

CF Benchmarks Quarterly Attribution Report

Attribution Analysis: September 3, 2024 - December 2, 2024



Market Recap

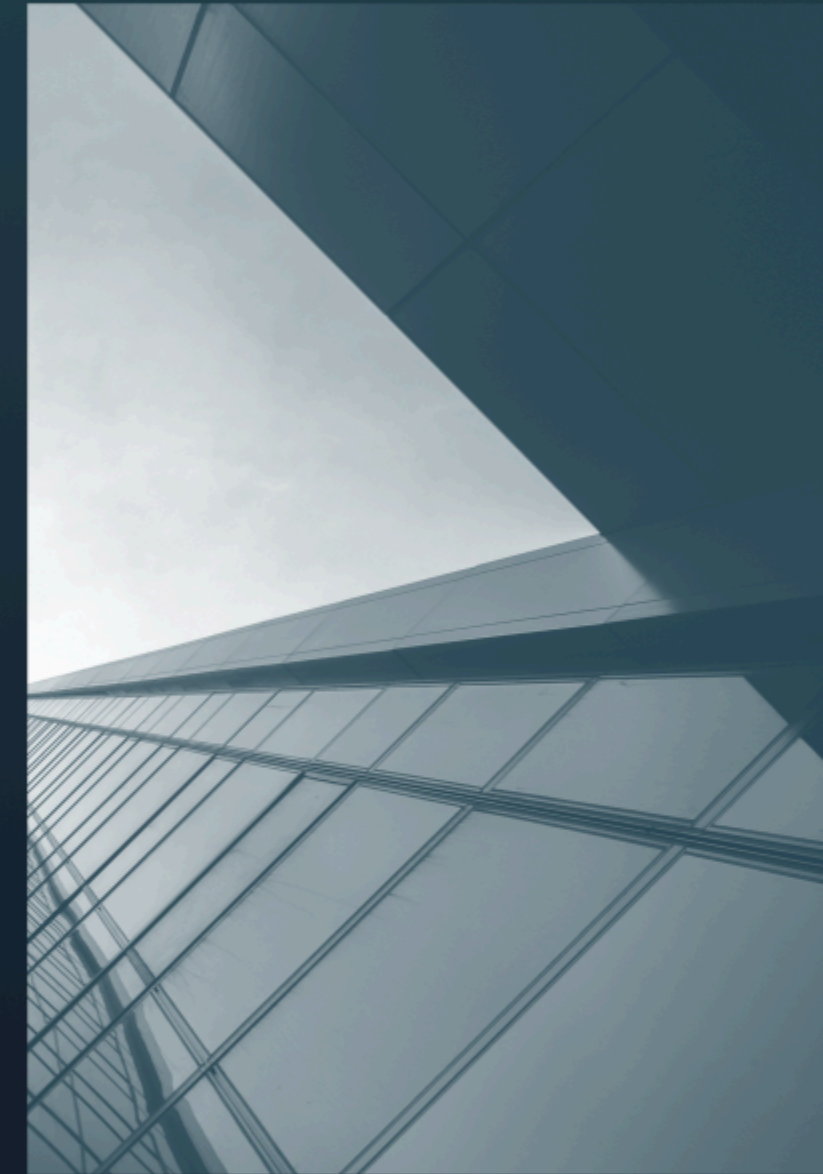
Policy Pivots: Monetary and Political Shifts Fuel Year-End Rally

A shift in monetary policy, coupled with a favorable political backdrop, bolstered digital assets during the rebalancing quarter. Historically, September exhibits seasonal weakness, with investors cautiously reacting to softening labor market data. However, the Federal Reserve's decisive 50-basis-point rate cut initiated a new rate-cutting cycle, dramatically shifting market dynamics. This monetary easing, justified by the Fed's dual mandate and improving inflation trends, sparked remarkable resilience in large-cap tokens, particularly Bitcoin and Ether.

In October, market dynamics intensified amid growing political anticipation surrounding the U.S. election. Decentralized prediction markets showed increasing confidence in Trump's presidential bid, while traditional polls suggested a closer race. This political backdrop, combined with expectations of regulatory reform, catalyzed record fund inflows not seen since the spot Bitcoin ETF's launch earlier in the year. Strong institutional interest drove CME futures activity to historic levels.

November emerged as a watershed moment following Trump's electoral victory. Bitcoin's surge to nearly \$100,000 reflected more than just price action – it marked a broad-based regulatory re-rating as investors began to price in crypto-friendly policies, driving capital into previously underperforming altcoins and market segments. The Federal Reserve's additional 25-basis-point rate reduction amplified the already robust momentum. Previously lagging digital asset segments experienced notable revivals as investors positioned for an anticipated pro-cryptocurrency regulatory environment.

The convergence of accommodative monetary policy and highly anticipated regulatory reform has sparked renewed price optimism, driving a notable shift in performance breadth across digital asset indices. Market strength was remarkable across the board, with a clear change in leadership emerging. The CF Digital Culture Index surged 103.62%, while the CF Blockchain Infrastructure Index advanced 82.34%, marking a decisive reversal from previous trends as sector-specific and smaller-cap strategies outpaced broader market measures. The flagship CF Free-Float Broad Cap Index captured this comprehensive rally with a 77.88% gain, while the more concentrated CF Ultra Cap 5 Index rose 72.69%, underscoring how thematic exposure and market breadth characterized this period's performance.

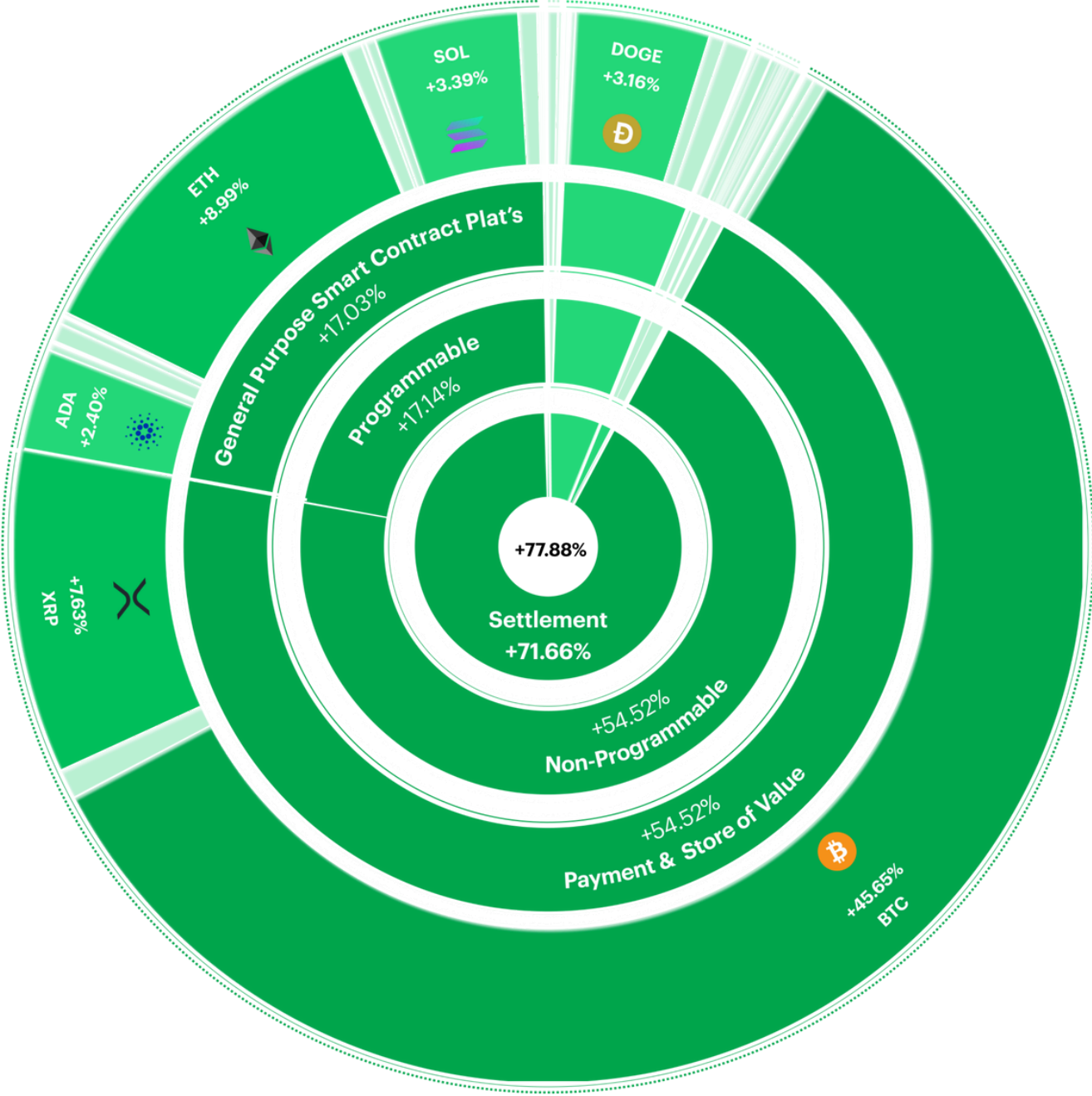


Attribution Analysis: CF Broad Cap Indices

Performance Attribution (Free Float Market Cap)



Index Return Contribution



Total Performance Contribution: +77.88% Date: 2nd December 2024

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors	Finance	Trading	+0.25%	UNI +0.25%	
		Asset & Wealth Management	+0.02%	LDO +0.02%	
		Borrowing & Lending	+0.14%	AAVE +0.09%	
		Stablecoin Issuance & Mgmt	+0.01%	ONDO +0.05%	
				MKR +0.01%	
	Culture	Gaming	+0.08%	GALA +0.05%	
		VR & AR	+0.04%	IMX +0.03%	
		Social	+0.02%	SAND +0.04%	
				CHZ +0.02%	
				BONK +0.11%	
		Meme Coins	+4.35%	DOGE +3.16%	
				PEPE +0.37%	
				SHIB +0.61%	
				WIF +0.10%	
Services	Infrastructure	Scaling	+0.45%	ARB +0.15%	
		Interoperability	+0.05%	MATIC +0.15%	
		Computing	+0.23%	OP +0.08%	
				STX +0.05%	
				TIA +0.03%	
	Utility	Oracles	+0.42%	QNT +0.05%	
		Information & Data Management	+0.14%	FET +0.10%	
				JASMY +0.03%	
				RNDR +0.10%	
				LINK +0.42%	
				FIL +0.09%	
				GRT +0.05%	
Settlement	Programmable	General Purpose Smart Contract Platforms		+17.03%	ADA +2.40%
					ALGO +0.18%
					APT +0.03%
					ATOM +0.02%
					AVAX +0.43%
					DOT +0.17%
					EGLD +0.01%
					EOS +0.03%
					ETC +0.07%
					ETH +8.99%
			FTM +0.06%		
			HBAR +0.40%		
			ICP +0.10%		
			NEAR +0.23%		
			SOL +3.39%		
		SUI +0.44%			
		XTZ +0.06%			
		Specialized Purpose Smart Contract Platforms	+0.11%	INJ +0.06%	
				SEI +0.06%	
				BCH +0.23%	
				LTC +0.31%	
				BTC +45.65%	
				XLTM +0.70%	
				XRP +7.63%	

- The CF Broad Cap Index rose by +77.88% over the most recent rebalancing period, underperforming the diversified weighted variant by approximately 23%.
- The two bellwether tokens, Bitcoin (BTC) and Ether (ETH), contributed the most to the overall increase in index value (+45.65% and +8.99%, respectively).
- From a CF DACS perspective, this translated into the Settlement category contributing the most to the positive performance, with total contributions from the Store of Value segment outweighing Smart Contract Platforms.

Source: CF Benchmarks, as of December 2, 2024

Index Weights (Free Float Market Cap)



3rd September 2024

Total Weight: 100% Index Value: 2245.56

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors 2.39%	Finance	Trading	0.18%	UNI 0.18%	
		Asset & Wealth Management	0.03%	LDO 0.03%	
		Borrowing & Lending	0.15%	AAVE 0.11%	
		Stablecoin Issuance & Mgmt	0.08%	ONDO 0.04%	
				MKR 0.08%	
	Culture	Gaming	0.08%	GALA 0.04%	
		VR & AR	0.03%	IMX 0.04%	
		Social	0.02%	SAND 0.03%	
				CHZ 0.02%	
		Meme Coins		1.82%	BONK 0.07%
					DOGE 0.94%
				PEPE 0.21%	
	Services 1.60%	Infrastructure	Scaling	0.66%	SHIB 0.50%
					WIF 0.10%
			Interoperability	0.05%	ARB 0.16%
				MATIC 0.27%	
				OP 0.10%	
Computing			0.37%	STX 0.09%	
				TIA 0.03%	
				QNT 0.05%	
Utility		Oracles	0.39%	FET 0.19%	
		Information & Data Management	0.13%	JASMY 0.04%	
Settlement 96.01%	Programmable	General Purpose Smart Contract Platforms	25.14%	RNDR 0.13%	
				LINK 0.39%	
				FIL 0.08%	
				GRT 0.05%	
				ADA 0.90%	
				ALGO 0.06%	
				APT 0.03%	
				ATOM 0.02%	
				AVAX 0.34%	
				DOT 0.14%	
				EGLD 0.02%	
				EOS 0.02%	
				ETC 0.09%	
				ETH 18.24%	
				FTM 0.04%	
		HBAR 0.09%			
	Specialized Purpose Smart Contract Platforms		0.11%	ICP 0.13%	
				NEAR 0.29%	
				SOL 4.57%	
	Non-Programmable	Payment & Store of Value	70.75%	SUI 0.14%	
				XTZ 0.04%	
				INJ 0.07%	
			SEI 0.04%		
	BCH 0.34%				
	LTC 0.35%				
	BTC 67.91%				
	XLM 0.14%				
	XRP 2.01%				

2nd December 2024

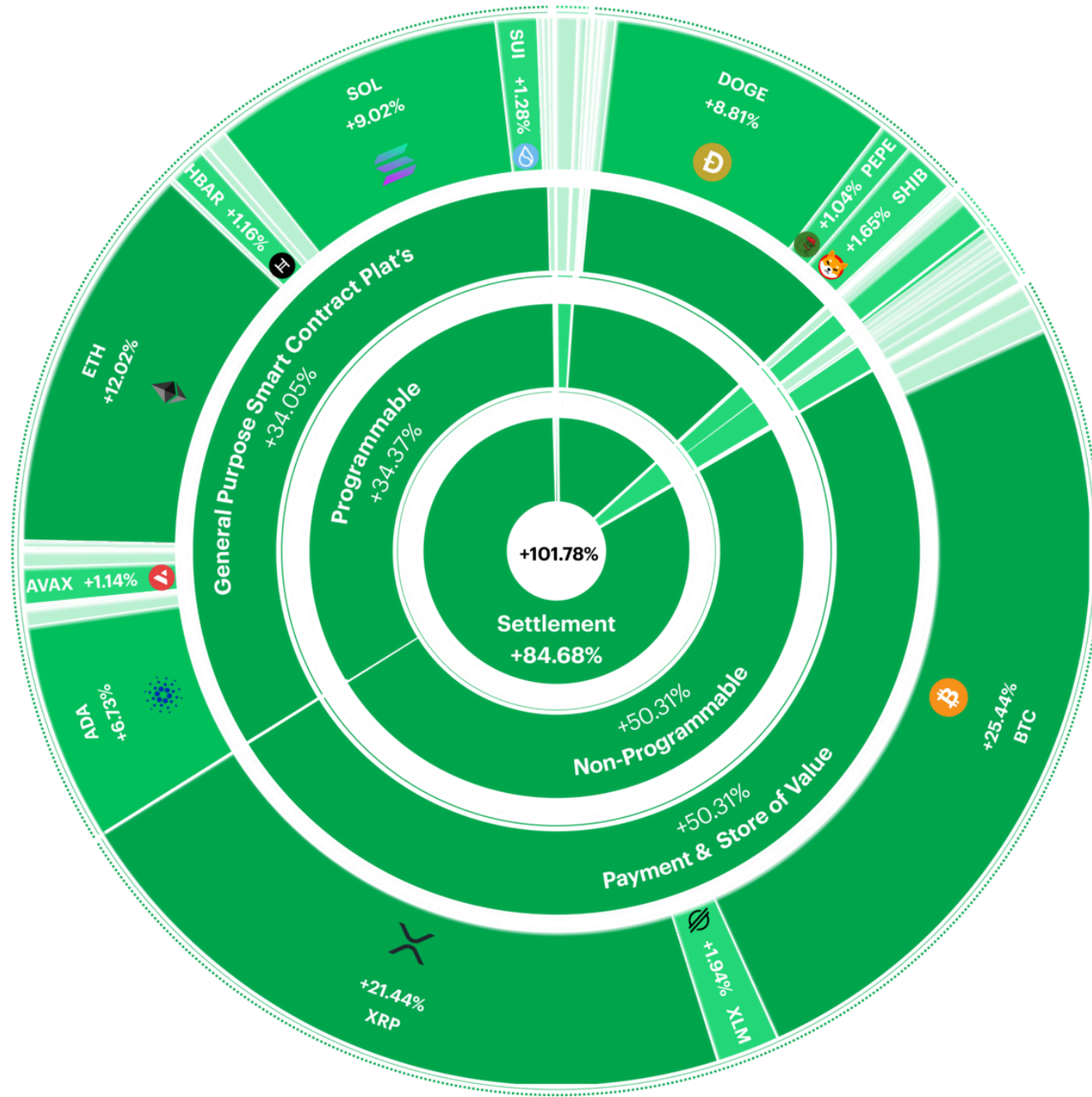
Total Weight: 100% Index Value: 3994.33

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors 4.13%	Finance	Trading	0.25%	UNI 0.25%	
		Asset & Wealth Management	0.04%	LDO 0.04%	
		Borrowing & Lending	0.17%	AAVE 0.12%	
		Stablecoin Issuance & Mgmt	0.05%	ONDO 0.06%	
				MKR 0.05%	
Services 1.47%	Infrastructure	Gaming	0.05%	IMX 0.05%	
		Meme Coins		3.57%	BONK 0.12%
					DOGE 2.37%
	Utility		0.65%	PEPE 0.32%	
				SHIB 0.65%	
Settlement 94.40%	Programmable	General Purpose Smart Contract Platforms	22.63%	WIF 0.12%	
				ARB 0.20%	
				OP 0.12%	
				STX 0.07%	
				TIA 0.04%	
				QNT 0.06%	
				FET 0.15%	
				JASMY 0.04%	
				RENDER 0.14%	
				LINK 0.47%	
	Specialized Purpose Smart Contract Platforms		0.05%	FIL 0.12%	
				GRT 0.06%	
	Non-Programmable	Payment & Store of Value	71.71%	ADA 1.80%	
				ALGO 0.13%	
				APT 0.04%	
	AVAX 0.45%				
	DOT 0.21%				
	EOS 0.03%				
	ETC 0.09%				
	ETH 13.72%				
	FTM 0.06%				
	HBAR 0.30%				
	ICP 0.13%				
	NEAR 0.33%				
	SOL 4.95%				
	SUI 0.38%				
	SEI 0.05%				
	BCH 0.33%				
	LTC 0.38%				
	BTC 64.92%				
	XLM 0.48%				
	XRP 5.60%				

Performance Attribution (Diversified Weight)



Index Return Contribution



Total Performance Contribution: +101.78% Date: 2nd December 2024

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors	Finance	Trading	+0.67%		
		Asset & Wealth Management	+0.07%		
		Borrowing & Lending	+0.39%		
		Stablecoin Issuance & Mgmt	+0.03%		
	Culture	Gaming	+0.22%		
		VR & AR	+0.12%		
		Social	+0.04%		
		Meme Coins	+12.10%		
		UNI	+0.67%		
		LDO	+0.07%		
Services	Infrastructure	Scaling	+1.28%		
		Interoperability	+0.15%		
		Computing	+0.54%		
	Utility	Oracles	+1.10%		
		Information & Data Management	+0.40%		
	Settlement	Programmable	General Purpose Smart Contract Platforms	+34.05%	
			Specialized Purpose Smart Contract Platforms	+0.32%	
			Non-Programmable	Payment & Store of Value	+50.31%
				BTC	+25.44%
				XLM	+1.94%
XRP				+21.44%	
ADA				+3.16%	
AVAX				+1.14%	
General Purpose Smart Contract Plat's			ETH	+12.02%	
			HBAR	+1.16%	
			SOL	+9.02%	
			SUI	+1.28%	
		DOGE	+8.81%		
		PEPE	+1.04%		

- Our CF Diversified Broad Cap Index posted a +101.78% increase and saw its relatively smaller-cap tilt result into sizable outperformance when compared to the free-float variant.
- Bitcoin's (BTC) heavier weight resulted in it being the leading contributor (+25.44%), followed by Ripple's XRP token's 21.44% contribution to the headline index.
- From a CF DACS perspective, the Store of Value and Payments segment in the Settlement category was the leading contributor in index performance.

Index Weights (Diversified Weight)



3rd September 2024

Total Weight: 100% Index Value: 1838

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors	Finance	Trading	0.50%	UNI 0.50%	
		Asset & Wealth Management	0.08%	LDO 0.08%	
		Borrowing & Lending	0.42%	AAVE 0.29%	
		Stablecoin Issuance & Mgmt	0.25%	ONDO 0.13%	
				MKR 0.25%	
	Culture	Gaming	0.21%	GALA 0.10%	
		VR & AR	0.07%	IMX 0.11%	
		Social	0.04%	SAND 0.07%	
				CHZ 0.04%	
		Meme Coins			BONK 0.21%
					DOGE 2.61%
					PEPE 0.59%
			SHIB 1.36%		
			WIF 0.27%		
	Services	Infrastructure	Scaling	1.87%	ARB 0.45%
				MATIC 0.80%	
				OP 0.26%	
				STX 0.25%	
				TIA 0.10%	
Interoperability		0.13%	QNT 0.13%		
Computing		0.84%	FET 0.39%		
			JASMY 0.13%		
			RNDR 0.33%		
Utility		1.40%	Oracles	1.03%	LINK 1.03%
		Information & Data Management	0.37%	FIL 0.23%	
				GRT 0.14%	
Settlement	Programmable	General Purpose Smart Contract Platforms	43.05%	ADA 2.53%	
				ALGO 0.16%	
				APT 0.08%	
				ATOM 0.07%	
				AVAX 0.90%	
				DOT 0.41%	
				EGLD 0.05%	
				EOS 0.05%	
				ETC 0.24%	
				ETH 24.39%	
				FTM 0.09%	
				HBAR 0.25%	
				ICP 0.33%	
				NEAR 0.81%	
				SOL 12.15%	
				SUI 0.41%	
				XTZ 0.11%	
				INJ 0.20%	
		SEI 0.11%			
	Non-Programmable	Payment & Store of Value	45.79%	BCH 0.97%	
				LTC 0.92%	
				BTC 37.84%	
				XLN 0.39%	
				XRP 5.66%	
6.61%					
4.24%					
89.15%					

2nd December 2024

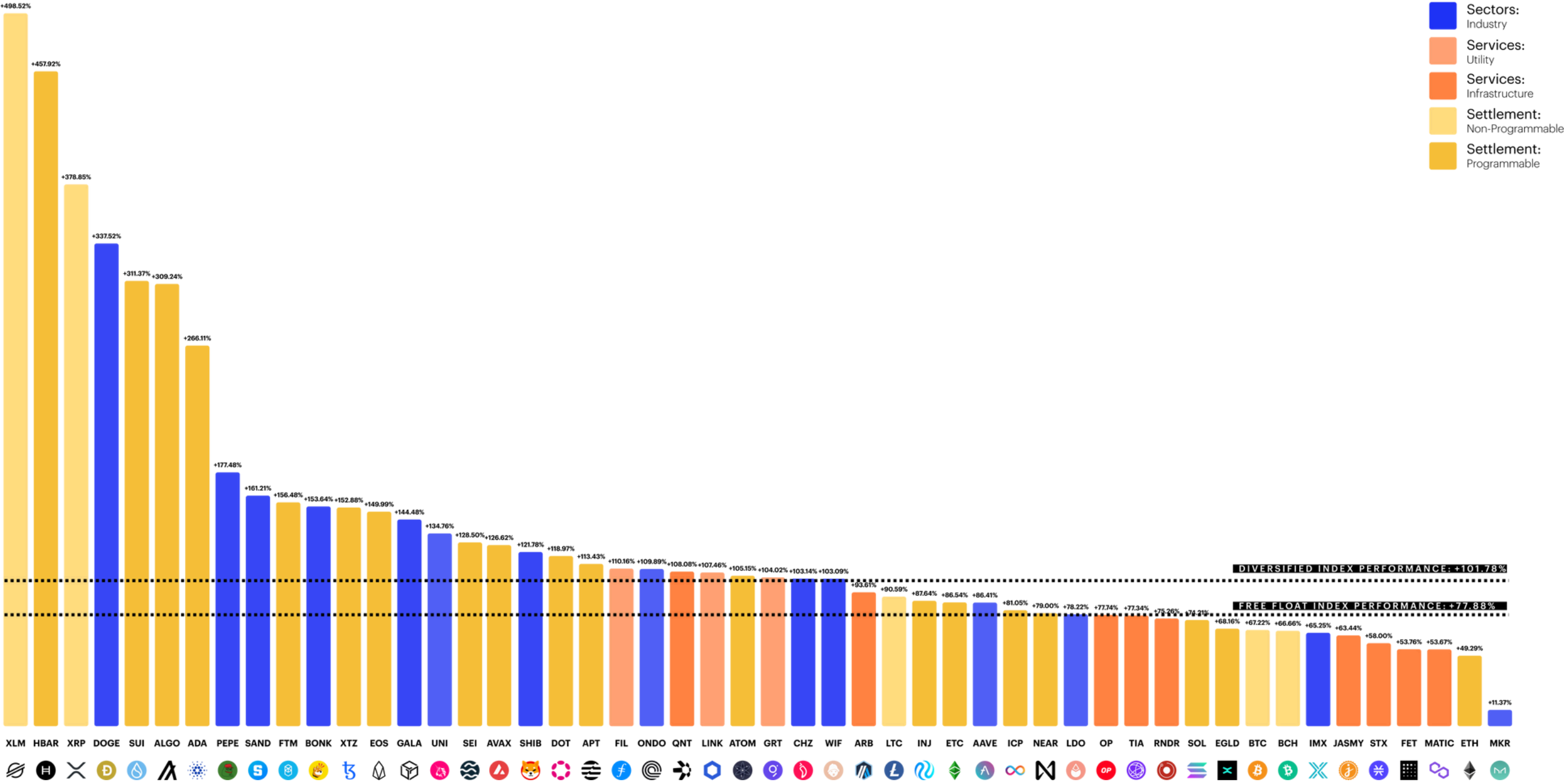
Total Weight: 100% Index Value: 3712.36

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors	Finance	Trading	0.49%	UNI 0.49%	
		Asset & Wealth Management	0.07%	LDO 0.07%	
		Borrowing & Lending	0.38%	AAVE 0.25%	
		Stablecoin Issuance & Mgmt	0.12%	ONDO 0.13%	
				MKR 0.12%	
	Culture	Gaming	0.10%	IMX 0.10%	
		Meme Coins			BONK 0.43%
					DOGE 6.36%
					PEPE 0.92%
				SHIB 1.61%	
				WIF 0.40%	
				ARB 0.43%	
	Services	Infrastructure	Scaling	0.94%	OP 0.25%
					STX 0.18%
					TIA 0.08%
				QNT 0.12%	
				FET 0.19%	
Interoperability		0.12%	JASMY 0.09%		
Computing		0.66%	RENDER 0.38%		
Utility		1.31%	Oracles	0.95%	LINK 0.95%
			Information & Data Management	0.36%	FIL 0.21%
					GRT 0.15%
Settlement	Programmable	General Purpose Smart Contract Platforms	40.83%	ADA 3.28%	
				ALGO 0.17%	
				APT 0.11%	
				AVAX 0.91%	
				DOT 0.40%	
				EOS 0.05%	
				ETC 0.21%	
				ETH 19.89%	
				FTM 0.11%	
				HBAR 0.44%	
			ICP 0.28%		
			NEAR 0.82%		
			SOL 12.91%		
			SUI 1.24%		
			SEI 0.13%		
			BCH 0.82%		
Non-Programmable			Payment & Store of Value	45.14%	LTC 0.79%
					BTC 36.24%
		XLN 0.60%			
		XRP 6.69%			
10.87%					
3.03%					
86.10%					

Market Breadth Expands as XLM and HBAR Rally



Absolute Performance

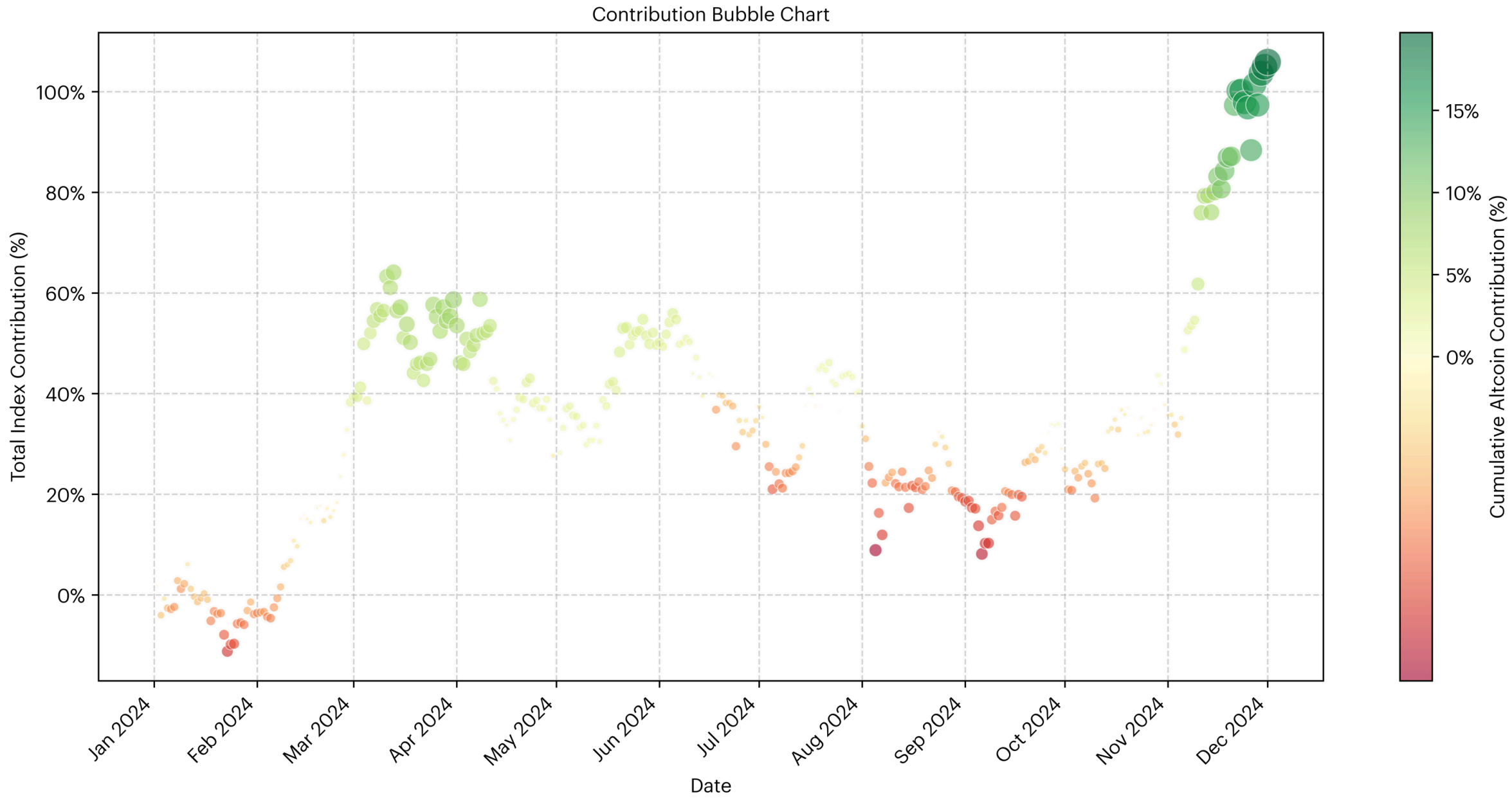


Constituent returns reversed course from the prior rebalance period, with all constituents demonstrating positive absolute performance. This broad breadth favored smaller capitalized tokens over the larger bellwethers, which translated into Bitcoin and Ether's price performance lagging the headline index.

Top gainers Stellar (XLM) and Hedera (HBAR) both rallied over 400%. Stellar Lumens gained momentum following reports of its potential integration with the Federal Reserve's FedNow system, while market sentiment improved after SEC chief Gary Gensler's resignation. Meanwhile, Canary Capital advanced institutional adoption of Hedera's ecosystem by filing for the first HBAR ETF, adding to their expanding portfolio of digital asset investment vehicles which includes the recently launched HBAR Trust and proposed XRP, SOL, and LTC ETFs.

Source: CF Benchmarks, as of December 2, 2024

Regulatory Rerating Fuels Altcoin Catch-Up Trade



The digital asset class is experiencing a powerful regulatory rerating, particularly evident in the recent performance of altcoins, or cryptocurrencies other than Bitcoin and Ether. While Bitcoin's dominance defined much of 2024's rally, the contribution data reveals that altcoins had significantly underperformed, with their contributions to the CF Broad Cap Index actually turning negative during much of Q3 2024.

This trend saw a dramatic reversal following Trump's November election victory, as expectations of an explicitly pro-crypto regulatory regime triggered a broad market revaluation. Altcoin contributions (excluding BTC and ETH) surged from -0.01% to +18.7% by month-end, marking their strongest performance of the year. The data highlights how the prospect of cryptocurrency-friendly policies sparked a powerful "catch-up trade," driving investors to broaden their exposure beyond Bitcoin into previously lagging market segments.

Source: CF Benchmarks, as of December 2, 2024

What's Driving Crypto?



Multi-asset correlations

Equities												Fixed Income										Currencies, Commodities, and Other											
S&P 500 INDEX	NASDAQ 100 STOCK INDEX	RUSSELL 2000 VALUE INDEX	RUSSELL 2000 GROWTH INDEX	FTSE 100 INDEX	MSCI EUROPE	MSCI JAPAN	MSCI EM	MSCI WORLD	MSCI ACWI	MSCI ACWI Growth Net USD	MSCI ACWI Value Net USD	US Generic Govt 3 Mth	US Generic Govt 2 Yr	US Generic Govt 5 Yr	US Generic Govt 10 Yr	2YR-10YR Yield Curve	5 YR Real Yield	Inflation Adjust Real Yield (10YR)	Global Aggregate	Global High Yield	US Corp BBB/Baa - Treasury 10	DOLLAR INDEX SPOT	Gold Spot \$/Oz	Crude Oil (WTI)	BBG Commodity Index	BBG Energy Index	BBG Industrial Metals	BBG Precious Metals	Cboe Volatility Index	Rates Volatility (MOVE) Index	Financial Conditions Index		
0.10	0.03	0.36	0.37	0.08	0.20	0.11	0.00	0.15	0.13	0.08	0.20	-0.08	0.02	0.00	-0.01	0.23	-0.11	-0.20	0.04	0.08	0.04	0.01	-0.02	-0.08	-0.08	-0.02	-0.17	-0.05	-0.13	-0.13	-0.12		
Average Weekly Correlation over the current rebalance period.																																	
-0.05	-0.09	0.31	0.36	-0.03	0.13	0.03	0.00	0.02	0.02	-0.03	0.11	-0.02	0.05	0.02	-0.01	0.12	-0.08	-0.19	0.09	0.09	0.08	-0.07	-0.07	-0.05	-0.16	-0.03	-0.25	-0.10	0.10	-0.01	-0.19		
Average Weekly Correlation over the prior rebalance period.																																	

Our multi-asset correlation matrix reveals significant shifts in cross-asset relationships. Most notably, digital assets' correlation with major equity indices has turned more positive during the current rebalance period. The average weekly correlation of the CF Free-Float Broad Cap Index with the S&P 500 and Nasdaq 100 increased to 0.10 and 0.03 respectively, compared to -0.05 and -0.09 in the prior period. Additionally, correlations with fixed income assets have remained relatively stable, with modest correlation readings across most US Treasury indices. The strongest positive correlation in fixed income was observed with 20Y Treasuries at 0.23, while other maturities showed mixed but generally weaker relationships. Digital assets maintained consistently low or negative correlations with currencies and commodities, highlighted by negative correlations with gold (-0.08) and the US Dollar Index (-0.02). This evolving correlation structure suggests that digital assets' relationships with traditional markets continue to be dynamic, with a notable increase in equity market alignment during the current period while maintaining their potential diversification benefits through low correlations with other major asset classes.

Source: CF Benchmarks, Bloomberg, total return indices are referenced in USD, as of November 30, 2024



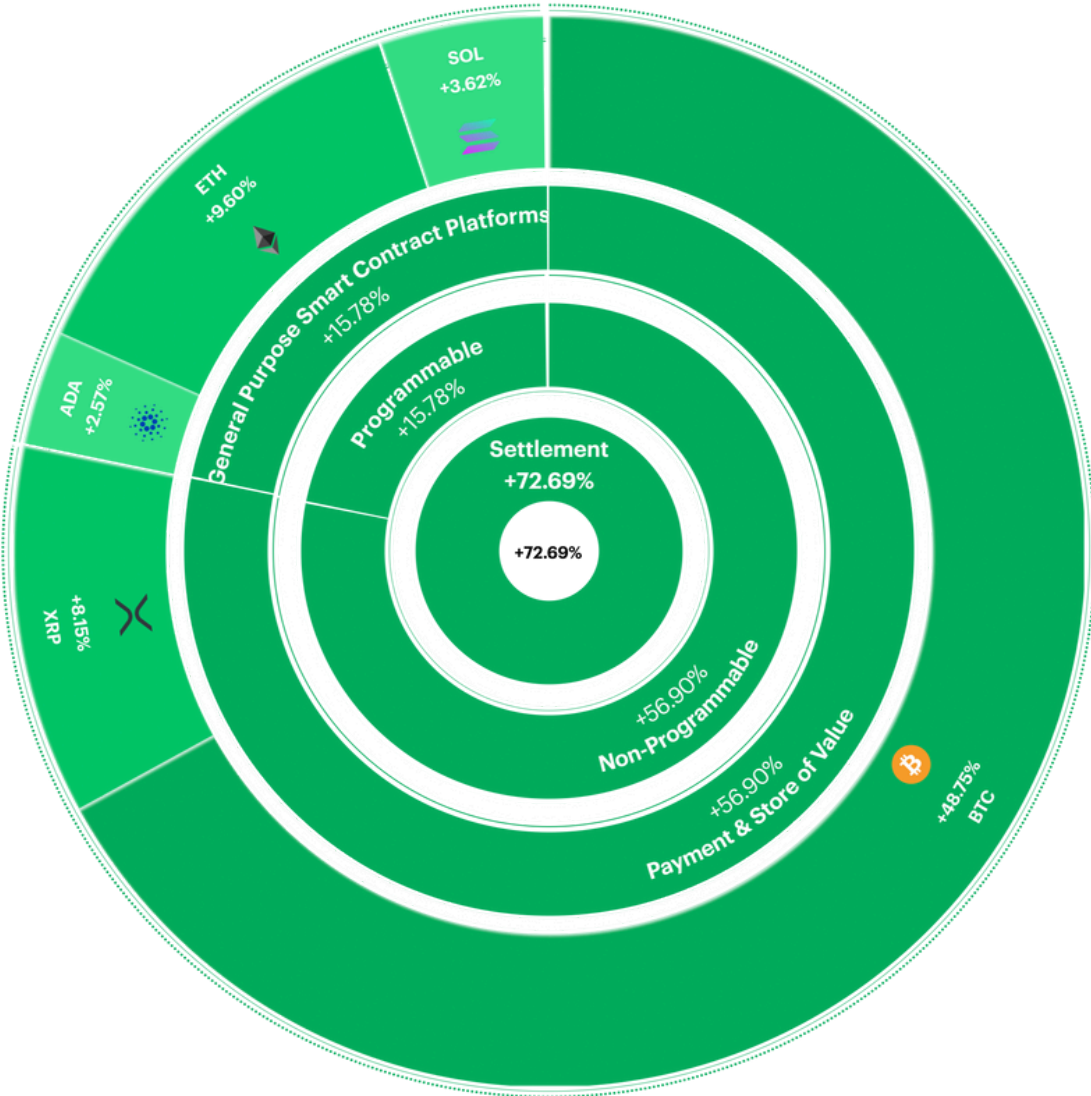
Attribution Analysis: CF Cryptocurrency Ultra Cap 5 Index

BTC & ETH Lead Settlement Category Gains



Index Return Contribution

Total Performance Contribution: +72.69% Date: 2nd December 2024



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Settlement	Programmable	General Purpose Smart Contract Platforms	ADA +2.57%
			ETH +9.60%
	Non-Programmable	Payment & Store of Value	SOL +3.62%
			BTC +48.75%
			XRP +8.15%
+72.69%			

- Mega-cap tokens, as measured by our CF Cryptocurrency Ultra Cap 5 index, experienced a sizable increase in value over the most recent rebalance period, rising by 72.69%.
- From a CF Digital Asset Classification Structure (DACs) perspective, the index is fully allocated to the Settlement category, with performance primarily driven by Bitcoin and Ether's dominant positions. The Payments & Store of Value sub-category outperformed the General Purpose Smart Contract sub-category, providing the majority of positive index returns.

Source: CF Benchmarks, as of December 2 2024

Index Weights



3rd September 2024

Total Weight: 100% Index Value: 6839.43

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Settlement	Programmable 25.32%	General Purpose Smart Contract Platforms 25.32%	ADA 0.96%
			ETH 19.48%
			SOL 4.88%
	Non-Programmable 74.68%	Payment & Store of Value 74.68%	BTC 72.53%
			XRP 2.15%
			100%

2nd December 2024

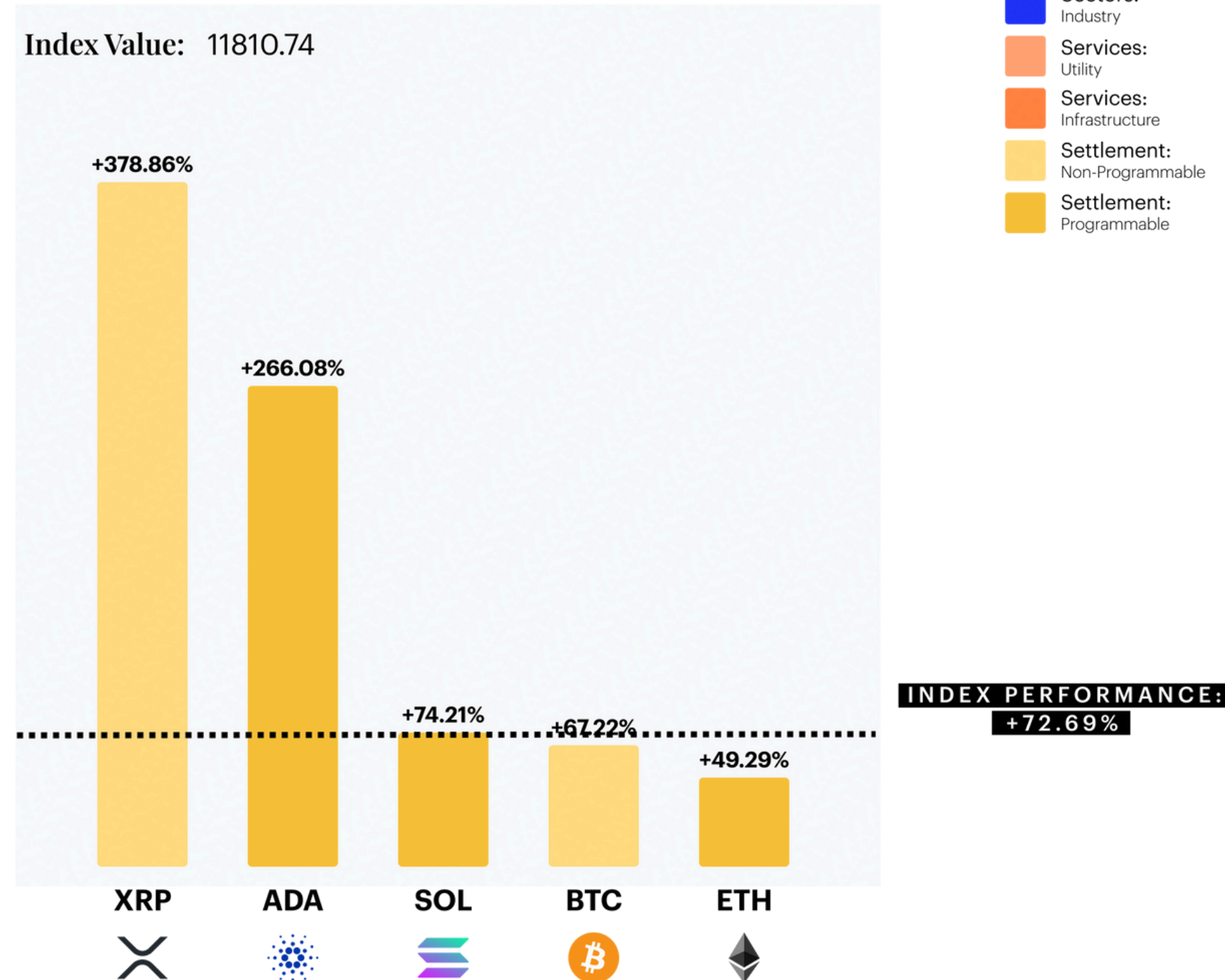
Total Weight: 100% Index Value: 11810.72

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Settlement	Programmable 22.50%	General Purpose Smart Contract Platforms 22.50%	ADA 1.98%
			ETH 15.08%
			SOL 5.44%
	Non-Programmable 77.50%	Payment & Store of Value 77.50%	BTC 71.35%
			XRP 6.15%
			100%

XRP and ADA Lead Ultra Caps as BTC & ETH Lag



Absolute Performance

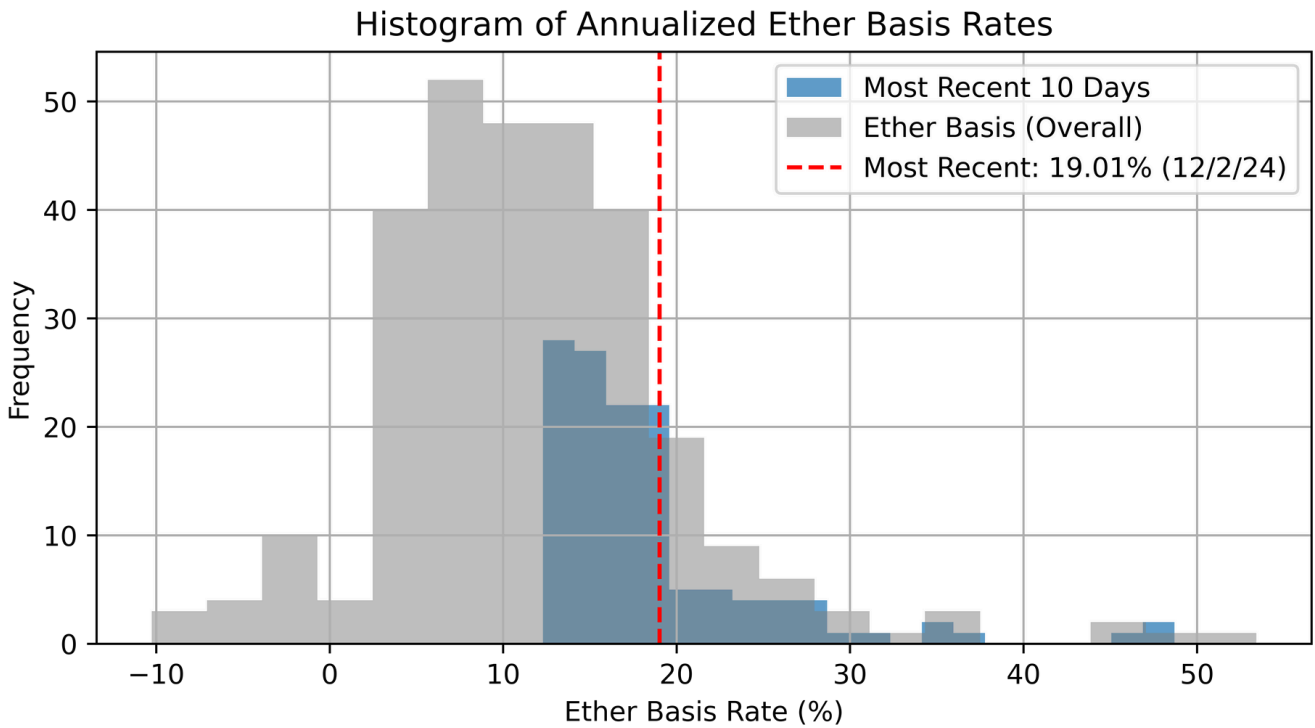
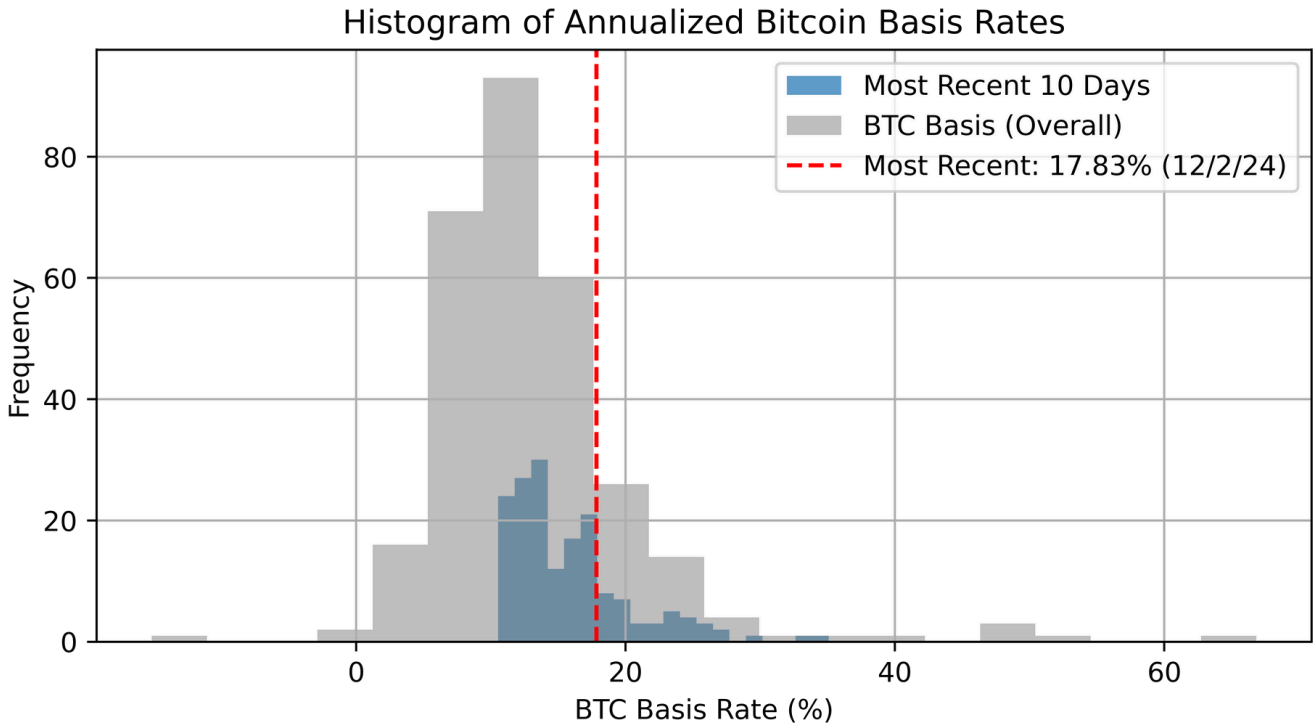


The CF Ultra Cap 5 index posted strong performance during the rebalance period, with all constituents delivering positive returns and driving the index up nearly 73%. While the two largest digital assets, Bitcoin and Ether, posted substantial gains of 67.22% and 49.29% respectively, they notably underperformed the broader index.

XRP emerged as the leading performer, surging 378.86% following a 90% reduction in XRP Ledger's reserve requirements. This significant change lowered barriers for account creation and maintenance, spurring increased network adoption. Market sentiment was further boosted by SEC Chair Gary Gensler's resignation.

Cardano's ADA also demonstrated remarkable strength, rising 266.08% to reach a 2.5-year high. This performance was supported by substantial whale accumulation, exceeding \$12 billion. The surge coincided with founder Charles Hoskinson's increased engagement with the Trump Administration and announcement of plans to enhance Bitcoin with DeFi capabilities, highlighting Cardano's expanding ecosystem strategy.

Bitcoin & Ether Basis Rates Jump



Following the bullish sentiment and breakout in prices for both Bitcoin and Ether, the CME Bitcoin and Ether Futures markets have witnessed notable deviations from their historical basis rates during the latter half of November, with a particularly intriguing development in the convergence of their basis spreads. Analysis of this period reveals substantial basis expansion compared to historical medians, potentially opening new opportunities for institutional traders and basis harvesting strategies.

Bitcoin futures remained in their contango structure (a market condition where a futures contract trades above the expected spot price at maturity), with basis rates averaging 19.4% – a significant premium to the historical median of 11.9%. The compelling shift, however, is Ether's surge to 22.5%, more than double its historical median of 10.9% and now matching Bitcoin's traditionally higher levels. This convergence raises an important question: will institutional traders begin expanding their cash-and-carry strategies to include Ether futures?

Historically, basis trading has been predominantly concentrated in Bitcoin futures, as Ether's lower basis rates made such strategies relatively less attractive. The current environment, with Ether's basis now matching Bitcoin's levels, could herald a new era of institutional arbitrage activity across both major assets. For traditional financial institutions with efficient market access, this alignment presents an opportunity to expand their basis trading strategies beyond Bitcoin. This convergence suggests evolving market sentiment and raises questions about whether institutional approaches to digital asset futures trading may materialize for the second largest digital asset, Ether. Persistently aligned basis spreads may boost futures open-interest and spot ETF flows as arbitragers hedge short futures with spot positions, enhancing Ether's market activity.

Source: CF Benchmarks, Data observed is from September 28, 2023 to December 2, 2024



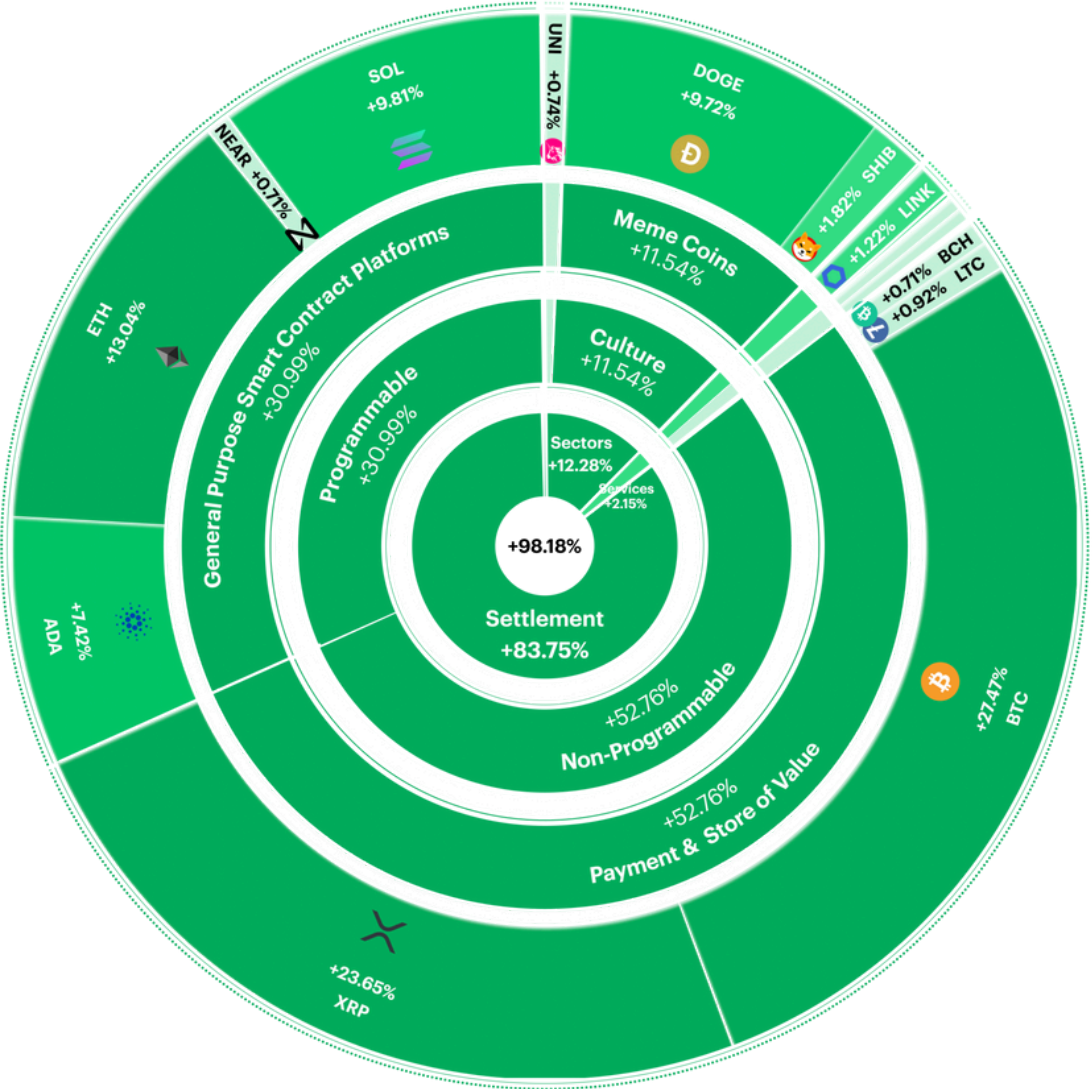
Attribution Analysis: CF Diversified Large Cap Index

Non-Programmables Lift Large-caps



Index Return Contribution

Total Performance Contribution: +98.18% Date: 2nd December 2024



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Sectors +12.28%	Finance +0.74%	Trading +0.74%	UNI +0.74%
	Culture +11.54%	Meme Coins +11.54%	DOGE +9.72%
			SHIB +1.82%
Services +2.15%	Infrastructure +0.93%	Scaling +0.93%	ARB +0.46%
	Utility +1.22%	Oracles +1.22%	MATIC +0.47%
			LINK +1.22%
Settlement +83.75%	Programmable +30.99%	General Purpose Smart Contract Platforms +30.99%	ADA +7.42%
			ETH +13.04%
			NEAR +0.71%
Non-Programmable +52.76%	Payment & Store of Value +52.76%		SOL +9.81%
			BCH +0.71%
			LTC +0.92%
			BTC +27.47%
			XRP +23.65%

- Large-cap tokens delivered their best quarterly rebalance performance since 2021, with the Diversified Large Cap Index posting a 98.18% increase in index value. Bitcoin's larger weight made it the largest contributor to index value (+27.55%), followed by Ripple's XRP token (+23.65%).
- From a CF DACS perspective, the Payment & Store of Value segment contributed over 52.76% to the rise of the headline index.

Source: CF Benchmarks, as of December 2, 2024

Index Weights



3rd September 2024

Total Weight: 100% Index Value: 561.65

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET
Sectors 4.92%	Finance 0.55%	Trading 0.55%	UNI 0.55%
	Culture 4.38%	Meme Coins 4.38%	DOGE 2.88%
Services 2.51%	Infrastructure 1.37%	Scaling 1.37%	SHIB 1.50%
	Utility 1.13%	Oracles 1.13%	ARB 0.49%
Settlement 92.57%	Programmable 43.37%	General Purpose Smart Contract Platforms 43.37%	MATIC 0.88%
			LINK 1.13%
			ADA 2.79%
			ETH 26.46%
			NEAR 0.90%
Non-Programmable 49.20%	Payment & Store of Value 49.20%		SOL 13.23%
			BCH 1.07%
			LTC 1.01%
			BTC 40.87%
			XRP 6.24%

2nd December 2024

Total Weight: 100% Index Value: 1113.07

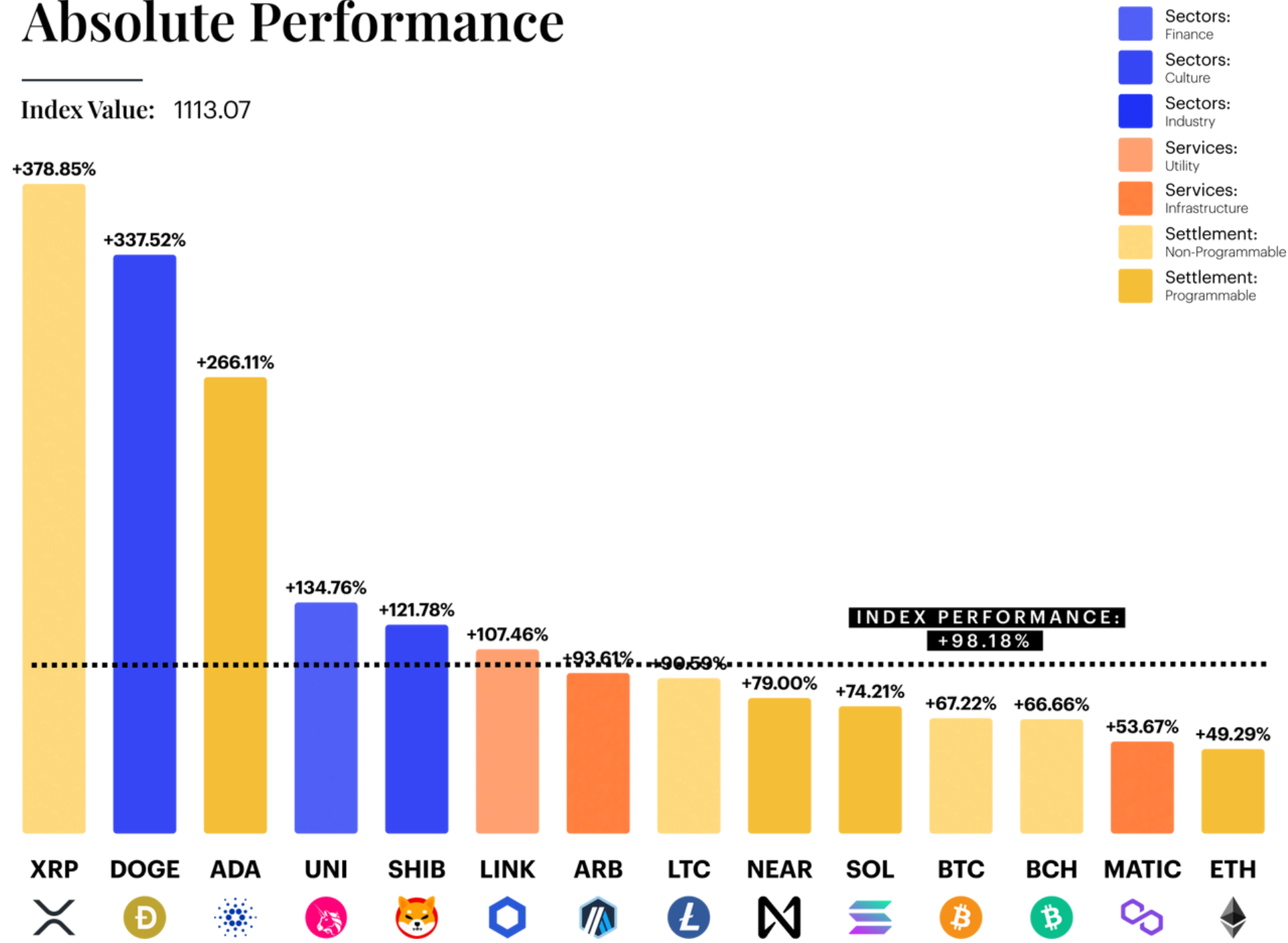
CATEGORY	SUB-CATEGORY	SEGMENT	ASSET			
Sectors 9.31%	Finance 0.54%	Trading 0.54%	UNI 0.54%			
	Culture 8.77%	Meme Coins 8.77%	DOGE 7.00%			
Services 1.51%	Infrastructure 0.47%	Scaling 0.47%	SHIB 1.77%			
	Utility 1.04%	Oracles 1.04%	ARB 0.47%			
Settlement 89.18%	Programmable 41.05%	General Purpose Smart Contract Platforms 41.05%	LINK 1.04%			
			ADA 3.61%			
			AVAX 1.00%			
			ETH 21.51%			
			NEAR 0.90%			
			SOL 14.03%			
			Non-Programmable 48.13%	Payment & Store of Value 48.13%		BCH 0.90%
						LTC 0.86%
						BTC 39.01%
						XRP 7.36%

XRP, DOGE, and ADA Rally Large Caps to New Highs



Absolute Performance

Index Value: 1113.07



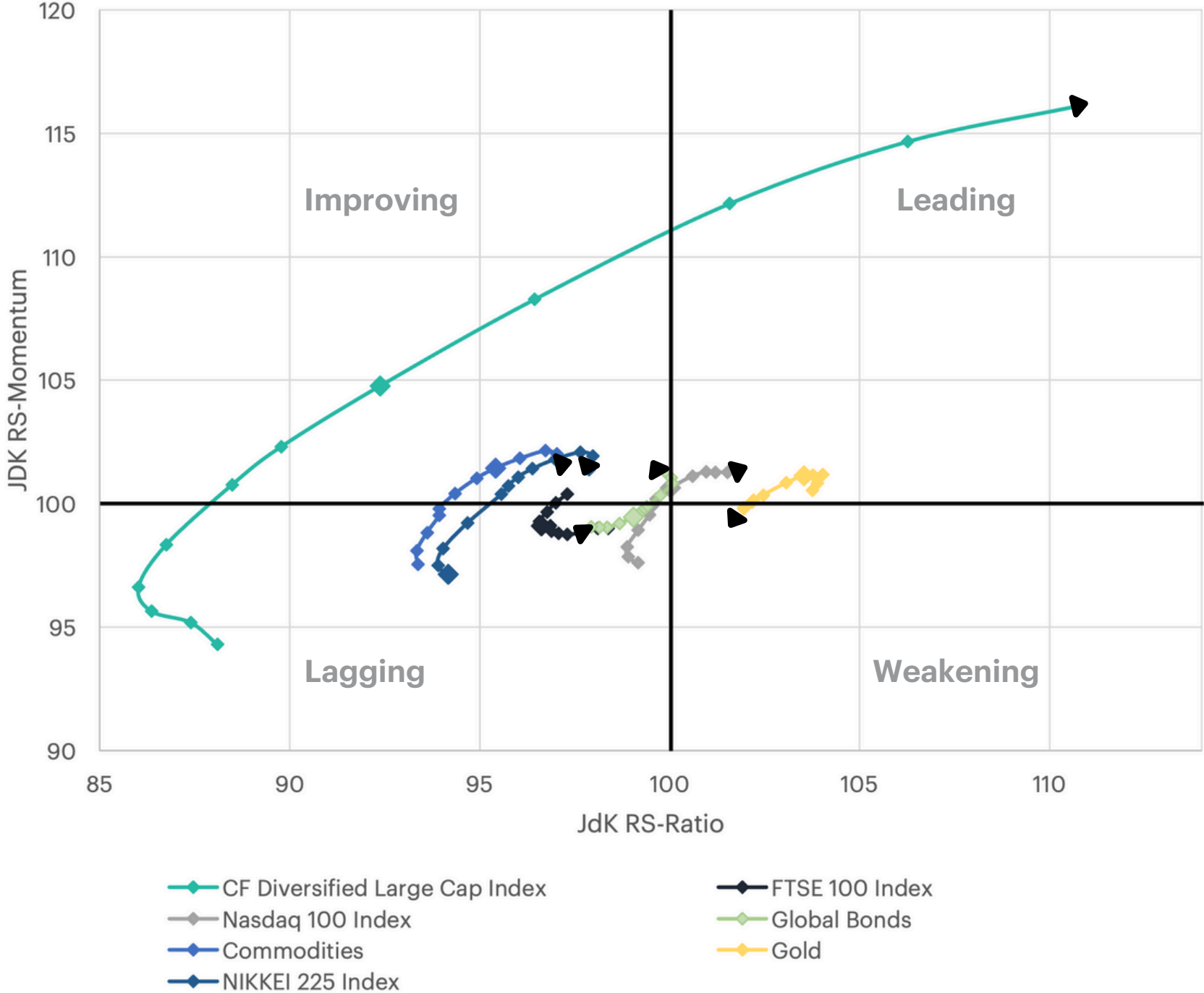
- Sectors: Finance
- Sectors: Culture
- Sectors: Industry
- Services: Utility
- Services: Infrastructure
- Settlement: Non-Programmable
- Settlement: Programmable

Our Large Cap token gauge witnessed broad price performance, with all constituents finishing in positive territory. The average (equal-weighted) gain was +137.19%, lifting the index level to new all-time highs.

Ripple's XRP, Dogecoin (DOGE), and Cardano (ADA) emerged as frontrunners in the large-cap index. XRP demonstrated remarkable activity growth with a 94% quarter-over-quarter increase in daily transactions, reaching 1.7 million, alongside a 10% rise in new addresses. The XRP Ledger implemented significant cost reductions by lowering its reserve requirements. Meanwhile, Dogecoin received attention due to developments involving Elon Musk, including a dismissed class action lawsuit and his proposed leadership of the D.O.G.E. agency. Cardano's ADA experienced price appreciation following Charles Hoskinson's engagement with Trump's administration on cryptocurrency regulations and his advocacy for crypto-friendly policies in Washington.

Source: CF Benchmarks, as of December 2, 2024

'Leading' Large Caps Cryptos Outpace the Rest



A Relative Rotation Graph (RRG) measures relative strength (RS) through four distinct quadrants: Leading (strong RS-Ratio and RS-Momentum), Weakening (strong RS-Ratio but weakening RS-Momentum), Lagging (weak RS-Ratio and RS-Momentum), and Improving (weak RS-Ratio but strengthening RS-Momentum). This analytical framework reveals crucial insights into asset rotation patterns, relative performance dynamics, and how broader participation in lagging digital assets has helped propel our Large Cap Index into the lead.

The CF Diversified Large Cap Index has executed a textbook rotation from the Lagging quadrant to the Leading quadrant, demonstrated by its dramatic RS-Ratio improvement from 88.1 to 110.7 and RS-Momentum surge from 94.3 to 116.1 between September and December 2024. This trajectory indicates not merely outperformance but accelerating strength relative to traditional assets.

In contrast, conventional markets displayed less dynamic positioning. The NASDAQ 100 maintained relatively stable RS-Ratio values between 96.5 and 97.3, suggesting a neutral position. Traditional safe havens like Gold, while maintaining positive RS-Ratios (101.9 to 103.7), exhibited decelerating momentum, signaling potential movement toward the Weakening quadrant. This rotation pattern reveals a compelling narrative of digital assets completing a full rotation cycle into market leadership, while traditional assets show signs of stagnation or deteriorating relative strength - suggesting a sizeable shift in capital allocation toward digital assets.

Source: CF Benchmarks, Bloomberg, Comparable benchmark selected is the Bloomberg Global 60/40 Index, as of September 1, 2024 to December 1, 2024



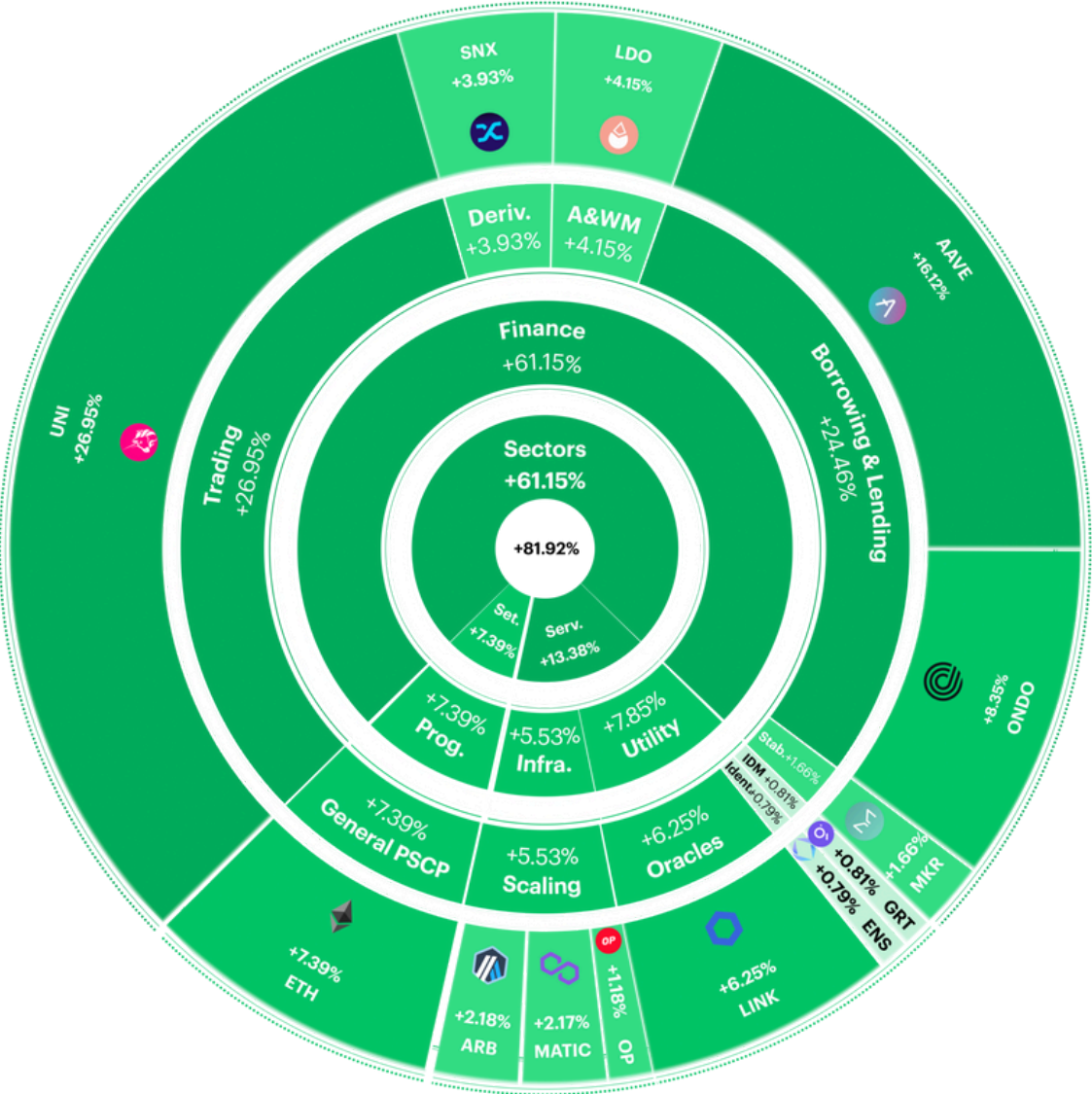
Attribution Analysis: CF DeFi Composite Index

Trading Segment Leads DeFi Index Higher



Index Return Contribution

Total Performance Contribution: +81.92% Date: 2nd December 2024



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET			
Sectors	Finance	Trading	+26.95%	UNI +26.95%		
		Derivatives	+3.93%	SNX +3.93%		
		Asset & Wealth Management	+4.15%	LDO +4.15%		
		Borrowing & Lending	+24.46%	AAVE +16.12%		
				ONDO +8.35%		
		Stablecoin Issuance & Mgmt	+1.66%	MKR +1.66%		
		Services	Infrastructure	Scaling	+5.53%	ARB +2.18%
						MATIC +2.17%
						OP +1.18%
				Oracles	+6.25%	LINK +6.25%
Identity	+0.79%			ENS +0.79%		
Information & Data Management	+0.81%			GRT +0.81%		
Settlement	Programmable	General Purpose Smart Contract Platforms	+7.39%	ETH +7.39%		

- Over the past three months, our CF DeFi Composite Index advanced +81.92%, with Uniswap's (UNI) token holding the largest weighting and contributing +26.95% to the total return of the headline index.
- Among the segments, UNI's substantial weight made the trading segment the largest contributor to the index's performance. The Borrowing & Lending segment followed as the second-largest contributor, with AAVE and ONDO tokens collectively adding 24.46% to the index.

Source: CF Benchmarks, as of December 2, 2024

Index Weights



3rd September 2024

Total Weight: 100% Index Value: 278.67

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	
Sectors 70.00%	Finance 70.00%	Trading 20.00%	UNI 20.00%	
		Derivatives 3.86%	SNX 3.86%	
		Asset & Wealth Management 5.31%	LDO 5.31%	
		Borrowing & Lending 26.25%	AAVE 18.65%	
			ONDO 7.60%	
		Stablecoin Issuance & Mgmt 14.59%	MKR 14.59%	
	Services 15.00%	Infrastructure 7.88%	Scaling 7.88%	ARB 2.33%
				MATIC 4.04%
				OP 1.51%
		Utility 7.12%	Oracles 5.82%	LINK 5.82%
Identity 0.52%			ENS 0.52%	
Information & Data Management 0.78%			GRT 0.78%	
Settlement 15.00%	Programmable 15.00%	General Purpose Smart Contract Platforms 15.00%	ETH 15.00%	

2nd December 2024

Total Weight: 100% Index Value: 506.95

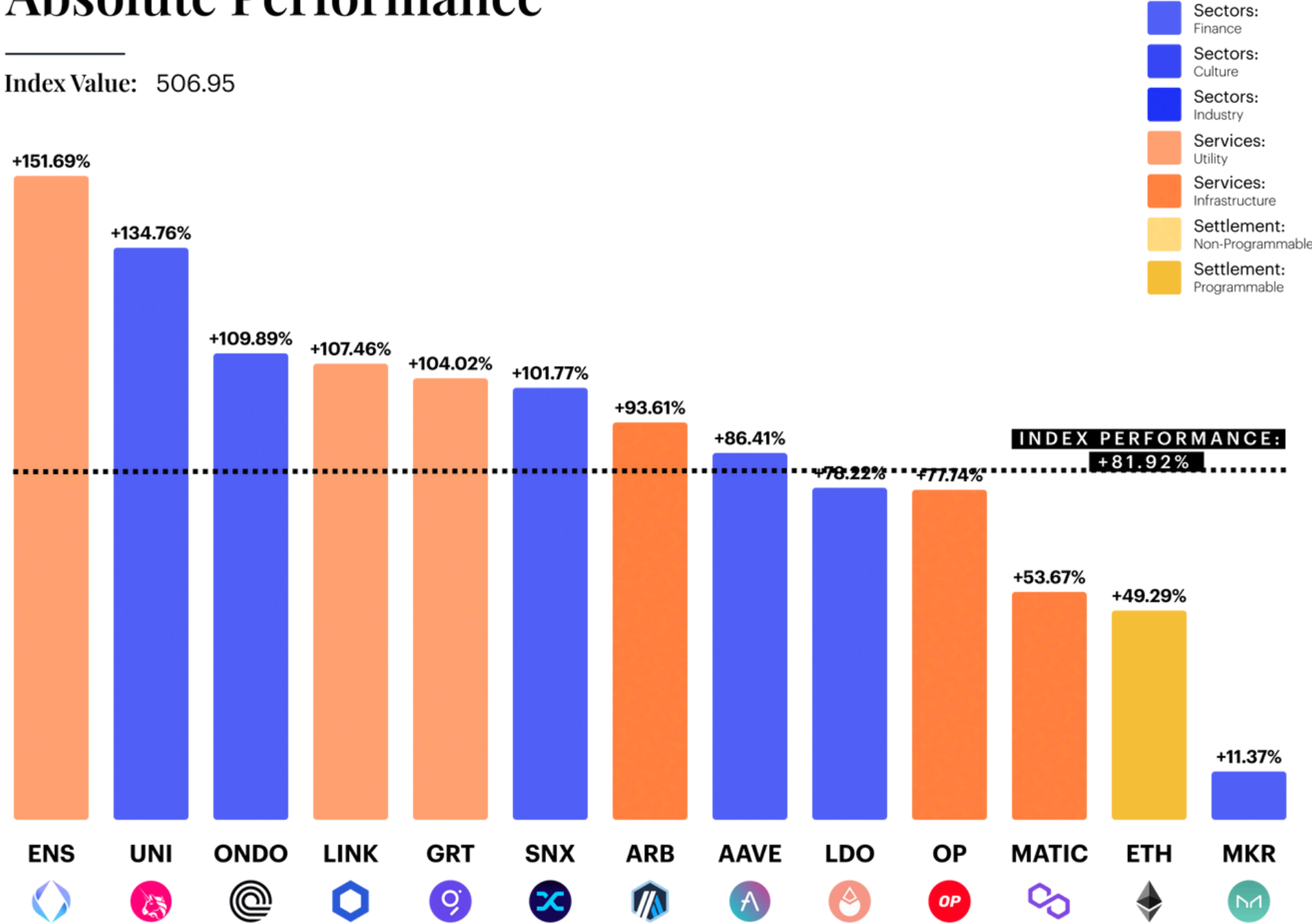
CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	
Sectors 70.00%	Finance 70.00%	Trading 20.00%	UNI 20.00%	
		Derivatives 5.00%	SNX 5.00%	
		Asset & Wealth Management 6.31%	LDO 6.31%	
		Borrowing & Lending 29.71%	AAVE 20.00%	
			ONDO 9.71%	
		Stablecoin Issuance & Mgmt 8.98%	MKR 8.98%	
	Services 15.00%	Infrastructure 5.93%	Scaling 5.07%	ARB 3.19%
				OP 1.88%
			Interoperability 0.86%	ZRO 0.86%
		Utility 9.07%	Oracles 7.35%	LINK 7.35%
Identity 0.75%			ENS 0.75%	
Information & Data Management 0.97%			GRT 0.97%	
Settlement 15.00%	Programmable 15.00%	General Purpose Smart Contract Platforms 15.00%	ETH 15.00%	

Finance Tokens Shine in a Strong Quarter for DeFi



Absolute Performance

Index Value: 506.95



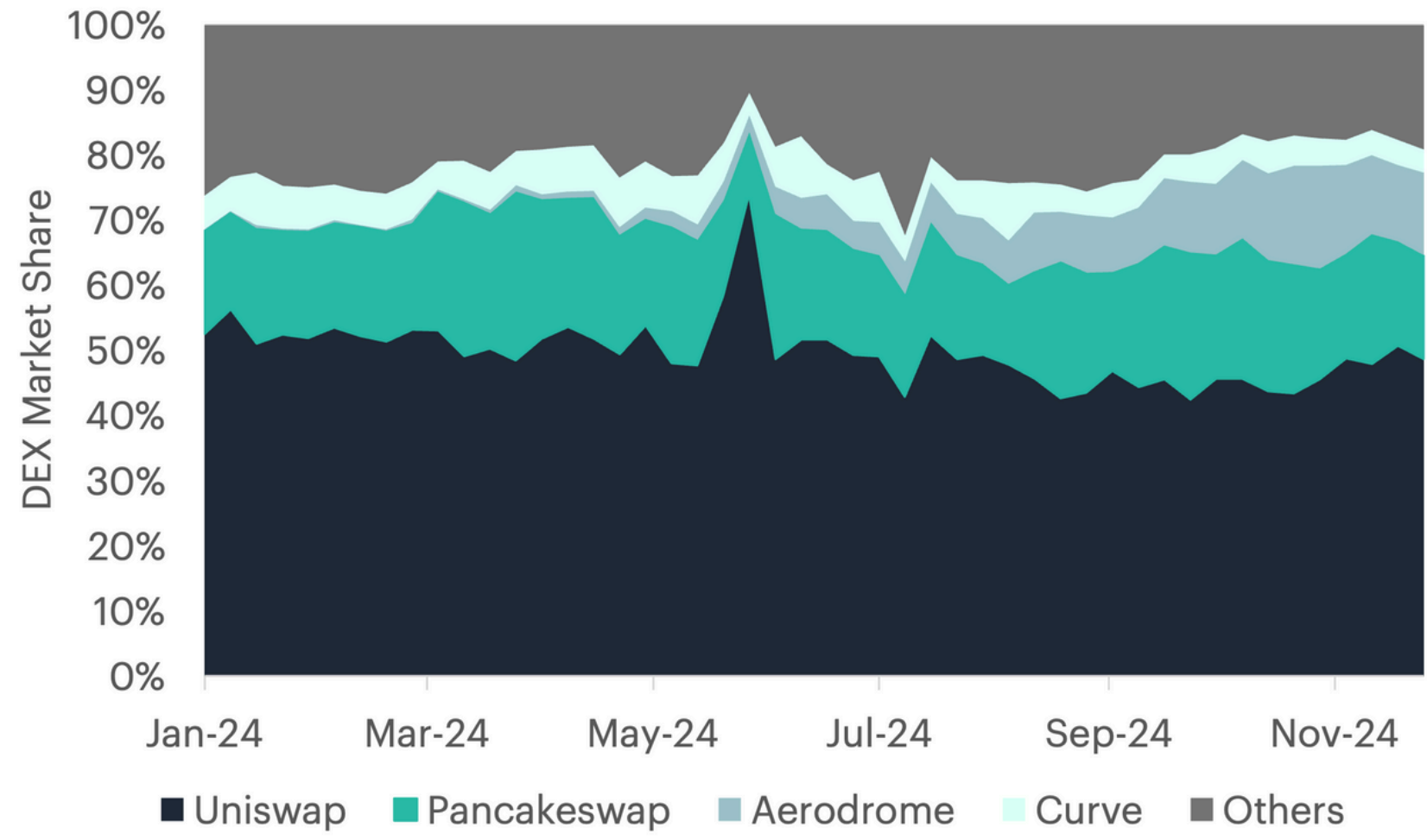
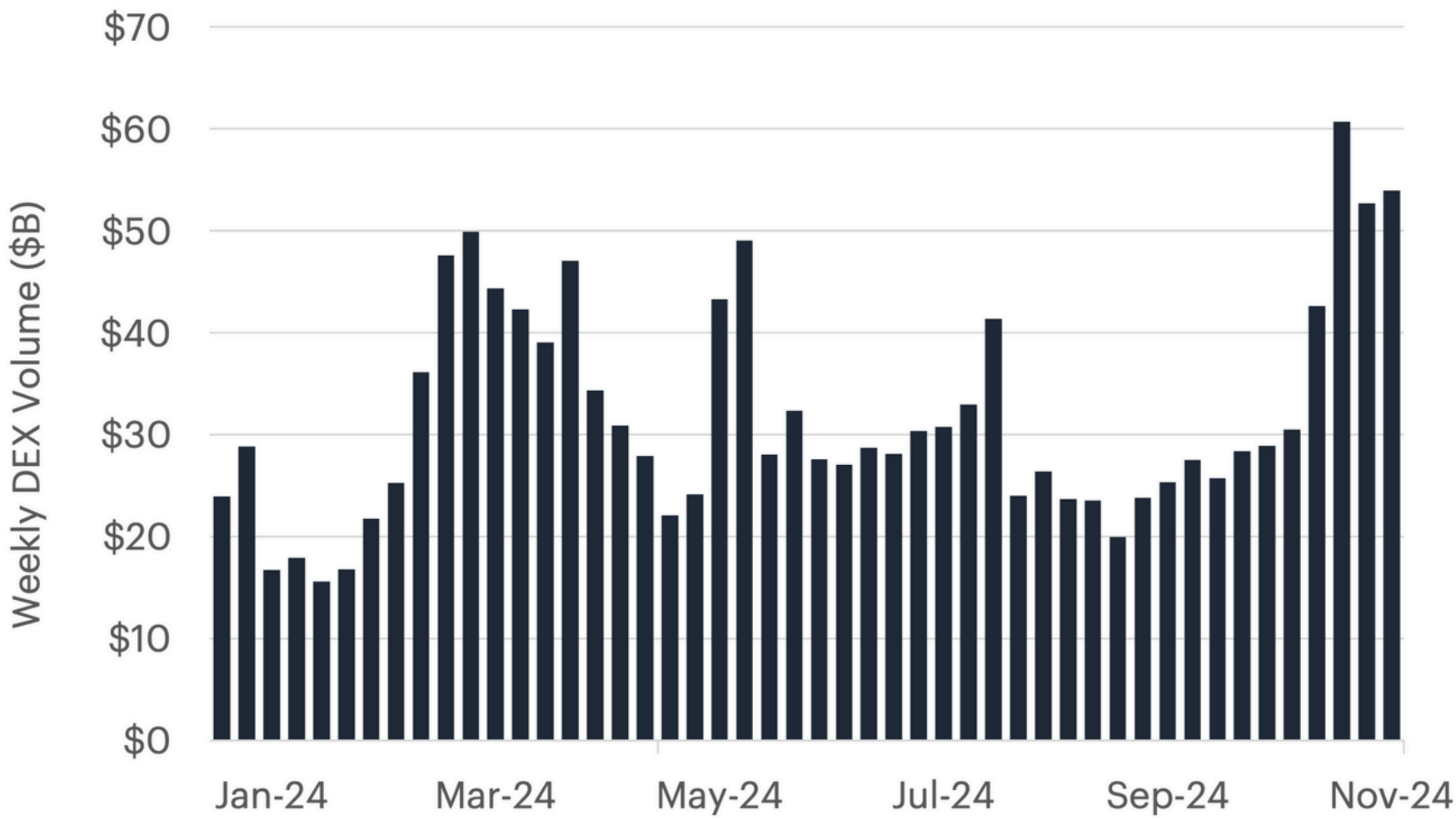
During the past quarter, our CF DeFi Composite Index reached new highs for the year, with all thirteen constituents, posting positive performance.

Uniswap’s UNI token emerged as the second-best performer and the largest contributor for the quarter, surging +134.76%. This growth coincided with a significant increase in trading volumes across decentralized exchanges (DEXes) following the November elections, during which Uniswap expanded its market share by 3.6%.

Ondo Finance, the second-largest contributor in the Borrowing and Lending segment, climbed +109.89%. In October, Ondo partnered with Wellington Management to enable intraday redemptions for its tokenized U.S. Treasury fund. Later in November, Ondo integrated LayerZero’s Omnichain Fungible Token standard, introducing a bridging solution for tokenized real-world asset (RWA) products with enhanced security features.

Source: CF Benchmarks, as of December 2, 2024

Uniswap Leads as DEX Activity Sets Records



In Q4, decentralized exchanges (DEXes) experienced steady growth in trading volumes, with a notable surge following the November elections. This sharp increase was driven by the anticipation of regulatory changes, which sparked a new wave of market activity and pushed volumes to unprecedented levels. Uniswap remained a key player, expanding its market share by 3.6%, fueled by heightened activity on the Base blockchain as a resurgence in meme coin captured retail investors' attention.

This period of accelerated growth aligned with a broader market rally, further amplifying Uniswap's prominence. Its mobile application gained significant traction on the Apple App Store, climbing to the 79th position among the top 100 most downloaded finance apps. The surge in trading activity also generated higher transaction fees, potentially increasing value for Uniswap token holders through its proposed fee-sharing mechanism.

Source: CF Benchmarks, Dune Analytics as of December 2, 2024

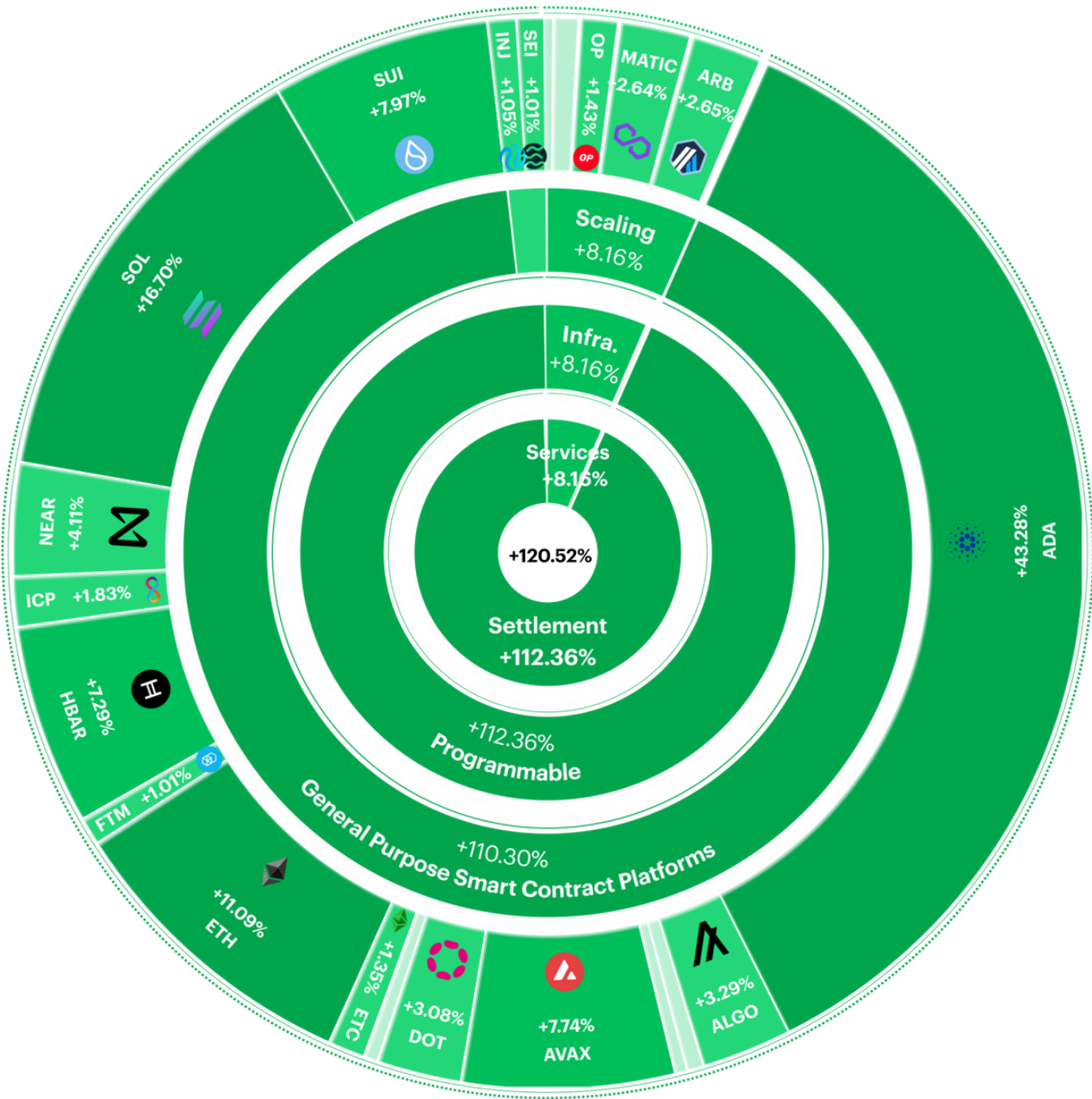


Attribution Analysis: CF Web 3.0 Smart Contract Platforms Index

Smart Contract Platforms Outperform in Q4



Index Return Contribution



Total Performance Contribution: +120.52% Date: 2nd December 2024

CATEGORY	SUB-CATEGORY	SEGMENT	CONTRIBUTION	ASSETS
Services	Infrastructure	Scaling	+8.16%	ARB +2.65%
				MATIC +2.64%
Settlement	Programmable	General Purpose Smart Contract Platforms	+110.30%	OP +1.43%
				STX +0.97%
Settlement	Programmable	Specialized Purpose Smart Contract Platforms	+2.06%	TIA +0.46%
				ADA +43.28%
Settlement	Programmable	General Purpose Smart Contract Platforms	+110.30%	ALGO +3.29%
				APT +0.60%
Settlement	Programmable	General Purpose Smart Contract Platforms	+110.30%	ATOM +0.44%
				AVAX +7.74%
Settlement	Programmable	General Purpose Smart Contract Platforms	+110.30%	DOT +3.08%
				EOS +0.51%
Settlement	Programmable	General Purpose Smart Contract Platforms	+110.30%	ETC +1.35%
				ETH +11.09%
Settlement	Programmable	General Purpose Smart Contract Platforms	+110.30%	FTM +1.01%
				HBAR +7.29%
Settlement	Programmable	General Purpose Smart Contract Platforms	+110.30%	ICP +1.83%
				NEAR +4.11%
Settlement	Programmable	General Purpose Smart Contract Platforms	+110.30%	SOL +16.70%
				SUI +7.97%
Settlement	Programmable	General Purpose Smart Contract Platforms	+110.30%	INJ +1.05%
				SEI +1.01%

- The CF Web 3.0 Smart Contract Platforms Index gained +120.52% in Q4. Cardano’s ADA token was the largest contributor to the total index’s performance, accounting for +43.28% of the performance contribution.
- The strong performance of large cap general-purpose smart contract platforms, including ETH, SOL, and ADA, drove the index’s value higher by 110.3%. Notably, Solana’s 74.21% price increase, combined with its significant weighting, contributed an additional 16.7% to the index’s overall gains.

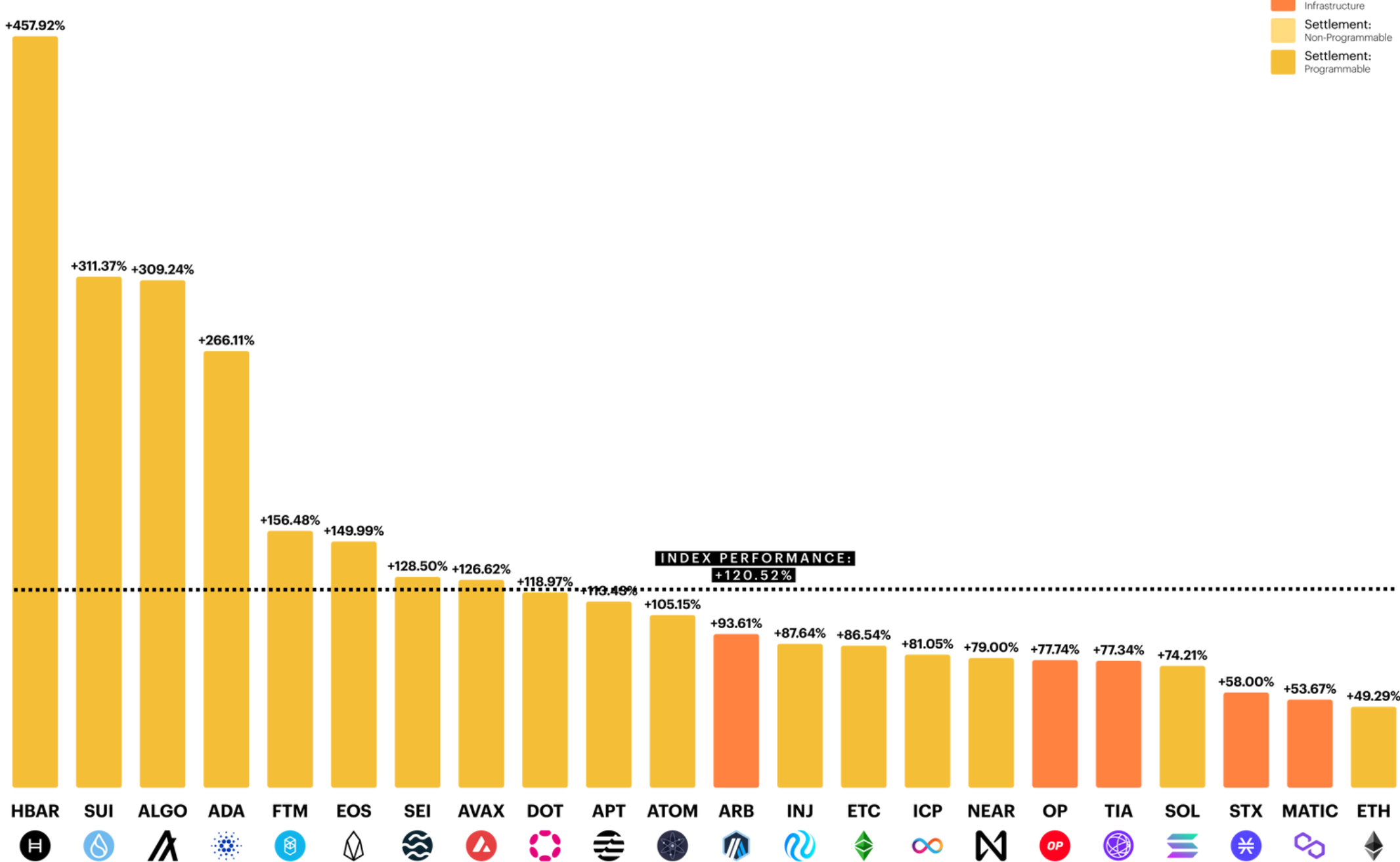
Source: CF Benchmarks, as of December 2, 2024

Network Upgrades Fuel Smart Contract Rally



Absolute Performance

Index Value: 633.76



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

Smart Contract Tokens reversed course during the rebalance period, with all constituents posting positive performance. Of the 22 constituents, 11 advanced by more than 100%.

Hedera rallied on news related to its integration with the Federal Reserve’s FedNow system via Dropp, strengthening its role in traditional finance by enabling secure, rapid transactions. A partnership with Ripple is anticipated to further expand its ecosystem by advancing USD transaction processing capabilities.

The Sui network has launched the Sui Bridge on its mainnet, marking a significant enhancement to its decentralized finance (DeFi) ecosystem. This development introduces support for USDC and FDUSD, enabling seamless cross-chain transfers. Additionally, Phantom wallet has announced support for the Sui network, making it more accessible to a larger user base.

Source: CF Benchmarks, as of December 2, 2024

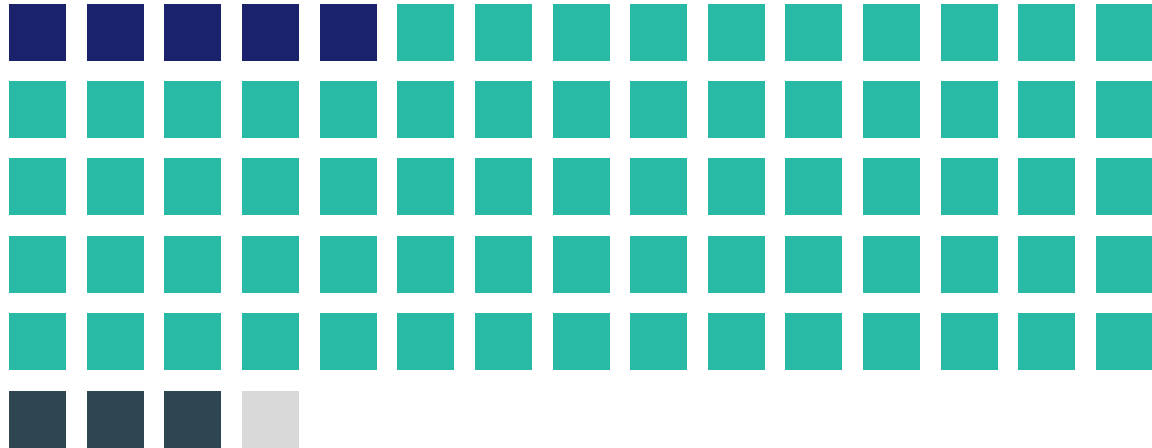
Smart Contract Scalability Supports Broad Adoption



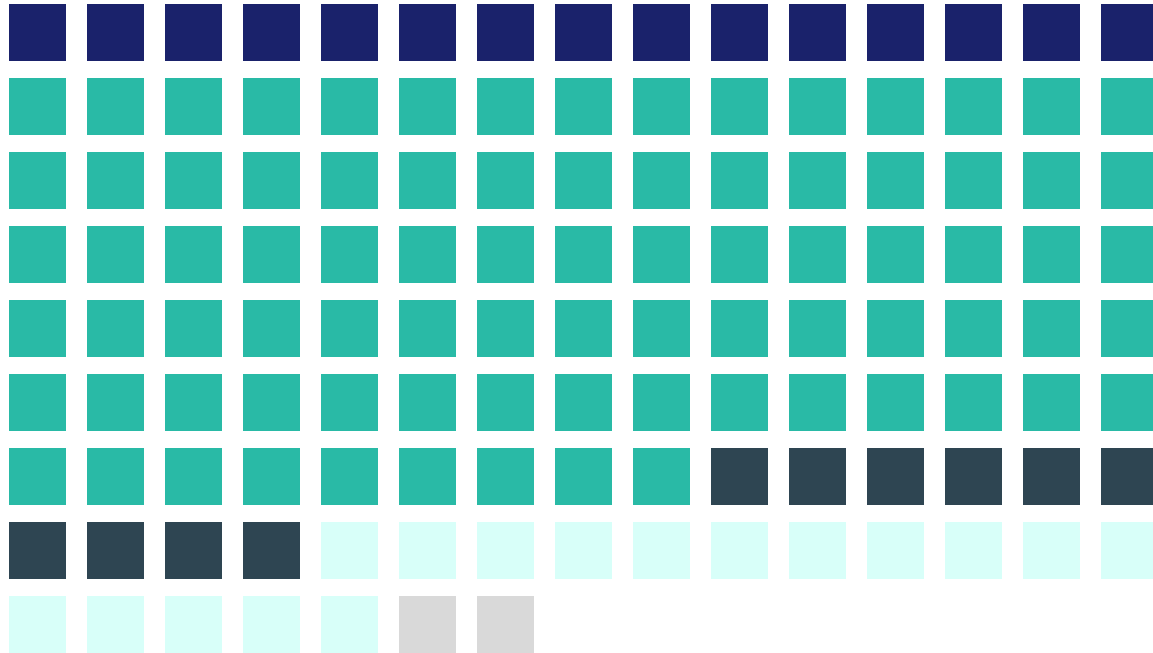
Maximum Layer 1 TPS - Each square represents 10 TPS

Ethereum Solana Near Sui Other

Maximum Observed TPS Jan 2024



Maximum Observed TPS Nov 2024



In 2024, the adoption of various layer 1 blockchain protocols experienced a significant surge, driven by an influx of new users and ongoing protocol upgrades throughout the year. By the fourth quarter, the maximum transactions per second (TPS) across the layer 1 protocols in the Web3 Smart Contract Index reached approximately 1,270 TPS. This represents an impressive 60% increase from the start of the year, highlighting substantial advancements in scalability. These improvements are critical as they enhance throughput capacity—the ability of these blockchains to handle larger volumes of transactions simultaneously—demonstrating their readiness to meet growing user demand. This progress underscores the sector’s readiness for broader adoption as distributed ledger technology continues to mature.

Source: CF Benchmarks, Dune Analytics, as of December 2, 2024



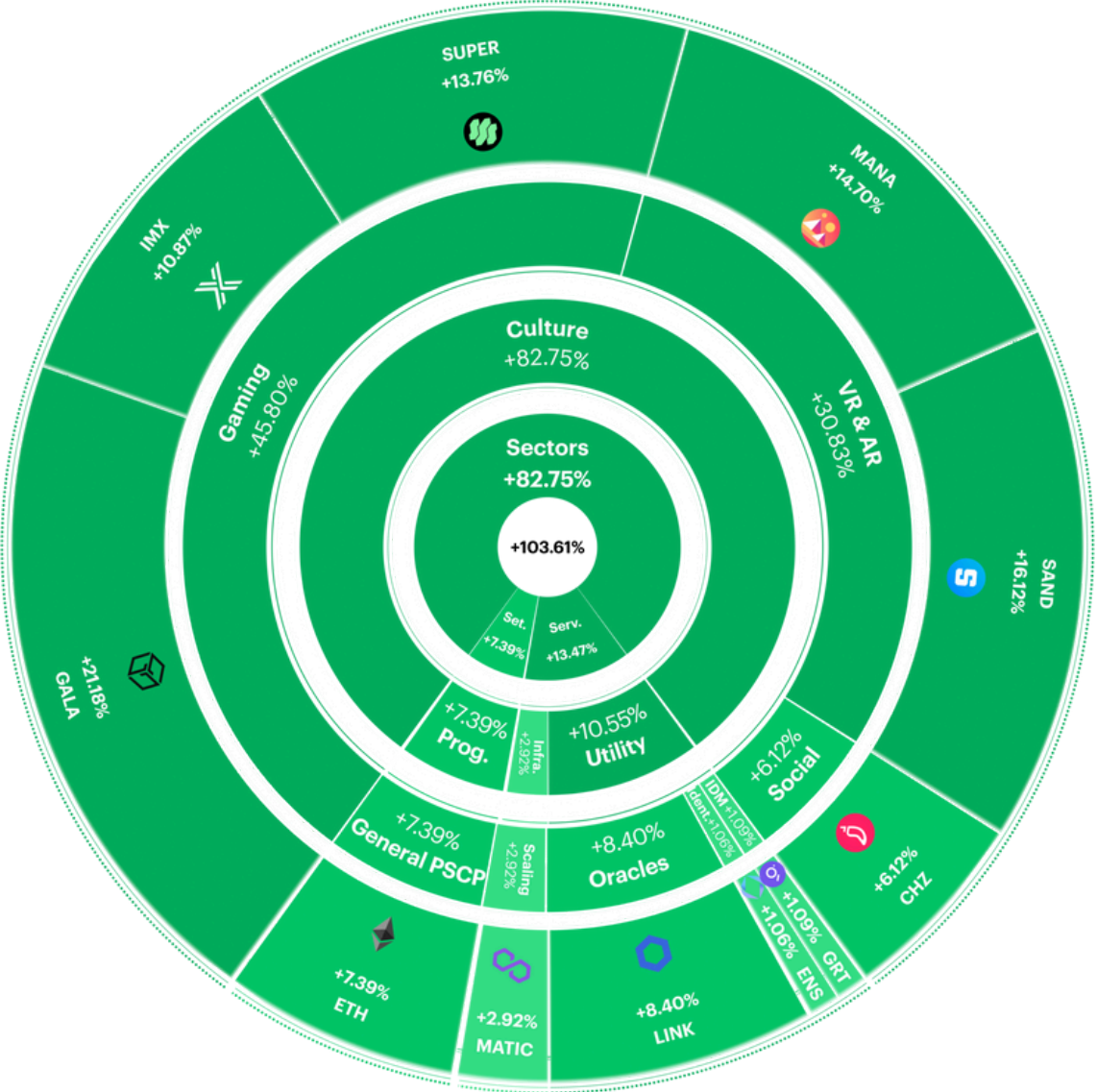
Attribution Analysis: CF Digital Culture Composite Index

Digital Culture Rebounds on Regulatory Optimism



Index Return Contribution

Total Performance Contribution: +103.61% Date: 2nd December 2024



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	
Sectors	Culture	Gaming	GALA +21.18%	
			IMX +10.87%	
			SUPER +13.76%	
		VR & AR	MANA +14.70%	
			SAND +16.12%	
			CHZ +6.12%	
Services	Infrastructure	Scaling	MATIC +2.92%	
			LINK +8.40%	
	Utility	Oracles	ENS +1.06%	
			GRT +1.09%	
		Information & Data Management	General Purpose Smart Contract Platforms	ETH +7.39%
Settlement	Programmable			

- The CF Digital Culture Composite Index gained +103.61% in Q4. The Sandbox’s SAND token experienced the largest gain of +161.21%; when combined with its 10% weight it accounted for 16.12% of the index’s performance.
- The gaming segment was the largest contributor to overall performance, accounting for 45.8% of the index’s overall gain. GALA, which gained +144.48% during the rebalance period, was the largest contributor to the index due to its 14.7% weight.

Source: CF Benchmarks, as of December 2, 2024

Index Weights



3rd September 2024

Total Weight: 100% Index Value: 223.99

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors 70.00%	Culture 70.00%	Gaming 43.84%	GALA 14.66%		
			IMX 16.66%		
			SUPER 12.52%		
		VR & AR 20.23%	MANA 10.23%		
			SAND 10.00%		
			CHZ 5.93%		
		Social 5.93%		CHZ 5.93%	
		Services 15.00%	Infrastructure 5.44%	Scaling 5.44%	MATIC 5.44%
			Utility 9.56%	Oracles 7.82%	LINK 7.82%
	Identity 0.70%			ENS 0.70%	
Information & Data Management 1.04%	GRT 1.04%				
General Purpose Smart Contract Platforms 15.00%	ETH 15.00%				
Settlement 15.00%	Programmable 15.00%		ETH 15.00%		

2nd December 2024

Total Weight: 100% Index Value: 456.08

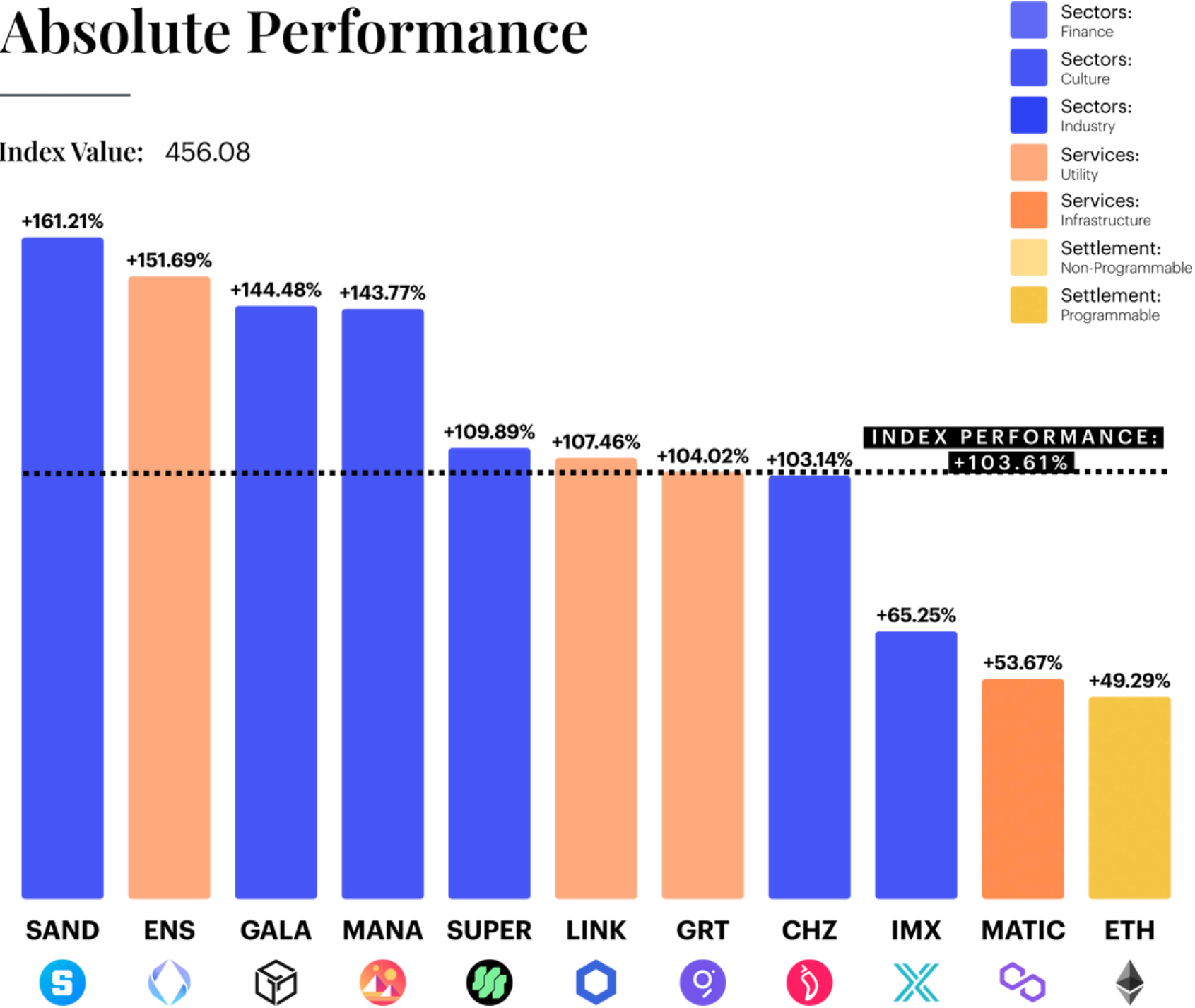
CATEGORY	SUB-CATEGORY	SEGMENT	ASSET		
Sectors 70.00%	Culture 70.00%	Gaming 55.06%	GALA 20.00%		
			IMX 17.60%		
			PRIME 5.03%		
			SUPER 12.44%		
			SAND 14.94%		
			LINK 13.25%		
		VR & AR 14.94%		SAND 14.94%	
			Oracles 13.25%		LINK 13.25%
			Information & Data Management 1.75%		GRT 1.75%
	Services 15.00%	Utility 15.00%			
Settlement 15.00%	Programmable 15.00%	General Purpose Smart Contract Platforms 15.00%	ETH 15.00%		

Gaming Tokens Lead Culture Index Higher



Absolute Performance

Index Value: 456.08



Digital Culture tokens rebounded sharply over the past three months, with all constituents posting positive performance. Ether’s 49.29% price increase during the period set the stage for a significant rally in smaller-cap tokens.

In the VR & AR segment, SAND surged by 161.21% during the quarter. As market sentiment improved across the crypto sector, The Sandbox experienced increased activity, with daily active users rising 580% from the summer lows.

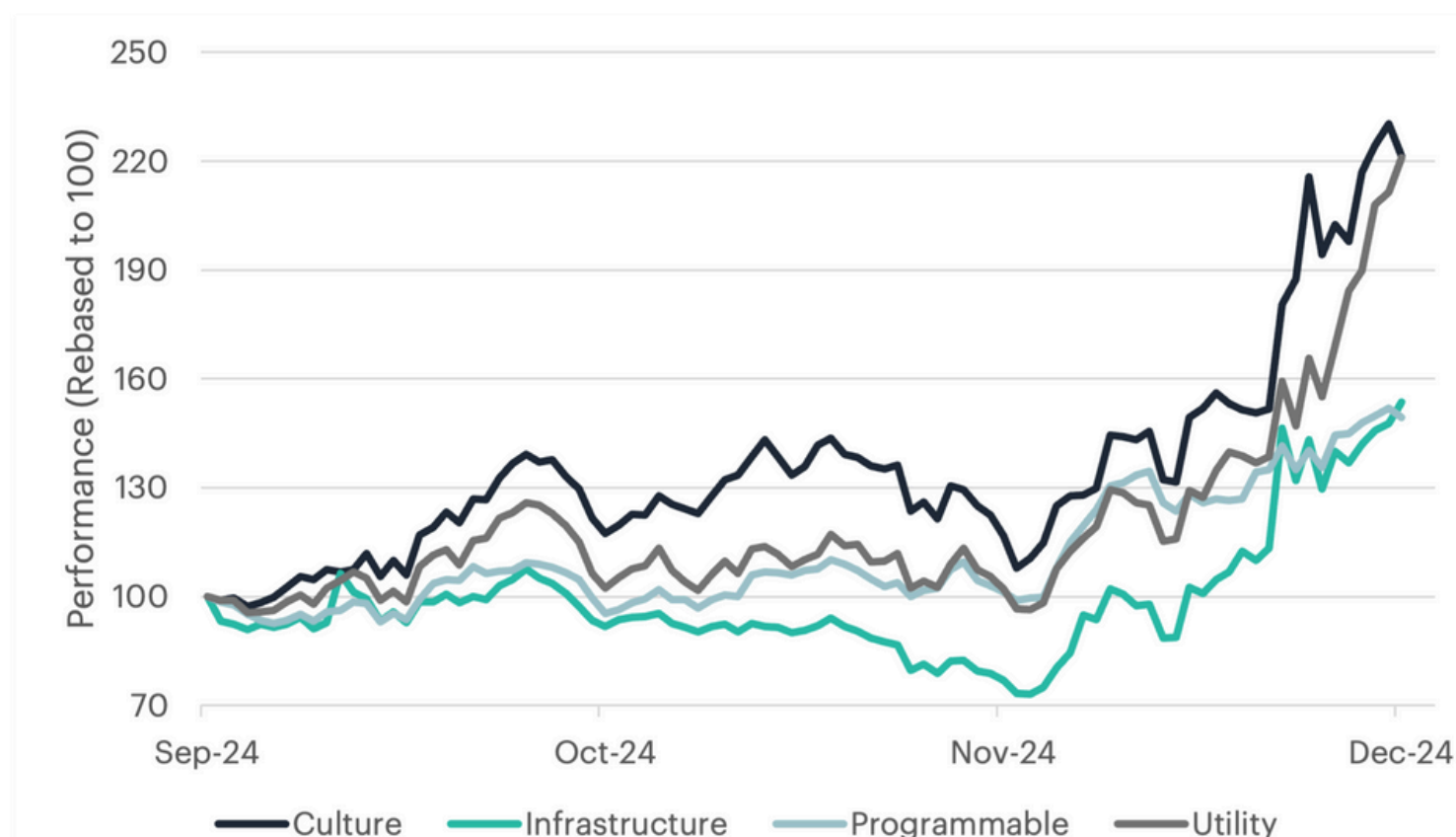
GALA, the native token of the Gala Games digital media platform, also benefited from the bullish sentiment in the GameFi space. A notable development was the introduction of bridging updates on GalaSwap, enabling users to seamlessly connect GalaChain with the Ethereum network. This advancement enhances interoperability, further strengthening Gala’s position within the rapidly evolving GameFi ecosystem.

Source: CF Benchmarks, as of December 2, 2024

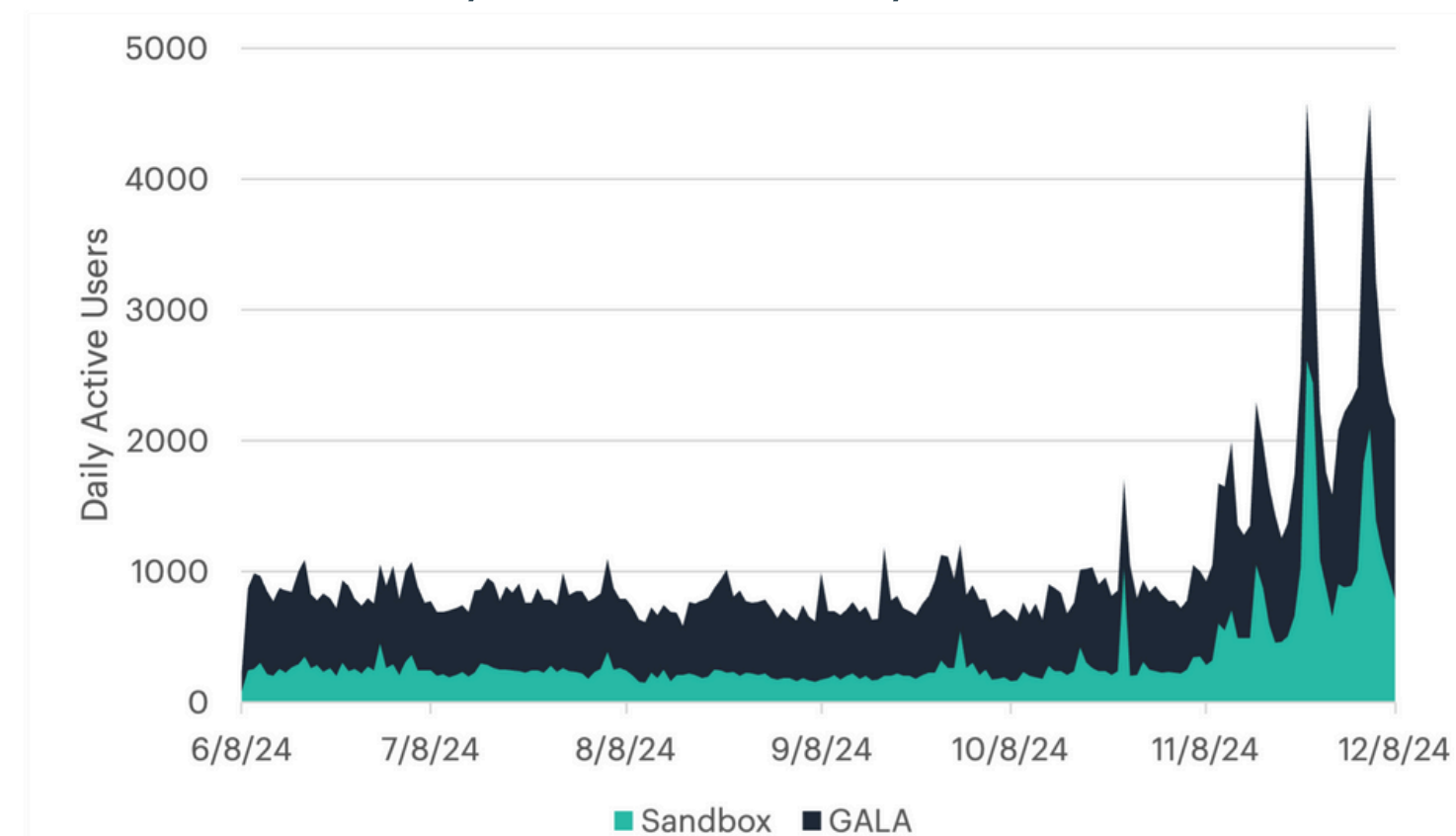
Price Growth Fuels On-Chain Activity



Average Token Performance by Sub-Category

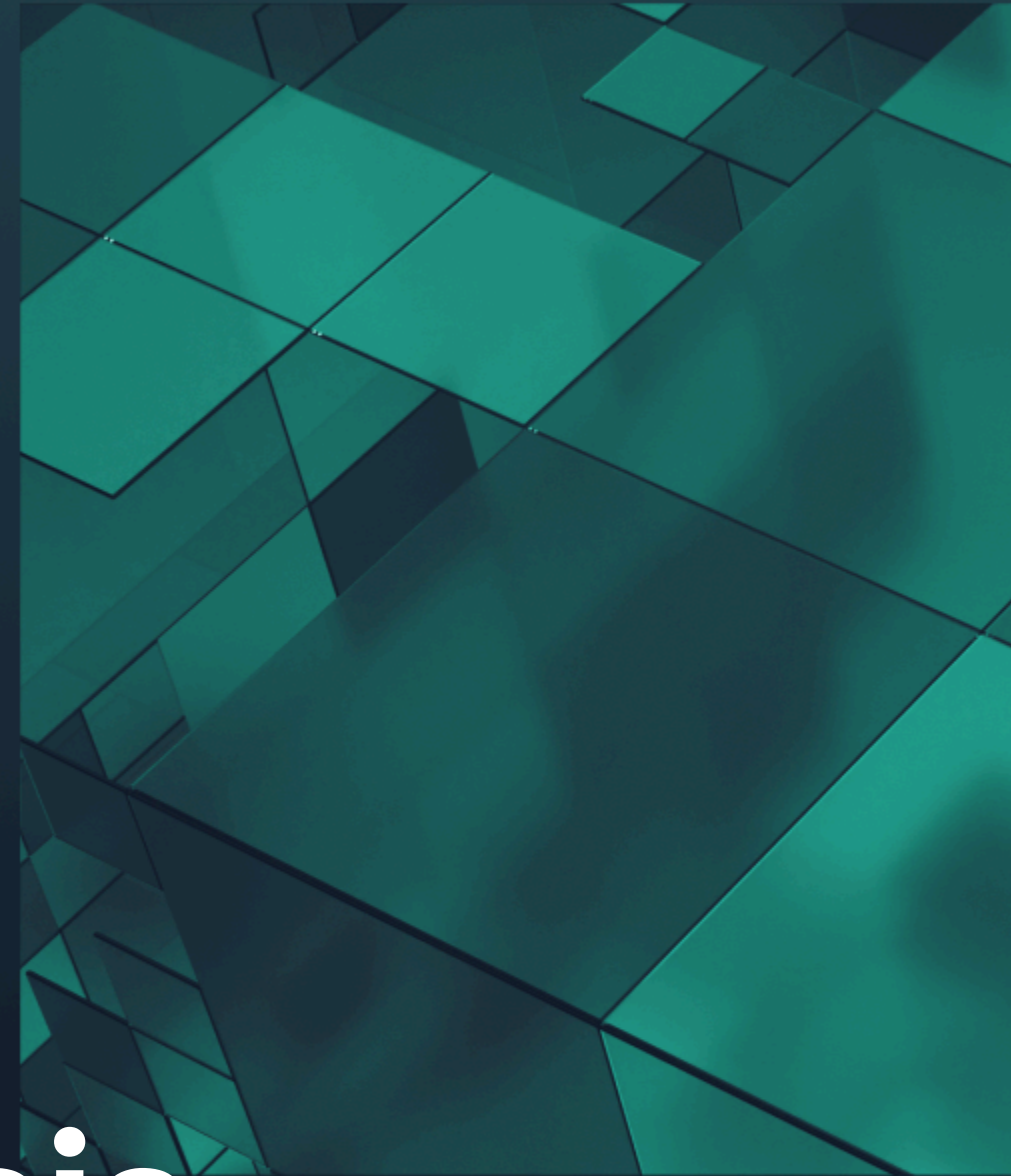


Daily Active Users by Protocol



Rising token prices often serve as a catalyst for increased user engagement, attracting attention to associated on-chain applications and ecosystems. This dynamic can create a feedback loop, where heightened activity further reinforces interest and drives broader adoption. The gaming sector, in particular, tends to benefit significantly, as the interactive nature of these protocols attracts users eager to capitalize on ecosystem token price increases.

In the fourth quarter, tokens in the culture sub-category outperformed other digital asset sectors, with gaming-focused tokens leading the way. This price growth coincided with a sharp increase in user engagement. Platforms such as The Sandbox and Gala reported daily active user counts rising by an average of 315% from their summer lows, reflecting renewed interest and participation in the digital culture and gaming ecosystems.



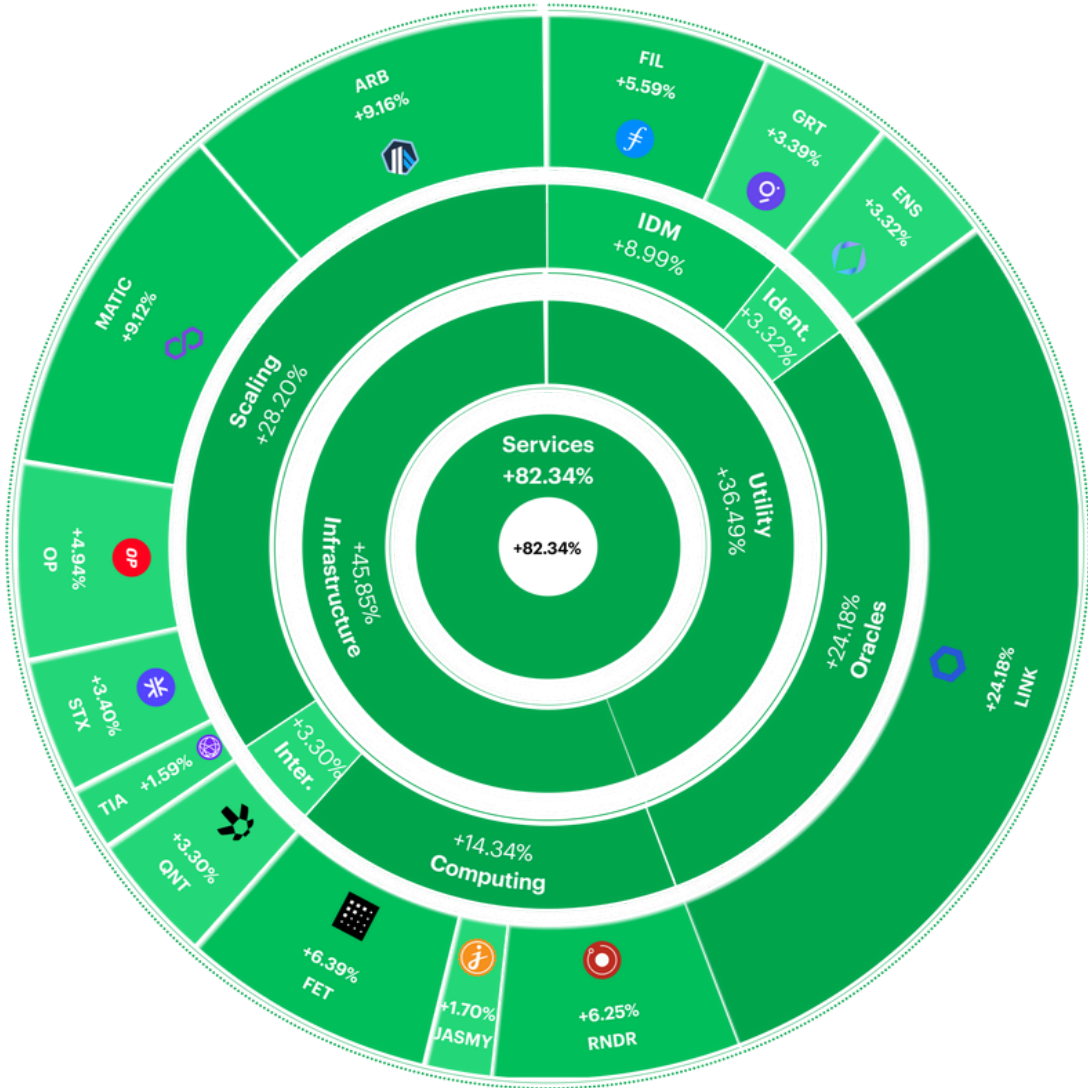
Attribution Analysis: CF Blockchain Infrastructure Index

Scaling Segment Weighs on Infrastructure Index



Index Return Contribution

Total Performance Contribution: +82.34% Date: 2nd December 2024



CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	CONTRIBUTION
Services	Infrastructure	Scaling	ARB	+9.16%
			MATIC	+9.12%
			OP	+4.94%
			STX	+3.40%
			TIA	+1.59%
	Utility	Interoperability	QNT	+3.30%
			FET	+6.39%
			JASMY	+1.70%
			RNDR	+6.25%
			LINK	+24.18%
Utility	Computing	LINK	+24.18%	
		ENS	+3.32%	
		FIL	+5.59%	
		GRT	+3.39%	
		IDM	+8.99%	

- The CF Blockchain Infrastructure Index rallied +82.34% over the last rebalancing period, outperforming the broader crypto market (as gauged by the CF Free-Float Broad Cap Index) by approximately +4.5%.
- Chainlink's LINK token emerged as the top individual contributor, adding +24.18% to the index's performance. From a CF DACS segment perspective, scaling solutions were the best performers, adding +28.2% to the overall index.

Source: CF Benchmarks, as of December 2, 2024

Index Weights



3rd September 2024

Total Weight: 100% Index Value: 347.16

CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	
Services	Infrastructure	Scaling	ARB 9.78%	
			MATIC 16.99%	
			OP 6.35%	
			STX 5.86%	
			TIA 2.06%	
		Interoperability	3.05%	QNT 3.05%
		Computing	22.88%	FET 11.88%
			JASMY 2.69%	
			RNDR 8.31%	
	Utility	Oracles	22.50%	LINK 22.50%
		Identity	2.19%	ENS 2.19%
		Information & Data Management	8.34%	FIL 5.08%
			GRT 3.26%	
100%				

2nd December 2024

Total Weight: 100% Index Value: 642.43

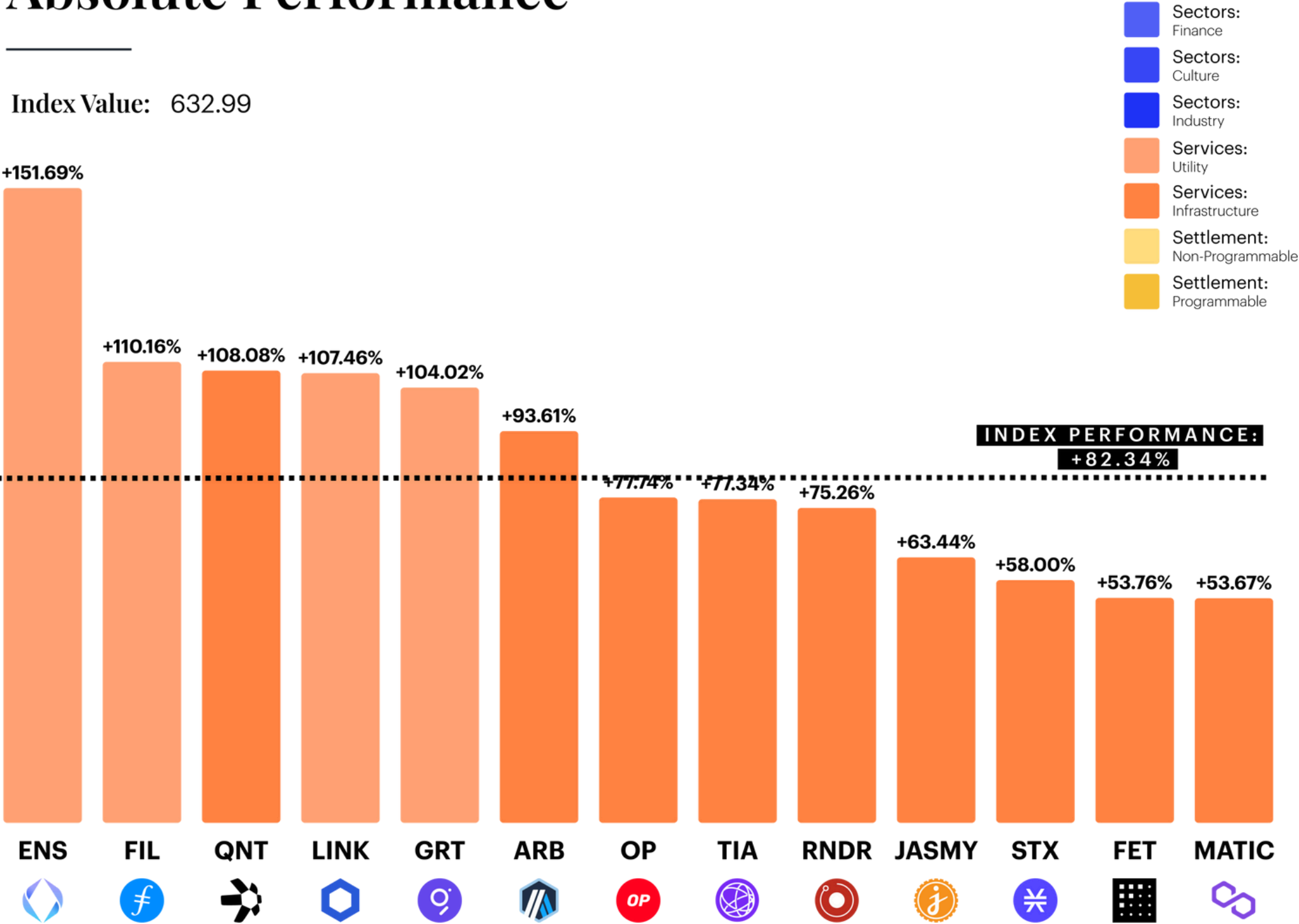
CATEGORY	SUB-CATEGORY	SEGMENT	ASSET	
Services	Infrastructure	Scaling	ARB 13.28%	
			OP 7.83%	
			STRK 7.33%	
			STX 4.80%	
			TIA 2.56%	
		Interoperability	7.45%	QNT 3.87%
		Computing	19.62%	ZRO 3.58%
			FET 5.72%	
			HNT 2.31%	
	Utility	Oracles	22.50%	JASMY 2.64%
		Identity	3.12%	RENDER 8.94%
		Information & Data Management	11.52%	LINK 22.50%
			ENS 3.12%	
100%			FIL 7.48%	
			GRT 4.04%	

Infrastructure Tokens Rally on Regulatory Optimism



Absolute Performance

Index Value: 632.99



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

Blockchain infrastructure protocols saw gains across the board over the latest rebalance period, with 38% of the constituents gaining more than 100%.

Ethereum Name Service’s (ENS) token emerged as the top performer, surging +151.69%. On November 11, ENS announced Namechain, a layer-2 solution designed to scale blockchain identity. Expected to launch by late 2025, Namechain aims to enhance name management through personal registries and improved cross-chain interoperability.

Filecoin was the second-best performer, rising 110.16% during the quarter. This surge occurred primarily after the U.S. election on November 5, as the market re-evaluated tokens cited in SEC lawsuits, anticipating a more favorable regulatory environment. The SEC first indicated that it considered the FIL token a security in May 2023, which had contributed to muted performance in recent quarters.

Source: CF Benchmarks, as of December 2, 2024

Chainlink Developments Advance Asset Tokenization



Chainlink’s LINK token surged by 99.6% following the announcement of its collaboration with Swift and UBS Asset Management to integrate tokenized assets into traditional financial systems, as well as the unveiling of the Chainlink Runtime Environment (CRE), designed to streamline cross-chain development.

The partnership with Swift and UBS Asset Management, part of the Monetary Authority of Singapore’s Project Guardian, marks a significant milestone in bridging tokenized assets with existing financial infrastructure. Leveraging Chainlink’s blockchain orchestration and Swift’s vast payment network, the project automates and optimizes fund subscriptions and redemptions, addressing inefficiencies such as delayed settlements and manual interventions in the mutual fund market. This initiative enables institutions to use Swift’s infrastructure for settlement without requiring widespread adoption of on-chain payments, offering a scalable framework to bridge traditional finance with the on-chain economy.

Concurrently, Chainlink introduced the Chainlink Runtime Environment (CRE), a modular platform designed to scale across thousands of blockchains while enhancing developer flexibility. CRE allows developers to deploy code directly on the Chainlink platform, simplifying the creation of cross-chain applications and reducing the reliance on Chainlink-specific code within on-chain contracts. Positioned as a unified framework for on-chain finance, CRE solidifies Chainlink’s role as a key infrastructure provider, allowing the integration of traditional finance with decentralized systems and unlocking significant growth potential.

Source: CF Benchmarks, as of December 2, 2024



Appendix

Market Performance Overview



Major Crypto-Pairs (USD)

Name	1 Day	1 Week	1 Month	3 Month	YTD	90 D Volatility
Bitcoin	-1.6%	1.1%	37.5%	67.2%	126.8%	53.71
Ethereum	0.9%	6.5%	44.8%	49.3%	55.7%	69.52
Cardano	8.7%	18.1%	230.5%	266.1%	95.7%	105.78
Dogecoin	1.7%	4.5%	162.4%	337.3%	363.9%	116.67
Polygon	8.3%	7.4%	95.3%	53.8%	-37.5%	100.73
Solana	-7.0%	-5.9%	35.4%	74.2%	111.2%	81.53
Litecoin	23.4%	30.4%	76.0%	90.6%	62.0%	70.01
Chainlink	18.2%	18.3%	87.9%	107.5%	35.8%	101.69
Polkadot	2.9%	6.1%	131.8%	118.9%	7.1%	98.87
Avalanche	11.7%	14.0%	96.0%	126.6%	22.2%	92.65
Uniswap	10.5%	20.4%	80.5%	134.7%	87.3%	112.53
Algorand	23.8%	83.0%	328.8%	309.3%	110.6%	111.76
Stellar Lumens	3.3%	11.9%	497.4%	498.7%	325.4%	153.00
Cosmos	2.2%	6.7%	110.1%	105.2%	-21.6%	89.26
Aave	17.0%	29.6%	63.4%	86.4%	107.2%	105.96
Maker	5.0%	-1.3%	49.3%	11.4%	21.7%	94.61
Compound	10.0%	16.4%	85.1%	81.0%	26.2%	108.71
Axie	0.6%	4.5%	71.2%	77.6%	-13.0%	95.46
Curve	8.3%	20.3%	97.8%	110.0%	-28.5%	78.67

Equities

Name	1 Day	1 Week	1 Month	3 Month	YTD	90 D Volatility
S&P 500 INDEX	0.3%	1.0%	5.7%	28.4%	28.4%	14.31
Nasdaq-100 Index	1.1%	1.7%	5.7%	26.7%	26.7%	19.95
FTSE 100 Index	0.3%	0.3%	2.1%	11.4%	11.4%	10.17
MSCI Europe Index	0.7%	1.0%	0.7%	10.6%	10.6%	11.56
MSCI Japan Index	1.4%	-0.1%	2.6%	17.8%	17.8%	36.15
MSCI Emerging Markets Index	0.7%	-0.5%	-3.1%	8.9%	8.9%	15.42
MSCI World Index	0.2%	1.0%	4.5%	22.6%	22.6%	11.89
MSCI ACWI Index	0.3%	0.8%	3.7%	21.2%	21.2%	11.46

Commodities

Name	1 Day	1 Week	1 Month	3 Month	YTD	90 D Volatility
Bloomberg Commodity Index	-1.1%	-1.2%	-1.1%	-1.6%	-1.6%	12.61
Bloomberg Energy Subindex	-1.6%	-3.2%	1.8%	-10.8%	-10.8%	27.43
Bloomberg Industrial Metals Subindex	-0.6%	-0.9%	-2.7%	1.3%	1.3%	19.19
Bloomberg Precious Metals Subindex	-0.8%	0.6%	-4.8%	21.1%	21.1%	18.05
Bloomberg WTI Crude Oil Subindex	0.1%	-1.2%	-1.4%	2.4%	2.4%	35.25
Bloomberg Gold Subindex	-0.8%	0.7%	-3.8%	27.0%	27.0%	15.30

Fixed Income

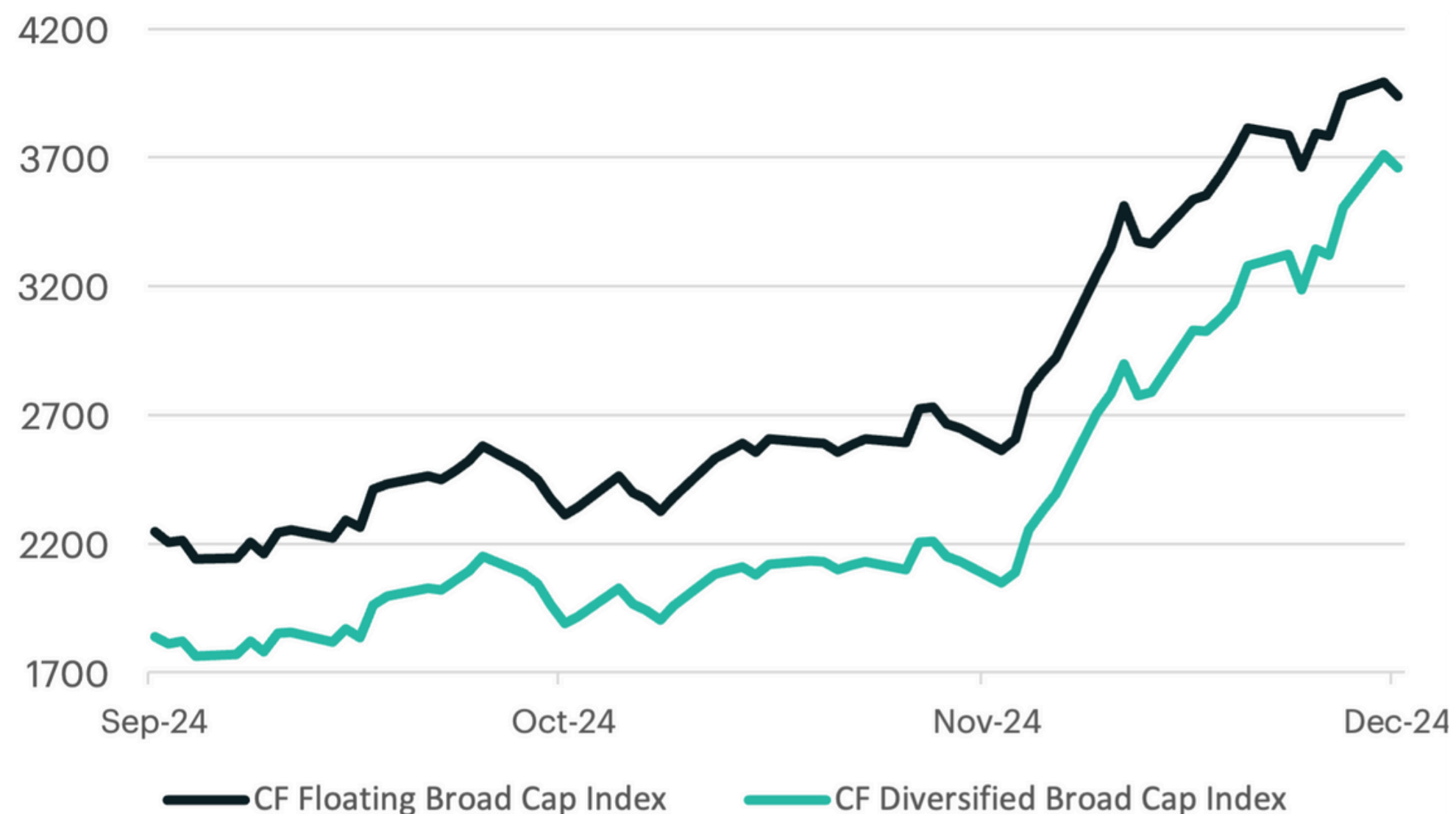
Name	1 Day	1 Week	1 Month	3 Month	YTD	90 D Volatility
Bloomberg Global-Aggregate Bond Index	-0.2%	0.8%	0.4%	0.3%	0.3%	5.50
Bloomberg Global Agg Credit Index	-0.1%	0.7%	0.6%	2.6%	2.6%	4.90
Bloomberg Global High Yield Index	-0.1%	0.3%	0.8%	9.7%	9.7%	2.87
Bloomberg US Long Treasury Bond Index	0.3%	1.5%	3.5%	-0.9%	-0.9%	12.56
Bloomberg US Short Term Treasury Index	0.0%	0.1%	0.3%	4.6%	4.6%	0.46
Bloomberg Global Inflation-Linked Index	0.0%	0.3%	0.9%	3.4%	3.4%	4.25

Fiat Currency Pairs

Name	1 Day	1 Week	1 Month	3 Month	YTD	90 D Volatility
DOLLAR INDEX SPOT	0.7%	-0.3%	2.1%	5.6%	5.0%	6.35
EURO/US DOLLAR	-0.7%	0.0%	-3.1%	-5.7%	-4.9%	6.98
BRITISH POUND/US DOLLAR	-0.6%	0.7%	-2.1%	-5.4%	-0.6%	7.26
JAPANESE YEN/US DOLLAR	0.1%	3.1%	2.3%	-4.0%	-5.7%	12.29
US DOLLAR/SWISS FRANC	0.6%	0.0%	1.9%	4.8%	5.4%	7.66
AUSTRALIAN DOLLAR/US DOLLAR	-0.6%	-0.4%	-1.3%	-6.3%	-4.9%	9.22
MEXICAN PESO/US DOLLAR	-0.1%	-0.5%	-0.6%	-3.5%	-16.8%	14.54
BRAZIL REAL/US DOLLAR	-1.6%	-4.2%	-3.2%	-10.2%	-20.0%	12.88
US DOLLAR/SINGAPORE DOLLAR	0.4%	-0.1%	1.4%	4.7%	1.9%	5.61
TAIWAN DOLLAR/US DOLLAR	-0.4%	-0.5%	-2.1%	-3.0%	-6.3%	5.09

Source: CF Benchmarks, Bloomberg, as of December 3, 2024

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 (+)

- Render (RENDER): Render is a decentralized, peer-to-peer network of connected graphics processing units (GPUs) that facilitates the renting and selling of computing power, specifically for digital rendering purposes.

Subtractions (-)

- Polygon (MATIC): Polygon (MATIC): Polygon is a Layer 2 scaling solution for Ethereum that enhances transaction speeds, reduces fees, and supports a wide range of use cases. Its ecosystem includes products like a PoS sidechain, zkEVM L2 chain, and appchain infrastructure, powered by its native token MATIC, which has recently migrated to POL to expand its utility within the ecosystem.
- Injective (INJ): Injective Protocol (INJ) is a decentralized exchange (DEX) that offers cross-chain trading and derivatives.
- The Sandbox (SAND): The Sandbox is software running on Ethereum that operates a decentralized virtual gaming world.
- Cosmos (ATOM): Cosmos, known as the "Internet of blockchains," focuses on customizability and interoperability, enabling independent blockchains ("zones") to share data and tokens via the Cosmos Hub, a proof-of-stake network powered by the ATOM cryptocurrency.
- Render (RNDR): Render is a decentralized, peer-to-peer network of connected graphics processing units (GPUs) that facilitates the renting and selling of computing power, specifically for digital rendering purposes.

Constituent changes: CF Broad Cap Indices (cont.)



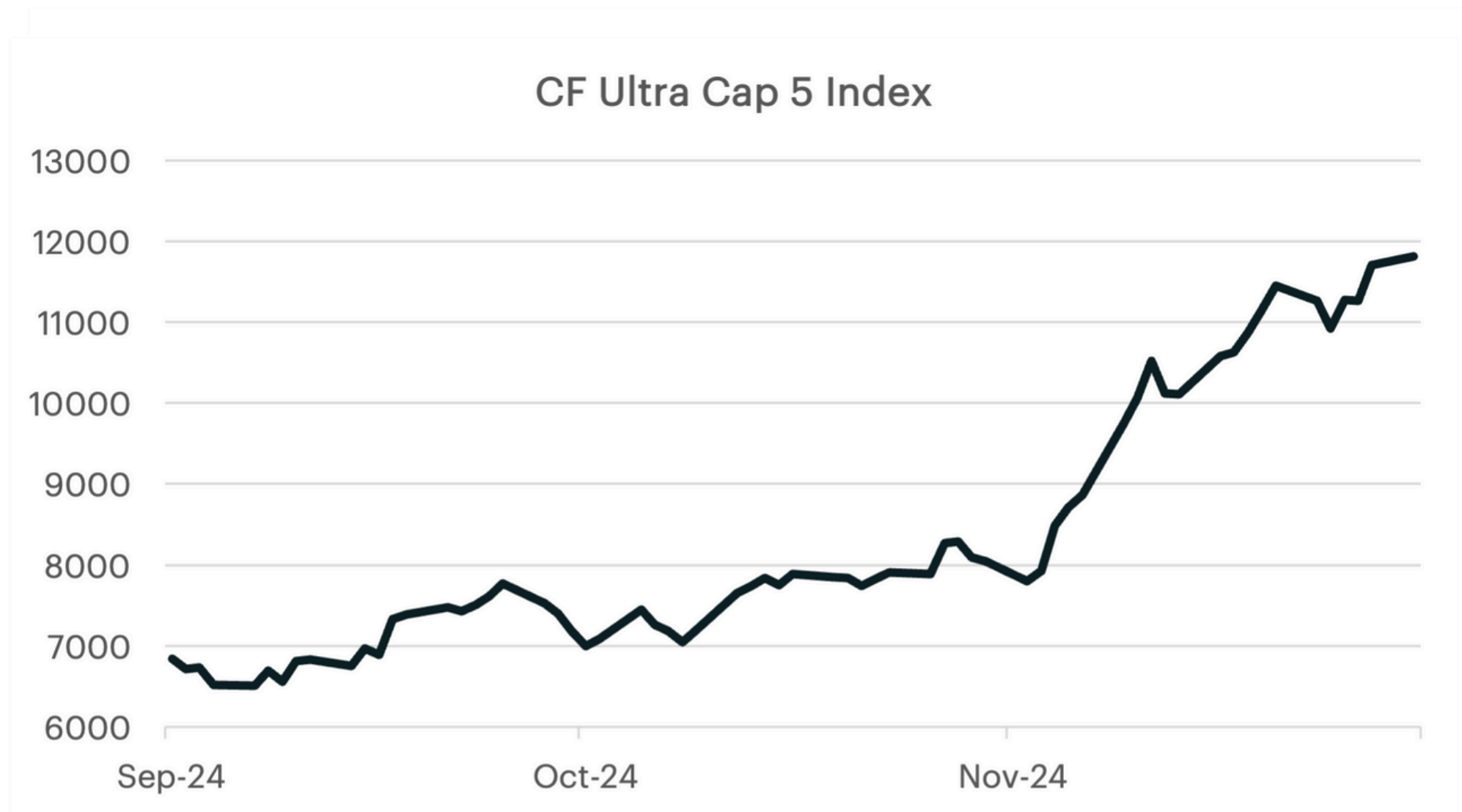
Additions (+)

- N/A

Subtractions (-)

- Tezos (XTZ): Tezos introduced a self-amending blockchain with on-chain governance, allowing XTZ holders to vote on rule changes through "baking," aiming to pioneer blockchain governance.
- Gala (GALA): Gala Games is a blockchain-based play-to-earn platform running on Ethereum and other networks, rewarding players with GALA tokens and NFTs for in-game achievements.
- Chiliz (CHZ): Chiliz is a blockchain-based platform that allows sports fans to engage with their favorite teams by purchasing Fan Tokens with the CHZ token, enabling unique experiences and influence over team decisions while providing teams with monetization opportunities.

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.

Constituent changes: CF Ultra Cap 5 Index



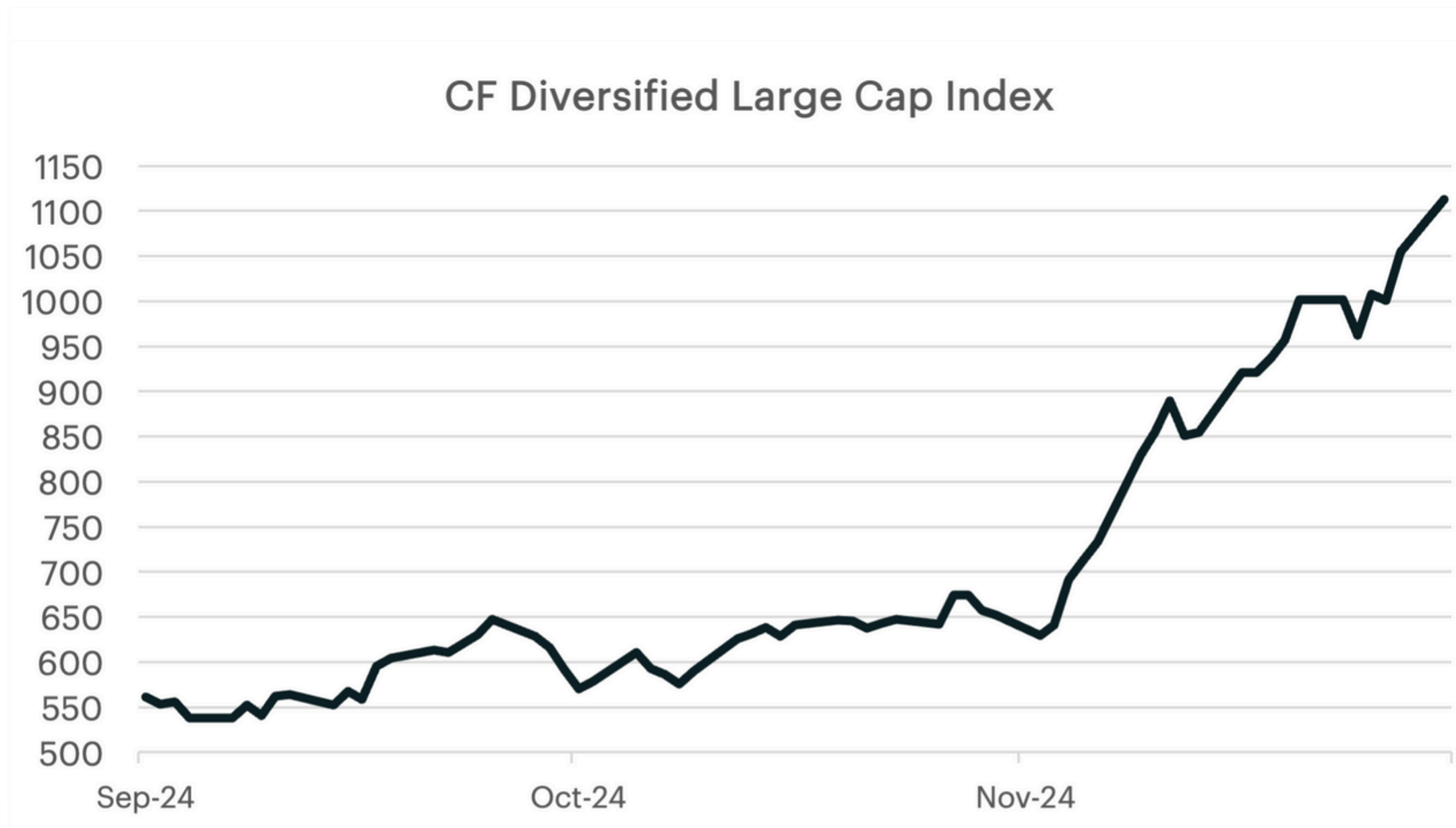
Additions (+)

- 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.

Source: CF Benchmarks, Bloomberg, as of December 2, 2024

Constituent changes: CF Diversified Large Cap Index



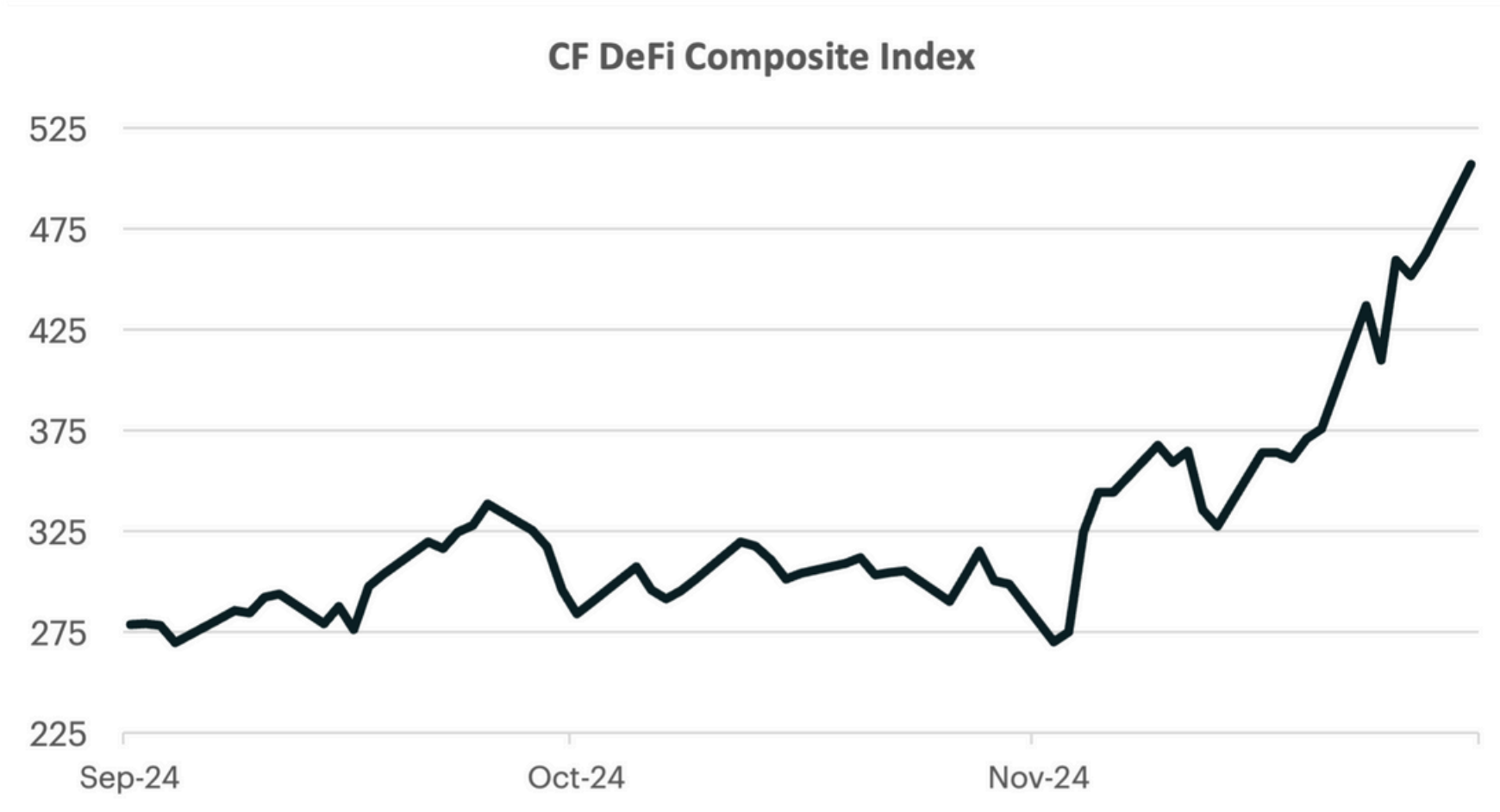
Additions (+)

- Avalanche (AVAX): Avalanche is a blockchain platform that tackles the blockchain trilemma of scalability, security, and decentralization through its Proof of Stake mechanism, supporting Ethereum-compatible smart contracts and using its native token for transactions, governance, and rewards.

Subtractions (-)

- Polygon (MATIC): Polygon (MATIC): Polygon is a Layer 2 scaling solution for Ethereum that enhances transaction speeds, reduces fees, and supports a wide range of use cases. Its ecosystem includes products like a PoS sidechain, zkEVM L2 chain, and appchain infrastructure, powered by its native token MATIC, which has recently migrated to POL to expand its utility within the ecosystem.

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.

Source: CF Benchmarks, Bloomberg, as of December 2, 2024

Constituent changes: CF DeFi Composite Index



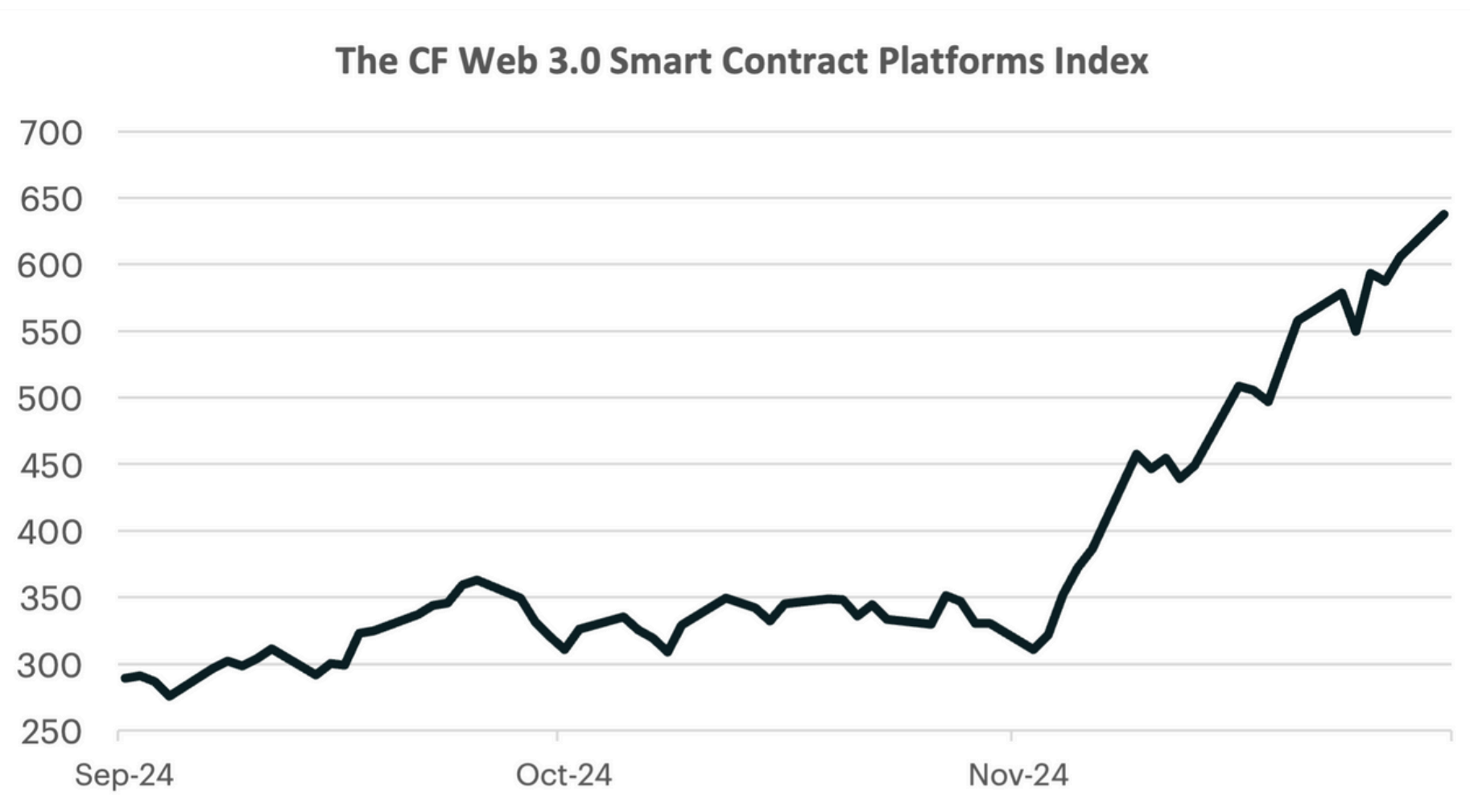
Additions (+)

- Ondo (ONDO): Ondo Finance seeks to bridge the gap between traditional and decentralized finance by improving accessibility to institutional grade financial products through tokenized real works assets.

Subtractions (-)

- Curve (CRV): Curve is a protocol on Ethereum that facilitates the trading of stablecoins through user-provided liquidity pools, allowing stablecoins to be traded with low fees and minimal variation in price.
- Compound (COMP): Compound is a DeFi protocol on Ethereum that enables users to lend and borrow cryptocurrencies through automated lending pools, rewarding participants with interest and COMP tokens.

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



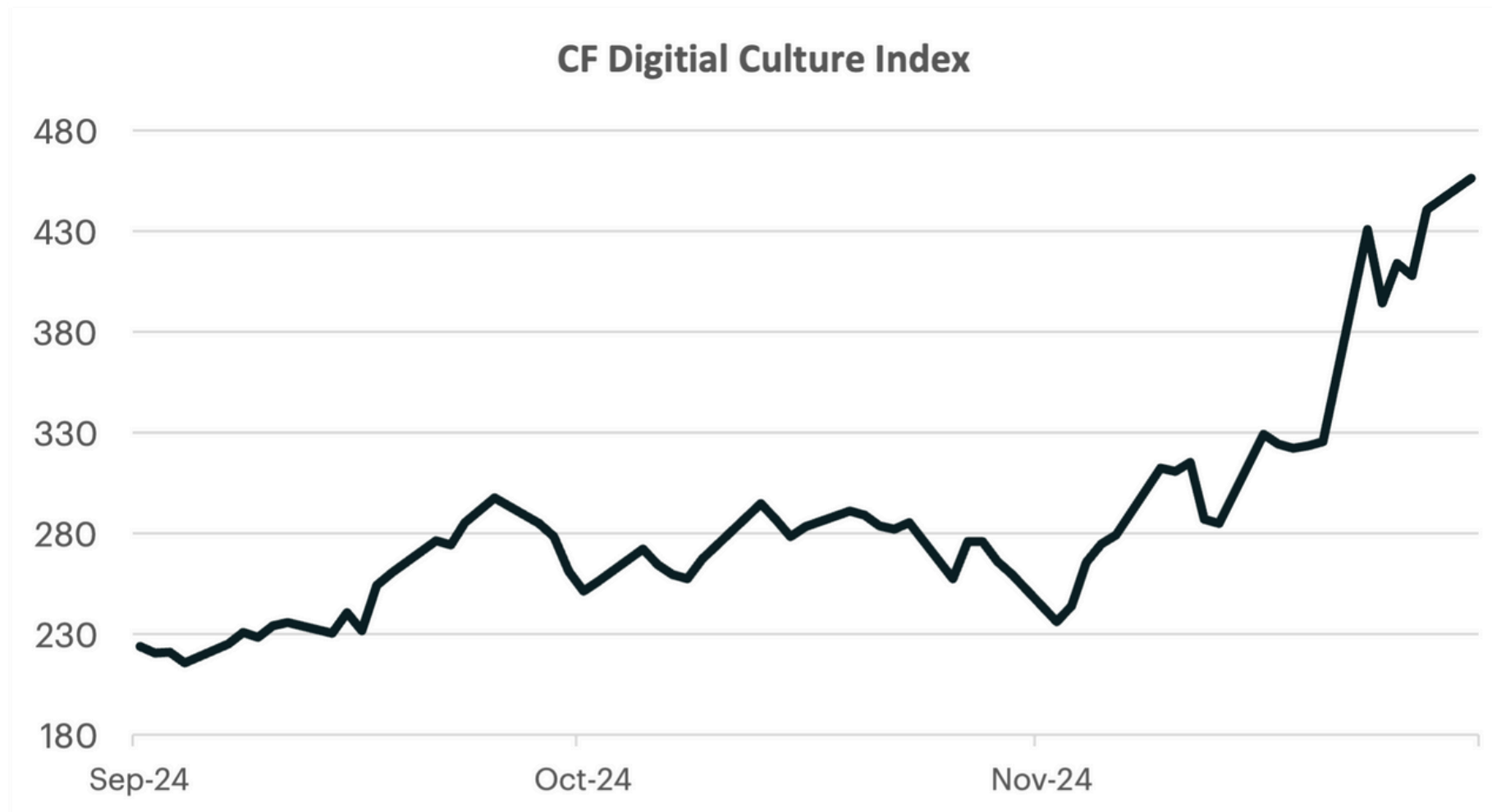
Additions (+)

- Starknet (STRK): Starknet is a permissionless zero-knowledge rollup for Ethereum, functioning as a Layer 2 blockchain. It enables dApps to scale while maintaining Ethereum's security and composability. Starknet achieves secure, low-cost transactions using the STARK cryptographic proof system.

Subtractions (-)

- Polygon (MATIC): Polygon (MATIC): Polygon is a Layer 2 scaling solution for Ethereum that enhances transaction speeds, reduces fees, and supports a wide range of use cases. Its ecosystem includes products like a PoS sidechain, zkEVM L2 chain, and appchain infrastructure, powered by its native token MATIC, which has recently migrated to POL to expand its utility within the ecosystem.

The CF Digital Culture Composite Index



The CF Digital Culture Composite Index - London is a liquid, investible benchmark portfolio index that tracks the return performance of protocols involved in the digitization and tokenization of cultural experiences and artefacts including the Metaverse, NFTs, Gaming, and Music. The index is comprised of three distinct sub-portfolios of fixed weight that represent the components of blockchain architecture that are required to deliver the digitised culture to individual and institutional end users; decentralized applications (dApps) via Digital Culture protocols, Services and Settlement Blockchains. Digital assets are classified in accordance with the CF Digital Asset Classification Structure (DACs) for sub-portfolio eligibility.

Constituent changes: CF Digital Culture Index



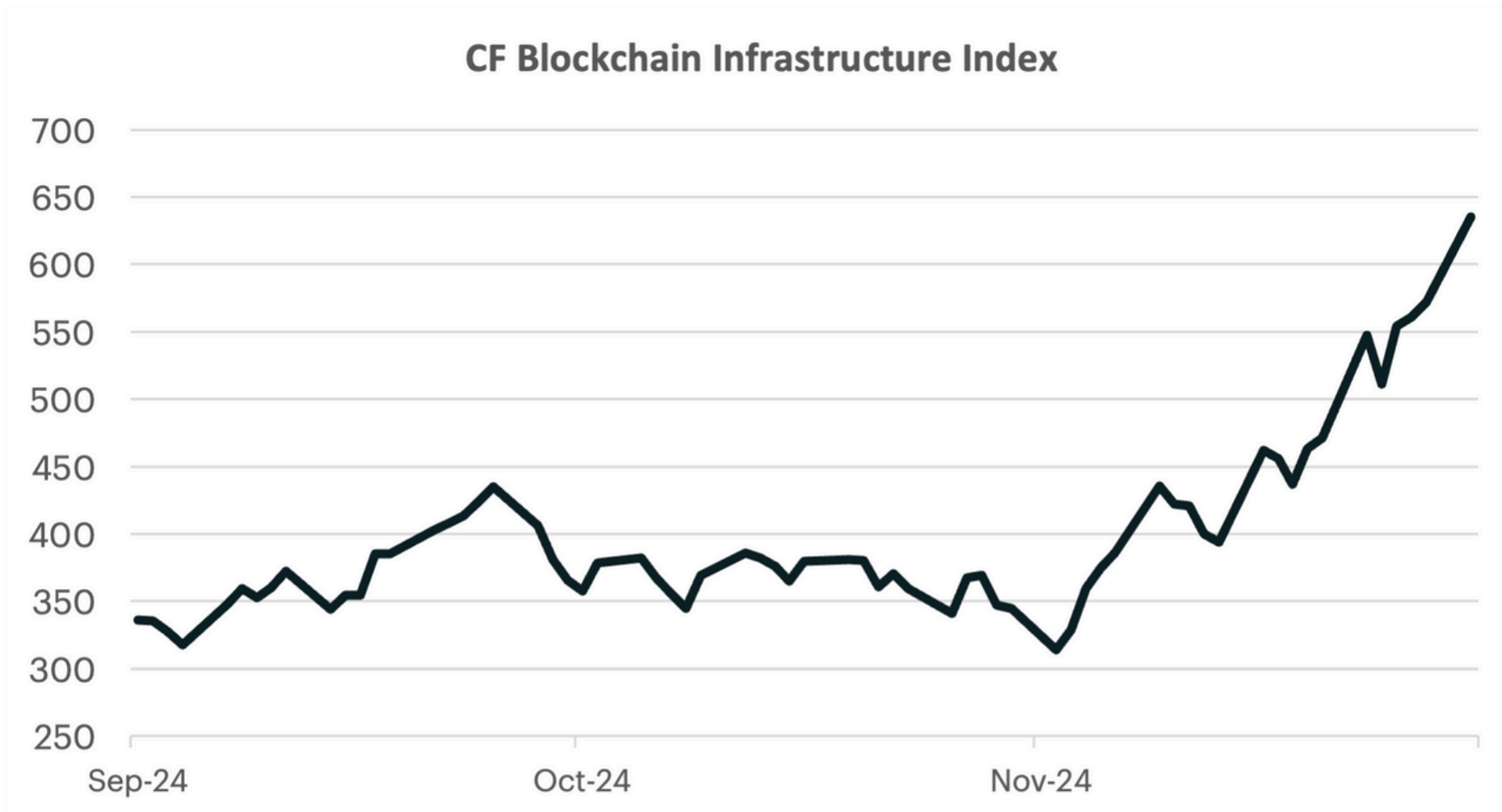
Additions (+)

- Echelon Prime (PRIME): Echelon Prime is a Web3 ecosystem that advances next-generation gaming by creating and distributing tools to encourage innovation and promote the growth of novel gaming models and economies.

Subtractions (-)

- Polygon (MATIC): Polygon (MATIC): Polygon is a Layer 2 scaling solution for Ethereum that enhances transaction speeds, reduces fees, and supports a wide range of use cases. Its ecosystem includes products like a PoS sidechain, zkEVM L2 chain, and appchain infrastructure, powered by its native token MATIC, which has recently migrated to POL to expand its utility within the ecosystem.
- Ethereum Name Service (ENS): ENS is a domain naming system built on the Ethereum blockchain. ENS allows Ethereum wallet addresses to be converted into recognizable words, like the name of a person or a brand.
- Decentraland (MANA): Decentraland is a fully decentralized virtual world. With Decentraland, anyone can buy land inside a virtual world powered by the Ethereum blockchain.
- Chiliz (CHZ): Chiliz is a blockchain-based platform that allows sports fans to engage with their favorite teams by purchasing Fan Tokens with the CHZ token, enabling unique experiences and influence over team decisions while providing teams with monetization opportunities.

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 CF Blockchain Infrastructure Index - London was incepted on April 1st 2022 with a value of 1,000. The index was launched on May 17th 2022, all values from inception date to launch date provided are backtested.

Constituent changes: CF Blockchain Infrastructure Index



Additions (+)

- **JasmyCoin (JASMY):** Jasmy develops internet of things (IoT) platforms via edge computing and the use of the InterPlanetary File System (IPFS) for data storage. Jasmy seeks to decentralize the maintenance and sharing of sensitive information.

Subtractions (-)

- **Helium (HNT):** Helium is a blockchain-based wireless network that allows devices to access the internet without requiring cellular service or satellite location hardware.
- **Immutable X (IMX):** Immutable specializes in blockchain solutions for the gaming industry, with its Layer 2 platform, Immutable X, providing gas-free, scalable transactions for Ethereum-based games and NFTs.

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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