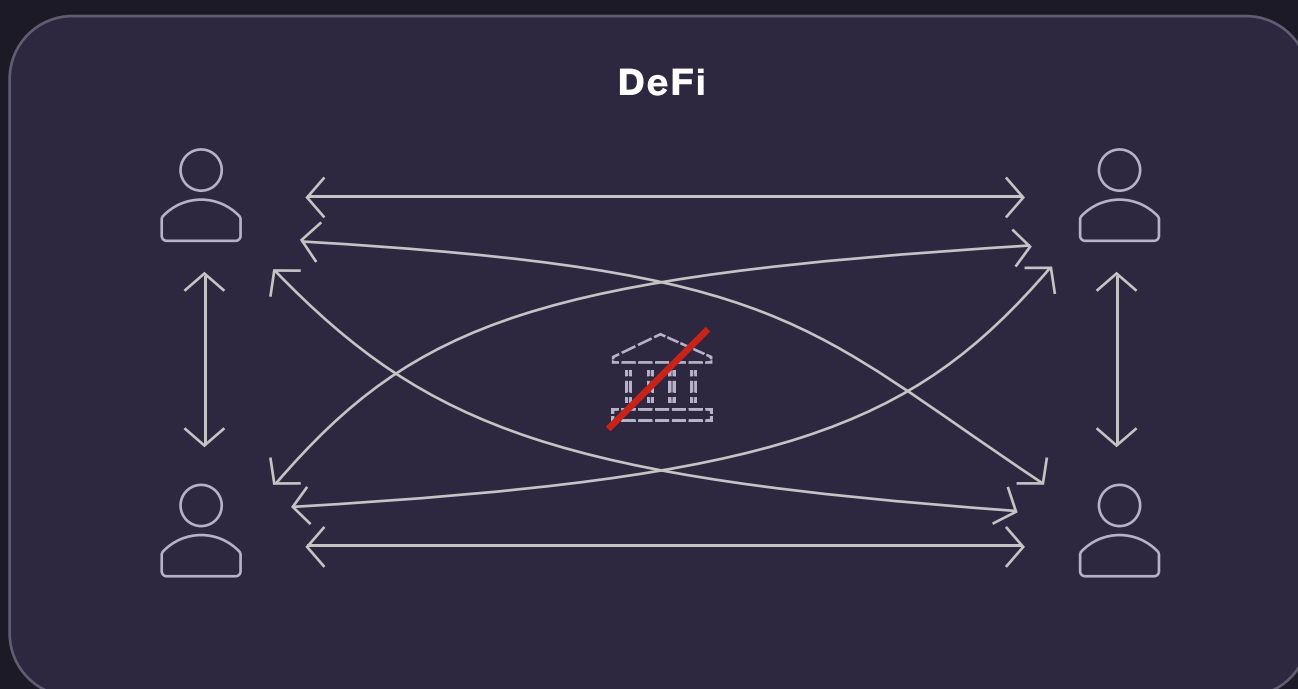# ETP METHODOLOGY

WSB Crypto 20 ETP

01 Introduction

The WSB Crypto ETP (Exchange Traded Portfolio) is a physical representation of a weighted portfolio of crypto assets, issued on Balancer Protocol. It is rebalanced in alignment with the basket, providing traders an opportunity to get non-synthetic exposure to the assets that are made up of the basket, and/or speculate on arbitrage between the price parity of the underlying spot markets (or derivatives) and the ETP itself.

The WSB Crypto ETP tracks the real-time market performance of a basket of Crypto assets. The underlying basket methodology comprises up to a maximum of 20 assets (reviewed quarterly) and based on their free float market capitalization weighting with a cap of **15%.**

Decentralised Finance (DeFi) is an open-source and transparent financial service ecosystem that represents a broad category of applications built on decentralised networks. DeFi leverages decentralised networks to transform legacy banking services and financial products into trustless and transparent protocols that can run without intermediaries. Some of these products and services include decentralised marketplaces & exchanges, asset issuance, insurance, checking accounts, investment services, borrowing and lending, asset management and prediction markets.
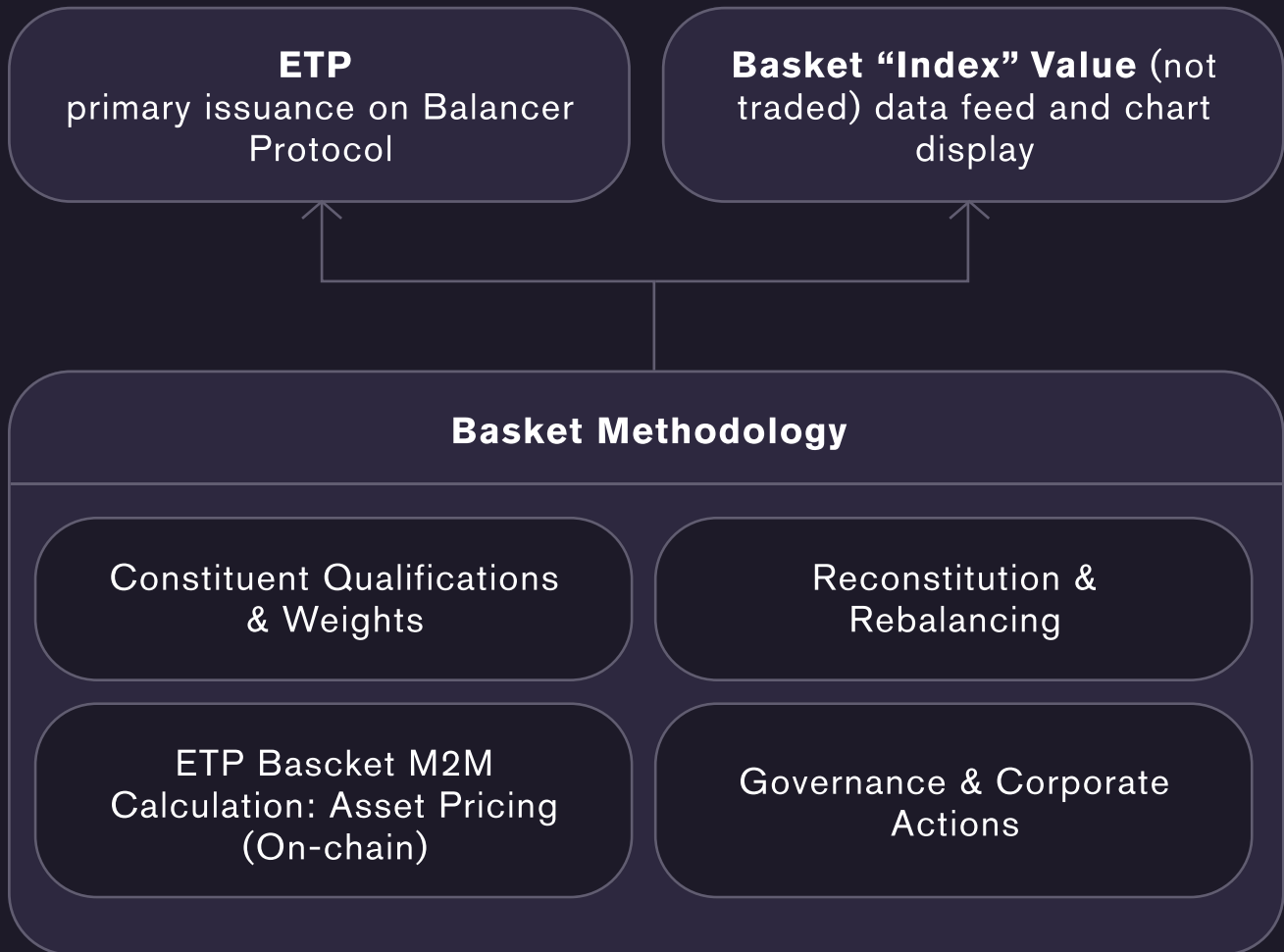

DeFi

The WSB Crypto ETP basket physically holds onto the underlying assets in a non-custodial way, powered by Balancer protocol.

The ETP is owned and administered by WSB Dapp under the principles:

Representative	The ETP should closely follow the basket and represent it adequately.
Transparent	The ETP should be transparent in its design and reproducible in its calculation.
Timely	The ETP should be computed as frequently as necessary to reflect price changes in the constituent assets of the basket.
Robust	The ETP should be robust to disruptions such as erroneous data or pricing source outages, and be resistant to manipulation.

Product tree logic

```
┌─────────────────────────────┐    ┌─────────────────────────────┐
│            ETP              │    │  Basket "Index" Value (not  │
│  primary issuance on Balancer│    │  traded) data feed and chart│
│          Protocol          │    │           display           │
└─────────────────────────────┘    └─────────────────────────────┘
```

Basket Methodology

Constituent Qualifications & Weights	Reconstitution & Rebalancing
ETP Bascket M2M Calculation: Asset Pricing (On-chain)	Governance & Corporate Actions

02 Asset Constituent Criteria

- **Basket Size:**
  - The basket size of this ETP will be set at 20.

- **Market Capitalization Weighting:**
  - Rather than using just market cap for the weighting, a squared market cap will be used to weight the constituents.

- **Weight Floor and Ceiling:**
  - Asset constituents are capped to a weight of 15% and a 1% weight floor will be introduced.

- **Asset Eligibility:**
  - Coverage: Have active tradable markets and been trading for 60 days.
  - Liquidity: Have an average daily trading volume that exceeds $50k USD
  - Tokenomics: Access to supply and free-float data.
  - Token Holder Count: > 500 Addresses
  - Particular Exclusions: Stablecoins

- **Reconstitution & Rebalancing:**
  - The proposed rebalancing will be every two months starting when the ETP has launched.

2.1 The WSB Crypto ETP Basket

Based on current expectations, the WSB Crypto ETP Basket will initially comprise the following assets (represented in wrapped and/or native form), and weighted in accordance with their current market capitalization, subject to a maximum weighting of 15%. The initial weightings of the crypto assets will be voted upon by the WSB Dapp community before launching the ETP.

Set of rights for the ETP:

1	$BTC	BITCOIN	Weight Sqr Cap	15.000%
2	$ETH	ETHEREUM	Weight Sqr Cap	15.000%
3	$LINK	CHAINLINK	Weight Sqr Cap	13.034%
4	$AAVE	AAVE	Weight Sqr Cap	7.947%
5	$MKR	MARKER	Weight Sqr Cap	6.698%
6	$COMP	COMPOUND G.	Weight Sqr Cap	5.090%
7	$SNX	SYNTHETIX N.	Weight Sqr Cap	4.639%
8	$YFI	YEARN FINANCE	Weight Sqr Cap	4.605%
9	$ENJ	ENJIN COIN	Weight Sqr Cap	4.209%

10	$UMA	UNIVERSAL MARKET	Weight Sqr Cap	3.548%
11	$CRV	CURVE DAO	Weight Sqr Cap	3.348%
12	$ZRX	0X	Weight Sqr Cap	3.255%
13	$BAL	BALANCER	Weight Sqr Cap	2.474%
14	$REN	REN	Weight Sqr Cap	2.470%
15	$RARI	RARIBLE	Weight Sqr Cap	1.840%
16	$SRM	SERUM	Weight Sqr Cap	1.817%
17	$NMR	NUMERAIRE	Weight Sqr Cap	1.767%
18	$SWAP	TRUSTSWAP	Weight Sqr Cap	1.259%
19	$IDEX	IDEX	Weight Sqr Cap	1.000%
20	$RAZOR	RAZOR	Weight Sqr Cap	1.000%

03 Key Balancer Concepts

- **Balancer Finance** is a non-custodial portfolio manager and liquidity provider platform.

- **Balancer Pools** are automated market makers with certain key properties that cause them to function as self-balancing weighted portfolios and price sensors.

- **Core Pooll** - a Balancer Pool contract object - this is the "base" pool that actually holds the tokens as accounted for in the Balance Vault. Core Pool is effectively a premiere issuance market. Core pools are tokenised in ERC-20 format, representing units of the underlying portfolio. Tokenisation of Core Pools effectively makes them Exchange Traded Portfolios (ETPs) as the tokenised pool can be listed and traded on a secondary market.

- **Smart Pool** - a contract that owns (i.e., is the controller of) a Core Pool. Not all core pools are controlled by smart pools, only those that are tuned to perform certain functions or follow a certain thesis, hence they are different to uncontrolled public pools. A smart contract controlled pool can fully emulate a finalised core pool, while also allowing complex logic to readjust balances, weights, and fees. Such a construct is used to create an ETP to reflect and support a basket of assets. Hereby, a Balancer Smart Pool ETP represents a spot market exposure to a physical basket of assets that reflect the constituents and weights of the basket methodology.

- **BPT Token** - all pools in Balancer are also ERC-20 tokens known as BPTs (Balancer Pool Tokens), which represent proportional ownership of the pool's assets. When users add assets, they receive BPTs proportional to the amount of assets they are adding to the pool. When listed, these tokens can be traded on a secondary market

04 Configurable Rights

Smart Pools are managed according to the rights granted to the controller on creation. By deploying a Smart Pool, WSB becomes the controller of the Smart Pool - and the Smart Pool itself becomes the controller of the Core Pool. Hence the ETP provider only has access to rebalancing of the assets, but not a custodial control over the funds in the Core Pool. The keys to the controller will be handed over to the WSB DAO once it's installed and live by the end of August 2021. Meanwhile, the $WSB token holders will be able to vote on the assets and the weightings.

Set of rights for the ETP:

- **Paused Swapping:** the controller will halt trading (swaps) on the underlying core pool. With paused swapping, the logic in the smart contract can toggle trading on and off. For instance, the controller might want to "short-circuit" the contract in certain pathological cases, such as market crashes.

- **Add/Remove Tokens:** allows the controller to change the composition of the pool. This will occur in accordance with the basket methodology and rebalancing directives. Adding a token is a two-step process meant to mitigate this risk and lower the trust required. The protocol emits an event when a token is "committed" (about to be added), and enforces a minimum wait time before the controller can "apply" (actually add) the token. Current "add/remove token" function delay is set to 6 hours (1440 blocks).

- **Change Weights:** the controller will call updateWeight (to directly update a single token's weight), or update Weights Gradually (to linearly transform a set of weights over time). This will occur in accordance with the basket rebalancing events. Naturally, altering weights will change balances - which means transferring tokens - in order to leave prices unchanged. When updating weights gradually, the protocol enforces a minimum time between updates, and a minimum total time for the update. These parameters are set at create time, and are immutable thereafter. Current "change weights" function delay is set for gradual change over a 3 day period (17280 blocks).

- **Change Swap Fee:** after contract deployment, the controller will be able to change the Swap Fee within the bounds set by the underlying core pool (e.g., it cannot be zero, or greater than 10%). With this right, it could be possible to implement fee optimisation strategies (i.e., to maintain the peg to the basket and minimise impermanent loss).

- **Whitelist:** When enabled, no one can add liquidity (including the controller, beyond initial creation of the pool), unless they are added to a whitelist by the creator. Although this function is available to the controller, it will be disabled for this portfolio.

- **Change Cap:** When enabled, the cap is set to the initial supply on creation - and can be changed later by the controller. Although this function is available to the controller, it will be disabled for this pool (there will be no cap for this pool).

05 BAL Liquidity Mining

To incentivise traders, fund managers, and liquidity providers and to pursue decentralisation, Balancer Labs implemented the concept of liquidity mining, where Balancer governance tokens ($BAL) are distributed proportionally to the amount of liquidity each address contributed to each qualified pool, relative to the total liquidity on Balancer.

Investors of the ETP should be able to receive $BAL rewards once it's the ETP is whitelisted with Balancer. The rewards must be claimed by investors individually via https://claim.balancer.finance/#/.

06 Portfolio Fees Structure

Now that Balancer V2 is live, the new features also allow for charging annual AUM fees - these will be programmed at 2% for this portfolio and will stream to the WSB DApp wallet (which is progressively decentralized under the governance of the DAO).

07 Technical Constraints of Balancer Pools

Balancer is meant to be a flexible and agnostic DeFi primitive. Due to constraints such as gas and math approximations, there are some limitations built into the protocol, including:

- **ERC-20 compliance:** pool tokens have to be ERC-20 compliant. There are no upgrade mechanisms in the contracts to allow for token upgrades. Any upgrade will need to be manually coordinated and moved into new pools. Tokens that have internal transfer fees or other non-standard balance updates (e.g. AMPL) may be excluded from the constituent lists at the discretion of the ETP provider.

- **Minimum Bound Tokens - 2.** A functional pool must contain at least two tokens. (If the pool creator can remove tokens, it is possible to remove them all and have one or zero, but of course no swaps are possible if there is only one token, and a 0-token pool cannot be restored).

- **Maximum Bound Tokens - 20.** The maximum number of tokens that can be in a given pool is 20.

- **Maximum Swap In Ratio - ½.** A maximum swap in ratio of 0.50 means a user can only swap in less than 50% of the current balance of tokenIn for a given pool.

- **Maximum Swap Out Ratio - ⅓.** A maximum swap out ratio of 1/3 means a user can only swap out less than 33.33% of the current balance of tokenOut for a given pool.

- **Minimum Swap Fee - 0.0001%.** There is a minimum swap fee of 0.0001% (or a hundredth of a basis point) to counteract any unfavorable pool rounding.

- **Maximum Swap Fee - 10%.** This is to prevent malicious pool controllers from setting predatory trading fees. (for instance, a pool controller could front-run a large trade and set the fee to 99%).

- **Minimum Balance - (10^18) / (10^12).** The minimum balance of any token in a pool is 10^6 wei. **Important**: this is agnostic to token decimals and may cause issues for tokens with less than 6 decimals. Also note that this is only enforced on initial token binding.

08 ETP Specs

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- **Constituent Assets** will be mirroring the basket composition to maintain parity.

- **Reconstitution & Rebalancing** will be implemented in accordance with the basket methodology and the Balancer protocol.

- **Asset Pricing** - Balancer protocol does not use outside price oracles. When portfolio asset prices start to differ from market prices, arbitrators sweep in to eliminate price differences. Asset prices in Balancer Pools do not move unless someone makes a trade.

- **Governance** - The ETP manager is responsible for the oversight and transparency of all aspects relating to the provision of the ETP with periodic reviews in accordance with the basket methodology. In this ETP product - the ETP Manager are the $WSB Token holders.