On the Performance of Cryptocurrency Funds

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Why should we care?

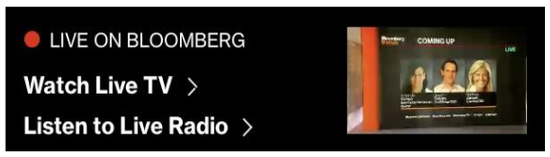
Cryptocurrencies

Fidelity Says a Third of Big Institutions Own Crypto Assets

By Olga Kharif

9 June 2020, 13:50 CEST *Updated on 9 June 2020, 14:32 CEST*

- Firm surveyed nearly 800 institutions in U.S. and Europe
- More than 25% of the respondents hold Bitcoin, 11% own Ether



Why should we care?

Cryptocurrencies

Fidelity Launches Inaugural Bitcoin Fund for Wealthy Investors

By Michael McDonald and Vildana Hajric
26 August 2020, 23:21 CEST

- Money manager to offer Wise Origin Bitcoin Index Fund I
- Qualified clients must make minimum investment of $100,000

Fidelity Bitcoin Fund Attracts $102M in First 9 Months

New SEC filings show the investment giant's Wise Origin Bitcoin Index Fund is one of the largest of its kind.

Why should we care?

Hedge funds + Add to myFT

Hedge funds expect to hold 7% of assets in crypto within five years

Forecast could equate to about $312bn in digital currencies across the industry, survey finds

The Intertrust survey signals a major vote of confidence in digital assets © Edgar Su/Reuters

Laurence Fletcher in London JUNE 15 2021

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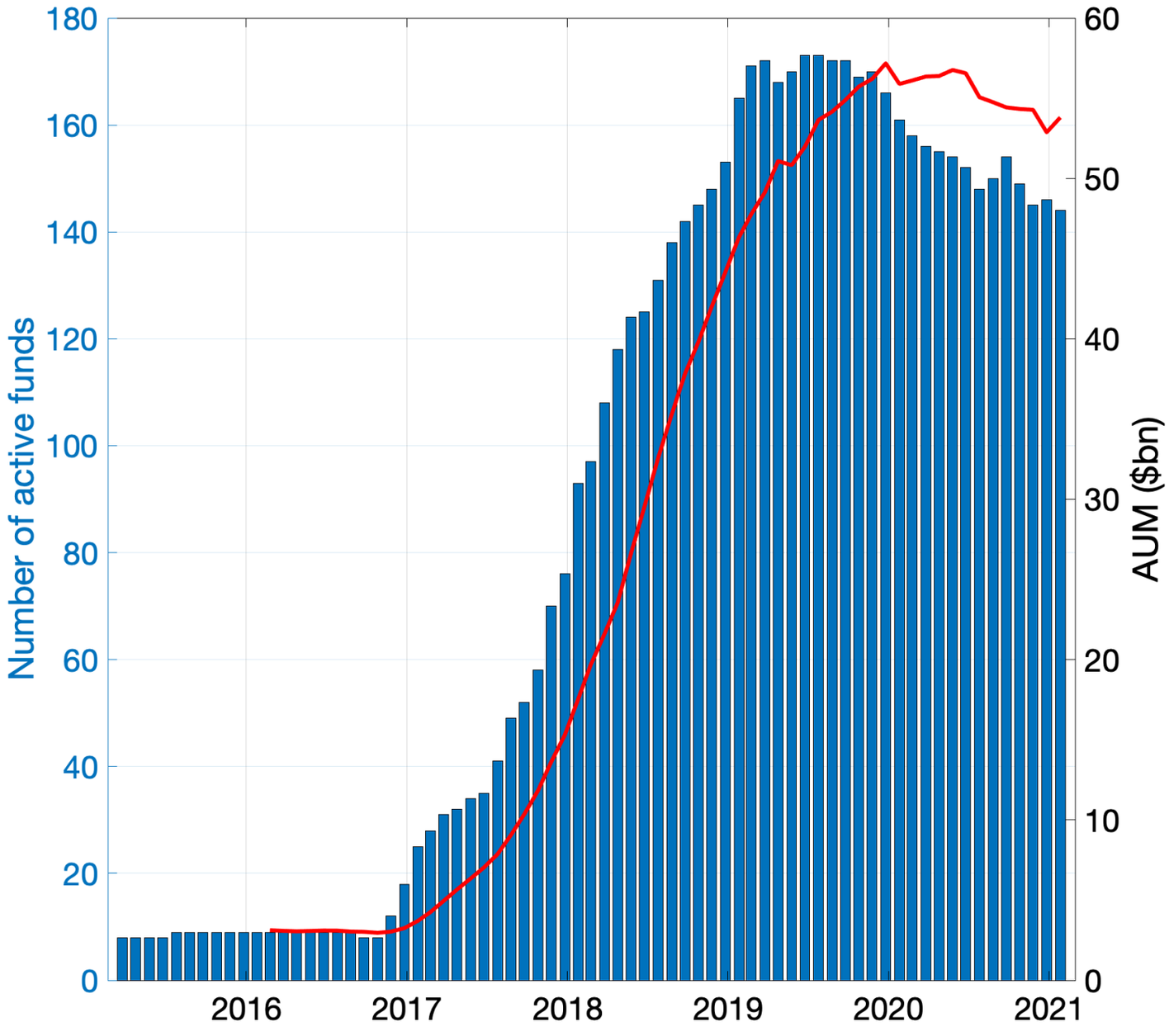
Why should we care?



Within five years the number of funds specialized in cryptocurrency investments increased by roughly 10 times.

The AUM went from few hundred $mln to roughly $50bn (as of end of January 2021)

Active funds (blue bars) vs Assets Under Management (red line).

Our paper:

A comprehensive study on active investment management in cryptocurrency markets.

What we do:

We look at the performance of 250 **funds that specialize in cryptocurrency investments** from March 2015 to January 2021.

- Benchmark- and risk-adjusted, net-of-fees, returns.
- Bootstrap approach to control for ‘’skill vs luck’’ + presence of outlying funds (see Kosowski et al. 2006 and Fama and French 2010).

What we find:

- On average, crypto funds generate sizable benchmark- and risk-adjusted alphas.
- This is primarily due to a small fraction of “skilled” outlying funds.
- The large sampling variation, i.e., volatility, makes hard to disentangle managers’ skills once exposures to benchmarks/risk factors are considered.

Cryptocurrency markets and delegated investment management

Cryptocurrency funds provide a peculiar context in which to understand the role of active asset management:

- Cryptocurrency markets are arguably de-coupled from traditional asset classes, i.e., markets are somewhat segmented (see, e.g., Liu and Tsyvinski 2020)

- New and mostly unregulated asset class. Regulation often plays a role with respect to fund managers risk taking behaviors (see, e.g., Novy-Marx and Rauh 2011)

- Low competition compared to traditional funds
  e.g., scarce competition from cheap and/or passive investment vehicles)

- Outlying performances, within-strategy correlation and non-normality.

Data description

Data description: Fund returns

Monthly net-of-fee returns for 250 funds from March 2015 to January 2021

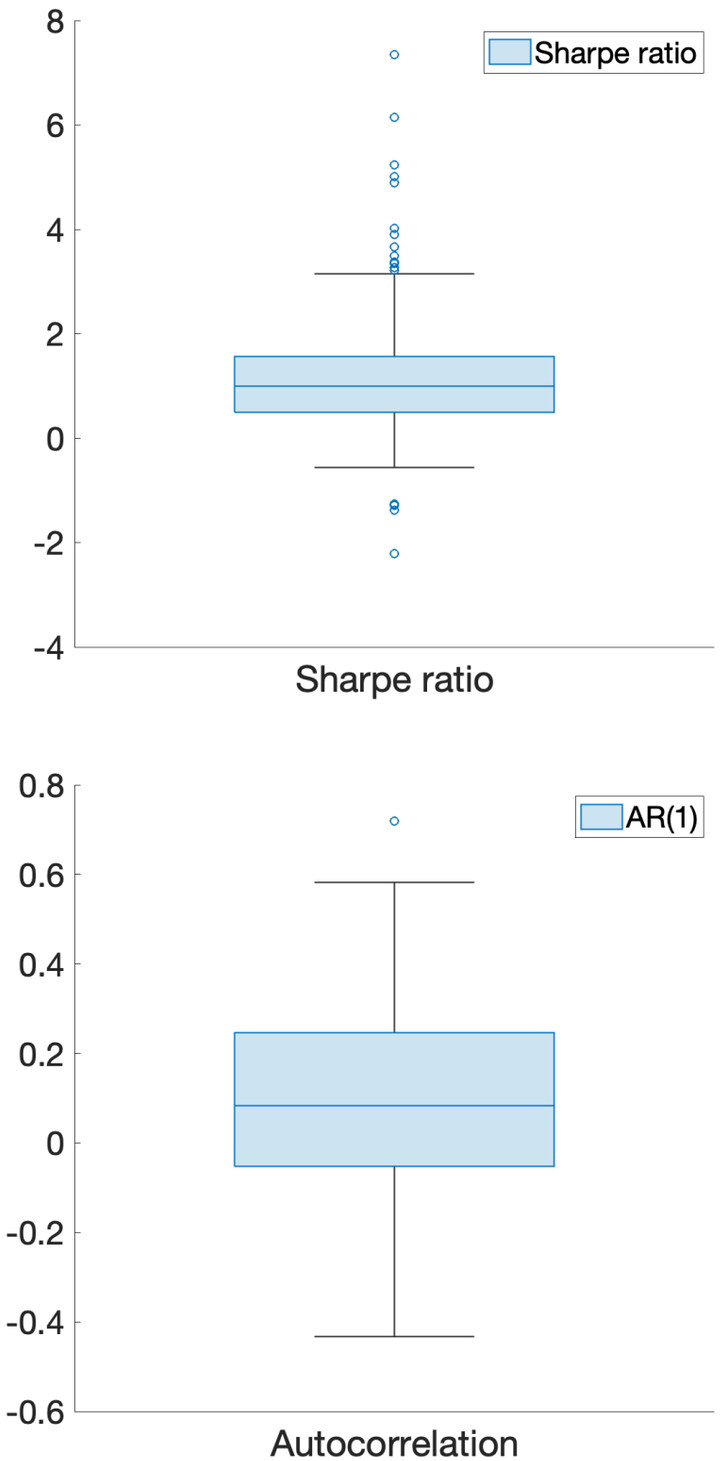
- Data collected from few sources (Crypto Fund Research + hand collection)
- Managers report returns on a voluntary basis (no legal obligation).
- Funds can be clustered by strategy: Long-term, long-short, market neutral, multi-strategy and opportunistic.

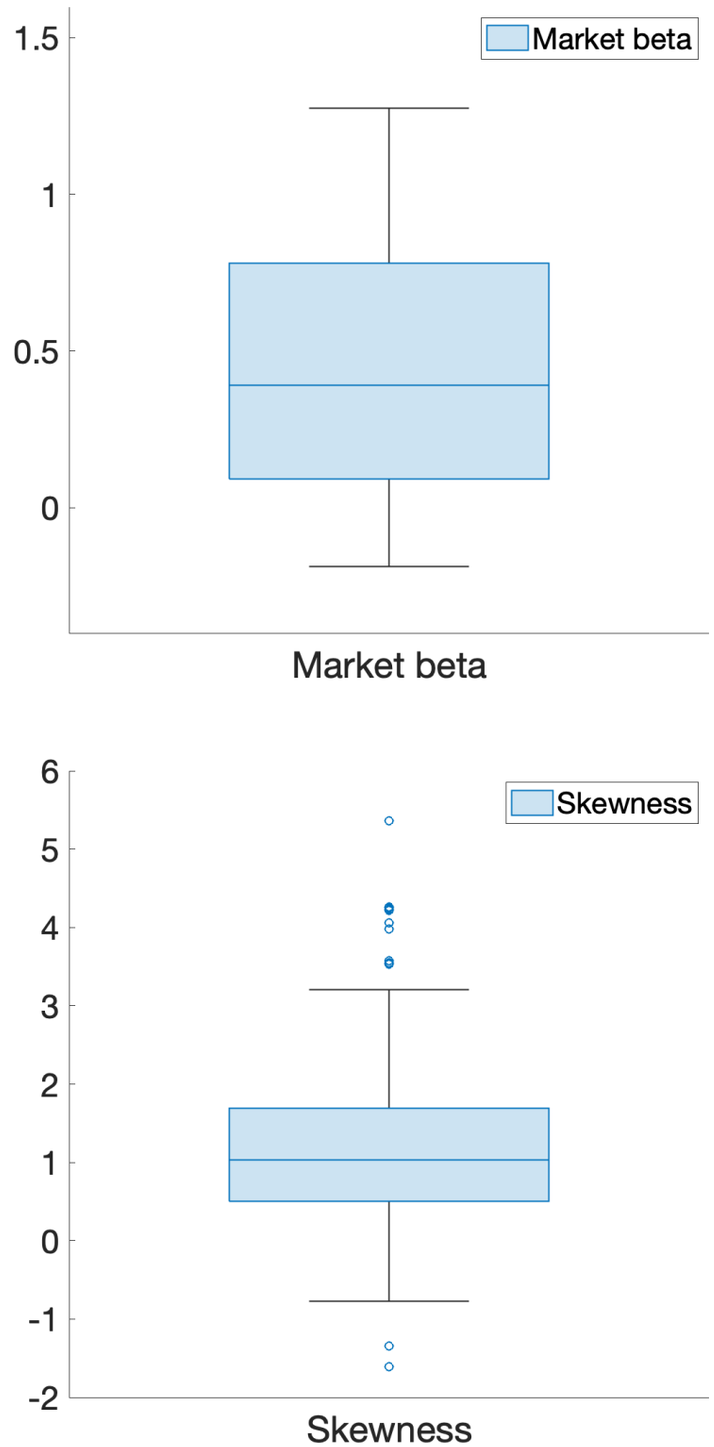
Filters:

- Exclude funds with less than $2mln AUM and less than 12 months returns.
- No revision or survivorship bias, i.e., include “dead” funds in the sample and consider only actual reports returns.
- USD as investment currency and reported performance.

After filtering we are left with 204 active funds as of January 2021

Some of the properties of raw returns





A sketch of the empirical results

Simple regression analysis

$$y_{t,j} = \alpha_{t,j} + \hat{\boldsymbol{\beta}}_j' \text{Benchmarks}_t + \epsilon_{j,t},$$

		Equal-weight aggregation by investment strategy				
	Agg	Long-short	Long-term	Market neutral	Multi-strategy	Opportunistic
β_{BTC}	0.28	0.12	0.40	0.05	0.43	0.11
	(3.34)	(1.07)	(3.27)	(1.36)	(8.79)	(2.22)
β_{DOL}	0.09	0.13	0.13	0.03	0.04	0.03
	(1.27)	(2.24)	(1.16)	(0.80)	(0.75)	(0.92)
β_{ETF}	0.19	0.11	0.28	0.11	0.10	-0.08
	(3.13)	(1.77)	(2.85)	(1.58)	(1.67)	(-1.23)
β_{ETH}	0.13	0.11	0.22	0.00	0.01	0.06
	(1.74)	(1.21)	(1.97)	(0.10)	(0.35)	(1.32)
Adj. R^2	0.78	0.60	0.77	0.40	0.72	0.23

This table reports the betas on the passive benchmark strategies of aggregate funds across all crypto funds and strategy. The top panel reports the betas estimates and robust t-statistics (in parentheses) from the corresponding robustregression. Robust t-statistics are reported in parenthesis. The sample covers the period from March 2015 to January 2021.

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Simple regression analysis

$$\alpha_{t,j} = y_{t,j} - \hat{\boldsymbol{\beta}}_j' \text{Benchmarks}_t, \qquad \Longrightarrow \qquad \alpha_{t,j} - \alpha_{t,m} = \gamma + \eta_t,$$

		Equal-weight aggregation by investment strategy				
Agg ($\alpha_{t,m}$)		Long-short	Long-term	Market neutral	Multi-strategy	Opport
Alpha	2.50	3.17	2.09	0.49	2.28	1.92
t-stat	(2.52)	(3.01)	(1.45)	(1.09)	(2.56)	(1.92)
Difference		0.66	-0.41	-1.87	-0.22	-1.70
		(0.90)	(-0.76)	(-2.13)	(-0.31)	(-1.13)

This table reports the benchmark-adjusted performance of aggregate funds across all crypto funds and strategy. The top panel reports the alpha estimates and robust t-statistics (in parentheses) from the corresponding OLS regression. In order to test for the difference in the alphas, we use an approach á la Diebold and Mariano (2002).The bottom panel reports the estimate $\hat{\gamma}$ and robust t-statistics (in parenthesis). The sample covers the period from March 2015 to January 2021.

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Simple regression analysis

Takeaways from the simple regression analysis:

- There is some evidence that fund managers generate value, on average.
- There are difference across investment strategies (within-strategy correlation).
- BTC as a ‘’level’’ factor

Bootstrap analysis of individual fund performances

Looking at the average fund performance could be mis-leading (Fama and French 2010)

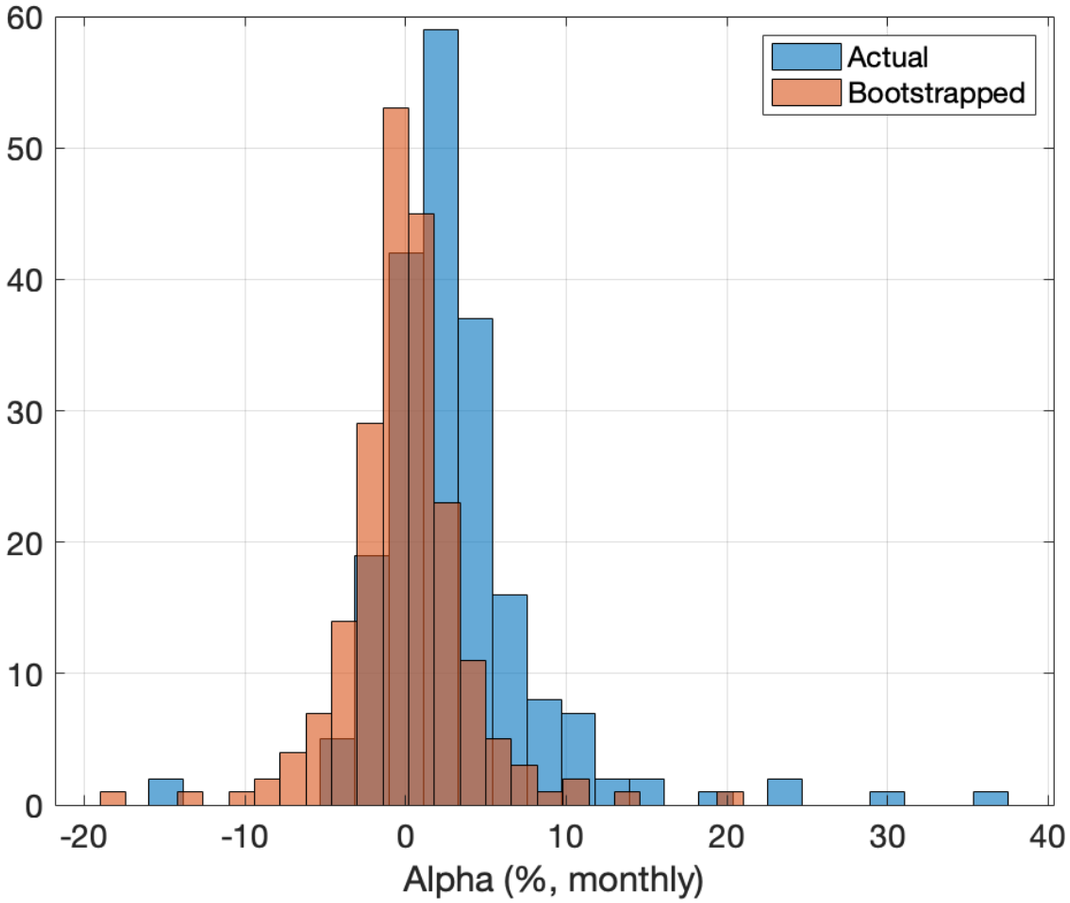
- Cannot control for the differences in risk-taking behaviors/skills.
- Returns on crypto funds are highly non-normal, i.e., the cross-section of alphas represents a complex mixture of non-normal distributions.

We extend the existing literature and propose a panel semi-parametric bootstrap which accounts for:

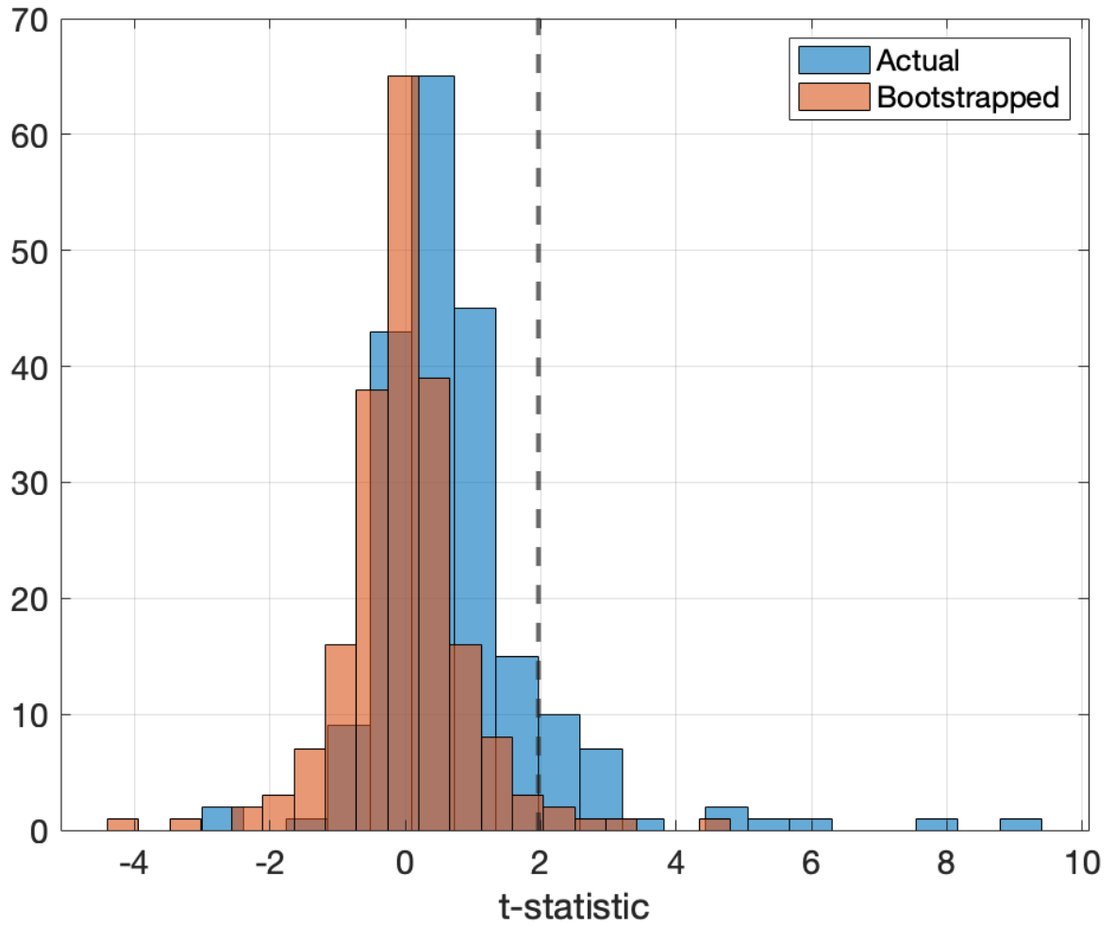
- Skill vs luck in performances – simulate zero-alpha returns and estimate the alpha due to sampling variation.
- Strategy-specific exposure to benchmark returns or risk factors.
- Within-strategy correlation.

Bootstrap analysis of individual fund performances

Cross-section of benchmark-adjusted alphas and standardized alphas



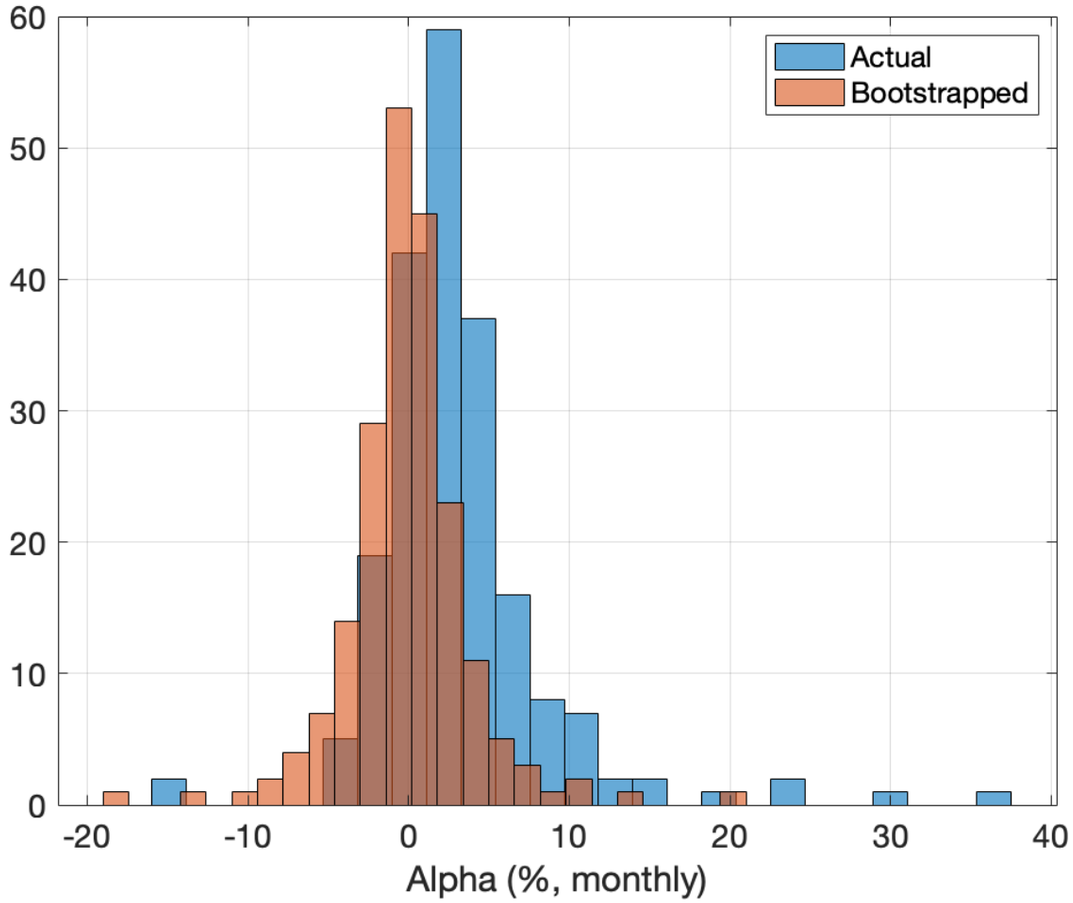
Raw benchmark-adjusted alphas



Standardised benchmark-adjusted alphas

Bootstrap analysis of individual fund performances

Cross-section of benchmark-adjusted alphas and standardized alphas



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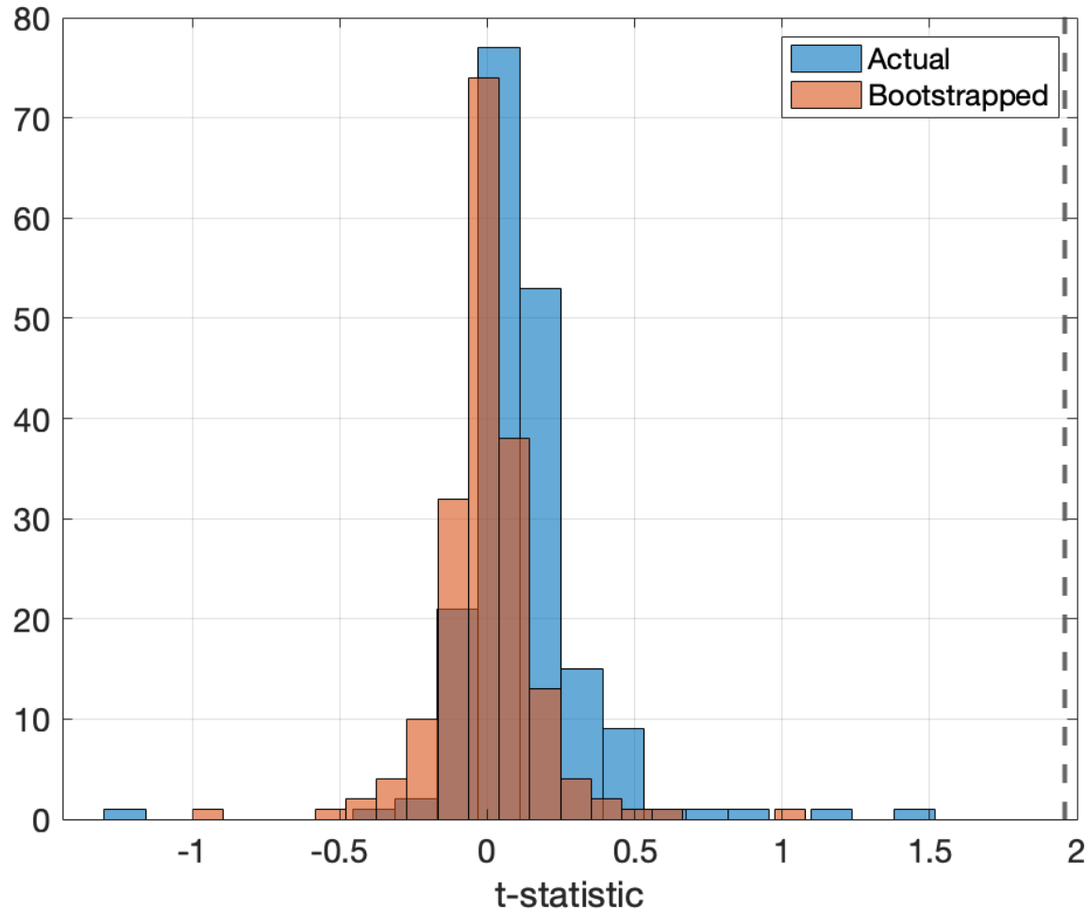

Standardised benchmark-adjusted alphas (clustered st.err at the strategy level)

Check our paper for more

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Abstract

We investigate the performance of funds that specialise in cryptocurrency markets. In doing so, we contribute to a growing literature that aims to understand the value of digital assets as investments. Methodologically, we implement a panel semi-parametric bootstrap approach that samples jointly the cross-sectional distribution of alphas conditional on different benchmark strategies and/or risk factors. Empirically, we show that a small significant fraction of managers are able to generate economically large alphas which are not purely due to sampling variation. However, once we account for the within-strategy correlation of the fund returns, the significance of the alphas substantially decreases below standard threshold confidence levels.

Keywords: Cryptocurrency, Investments, Active Management, Alternative Investments, Bootstrap Methods, Bitcoin.

JEL Classification: G12, G17, E44, C58

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