

CF Benchmarks Quarterly Attribution Report

Attribution Analysis: June 2, 2023 -
September 1, 2023

Market Recap

Spot filings & court rulings whipsaw markets as macro uncertainty looms

The next wave of institutional adoption may be around the corner. Recent filings from leading asset managers have increased the possibility of a spot Bitcoin exchange-traded fund (ETF), which has helped bring renewed interest and optimism into digital assets. Bitcoin prices breached the \$30K mark for the first time since April, before retracing back to the \$25K-\$28K range. The implications of a spot ETF for both the industry and Bitcoin itself are profound. For the first time, clients and advisors across the United States will have access to an investment vehicle that offers pure exposure to Bitcoin in a readily accessible, exchange-listed product that offers high liquidity, complies with regulations, is tax-efficient, and eliminates the operational risks of maintaining private cryptographic keys.

While the approval of a spot Bitcoin ETF is still pending, recent court rulings have indicated that U.S. regulators must reconsider the grounds of their previous rejections of such financial products. These judicial decisions have been critical for investors and institutions who have been seeking regulatory clarity. Furthermore, in July, a federal judge ruled that Ripple's XRP token may not always be considered an investment contract or security. This would imply that the current regulatory securities framework may not be applicable to such tokens, something that many crypto industry proponents have been arguing for years.

In the macro environment, following the most aggressive Fed hiking cycle in almost four decades, optimism for a soft landing has begun to permeate through to more bullish pricing sentiment across most risk assets. The US economy has proven more resilient than many anticipated, with growth forecasts trending higher over the next few quarters. This is despite the banking sector turmoil earlier in the year and the more recent debt-ceiling standoff that resulted in a credit rating downgrade. However, the global economy faces a series of complex challenges through the remainder of 2023. Inflation rates in most developed markets are still unacceptably high for monetary policymakers, and it appears this pricing pressure is likely to linger.

The negative sentiment in the second half of the rebalancing period led to more defensive price action, which resulted in mega cap token resilience. This dynamic enabled our capitalization series, namely the CF Ultra Cap 5 and Floating Broad Cap indices, to relatively outperform the rest of our benchmarks. On the other hand, the CF Digital Culture Composite and Blockchain Infrastructure Indices ended the rebalancing period as the group's worst performers.

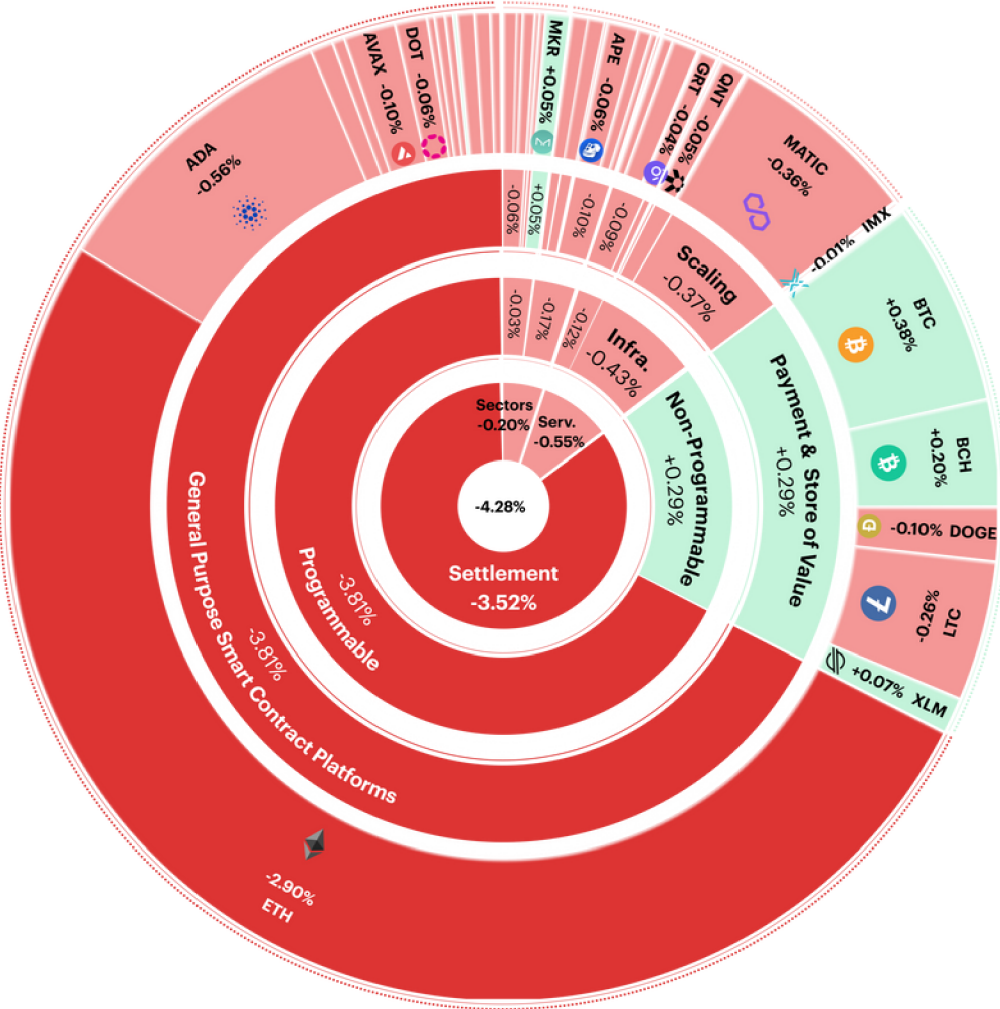
Attribution Analysis: CF Broad Cap Indices

Performance Attribution (Free Float Market Cap)



Index Return Contribution

Total Performance Contribution: -4.28% Date: 31st August 2023



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	CONTRIBUTION
Sectors	Finance	Trading	CRV	-0.03%
		Derivatives	LRC	-0.01%
		Borrowing & Lending	UNI	-0.02%
		Stablecoin Issuance & Management	SNX	-0.01%
		Gaming	AAVE	-0.01%
		VR & AR	MKR	+0.05%
		Media	GALA	-0.03%
		Social	MANA	-0.03%
		Infrastructure	BAT	-0.01%
		Culture	APE	-0.06%
Services	Infrastructure	Scaling	CHZ	-0.02%
		Interoperability	SHIB	-0.02%
		Computing	IMX	-0.01%
		Oracles	MATIC	-0.36%
		Information & Data Management	QNT	-0.05%
	Utility	Scaling	STX	-0.01%
		Interoperability	LINK	-0.02%
		Computing	FIL	-0.05%
		Oracles	GRT	-0.04%
		Information & Data Management	ETH	-2.90%
Settlement	Programmable	Payment & Store of Value	ADA	-0.56%
		General Purpose Smart Contract Platforms	ALGO	-0.04%
			ATOM	-0.02%
			AVAX	-0.10%
			DOT	-0.06%
			EOS	-0.01%
			ETC	-0.02%
			FTM	-0.02%
			HBAR	+0.01%
			ICP	-0.03%
			SOL	-0.03%
			XTZ	-0.02%
		Non-Programmable	BTC	+0.38%
	BCH	+0.20%		
	DOGE	-0.10%		
	LTC	-0.26%		
	XLM	+0.07%		

- The CF Floating Broad Cap Index posted a 4.3% decline over the most recent rebalancing period. Our market-cap weighted variant outperformed the diversified weighting scheme by over 300 basis points.
- Bitcoin was the main performance contributor, adding over 37 basis points in positive performance. Meanwhile, Ether subtracted over 2.9%. From a CF DACS perspective, the general purpose Smart Contract Platforms segment was responsible for almost all of the headline index's decline.

Source: CF Benchmarks, as of August 31, 2023

Index Weights (Free Float Market Cap)



2nd June 2023

Total Weight: 100% Index Value: 1243.59

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors 1.44%	Finance 0.58%	Trading 0.35%	CRV 0.06% LRC 0.04% UNI 0.26%		
		Derivatives 0.06%	SNX 0.06%		
		Borrowing & Lending 0.10%	AAVE 0.10%		
		Stablecoin Issuance & Management 0.06%	MKR 0.06%		
		Gaming 0.09%	GALA 0.09%		
		VR & AR 0.09%	MANA 0.09%		
	Culture 0.87%	Media 0.03%	BAT 0.03%		
		Social 0.66%	APE 0.11% CHZ 0.07% SHIB 0.49%		
			Scaling 1.04%	IMX 0.04% MATIC 1.00%	
			Interoperability 0.34%	QNT 0.34%	
		Utility 0.69%	Computing 0.06%	STX 0.06%	
			Oracles 0.38%	LINK 0.38%	
			Information & Data Management 0.31%	FIL 0.17% GRT 0.14%	
		Settlement 96.42%	Programmable 34.86%	General Purpose Smart Contract Platforms 34.86%	ETH 30.08% ADA 1.89% ALGO 0.12% ATOM 0.07% AVAX 0.34% DOT 0.39% EOS 0.04% ETC 0.16% FTM 0.05% HBAR 0.12% ICP 0.12% SOL 1.39% XTZ 0.09%
Non-Programmable 61.57%	Payment & Store of Value 61.57%				BTC 58.94% BCH 0.22% DOGE 1.24% LTC 0.92% XLM 0.23%

1st September 2023

Total Weight: 100% Index Value: 1138.77

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors 1.32%	Finance 0.62%	Trading 0.28%	CRV 0.04% UNI 0.25%		
		Derivatives 0.05%	SNX 0.05%		
		Asset & Wealth Management 0.08%	LDO 0.08%		
		Borrowing & Lending 0.09%	AAVE 0.09%		
		Stablecoin Issuance & Management 0.11%	MKR 0.11%		
		Gaming 0.06%	GALA 0.06%		
	Culture 0.70%	VR & AR 0.06%	MANA 0.06%		
		Social 0.59%	APE 0.06% CHZ 0.04% SHIB 0.48%		
			Infrastructure 1.53%	Scaling 1.15%	ARB 0.46% IMX 0.03%
				Interoperability 0.27%	MATIC 0.66% QNT 0.27%
Services 2.16%	Utility 0.63%	Computing 0.11%	RNDR 0.05% STX 0.05%		
		Oracles 0.41%	LINK 0.41%		
		Information & Data Management 0.23%	FIL 0.13% GRT 0.10%		
Settlement 96.51%	Programmable 32.91%	General Purpose Smart Contract Platforms 32.91%	ETH 28.80% ADA 1.41% ALGO 0.08% APT 0.03% ATOM 0.05% AVAX 0.24% DOT 0.34% EOS 0.03% ETC 0.15% FTM 0.03% HBAR 0.14% ICP 0.10% SOL 1.43% XTZ 0.08%		
			Non-Programmable 63.61%	Payment & Store of Value 63.61%	BTC 60.97% BCH 0.43% DOGE 1.20% LTC 0.68% XLM 0.33%

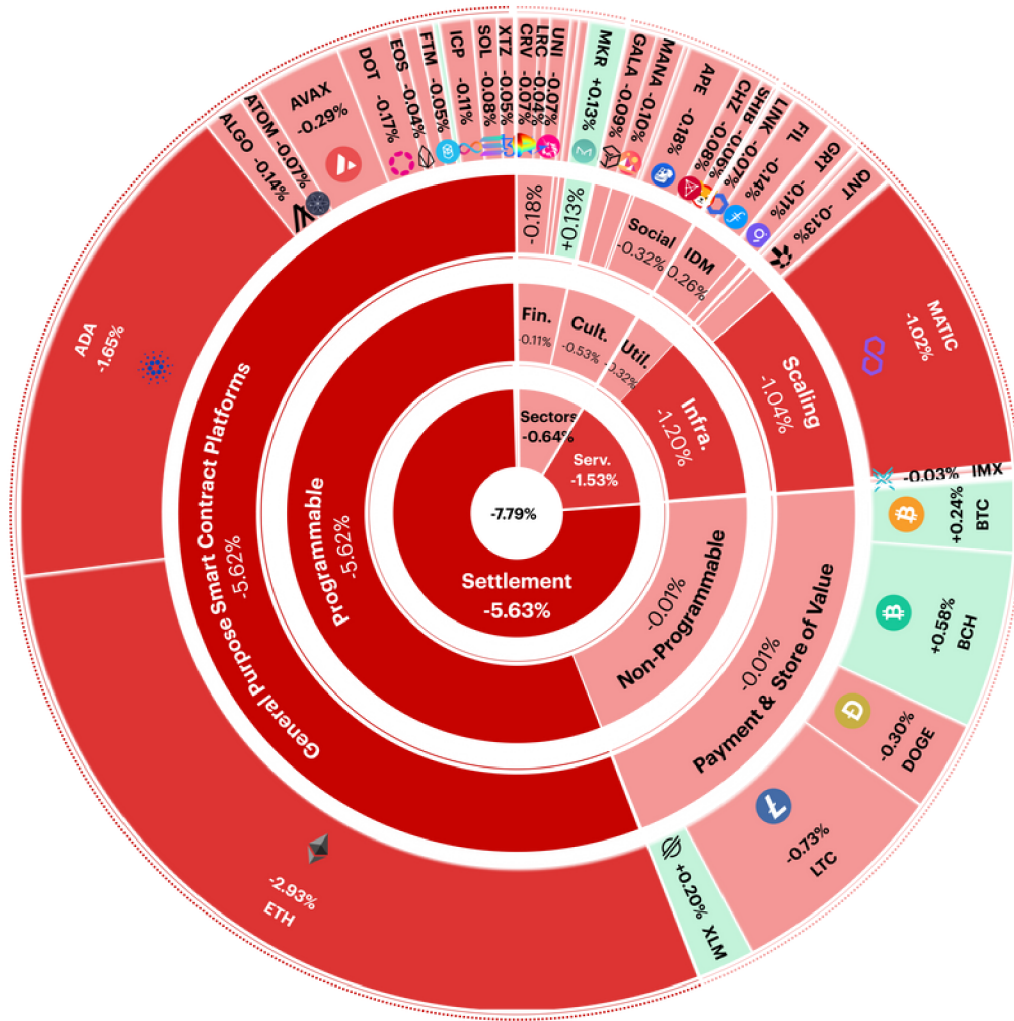
Performance Attribution (Diversified Weight)



Index Return Contribution

Total Performance Contribution: -7.79%

Date: 31st August 2023



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Sectors	Finance	Trading	-0.18%
		Derivatives	-0.03%
		Borrowing & Lending	-0.03%
		Stablecoin Issuance & Management	+0.13%
		Gaming	-0.09%
	Culture	VR & AR	-0.10%
		Media	-0.02%
		Social	-0.32%
		Scaling	-1.04%
		Interoperability	-0.13%
Services	Infrastructure	Computing	-0.03%
		Oracles	-0.07%
	Utility	Information & Data Management	-0.26%
		Payment & Store of Value	-0.01%
		Non-Programmable	-0.01%
Settlement	Programmable	General Purpose Smart Contract Platforms	-5.62%
		Non-Programmable	-0.01%
		Payment & Store of Value	-0.01%
		General Purpose Smart Contract Platforms	-5.62%
		Non-Programmable	-0.01%
		Payment & Store of Value	-0.01%
		General Purpose Smart Contract Platforms	-5.62%
		Non-Programmable	-0.01%
		Payment & Store of Value	-0.01%
		General Purpose Smart Contract Platforms	-5.62%
Non-Programmable	-0.01%		

- The CF Diversified Broad Cap Index saw a decline of 7.8%. Ether and Cardano's ADA were the main detractors in performance, subtracting 1.7% and 2.9% from the index value, respectively. Meanwhile, Bitcoin Cash (BCH) and Bitcoin led in contribution, adding 58 bps and 24 bps, respectively.
- From a CF DACS perspective, the general purpose Smart Contract Platforms segment was responsible for 5.6% of the total decline in index value, and conversely, the Stablecoin Issuance & Management segment was the only group that contributed positive value.

Index Weights (Diversified Weight)



2nd June 2023

Total Weight: 100% Index Value: 1122.57

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	
Sectors 4.34%	Finance 1.73%	Trading	1.08%	CRV 0.17%
		Derivatives	0.17%	LRC 0.12%
		Borrowing & Lending	0.30%	UNI 0.79%
		Stablecoin Issuance & Management	0.17%	SNX 0.17%
		Gaming	0.27%	AAVE 0.30%
		VR & AR	0.26%	MKR 0.17%
	Culture 2.61%	Media	0.09%	GALA 0.27%
		Social	1.99%	MANA 0.26%
				BAT 0.09%
				APE 0.35%
				CHZ 0.20%
				SHIB 1.43%
Services 5.94%	Infrastructure 3.99%	Scaling	2.93%	IMX 0.11%
		Interoperability	0.87%	MATIC 2.82%
		Computing	0.19%	QNT 0.87%
	Utility 1.96%	Oracles	1.12%	STX 0.19%
		Information & Data Management	0.84%	LINK 1.12%
				FIL 0.46%
Settlement 89.72%	Programmable 44.37%	General Purpose Smart Contract Platforms 44.37%		ETH 30.38%
				ADA 5.53%
				ALGO 0.38%
				ATOM 0.21%
				AVAX 1.02%
				DOT 1.16%
				EOS 0.12%
				ETC 0.48%
				FTM 0.16%
				HBAR 0.34%
				ICP 0.39%
				SOL 3.94%
	Non-Programmable 45.35%	Payment & Store of Value 45.35%		XTZ 0.27%
				BTC 37.77%
				BCH 0.65%
				DOGE 3.68%
				LTC 2.60%
				XLM 0.65%

1st September 2023

Total Weight: 100% Index Value: 991.87

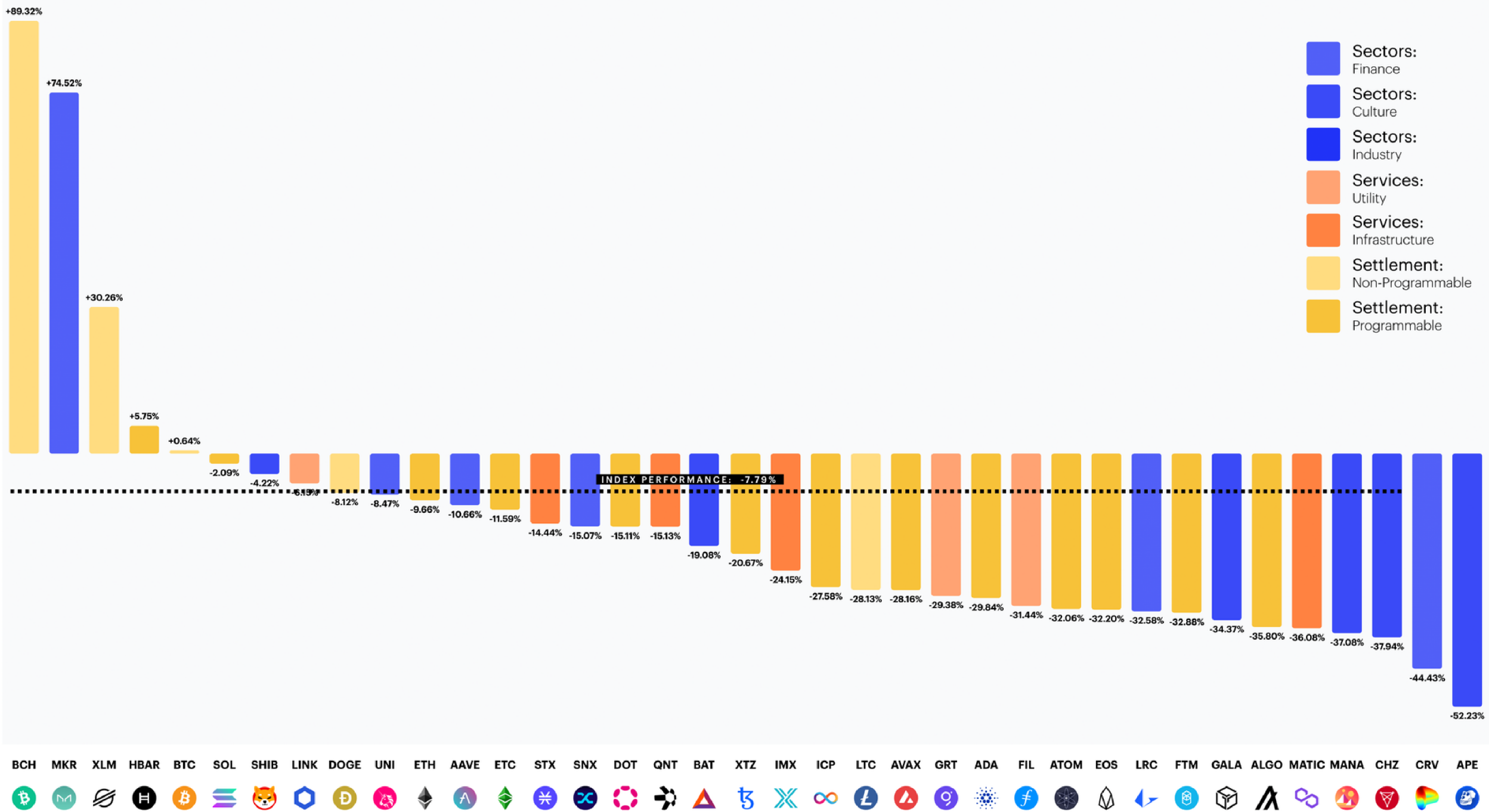
CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	
Sectors 3.99%	Finance 1.90%	Trading	0.90%	CRV 0.12%
		Derivatives	0.17%	UNI 0.79%
		Asset & Wealth Management	0.25%	SNX 0.17%
		Borrowing & Lending	0.27%	LDO 0.25%
		Stablecoin Issuance & Management	0.31%	AAVE 0.27%
		Gaming	0.18%	MKR 0.31%
	Culture 2.09%	VR & AR	0.17%	GALA 0.18%
		Social	1.74%	MANA 0.17%
				APE 0.20%
				CHZ 0.13%
				SHIB 1.42%
				ARB 1.47%
Services 6.53%	Infrastructure 4.62%	Scaling	3.54%	IMX 0.10%
		Interoperability	0.77%	MATIC 1.96%
		Computing	0.31%	QNT 0.77%
	Utility 1.91%	Oracles	1.21%	RNDR 0.16%
		Information & Data Management	0.70%	STX 0.15%
				LINK 1.21%
Settlement 89.49%	Programmable 43.15%	General Purpose Smart Contract Platforms 43.15%		ETH 30.58%
				ADA 4.20%
				ALGO 0.23%
				APT 0.09%
				ATOM 0.16%
				AVAX 0.72%
				DOT 1.03%
				EOS 0.09%
				ETC 0.45%
				FTM 0.09%
				HBAR 0.52%
				ICP 0.30%
	Non-Programmable 46.34%	Payment & Store of Value 46.34%		SOL 4.46%
				XTZ 0.22%
				BTC 38.77%
				BCH 1.14%
				DOGE 3.38%
				LTC 2.03%
		XLM 1.02%		

Bitcoin Cash stages summer rally



Absolute Performance

Index Value: 1035.14



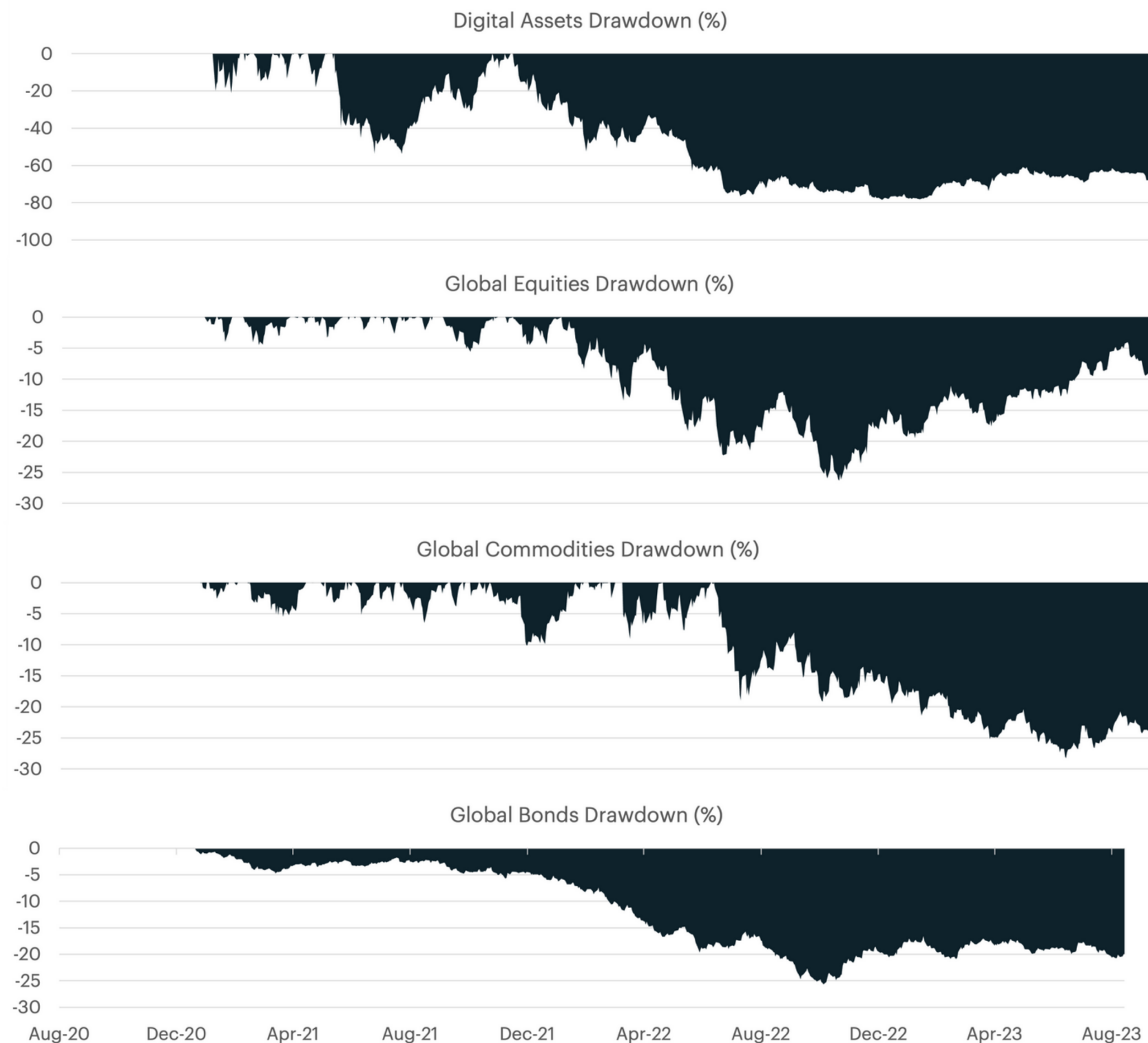
Bitcoin Cash (BCH) outpaced MakerDAO’s MKR token and was the top performing index constituent, rising 90%. Bitcoin Cash (BCH) is a cryptocurrency that was created in August 2017 as a result of a hard fork in the Bitcoin blockchain. The fork was caused by a disagreement among the Bitcoin community about the scaling of the blockchain.

This store of value token rallied over 200% in mid-June after the launch of EDX Markets, an institutionally focused digital asset exchange. BCH was listed as one of only four cryptocurrencies available on EDX. Many market participants are hoping that the listing will give BCH more exposure to institutional investors.

Lastly, negative headlines and events resulted in ApeCoin (APE) and Curve (CRV) being the major laggards of the performance period.

Source: CF Benchmarks, as of August 31, 2023

Revisiting the current market cycles



Our CF Broad Cap Index series provides the broadest, institutionally focused measure of the crypto market which can also be used by investment professionals to define the investible universe for digital assets.

Using our free-float variant as a proxy for digital assets, we can compare the crypto market to other traditional asset classes to see where they currently stand in their recovery cycles.

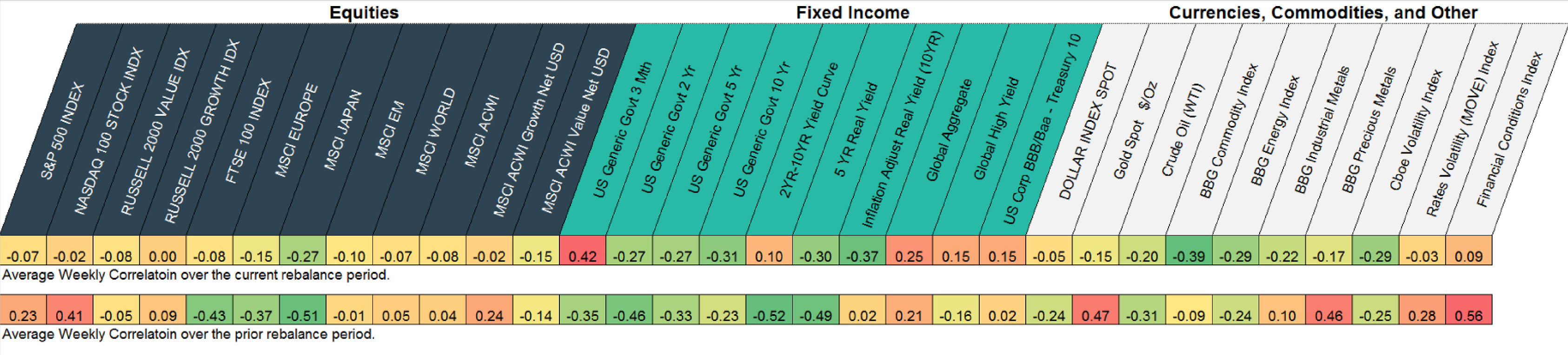
In our last attribution report, we highlighted how the crypto market has outpaced its counterparts likely due to the asymmetrical characteristics in its return profile. Currently, digital assets have not only provided outperformance year-to-date when compared to these asset classes, but the visualization highlights that there might be more room to run. Our CF Floating Broad Cap Index still remains over 60% lower than its 2021 all-time high, leaving significantly more retracement potential than global equities (-7%), commodities (-22%), and bonds (-20%). In other words, crypto's relative recovery has lagged its peers despite its positive relative performance.

Source: CF Benchmarks, Bloomberg, as of August 30, 2023. All indices reflect total returns.

What's driving crypto?



Multi-asset correlations



Investors analyze the correlation of various asset classes to help build diversified portfolios that better optimize risk and return. Utilizing our CF Floating Broad Cap Index as the market benchmark, our analysis underscores the shifts in multi-asset correlations during the latest rebalance phase. While recent market cycles have seen strong correlations between crypto markets and equity markets like the S&P 500 and Nasdaq 100 indices, this relationship has shown signs of weakening during the most recent rebalance period. Factors such as the potential introduction of a spot bitcoin ETF and diminishing macroeconomic challenges have contributed to a reduced synchronization between these decentralized assets and traditional markets.

Source: CF Benchmarks, Bloomberg, total return indices are referenced in USD, as of August 31, 2023

Attribution Analysis: CF Cryptocurrency Ultra Cap 5 Index

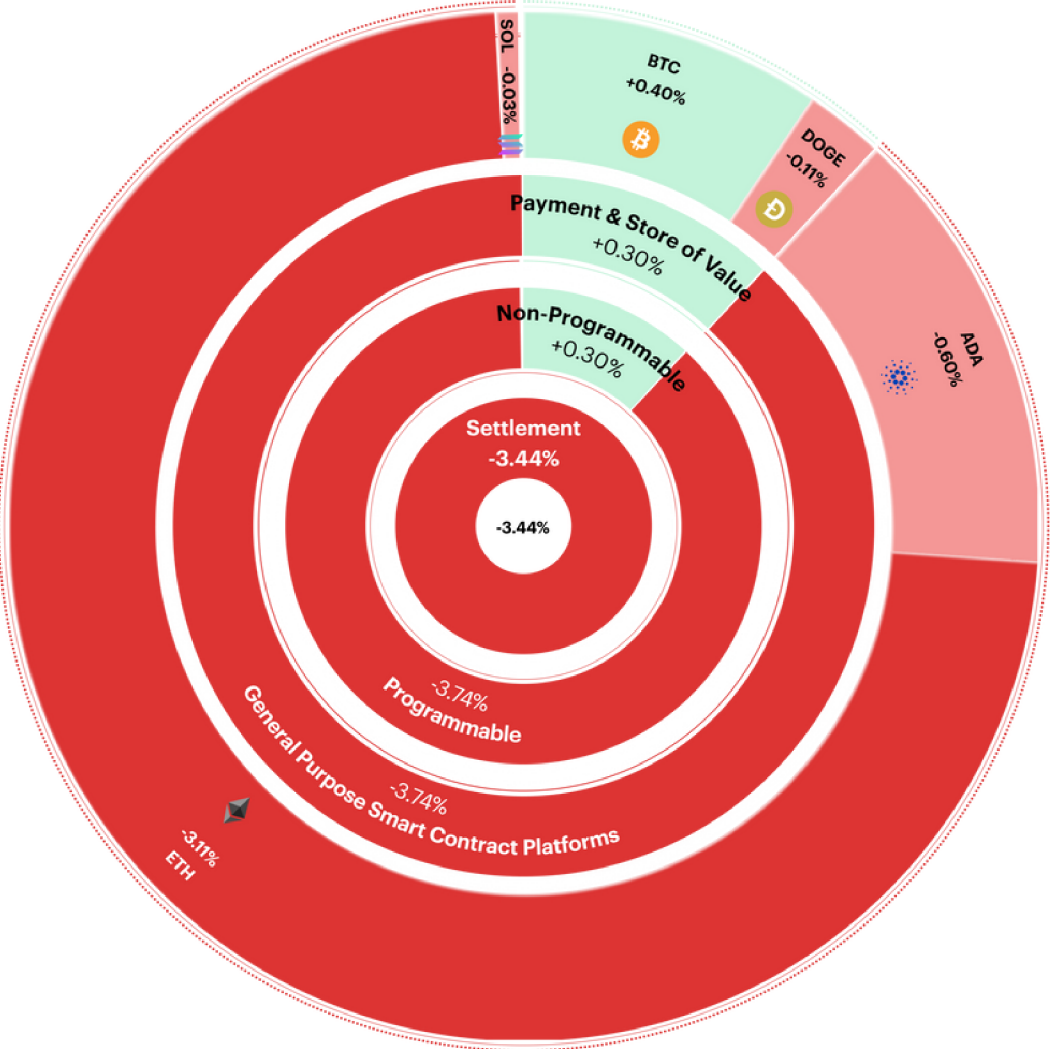
Mega cap tokens round-trip after bullish start



Index Return Contribution

Total Performance Contribution: -3.44%

Date: 31st August 2023



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	CONTRIBUTION
Settlement			ADA	-0.60%
	Programmable	General Purpose Smart Contract Platforms	ETH	-3.11%
			SOL	-0.03%
	Non-Programmable	Payment & Store of Value	BTC	+0.40%
			DOGE	-0.11%
				-3.44%

- Mega-cap tokens, as measured by our CF Cryptocurrency Ultra Cap 5 index, saw only a modest decrease in index value throughout the most recent rebalance period, falling just over 3%. Ether’s heavy weighting provided the majority of the negative contribution.
- From a CF DACS perspective, the index is entirely allocated to the Settlement category and primarily driven by the dominant positions of Bitcoin and Ether. The relative divergence in price performance between these two assets resulted in the Programmable sub-category being the main detractor.

Source: CF Benchmarks, as of August 31, 2023

Index Weights



2nd June 2023

Total Weight: 100% Index Value: 3628.23

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Settlement	Programmable	General Purpose Smart Contract Platforms	ADA 2.02%
			ETH 32.16%
	Non-Programmable	Payment & Store of Value	SOL 1.48%
			BTC 63.01%
100.00%			DOGE 1.33%

1st September 2023

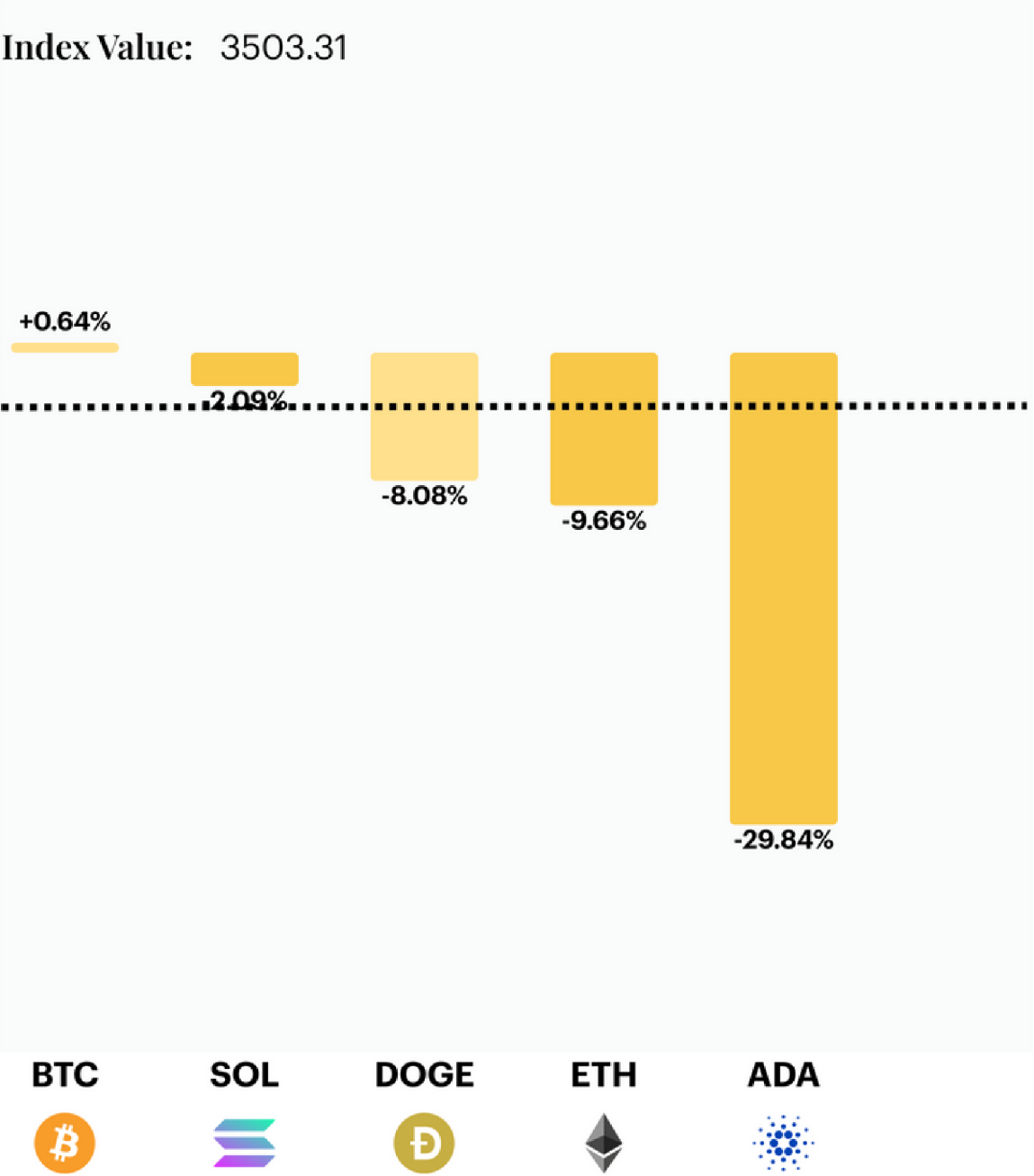
Total Weight: 100% Index Value: 3350.69

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Settlement	Programmable	General Purpose Smart Contract Platforms	ADA 1.50%
			ETH 30.70%
	Non-Programmable	Payment & Store of Value	SOL 1.52%
			BTC 65.00%
100.00%			DOGE 1.28%

Bitcoin's dominance streak continues



Absolute Performance



- Sectors: Finance
- Sectors: Culture
- Sectors: Industry
- Services: Utility
- Services: Infrastructure
- Settlement: Non-Programmable
- Settlement: Programmable

The world's largest and most popular cryptocurrency, Bitcoin, was supported with relatively bullish pricing sentiment after news was announced that a series of premier asset managers (led by BlackRock) have filed to launch spot Bitcoin ETFs in the United States.

The potential of a spot product has increased the visibility and legitimacy of Bitcoin in the eyes of traditional investors. ETFs are offered through many traditional financial firms. This could make Bitcoin more attractive to institutional investors, who have been hesitant to invest in the cryptocurrency due to its volatility and lack of regulation. Secondly, a spot ETF would make it easier for retail investors to buy and sell Bitcoin. Currently, the most common way to invest in Bitcoin is to buy it directly from a cryptocurrency exchange. This can be a daunting task for many investors, who may not be familiar with the process or the risks involved.

Lastly, Cardano's ADA token was the major laggard, falling approximately 30% as the smart contract platform came under selling pressure due to an announcement that Binance would delist its perpetual futures offering.

Source: CF Benchmarks, as of August 31, 2023

Bitcoin's historically challenging September



	January	February	March	April	May	June	July	August	September	October	November	December
Max.	40.23	32.54	33.77	32.55	63.16	31.61	29.12	19.47	-2.72	40.76	41.76	43.81
Min.	-25.47	-6.62	-33.26	-16.17	-31.95	-39.78	-13.98	-15.91	-15.02	-5.37	-36.87	-19.27
Avg.	4.75	8.78	3.06	10.88	-0.02	-3.54	12.73	-2.34	-8.01	16.12	-6.77	2.98
2023	40.23	1.52	21.24	2.46	-7.47	11.6	-2.43	-7.75				
2022	-21.27	6.91	15.19	-16.17	-19.21	-39.78	26.93	-15.91	-2.72	3.38	-17.32	-2.01
2021	15.26	32.54	33.77	-8.29	-31.95	-5.19	14.98	19.47	-9.56	40.76	-3.23	-19.27
2020	29.11	-6.62	-25.34	28.72	14.42	-3.91	21.76	5.16	-8.3	28.44	41.76	43.81
2019	-9.36	12.31	6.79	26.03	63.16	31.61	-13.98	0.71	-15.02	13.41	-18.2	-3.99
2018	-25.47	6	-33.26	32.55	-19.04	-15.6	29.12	-15.72	-4.45	-5.37	-36.87	-3.61

Investors often analyze seasonal performance to identify patterns, trends, and potential opportunities in financial markets. Seasonal analysis typically involves examining how an asset's performance, such as stock prices, commodity prices, market indices, or even cryptocurrencies, tends to behave during specific times of the year.

As highlighted above, Bitcoin's potential for weak performance in September might dampen the recent enthusiasm for a potential spot ETF. In August, Bitcoin experienced a sharp selloff from above \$29,000 to approximately \$26,000, which was met with a prolonged period of low volatility. Historically, our analysis indicates that Bitcoin has posted negative monthly returns in all five previous Septembers, averaging a loss of 8%. However, for more patient holders, the following month has historically delivered the highest monthly returns, averaging over 16% for October.

Source: CF Benchmarks, Bloomberg, total return indices are referenced in USD, as of August 31, 2023

Attribution Analysis: CF Diversified Large Cap Index

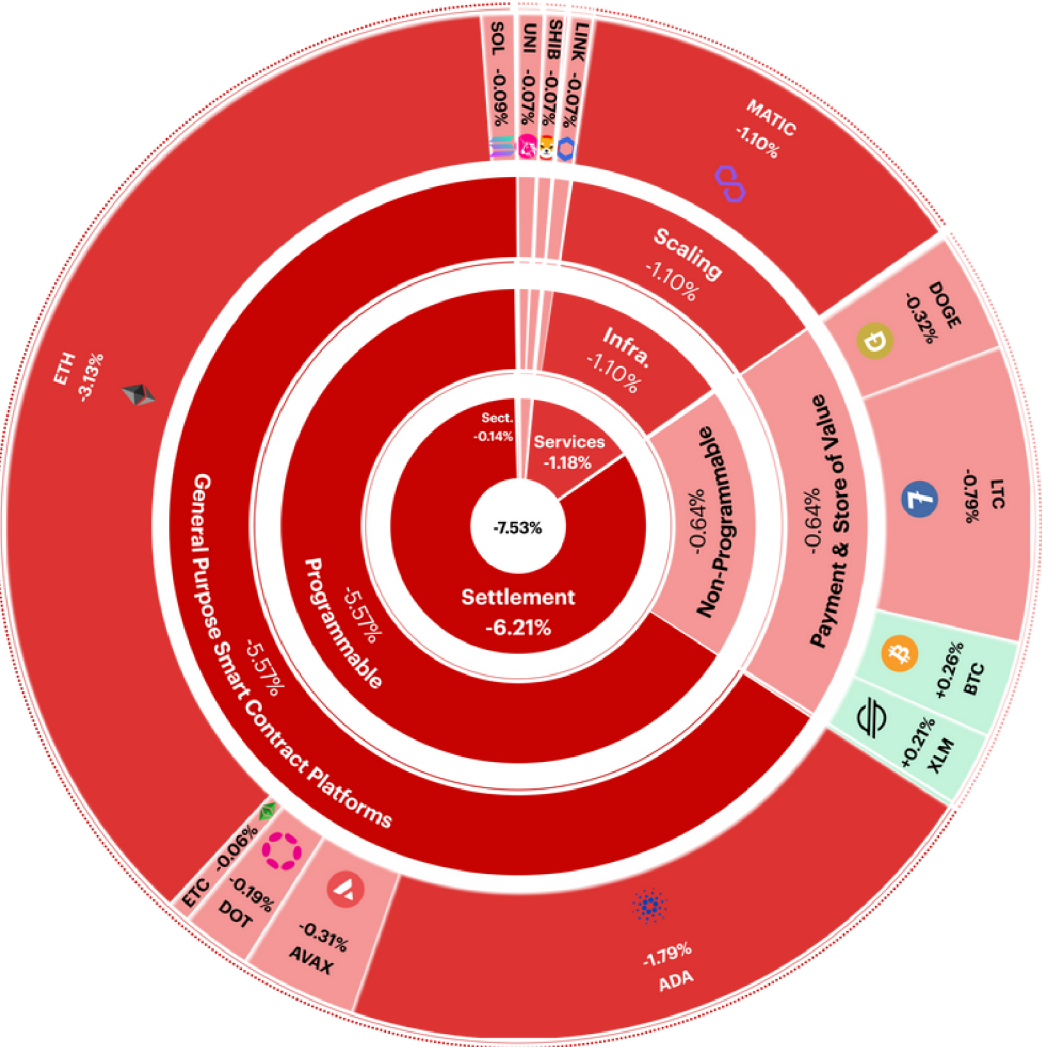
Programmable sub-category weighs on large-caps



Index Return Contribution

Total Performance Contribution: -7.53%

Date: 31st August 2023



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Sectors	-0.14%	Finance Culture	-0.07%
Services	-1.18%	Trading Social	-0.07%
	Infrastructure	-1.10%	Scaling
	Utility	-0.07%	Oracles
Settlement	-6.21%	Programmable	-5.57%
	Non-Programmable		-0.64%
		General Purpose Smart Contract Platforms	-5.57%
		Non-Programmable	-0.64%
		Payment & Store of Value	-0.64%
		Trading Social	-0.07%
		Scaling	-1.10%
		Oracles	-0.07%
		General Purpose Smart Contract Platforms	-5.57%
		Payment & Store of Value	-0.64%
		UNI	-0.07%
		SHIB	-0.07%
		MATIC	-1.10%
		LINK	-0.07%
		ADA	-1.79%
		AVAX	-0.31%
		DOT	-0.19%
		ETC	-0.06%
		ETH	-3.13%
		SOL	-0.09%
		DOGE	-0.32%
		LTC	-0.79%
		BTC	+0.26%
		XLM	+0.21%

- The positive momentum for large-cap tokens appears to have stalled out over the summer months, with the Diversified Large Cap Index posting a decrease of -7.5% in index value. Bitcoin and Stellar were the only two assets to contribute positive performance.
- From a CF DACS perspective, the significant weighting and negative performance of Ether translated into the General Purpose Smart Contracts Platforms segment contributing the most to the index's decline at -5.6%.

Source: CF Benchmarks, as of August 31, 2023

Index Weights



2nd June 2023

Total Weight: 100% Index Value: 331.05

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Sectors 2.41%	Finance	Trading	UNI 0.86%
	Culture	Social	SHIB 1.55%
Services 4.27%	Infrastructure	Scaling	MATIC 3.05%
	Utility	Oracles	LINK 1.21%
			ADA 5.99%
Settlement	Programmable 45.56%	General Purpose Smart Contract Platforms 45.56%	AVAX 1.10%
			DOT 1.24%
			ETC 0.52%
			ETH 32.42%
			SOL 4.27%
	Non-Programmable 47.76%	Payment & Store of Value 47.76%	DOGE 3.99%
			LTC 2.81%
			BTC 40.26%
			XLM 0.70%
93.32%			

1st September 2023

Total Weight: 100% Index Value: 293.31

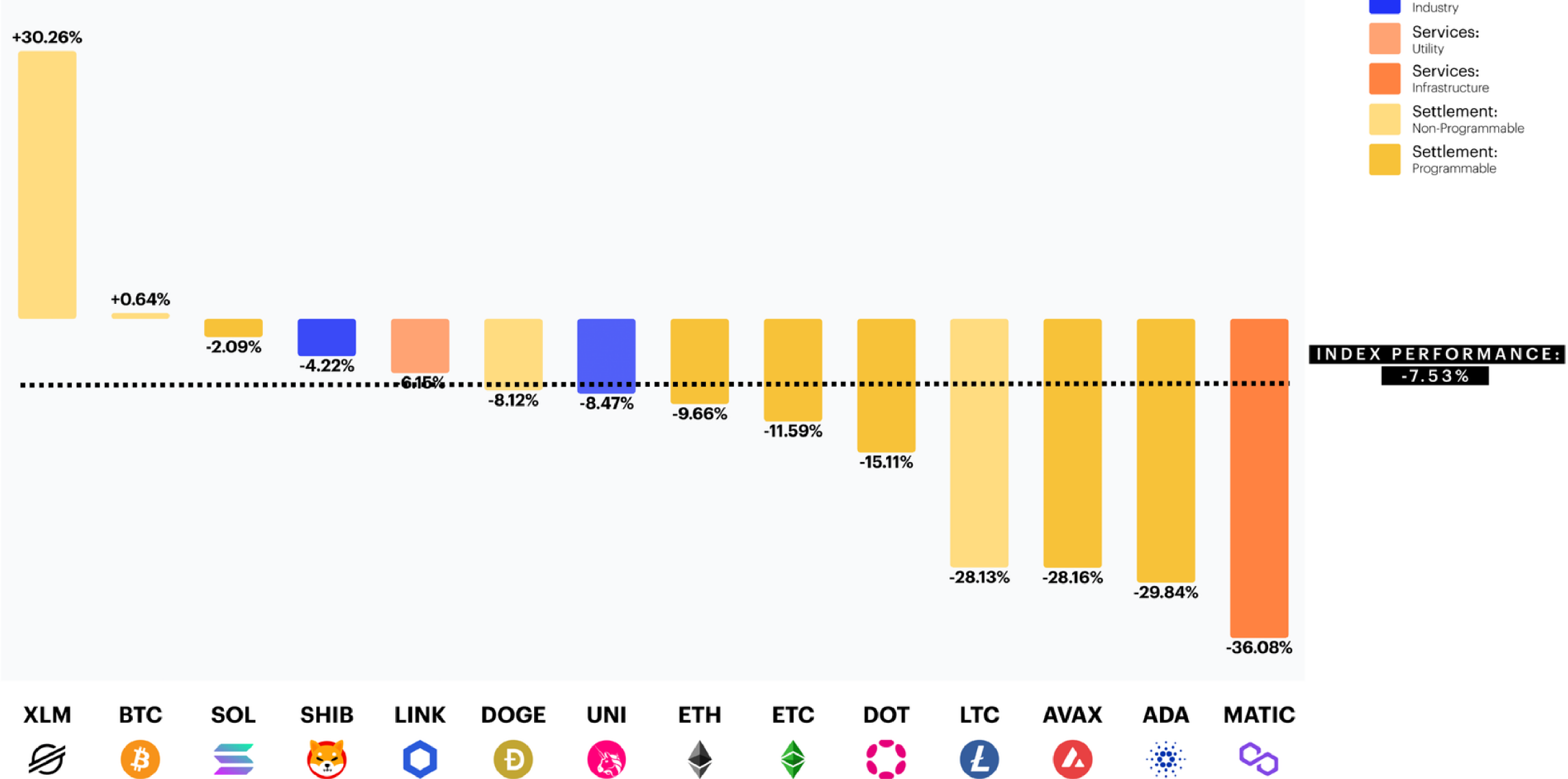
CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Sectors 2.46%	Finance	Trading	UNI 0.88%
	Culture	Social	SHIB 1.59%
Services 3.55%	Infrastructure	Scaling	MATIC 2.20%
	Utility	Oracles	LINK 1.35%
			ADA 4.71%
Settlement	Programmable 44.37%	General Purpose Smart Contract Platforms 44.37%	DOT 1.15%
			ETH 33.52%
			SOL 4.99%
			DOGE 3.79%
			LTC 2.27%
	Non-Programmable 49.62%	Payment & Store of Value 49.62%	BTC 42.42%
			XLM 1.14%
93.99%			

Court ruling boosts Stellar's XLM



Absolute Performance

Index Value: 306.13



- Sectors: Finance
- Sectors: Culture
- Sectors: Industry
- Services: Utility
- Services: Infrastructure
- Settlement: Non-Programmable
- Settlement: Programmable

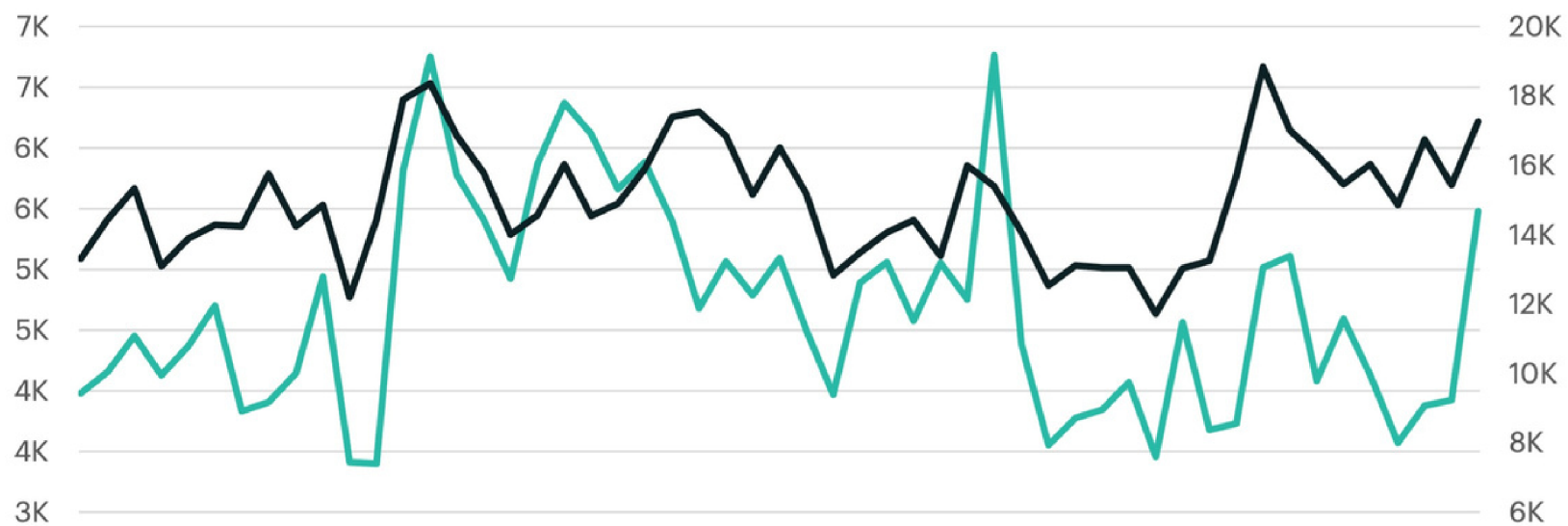
Performance at the constituent level was broadly negative for the second straight rebalance period. Individual standouts included Stellar's XLM token, which rose over 30%, and Bitcoin, which was mostly unchanged.

The July 13, 2023, court ruling in favor of Ripple Labs in the SEC vs. Ripple case was a positive development for the entire cryptocurrency market, especially for Stellar, which is also a blockchain network designed to improve the ease of completing transactions for payment providers and financial institutions, and is often considered a direct competitor to Ripple.

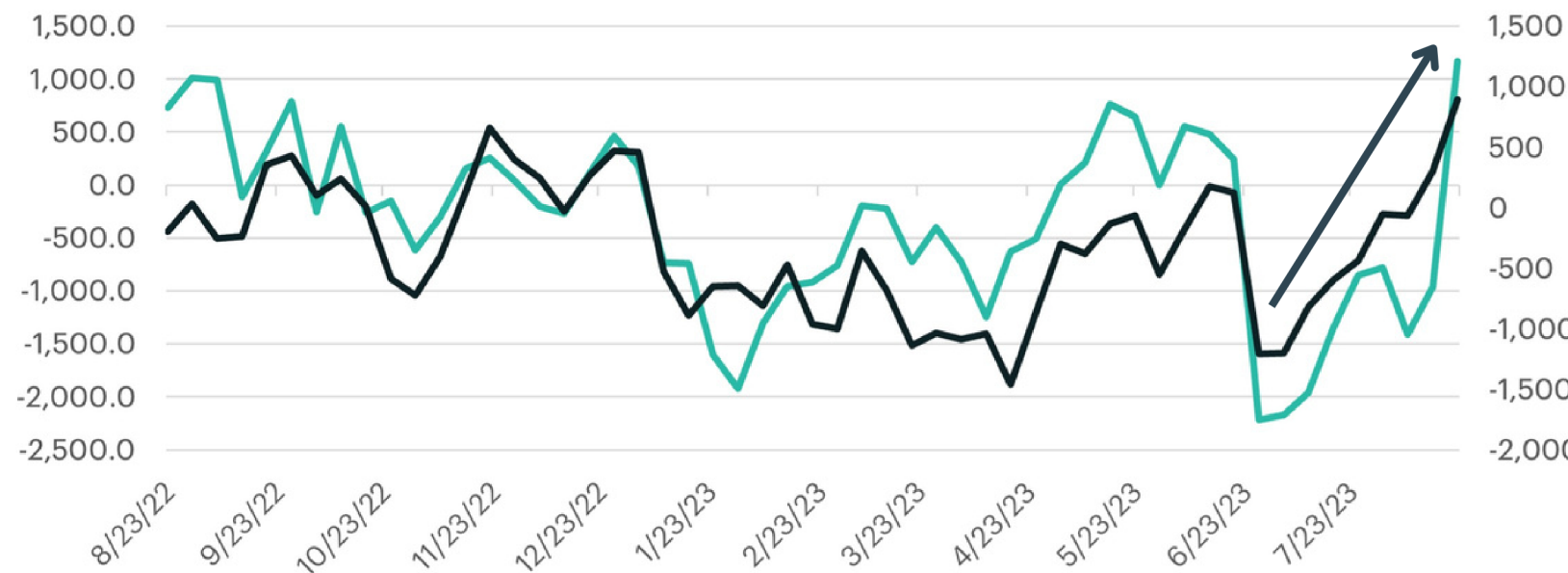
The favorable outcome of the court decision therefore had an outsized impact on XLM's price since many investors have been discounting the possibility of an adverse outcome also applying to XLM's classification status as possibly being an unregistered security.

Source: CF Benchmarks, as of August 31, 2023

Futures Interest and positioning rises on ETF filings



— CME Ether Open Interest (# of Futures Contracts, LHS)
— CME Bitcoin Open Interest (# of Futures Contracts)



— CME Bitcoin Speculative Positioning (Net, LHS) — CME Ether Speculative Positioning (Net)

Numerous industry experts believe that a spot Bitcoin ETF could act as a significant catalyst for the growth and legitimization of digital assets. A spot product would likely serve as a key milestone in attracting a new wave of institutional investors. For the very first time, investors seeking exposure to the world's largest digital asset could access a regulated product designed to purely track the spot Bitcoin price through traditional brokerage firms or financial institutions.

However, Bitcoin maximalists might not be the sole beneficiaries of a spot fund, as many foresee that Ether's substantial market size and decentralized network could potentially follow suit. Despite this exciting development, spot volumes across exchanges have remained relatively unchanged. What many experts might not have anticipated are the impacts this has had on the futures market.

The highlighted visualizations depict both futures open interest—the total count of outstanding contracts—and the net speculative positioning of futures traders (considered non-commercial), encompassing both long and short holdings. According to recent CFTC data, total futures open interest for both Bitcoin and Ether consistently hovers around all-time highs, coinciding with net speculative positioning returning to positive territory. Though spot prices remain relatively depressed, the futures market data reveals institutional players might be positioning for a bullish outlook.

Source: CF Benchmarks, CFTC.gov, Bloomberg, as of September 1, 2023

Attribution Analysis: CF Defi Composite Index

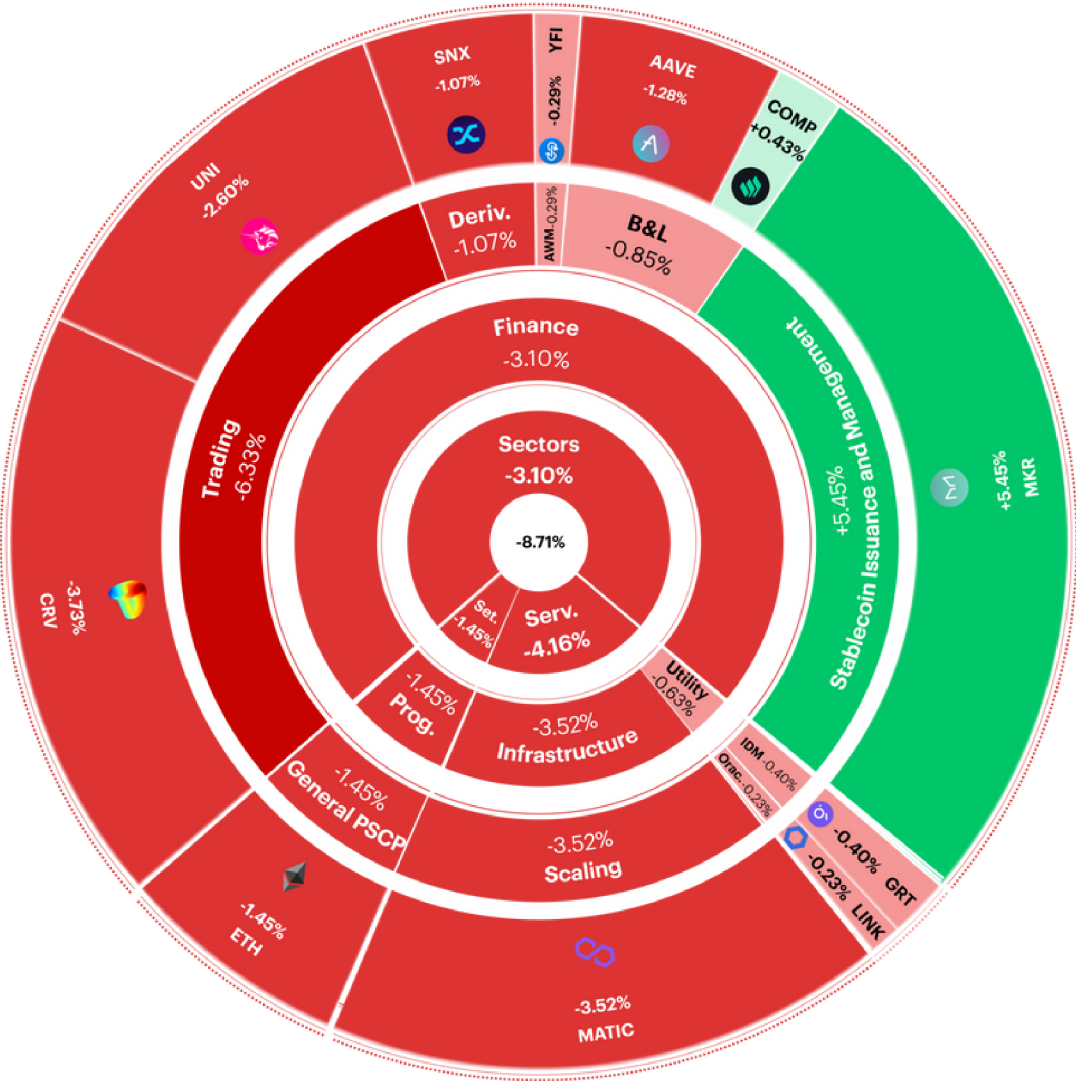
New exploits lead to DeFi underperformance



Index Return Contribution

Total Performance Contribution: -8.71%

Date: 31st August 2023



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	
Sectors	Finance	Trading	CRV	-3.73%
			UNI	-2.60%
			SNX	-1.07%
			YFI	-0.29%
			AAVE	-1.28%
			COMP	+0.43%
			MKR	+5.45%
			Deriv.	-1.07%
			Asset & Wealth Management	-0.29%
			Borrowing & Lending	-0.85%
Services	Infrastructure	Scaling	MATIC	-3.52%
			LINK	-0.23%
			GRT	-0.40%
			ETH	-1.45%
Settlement	Utility	Programmable	LINK	-0.23%
			GRT	-0.40%

- Our CF DeFi Composite Index posted an 8.7% decline over the past three months, underperforming the broader market by approximately 5% in relative performance terms.
- From an attribution standpoint, the sole positive contributor in the index was Maker’s MKR token, which added over 5.4% to the overall index performance. Meanwhile, Curve's (CRV) token was the main detractor, subtracting over 3.7% from the overall performance.

Source: CF Benchmarks, as of August 31, 2023

Index Weights



2nd June 2023

Total Weight: 100% Index Value: 237.87

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Sectors	Finance	Trading	CRV 8.40%
			UNI 30.70%
			SNX 7.10%
			YFI 2.20%
			AAVE 12.00%
			COMP 2.40%
			MKR 7.31%
			Derivatives 7.10%
			Asset & Wealth Management 2.20%
			Borrowing & Lending 14.40%
Stablecoin Issuance & Management 7.31%			
Services	Infrastructure	Scaling	MATIC 9.76%
	Utility	Oracles	LINK 3.73%
		Information & Data Management	GRT 1.38%
Settlement	Programmable	General Purpose Smart Contract Platforms	ETH 15.02%
70.11%	70.11%		
14.87%			
15.02%			

1st September 2023

Total Weight: 100% Index Value: 208.67

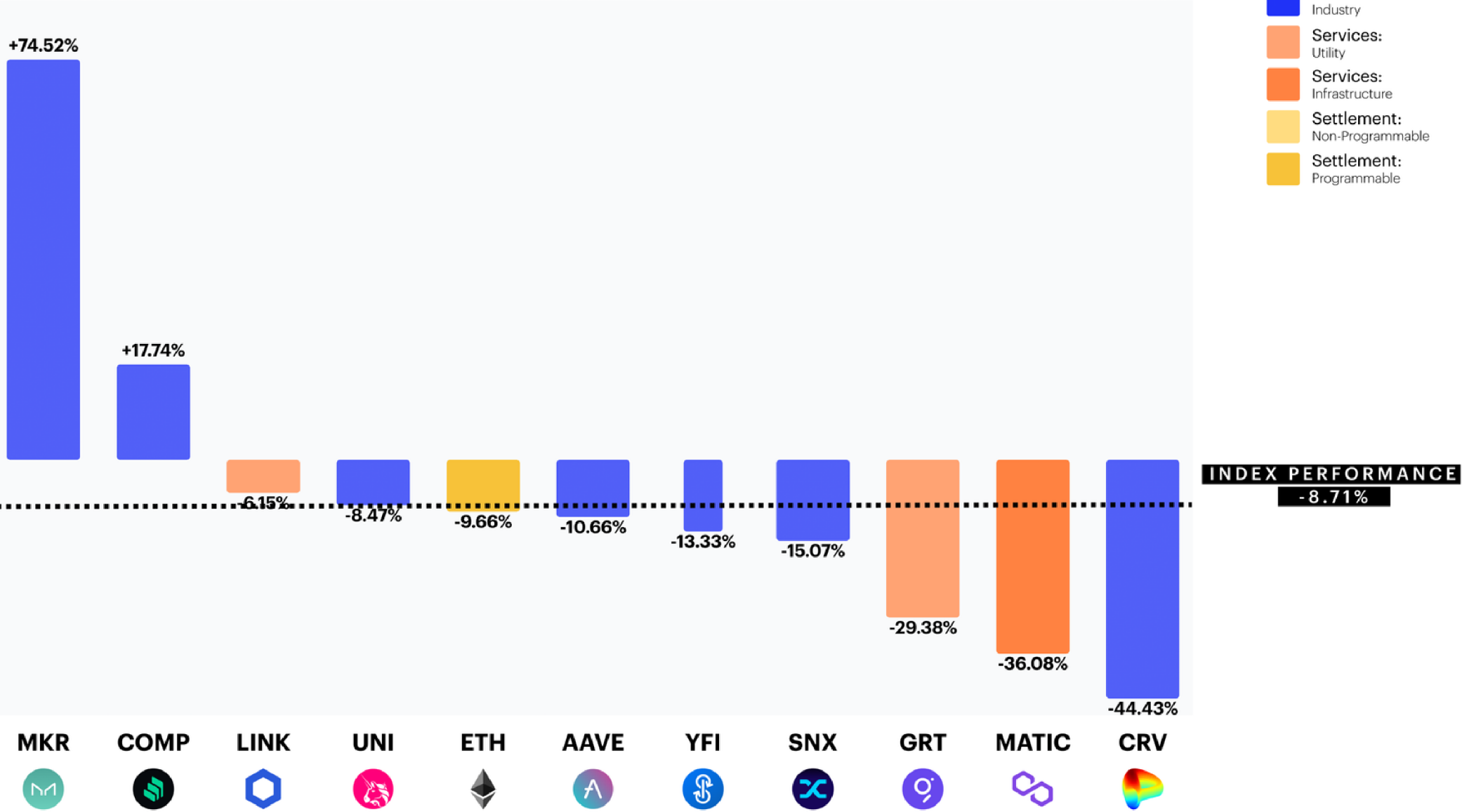
CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Sectors	Finance	Trading	CRV 4.58%
			UNI 26.47%
			SNX 5.82%
			LDO 8.62%
			AAVE 9.78%
			COMP 2.62%
			MKR 12.12%
			Derivatives 5.82%
			Asset & Wealth Management 8.62%
			Borrowing & Lending 12.40%
Stablecoin Issuance & Management 12.12%			
Services	Infrastructure	Scaling	ARB 4.25%
	Utility	Oracles	MATIC 6.07%
		Information & Data Management	LINK 3.74%
Settlement	Programmable	General Purpose Smart Contract Platforms	GRT 0.94%
			ETH 15.00%
70.00%	70.00%		
15.00%			
15.00%			

MKR shows divergent strength in broad sell-off



Absolute Performance

Index Value: 217.16



- Sectors: Finance
- Sectors: Culture
- Sectors: Industry
- Services: Utility
- Services: Infrastructure
- Settlement: Non-Programmable
- Settlement: Programmable

Performance at the constituent level was predominantly negative, with only 2 out of 11 tokens finishing the period in positive territory. The negative market breadth resulted in an equal weighted average performance of -7.4%.

Maker’s MKR token surged over 70%, decoupling from the rest of the index constituents and finishing the rebalance period as the clear leader. The Maker protocol is a decentralized finance (DeFi) protocol that allows users to create a stablecoin called Dai. Dai is a cryptocurrency designed to be pegged to the US dollar. Maker has also recently announced it will launch a new decentralized autonomous organization (DAO) in the Korean market, which was met with investor enthusiasm.

The increase in stablecoin adoption has been on a secular uptrend since the launch of the first stablecoin almost 10 years ago. Users find utility in stablecoins due to their intended desire to eliminate base currency volatility. Additionally, the adoption of the DeFi space has made stablecoins essential for many dApps that offer lending, borrowing, or trading solutions.

Source: CF Benchmarks, as of August 31, 2023

Protocol exploits continue hampering DeFi recovery



Source: CF Benchmarks, DeFiLlama, Kraken Intelligence, as of August 31, 2023

On July 30, 2023, hackers exploited a vulnerability in the Curve Finance protocol to steal an estimated \$62 million worth of cryptocurrency. The exploit took advantage of a reentrancy vulnerability in the Curve Finance smart contracts, which allowed the hackers to withdraw funds from the protocol multiple times without actually depositing any funds. The exploit has had a significant impact on the TVL (Total Value Locked) in the DeFi space, with the nominal figure falling by approximately \$3.0 billion. TVL values have come down considerably since the start of the most recent crypto winter, falling over 70% from the high water mark of \$250 billion.

If we were to normalize the recent impact on the size of DeFi using a statistical method called Z-Scoring, we would find that the recent impact has been in line with the prior shocks in the space that included the collapse of Terra-Luna, FTX, and April’s Beanstalk and Venus hacks. However, the TVL in DeFi has since stabilized somewhat. As of August 31, 2023, the TVL in DeFi stood at approximately \$70 billion. These recent setbacks clearly illustrate that there are opportunities for improvements.

However, disregarding the advantages of this domain would overlook the evident real-world benefits associated with decentralized financial functionalities. For instance, in early March, on-chain data indicated that users could convert their funds into stablecoins over the weekend, bypassing regular business hours. As these segments in the DeFi space continue to develop, these benefits for the average person should become increasingly clear.

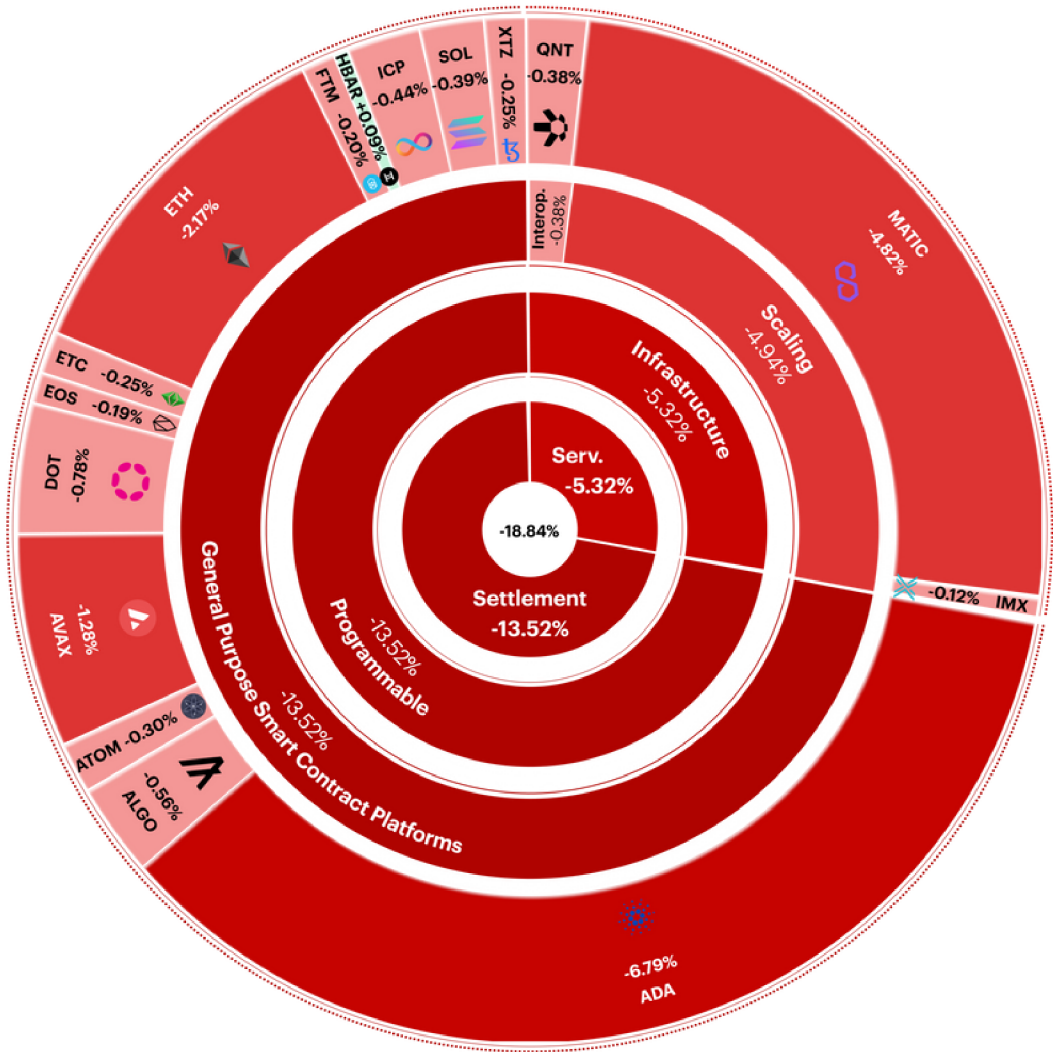
Attribution Analysis: CF Diversified Large Cap Index

Smart Contract Platforms post outsized decline



Index Return Contribution

Total Performance Contribution: -18.84% Date: 31st August 2023



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	CONTRIBUTION
Services	Infrastructure	Scaling	IMX	-0.12%
			MATIC	-4.82%
		Interoperability	QNT	-0.38%
Settlement	Programmable	General Purpose Smart Contract Platforms	ADA	-6.79%
			ALGO	-0.56%
			ATOM	-0.30%
			AVAX	-1.28%
			DOT	-0.78%
			EOS	-0.19%
			ETC	-0.25%
			ETH	-2.17%
			FTM	-0.20%
			HBAR	+0.09%
			ICP	-0.44%
			SOL	-0.39%
			XTZ	-0.25%

- The CF Web 3.0 Smart Contract Platforms Index declined by 18.8% during the most recent rebalancing period. The index has continued to underperform the broader market for the second straight time.
- Hedera's HBAR token was the only source of positive performance, contributing a mere 8 basis points to the index return. The primary detractors from the index were Cardano's ADA token and Polygon's MATIC token, collectively accounting for over 61% of the overall decline.

Source: CF Benchmarks, as of August 31, 2023

Index Weights



2nd June 2023

Total Weight: 100% Index Value: 188.67

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Services 16.39%	Infrastructure 16.39%	Scaling 13.86%	IMX 0.52%
		Interoperability 2.53%	MATIC 13.35%
Settlement 83.61%	Programmable 83.61%	General Purpose Smart Contract Platforms 83.61%	QNT 2.53%
			ADA 22.75%
			ALGO 1.56%
			ATOM 0.95%
			AVAX 4.55%
			DOT 5.17%
			EOS 0.58%
			ETC 2.16%
			ETH 22.46%
			FTM 0.62%
HBAR 1.54%			
ICP 1.60%			
SOL 18.45%			
XTZ 1.23%			

1st September 2023

Total Weight: 100% Index Value: 147.05

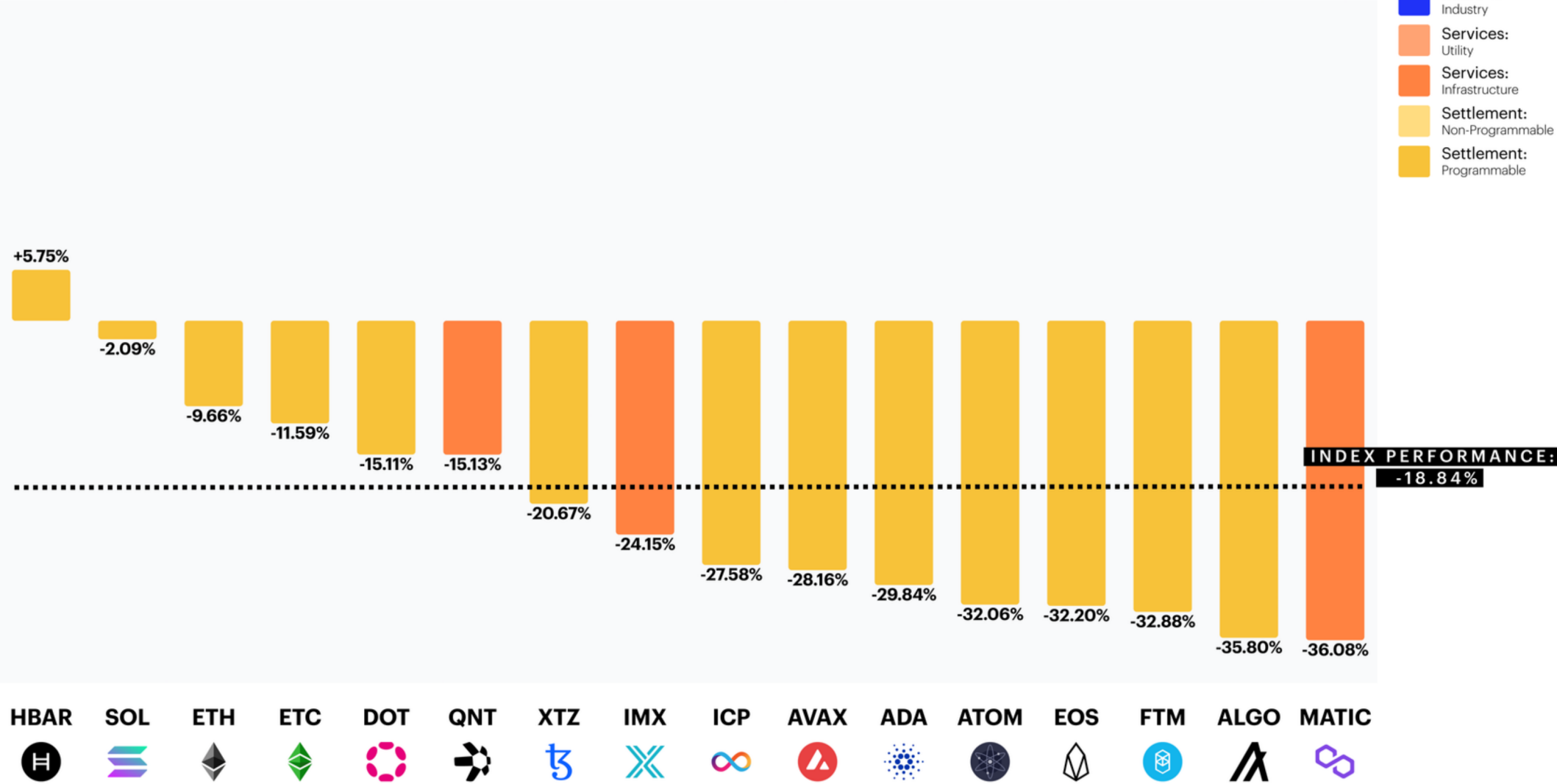
CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Services 18.76%	Infrastructure 18.76%	Scaling 16.50%	ARB 6.59%
		Interoperability 2.26%	IMX 0.49%
Settlement 81.24%	Programmable 81.24%	General Purpose Smart Contract Platforms 81.24%	MATIC 9.42%
			QNT 2.26%
			ADA 20.14%
			ALGO 1.13%
			APT 0.43%
			ATOM 0.72%
			AVAX 3.39%
			DOT 4.88%
			EOS 0.44%
			ETC 2.21%
ETH 22.50%			
FTM 0.44%			
HBAR 2.05%			
ICP 1.43%			
SOL 20.40%			
XTZ 1.08%			

HBAR outshines its competition



Absolute Performance

Index Value: 153.13



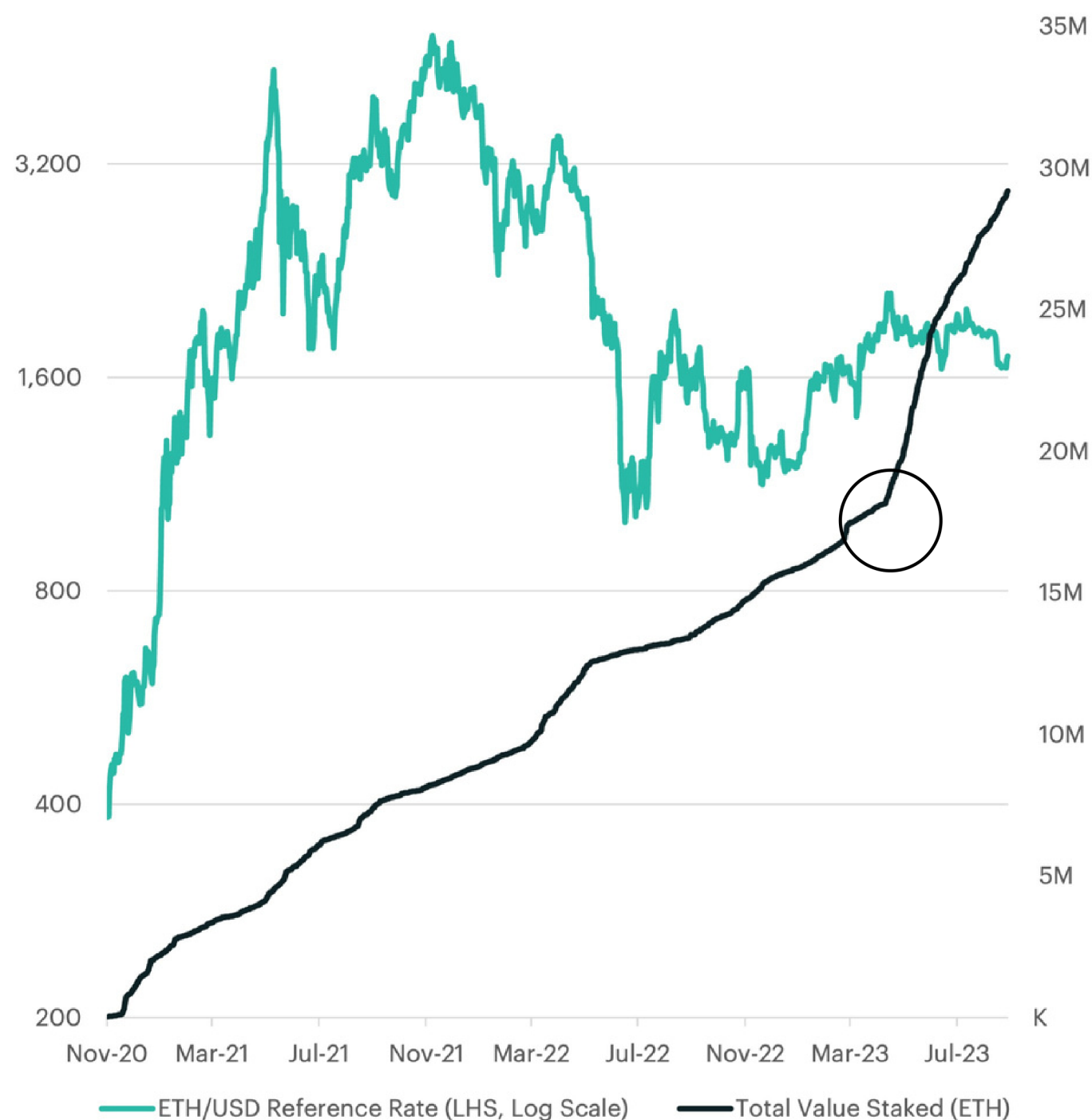
Price performance at the constituent level remained predominantly negative over the past 3 months. Hedera's HBAR token was the sole asset to finish the period in positive territory, while the other 15 constituents experienced an average decline of 23%.

HBAR serves as the native cryptocurrency of the Hedera Hashgraph network, facilitating payments for network services such as HBAR transfers, minting both fungible and non-fungible tokens, invoking smart contracts, and recording data. For each transaction submitted to the network, HBARS are used to cover fees that compensate validator nodes for their role in bandwidth, computation, and storage.

Historically, Hashgraph has achieved significant success through corporate partnerships, including notable entities such as Google and IBM. Despite this, the price of HBAR demonstrated resilience following recent news that Galaxy, a social media decentralized application (dApp), would be adopting Hedera's technology

Source: CF Benchmarks, as of August 31, 2023

Staking since Shanghai



The Shanghai Upgrade is a hard fork for the Ethereum blockchain that was activated on April 12, 2023. It is the first major upgrade to the Ethereum network since the Merge, which took place in September 2022.

The main purpose of the Shanghai Upgrade is to enable validators to withdraw their staked ETH. Ethereum staking is the process of locking up ETH tokens in order to participate in the security of the Ethereum network and earn rewards. Validators are responsible for validating transactions and adding new blocks to the blockchain. They are rewarded with ETH for their work. Staking rewards are determined by a number of factors, including the amount of ETH staked, the number of validators, and the block rewards. The current annual staking yield is around 3-4%.

Some crypto enthusiasts speculated that once withdrawals were allowed, many validators would unstake their Ether. However, there has been a significant increase in the amount of ether staked since the Shanghai upgrade. According to data from Glassnode, the amount of ether staked has increased by approximately 12 million ETH since the upgrade was activated. This represents an increase of almost 67%. So far, the ability to withdraw staked ETH has made staking more attractive to investors. It may still be too early to say what the long-term impact of the Shanghai upgrade will be on ether staked. However, the initial increase is a positive sign and suggests that investors are confident in the future of Ethereum staking.

Attribution Analysis / CF Digital Culture Composite Index

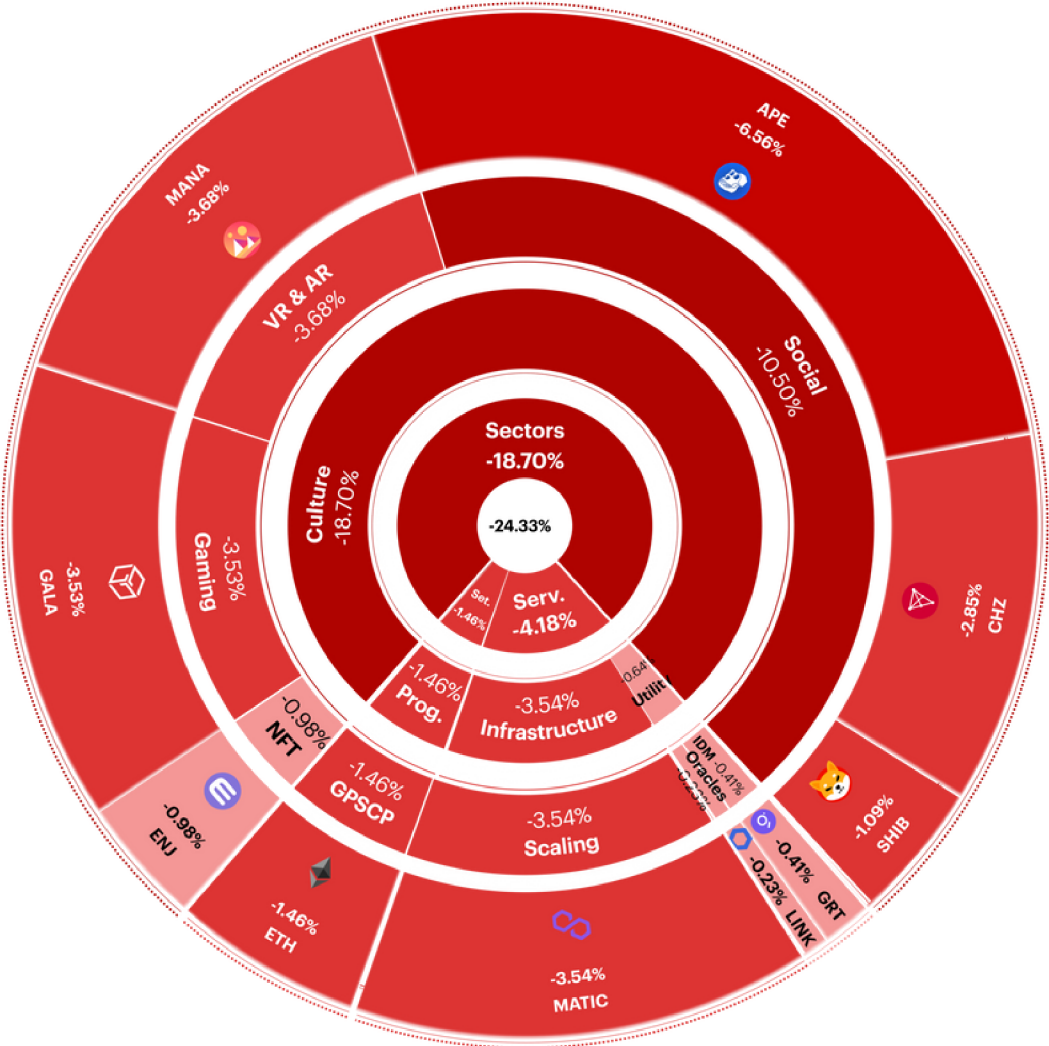
Social segment drags down index



Index Return Contribution

Total Performance Contribution: -24.33%

Date: 31st August 2023



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Sectors	Culture	NFT Platforms	-0.98%
		Gaming	-3.53%
		VR & AR	-3.68%
		Social	-10.50%
		Scaling	-3.54%
		Oracles	-0.23%
		Information & Data Management	-0.41%
		General Purpose Smart Contract Platforms	-1.46%
		Infrastructure	-3.54%
		Utility	-0.64%
Programmable	-1.46%		
Services	Social	ENJ	-0.98%
		GALA	-3.53%
		MANA	-3.68%
		APE	-6.56%
		CHZ	-2.85%
		SHIB	-1.09%
		MATIC	-3.54%
		LINK	-0.23%
		GRT	-0.41%
		ETH	-1.46%

- The CF Digital Culture Composite Index fell by 24.3%, markedly underperforming the broader market and finishing the rebalancing period as the worst performer in our benchmark series.
- Constituent contributions were overwhelmingly negative, with ApeCoin (APE) and Decentraland (MANA) contributing close to half of the index's decline. Meanwhile, Chainlink's LINK token detracted the least, subtracting just 23 basis points from portfolio performance.

Source: CF Benchmarks, as of August 31, 2023

Index Weights



2nd June 2023

Total Weight: 100% Index Value: 270.24

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors 69.98%	Culture 69.98%	NFT Platforms 3.78%	€ ENJ 3.78%		
		Gaming 10.26%	🎮 GALA 10.26%		
		VR & AR 9.93%	👤 MANA 9.93%		
		Social 46.00%	👤 APE 12.55%		
			📶 CHZ 7.52%		
			🐱 SHIB 25.92%		
			Services 14.93%	Infrastructure 9.81%	🔗 MATIC 9.81%
				Utility 5.13%	🔗 LINK 3.74%
			Information & Data Management 1.38%	🔗 GRT 1.38%	
		Settlement 15.09%	Programmable 15.09%	General Purpose Smart Contract Platforms 15.09%	⚡ ETH 15.09%

1st September 2023

Total Weight: 100% Index Value: 204.50

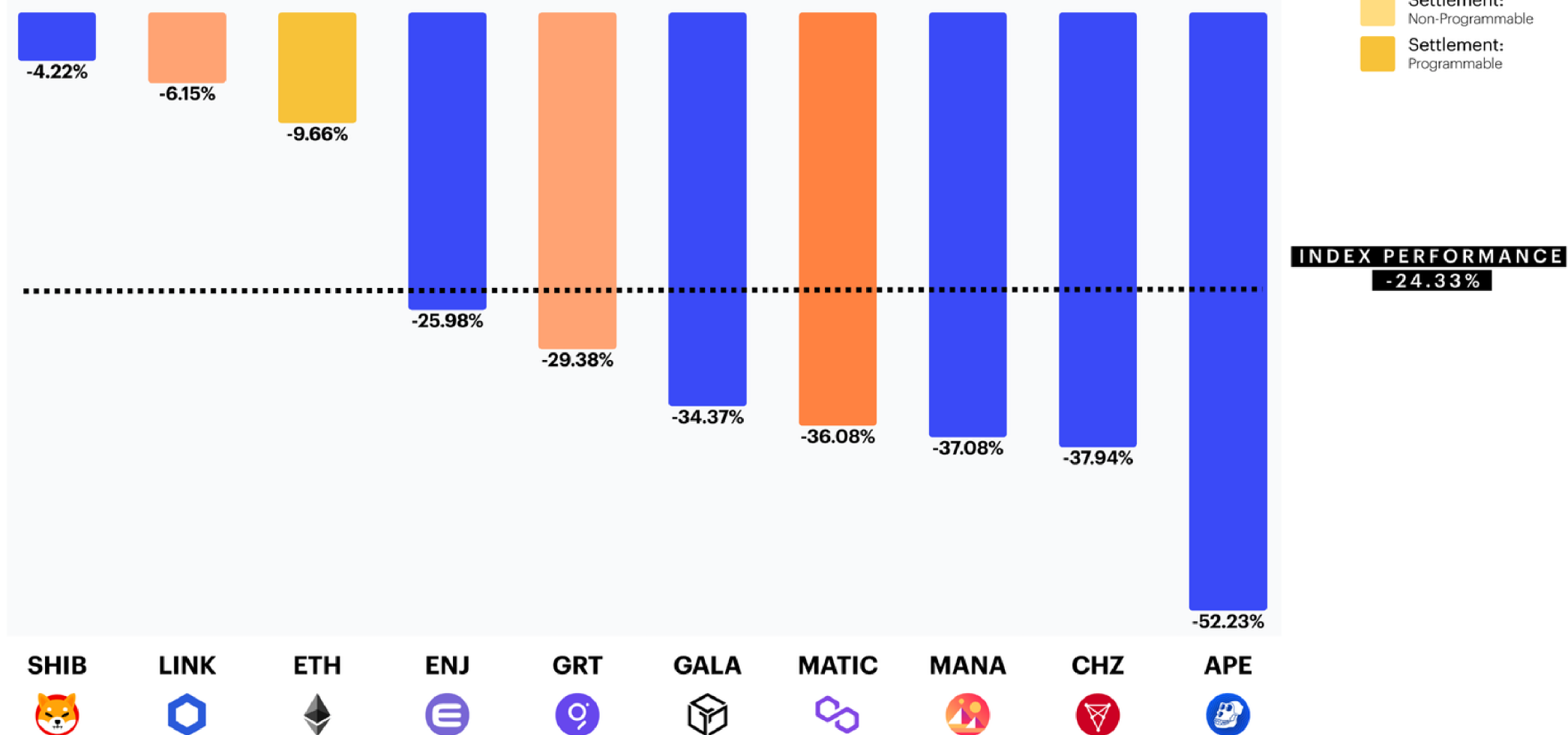
CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors 67.77%	Culture 67.77%	NFT Platforms 3.70%	€ ENJ 3.70%		
		Gaming 8.90%	🎮 GALA 8.90%		
		VR & AR 8.26%	👤 MANA 8.26%		
		Social 46.91%	👤 APE 7.92%		
			📶 CHZ 6.17%		
			🐱 SHIB 32.81%		
			Services 14.22%	Infrastructure 8.28%	🔗 MATIC 8.28%
				Utility 5.93%	🔗 LINK 4.64%
			Information & Data Management 1.29%	🔗 GRT 1.29%	
		Settlement 18.01%	Programmable 18.01%	General Purpose Smart Contract Platforms 18.01%	⚡ ETH 18.01%

APE holders face more selling pressure



Absolute Performance

Index Value: 204.50



- Sectors: Finance
- Sectors: Culture
- Sectors: Industry
- Services: Utility
- Services: Infrastructure
- Settlement: Non-Programmable
- Settlement: Programmable

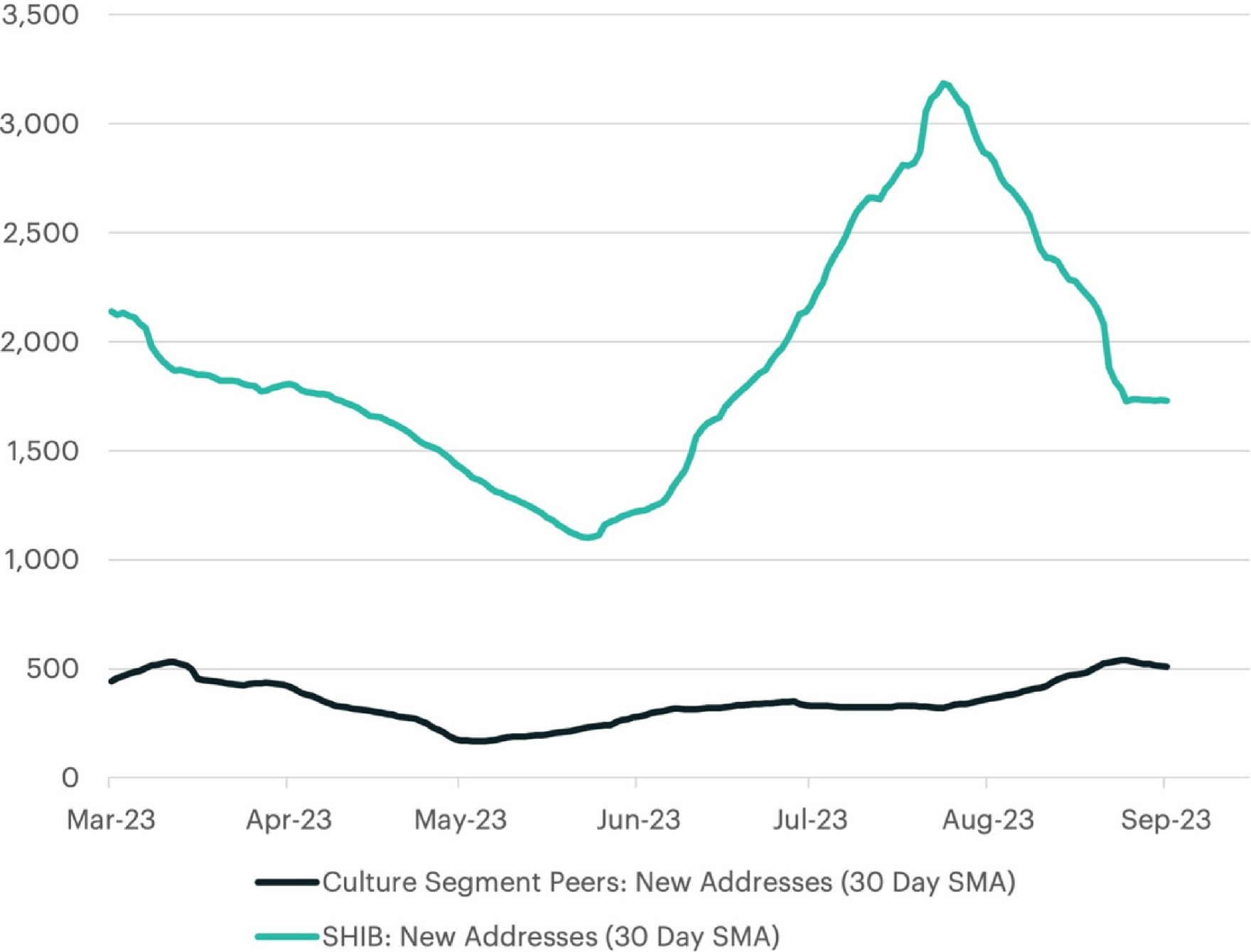
Many tokens in the headline segment underperformed peers in other categories. In particular, ApeCoin (APE), which is an ERC-20 token that serves as a governance token for the ApeCoin DAO, saw its market capitalization decrease by over half over the course of the most recent rebalance period.

ApeCoin prices saw a sharp sell-off at the start of the rebalance period when an organizational chart was leaked that included the salaries of the governance board members, which some felt demonstrated a disconnect between the DAO and token holders. Price momentum continued to accelerate downward throughout the remainder of the rebalance period and the token is now down approximately 70% year-to-date.

Relative performance leaders for the period included Chainlink (LINK) and Shiba Inu (SHIB), which fell a more modest 6.1% and 4.2%, respectively.

Source: CF Benchmarks, as of August 31, 2023

SHIB stands out amid layer-2 launch



The growth of new addresses on any blockchain can be viewed as a significant metric which can be used to measure the adoption of the respective protocol and its network's technology. When new addresses are created, it can mean that new users are interacting with the blockchain network.

Shiba Inu (SHIB) has set itself apart when we compare its network growth to its culture segment peers over the summer months. A major factor for this enthusiasm and interest might be centered on the launch of its long-awaited layer-2 scaling solution, Shibarium.

Shibarium was first announced in October 2021 and was just recently launched in August of this year. This Layer-2 scaling solution will operate as a sidechain that runs alongside the Ethereum blockchain and will be used to process transactions more quickly and cheaply. Developers are likely to find it to be suitable for applications that require high throughput, such as gaming and decentralized finance (DeFi). The growth in new addresses and activity on the network likely points to enthusiasm around the possibilities enabled by this new scaling technology.

Source: CF Benchmarks, glassnode.com, as of September 1, 2023

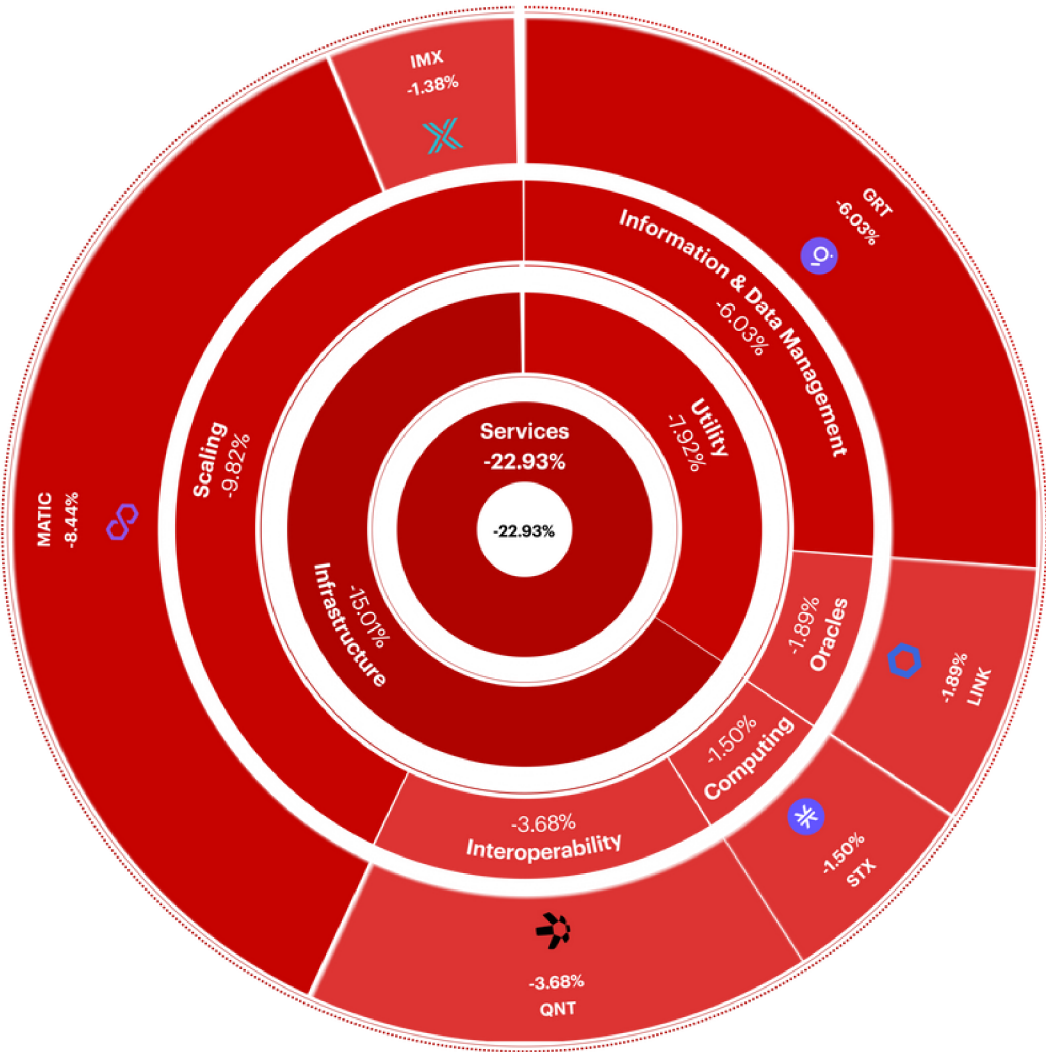
Attribution Analysis: The CF Blockchain Infrastructure Index

Infrastructure's losing streak continues



Index Return Contribution

Total Performance Contribution: -22.93% Date: 31st August 2023



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Services	Infrastructure	Scaling	IMX -1.38%
			MATIC -8.44%
			QNT -3.68%
		Interoperability	STX -1.50%
			LINK -1.89%
			GRT -6.03%
	Utility	Oracles	LINK -1.89%
			QNT -3.68%
			STX -1.50%
		Information & Data Management	LINK -1.89%
			QNT -3.68%
			STX -1.50%

- The CF Blockchain Infrastructure Index witnessed a steep -22.9% decline over the last rebalancing period, underperforming the broader crypto market (as measured by the CF Floating Broad Cap Index) by approximately 18%.
- Polygon's MATIC token was again the top detractor in index performance contribution (-8.4%) as it saw the strongest underperformance coupled with its relatively large index weight.

Source: CF Benchmarks, as of August 31, 2023

Index Weights



2nd June 2023

Total Weight: 100% Index Value: 387.83

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Services	Infrastructure	Scaling	IMX 5.07%
			MATIC 22.26%
		Interoperability	QNT 22.95%
		Computing	STX 8.20%
		Oracles	LINK 22.36%
		Information & Data Management	GRT 19.16%
	Utility		
100.00%			

1st September 2023

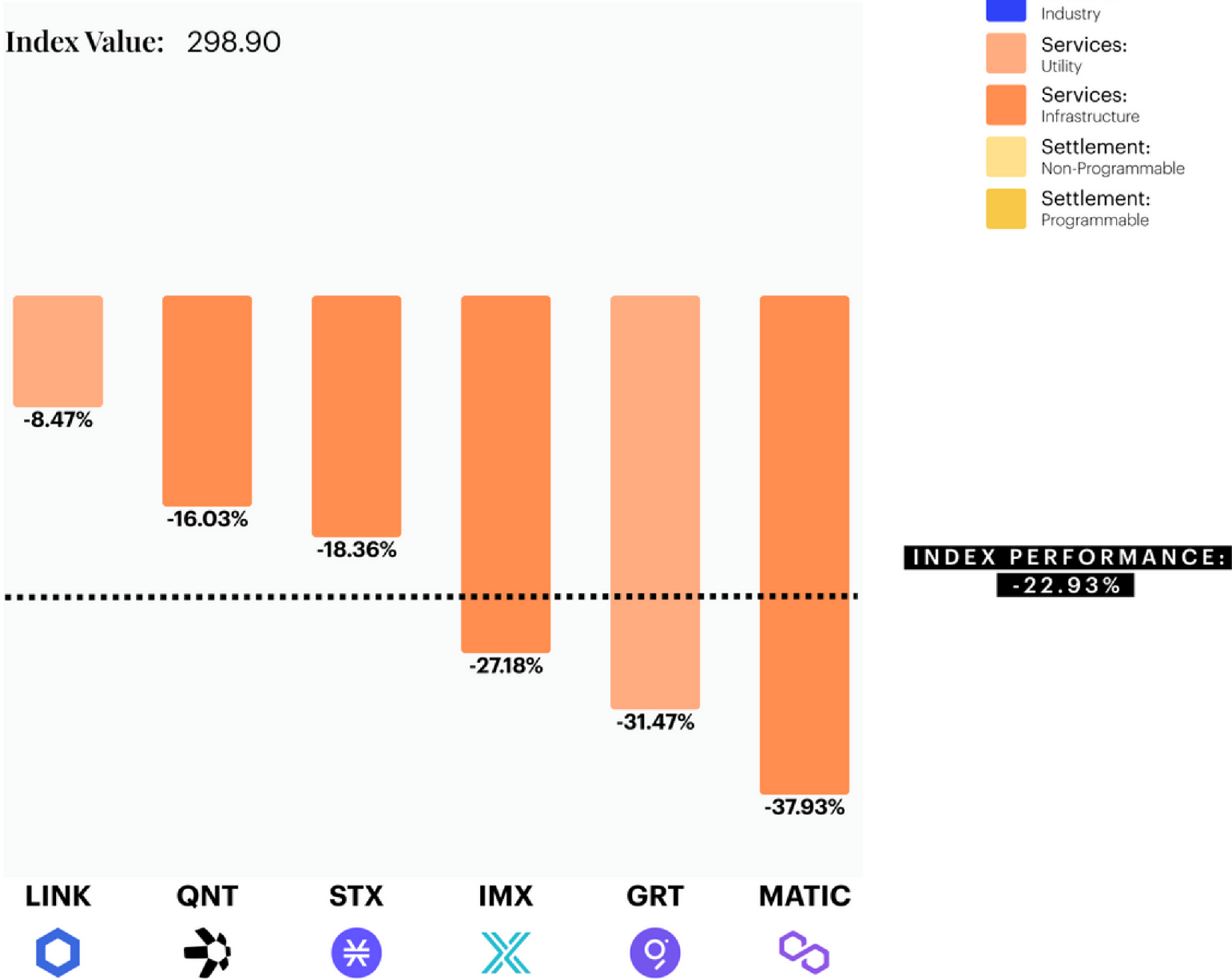
Total Weight: 100% Index Value: 292.34

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Services	Infrastructure	Scaling	ARB 22.50%
			IMX 1.78%
			MATIC 22.50%
		Interoperability	QNT 14.18%
		Computing	RNDR 2.78%
			STX 2.85%
	Utility		LINK 21.36%
			FIL 6.64%
			GRT 5.40%
100.00%			

Scalers' slump continues



Absolute Performance



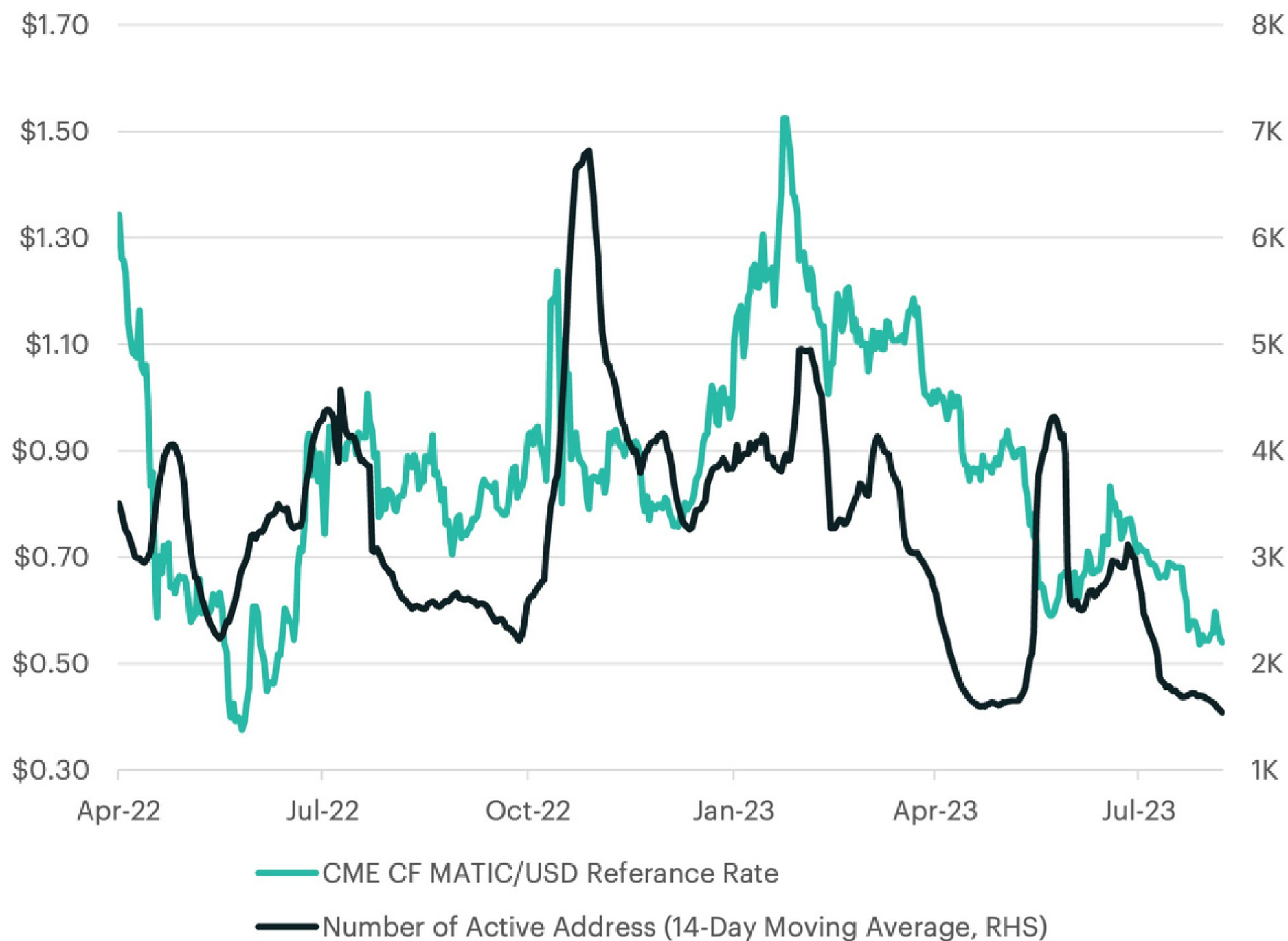
Chainlink (LINK) displayed the most resilience in a broadly negative market, falling just over 8% and relatively outperforming the portfolio index by 16%. In mid-July, a judge in the Southern District of New York ruled that Ripple's XRP token is not always considered a security. The long-awaited decision from this December 2020 lawsuit was mostly seen as a victory for the crypto industry, which had a meaningful impact on altcoins such as LINK. The price of LINK even breached the \$8 mark for the first time since April, before forfeiting most of its pre-ruling gains over the course of August

Polygon's MATIC token has continued to decline after a relatively strong start of the year. The layer-2 scaling solution fell almost 40% over this rebalance period as competition in the scaling wars heats up. Headlines of projects switching from Polygon to other layer-2s weighed on price action.

Lastly, The Graph's GRT token also fell over 30% as enthusiasm for A.I. continues to be priced out of the market.

Source: CF Benchmarks, as of August 31, 2023

Polygon's network activity leads price lower



The number of unique active addresses is a metric that measures the number of different wallets that have been used to send or receive cryptocurrency on a blockchain network in a given period of time. It is a good indicator of the level of activity on the network and the number of users who are transacting on it.

A high number of unique active addresses can be seen as a positive sign for a blockchain network, as it indicates that there is a lot of interest and activity in the network. This can lead to increased demand for the cryptocurrency, which can drive up the price. Conversely, a declining trend in unique can weight on pricing sentiment.

Using this framework, on-chain data shows that Polygon's network activity has been on a broad downward trajectory. In mid-November, the rolling 14-day moving average of active addresses peaked just shy of 7 thousand. This momentum was likely due to Polygon's success in securing strategic corporate sponsorships. Now it appears that competition from other layer-2 scalars is starting to come for Polygon's market share. With competition heating up and network growth stalling, Polygon may faces challenges ahead for holding onto its status as the leading layer-2 scaling solution.

Source: CF Benchmarks, glassnode.com, as of June 1, 2023

Appendix

Market Performance Overview



Major Crypto-Pairs (USD)

Name	1 Day	1 Week	1 Month	3 Month	YTD	90 D Volatility
Bitcoin	-0.6%	3.5%	-6.0%	0.8%	64.4%	35.76
Ethereum	-0.6%	2.9%	-7.1%	-8.5%	42.7%	35.76
Cardano	-0.5%	-0.9%	-13.8%	-28.1%	4.6%	57.91
Dogecoin	1.4%	4.9%	-14.1%	-7.9%	-2.1%	44.04
Polygon	0.0%	4.9%	-15.5%	-35.7%	-25.3%	65.22
Solana	-2.7%	-3.6%	-11.4%	-0.4%	104.2%	77.06
Litecoin	-0.2%	3.6%	-27.6%	-28.3%	-4.2%	69.02
Chainlink	0.5%	-3.5%	-19.5%	-6.7%	7.0%	66.02
Polkadot	-2.8%	0.2%	-12.8%	-15.1%	1.4%	50.28
Avalanche	-1.3%	1.7%	-18.6%	-27.2%	-3.9%	63.02
Uniswap	-1.8%	-1.6%	-28.4%	-8.2%	-10.2%	65.25
Algorand	-0.8%	-0.5%	-11.3%	-34.6%	-44.6%	56.46
Stellar Lumens	-1.7%	-4.4%	-19.2%	29.6%	66.7%	89.14
Cosmos	-1.2%	-1.9%	-18.3%	-31.0%	-23.9%	44.71
Aave	-1.8%	-0.7%	-10.7%	-9.5%	9.6%	71.38
Maker	11.4%	7.7%	-6.6%	81.1%	125.9%	73.84
Compound	-1.2%	-2.7%	-32.1%	18.8%	39.4%	99.26
Axie	-1.4%	-1.4%	-18.4%	-30.9%	-18.3%	68.54
Curve	-3.5%	-6.3%	-21.2%	-17.2%	33.1%	75.73

Commodities

Name	1 Day	1 Week	1 Month	3 Month	YTD	90 D Volatility
Bloomberg Commodity Index	-0.1%	1.1%	-0.6%	-6.0%	-6.0%	13.03
Bloomberg Energy Subindex	1.0%	2.9%	2.4%	-11.4%	-11.4%	27.96
Bloomberg Industrial Metals Subindex	-0.3%	0.8%	-4.0%	-13.7%	-13.7%	18.61
Bloomberg Precious Metals Subindex	-0.5%	1.0%	-0.4%	1.8%	1.8%	12.80
Bloomberg WTI Crude Oil Subindex	2.3%	5.5%	3.3%	4.5%	4.5%	31.85
Bloomberg Gold Subindex	-0.3%	1.1%	-0.2%	6.3%	6.3%	10.51

Equities

Name	1 Day	1 Week	1 Month	3 Month	YTD	90 D Volatility
S&P 500 INDEX	-0.1%	3.1%	-1.3%	18.7%	18.7%	11.73
NASDAQ 100 Stock Index	0.3%	4.7%	-1.3%	42.5%	42.5%	17.43
FTSE 100 Index	-0.5%	1.5%	-2.2%	2.8%	2.8%	11.44
MSCI Europe Index	-0.2%	1.4%	-1.6%	11.1%	11.1%	11.08
MSCI Japan Index	0.8%	1.9%	-0.7%	25.6%	25.6%	13.74
MSCI Emerging Markets Index	-0.8%	-0.2%	-5.8%	4.8%	4.8%	12.56
MSCI World Index	-0.2%	2.8%	-1.8%	16.6%	16.6%	10.48
MSCI ACWI Index	-0.2%	2.5%	-2.3%	15.2%	15.2%	10.20

Fixed Income

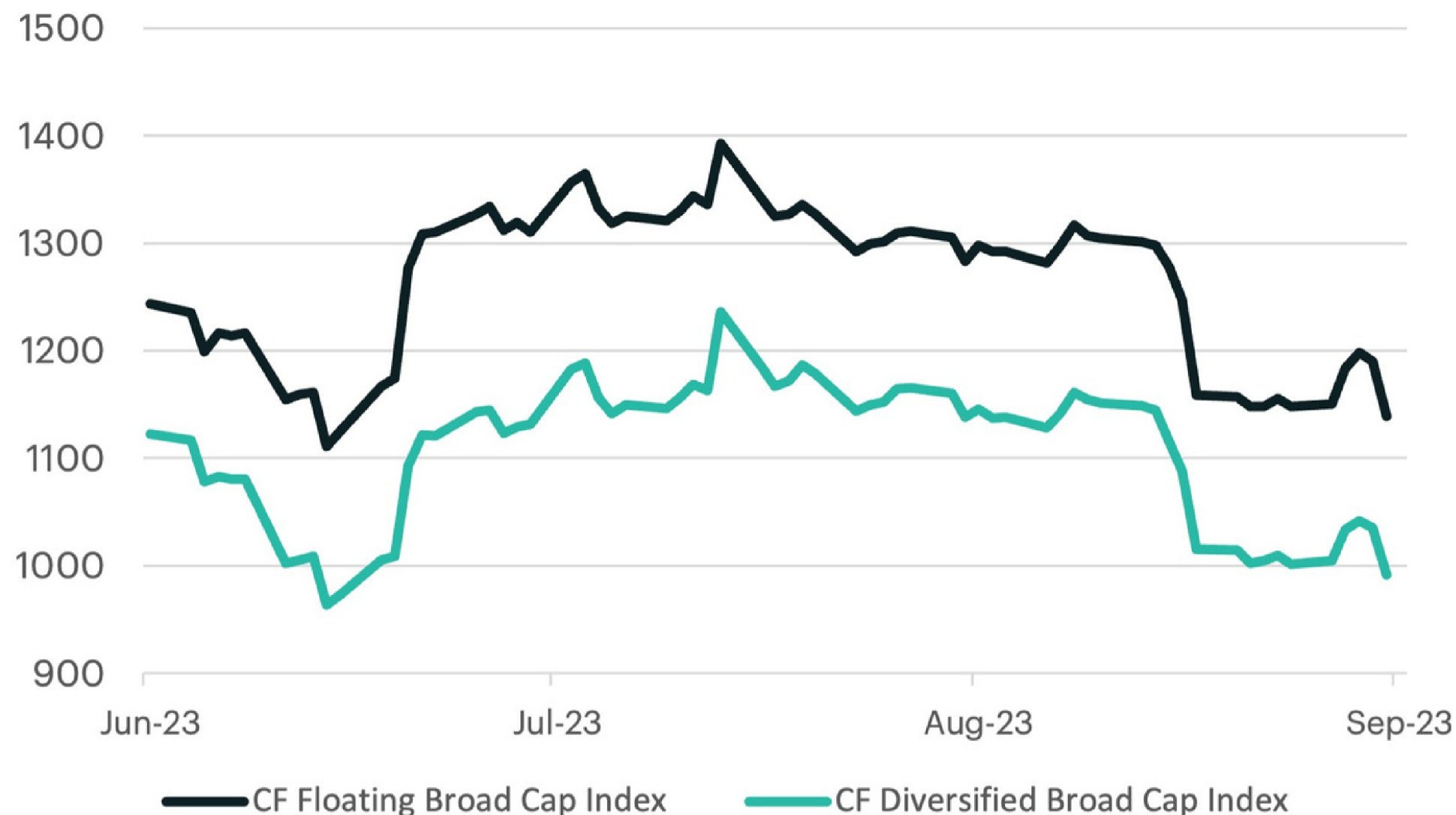
Name	1 Day	1 Week	1 Month	3 Month	YTD	90 D Volatility
Bloomberg Global-Aggregate Bond Index	0.0%	0.6%	-0.7%	0.7%	0.7%	5.72
Bloomberg Global Agg Credit Index	0.0%	0.8%	-0.3%	3.3%	3.3%	5.91
Bloomberg Global High Yield Index	-0.1%	0.7%	-0.1%	6.7%	6.7%	4.14
Bloomberg US Long Treasury Bond Index	0.4%	1.7%	-1.3%	-1.4%	-1.4%	14.97
Bloomberg US Short Term Treasury Index	0.0%	0.1%	0.4%	2.9%	2.9%	0.39
Bloomberg Global Inflation-Linked Index	0.1%	0.5%	-0.3%	1.1%	1.1%	5.87

Fiat Currency Pairs

Name	1 Day	1 Week	1 Month	3 Month	YTD	90 D Volatility
DOLLAR INDEX SPOT	0.4%	-0.3%	1.3%	-0.7%	0.1%	6.16
EURO/US DOLLAR	-0.7%	0.3%	-1.3%	1.4%	1.3%	6.58
BRITISH POUND/US DOLLAR	-0.4%	0.6%	-0.8%	1.9%	4.9%	7.20
JAPANESE YEN/US DOLLAR	0.5%	0.2%	-1.5%	-4.3%	-9.9%	8.80
US DOLLAR/SWISS FRANC	0.6%	-0.1%	0.9%	-3.0%	-4.4%	7.39
AUSTRALIAN DOLLAR/US DOLLAR	0.1%	1.0%	-2.0%	-0.3%	-4.8%	10.29
MEXICAN PESO/US DOLLAR	-1.8%	-1.2%	-0.9%	3.8%	14.5%	9.68
BRAZIL REAL/US DOLLAR	-1.4%	-1.5%	-3.3%	2.0%	6.7%	11.49
US DOLLAR/SINGAPORE DOLLAR	0.1%	-0.4%	1.1%	0.0%	0.9%	4.27
TAIWAN DOLLAR/US DOLLAR	-0.1%	-0.4%	-1.0%	-3.5%	-3.6%	4.04

Source: CF Benchmarks, Bloomberg, as of August 31, 2023

The CF Diversified Broad Cap Indices



The CF Diversified Broad Cap Index and CF Broad Cap Index (Free Float Market Cap Weight) are liquid investible benchmark portfolio indices designed to track the performance of diversified exposure to a broad portfolio of the digital asset class. The index seeks to capture 99% of the total market capitalization of the investible digital asset universe as its constituents.

For the diversified variant, the index constituents are weighted by diversified market capitalization that reduces portfolio weight away from overly dominant constituents. Conversely, the index constituents are weighted using free-float market capitalization and reconstituted and rebalanced once a quarter in accordance with the CF Multi Asset Ground Rules.

The index is calculated and published once a day at 4:00pm London Time every day of the year, it is re-constituted and rebalanced quarterly in accordance with the CF Multi Asset Ground Rules. There are two variants; the CF Diversified Broad Cap Index & CF Floating Broad Cap Index and both were launched on October 30th 2022 with an inception date of September 1st 2022 at a value of 1,000.

Constituent changes: CF Broad Cap Indices

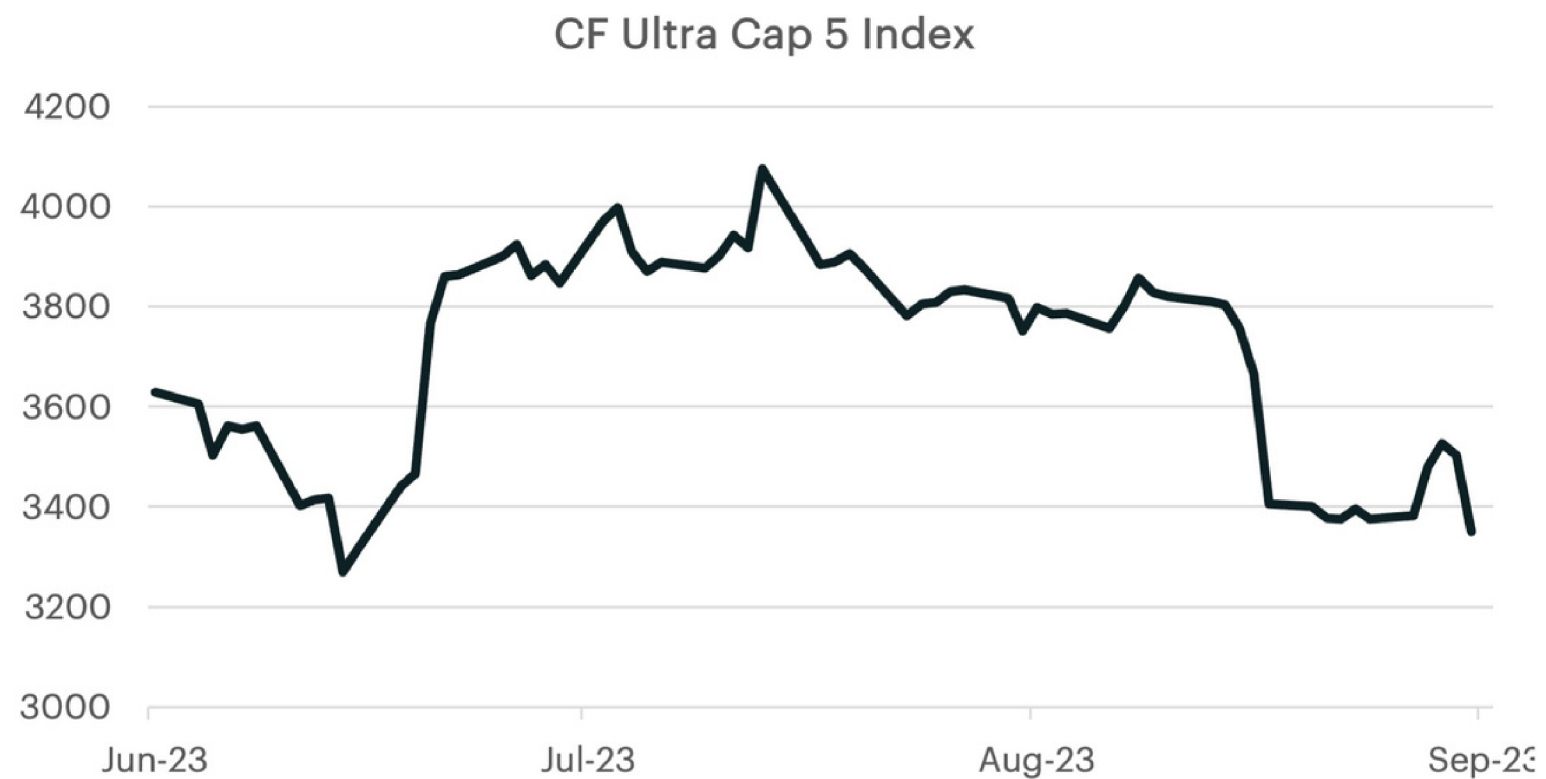
Additions (+)

- Lido DAO (LDO): Lido is a liquid staking solution for Ethereum. Lido lets users continue to use their staked ETH for other on-chain actions, like providing collateral for a DeFi loan. LDO, Lido's native token, can empower holders to vote on governance proposals.
- Arbitrum (ARB): Arbitrum is a Layer 2 (L2) blockchain protocol built on top of the Ethereum blockchain that allows Ethereum transactions to be processed more efficiently.
- Aptos (APT): Aptos is a decentralized blockchain and scalable Web3 infrastructure.
- Render (RNDR): Render provides Near Unlimited Decentralized GPU Computing Power For Next Generation 3D Content Creation.

Subtractions (-)

- Basic Attention Token (BAT): Basic Attention Token (BAT) is a cryptocurrency intending to create a virtuous cycle around digital advertising that is equitable for creators and consumers.
- Loopring (LRC): Loopring is a software running on Ethereum that aims to incentivize a global network of users to operate a platform that enables the creation of new types of crypto asset exchanges.

The CF Cryptocurrency Ultra Cap 5 Index



The CF Cryptocurrency Ultra Cap 5 (CFUC5) is an investible benchmark index tracking the performance of a free float market capitalization weighted portfolio of the 5 largest cryptocurrencies by market capitalization. It is the first true measure of the market beta of cryptocurrencies being a Registered Benchmark under EU BMR. All pricing sources for constituents of the index are also themselves Registered Benchmarks. The index is calculated and published once every second in accordance with the methodology. The portfolio composition is determined by the CF Digital Asset Index Family Multi Asset Series Ground Rules with constituent reviews taking place twice a year and monthly rebalancing. The index was launched on August 18th 2020 with an inception date of September 1st 2018 at a value of 1000.

Source: CF Benchmarks, Bloomberg, as of September 1, 2023

Constituent changes: CF Ultra Cap 5 Index



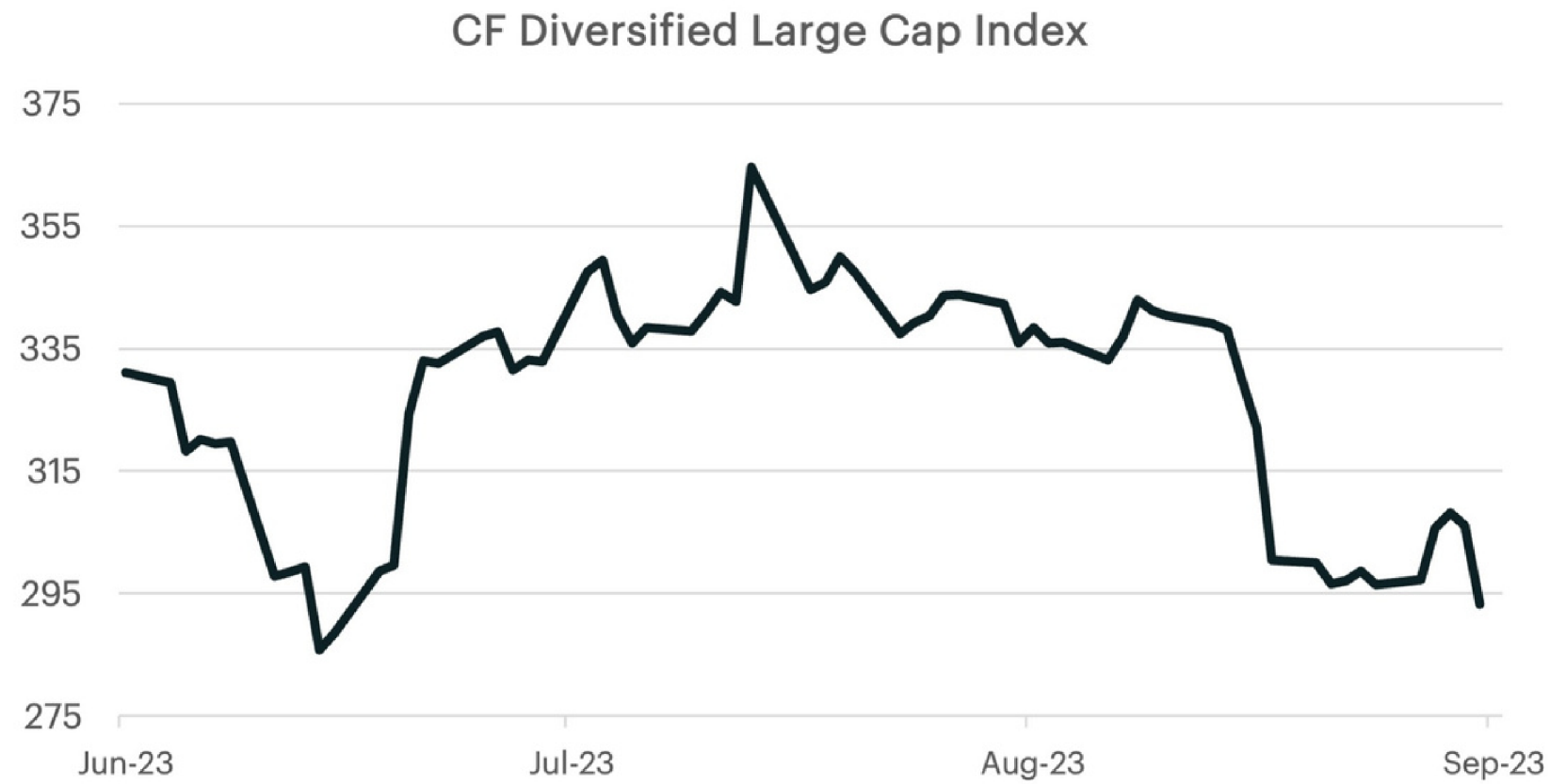
Additions (+)

- None

Subtractions (-)

- None

The CF Diversified Large Cap Index



The CF Diversified Large Cap Index - is a liquid, investible benchmark portfolio index designed to track the performance of large-cap digital assets. The index seeks to capture 95% of the total market capitalization of the investible digital asset universe as its constituents. Index constituents are weighted using the diversified market capitalization which is determined by the free-float market capitalization adjusted by the application of the harmonic series' terms. This has the benefit of discounting the higher capitalization assets within the portfolio in accordance with the CF Multi Asset Series Ground Rules and the CF Diversified Large Cap Index Methodology. The index is calculated and published every second. The index is re-constituted on a twice yearly basis and rebalanced quarterly. The CF Diversified Large Cap Index - was incepted on December 1st 2021 with a value of 1,000. The index was launched on February 14th, all values from inception date to launch date provided are back tested.

Constituent changes: CF Diversified Large Cap Index



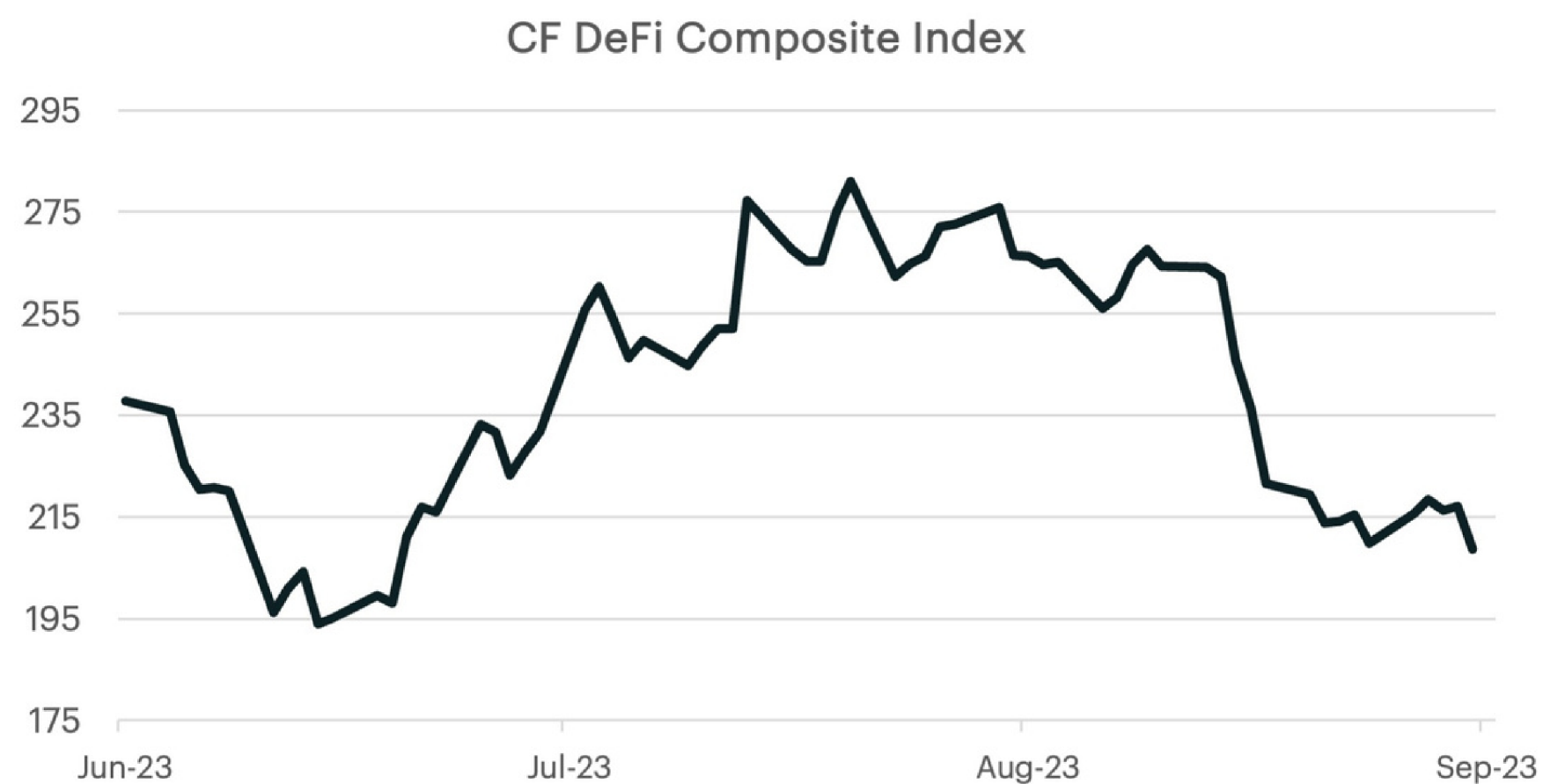
Additions (+)

- None

Subtractions (-)

- Avalanche (AVAX): Avalanche is a blockchain platform that aims to address the blockchain trilemma of scalability, security and decentralization thanks to its unique Proof of Stake (PoS) mechanism.
- Ethereum Classic (ETC): Ethereum Classic allows developers to create new cryptocurrencies and decentralized applications that can run autonomously on a blockchain. These programs, more commonly known as decentralized applications, can include anything from exchanges to prediction markets to games.

The CF DeFi Composite Index



The CF DeFi Composite Index - London is a liquid, investible benchmark portfolio index that tracks the return performance of decentralised financial services, commonly referred to as "DeFi". The index is comprised of three distinct sub-portfolios of fixed weight that represent the components of blockchain architecture that are required to deliver decentralised financial services to individual and institutional end users; decentralized applications (dApps) via DeFi protocols, Services and Settlement Blockchains. Digital assets are classified in accordance with the CF Digital Asset Classification Structure (DACs) for sub-portfolio eligibility. The index is calculated and published once a day at 4:00pm London Time. The index is re-constituted on a twice yearly basis and rebalanced quarterly.

The CF DeFi Composite Index - London was incepted on December 1st 2021 with a value of 1,000. The index was launched in January 18th, all values from inception date to launch date provided are backtested.

Constituent changes: CF DeFi Composite Index

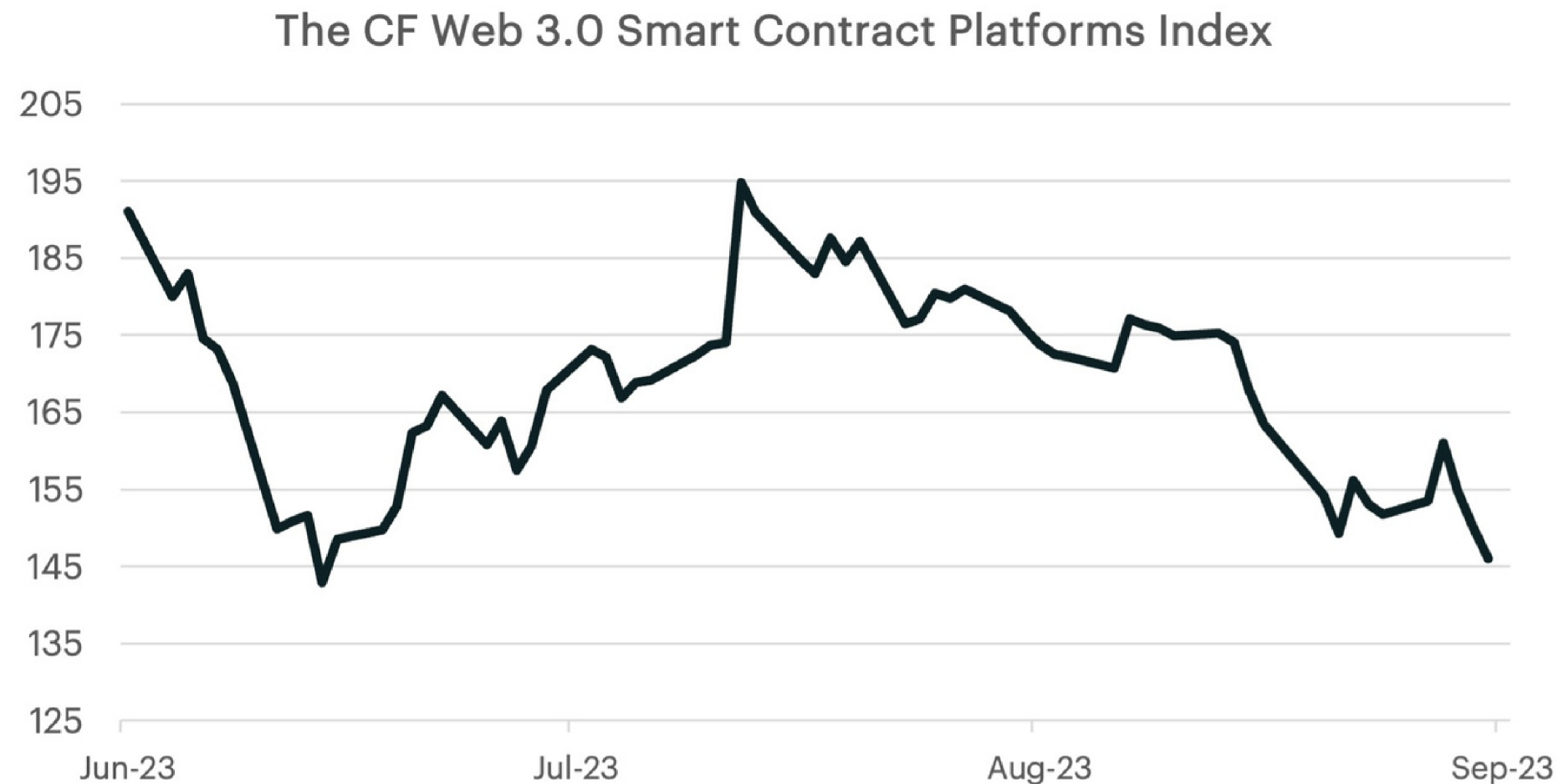
Additions (+)

- Lido DAO (LDO): Lido is a liquid staking solution for Ethereum. Lido lets users continue to use their staked ETH for other on-chain actions, like providing collateral for a DeFi loan. LDO, Lido's native token, can empower holders to vote on governance proposals like fee parameters and new node operators.
- Arbitrum (ARB): Arbitrum is a Layer 2 (L2) blockchain protocol built on top of the Ethereum blockchain that allows Ethereum transactions to be processed more efficiently.

Subtractions (-)

- Yearn.finance (YFI): Yearn.finance is a group of protocols running on the Ethereum blockchain that allow users to optimize their earnings on crypto assets through lending and trading services.

Constituent changes: CF Web 3.0 Smart Contract Platforms Index



The CF Web 3.0 Smart Contract Platforms Index - London is a liquid, investible benchmark portfolio index that tracks the return performance of Smart Contract Platforms within the Digital Asset space. The index seeks to capture returns of all eligible protocols under the Settlement category and Programmable sub-category of the CF Digital Asset Classification Structure. Index constituents are weighted by using a capped free-float market capitalization in accordance with the CF Digital Asset Series Ground Rules and the index methodology. The index is calculated and published once a day at 4:00pm London Time. The index is re-constituted and rebalanced quarterly. The CF Web 3.0 Smart Contract Platforms Index - London was inceptioned on December 1st 2021 with a value of 1,000. The index was launched on June 28th, all values from inception date to launch date provided are backtested.

Constituent changes: CF Web 3.0 Smart Contract Platforms Index

Additions (+)

- Aptos (APT): Aptos is a decentralized blockchain and scalable Web3 infrastructure. Aptos' parallel execution engine and modular design allow for high transaction throughput and low latency. APTOS is the native token of the blockchain which is used to pay for network transaction fees, earn rewards for securing the protocol via staking and vote on decisions that affect the future of the platform.
- Arbitrum (ARB): Arbitrum is a Layer 2 (L2) blockchain protocol built on top of the Ethereum blockchain that allows Ethereum transactions to be processed more efficiently.

Subtractions (-)

- None

The CF Digital Culture Composite Index



CF Digital Culture Index



The CF DeFi Composite Index - London is a liquid, investible benchmark portfolio index that tracks the return performance of decentralised financial services, commonly referred to as "DeFi". The index is comprised of three distinct sub-portfolios of fixed weight that represent the components of blockchain architecture that are required to deliver decentralised financial services to individual and institutional end users; decentralized applications (dApps) via DeFi protocols, Services and Settlement Blockchains. Digital assets are classified in accordance with the CF Digital Asset Classification Structure (DACs) for sub-portfolio eligibility. The index is calculated and published once a day at 4:00pm London Time. The index is re-constituted on a twice yearly basis and rebalanced quarterly.

The CF DeFi Composite Index - London was incepted on December 1st 2021 with a value of 1,000. The index was launched in January 18th, all values from inception date to launch date provided are backtested.

Constituent changes: CF Digital Culture Index



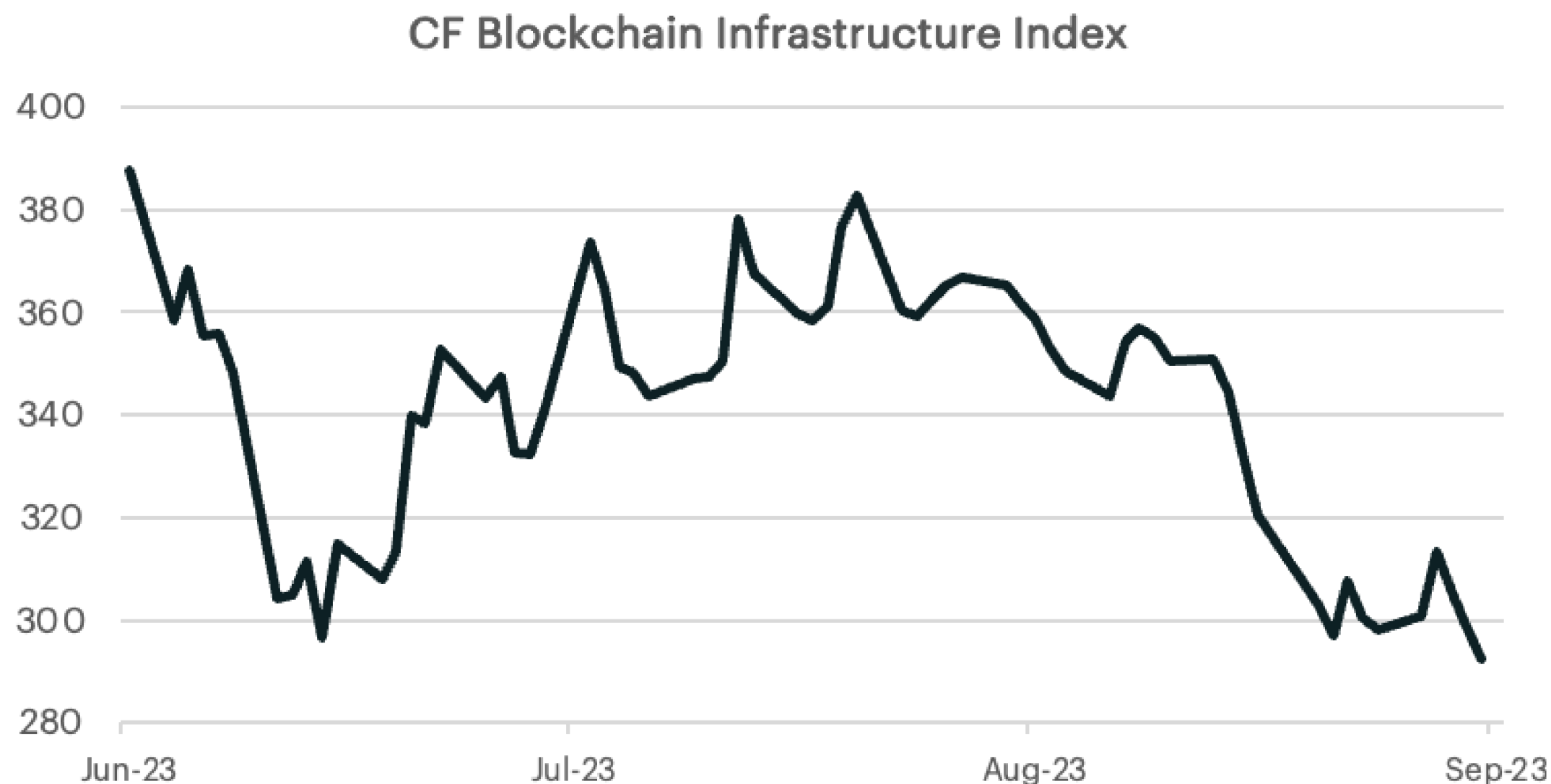
Additions (+)

- None

Subtractions (-)

- None

The CF Blockchain Infrastructure Index



The CF Blockchain Infrastructure Index is a liquid, investible benchmark portfolio index that tracks the return performance of blockchain services within the Digital Asset space. The index seeks to capture returns of all eligible protocols under the Services category of the CF Digital Asset Classification Structure. Index constituents are weighted by using a capped free-float market capitalization in accordance with the CF Digital Asset Series Ground Rules and the index methodology.

The index is calculated and published once a day at 4:00pm Brasilia Time. It is re-constituted and rebalanced quarterly. The CF Blockchain Infrastructure Index - Brazil was inceptioned on April 1st 2022 with a value of 1,000. The index.

Constituent changes: CF Blockchain Infrastructure Index

Additions (+)

- Filecoin (FIL): Filecoin is a cryptocurrency that aims to incentivize a global network of computer operators to provide a file sharing and storage service.
- Arbitrum (ARB): Arbitrum is a Layer 2 (L2) blockchain protocol built on top of the Ethereum blockchain that allows Ethereum transactions to be processed more efficiently.
- Render (RNDR): The Render Network is the first decentralized GPU rendering platform, empowering artists to scale GPU rendering work on-demand to high performance GPU Nodes around the world.

Subtractions (-)

- None

CF Digital Asset Classification Structure



CF Digital Asset Classification Structure

The CF Digital Asset Classification Structure (CF DACS) classifies coins and tokens based on the services that the associated software protocol delivers to end users, grouping assets by the role they play in delivering services to end users. The CF DACS powers CF Benchmarks' sector composite and category portfolio indices and allows users to perform attribution analysis to better understand the fundamental drivers of returns within their digital asset portfolios.

CF Digital Asset Classification Structure



Additional Resources

For more information about our CF Benchmark indices and our methodologies, please visit the respective web links below:

- [CF Diversified Large Cap Index](#)
- [CF DeFi Composite Index](#)
- [CF Web 3.0 Smart Contract Platforms Index](#)
- [CF Digital Culture Composite Index](#)
- [CF Blockchain Infrastructure Index](#)
- [CF Cryptocurrency Ultra Cap 5 Index](#)
- [CF Broad Cap Index Market Cap Weight](#)
- [CF Broad Cap Index Diversified Weight](#)

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