EAGLEBROOK ADVISORS

Resilience – May 17th, 2022

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The failure of a large algorithmic stablecoin tied to a top smart contract platform caused panic and contagion early last week, with a "Lehman" moment finding stability by Sunday's close

KEY TAKEAWAYS

+ Last week's focus was heavily on the failure of LUNA, a top smart contract platform tied to the failed algorithmic-stablecoin UST, resulting in a downward spiral that caused contagion early in the week
+ We offer key takeaways from the collapse, provide an update on pending stablecoin regulation, and illustrate the size and differences of various stablecoins
+ We conclude with an update to our intra-year drawdown table - despite an average peak to trough drawdown of 55% per year for bitcoin, the asset still finished positive in 9 out of the last 11 years. Bitcoin has shown resilience through multiple market cycles, and this time will likely be no different

THE BIRD'S EYE VIEW

A top five smart contract platform declined in rapid fashion last week as a popular algorithmic stablecoin lost it's USD peg in a severe decline that caused both panic and contagion across digital assets. With nearly $60 billion of market capitalization between LUNA and UST wiped out, bitcoin and ether declined 9.4% and 16.2% on the week.

While the same macro uncertainties had price action already negative, this decline resulted in now six straight weeks of digital asset and equity losses in a row.

So, what happened? To simplify, LUNA is a smart contract platform with a focus on stablecoin issuance, the largest being the algorithmic stablecoin UST. UST became popular as a 20% interest rate offered through DeFi application Anchor attracted nearly $18.7 billion in UST market capitalization.

As an algorithmic stablecoin, UST's peg was dependent on arbitrage between the redemption of $1 in UST for $1 in newly-minted LUNA (and vice-versa). The redemption of UST led to inflation in LUNA's supply (while the creation of UST burnt LUNA's supply) and this was viewed as an attractive technology for many as LUNA reached a market capitalization of $41 billion at its highs.

Until, a trader found an opportunity to short UST, causing panic, de-pegging, and ultimately a "run on the bank" type scenario. As LUNA's market cap fell below UST's, there was not enough "equity" to back the UST "debt," and a death-spiral occurred. LUNA's supply skyrocketed from 375 million to 6.5 trillion, sending the asset to nearly $0, while UST fell to a low of around $0.05.

This led to panic and contagion, with a drawdown to $25,424 for bitcoin and $1,706 for ether. However, the two quickly recovered with a bounce and a weekly close of $31,019 and $2,130, respectively. As markets have since returned to a semblance of normality, this offers an attractive opportunity for bitcoin investors, given Luna-specific volatility.

TAKEAWAYS OF THE FALLOUT

1) Unlike the downfalls of Lehman ($60 billion), Bear Sterns ($25 billion), and Enron ($65 billion), the LUNA & UST collapse ($60 billion) did not cause systemic issues within digital assets, nor across broader capital markets. Bitcoin did not need or ask for a bailout – the asset bounced off it's lows rather quickly and has shown resilience since, even as ~$60bn of wealth was wiped from the system.
2) While bitcoin has established itself as a fully-decentralized, hard-coded, and immutable payments network and store of value, many digital assets were created within the last five years, and the space will naturally experience growing pains. Many of these altcoins are experimental projects that combine software and money; success will not come without failure. But this type of risk profile is what attracts investors to the VC-type returns seen in prior bull markets.
3) Stablecoin regulation was already coming, but this speeds up the process, and for the better. As we say, regulation provides a runway for growth and investment. Greater confidence in stablecoins will support further investment and use of digital assets.

A stablecoin regulatory framework has been a key theme as the segment quickly amounted to now $160 billion in market capitalization. While not set in stone, the President's Working Group on Financial Markets recommended stablecoin issuers be insured depository institutions in November of 2021. Most recently, Sen. Pat Toomey rolled out draft legislation of a three-path framework: the PWG's recommendation, registration under state-level money transmitter regimes, or new federal licenses under the OCC. Senator Lummis and Gillibrand's comprehensive crypto framework will also include stablecoins as well.

What doesn't kill digital assets, only makes them stronger; each boom and bust ultimately improves infrastructure and stability of this rapidly emerging asset class. This will likely be no different.

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SIZING STABLES

Broadly, there are three types of stablecoins: fiat-backed (USDC, USDT, BUSD, GUSD), debt-backed (DAI), and algorithmic (UST, FRAX, FEI).

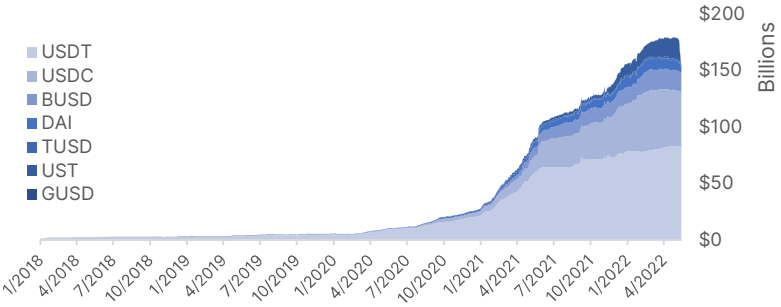
Fiat-backed stablecoins have an equal amount of USD or cash-equivalents held in reserves. Despite controversy around Tether's lack of audited financial statements, fiat-backed stablecoins are generally the safest of the bunch. Those concerns have led to the significant rise of USDC (issued by Circle) as a centralized, yet fully-audited stablecoin. While Tether momentarily declined to a low of $0.94 before quickly resolving, fiat-backed stablecoins were not impacted by UST's fallout. CBDCs would fall under the fiat-backed category.

Debt-backed stablecoins are backed with collateral, such as ETH, which is locked in a smart contract to receive DAI (for example) in return. These debt-backed stablecoins are overcollateralized, 150+% in DAI's case, and loans are liquidated if investor collateral falls below a certain threshold. As a result, DAI did not face any issues during the UST downfall.

Algorithmic stablecoins, such as UST, use algorithms to peg against a selected currency. Often, this is through utilizing another token, such as LUNA, with a redemption process used to maintain the peg. While the most capital efficient, algorithmic stables pose the greatest risks, as seen in the downfalls of Iron Finance and now, UST. These are, however, much different than fiat-backed and debt-backed stablecoins and should be treated as such.

STABLECOIN SUPPLY

Source: Messari, Glassnode, Eaglebrook Advisors



Top 10 Stablecoins By Market Capitalization

Ticker	Name	Category	Market Cap 5/16	% of Top 10
USDT	Tether	Fiat-Backed	$75,670,719,909	48.2%
USDC	USD Coin	Fiat-Backed	$51,900,298,654	33.1%
BUSD	Binance USD	Fiat-Backed	$18,016,345,552	11.5%
DAI	Dai	Debt-Backed	$6,417,397,490	4.1%
UST	TerraUST	Algorithmic	$1,285,464,355	0.8%
TUSD	TrueUSD	Fiat-Backed	$1,220,859,789	0.8%
USDP	Pax Dollar	Fiat-Backed	$946,810,786	0.6%
USDN	Neutrino USD	Algorithmic	$851,761,223	0.5%
FEI	Fei Usd	Algorithmic	$420,117,275	0.3%
USDD	USDD	Algorithmic	$302,411,993	0.2%
		Total:	**$157,032,187,026**	

Source: Coinmarketcap, Eaglebrook Advisors.

UPDATE TO DRAWDOWN TABLE

Given that the brunt of this most recent decline was much-to-do with the LUNA & UST downfall, an attractive opportunity is now presented for long-term bitcoin investors.

To the right, we illustrate intra-year drawdowns as well as annual returns. While bitcoin certainly draws down, it also disproportionately recovers.

Despite an average 55% intra-year drawdown, bitcoin has ended positive in nine out of the eleven years since 2011.

This is for one evidence of bitcoin's outstanding resilience, and two, illustrative of the significant opportunity that long-term investors have when investing in bitcoin off its highs.

History doesn't repeat itself, but it often rhymes.

Stay Tuned,
Joseph Orsini, CFA
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Year	Max Drawdown High Date	Max Drawdown Low Date	Max DD	DD Length (High to Low)	Max DD Recovery Date	Total DD Length (High to Recovery)	Annual Return	Annual Closing Price
2022	3/28/2022	5/11/2022	**-41%**	44	?	?	?	?
2021	4/15/2021	7/20/2021	**-53%**	96	10/19/2021	187	**60%**	$46,334
2020	2/12/2020	3/16/2020	**-53%**	33	7/27/2020	166	**305%**	$28,996
2019	6/26/2019	12/17/2019	**-48%**	174	10/21/2020	483	**95%**	$7,158
2018	1/5/2018	12/14/2018	**-81%**	343	11/17/2020	1047	**-74%**	$3,674
2017	6/11/2017	7/16/2017	**-36%**	35	8/6/2017	56	**1375%**	$14,043
2016	6/16/2016	8/15/2016	**-25%**	60	12/2/2016	169	**120%**	$952
2015	1/2/2015	1/14/2015	**-42%**	12	10/30/2015	301	**36%**	$432
2014	1/6/2014	12/3/2014	**-69%**	331	12/28/2016	1087	**-58%**	$317
2013	4/9/2013	7/5/2013	**-70%**	87	11/4/2013	209	**5428%**	$747
2012	1/5/2012	2/16/2012	**-39%**	42	7/9/2012	186	**218%**	$13.5
2011	6/8/2011	11/18/2011	**-93%**	163	2/20/2013	623	**1317%**	$4.3
Average (2011 - 2021)			**-55%**	125		410	**802%**	

Source: Bloomberg, Eaglebrook Advisors.

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KEY MARKET DATA

As of Sunday, 5/15/2022

Market Capitalization	2018	2019	2020	2021	2022 YTD
Bitcoin Market Cap (mlns)	$65,307	$130,517	$538,811	$876,370	$595,990
Ether Market Cap (mlns)	$13,886	$14,141	$84,171	$433,423	$254,346
Total Crypto Market Cap (mlns)	$122,177	$186,105	$766,003	$2,250,184	$1,266,357
Bitcoin Dominance %	53.5%	70.1%	70.3%	38.9%	47.1%
Ethereum Dominance %	11.4%	7.6%	11.0%	19.3%	20.1%

Source: Glassnode, TradingView, Eaglebrook Advisors

Bitcoin	2018	2019	2020	2021	2022 YTD
Supply (mlns)	17.5	18.1	18.6	18.9	19.0
Market Price	$3,674	$7,158	$28,996	$46,334	$31,019
Realized Price	$4,556	$5,587	$9,206	$24,480	$23,951
Realized Value (mlns)	$79,524	$101,309	$171,112	$463,063	$456,052
Market Value / Realized Value	0.82	1.29	3.15	1.89	1.31
Hash Rate	40.5 EH/S	94.3 EH/S	153 EH/S	179.2 EH/S	189.6 EH/S
Transfer Volume (USD, mlns)	$2,127,287	$1,893,560	$2,327,727	$13,106,605	$6,636,134
Avg Daily Transfer Volume (USD, mlns)	$5,828	$5,188	$6,360	$35,909	$49,157
Avg Transaction Value (USD)	$26,518	$18,073	$21,266	$138,824	$190,906

Source: Glassnode[1], Bloomberg, Eaglebrook Advisors

	Level	WTD%	MTD%	QTD%	YTD%	1 Year%	3 Year%	5 Year%	% off 52Wk High	90D Annualized Vol.
Bitcoin	$31,019	-9.4%	-19.1%	-32.2%	-33.1%	-35.7%	279.6%	1703.8%	-54.2%	57.2%
Ether	$2,130	-16.2%	-23.7%	-35.5%	-42.3%	-43.8%	788.6%	2260.0%	-55.6%	64.5%
S&P 500	4,024	-2.4%	-2.5%	-11.0%	-15.1%	-2.2%	48.3%	83.1%	-16.1%	24.1%
Nasdaq Composite	11,805	-2.8%	-4.2%	-16.9%	-24.3%	-11.5%	54.9%	101.5%	-26.5%	34.1%
Bloomberg Barclay's Agg	2,126	0.9%	-0.2%	-4.0%	-9.7%	-8.6%	0.3%	5.9%	-10.9%	6.8%
Gold	$1,812	-3.8%	-4.5%	-6.5%	-1.0%	-1.7%	39.7%	47.2%	-11.7%	15.4%
DXY Index	$105	0.9%	1.6%	6.4%	9.3%	15.8%	7.2%	5.7%	-0.3%	7.3%
WTI Crude	$110	0.7%	5.5%	10.2%	43.5%	69.0%	78.2%	126.2%	-10.7%	58.8%

Source: Bloomberg, Eaglebrook Advisors

"Tantrum Table"

Asset	High Since 9/30/21	Max Drawdown	Low Close Date	Rally From Low	YTD Price % Change
ARK Innovation	11/1/2021	-70.5%	5/11/2022	18.1%	-53.9%
Ishares MSCI USA Momentum	11/3/2021	-29.2%	5/11/2022	3.8%	-21.7%
Invesco S&P 500 High Beta	11/8/2021	-25.1%	5/11/2022	5.4%	-17.5%
Ishares Russell 2000 Value	11/8/2021	-20.5%	5/11/2022	2.8%	-13.0%
Ishares Russell 2000 Growth	11/8/2021	-38.5%	5/11/2022	6.3%	-27.0%
Ishares Core U.S. Aggregate	11/9/2021	-11.9%	5/6/2022	0.9%	-10.1%
Bitcoin	11/9/2021	-58.1%	5/11/2022	4.8%	-33.1%
Ether	11/9/2021	-59.9%	5/12/2022	6.1%	-42.3%
Us Breakeven 30 Year	4/21/2022	-0.56	2/18/2022	0.42	0.16
Us Breakeven 10 Year	4/21/2022	-0.67	1/21/2022	0.37	0.15
Us Breakeven 5 Year	3/25/2022	-0.82	5/12/2022	0.17	0.17
Gold Spot $/Oz	3/8/2022	-11.7%	5/13/2022	0.0%	-1.0%
Nasdaq Composite	11/19/2021	-29.2%	5/11/2022	3.9%	-24.5%
S&P 500 Info Tech Index	12/27/2021	-26.1%	5/12/2022	3.4%	-22.3%
S&P 500 Index	1/3/2022	-18.1%	5/12/2022	2.4%	-15.6%

Source: Bloomberg, Eaglebrook Advisors

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DISCLOSURES

[1]Realized Price, Source: Glassnode. Realized Price is the Realized Cap divided by the current supply. Realized Capitalization, Source: Glassnode. Realized Cap values different part of the supplies at different prices (instead of using the current daily close). Specifically, it is computed by valuing each UTXO by the price when it was last moved. Market Cap / Realized Cap, Source: Glassnode. Market Value to Realized Value (MVRV) is the ratio between market cap and realized cap. It gives an indication of when the traded price is below a "fair value". Hash Rate, Source: Glassnode: The average estimated number of hashes per second produced by the miners in the network. Total Transfer Volume, Source: Glassnode. Data is change-adjusted, annual sum: The total amount of coins transferred on-chain, adjusted by change volume. Only successful transfers are counted. Avg Daily Transfer Volume, Source: Glassnode. Data is change-adjusted, daily average: The total amount of coins transferred on-chain, adjusted by change volume. Only successful transfers are counted. Avg Transaction Value, Source: Glassnode. The mean value of a transfer, adjusted by change volume. Only successful transfers are counted.

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