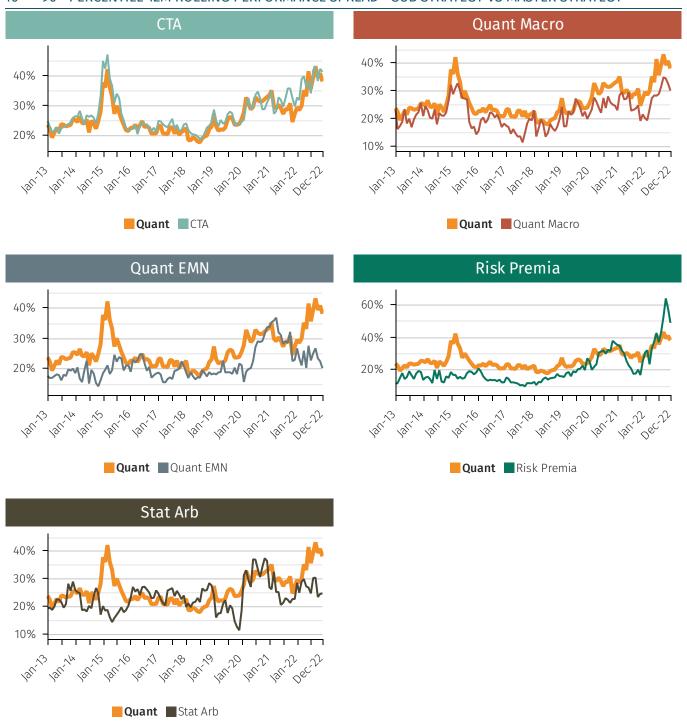




# 10<sup>th</sup> - 90<sup>th</sup> PERCENTILE 12M ROLLING PERFORMANCE SPREAD

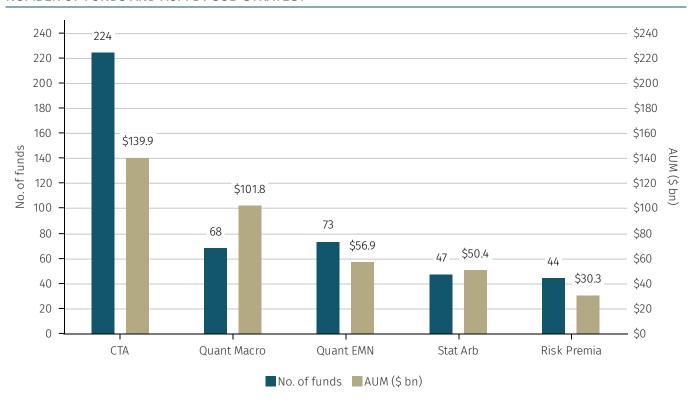


10th - 90th Percentile 12M rolling Performance Spread - Sub Strategy VS Master Strategy

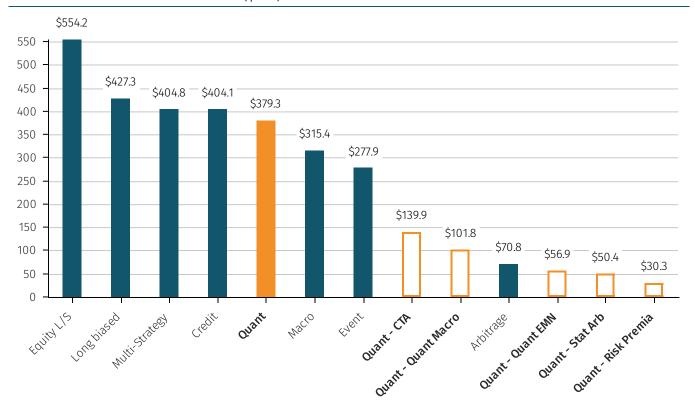


# Assets, flows and fees

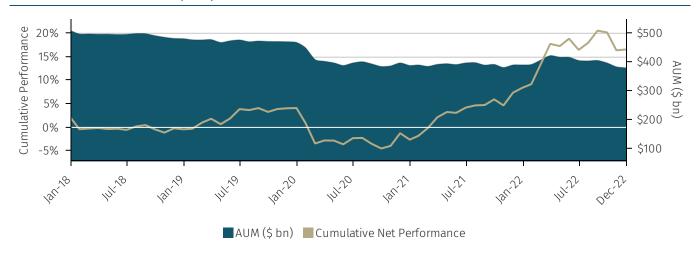
# NUMBER OF FUNDS AND AUM BY SUB-STRATEGY



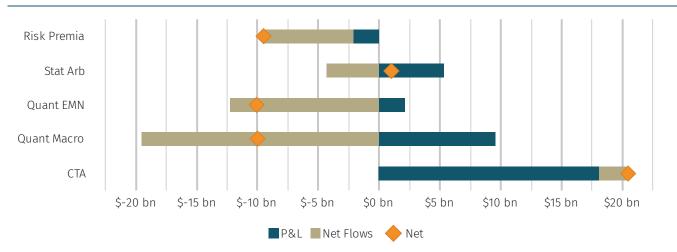
# CURRENT AUM OF MASTER STRATEGY (\$ BN)



# MASTER STRATEGY ASSETS (5 YR)\*



# 12-MONTH CHANGE IN AUM BY SUB-STRATEGY



# **TERMS AND CONDITIONS**

	Median redemption notice (days)	Median redemption frequency	Weighted avg. redemption total (days)¹	Weighted avg. management fee	Weighted avg. performance fee
Quant - CTA	5	Monthly	52	1.62%	17.69%
Quant - CTA	3	Weekly	34	1.33%	15.24%
Quant - Equity MN	30	Monthly	71	1.36%	15.00%
Quant - Macro/GAA	6	Monthly	29	1.95%	19.33%
Quant - Risk Premia	4	Weekly	27	0.67%	5.70%
Quant - Statistical Arbitrage	30	Monthly	111	2.43%	25.09%

1. Weighted Avg. Redemption Total (Days) is the weighted Avg. of both redemptions notice days and redemption frequency days.

# **Definitions**

### Quant

Systematic strategies: Funds trade securities based strictly on the buy/sell decisions of computer algorithms. Quant strategies primarily fall into the following categories: Quantitative Equity Market Neutral, Statistical Arbitrage, Quant macro/GAA (Global Asset Allocation), CTA, and risk-premia.

# **CTA**

CTAs (Commodity Trading Advisors) take primarily directional positions in index level or macro instruments, such as futures or FX contracts, in a systematic fashion. Technically, a CTA is a trader of futures contracts as defined by the CFTC and historically, there were many CTAs who were not systematic; such traders are more likely to be classified as 'Global Macro'. CTAs are typically extremely systematised with straight through processing from signal generation to execution. Many, but by no means all, CTAs are trend following (using historical prices to determine predictable 'trending patterns') buying into markets where prices are rising and selling where markets are falling. When rising markets slow down/stop rising, trend-followers typically reduce its position and will eventually reverse its position into a short position, which it will hold until the market starts to rally again. The strategy is known for running with profits and cutting losses. Other models used in CTAs may include carry, seasonality, mean reverting or pattern recognition systems, models driven by fundamental data or non-traditional data sources. Some CTAs can also trade very short-term signals driven by market microstructure anomalies and patterns.

# Quant macro / GAA

GAA (Global Asset Allocation) is a systematic approach to Global Macro, with managers taking positions in global markets based on quantitative analysis, taking in information based primarily on economic data, but also incorporating price related information. The strategy is highly data and technology intensive. The positions tend to be relative value based, but they may also take directional positions in instruments such as futures, FX and baskets of equities, ETFs, swaps and other instruments. Signals may be arranged into relative value asset class models, cross asset class models / directional trades. Signals are also often classified under a number of factor headings: value, carry, momentum etc.

# Quant equity market neutral

Traditional QEMN strategies take fundamental data, such as analyst earnings estimates, balance sheet information and cash flow statement statistics, and systematically rank/score stocks against these metrics in varying proportions. The weights of the scores of the different fundamental data sources may be fixed or dynamic. Managers may construct a portfolio using an optimisation process or by applying simpler rules combined with risk constraints so as to create a portfolio that is dollar and/or beta neutral, and typically with minimal sector exposure. Traditional QEMN portfolios consists of exposure to: Value (looking for stocks mispriced relative to their fundamental value, e.g. based on P/E, P/B, cash flow, etc.); Quality (looking at metrics such as levels of debt, stability of earnings growth, balance sheet strength); momentum (looking at past returns over a preset timeframe ranging from days to months); however, these are common factors that are relatively easy to exploit/replicate - hence the proliferation of risk-premia products that operate in this space.

# Risk premia

Hedge fund risk premia products typically seek to capture the fundamental insights of a class of hedge fund strategies (hedge fund risk premia / alternative risk premia) along with a meaningful proportion of the expected returns those strategies can earn - using a dynamic but clearly defined process. Funds typically have exposure to a well-diversified portfolio of hedge-fund premia. Premia can cover everything from equity premia (Equity market neutral - trading across value, quality, growth and momentum factors, as well as EM premia), macro premia (e.g., trend following, or EM premia), to arbitrage strategies (e.g., risk arbitrage - holding a portfolio of merger targets diversified by sector and deal type; convertible arbitrage, etc.). The strategies are typically very well understood, backed up by academic research and implemented systematically.

# Statistical arbitrage

Statistical arbitrage funds typically take price data and its derivatives, such as correlation, volatility and other forms of market data, such as volume and order-book information to determine the existence of patterns. These patterns can help the manager forecast the future return of a stock, often over a relatively short timeframe. Typical signal types are: mean-reversion, momentum and event-driven. Mean- reversion looks to take advantage of the phenomenon of short-term price movements occurring due to supply/demand imbalances then moving back to an equilibrium level. Momentum models look for patterns in price data that suggest that price movements will be more persistent (i.e., trend). Other statistical arbitrage funds will look to incorporate more discrete information into their process from events (e.g., publishing of analyst earnings estimates, news flow, etc.). Whilst statistical arbitrage funds tend to focus more on 'technical' models, some may also incorporate some longer-term models that are driven by fundamental data (e.g., stock value models, growth, etc.), however, if these models are the more dominant driver of risk, then the fund is likely to be classified as Quantitative Equity Market Neutral. Statistical arbitrage funds are typically run with a very low level of beta and are market neutral, however, this may not always be the case, with some funds able to take significant directional risk; however, given the higher frequency trading nature of such funds, they are not expected to have significant correlation to markets over time.

# **Bond and equity indices**

The S&P Global BMI and S&P Global Developed Aggregate Ex Collateralized Bond (USD) Total Return Index (the "S&P Indices") are products of S&P Dow Jones Indices LLC, its affiliates and/or their licensors and has been licensed for use by Aurum Research Limited. Copyright © 2021 S&P Dow Jones Indices LLC, its affiliates and/or their licensors. All rights reserved. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. For more information on any of S&P Dow Jones Indices LLC's indices please visit www.spdji.com. S&P® is a registered trademark of Standard & Poor's Financial Services LLC and Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC. Neither S&P Dow Jones Indices LLC, Dow Jones Trademark Holdings LLC, their affiliates nor their third party licensors make any representation or warranty, express or implied, as to the ability of any index to accurately represent the asset class or market sector that it purports to represent and neither S&P Dow Jones Indices LLC, Dow Jones Trademark Holdings LLC, their affiliates nor their third party licensors shall have any liability for any errors, omissions, or interruptions of any index or the data included therein.

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### Note regarding decomposition returns

Please note that the charts and figures which reference the decomposition of dollar performance into alpha, beta and risk free components only use data from January 2013, unlike other charts and figures which use data for the full 10 year period, namely August 2012. This variance in time period used to present data is due to there being insufficient data to accurately construct a decomposition for the period of August 2012 to December 2012.



# Aurum

# **Aurum Fund Management Ltd.**

Aurum House 35 Richmond Road Hamilton HM08 Bermuda

Telephone: +1 441 292 6952

Website: <a href="www.aurum.com">www.aurum.com</a> Email: <a href="mailto:ir@aurumfunds.com">ir@aurumfunds.com</a>

### **Aurum Funds Limited**

Ixworth House 37 Ixworth Place London SW3 3QH

Telephone: +44 (0)20 7589 1130

### **KBA Investments Limited**

Trident Park, Notabile Gardens, No 2 - Level 3, Zone 2, Central Business District Birkirkara, Malta Telephone: +27 11 325 4820

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References to Aurum Hedge Fund Data Engine refer to Aurum's proprietary Hedge Fund Data Engine database maintained by Aurum Research Limited ("ARL") containing data on around 3,500 active hedge funds representing around \$3 trillion of assets as at December 2022. Information in the database is derived from multiple sources including Aurum's own research, regulatory filings, public registers and other database providers. Performance in the charts using Aurum Hedge Fund Data Engine data are asset weighted unless otherwise stated.

An investment in a hedge fund should be considered a speculative investment. Past performance is no guarantee of future returns.

Data from the Aurum Hedge Fund Data Engine is provided on the following basis: (1) Aurum Hedge Fund Data Engine data is provided for informational purposes only; (2) information and data included in the Aurum Hedge Fund Data Engine are obtained from various third party sources including Aurum's own research, regulatory filings, public registers and other data providers and are provided on an "as is" basis; (3) Aurum does not perform any audit or verify the information provided by third parties; (4) Aurum is not responsible for and does not warrant the correctness, accuracy, or reliability of the data in the Aurum Hedge Fund Data Engine; (5) any constituents and data points in the Aurum Hedge Fund Data Engine may be removed at any time; (6) the completeness of the data may vary in the Aurum Hedge Fund Data Engine; (7) Aurum does not warrant that the data in the Aurum Hedge Fund Data Engine will be free from any errors, omissions or inaccuracies; (8) the information in the Aurum Hedge Fund Data Engine does not constitute an offer or a recommendation to buy or sell any security or financial product or vehicle whatsoever or any type of tax or investment advice or recommendation; (9) past performance is no indication of future results; and (10) Aurum reserves the right to change its Aurum Hedge Fund Data Engine methodology at any time and may elect to suppress or change underlying data should it be considered optimal for representation and/or accuracy.