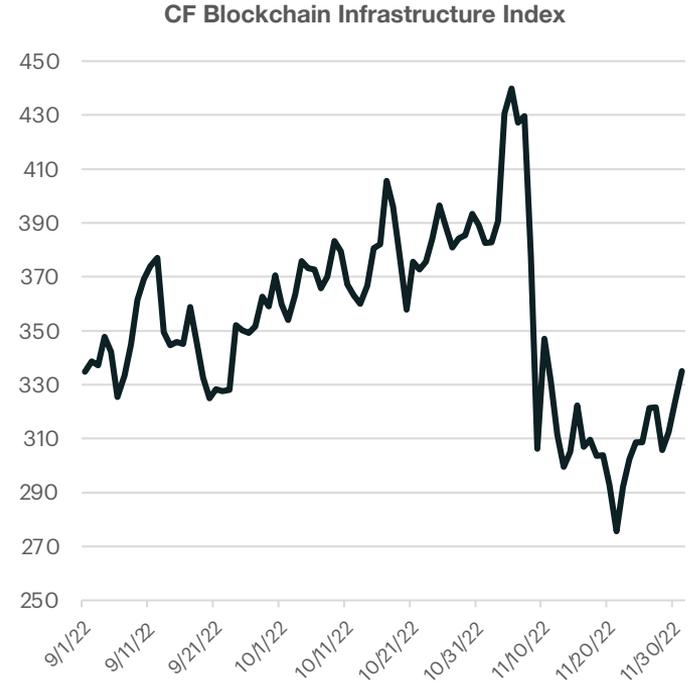


# CF Blockchain Infrastructure Index

QUARTERLY ATTRIBUTION ANALYSIS

# 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 capitalisation in accordance with the CF Digital Asset Series Ground Rules and the index methodology.



Source: CF Benchmarks LTD., Bloomberg LP, as of December 1st, 2022

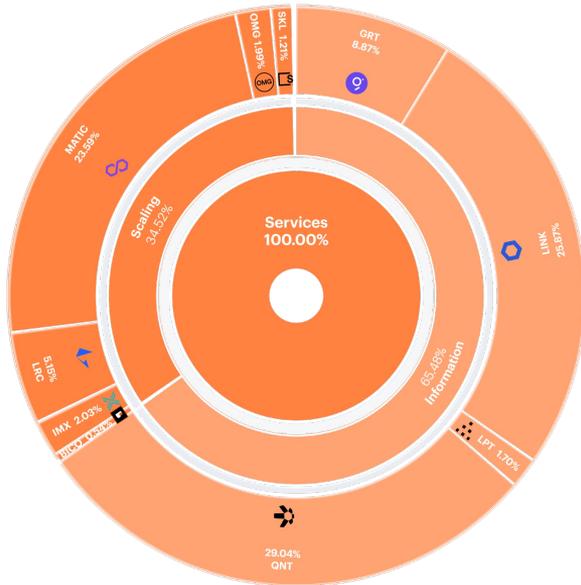
## Post-merge hysteria damped after fallouts

Another exogenous shock has led crypto markets lower over the last rebalancing period as one of the world's largest exchanges surprisingly filed for bankruptcy. The CF Blockchain Infrastructure Index nearly gave up all its early November gains, finishing the rebalancing period essentially flat. The bear market that began earlier this year has only intensified after each over-levered institution or organization collapses. These failures have had a cascading impact on the overall asset class, with the falling prices of crypto markets sparking an industry deleveraging exercise, spreading contagion that leads to even further discounting of crypto assets.

Regarding the macroenvironment, risk sentiment has begun to look toward an eventual pivot or slowdown in monetary tightening. The most recent inflationary trends indicate that headline pricing pressures may have peaked in June. This dynamic is expected to be supportive of crypto markets, which face particularly pronounced headwinds from a rising interest rate environment. However, core inflation is likely to be more difficult to tame and the overall level of inflation is likely to remain above any acceptable threshold for some time. This has left crypto market participants in limbo when trying to balance the improving data on the inflation side and spill over impacts from the latest fallout of a major market player.

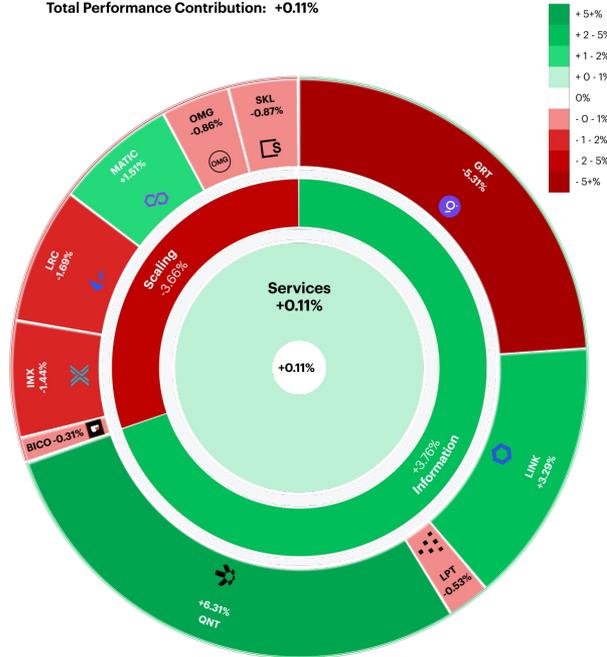
## Index Weights

Total Weight: 100%  
Index Value: 335.08



## Index Return Contribution

Total Performance Contribution: +0.11%



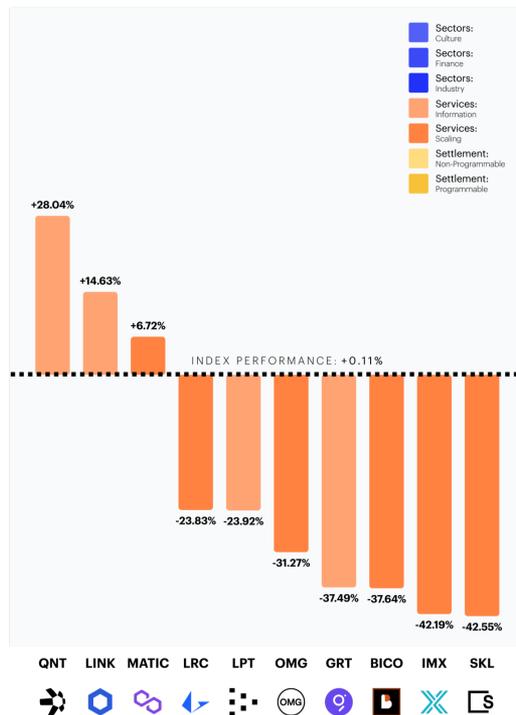
# Infrastructure nets neutral

The CF Blockchain Infrastructure Index finished the rebalancing period mostly flat, notching a +0.11% increase in value. The index composition has a slight bias toward Scaling protocols, which contributed -3.7% of negative performance. This was offset by the positive +3.8% contribution from the Information segment.

From an individual asset level, recently added Quant (QNT) contributed the most positive performance (+6.3%) due to its sizable weight and stellar performance.

## Absolute Performance

Index Performance: +0.11%



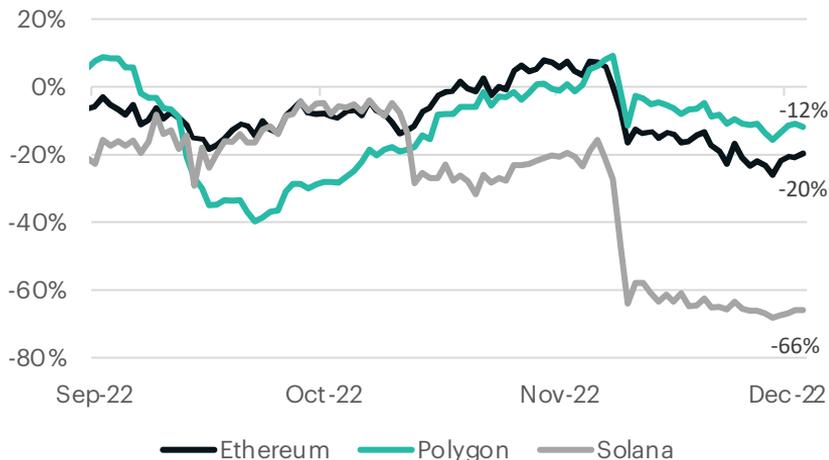
## Select standouts mask broadly negative breadth

Although it may appear that the performance of our Blockchain Infrastructure Index finished the quarter in a truly split fashion, most tokens in each category ended the rebalance period in negative territory. Information saw Quant (QNT) and Chainlink (LINK), lead their peer group. QNT has seen strong bouts of price outperformance as a series of developer upgrades and strategic partnerships helped maintain positive price momentum. Meanwhile, LINK's recent announcement of the launch of its novel staking program has garnered investor interest. Lastly, MATIC, a Scaling protocol continued to display defensive pricing characteristics in a broadly negative environment.

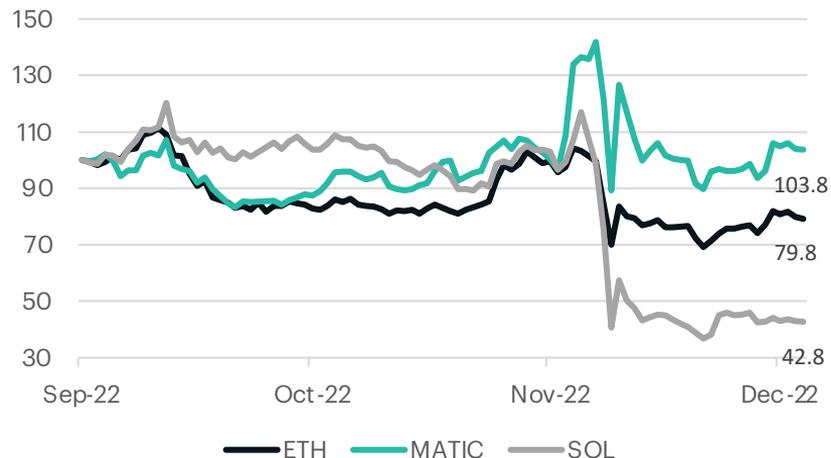
Major laggards included Skale (SKL) and Immutable X (IMX), which both saw steep declines following the collapse of FTX/Alameda.

# TVL fundamentals post FTX

Rolling 30-day changes in TVL



Indexed Performance (100)



The surprise collapse of FTX has had a profound impact on the price performance of some of our leading Blockchain Infrastructure constituents. One way to better explain this is to analyse the change in the Total Value Locked (TVL), which can be seen as a fundamental metric for activity. Solana’s exposure to FTX (through reported investments and custodied assets), has caused the amount of TVL on the blockchain to decrease 66% since September 1st. This decrease was much more profound than its peers, and the market price of SOL has proportionately reflected this, falling almost 60% over the same time period.

# Appendix: Market Performance Overview

## Major Crypto-Pairs (USD)

Name	1 Day	1 Week	1 Month	QTD	YTD	90 D Volatility
Bitcoin	3.9%	3.8%	-16.2%	-15.3%	-63.1%	55.33
Ethereum	6.4%	10.9%	-17.1%	-17.4%	-64.8%	69.65
XRP	2.7%	8.2%	-10.2%	24.0%	-50.5%	81.54
Litecoin	2.3%	0.5%	43.3%	43.4%	-46.3%	77.95
Dash	-0.1%	-0.7%	3.5%	-4.3%	-67.8%	75.00
Zcash	9.1%	1.4%	-16.4%	-27.8%	-70.0%	75.36
Solana	3.2%	-2.1%	-57.5%	-57.0%	-91.9%	146.15
Avalanche	4.5%	2.1%	-31.0%	-32.7%	-88.1%	78.74
Polkadot	2.8%	1.0%	-17.6%	-23.1%	-79.5%	60.36
Doge	2.4%	29.6%	-16.3%	66.0%	-40.1%	106.79
Polygon	10.2%	9.4%	3.1%	11.0%	-63.2%	108.62
Chainlink	1.4%	15.7%	-6.9%	9.7%	-63.6%	77.85
Uniswap	6.8%	6.8%	-15.3%	-6.0%	-65.7%	84.26
Algorand	3.2%	1.8%	-30.6%	-15.1%	-85.1%	92.94
Cardano	1.7%	0.5%	-22.0%	-31.5%	-76.7%	50.52
Maker	2.4%	1.5%	-26.1%	-14.5%	-71.6%	87.35
Aave	6.9%	13.7%	-21.0%	-23.5%	-74.2%	78.34
Curve DAO Token	0.4%	-3.1%	-23.7%	-42.1%	-87.4%	112.57
Axie Infinity	1.9%	1.5%	-24.5%	-52.1%	-89.1%	83.03

## Commodities

Name	1 Day	1 Week	1 Month	QTD	YTD	90 D Volatility
Bloomberg Commodity Index	0.8%	-0.4%	2.4%	17.0%	17.0%	19.61
Bloomberg Energy Subindex	0.4%	-2.8%	-1.1%	52.6%	52.6%	37.18
Bloomberg Industrial Metals Su	2.7%	3.4%	14.1%	-6.1%	-6.1%	29.67
Bloomberg Precious Metals Subi	0.2%	0.3%	7.9%	-6.9%	-6.9%	19.61
Bloomberg WTI Crude Oil Subind	3.0%	3.3%	-5.7%	23.1%	23.1%	41.71
Bloomberg Gold Subindex Total	-0.2%	0.1%	6.8%	-4.7%	-4.7%	15.88

## Equities

Name	1 Day	1 Week	1 Month	QTD	YTD	90 D Volatility
S&P 500 INDEX	3.1%	1.4%	5.6%	-13.1%	-13.1%	25.12
NASDAQ 100 Stock Index	4.6%	1.6%	5.6%	-25.7%	-25.7%	31.87
FTSE 100 Index	0.8%	1.6%	7.1%	6.1%	6.1%	12.72
MSCI Europe Index	0.7%	0.5%	6.9%	-5.7%	-5.7%	15.83
MSCI Japan Index	-0.3%	-0.5%	2.9%	1.1%	1.1%	17.01
MSCI Emerging Markets Index	2.0%	4.3%	14.8%	-18.7%	-18.7%	20.55
MSCI World Index	2.2%	0.9%	7.0%	-14.1%	-14.1%	21.94
MSCI ACWI Index	2.2%	1.3%	7.8%	-14.6%	-14.6%	20.27

## Fixed Income

Name	1 Day	1 Week	1 Month	QTD	YTD	90 D Volatility
Bloomberg Global-Aggregate Bond Index	0.0%	-0.2%	4.7%	-16.7%	-16.7%	9.43
Bloomberg Global Agg Credit Index	0.2%	0.0%	5.4%	-17.1%	-17.1%	9.59
Bloomberg Global High Yield Index	0.3%	0.5%	5.0%	-13.3%	-13.3%	8.95
Bloomberg US Long Treasury Bond Index	0.7%	-0.3%	7.1%	-28.0%	-28.0%	19.88
Bloomberg US Short Term Treasury Index	0.0%	0.1%	0.3%	-0.5%	-0.5%	0.51
Bloomberg Global Inflation-Linked Index	1.4%	0.7%	1.8%	-10.9%	-10.9%	9.33

## Fiat Currency Pairs

Name	1 Day	1 Week	1 Month	QTD	YTD	90 D Volatility
DOLLAR INDEX SPOT	-0.8%	-0.1%	-5.0%	-2.5%	10.7%	11.92
EURO/US DOLLAR	0.7%	0.1%	5.3%	3.5%	-8.5%	12.04
BRITISH POUND/US DOLLAR	0.9%	0.0%	5.1%	3.8%	-10.9%	16.81
JAPANESE YEN/US DOLLAR	0.4%	1.1%	7.7%	0.7%	-16.6%	13.33
US DOLLAR/SWISS FRANC	-0.8%	0.3%	-5.6%	-3.3%	3.6%	11.18
AUSTRALIAN DOLLAR/US DOLLAR	1.5%	0.8%	6.1%	-0.8%	-6.5%	16.04
MEXICAN PESO/US DOLLAR	-0.2%	0.5%	2.8%	4.5%	6.5%	9.43
BRAZIL REAL/US DOLLAR	1.7%	3.1%	-0.3%	-0.2%	7.3%	20.42
US DOLLAR/SINGAPORE DOLLAR	-0.9%	-1.1%	-3.9%	-2.6%	0.9%	6.35
TAIWAN DOLLAR/US DOLLAR	0.3%	1.1%	4.7%	-1.4%	-10.2%	6.28

Source: CF Benchmarks LTD., Bloomberg LP, as of November 30th, 2022

## Appendix: constituent changes for current period

Additions (+)	Subtractions (-)
<ul style="list-style-type: none"><li>• Biconomy (BICO): BICO aims to streamline crypto transaction flows by reducing gas fees and increasing the ease of transferring assets across protocols so as to make Web 3.0 more composable and interoperable for all</li><li>• Immutable X (IMX): IMX brands itself as the first Layer 2 NFT platform on Ethereum. It boasts zero gas fees, instant trades, and carbon-neutral NFT creation and trading.</li><li>• Quant (QNT): Quant is a distributed ledger technology focused on building connections between existing blockchains. Quant's Overledger software provides organizations with a cross-chain infrastructure to link their enterprise software system with multiple distributed networks. QNT is the native token of the protocol which is used to access the platform and pay for the products and services found on the network.</li></ul>	<ul style="list-style-type: none"><li>• None</li></ul>

Source: CF Benchmarks LTD., Kraken, as of November 30th, 2022



## Appendix: CF Digital Asset Classification Structure

The CF Digital Asset Classification Structure (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.

## 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](#)

## Contact Us

Have a question or would like to chat? If so, please drop us a line to:

[info@cfbenchmarks.com](mailto:info@cfbenchmarks.com)

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