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ReStaking and Hong Kong Virtual Asset ETFs In-depth Analysis Report

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- *What's the OEV that prophecy machine tracks are exploding and projects like API3 are scrambling to solve?*
- *An objective look at Gala's new project, GalaMusic, and whether it can be "Regroup and start again"*
- *Read Vitalik's article on SSF's balance of decentralisation, security, and performance, and maybe you'll be relieved by ETH's performance*
- *Talking about Entangle, the interoperable infrastructure that's going to be issuing tokens soon*
- *Risk tips on Dynex and the feasibility of putting it on the ground*
- *Do we really need that many Layer2s? Where is the Singularity of Web3's Mass Adoption*
- *Things you need to know about the Bedrock upgrade of the OP mainnet on June 6*

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He has many years of experience in the financial industry and Crypto industry, focusing on risk management, specialising in various types of Crypto related analyses, and has extensive experience in risk control strategies, asset allocation and market monitoring.

• Summary

ReStaking:

Since 1 December 2020, when Ethereum's POS-based beacon chain was launched, the Ethereum Stakings Track was officially opened. To date, Ethereum stakings have gone through six stages of development, namely: **Native Staking** → **Staking-as-a-Service** → **Joint Staking** → **Liquid Staking** → **Decentralised Staking** → **Re-Staking**.

The Liquid Staking Token (LST) allows ethereum holders to stake in multiple DeFi agreements in order to receive a return. However, once LSTs are locked into a specific staking agreement, they cannot be traded or used as collateral for other DeFi operations. To address this liquidity problem, Liquidity ReStaking Tokens (LRT) were created.

LRTs unlock the liquidity of LSTs through the ReStaking process and increase the potential benefits by introducing a leverage mechanism. In addition, users have the option to maintain a higher degree of flexibility through a specific liquidity staking agreement rather than depositing the LST directly.

ReStaking can contribute to the security and decentralisation of the blockchain network while increasing the efficiency of capital utilisation.

Regulators have reservations about virtual assets

Staking activities:

Currently, cryptocurrency stakings face multiple regulatory challenges. Firstly, different laws in different countries make it difficult to apply existing regulations, increasing the risk of legality and compliance. Secondly, cryptocurrency staking is designed to be high-risk and highly volatile, making it easy for ordinary investors to suffer losses and requiring adequate risk warnings. In addition, staking may be used for money laundering, anonymity increases the difficulty of tracking funds. Staking bets may also affect supply and demand, leading to price manipulation. Finally, smart contract loopholes or failures may lead to loss of funds, need to ensure that the staking platform to take appropriate technical measures to protect the security and reliability of its system.

Comparison between Hong Kong and US Bitcoin ETFs:

There are significant differences between US and Hong Kong Bitcoin ETFs in terms of regulatory environment, investment targets, market participants and issuance procedures.

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• Introduction to Ethereum Staking

Since 1 December 2020, when Ethereum's PoS-based beacon chain went online, the Ethereum staking Track was officially launched, and on 15 September 2022, the Paris upgrade was completed, merging the beacon chain with the main chain to start the PoS era of Ethereum.

Moving from PoW to PoS doesn't mean you don't need to "work" on a node, just that before you didn't need permission to work on it, but now you need to "buy" the credentials to run a node, which means you need to deposit 32 ETH to activate the validator. The staking means that you need to deposit 32 ETH before you can activate the validator and become eligible to run a node and participate in the network consensus.

So you can roughly divide Ether staking into two roles: the money-paying validator and the working operator.

Six Stages of Development of Ethereum Staking

Native Staking → Staking-as-a-Service → Joint Staking → Liquid Staking → Decentralised Staking → Re-Staking

Native Staking: People pay their own money, operate their own nodes, and are responsible for all client hardware and software maintenance and costs.

- Advantages:

1. More secure and decentralised to the Ethereum network.
2. Earn 100% of the staking revenue, no middlemen.

- Disadvantages:

1. Technical threshold, need to know the technology to install and implement the client side.
2. Hardware threshold, you need to have a very good performance computer, at least 10MB network.
3. Funding threshold, you need to stake 32 ETH.
4. Penalty: If there is any problem with the software, hardware or network, which leads to instability of the node, the staked funds will be forfeited.
5. Risk issue, you need to manage the security of private key and auxiliary word by yourself and upgrade the node from time to time.

Staking-as-a-Service: People only need to pay to become a verifier, and the third party will be responsible for running the nodes.

- Advantage: eliminates the technical threshold, only money and no effort.

- Disadvantages:

1. Funding threshold, you need to stake 32 ETH.
2. Penalty: If there is any problem with the software, hardware or network, which leads to instability of the node, the staked funds will be forfeited, but the third party will not.
3. Risk issue, may have to trust the private key and auxiliary word to the third party.
4. Give a little profit to the third party.
5. Centralisation, threat to the security of the Ethereum.

Joint Staking: Multiple people gather 32 ETH group buyer qualifications, and a third party is responsible for running the node, which is equivalent to the nature of a mining pool. Correspondingly, the income from operating the node is also distributed according to the proportion of each person's staked funds.

- Advantages:

1. Eliminate the technical threshold, only money and no effort.
2. Lower the Funding threshold of 32 ETHs.

- Disadvantages:

1. Even though the threshold for contributing funds is lower, the funds are still locked in liquidity by staking.
2. Penalty: If there is any problem with the software, hardware or network, which leads to instability of the node, the staked funds will be forfeited, but the third party will not.
3. Risk issue, may have to trust the private key and auxiliary word to the third party.
4. Give a little profit to the third party.
5. Centralisation, threat to the security of the Ethernet.

Up to this point in the development of Ethernet staking, the three major thresholds of technology, hardware, and capital have been basically solved, and it seems to be close to saturation. But in reality, there is still a big problem that has not been solved, and that is the liquidity problem. Because in essence, no matter which of the above stakings, it takes up the validator's funds, and as an Ethereum node, you need to queue up every day to enter and exit, so it is impossible to use and withdraw funds at will, especially in Joint staking. So this is equivalent to locking the liquidity of the validator.

Liquid Staking (LST) : Multiple people to gather 32 ETH group purchase validator qualification, the third party to be responsible for running the node work, and the platform will be 1:1 to give stETH to release liquidity, on behalf of the project Lido, SSV, Puffer.

- Advantages:

1. Eliminate the technical threshold, only money and no effort.
2. Lower the Funding threshold of 32 ETHs.
3. Do not need to be locked liquidity, increase the rate of use of funds.

- Disadvantages:

1. Penalty: If there is any problem with the software, hardware or network, which leads to instability of the node, the staked funds will be forfeited, but the third party will not.
2. Risk issue, may have to trust the private key and auxiliary word to the third party.
3. Give a little profit to the third party.
4. Centralisation, threat to the security of the Ethernet. (The problem of centralisation can easily bring uneasiness and anxiety to the whole industry, so solving the problem of centralisation has become the next direction of the staking track.)

Decentralised Staking: Unrequired permission access for third party operators is achieved through DVT, remote signature and other technologies.

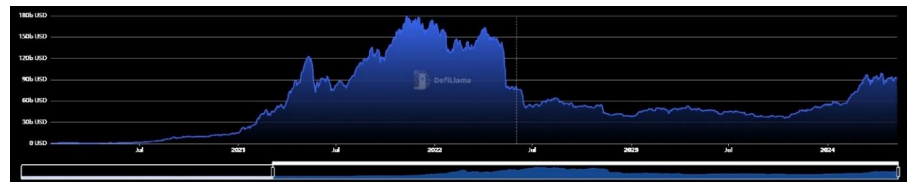
- Advantages:

1. Eliminate the technical threshold, only money and no effort.
2. Lower the Funding threshold of 32 ETHs.
3. Do not need to be locked liquidity, increase the rate of use of funds.
4. Increase the decentralisation of operators, reduce the risk of users' staked funds being forfeited, and increase the security of Ethereum.

- Disadvantage: gives a little profit to a third party.

Introduction to ReStaking

The concept of ReStaking has gradually developed with the popularity of PoS (Proof of Stake) systems. In a PoS system, staked funds are used for network security and consensus building, and PoS focuses more on capital lock-in than computing power compared to traditional PoW (Proof of Work). With the rise of DeFi, there is an increasing demand for capital efficiency, creating a need for Restaking.



The purpose of staking is to allow users to put a certain amount of money as security deposit and then become a node to maintain the security of a certain project, so as to earn revenue. If the node does something bad, the security deposit will be forfeited. Therefore, it is not only POS chains that need staking to ensure security, but also cross-chain bridges, Oracles, DAs, ZKPs, etc. All of them need staking to ensure the security of participants, which is professionally known as AVS (Active Verification Service).

For the project side, the purpose of Staking is to ensure security, and for the users, the purpose of Staking is to earn revenue, so the capital and the project is a 1:1 relationship, i.e., every time a new project is uploaded, it needs to start from 0 to find a way to let the users to spend their real money on the above Staking to ensure security. The money in the user's hand is limited, the project side will fight for its own security to the market for a limited amount of staked funds, and the user can only choose a limited number of projects to staking a limited number of funds to get a limited return.

The essence of ReStaking is to establish a shared staking pool to achieve the effect that a single capital can be staked for multiple projects at the same time to guarantee security, so that the relationship between staked funds and projects can be changed from 1:1 to 1:N, thus allowing users to obtain excessive returns and reducing the pressure of projects competing for staked funds.

Technical Principles of ReStaking

When exploring the principles of ReStaking technology, we need to understand how it is implemented in a blockchain network. The ReStaking technology is based on a system of smart contracts that programme and manage the status and privileges of the staked assets. On a technical level, ReStaking involves several key components:

- Staking Proof Mechanism

Which is a mechanism for verifying that a user has staked an asset, usually by means of tokenization, e.g. by creating a token corresponding to the original asset (e.g. stETH). The Proof of Staking mechanism provides the starting point for the entire ReStaking process, ensuring that the staking status of the user's assets can be verified and tracked up the chain through the tokenized Proof of Staking.

- Cross-Protocol Interoperability

ReStaking requires the flow of staked assets between different protocols and platforms, which needs to be supported by strong interoperability to ensure that assets can be moved safely and efficiently between systems. Cross-protocol interoperability ensures that staked assets can flow freely between different blockchain protocols. This is critical for enabling the ReStaking of assets across multiple projects, which relies on strong technical support to ensure safe and efficient asset transfers.

- Consensus Algorithm Extension

In POS systems, ReStaking may require modification or extension of existing consensus algorithms to support new staking and verification mechanisms. Consensus Algorithm Extension provides the necessary network security for ReStaking. By adapting or extending existing consensus algorithms, new staking and ReStaking behaviours can be supported while maintaining the decentralisation and security of the network.

- On-chain Governance and Automated Execution

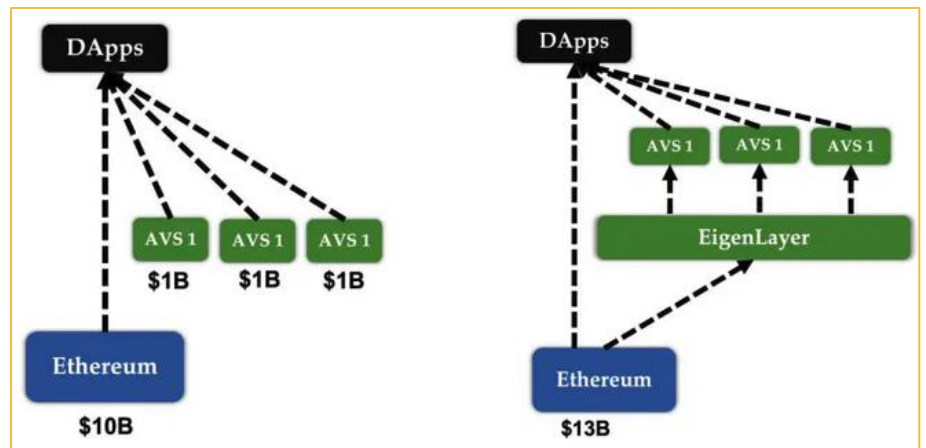
Smart Contracts also allow for on-chain governance, i.e. the automatic enforcement of contractual terms and conditions through code to manage the various conditions and rules in the ReStaking process. On-chain governance and automated enforcement through smart contracts automatically manage the rules and terms of the ReStaking process, enabling ReStaking operations to comply with predefined governance policies, while increasing transparency and predictability of operations.

- Security and Isolation Guarantees

To prevent security issues during the ReStaking process, it is necessary to ensure the isolation and security of assets as they are transferred between projects. This is usually achieved through encryption technology and specialised security modules to avoid potential security breaches. Security and isolation is an integral part of a ReStaking system, especially when assets are transferred across multiple staking agreements and projects, it is important to ensure that every step of the process is carried out in a secure environment to prevent inappropriate access to or misappropriation of assets.

Overall, the implementation of ReStaking requires not only a high degree of technical expertise, but also consideration of security of funds, transparency of operations and stability of the system. Through these technical means, ReStaking can contribute to the security and decentralisation of the blockchain network while improving the efficiency of capital utilisation.

The following diagram shows the path to realise Ethereum → Eigenlayer → AVS → DApps



Shown on the left is the previous staking method, assume that the Ethereum network has 10 Billion funds, which are staked to provide security for upper-layer applications. There are also some oracles, cross-chain bridges, etc., each of which is staked 1 Billion to provide services for the same application. At this time, the total is There are 13 Billion in funds.

However, some projects may not require so much funds. For example, when a company used servers in the past, it needed to purchase a cabinet from companies such as Lenovo and Dell to put in the company. However, the company's business is unstable and sometimes it cannot use up that much. capacity will cause a waste of costs. As a result, cloud computing services such as AWS and Alibaba Cloud emerged, allowing companies to purchase services on demand at any time. In this process, the actual hardware servers used behind the scenes have not actually been reduced, but they are all unified by AWS and Alibaba Cloud. maintenance and management.

The right part of the picture has a similar meaning. People put their funds into Ethereum, and an Eigenlayer staking layer appears on Ethereum. Eigenlayer provides security to oracles and cross-border machines that need stakings to provide security. Cross-chain bridge and others provide staked funds, and everyone works together to provide services for upper-layer applications. In this way, the utilization rate of funds is greatly improved.

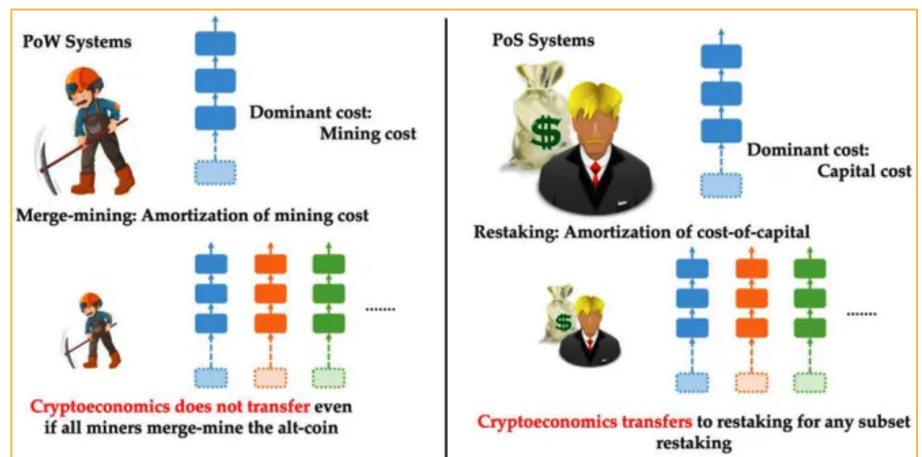
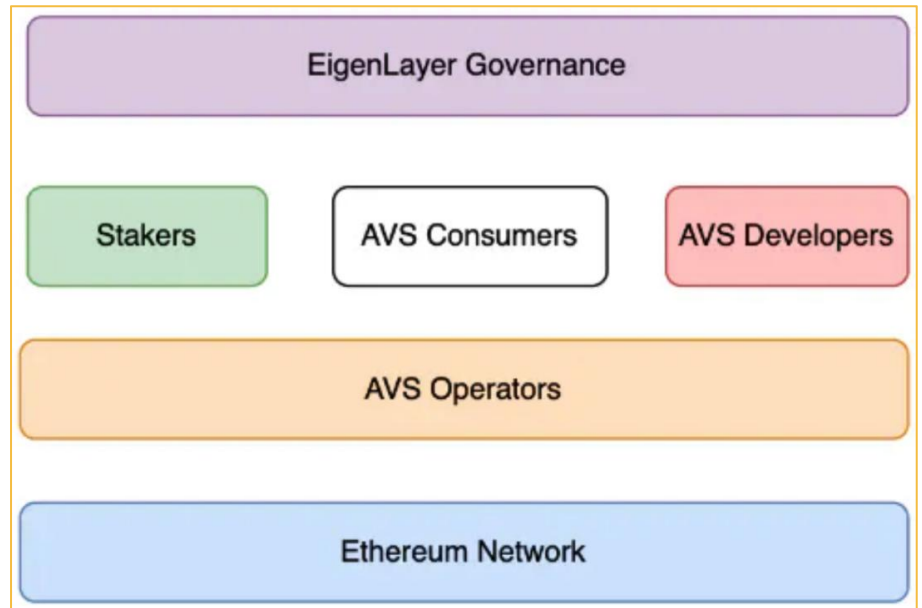
The essence of the concept of ReStaking is shared security. Ethereum is the most secure of the PoS chains, with tens of thousands of nodes, so there is a spillover of security, which gives it the ability to provide security to third parties, and then release that ability through ReStaking.

BNB has only 48 nodes, and other PoS chains have far less than the number of Ethernet nodes. Even if they really go for ReStaking, they are not capable of doing it, and they do not have security (compared to Ethernet), so how can they share security with other third parties? Even if they do, the third parties may not dare to use it.

The structure of Eigenlayer has four main layers, the bottom layer is the Ethernet main network, then is the unified AVS layer, and then there are three roles, the stakers, the consumer and the developer.

Stakers are those who fund the AVS to earn revenue, consumers are projects that need to use staking services to ensure security, developers are those who build their own security services on Eigenlayer, and at the top of the hierarchy is the governance layer of Eigenlayer.

Eigenlayer uses the SaaS model to build a secure staking trading market based on Ethereum. Users provide funds, operators provide nodes, and project parties provide demand and profits.



Market Application of ReStaking

As an advanced blockchain technology, ReStaking realizes multiple utilization and dynamic allocation of funds through smart contracts, significantly reducing the idle rate of funds and expanding the scope of funds utilization.

- Typical case study of ReStaking products

Platforms utilize ReStaking technology to provide liquidity staking solutions that enable users to ReStaking capital to other projects without revoking the original staking. These platforms enable the re-utilization of funds by creating new tokens or staking certificates to represent the user's act of ReStaking.

- Functions and impact of ReStaking in the marketplace

ReStaking increases the liquidity and flexibility of capital, allowing capital to flow freely between multiple items and effectively enhancing the efficiency of capital utilization in the market as a whole. In addition, ReStaking may have a significant impact on the price volatility of cryptocurrencies and the market pricing mechanism by adjusting the supply and demand of capital in the market. This increased capital mobility not only optimizes the allocation of resources, but also provides market participants with more opportunities for investment and income, and at the same time, the security and risk-resistance of the entire blockchain network is enhanced as a result of the wider application of capital.

In summary, the market application of ReStaking technology demonstrates its dual value in improving capital efficiency and enhancing network security, and plays a key role in promoting the widespread application and market maturity of blockchain technology.

Risks and Challenges of ReStaking

While ReStaking has brought many positive changes to the market, it has also introduced some new risks and challenges, particularly in terms of security and regulation.

- Security Risks

ReStaking transfers capital between multiple protocols through smart contracts, improves the efficiency of capital utilization, but also greatly increases the complexity and attack surface of the system. Each additional staking level increases a potential security vulnerability point. For example, if there is a loophole in the smart contract of a certain layer, or if the security measures of a certain project are insufficient, it may cause the capital to be attacked during the circulation process, and even trigger a chain reaction, affecting the security of the entire capital chain. In addition, the rapid flow of capital between different projects may conceal the true source and destination of the capital, thus increasing the risk of money laundering.

- Regulatory Challenges

ReStaking involves inter-agreement capital flows and multi-level financial activities, which not only increase the complexity of financial products, but also may evade or conflict with existing financial regulatory requirements.

For regulators, the traditional financial regulatory framework may be difficult to adapt to this new type of financial activity, especially in terms of transparency of funds, compliance, and anti-money laundering (AML) and customer identification (KYC). Regulators therefore need to develop new regulatory and technical tools to keep pace with technological developments to ensure compliance of ReStaking activities while protecting investor interests and market stability.

In summary, ReStaking, as an innovative financial operation, brings many benefits and at the same time demonstrates a complex risk structure. Therefore, practitioners and regulators need to be highly alert to these risks, and plan risk management strategies and regulatory countermeasures in a reasonable manner to ensure the healthy development of the market.

Future Outlook and Industry Impact

ReStaking, as an emerging financial innovation, has a promising future in the cryptocurrency market and fintech sector.

- Technological Advancements Drive ReStaking Development

The rapid advancement of blockchain technology is expected to greatly enhance the operational efficiency and system security of ReStaking. In the future, with the optimization of cryptography, smart contracts and the innovation of consensus algorithms, ReStaking operations will become more stable and reliable. The optimization of technology will not only alleviate existing security concerns, but may also reduce human error and operational complexity through automation and decentralization enhancements, making ReStaking technology more readily available for widespread adoption.

- The potential impact of ReStaking on traditional finance

ReStaking demonstrates the great potential of using blockchain technology to optimize capital efficiency, which may attract the attention of traditional financial institutions. Traditional financial services firms may explore the introduction of a similar ReStaking mechanism to enhance the liquidity and profitability of capital. In addition, the transparency and efficiency of the ReStaking model may prompt traditional financial markets to accelerate their digital transformation process and explore more innovative blockchain-based financial solutions.

- Long-term market impact and changes in strategy

As the ReStaking model becomes more popular, we expect the cryptocurrency market structure to undergo changes. The evolution of ReStaking strategies and capital allocation methods may alter the liquidity landscape of the market, which in turn may affect price stability and market depth. Market participants may need to adapt their investment strategies to this new market environment. In the long run, the proliferation of ReStaking may lead to a more mature and efficient phase of development in the cryptocurrency market, paving the way for further consolidation of the global financial markets.

- **Regulators have reservations about virtual assets Staking activities**

- **Regulatory Uncertainty**

As the legal status of crypto-assets varies from country to country and region to region, regulators are challenged to apply existing financial regulations directly to cryptocurrency activities such as staking. This regulatory ambiguity may lead to uncertainty regarding the legality, tax and regulatory compliance of staking activities.

- **Investor Protection Concerns**

Cryptocurrency staking involve high-risk investments and regulators are concerned that the average investor may face significant losses due to a lack of specialized knowledge. In addition, due to the high volatility of the crypto market, investor capital can evaporate quickly and regulators need to ensure that investors are provided with adequate risk warnings and protection measures.

- **Financial Crime Risks**

Staking activity may be used as a tool for money laundering and other financial crimes. The anonymous or pseudo-anonymous nature of cryptocurrencies exacerbates this problem, making it difficult for regulators to track the flow of funds, thereby hampering anti-money laundering (AML) and counter-terrorism financing efforts.

- **Market Integrity and Price Manipulation**

Staking mechanisms may affect the supply of and demand for crypto assets, which in turn may manipulate market prices. Regulators are concerned that these activities may cause unfair and artificial price fluctuations in the market, jeopardizing the integrity and fairness of the market.

- **Technological and Operational Risks**

Cryptocurrency staking relies on complex technical and operational processes. Vulnerabilities or failures in smart contracts may result in loss of funds or erroneous transactions. Regulators will need to ensure that the staking platforms take appropriate technical measures to safeguard the security and reliability of their systems.

- **Proof of Stake (PoS) Model**

The PoS system bears some resemblance to traditional stocks in terms of its operating mechanism, mainly in the sense that the holders of cryptocurrencies receive proceeds similar to shareholders' equity through holding cryptocurrencies, which includes transaction fees and the issuance of new coins, among other things. This mechanism may be of concern to regulators as it analogizes the holding of cryptocurrencies to the holding of stocks, thus potentially interpreting PoS as a security. Regulators are concerned that this may require cryptocurrencies to comply with the same laws and regulations as traditional securities, particularly with respect to disclosure, market manipulation and investor protection. These factors have led regulators to be more concerned about PoS systems.

In addition, the security of the PoS model is also a major concern for regulators. In a PoS system, network security relies on the number of staked assets, and theoretically, the node with more assets has more persuasive power. Regulators are concerned that this could lead to network centralization, as a small number of participants holding a large number of tokens could overly influence network decisions. In addition, PoS systems may be at risk of a "Nothing at Stake Attack," as authenticators may support multiple blockchain branches at no cost, threatening the security and consistency of the network. These security considerations are issues that regulators need to scrutinize when approving related activities.

- Will Ethereum ETFs be allowed to be staked?

Previously, the Hong Kong Securities and Futures Commission (SFC) approved the ETFs of Bitcoin and Ethereum in one go, and recently, there are news that the SFC is negotiating to allow the issuers of Ethereum ETFs to make staking, so will the ETFs be staked or not?

For the issuers of ETFs, if they are in the business of making money, they will definitely want to take staking. Take the United States as an example, ARK 21SHARES clearly mentioned in the document submitted to the SEC in February that it would staking the ETH under custody to obtain additional income, and this part of the income belongs to the issuer, the buyers of ETFs only enjoy the income brought by the fluctuation of the assets themselves, which means that in addition to the capital management fees, the issuer of ETFs can also earn a considerable amount of income from the stakings.

- If Ethereum ETFs are allowed to be staked, what might be the tricky part?

First of all, there is a high probability that LSDs such as Lido will not be chosen for staking, because the regulators will never allow what investors bought (ETH) to be exchanged by the issuer for something else (stETH), which is a direct change of the underlying assets, and the issuer will never allow such a high yield to be further shared by LSDs such as Lido.

Secondly, there are some tricky issues if you use the native staking to generate interest. There are rate limitations and queuing for entering and exiting the Ethereum staking node, and the daily quota is fixed, so if directly staking the ETF's Ether into the ETF, and if there is a relatively large-scale crowdedness, then it will lead to the investors not being able to exit normally, and there may be a series of complicated issues that need to be considered here, such as early payment of issuer/custodian's guarantee. This may also involve a series of complicated issues that need to be considered, such as the early payment of issuer/custodian guarantees, which can definitely not be solved easily.

Overall, although the staking of Ethereum ETFs is not yet allowed due to various problems, believe it may be allowed in the future.

• Comparison between Hong Kong and US BTC ETFs

Why invest in ETFs?

Spot Bitcoin ETFs have four main advantages:

- Convenience

Overcoming traditional barriers and making it easy for investors to use Bitcoin as an asset allocation and trading tool.

- Transparency

Price, position, NAV and the entire ETF secondary market data are open to the public.

- Liquidity

Bitcoin spot ETFs are backed by top-tier market makers to provide liquidity on the exchange.

- Cost Effectiveness

Simpler tax and accounting.

Comparison between BTC spot and futures ETFs

- Differences in underlying investments within the basket

Bitcoin spot ETFs hold Bitcoin directly and are custodied by a third party. Bitcoin futures ETFs are a basket of derivatives instruments, including CME contracts and money market instruments.

- Differences in Regulatory Units

Bitcoin spot ETFs are regulated by the CFTC through the Securities Act of 1933 to ensure that the market is not manipulated. Bitcoin futures ETFs are regulated by the SEC and are subject to the Investment Company Act of 1940.

- Differences in Price

Futures ETFs invest in Bitcoin futures contracts and do not hold Bitcoin directly, so there is a gap between futures and spot prices, and therefore the price of the ProShares ETFs may fall short of, or be at a premium to, the price of Bitcoin. However, arbitrageurs in the market are able to carry out arbitrage operations to equalize the price.

- Differences in Liquidity

The futures market may be illiquid compared to the spot market. It may be difficult to buy or sell positions at the desired price when there is a large amount of capital on hand, and market volatility may result in a lack of counterparties with depth and agreeable prices. An illiquid market is more risky for investors.

- Differences in Reward

In addition to the ETF's premium from the futures contract premium, rollover fees are also an important factor affecting returns. When a Bitcoin futures contract held by an ETF expires, it will sell the contract and buy the next contract. If the futures price is higher than the spot price, the cost of selling a contract at a lower price and buying a contract at a higher price is the rollover fee. As Bitcoin is bullish in the long term, multiple rollovers may cause the ETF to underperform Bitcoin spot.

BITCOIN FUTURES - QUOTES

VENUE: GLOBEX

AUTO-REFRESH IS OFF Last Updated 05 Jun 2024 07:55:59 PM CT Market data is delayed by at least 10 minutes.

MONTH	OPTIONS	CHART	LAST	CHANGE	PRIOR SETTLE	OPEN	HIGH	LOW	VOLUME	UPDATED
JUN 2024 BTCM4			71615	-275 (-0.38%)	-	71840	71880	71335	222	19:39:55 CT 05 Jun 2024
JUL 2024 BTCM4			72395	-150 (-0.21%)	-	72470	72470	71985	13	19:00:33 CT 05 Jun 2024
AUG 2024 BTCQ4			72945	-420 (-0.57%)	-	73825	73825	72945	2	18:28:28 CT 05 Jun 2024

Source: CME website

**Comparison between Hong Kong and US BTC ETFs
- Basic Concepts**

Hong Kong:

- 1.Regulator and Regulatory Framework: Regulated by the Securities and Futures Commission (SFC) of Hong Kong, according to the stringent regulatory policies of the SFC in Hong Kong, including compliance, KYC (Know Your Customer), AML (Anti-Money Laundering) requirements.
- 2.Exchange: Listed and traded on the Hong Kong Exchange (HKEX).

United States:

- 1.Regulatory body and regulatory framework: Regulated by the U.S. Securities and Exchange Commission (SEC) and subject to the SEC’s stringent regulatory policies and the U.S. Commodity Futures Trading Commission’s (CFTC) Commodity Trading Rules.
- 2.Exchanges: Listed and traded on the Chicago Mercantile Exchange (CME) and New York Stock Exchange (NYSE).

- Product Structure

Hong Kong:

- 1.Product Format: Mainly spot Bitcoin ETFs, i.e. direct holdings of Bitcoin assets.
- 2.Position holding method: Bitcoin assets are held through a compliant custodian service organization to ensure the safety of the assets.
- 3.Trading hours: synchronized with the Hong Kong stock market.
- 4.Subscription Methods: Cash and in-kind subscriptions are supported.

United States:

- 1.Product Format: There are both spot Bitcoin ETFs and futures Bitcoin ETFs.
- 2.Position holding method: Spot ETFs hold Bitcoin assets through a custodian service provider, while futures ETFs hold Bitcoin assets through a futures contract. Futures ETFs are held through futures contracts.
- 3.Trading hours: Synchronized with the U.S. stock market.
- 4.Subscription Methods: Cash subscription only.

- Fee Structure

Hong Kong:

- 1.Management fee: usually low and mainly used to cover hosting and management costs.
- 2.Transaction fees: A transaction fee is payable when trading on an exchange, but it is relatively low.

United States:

1. Management fees: Cash ETFs have lower management fees, while futures ETFs have higher fees due to complexity.

2. Transaction fees: Transaction fees are payable when trading on an exchange and futures ETFs may involve additional futures contract fees.

- Expense Comparison

Hong Kong:

Co-operative Exchanges	ETF	Number of shares per lot	30 April Admission fee*	Management Fee	Estimated Annual Expense Ratio [^]
OSL Exchange	Harvest Bitcoin (03439)	100 shares	782.7	0.3%	1.0%
	Harvest Ethereum (03179)	100 shares	782.7	0.3%	1.0%
	Chinaamc Bitcoin (03042)	100 shares	783.0	0.99%	1.99%
	Chinaamc Ethereum (03046)	100 shares	783.0	0.99%	1.99%
Hashkey Exchange	Bosera Hashkey Bitcoin (03008)	10 shares	487.04	0.60%	0.85%
	Bosera Hashkey Ethereum (03009)	10 shares	249.11	0.60%	0.85%
*Value per board lot at Listed or Previous Closing Price on 30 April					
[^] Includes management, administration and custodian fees (if any)					

United States:

ETF	code	Management Fee	Management Fee Waiver Offer
ARK 21Shares Bitcoin ETF	ARKB	0.0%(0.21%)	6 months or \$1 billion
Bitwise Bitcoin ETF	BITB	0.95%	-
Valkyrie Bitcoin Fund	BRRR	0.0%(0.25%)	3 months
Invesco Galaxy Bitcoin ETF	BTCO	0.0%(0.39%)	6 months or \$5 billion
WisdomTree Bitcoin ETF	BTCW	0.0%(0.30%)	6 months or \$1 billion
Hashdex Bitcoin ETF	DEFI	0.90%	
Franklin Bitcoin ETF	EZBC	0.0%(0.19%)	7 months or \$10 billion
Fidelity Wise Origin Bitcoin Trust	FBTC	0.0%(0.25%)	7 months
Grayscale Bitcoin Trust	GBTC	1.50%	-
VanEck Bitcoin Trust	HODL	0.25%	-
iShares Bitcoin Trust	IBIT	0.25%	12 months or \$5 billion

- Comparison of Advantages and Disadvantages

Hong Kong:

Advantages:

1. **Security:** Strict regulatory and custodial measures to ensure the safety of investors' assets.
2. **Transparency:** Investors can clearly know the amount and value of Bitcoin held in the ETF.
3. **Market access:** It is convenient for Asian investors to enter the Bitcoin market. Meanwhile, the regulatory environment is relatively lax, which attracts not only institutional investors but also high-net-worth individual investors, making the market more diversified in terms of participants.

Disadvantages:

1. **Liquidity:** Compared with the U.S. market, the market liquidity of Hong Kong Bitcoin ETFs may be lower.
2. **Regional limitation:** mainly for Hong Kong and Asian markets, there is a certain limitation for global investors to enter the market.

United States:

Advantages:

1. **Diversity:** Provides two forms of investment, spot and futures, to meet different investment needs.
2. **Market depth:** The U.S. market is more liquid and deeper, with more active trading.
3. **Globalization:** It is open to investors from all over the world and has a high degree of market participation.

Disadvantages:

1. **Complexity:** The structure of futures ETFs is relatively complex, and investors need to have certain specialized knowledge.
2. **Risk:** Futures ETFs are subject to leverage risk and investors need to manage them carefully.

- Investment Strategy

Hong Kong:

1. **Investment Objective:** To closely track the spot price of Bitcoin and hold Bitcoin directly.
2. **Risk Management:** Risks are relatively controllable due to stringent regulatory and compliance requirements.
3. **Applicable investors:** Suitable for those who wish to hold Bitcoin directly, emphasize on asset safety and regulatory protection, and have the ability to afford the fluctuation of Bitcoin price, especially those in Asia.

United States:

1. **Investment Objective:** Products that closely track the spot price of Bitcoin, as well as products that utilize futures contracts for arbitrage and hedging.
2. **Risk Management:** Hedging and risk management through futures contracts, but futures ETFs are subject to leverage risk.
3. **Applicable investors:** Suitable for global investors (both short-term and long-term) who wish to invest in Bitcoin through a wide range of investment vehicles (including futures) and who wish to capitalize on the liquidity and depth of the market.

Comparative of the 3 BTC ETF Issuers in Hong Kong

- Listing Date and Issue Price

All three ETF products will be listed on the same day, i.e. April 30, 2024. For the initial offering, the opening price for both Chinaamc and Harvest is USD1, Bosera is priced based on 0.0001 of the CME CF Bitcoin Index price at 4:00 pm Hong Kong time on April 26.

- Share Trading and Subscription Requirements

In terms of the number of shares per board lot, the threshold is 100 shares for Chinaamc and Harvest Funds and 10 shares for Bosera Fund. The minimum number of shares required for subscription is 10,000 shares for Chinaamc and Bosera Funds and 50,000 shares for Harvest Funds.

CME CF Bitcoin Index:

1. Updated once a day at 4:00pm (Hong Kong time).
2. Combines trading data from multiple cryptocurrency exchanges.
3. Calculated by volume-weighted median trading price.
4. Used as a reference exchange rate benchmark price for Bitcoin against the US dollar in the Asia Pacific region.
5. Index constituent platforms include cryptocurrency exchanges such as Coinbase, Bitstamp, itbit, Kraken, Gemini and LMAX Digital.

	Chinaamc	Harvest	Bosera
Listing date	30 Apr 2024	30 Apr 2024	30 Apr 2024
Issue price during initial offering period	1 Dollar	1 Dollar	0.0001 of USD-denominated index price at 4:00 pm (HKT) on April 26
Number of shares bought and sold per lot	100 shares	100 shares	10 shares
Creation/Redemption Policy	In Cash or in Kind	In Cash or in Kind	In Cash or in Kind
Number of shares applied for	At least 10,000 shares	At least 50,000 shares	At least 10,000 shares
Trading currency	USD/HKD/RMB	USD/HKD	USD/HKD
Management fee	0.99%	0% (0.3% after 6 months)	0% (0.6% after 4 months)
Index	CME CF Bitcoin Index	CME CF Bitcoin Index	CME CF Bitcoin Index
Custodian	BOCI-Prudential Trustee Limited	BOCI-Prudential Trustee Limited	BOCI-Prudential Trustee Limited
Sub-custodian	OSL	OSL	Hash Blockchain
Virtual asset trading platform	OSL Exchange	OSL Exchange	HashKey Exchange
Market maker	Vivienne Court Trading	CMS(HK) CITIC CLSA Vitru Financial Singapore	The website of the sub-fund has not yet been disclosed

	Chinaamc	Harvest	Bosera
Participating securities dealers	Victory Securities Mirae Asset Securities (HK) Solomonwin Eddid Financial VCL	Victory Securities Mirae Asset Securities (HK) Solomonwin Eddid Financial VCL CMS(HK)	The website of the sub-fund has not yet been disclosed
Auditor	PwC	PwC	EY

All three companies offer investors the flexibility to add or redeem ETF shares via cash or in-kind.

Appendix

Bitcoin performance compared to major asset classes

Bitcoin has had periods of high performance and significant drawdowns 2013-2023

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Cumulative	Annualized
BTC 5,516%	SPX 12%	BTC 37%	BTC 119%	BTC 1,300%	AGG 0%	BTC 92%	BTC 302%	BTC 58%	CMT 20%	BTC 156%	BTC 315,678%	BTC 124%
SPX 26%	AGG 5%	AGG 0%	HY 17%	EM 35%	HY -2%	SPX 29%	Gold 24%	CMT 30%	Gold 1%	SPX 25%	SPX 226%	SPX 13%
HY 6%	HY 2%	SPX -1%	EM 15%	SPX 18%	Gold -3%	EM 21%	SPX 15%	SPX 29%	HY -11%	HY 12%	HY 64%	HY 5%
AGG -1%	EM 1%	HY -4%	CMT 14%	Gold 12%	SPX -7%	Gold 18%	EM 14%	HY 5%	AGG -12%	Gold 12%	EM 35%	EM 3%
EM -3%	Gold -3%	Gold -11%	SPX 11%	HY 7%	CMT -9%	HY 14%	AGG 7%	EM 0%	EM -18%	EM 9%	Gold 18%	Gold 2%
CMT -9%	CMT -18%	EM -14%	Gold 7%	CMT 6%	EM -15%	CMT 10%	HY 7%	AGG -1%	SPX -20%	AGG 5%	AGG 17%	AGG 2%
Gold -29%	BTC -58%	CMT -25%	AGG 2%	AGG 3%	BTC -73%	AGG 8%	CMT -3%	Gold -6%	BTC -65%	CMT -2%	CMT -4%	CMT 0%

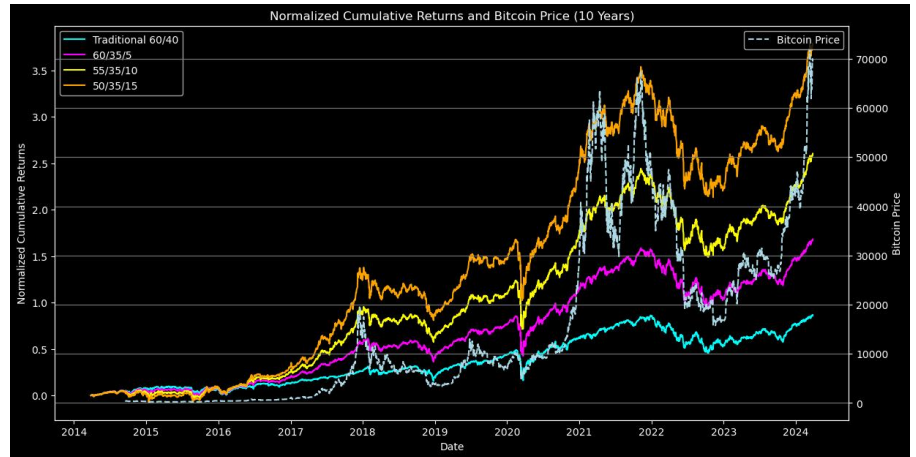
Past performance does not guarantee future results. Index performance is for illustrative purposes only. Index performance does not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Certain sectors and markets perform exceptionally well based on current market conditions and iShares and BlackRock Funds can benefit from that performance. Achieving such exceptional returns involves the risk of volatility and investors should not expect that such results will be repeated. Index performance does not represent actual Fund performance. For actual fund performance, please visit www.iShares.com or www.blackrock.com.

Source: Bloomberg, BlackRock calculations, as of December 31, 2023. Asset classes shown include major liquid asset classes available to U.S. investors. Bitcoin returns calculated using Bloomberg Bitcoin Spot Price. SPX is represented by the S&P 500 Total Return Index (USD). EM is represented by the Dow Jones Emerging Markets Total Return Index (USD). AGG is represented by S&P U.S. Aggregate Bond Index. HY is represented by S&P U.S. High Yield Corporate Bond Index. Gold is the 1.oz price of gold from Bloomberg. CMT is represented by Dow Jones Commodity Index.

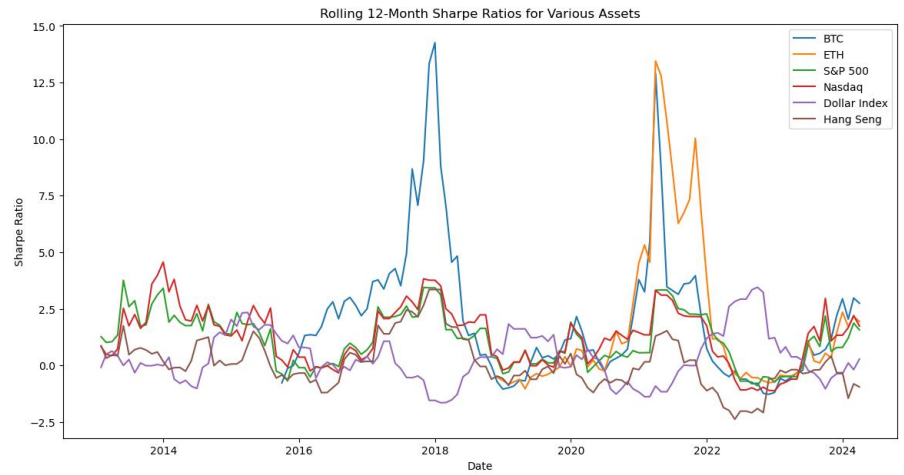
- Bitcoin's 90-day rolling correlation with other assets



– Standardised Cumulative Return Comparison (Backtesting)



– Rolling 12-month Sharpe ratio comparison



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