Bizantine Capital 

2021 Annual Report

January 1st – December 31st

Dear Partners,

We are pleased to inform you that Bizantine returned **+22.63% in Q4 of 2021**, totaling a return of **+331.58% in 2021** (January 2021 – December 2021). We have now returned **+2,626.39% since our inception on April 1, 2019**. In Q4, we outperformed Bitcoin by 12.83% and the S&P500 by 32.03%. In 2021, we outperformed Bitcoin by 270.40% and the S&P500 by 304.69%. Since inception, we have outperformed Bitcoin by 1,587.79% and the S&P500 by 2,560.16%.

10/1/2021 - 1/1/2022 (Fourth Quarter):

Bizantine Capital	**+22.63%**
Bitcoin	+9.80%
FAANG	+5.71%
CSI 300 Index	+1.52%
S&P 500 Index	+9.39%

1/1/2021 - 1/1/2022 (2021):

Bizantine Capital	**+331.58%**
Bitcoin	+61.18%
Tesla (TSLA)	+49.75%
FAANG	+27.18%
CSI 300 Index	-5.20%
S&P 500 Index	+26.89%

4/1/2019 - 1/1/2022 (Inception):

Bizantine Capital	**+2626.39%**
Bitcoin	+1038.60%
FAANG	+130.59%
CSI 300 Index	+24.32%
S&P 500 Index	+66.23%

Bizantine Capital

Avg. Daily Returns	0.59%
Stdev. Daily Returns	5.58%
Sharpe Ratio (Annualized)	2.000

S&P 500 Index

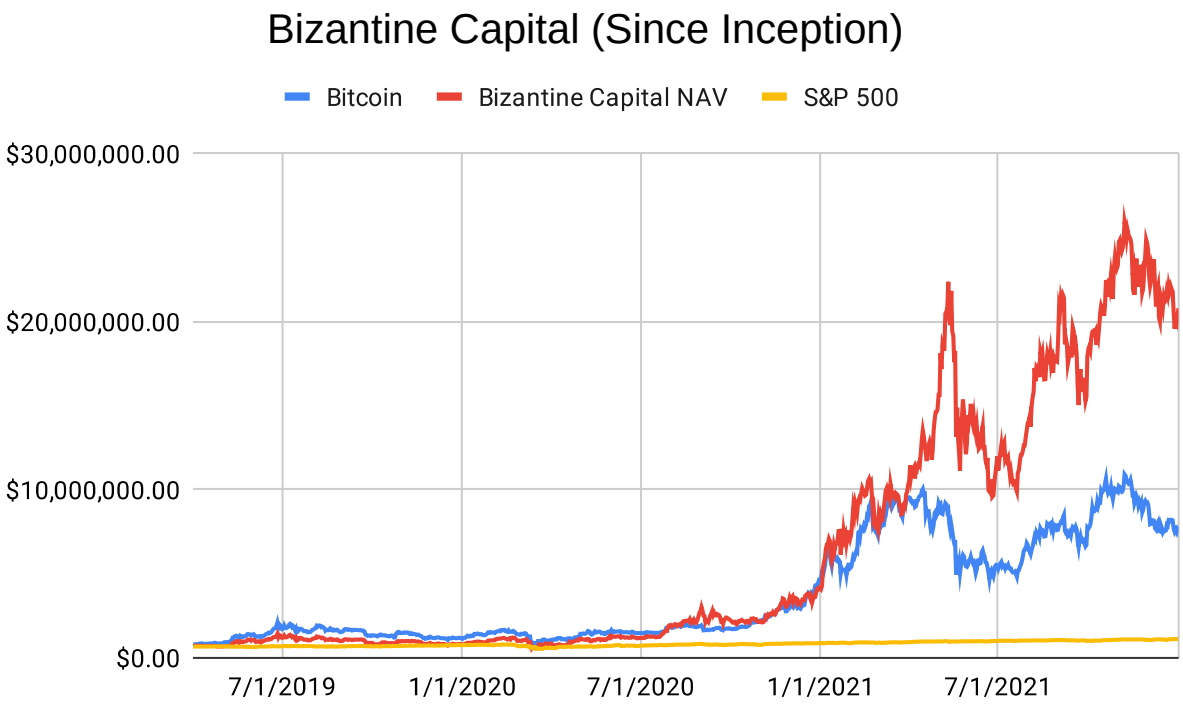
Avg. Daily Returns	0.07%
Stdev. Daily Returns	0.69%
Sharpe Ratio (Annualized)	1.875

FAANG

Avg. Daily Returns	1.67%
Stdev. Daily Returns	1.37%
Sharpe Ratio (Annualized)	1.309

Shenzhen CSI 300 Index

Avg. Daily Returns	0.03%
Stdev. Daily Returns	1.12%
Sharpe Ratio (Annualized)	0.544



On Market Efficiency

While we have garnered two strong consecutive years, returning +483% in 2020 and now +331% in 2021, we found ourselves significantly more frustrated this year, namely with the market's outstanding pricing inefficiencies (which are now painfully obvious but remain unsolved). The Efficient Market Hypothesis states that asset prices reflect all available information. The implication of the Efficient Market Hypothesis is that it should be impossible to consistently beat the market on a risk-adjusted basis, as market prices should only react to new information, which, by definition, no one cannot yet know.

After 2021, we have a different perspective: the global economy cannot perfectly propagate new information. Rather, information propagates at different speeds, depending on the complexity and implications of that information. The complexity of new information is measured by the amount of learning required to obtain that information. The implications of that information are the magnitude of change to the current global economy caused by that information. If information is both complex and has immense implications, it can take years to propagate throughout the market. The Efficient Market Hypothesis is thus not a hypothesis at all, but rather a measurement: how much more efficient than the market can an investor be.

The next best example to the paradigm shift caused by our investments is Michael Burry's housing market short in 2005. Burry sat on his trade for two and half years. We view ourselves as significantly more fortunate than Burry, who unsuccessfully shorted Bitcoin and has completely missed crypto as an asset class. From 2005 through 2007, Burry paid significant premiums while watching the value of his investments cater, despite knowing for a fact that he had discovered information that the rest of the market had not. We pay no premiums and have

watched the value of our portfolio rise significantly, despite knowing for a fact that the market has still not yet discovered information that we know.

Pricing Inefficiencies within the Crypto Industry

The cryptocurrency industry can be further categorized into two subsectors: public blockchain technology itself (referred to as 'layer-one'; layer-one assets are akin to commodities) and the businesses built leveraging public blockchain technology (referred to as 'layer-two'; layer-two assets are akin to equities). Assets, both at the layer-one and layer-two level, are supposed to be valued based on their current and future expected utility, where utility is typically measured via revenue, profits, free cashflow, and additional tangential metrics, depending on the asset type and the perspective of the investor. There remain severe market pricing inefficiencies at both layers of the cryptocurrency industry, with both our layer-one and layer-two holdings severely undervalued. Based on current and future expected utility, we believe our portfolio should be valued at over ten times its current value. While perhaps a bold statement, we believe it to be conservative.

Inefficiencies within the Crypto Industry: Layer-One

Today, Ethereum earns over 50x the revenue of all its competitors combined (a blockchain's revenue is measured in transaction fees—transaction fees are to blockchains as revenue is to corporations). At face value, Ethereum's current utility suggests it should be worth ~50x the value of the aggregate of its competitors. However, Ethereum competitors hold a combined market capitalization of $1.2trn, 3.3x larger than Ethereum's market capitalization of $365bn. Either the market is not aware of the discrepancy in the current utility of layer-ones, or the market believes that Ethereum's future expected utility is less than 1/100 of its competitors.

And yet, a rational market would price Ether's future expected utility as infinitely times higher than its competitors, all of which will go to zero or pivot to becoming Ethereum-centric businesses. We wrote extensively about Ethereum's future expected utility in ETH, The World's Most Valuable Asset (19.7k views, our best performing public piece). To summarize the long-form piece, Ethereum has four interconnected moats (the network effects of liquidity, the network effects of developer tooling, the economies of scale of miner security, and the network effects of money) that render it impossible for any competing chain to beat Ethereum in what will be a winner-take-all market (due to the aforementioned moats), so long as Ethereum continued to lead its competitors in innovation (measured by upgrades to the network that further cement these moats).

And Ethereum continues to lead its competitors in innovation, with two prominent 2022 developments that will create a supply shock alongside an exponential demand increase. In 2022, Ethereum will scale at both the consensus layer, via the incoming upgrade from Proof of Work to Proof of Stake (Proof of Stake requires 99% less money to produce a block, thus significantly decreasing the costs of block production), and the application layer, via a scaling technology called rollups (Rollup adoption increased by over 100x in 2021, with many low-hanging upgrades still in progress, as we highlighted in Bizantine's Law, what we believe will become the Moore's Law of crypto).

Its incoming Proof of Stake upgrade will low Ether's inflation rate from 0.92% (its inflation rate is already lower than any non-sovereign commodity—from Bitcoin to gold) to approximately -3%, creating the first deflationary non-sovereign store of value in history. Additionally, after the upgrade Proof of Stake chain, Ether holders will be able to utilize their Ether to produce blocks, thus earning interest (~3% annually, which we will participate in and distribute to all Partners) of an asset that is deflationary. There has never been an asset with those characteristics in the history of global economics.

Alongside the incoming supply shock, the continued exponential adoption of rollups will cement Ethereum as the disruptor of every digital middleman globally. Rollups are currently becoming integrated across prominent centralized exchanges (i.e. Binance, FTX, and Crypto.com), with prominent applications already deploying on rollups due to rollups' compatibility with code already written for the Ethereum layer-one chain (A nod to developer tooling as an extremely strong moat.). All of this is happening simultaneously on a backdrop where the top 15 Ethereum layer-two's already earn more revenue than the next highest layer-one chain, Bitcoin. Thus, the discrepancy between the Ethereum ecosystem and every other ecosystem will only continue to grow, and it's already over 50 times bigger than everything else. The market's current pricing of layer-ones is completely non-sensical.

We recognized that Ethereum had beaten all of its competitors in February 2020. We did not expect to be two years ahead of the market in this regard, and yet here we are. In 2021, Ethereum's monthly revenue grew 11x, from $108mn ($1.3bn annualized) to $1.2bn ($14.4bn annualized). Its assets under management grew 8x, from $20bn to $160bn. 2022 will see larger growth of these numbers. By mid 2022, Ether will be 100x better than gold in terms of utility and scarcity. To meet gold's market capitalization would be 33x. Our 10x mispricing is conservative.

Inefficiencies within the Crypto Industry: Layer-Two

At the layer-two layer, there exists over $100bn of market capitalization stored in businesses that generate no revenue today and hold extremely low future expected income projections based on the lack of defensibility of their products (i.e. Chainlink, Shiba Inu, and Uniswap). Crypto investors still struggle to grasp what exactly a token is, with 2021 harboring the rebirth of utility tokens, staking tokens, and other tokens that provide no rights to cash flows.

Yearn, our layer-two holding, is valued at under $1bn USD, despite generating over $120mn in revenue (last three months annualized) at 80% operating margins, with a product that is extremely defensible due to its economies of scale in operation. Yearn boasts two prominent economies of scale, both within singular Yearn vaults and across the entire Yearn platform: 1) the more capital stored in a singular Yearn vault, the cheaper it is to move that capital per dollar on-chain to achieve yield, as the cost to move assets on-chain is fixed regardless of asset size; 2) the more capital stored across Yearn vaults in aggregate, the more likely Yearn can refund any on-chain hacks of a Yearn vault (the most pressing pain point for any layer-two business), as Yearn can utilize revenue from separate vaults to insure each other. The result is that Yearn is both cheaper and more secure to use than any of its competitors.

Additionally, Yearn's best-in-class developer talent continue to out-innovate its competitors, continuously adding new yield products and saving eight competing projects from hacks in 2021 (simply because they use other project's products and recognized faults that those teams missed). It is the only layer-two to be a fully on-chain decentralized autonomous organization, meaning that it has no off-chain entity attached to it, which further attracts the best Web3 developers. The best developers have no interest in wasting money and time on non-productive business costs, i.e. Human Resources or Legal, and instead can further incentivize the best talent to continue to join their platform and further add new lines of business.

In 2021, Yearn's revenue grew 12.85x, from $1.4mn in January to $18.4mn in December. It's assets under management grew 7.7x, from $553mn to $4.09bn. Its P/E ratio is approximately 13, even with such high growth and being only one and a half years old. Yearn is valued at about one-fifth of its competing layer-two asset managers based on current utility. The yield aggregator should have significantly higher future expected utility than them due to its aforementioned defensibility of its product and its best-in-class team. Because the team is the smartest in crypto, they recognize the YFI token's undervaluation and are working to further align incentives between revenue growth and long-term token adoption, with numerous proposals currently under review. Yearn is still poised to become the largest asset manager in the world as Ethereum becomes the world's global settlement layer, which again would render a 10x 2022 as conservative, given the valuations of competing on-chain and off-chain wealth managers (i.e. Berkshire Hathaway, BlackRock, and PIMCO).

Inefficiencies in the Macroeconomy

The macroeconomy is undergoing a restructuring from a dollar-centric world to a decentralized world, further emphasizing the mispricing of our portfolio (which is perfectly positioned for the change). The implications of the change are immense, as it impacts all asset classes. We wrote extensively about the impending change in The Restructuring of the American Economy, which we highly recommend reading.

The result of the restructuring will be a repricing of the real value of all asset classes—bonds, equities, real estate, and commodities—as a new world order forms to better efficiently allocate capital. The dollar standard will end. It will be much more painful for the West than the East (Asia now does over half of the world's GDP, but only accounts for 10% of its currency), but sovereign assets in the East still tend to be significantly over-levered, and so non-sovereign assets, specifically commodities, will perform the best in aggregate. This further excites us for Ethereum's and Yearn's 2022 outlook (While not a commodity, Yearn is one of the only truly non-sovereign businesses, while also being extremely innovative technologically.). It also excites us about Carbon as an investible commodity, which we wrote about more here, although the poor execution of a streamlined Carbon price has thus deterred us from entering a position with the fund.

Looking Forward

The longer the rest of the market takes to process that new information, the more patient those who hold that information must be; however, the further ahead those who hold that information

may go, with regards to planning for a world where that new information is pervasive. We're incredibly excited, as we believe Ethereum, Yearn, and Web3 as a whole will harbor a much more efficient financial system, as every business and product is downstream of the monetary layer, what Ethereum and Yearn solve. We have begun researching the markets we believe will benefit from Web3's adoption outside of our Web3 investments themselves, namely physical manufacturers, with biotech and climatetech as the ones we believe to be most exciting. The physical products we desire will finally receive the monetary investment and consequent human capital needed to become real. That's the beauty of a paradigm shift—while scary for those who are unprepared, they almost always harbor in a better world. That's why the world adopts the change. Thank you for giving us the opportunity to be at the forefront of it.

Sincerely,

Andrew Bakst March Zheng Roland Li