SEBA BANK

January 2022

Crypto 2022
The wheel turns

The New Digital Investor

Redefining Finance for the New Economy

Table of Contents

Authors

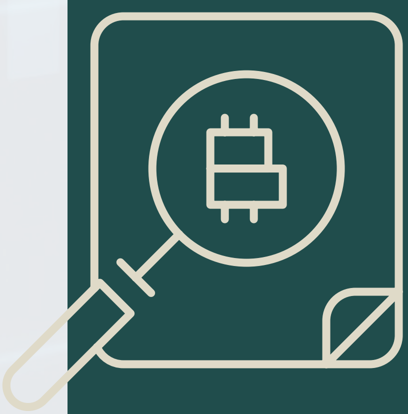
Yves Longchamp
Head of Research
SEBA Bank AG

Kunal Goel
Research Analyst
B&B Analytics Private Limited

Chetan Kale
Research Analyst
B&B Analytics Private Limited

Contact

research@seba.swiss



Executive summary

- Ups and downs punctuated the crypto market in 2021. But if there is only one direction to remember, it is up!
- Bitcoin adoption is strong as institutional investors progressively enter the market. We expect this trend to continue this year. Macro and political events will provide volatility to its price, as was the case last year.
- A massive sector rotation characterised by the decline in payment and the rise of platform chains is occurring.
- Ethereum is expected to finish its transition to ETH 2.0 this year. This will be a significant change with profound implications for its ecosystem and tokenomics.
- Alternative platforms such as Polkadot and Cardano need to deliver on their promises. Applications and user growth will be determinants.
- Decentralised finance (DeFi) applications trade at cheap valuations after a mixed performance last year. Developments in this sector may bring them back to light in 2022.

Table 1: Price performance in USD of the assets in coverage universe as of 31 December 2021

Days	SEBAX®*	BTC	LTC	XLM	ETH	ADA	DOT	UNI	YFI	SNX	AAVE	LINK
365/SI	199%	60%	17%	109%	399%	622%	188%	232%	45%	-24%	190%	75%
180	43%	31%	1%	0%	59%	-10%	67%	-18%	-1%	-36%	-8%	2%
90	-1%	-3%	-14%	-16%	9%	-42%	-17%	-35%	3%	-50%	-19%	-27%
60	-22%	-24%	-26%	-27%	-15%	-33%	-47%	-33%	-5%	-47%	-21%	-38%
Dec 2021	-19%	-19%	-30%	-21%	-21%	-16%	-30%	-19%	12%	-28%	-1%	-23%

* SEBAX® Index
Source: SEBA Bank, Coinmetrics

Crypto is at a crucial juncture where it must deliver on its high expectations even under macroeconomic uncertainty.

1.
Introduction

Ups and downs punctuated the crypto market in 2021. But if there is only one direction to remember, it is up! According to the SEBAX index, an index representing more than 80% of the total market capitalisation, cryptocurrency prices tripled last year. The crypto market made fresh all-time highs as awareness, adoption, and use cases grew manifold.

The tripling of the market occurred despite a broad correction in the market in December. Major currencies dropped by about 20% last month. Typically, volatility is elevated at the end of the year as options contracts expire and traders book losses for tax purposes. Additionally, there was added selling pressure as large exchanges, Huobi and OKEx, had to wind down their operations in China.

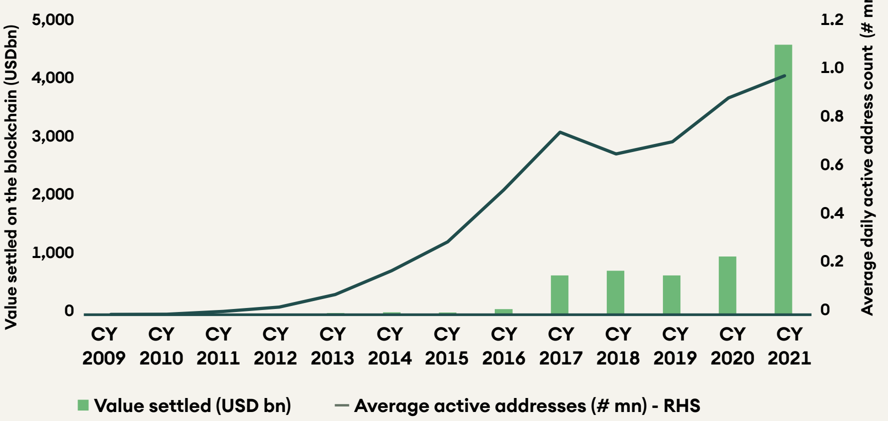
Our first report of 2022 is an excellent time to reflect on what happened last year and share our thoughts for 2022. But now, at the beginning of the year, crypto stands at a crucial juncture where it must deliver on its high expectations even as macro uncertainty looms.

2.
Bitcoin

Bitcoin experienced a tremendous year in many respects. It became a legitimate investable asset for large financial institutions and fund managers. It also marked history when El Salvador adopted it as a legal tender.

Data supports bitcoin's rising adoption. Bitcoin transaction value increased by a staggering 367% year on year to USD 4.7 trillion. The number of active addresses, a proxy for the number of direct users, was just short of 1 million growing by 10% compared to 2020.

Figure 1: Value settled and average active addresses grew in 2021



Source: SEBA Bank, Coinmetrics

The Lightning Network (LN) – a scalable solution for bitcoin payment – that came to light after El Salvador adoption of bitcoin as a legal tender also shows a substantial increase in utilisation. The capacity of LN increased from about 1,000 bitcoins a year ago to 3,300 at the time of writing.

In line with the adoption trend described above, the price of bitcoin increased from USD 29,023 on 1 January 2021 to USD 46,355 on 31 December, a performance of 60%. During the year, bitcoin price looked like a roller-coaster, reaching a first all-time high at USD 64,000 in April, dropping to below USD 30,000 in July, recovering quickly to a second all-time high of USD 68,000 in November and declining to USD 46,355 on new year's eve. Both tops coincided with important announcements. The first one was the public listing of Coinbase, and the second was the US inflation data printing above 6% for the first time since the early 1980s.

On a different topic, an interesting relationship emerged last year between the price of bitcoin and the US 10-year treasury yields. There is a positive relationship between them, meaning that when yields increase, government bond prices decline, bitcoin price increases. There are two ways to figure out the mechanism at work behind this relation. Either bitcoin acts as an additional risk-on asset, or it is a hedge against inflation. This parallel development, whether it holds further in 2022, will be worth looking at carefully as the Fed promised to raise rates this year to contain inflation.

Figure 2: Bitcoin and US-treasury yields have shown a positive relationship in 2021

Source: SEBA Bank, Coinmetrics

While macro and political factors will impact bitcoin this year, their impact should be short-lived. Structurally, the growing adoption trend is robust and likely to strengthen further in 2022. The rising number of financial institutions ready to offer financial products on bitcoin, and more generally cryptocurrencies, to retail and institutional investors, will boost demand.

Finally, regulatory frameworks are developing. Besides Switzerland that introduced a DLT law in February last year, the European Union is preparing a Market in Crypto-Assets (MiCA) regulation for 2022 or 2023. In the United States, there is not much visibility on the development of a framework, but there is no doubt it will build one. Besides these frameworks, the interest of central banks in developing Central Bank Digital Currencies (CBDC) and of the Bank of International Settlement (BIS) and its innovation hub, the G20 and the Financial Action Task Force (FATF) to provide a comprehensive set of rules for stablecoins, the gateway to cryptocurrencies, is paving the way to the integration of traditional and decentralised finance.

3.
Alternative Payment Chains

Payment chains, in general, are losing steam. While bitcoin (BTC) remains the largest cryptocurrency measured by its market capitalisation, its share has eroded massively, from 68% a year ago to a mere 40% today!

This movement is general as alternative payment chains have fallen in the ranking. Litecoin (LTC) dropped from the 4th to the 21st position, Ripple (XRP) from the 5th to the 8th, Bitcoin Cash (BCH) from the 7th to the 26th, Bitcoin SV (BSV) from the 13th to the 63rd and Lumen (XLM) from the 14th to the 29th. The only exception is DOGE, which moved from the 26th to the 12th position.

This relative decline is the conjunction of two factors, the rise of platforms and of stablecoins. Some platforms have become so popular – Ethereum, for instance – that their cryptocurrencies have become a payment token in addition to being utility tokens.

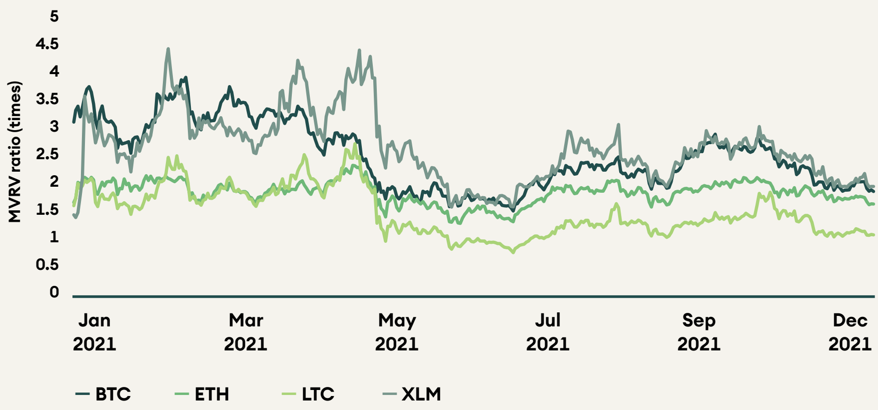
The network value to transaction value (NVT) ratio is a fundamental valuation tool to compare payment chains. It compares the market capitalisation to the amount of value settled on-chain. A low value signifies a cheap valuation. The NVT ratios for BTC, ETH, and LTC have converged to a much smaller range over the year. The NVT ratio for LTC is the lowest at 38, followed by ETH and BTC at 44 and 49, respectively. According to this metric, they all look attractive and priced similarly. The NVT ratio for XLM stays significantly higher at 197.

Figure 3: NVT ratios of BTC, ETH, and LTC have converged over the year

Source: SEBA Bank, Coinmetrics

Another insightful metric to compare payment chains is the market value to realised value (MVRV) ratio. The MVRV ratio indicates the degree of profitability of holders by comparing the current market capitalisation to the sum of the value of all native coins when they were last moved on-chain. A higher MVRV ratio means that holders enjoy a higher degree of profit and are likelier to sell. Similar to the NVT ratio, the MVRV ratios of all coins have converged to a tighter range. They trade well below their yearly averages, with LTC being the cheapest at 1.1, followed by ETH at 1.7. BTC and XLM trade at MVRV ratios of 1.9 and 2.0, below their yearly average of 2.5 and 2.7, respectively. According to this metric, payment tokens look attractive.

Figure 4: MVRV ratios of all chains trade below their yearly averages

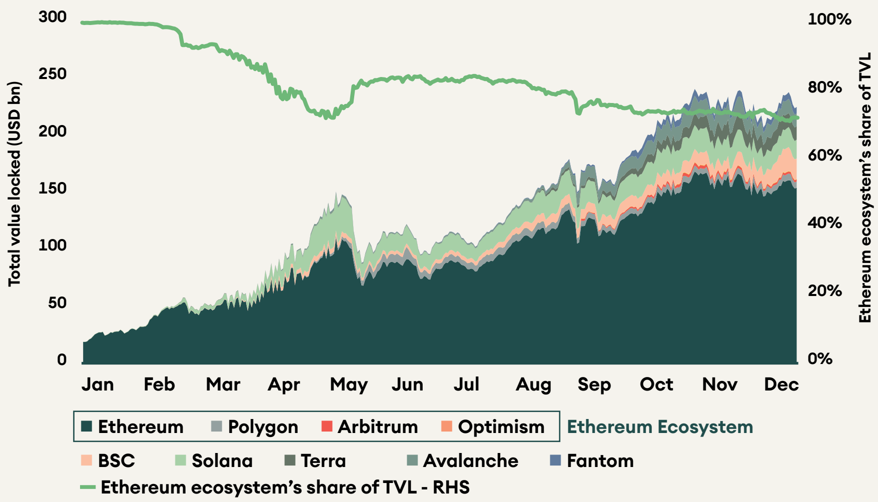


Source: SEBA Bank, Coinmetrics

4.
Ethereum

Ethereum performed well last year as it benefited from the innovation in smart contract use-cases. DeFi, NFTs, stablecoins, and metaverse all originated from Ethereum-based dapps. As a result, ETH prices increase by almost 400%. However, it has suffered from its success. Through most of the year, transaction costs on Ethereum have remained high as demand for block space has outpaced the supply. As a result, Ethereum has gradually lost market share to competing smart contract platforms like Terra and Binance Smart Chain (BSC). For Ethereum to succeed in 2022 and stop losing market share, it must complete the merge to Ethereum 2.0. The merge will transition Ethereum from proof-of-work to proof-of-stake, improve throughput, and reduce gross inflation by 90% by removing miner rewards. It will be a significant upgrade to both technology and tokenomics. The first testnet for the merge, Kintsugi, went live in December, and the mainnet upgrade is expected in Q1/Q2 2022.

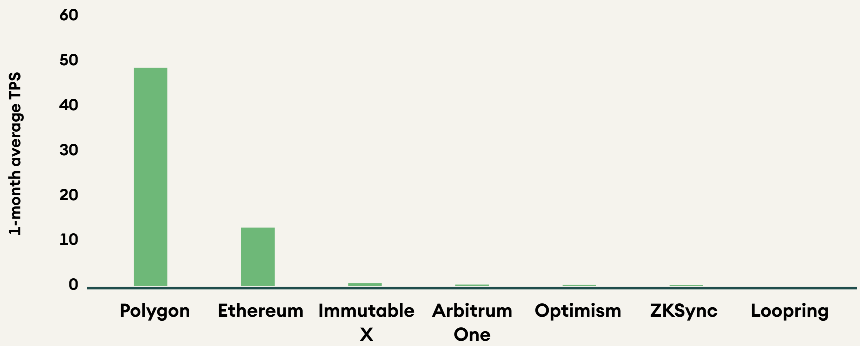
Figure 5: Ethereum lost ~30% TVL market share to competing platform chains



Source: SEBA Bank, Defi Llama

Ethereum is also pursuing a rollup centric strategy to meet the demand for block space. We covered the different scaling solutions for Ethereum in our investor education publication, The Bridge. However, other than Polygon's sidechain, the other scaling solutions still only do a fraction of the transactions of the mainnet. Low awareness, poor user experience, high cost of bridging, and throttled throughput impede their growth. Along with Ethereum 2.0, these rollups must mature in 2022 for Ethereum to compete against high throughput chains like Solana and Avalanche.

Figure 6: Scaling solutions for Ethereum are still in their infancy



Source: SEBA Bank, ethtps.info

5.
Alternative Platform Chains

Polkadot and Cardano have, perhaps, the most to prove in 2022. By the end of 2021, they have finally become technologically ready to support parachains and smart contracts, respectively. From here, developer adoption and user growth will determine their success.

For Polkadot, the first round of parachain auctions has concluded, connecting five layer-1 smart contract platforms to its interoperable layer-0 relay chain. The success of Polkadot will depend on the growth and adoption of these parachains in 2022.

Table 2: Winners of the first round of parachain auctions on Polkadot

Project	Description	DOT Bonded (mn)
Acala	DeFi hub	32.5
Moonbeam	EVM-compatible platform chain	35.8
Astar	Layer-2 platform hub	10.3
Parallel Finance	Money market and staking protocol	10.8
Clover Finance	Cross-chain platform	9.8

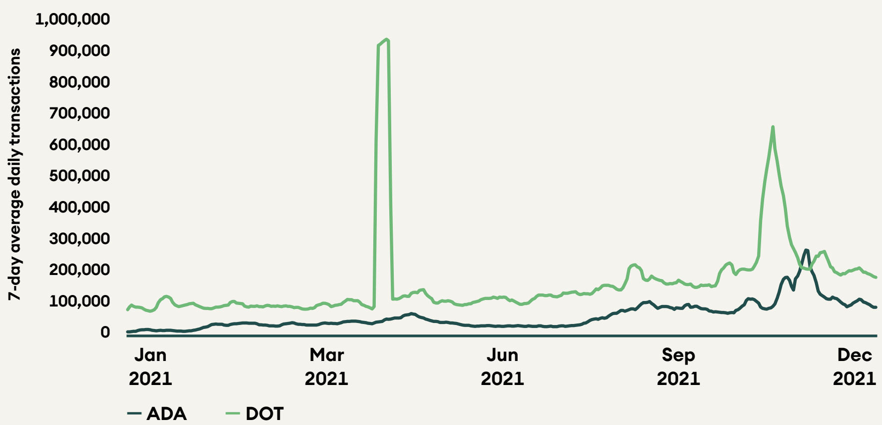
Source: SEBA Bank, project websites, parachains.info

Polkadot's parachain auction system has a good tokenomic design that effectively reduces the amount of DOT in circulation. The first round of auctions has already bonded 99.2 million DOT, locking 10% of the circulating supply for 96 weeks. There are expected to be a total of 100 parachains, and as these auctions continue, more DOT will be locked away. With a 50% staking ratio target, and a significant amount locked in parachains, the free DOT supply is likely to be in the low double digits after the auctions conclude.

Cardano made important technological progress in 2021, finally enabling smart contracts. However, even though smart contracts are now technically possible on Cardano, essential developer tooling required to work with its unique architecture is still under development. In addition, its unique e-UTXO accounting model and choice of programming language, Haskell, have been a hurdle for smart contract development. Even after four months of smart contract launch, it still awaits the launch of its first dapp on the mainnet.

To compare the adoption of the two platforms, the number of transactions is a good indicator. The number of transactions for both chains should grow significantly as new dapps launch and new users join. There were on average 215,000 transactions on Polkadot in December, almost twice as much as on Cardano.

Figure 7: Transaction count on Polkadot is more than two times that on Cardano

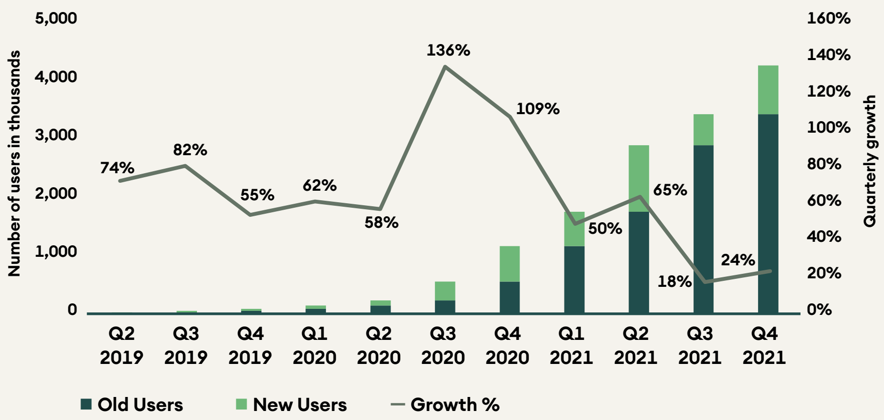


Source: SEBA Bank, Coinmetrics

6.
Decentralised Finance

Decentralised finance recorded mixed performance in 2021. Earlier in the year, there was euphoria regarding the possibilities on DeFi, but it did not meet those expectations in delivery. User growth has been stagnant, with changing narratives and high transaction costs being the primary roadblock. However, Q4 did see a mild recovery in user growth, adding 841,000 new users.

Figure 8: DeFi user growth has seen an improvement in Q4 2021



Source: SEBA Bank, Dune Analytics

For DeFi to reach new highs in 2022, developers need to continue building and delivering product improvements. Projects are already pursuing a multi-chain strategy boosting user activity and revenues. Institutional adoption of DeFi platforms will be another catalyst for their growth.

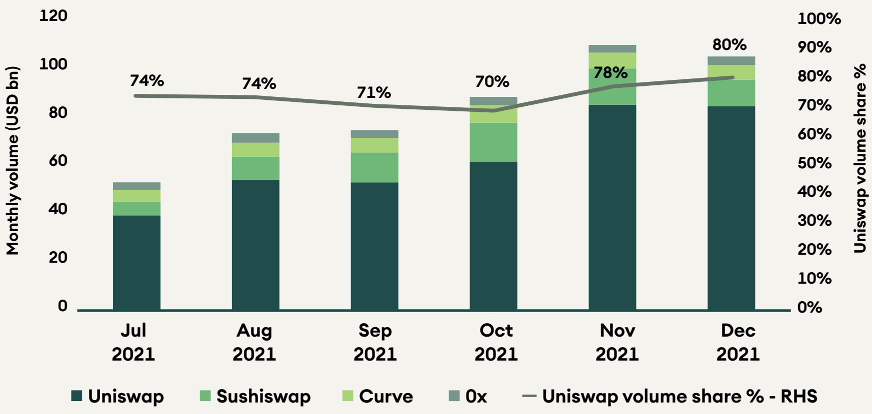
Table 3: DeFi products are following the users and going multi-platform

Protocol	Description	Ethereum	Optimism	Arbitrum	Polygon	Other chains
Uniswap	Decentralised exchange	✓	✓	✓	✓	
ChainLink	Oracle	✓	✓	✓	✓	Present on Binance Smart Chain. Will be launching on Polkadot, Cardano, and more
Aave	Lending and borrowing	✓			✓	Avalanche
Synthetix	Derivatives	✓	✓	✓		
Yearn Finance	Asset management	✓				Present on Fantom. Experimental vaults on Binance Smart Chain, Polygon, and Arbitrum

Source: SEBA Bank, Project websites

Uniswap launched their decentralised exchange on Polygon (MATIC), adding about USD 50 million to its daily volume. In December, Uniswap's market share grew to 80%, among the top four decentralised exchanges on Ethereum.

Figure 9: Uniswap had monthly volumes of USD 85 billion with a market share of 80%



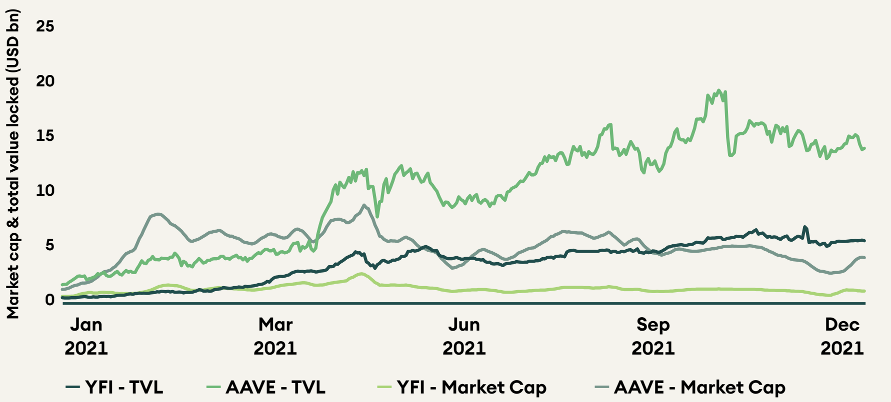
Source: SEBA Bank, Dune Analytics

In the past two Digital Investors, we have noted how Aave and Yearn Finance have been trading at significant discounts to their earlier valuations. On the back of improvements in tokenomics and protocol buybacks from its treasury, Yearn Finance recovered in December.

Aave price remained broadly unchanged in December. Its v3 upgrade will provide higher capital efficiency for users and improved risk management for the protocol. A proposal to add SEBA Bank as a whitelister for Aave's institutional platform, Aave Arc, has also been submitted. Further, the Aave team is building a social network and a mobile wallet, which will help onboard more users to their platform.

Both projects' market capitalisation to total value locked ratio continues to stay depressed, indicating attractive valuations. Aave trades at 0.3, less than half of the yearly average of 0.7. Similarly, Yearn Finance trades at 0.2, less than half of its yearly average of 0.5.

Figure 10: YFI and AAVE TVL growth has outpaced market cap growth



Source: SEBA Bank, DeFi Llama, Coinmetrics

7. Conclusion

2021 was an exciting year for cryptocurrencies as this asset class gradually entered mainstream consciousness and made new highs. There were ups and downs in crypto prices, but the upward trend has remained intact. Exciting new themes like DeFi, NFTs, metaverse, and stablecoins captured the attention of investors. At the beginning of 2022, the crypto ecosystem stands at a crucial juncture.

Payment chains are losing steam to the benefit of platform chains and stablecoins. We expect this trend to continue this year.

Among the platform, Ethereum is expected to finish its transition to ETH 2.0 and to offer new possibilities and better tokenomics. Polkadot and Cardano need to fulfil their promises. The number of applications to be developed on these platforms and the user growth will be determinant.

Finally, DeFi applications trade at cheap valuations after a mixed year. Developments in this sector may bring them back to light in 2022.

Disclaimer

This document has been prepared by SEBA Bank AG ("SEBA") in Switzerland. SEBA is a Swiss bank and securities dealer with its Head Office and legal domicile in Switzerland. It is authorized and regulated by the Swiss Financial Market Supervisory Authority (FINMA). This document is published solely for information purposes; it is not an advertisement nor is it a solicitation or an offer to buy or sell any financial investment or to participate in any particular investment strategy. It is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or would subject SEBA to any registration or licensing requirement within such jurisdiction.

No representation or warranty, either express or implied, is provided in relation to the accuracy, completeness or reliability of the information contained in this document, except with respect to information concerning SEBA. The information is not intended to be a complete statement or summary of the financial investments, markets or developments referred to in the document. SEBA does not undertake to update or keep current the information. Any statements contained in this document attributed to a third party represent SEBA's interpretation of the data, information and/or opinions provided by that third party either publicly or through a subscription service, and such use and interpretation have not been reviewed by the third party.

Any prices stated in this document are for information purposes only and do not represent valuations for individual investments. There is no representation that any transaction can or could have been effected at those prices, and any prices do not necessarily reflect SEBA's internal books and records or theoretical model-based valuations and may be based on certain assumptions. Different assumptions by SEBA or any other source may yield substantially different results.

Nothing in this document constitutes a representation that any investment strategy or investment is suitable or appropriate to an investor's individual circumstances or otherwise constitutes a personal recommendation. Investments involve risks, and investors should exercise prudence and their own judgment in making their investment decisions. Financial investments described in the document may not be eligible for sale in all jurisdictions or to certain categories of investors. Certain services and products are subject to legal restrictions and cannot be offered on an unrestricted basis to certain investors. Recipients are therefore asked to consult the restrictions relating to investments, products or services for further information. Furthermore, recipients may consult their legal/tax advisors should they require any clarifications. SEBA and any of its directors or employees may be entitled at any time to hold long or short positions in investments, carry out transactions involving relevant investments in the capacity of principal or agent, or provide any other services or have officers, who serve as directors, either to/for the issuer, the investment itself or to/for any company commercially or financially affiliated to such investment.

At any time, investment decisions (including whether to buy, sell or hold investments) made by SEBA and its employees may differ from or be contrary to the opinions expressed in SEBA research publications.

Some investments may not be readily realizable since the market is illiquid and therefore valuing the investment and identifying the risk to which you are exposed may be difficult to quantify. Investing in digital assets including crypto assets as well as in futures and options is not suitable for every investor as there is a substantial risk of loss, and losses in excess of an initial investment may under certain circumstances occur. The value of any investment or income may go down as well as up, and investors may not get back the full amount invested. Past performance of an investment is no guarantee for its future performance. Additional information will be made available upon request. Some investments may be subject to sudden and large falls in value and on realization you may receive back less than you invested or may be required to pay more. Changes in foreign exchange rates may have an adverse effect on the price, value or income of an investment. Tax treatment depends on the individual circumstances and may be subject to change in the future.

SEBA does not provide legal or tax advice and makes no representations as to the tax treatment of assets or the investment returns thereon both in general or with reference to specific investor's circumstances and needs. We are of necessity unable to take into account the particular investment objectives, financial situation and needs of individual investors and we would recommend that you take financial and/or tax advice as to the implications (including tax) prior to investing. Neither SEBA nor any of its directors, employees or agents accepts any liability for any loss (including investment loss) or damage arising out of the use of all or any of the Information provided in the document.

This document may not be reproduced or copies circulated without prior authority of SEBA. Unless otherwise agreed in writing SEBA expressly prohibits the distribution and transfer of this document to third parties for any reason. SEBA accepts no liability whatsoever for any claims or lawsuits from any third parties arising from the use or distribution of this document.

Research will initiate, update and cease coverage solely at the discretion of SEBA. The information contained in this document is based on numerous assumptions. Different assumptions could result in materially different results. SEBA may use research input provided by analysts employed by its affliate B&B Analytics Private Limited, Mumbai. The analyst(s) responsible for the preparation of this document may interact with trading desk personnel, sales personnel and other parties for the purpose of gathering, applying and interpreting market information The compensation of the analyst who prepared this document is determined exclusively by SEBA.

Austria: SEBA is not licensed to conduct banking andfinancial activities in Austria nor is SEBA supervised by the Austrian Financial Market Authority (Finanzmarktaufsicht), to which this document has not been submitted for approval. France: SEBA is not licensed to conduct banking and financial activities in France nor is SEBA supervised by French banking and financial authorities. Italy: SEBA is not licensed to conduct banking and financial activities in Italy nor is SEBA supervised by the Bank of Italy (Banca d'Italia) and the Italian Financial Markets Supervisory Authority (CONSOB - Commissione Nazionale per le Società e la Borsa), to which this document has not been submitted for approval. Germany: SEBA is not licensed to conduct banking and financial activities in Germany nor is SEBA supervised by the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht), to which this document has not been submitted for approval. Hong-Kong: SEBA is not licensed to conduct banking and financial activities in Hong-Kong nor is SEBA supervised by banking and financial authorities in Hong-Kong, to which this document has not been submitted for approval. This document is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in Hong-Kong where such distribution, publication, availability or use would be contrary to law or regulation or would subject SEBA to any registration or licensing requirement within such jurisdiction. This document is under no circumstances directed to, or intended for distribution, publication to or use by, persons who are not "professional investors" within the meaning of the Securities and Futures Ordinance (Chapter 571 of the Laws of Hong Kong) and any rules made thereunder (the "SFO"). Netherlands: This publication has been produced by SEBA, which is not authorised to provide regulated services in the Netherlands. Portugal: SEBA is not licensed to conduct banking and financial activities in Portugal nor is SEBA supervised by the Portuguese regulators Bank of Portugal "Banco de Portugal" and Portuguese Securities Exchange Commission "Comissao do Mercado de Valores Mobiliarios". Singapore: SEBA is not licensed to conduct banking and financial activities in Singapore nor is SEBA supervised by banking and financial authorities in Singapore, to which this document has not been submitted for approval. This document was provided to you as a result of a request received by SEBA from you and/or persons entitled to make the request on your behalf. Should you have received the document erroneously, SEBA asks that you kindly destroy/delete it and inform SEBA immediately. This document is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in Singapore where such distribution, publication, availability or use would be contrary to law or regulation or would subject SEBA to any registration or licensing requirement within such jurisdiction. This document is under no circumstances directed to, or intended for distribution, publication to or use by, persons who are not accredited investors, expert investors or institutional investors as declned in section 4A of the Securities and Futures Act (Cap. 289 of Singapore) ("SFA"). UK: This document has been prepared by SEBA Bank AG ("SEBA") in Switzerland. SEBA is a Swiss bank and securities dealer with its head offce and legal domicile in Switzerland. It is authorized and regulated by the Swiss Financial Market Supervisory Authority (FINMA). This document is for your information only and is not intended as an offer, or a solicitation of an offer, to buy or sell any investment or other specific product.

SEBA is not an authorised person for purposes of the Financial Services and Markets Act (FSMA), and accordingly, any information if deemed a financial promotion is provided only to persons in the UK reasonably believed to be of a kind to whom promotions may be communicated by an unauthorised person pursuant to an exemption under the FSMA (Financial Promotion) Order 2005 (the "FPO"). Such persons include: (a) persons having professional experience in matters relating to investments ("Investment Professionals") and (b) high net worth bodies corporate, partnerships, unincorporated associations, trusts, etc. falling within Article 49 of the FPO ("High Net Worth Businesses"). High Net Worth Businesses include: (i) a corporation which has called-up share capital or net assets of at least GBP 5 million or is a member of a group in which includes a company with called-up share capital or net assets of at least GBP 5 million (but where the corporation has more than 20 shareholders or it is a subsidiary of a company with more than 20 shareholders, the GBP 5 million share capital / net assets requirement is reduced to GBP 500,000); (ii) a partnership or unincorporated association with net assets of at least GBP 5 million and (iii) a trustee of a trust which has had gross assets (i.e. total assets held before deduction of any liabilities) of at least GBP 10 million at any time within the year preceding the promotion. Any financial promotion information is available only to such persons, and persons of any other description in the UK may not rely on the information in it. Most of the protections provided by the UK regulatory system, and compensation under the UK Financial Services Compensation Scheme, will not be available.

SEBA BANK

SEBA Bank AG
Kolinplatz 15 • 6300 Zug • Switzerland • info@seba.swiss • seba.swiss