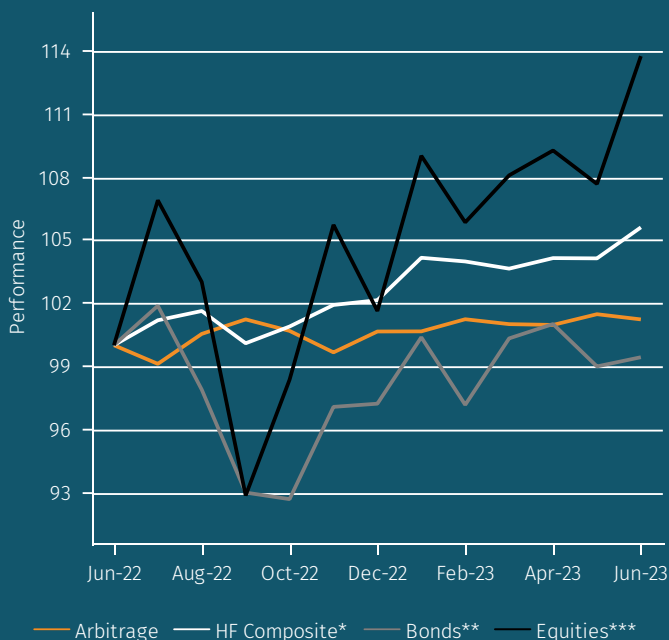


## Arbitrage strategy analytics pack H1 2023

### Inside this report:

Master strategy performance	3
Sub-strategy performance	9
Performance dispersion	10
Assets and flows	12
Terms and conditions	13
Definitions	14

### MASTER STRATEGY vs INDICES NET RETURN (1 YR)

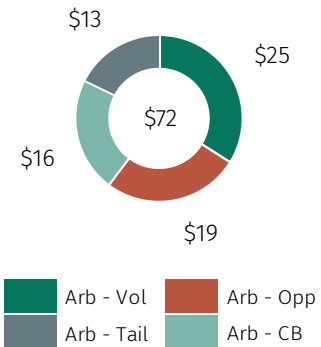


\*HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index.  
 \*\*Bonds = S&P Global Developed Aggregate Ex Collateralized Bond (USD).  
 \*\*\*Equities = S&P Global BMI.

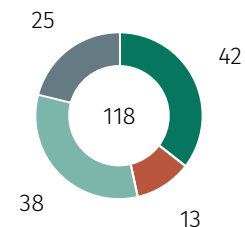
All figures and charts use asset weighted net returns unless otherwise stated. All Hedge Fund data is sourced from Aurum Hedge Fund Data Engine. Data included in this report is dated as at 21<sup>st</sup> July 2023.

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/>

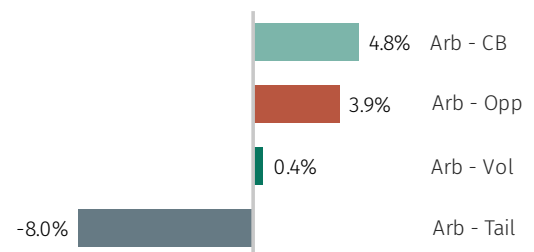
### AUM (\$BN) – JUNE 2023



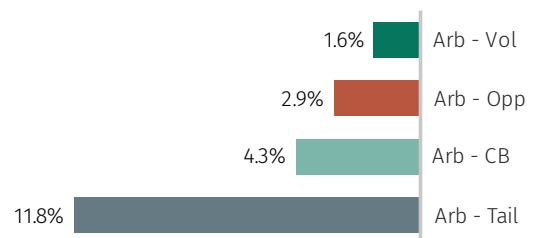
### NO. OF FUNDS – JUNE 2023



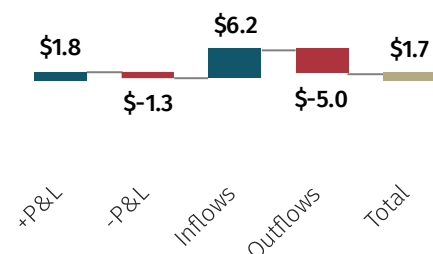
### SUB-STRATEGY NET RETURN (H1)



### STANDARD DEVIATION (1 YR)



### AUM CHANGE \$BN (H1)



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

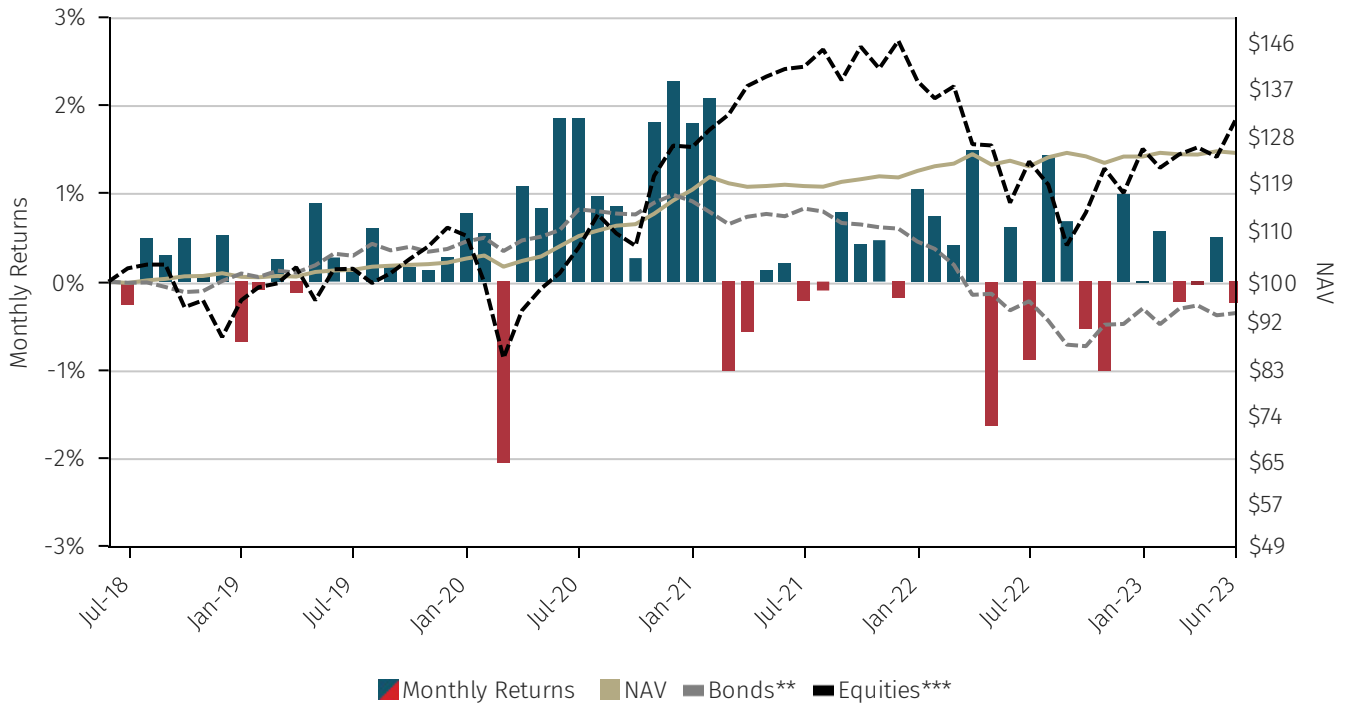
	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	YTD	1 YR
<b>Arbitrage</b>	-0.89%	1.44%	0.69%	-0.54%	-1.01%	1.00%	0.01%	0.57%	-0.23%	-0.04%	0.51%	-0.24%	0.57%	1.23%
Arb - CB	0.72%	1.61%	-2.43%	-0.13%	1.07%	1.27%	2.74%	0.09%	0.07%	0.33%	0.61%	0.90%	4.81%	6.99%
Arb - Opp	-0.19%	2.20%	-0.15%	0.18%	-0.52%	1.16%	1.82%	0.62%	-0.37%	0.41%	0.79%	0.63%	3.95%	6.73%
Arb - Vol	-0.50%	0.33%	0.30%	0.33%	-0.56%	0.67%	-0.42%	0.41%	0.45%	-0.22%	0.63%	-0.41%	0.44%	1.00%
Arb - Tail	-4.41%	2.34%	6.29%	-3.83%	-5.08%	1.15%	-4.85%	1.40%	-1.64%	-0.78%	-0.25%	-2.09%	-8.03%	-11.71%
<b>HF Composite*</b>	1.19%	0.44%	-1.51%	0.79%	1.02%	0.22%	1.98%	-0.17%	-0.33%	0.48%	-0.01%	1.42%	3.39%	5.60%
<b>Bonds**</b>	1.88%	-3.91%	-5.00%	-0.34%	4.73%	0.16%	3.25%	-3.20%	3.25%	0.68%	-1.99%	0.44%	2.27%	-0.57%
<b>Equities***</b>	6.89%	-3.63%	-9.86%	5.93%	7.48%	-3.87%	7.26%	-2.90%	2.11%	1.09%	-1.46%	5.64%	11.92%	13.74%

## NET RETURN (5 YR) PERIOD TO JUNE 2023

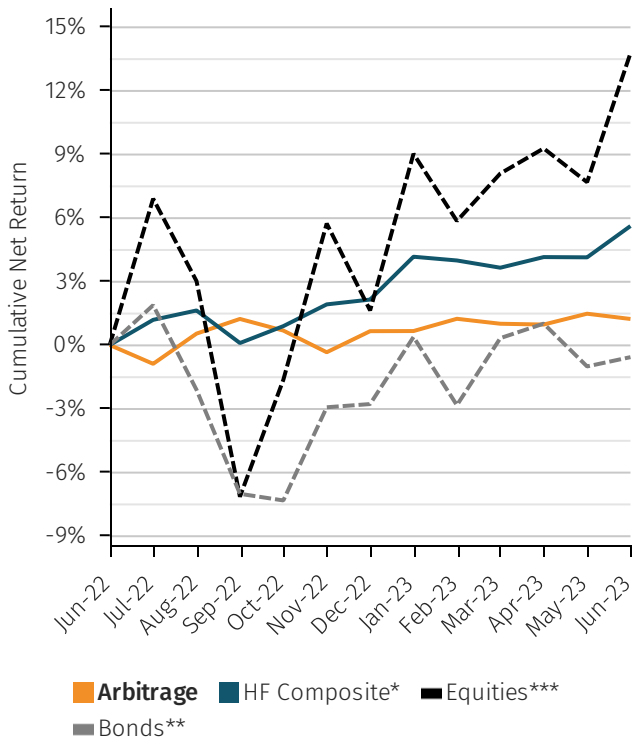
Performance	2023	2022	2021	2020	2019	5Yr CAR	5Yr Vol	5Yr Sharpe
<b>Arbitrage</b>	0.57%	3.36%	3.84%	11.58%	2.00%	4.54%	2.93%	0.90
Arb - Opp	3.95%	2.91%	10.51%	19.18%	7.08%	8.88%	6.86%	1.01
Arb - CB	4.81%	-4.62%	7.41%	16.99%	8.76%	6.41%	5.16%	0.87
Arb - Vol	0.44%	6.09%	0.95%	1.84%	3.78%	3.02%	3.07%	0.38
Arb - Tail	-8.03%	8.34%	-7.80%	14.37%	-12.21%	-1.18%	12.83%	-0.18
<b>HF Composite*</b>	3.39%	-2.25%	7.57%	8.97%	10.06%	4.74%	5.91%	0.50
<b>Bonds**</b>	2.27%	-16.69%	-5.59%	9.84%	6.19%	-1.25%	6.89%	-0.42
<b>Equities***</b>	11.92%	-20.04%	16.02%	14.34%	23.65%	5.56%	18.20%	0.29

# Master strategy performance

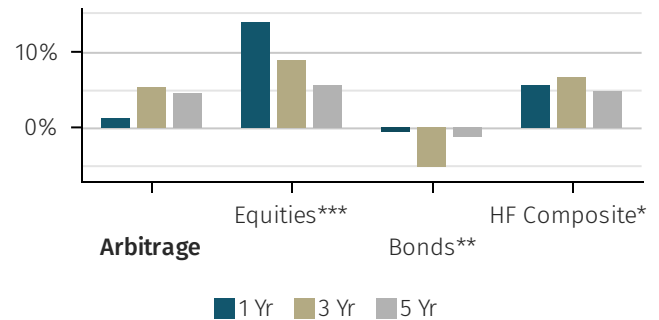
## NET MONTHLY RETURN (5 YR)



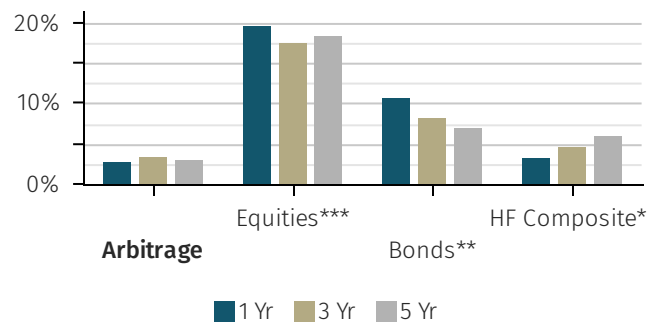
## COMPARATIVE RETURN VS HF COMPOSITE (1 YR)



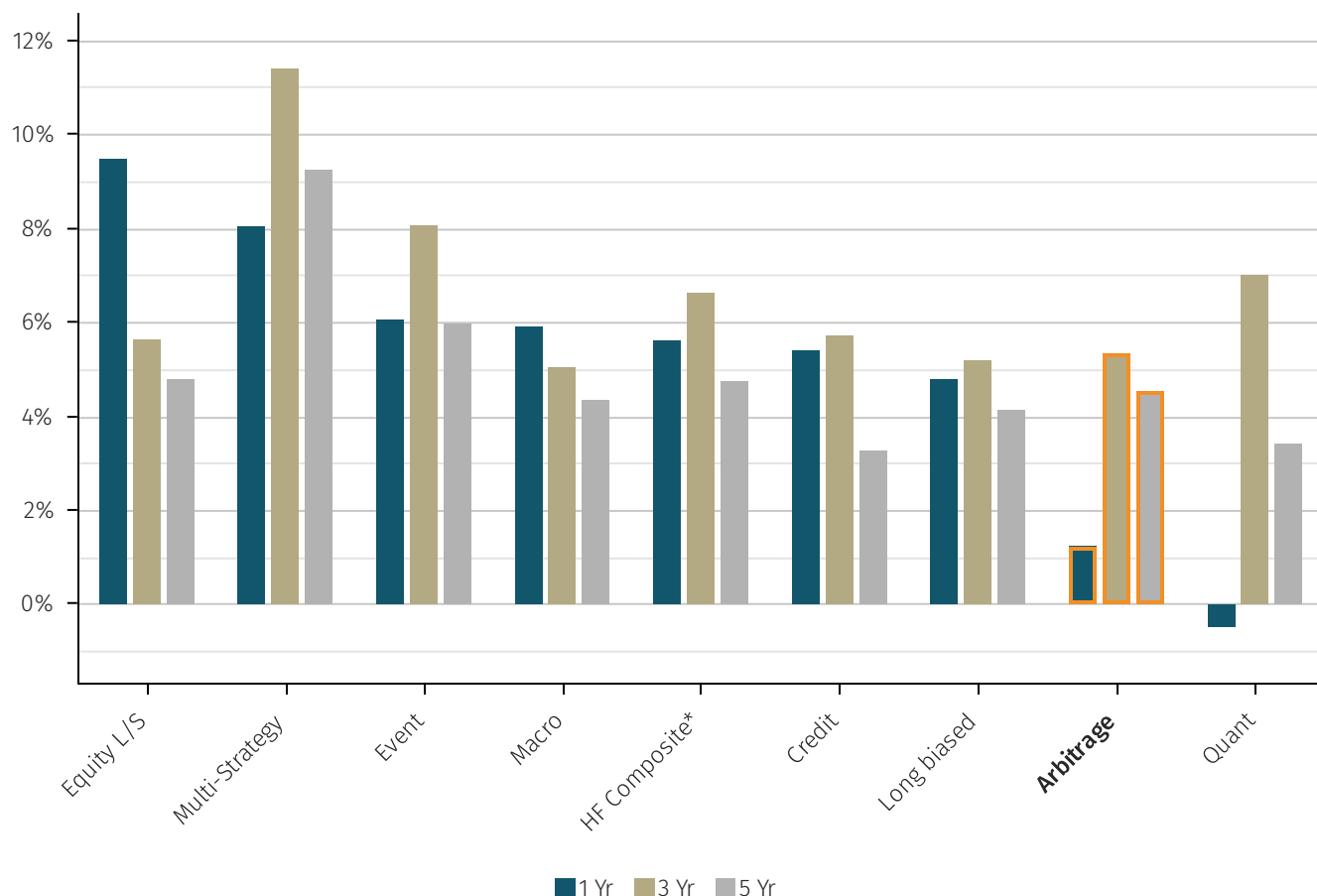
## NET RETURN (ANNUALISED)



## VOLATILITY (ANNUALISED)



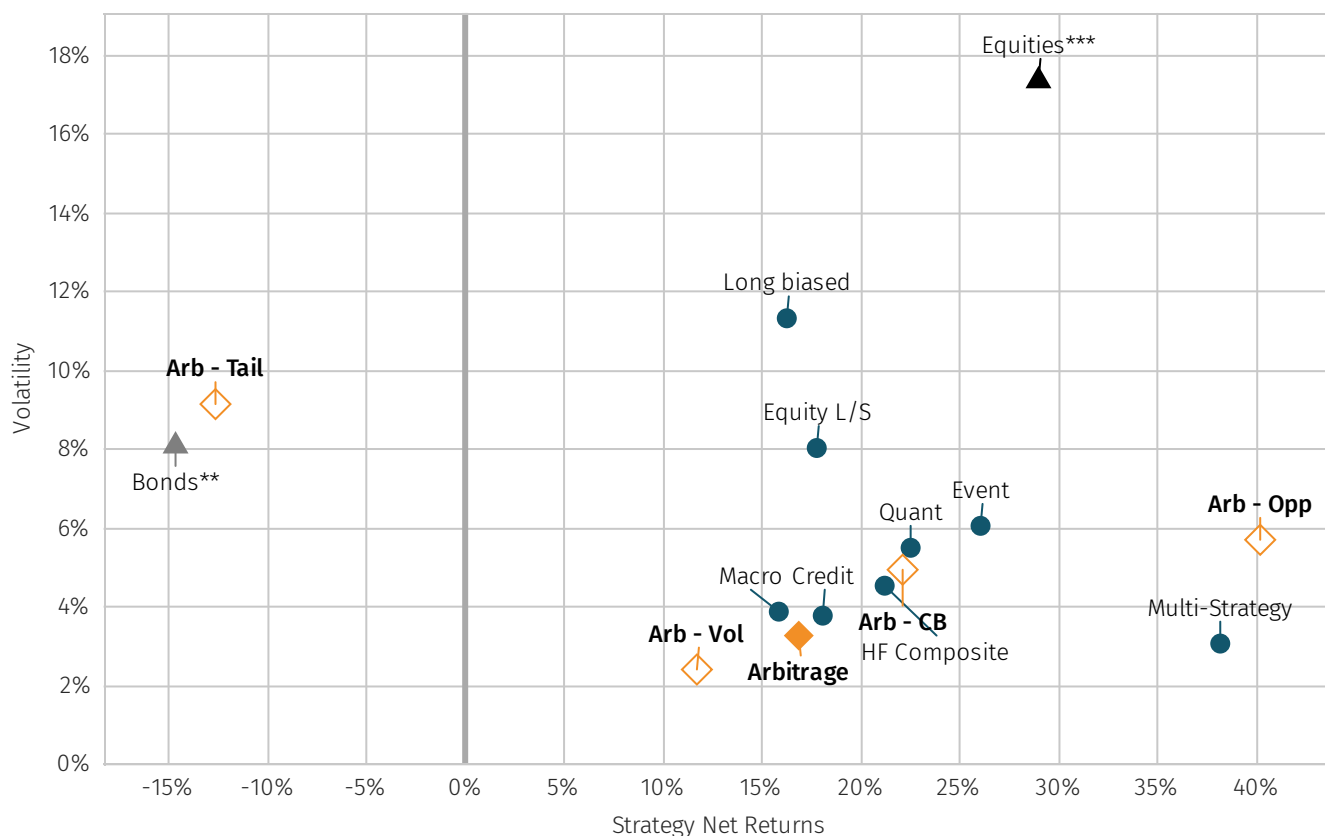
## MASTER STRATEGY NET ANNUALISED RETURNS



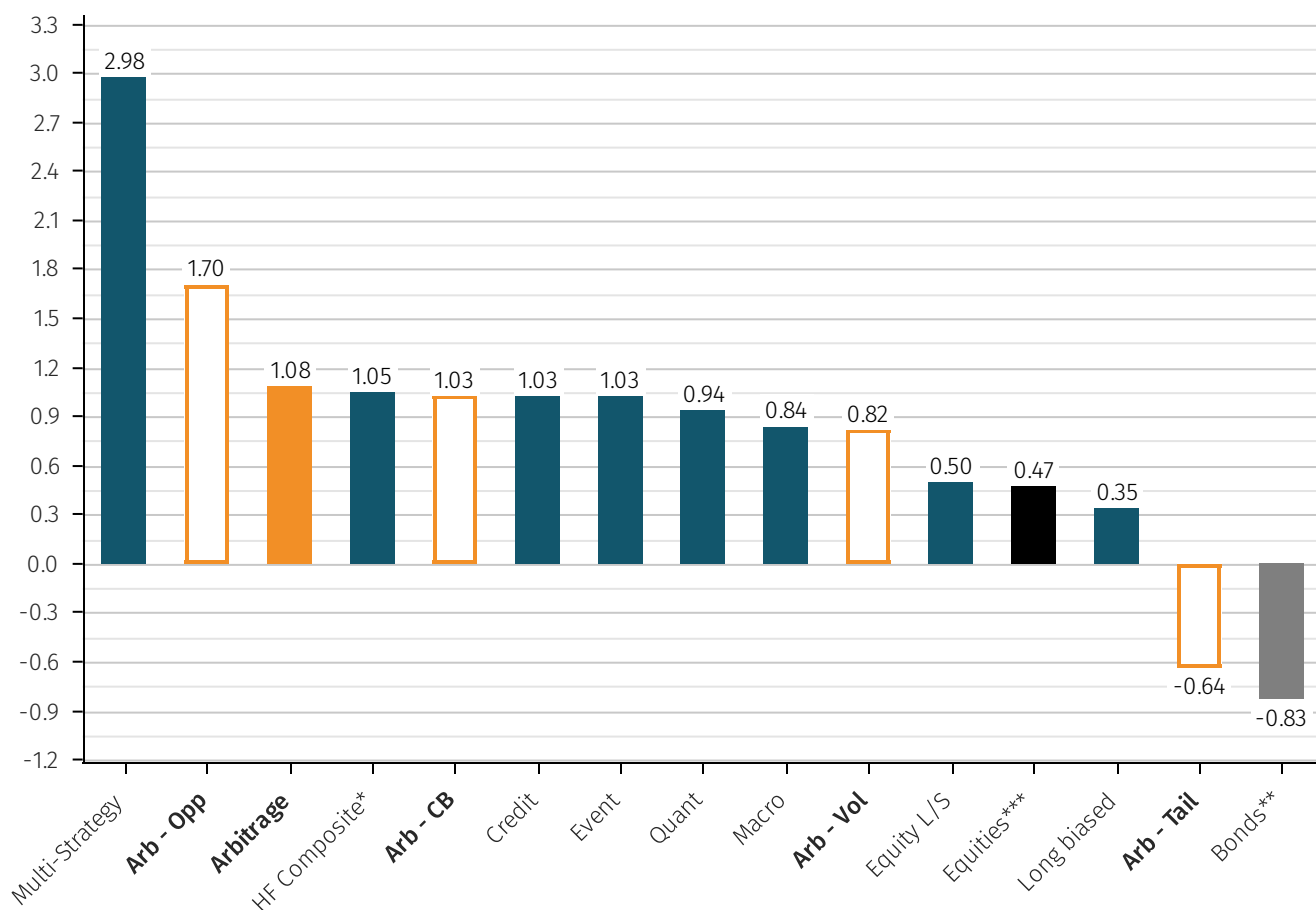
## HIERARCHICAL ANNUALISED NET RETURN TO JUNE 2023

6 MONTHS	1 YEAR	3 YEAR	5 YEAR	10 YEAR
<b>Equity L/S</b> 12.6%	<b>Equity L/S</b> 9.5%	<b>Multi-Strategy</b> 11.4%	<b>Multi-Strategy</b> 9.2%	<b>Multi-Strategy</b> 7.9%
<b>Long biased</b> 8.2%	<b>Multi-Strategy</b> 8.0%	<b>Event</b> 8.0%	<b>Event</b> 6.0%	<b>Event</b> 5.4%
<b>Credit</b> 7.9%	<b>Event</b> 6.0%	<b>Quant</b> 7.0%	<b>Equity L/S</b> 4.8%	<b>Equity L/S</b> 5.3%
<b>HF Composite*</b> 6.9%	<b>Macro</b> 5.9%	<b>HF Composite*</b> 6.6%	<b>HF Composite*</b> 4.7%	<b>HF Composite*</b> 4.6%
<b>Event</b> 6.5%	<b>HF Composite*</b> 5.6%	<b>Credit</b> 5.7%	<b>Arbitrage</b> 4.5%	<b>Long biased</b> 4.5%
<b>Multi-Strategy</b> 5.9%	<b>Credit</b> 5.4%	<b>Equity L/S</b> 5.6%	<b>Macro</b> 4.3%	<b>Credit</b> 3.9%
<b>Quant</b> 2.4%	<b>Long biased</b> 4.8%	<b>Arbitrage</b> 5.3%	<b>Long biased</b> 4.1%	<b>Quant</b> 3.6%
<b>Macro</b> 1.4%	<b>Arbitrage</b> 1.2%	<b>Long biased</b> 5.2%	<b>Quant</b> 3.4%	<b>Macro</b> 3.1%
<b>Arbitrage</b> 1.1%	<b>Quant</b> -0.5%	<b>Macro</b> 5.0%	<b>Credit</b> 3.3%	<b>Arbitrage</b> 2.3%

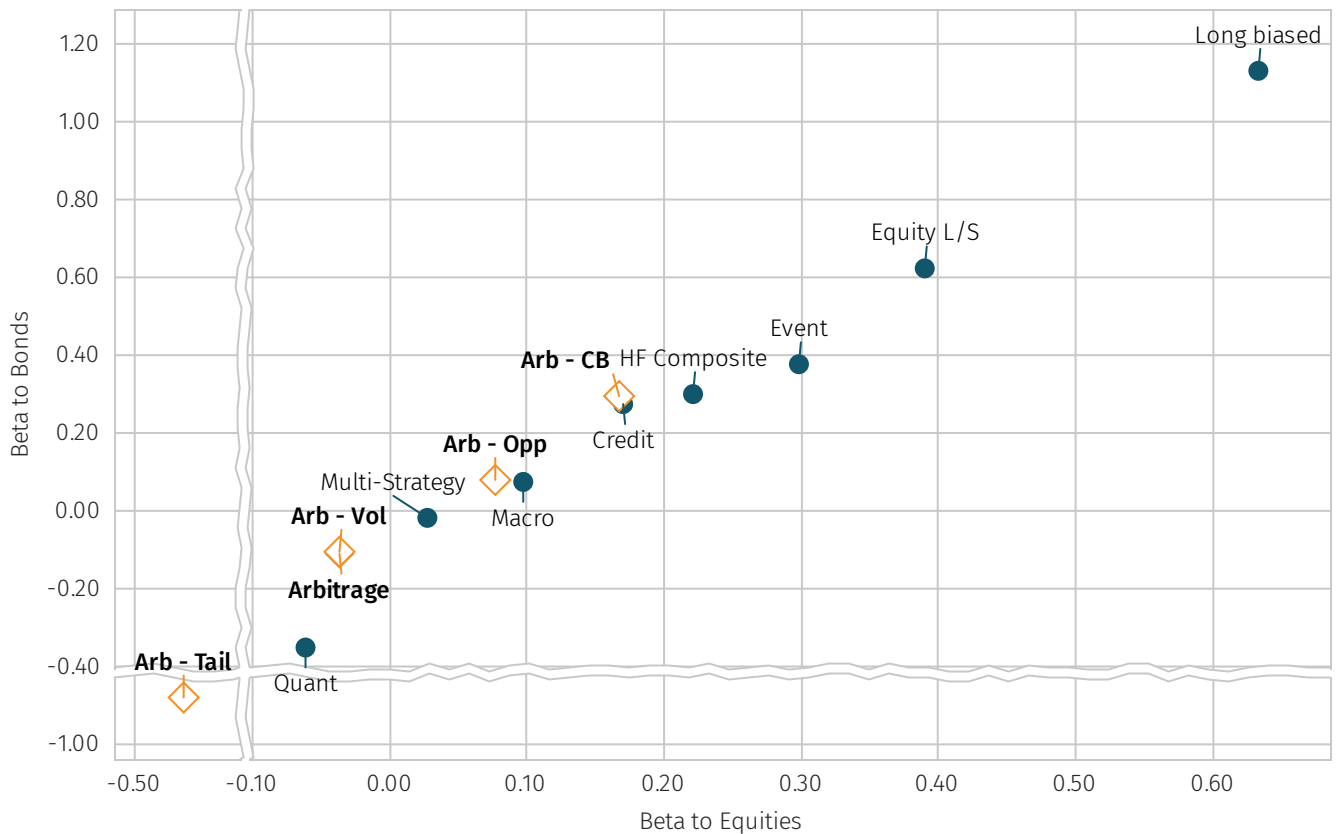
## STRATEGY NET TOTAL RETURN VS ANNUALISED VOL (3 YR)



## SHARPE RATIO BY HEDGE FUND STRATEGY (3 YR)<sup>†</sup>

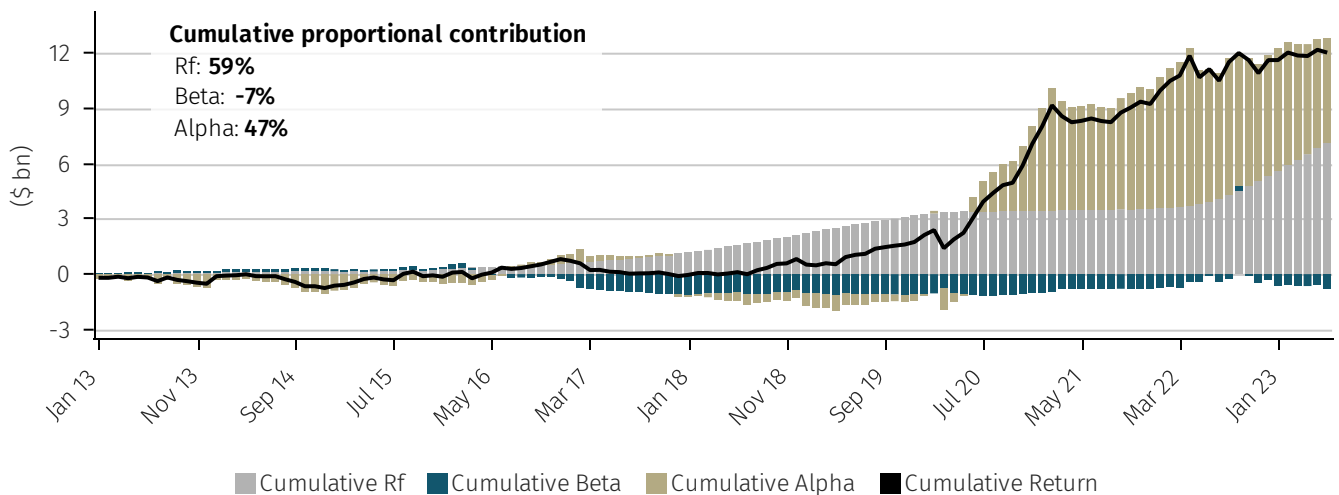


## BETA TO BONDS AND BETA TO EQUITIES (3 YR) PERIOD TO JUNE 2023



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

### Arbitrage

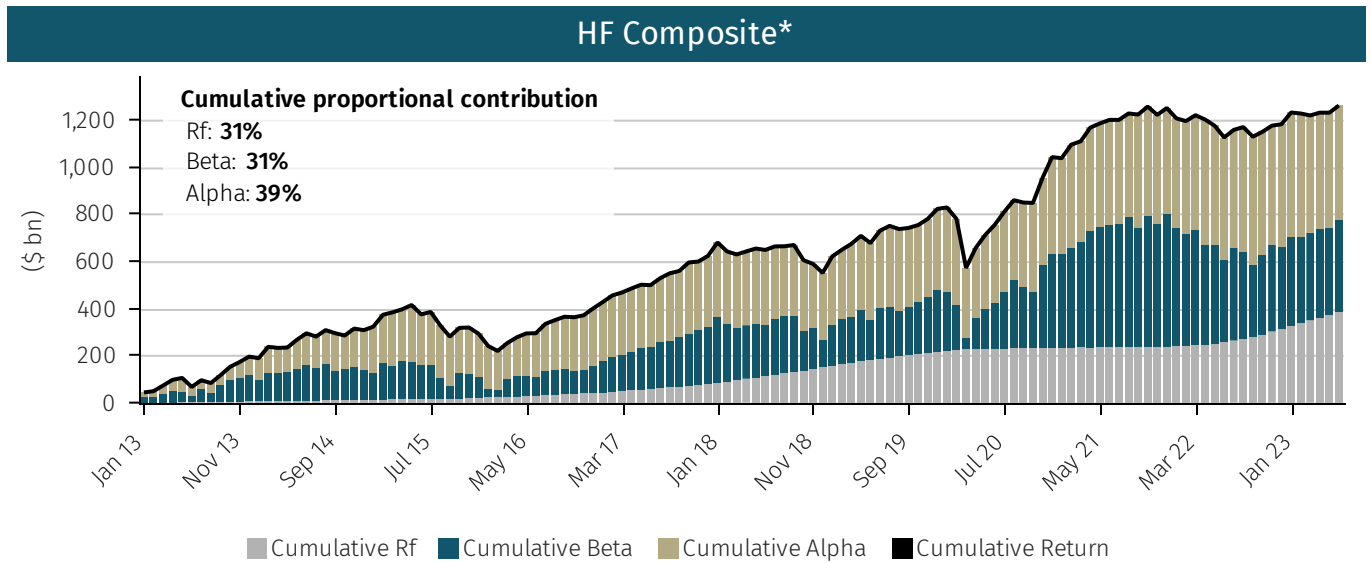


These charts decompose the Hedge Fund Composite dollar returns into beta, alpha and risk free ("Rf") components, as follows:  $\alpha = \text{actual return} - R_f - \beta * (\text{market return} - R_f)$ .

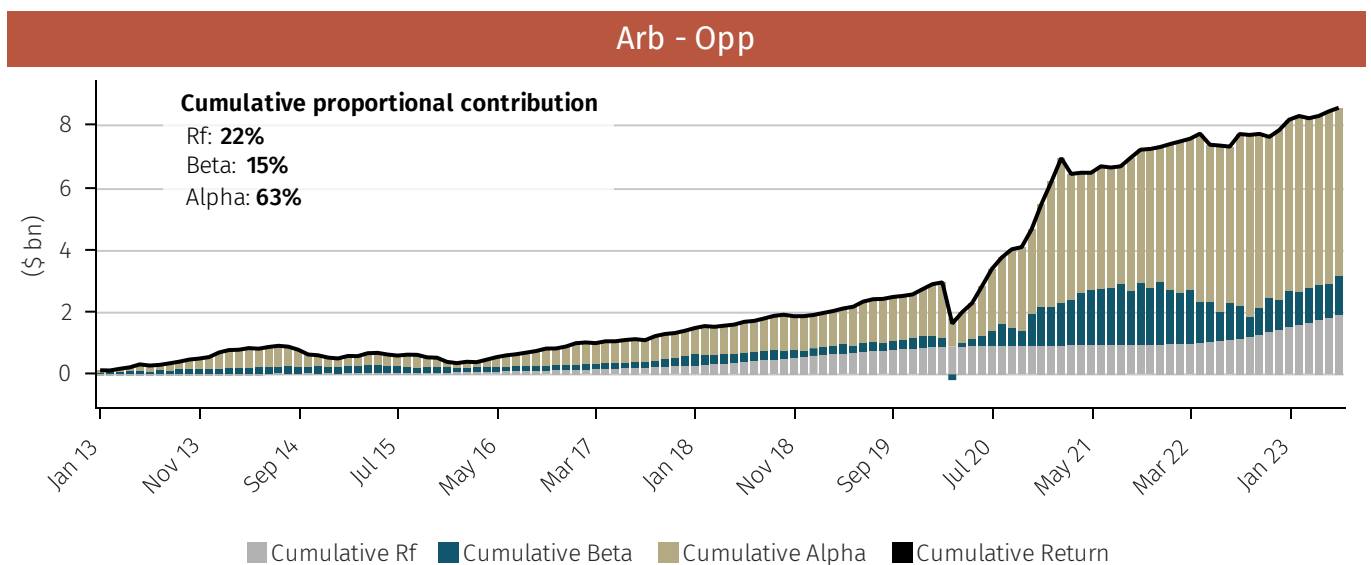
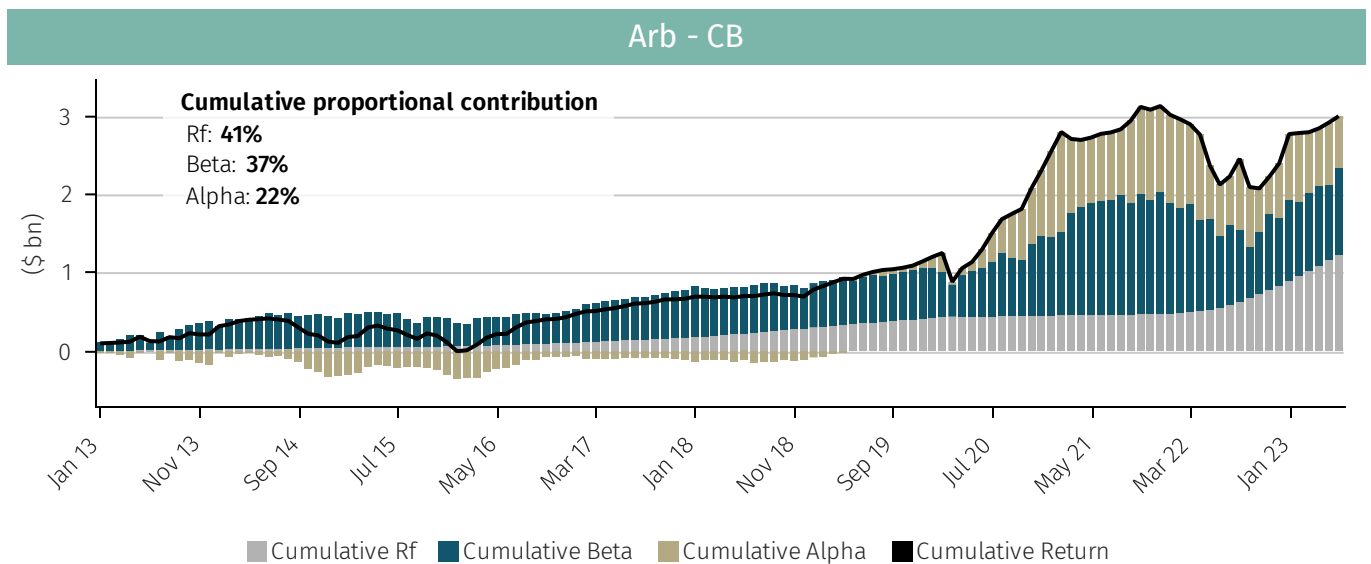
Where  $R_f$  is the risk free rate as defined by a rolling 3-month LIBOR-SOFR, where market return is that of S&P Global BMI ('the market index') and where beta has been calculated with respect to each underlying fund observed on a 60m rolling basis to the market index. The monthly alpha, beta and  $R_f$  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.

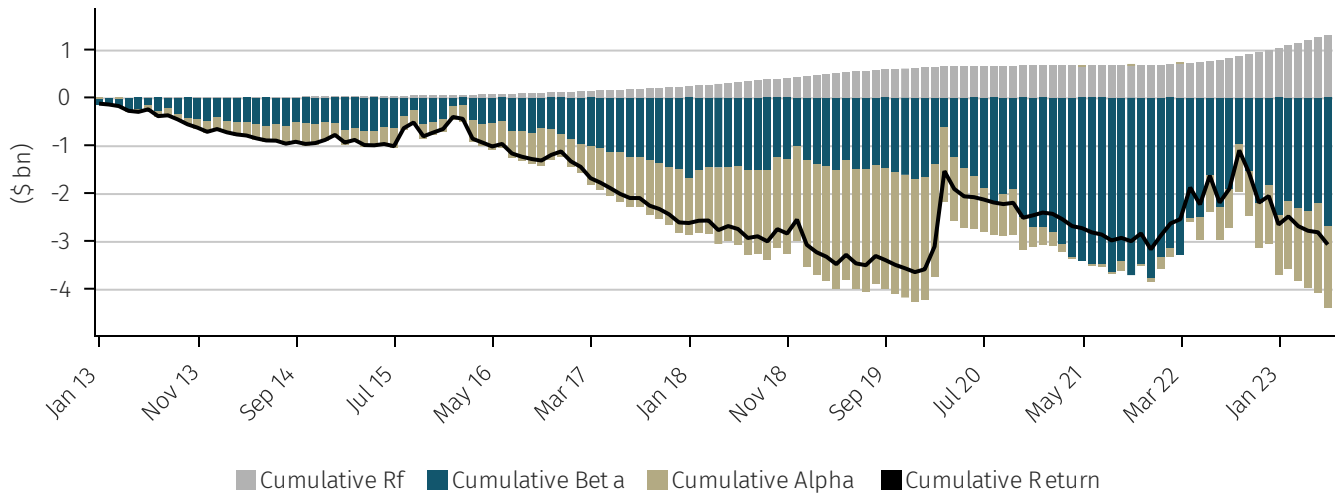
## HF Composite\* - DECOMPOSING DOLLAR PERF. INTO ALPHA, BETA AND RISK FREE (RF) COMPONENTS



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

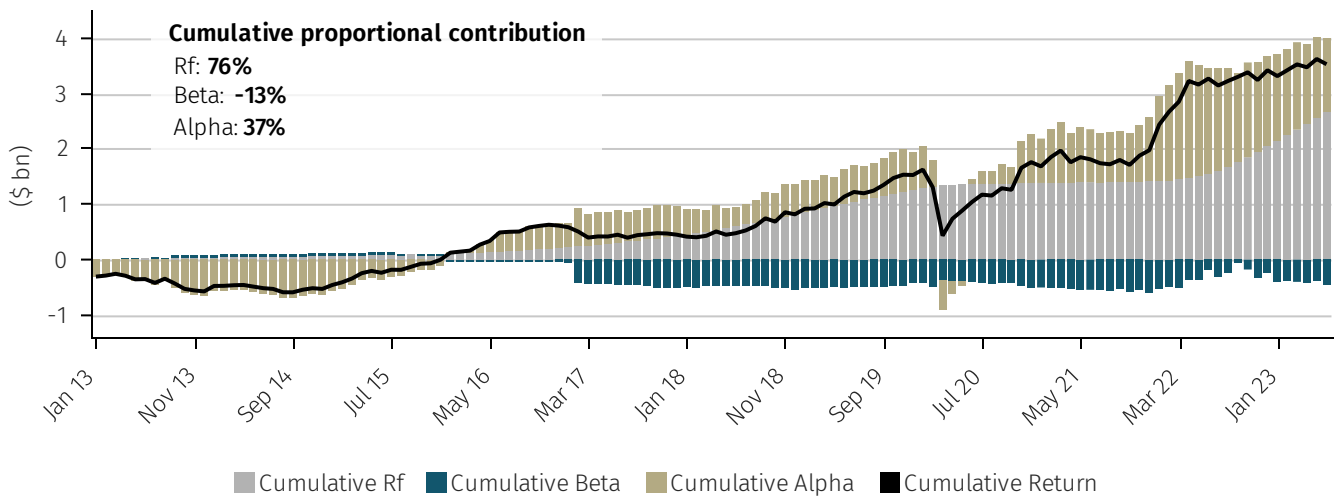


## Arb - Tail



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

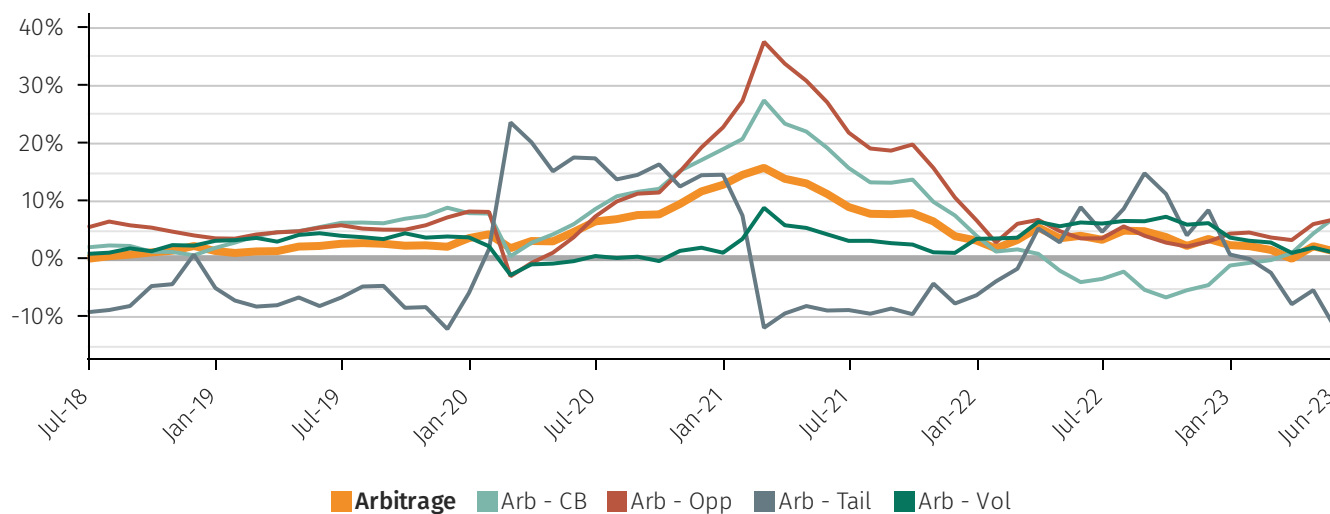
## Arb - Vol



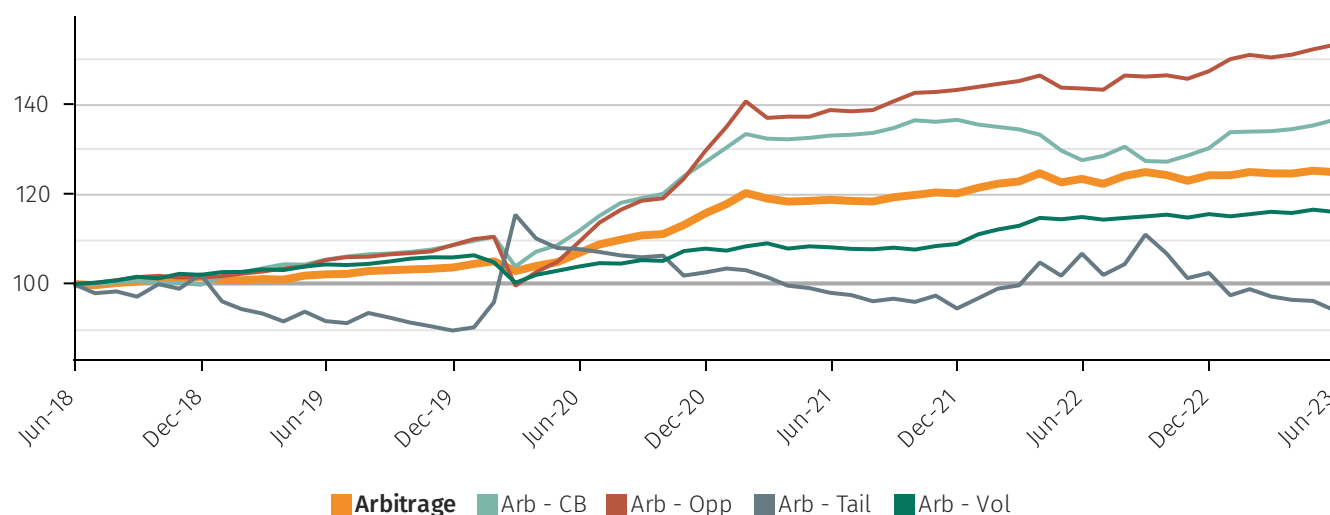


## Sub-strategy performance

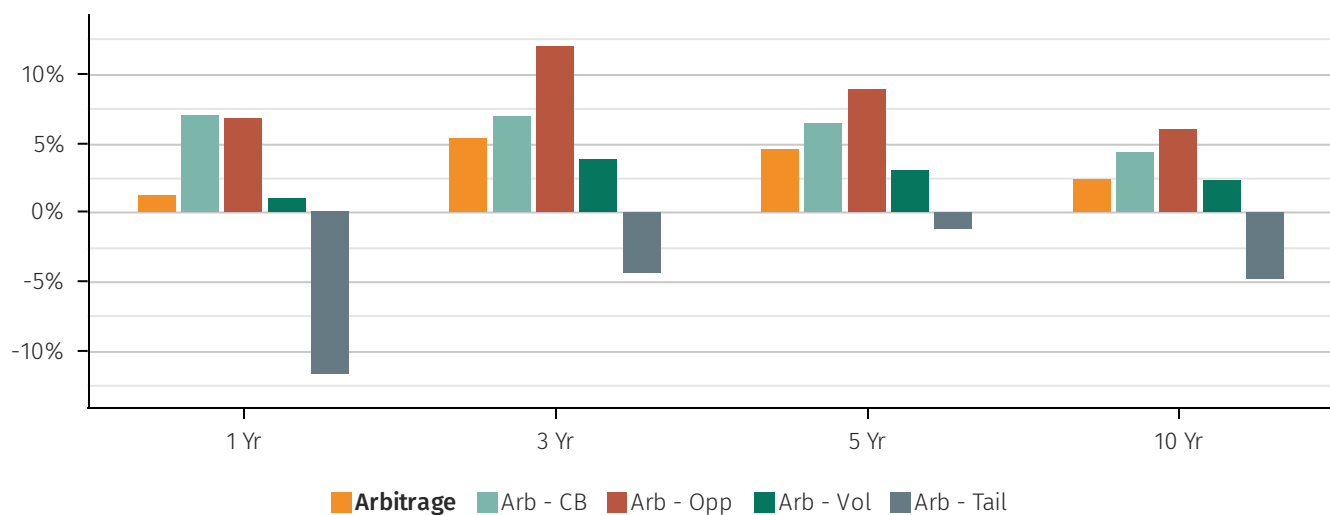
### ROLLING 12 MONTH NET RETURN (5 YR)



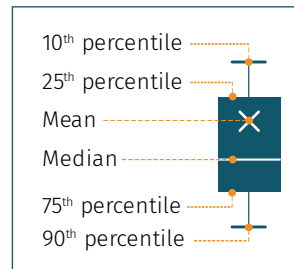
### CUMULATIVE NET RETURN (5 YR)



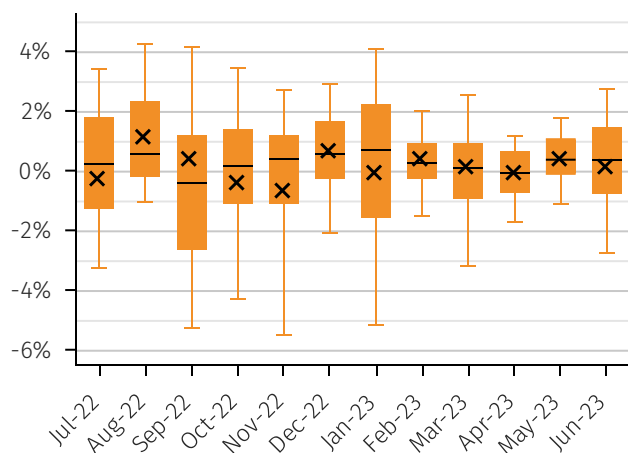
### COMPOUND RETURN (ANNUALISED)



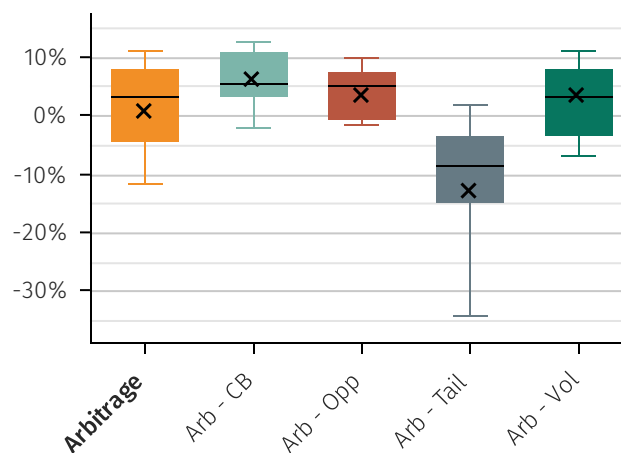
# Performance dispersion



## MASTER STRATEGY NET RETURN DISTRIBUTION

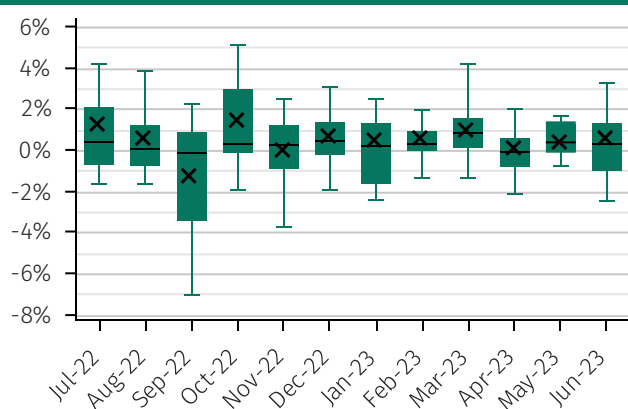


## SUB-STRATEGY NET RETURN (H1)

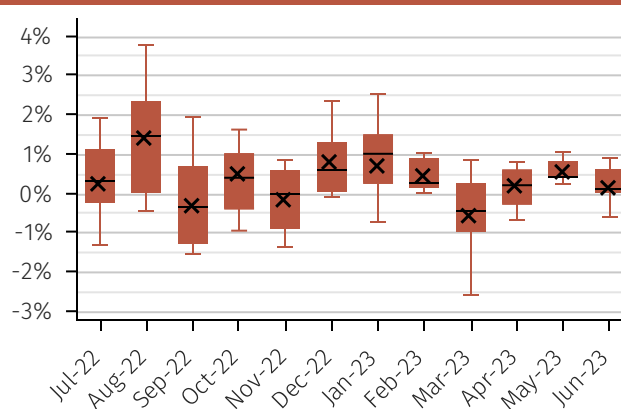


## SUB-STRATEGIES NET MONTHLY RETURN DISTRIBUTION

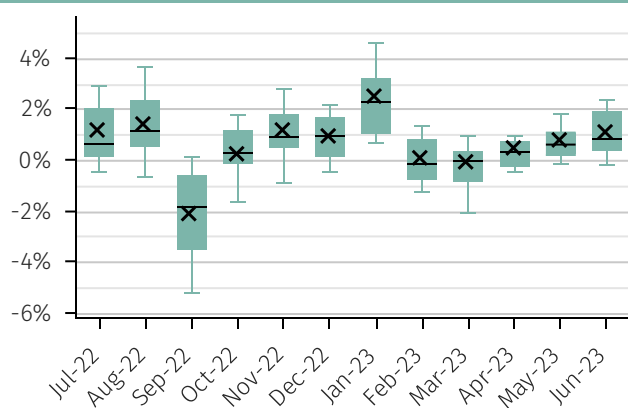
### Arb - Vol



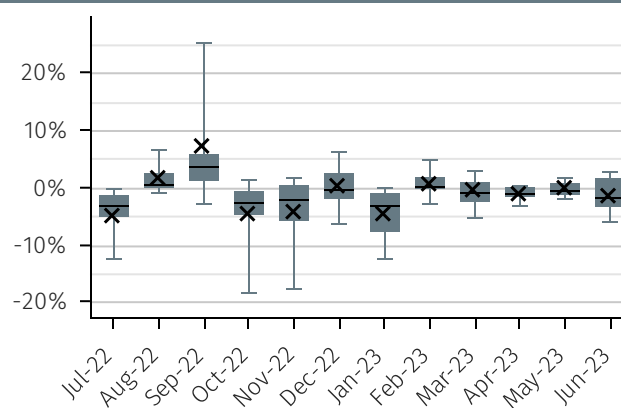
### Arb - Opp



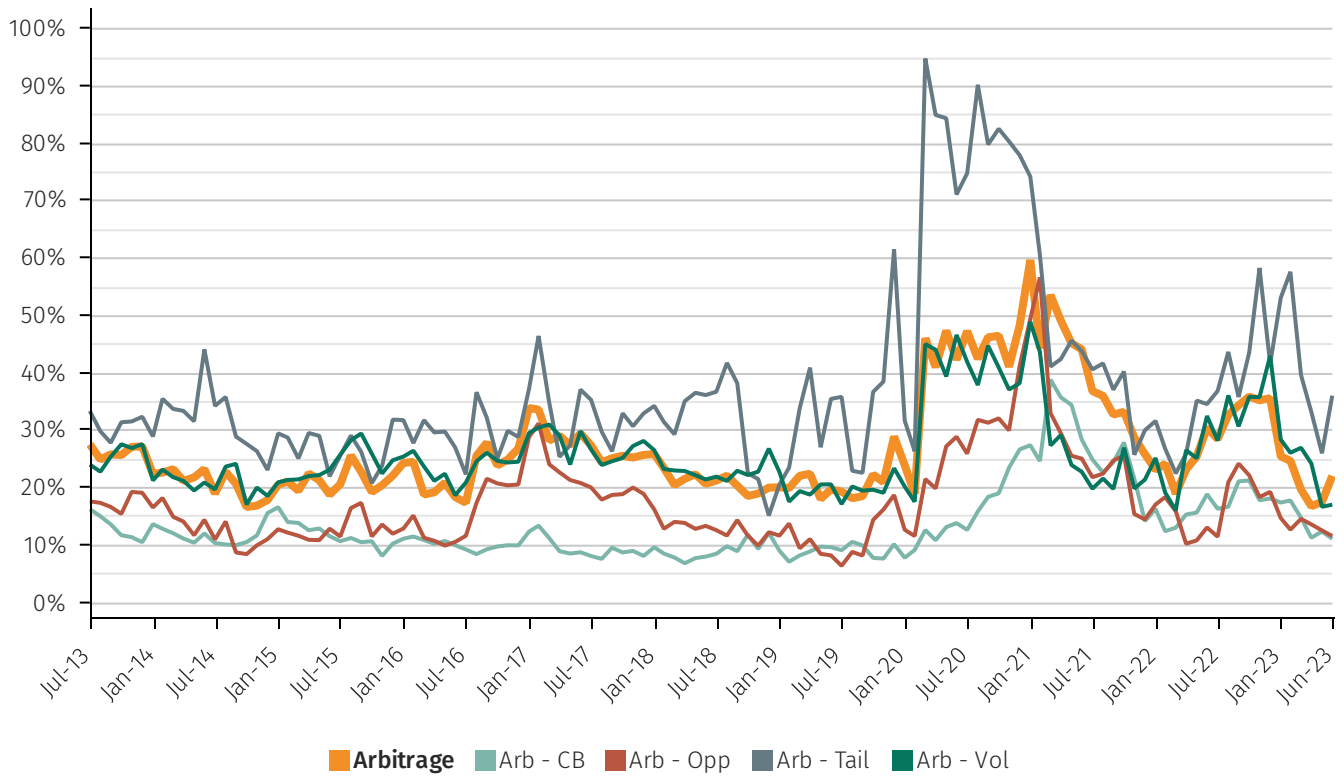
### Arb - CB



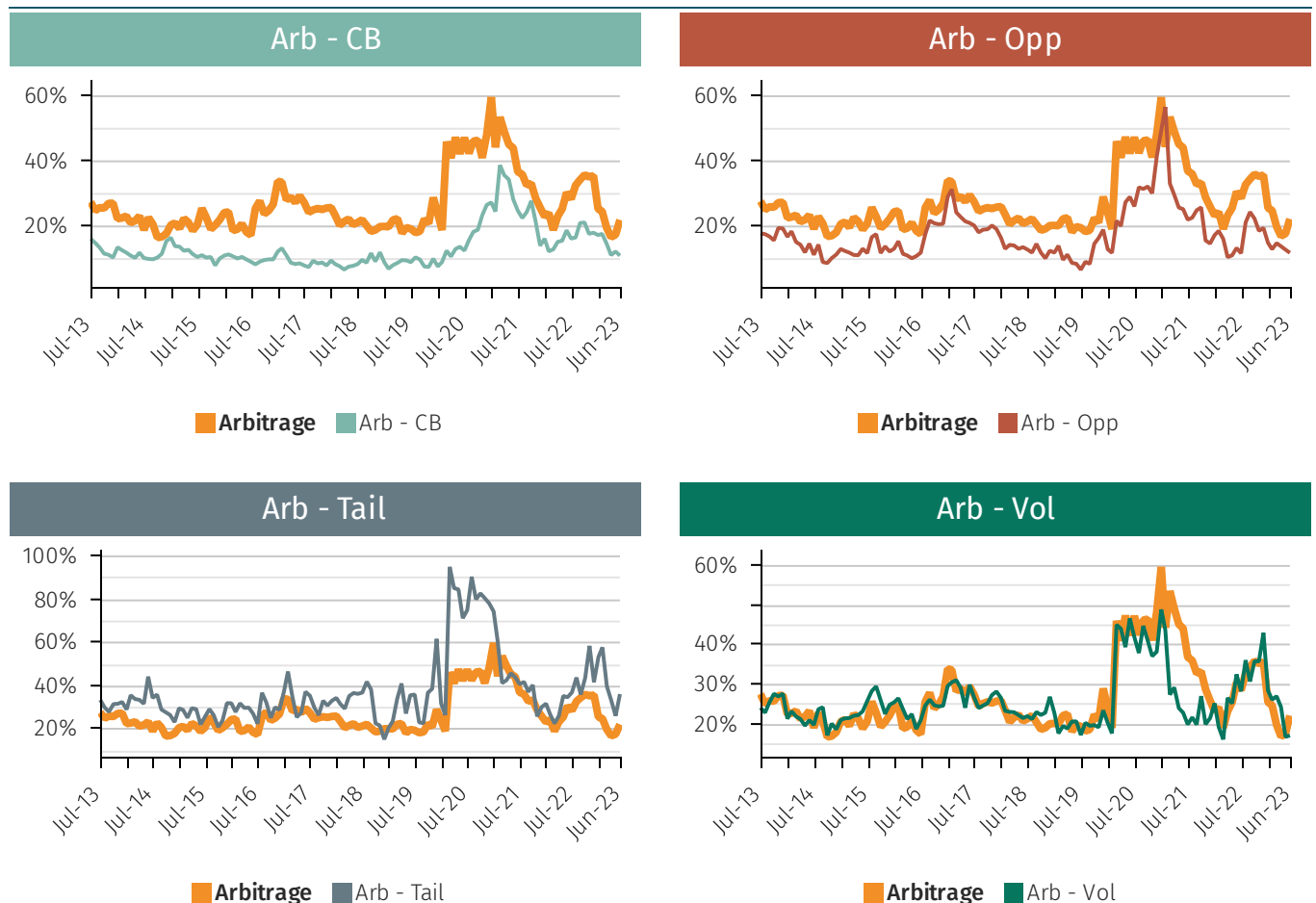
### Arb - Tail



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

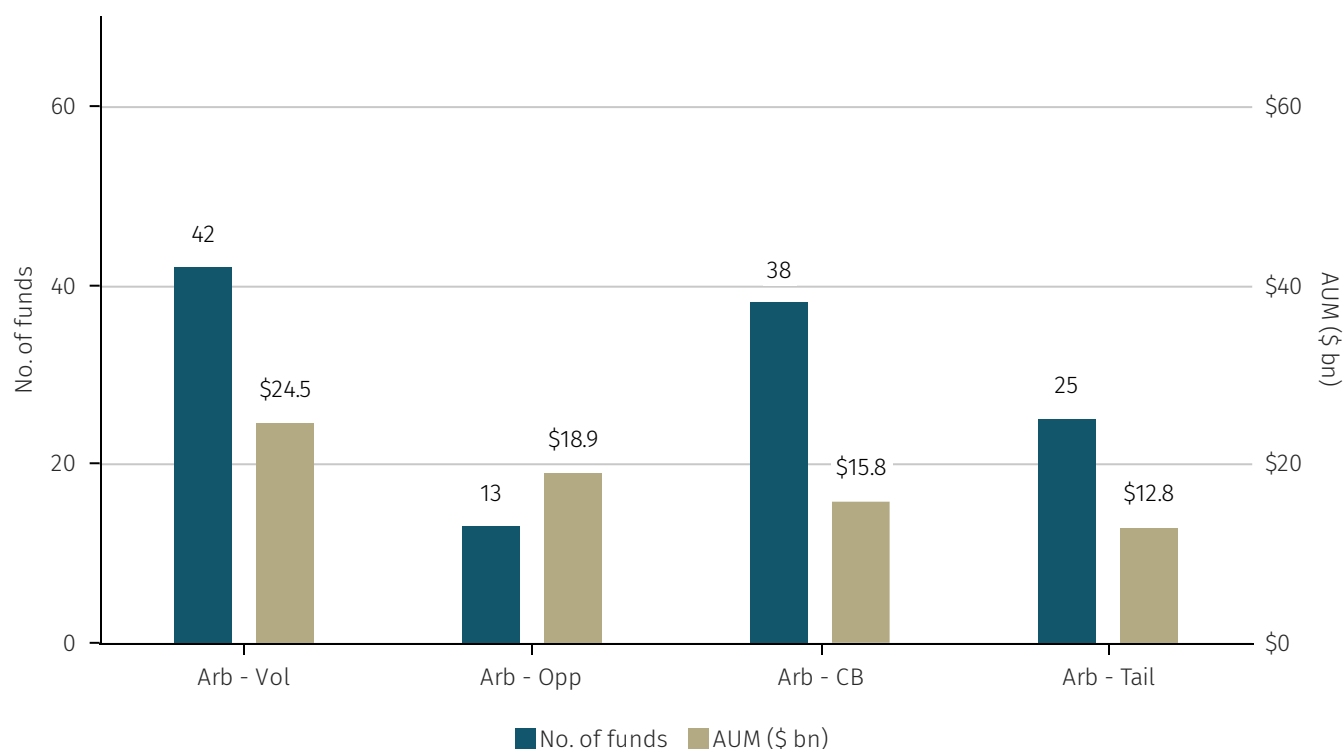


## 10<sup>th</sup> – 90<sup>th</sup> PERCENTILE 12M ROLLING PERFORMANCE SPREAD - SUB STRATEGY VS MASTER STRATEGY

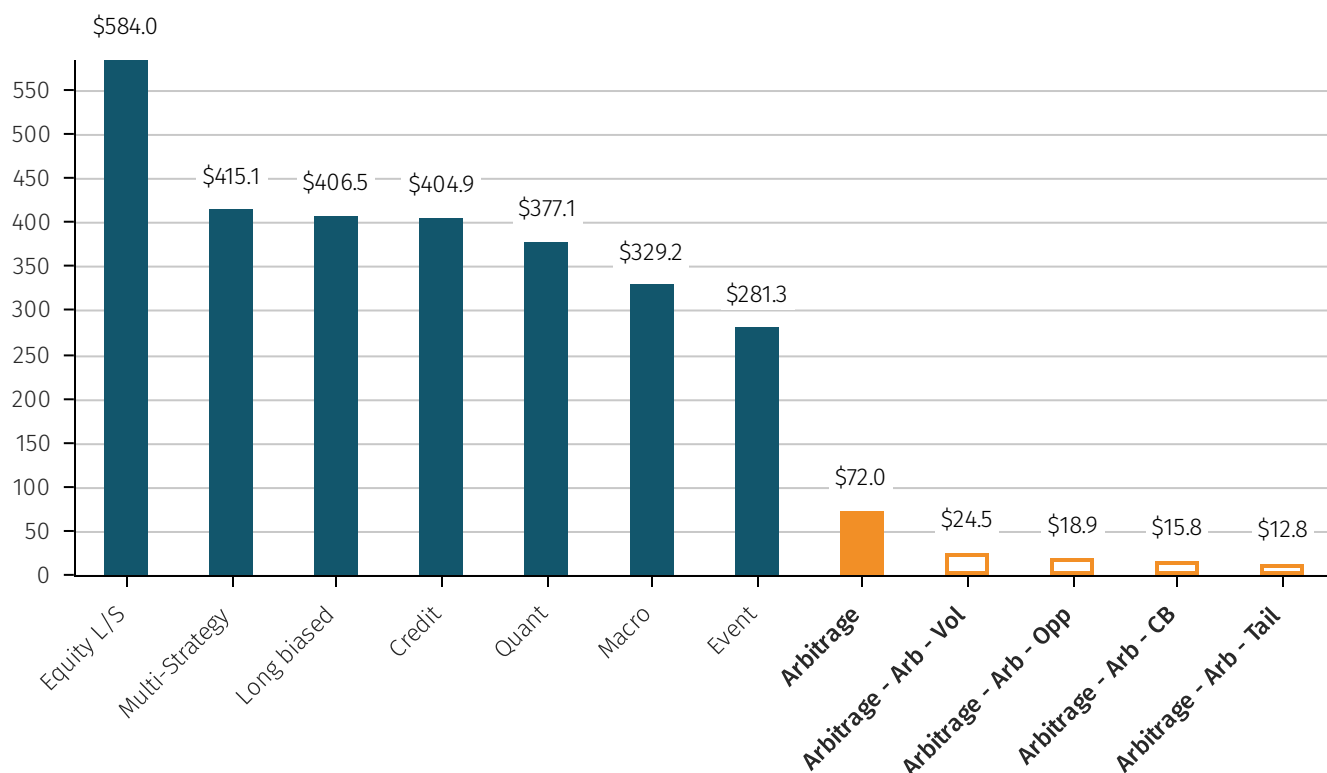


## Assets and flows

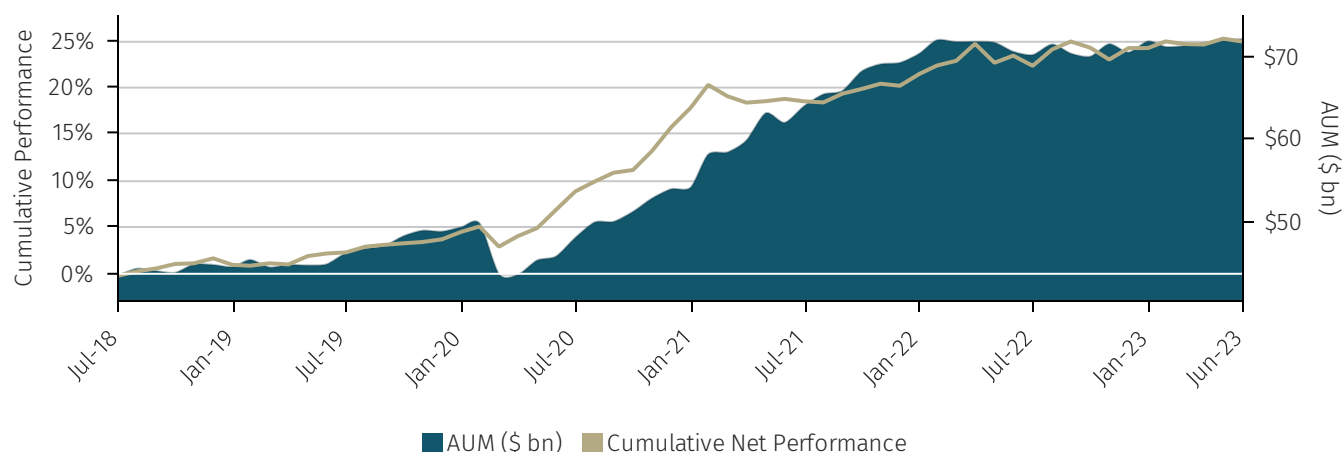
### NUMBER OF FUNDS AND AUM BY SUB-STRATEGY



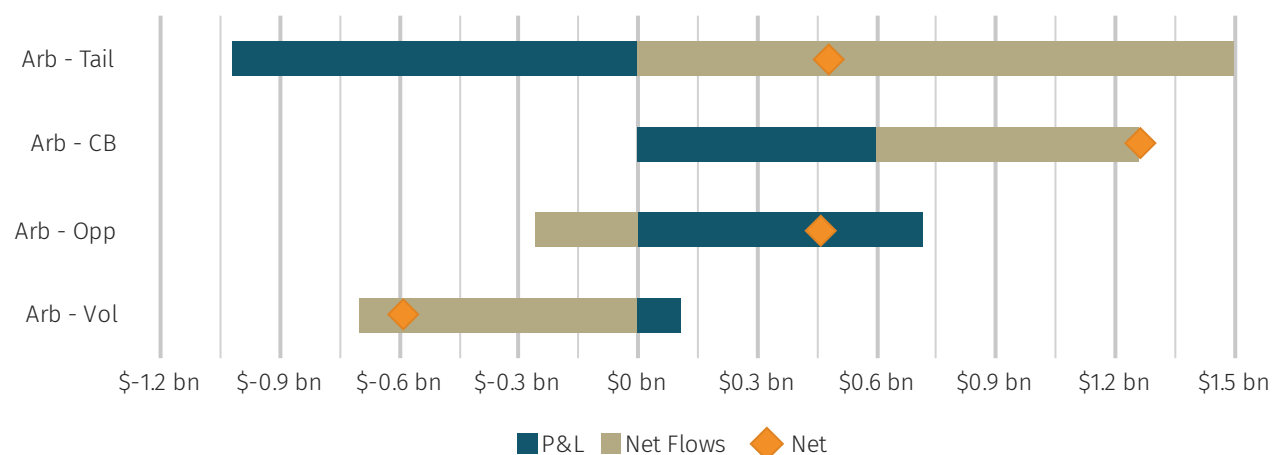
### CURRENT AUM OF MASTER STRATEGY (\$ BN)



## MASTER STRATEGY ASSETS (5 YR)\*



## 6-MONTH CHANGE IN AUM BY SUB-STRATEGY



## Terms and conditions

	Median redemption notice (days)	Median redemption frequency	Weighted avg. redemption total (days) <sup>1</sup>	Weighted avg. management fee	Weighted avg. performance fee
<b>Arbitrage</b>	<b>30</b>	<b>Monthly</b>	<b>107</b>	<b>1.38%</b>	<b>19.57%</b>
Arbitrage – Convertible bond (CB)	45	Quarterly	111	1.29%	18.11%
Arbitrage – Opportunistic (Opp)	60	Quarterly	146	1.29%	21.28%
Arbitrage – Tail protection (Tail)	30	Monthly	46	1.16%	18.04%
Arbitrage – Volatility arbitrage (Vol)	28	Monthly	88	1.67%	19.38%

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

# Definitions

## Arbitrage

Master strategy: Strategies that look to benefit from mispricings of the same instrument/asset or extremely closely related instrument. The strategy covers the following areas: convertible bond arbitrage, tail protection, volatility or opportunistic trades in this area, including but not limited to other areas such as capital structure arbitrage, ETF arbitrage or arbitrage of other closely related instruments.

### Arbitrage - Convertible bond (Arb – CB)

Traditionally the strategy looks to isolate mispriced components of convertible bond ('CB') securities in order to capture a return to fair value. CBs essentially consist of a bond plus an embedded call option on the equity. Key valuation components relate to the credit (bond component) and the volatility (option and equity component). Those components other than the component believed to be mispriced are typically hedged in order to isolate the mispricing.

### Arbitrage - Tail protection (Arb – Tail)

Strategies that explicitly look to benefit from tail events (large market moves to the downside), typically either in the form of large spikes in volatility (either from implied or realised volatility), or from significant moves in the underlying spot price (long gamma) or a particular asset. Some tail protection strategies also look to benefit from sudden/large moves in spread relationships, which are typically tight, but which can move to extremes during periods of stress.

### Arbitrage - Volatility arbitrage (Arb – Vol)

Traditionally the strategy looks to identify the mispricing of volatility. Funds may incorporate exposure to factors such as implied volatility, dividends, skew, term structure and correlation. Funds may be biased short, long or neutral to Greek exposures such as delta, vega and gamma.

### Arbitrage – Opportunistic (Arb – Opp)

Strategies that look to benefit from inconsistent/mispricing of the same instrument/asset or extremely closely related assets. Opportunistic arbitrage strategies typically have the flexibility to trade across multiple areas, but tend to specialise in a combination of volatility trading, convertible bonds and capital structure arbitrage trades. But they may also focus on other niche areas in order to capitalise upon perceived mispricing. The narrow arbitrage focus is why they are better considered as part of arbitrage, rather than in the broader multi-strategy classification.

## **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](http://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

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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 June 2023. 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.

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