



Compass Staking Yield Reference Index Solana

Methodology

September 10th, 2024

Version History

Readers can access versions of the methodology for the Compass Staking Yield Reference Index Solana online when they become available on Compass Financial Technologies website (<https://www.compass-ft.com>).

Date	Version	Change
September 10 th , 2024	1.0	Methodology Publication

Table of Contents

1	Introduction	3
2	Index Calculation	4
	2.1 Rewards definition	4
	2.2 Calculation formula	5
	2.3 Rounding of Data	6
	2.4 Calculation Frequency and Dissemination	6
3	Index Governance	7
	3.1 Index Administrator	7
	3.2 Index Calculation Agent	7
	3.3 Index Committees – Supervisor	7
4	Methodology Changes - Maintenance	9
5	Expert Judgment	9
6	Errors and Recalculations	9
7	Potential Limitations	10
8	Cases not covered in rules	10
9	Liability	10
10	Compass Staking Yield Reference Index Solana - Codes - Rounding	11
11	Disclaimer	12

1 Introduction

The Compass Staking Yield Reference Index Solana (the *CSRI*, the *CCSRI*, the *Indices* or the *Index*) measures the annualized staking yield obtained when staking on the Solana blockchain.

Staking on the Solana blockchain

Solana operates on a unique consensus mechanism called Proof of Stake (PoS) combined with Proof of History (PoH), which ensures the network remains efficient and secure without relying on a trusted third party. Staking SOL, the native token of the Solana network, involves delegating your SOL to a validator, by this way contributing to the performance, security, and decentralization of the network. By staking, participants earn rewards for supporting the network, which encourages them to act in its best interests.

Validators on Solana are responsible for processing transactions into new blocks and adding them to the blockchain. In return for their service, validators earn staking rewards. At the time of writing, Solana unlike some other blockchain, does not use penalties or automatically “slashing” on validators who fail to perform their duties correctly. Instead, validators who do not participate effectively in the network also known as delinquents simply miss out on earning rewards.

Proof of Stake (PoS) and Proof of History (PoH) on Solana

Solana’s consensus model is a combination of Proof of Stake and Proof of History. Proof of Stake helps maintain the network’s security and decentralization by requiring validators to stake SOL as collateral. Validators are selected to validate transactions and produce new blocks based on the amount of SOL they have staked. Proof of History, an exclusive characteristic of Solana, works as a cryptographic clock that certifies the passage of time between events. This allows Solana to achieve very high throughput and low latency, making it one of the fastest blockchains in the industry. The combination of PoS and PoH enables Solana to process thousands of transactions per second while keeping fees low.

Providing a reliable and trusted staking yield

In order to avoid potential conflict of interest or the risk of using incomplete information, Compass has decided to extract information directly from the Solana blockchain by connecting to a node without the use of an external data provider.

Solana’s staking system is designed to provide validators and delegators with fair returns. The staking rewards are directly tied to the network’s performance and security. This ensures that rewards are calculated transparently and accurately based on the validator’s contribution to the network.

Compass Staking Yield Reference Index Solana indices are part of the Compass Staking Yield Reference Index family.

Compass Staking Yield Reference Index Solana can be accessed online on the Compass Financial Technologies website (<https://www.compass-ft.com>) or on Bloomberg or Refinitiv.

Compass Staking Yield Reference Index Solana are owned by Compass Financial Technologies SA. The Index Administrator and Calculation Agent is Compass Financial Technologies (France).

Compass Staking Yield Reference Index Solana available as of August 14th 2024 are listed in tables of section 10.

2 Index Calculation

2.1 Rewards definition

The reward system in Solana’s crypto-economic model is structured to create a sustainable and secure network by aligning participant incentives with the network’s security and decentralization. The primary actors in this system are validation clients, who play a crucial role in validating the network’s state. Their rewards come from two main sources: protocol-based rewards and transaction fees.

2.1.1 Protocol-Based Rewards:

- **Inflationary Issuance:** These rewards are generated from an inflationary process defined by the protocol’s inflation schedule. In the early stages of the network, these inflation-based rewards are expected to be the primary incentive for participation.
- **Distribution:** Rewards are calculated on a per-epoch basis and are distributed among the active delegated stake and validator set, with each validator receiving rewards based on their commission.
- **Inflation Schedule:** The inflation rate is predetermined and follows a disinflationary schedule, which means that while the supply increases, the rate of increase slows down over time. This approach is designed to ensure long-term supply predictability and economic stability.

2.1.2 Transaction Fees:

- **Compensation Mechanism:** Transaction fees are payments made by participants for the inclusion and execution of their transactions on the network. These fees serve as compensation for the validators.
- **Burn Mechanism:** To maintain long-term economic stability and protect against network forks, a portion of each transaction fee is burned, reducing the total supply and counteracting inflation.

2.2 Calculation formula

For each epoch and for each calendar day, two types of indices are computed according to the formula below:

- The *Compass Staking Yield Protocol Reference Index Solana* represents the annualized staking yield purely linked to the protocol-based rewards
- The *Compass Staking Yield Reference Index Solana* represents the overall annualized staking yield including in addition to the the protocol-based rewards the transaction fee received by the validators

2.2.1 Compass Epoch Staking Yield Reference Index Solana

For each epoch i , the *Compass Epoch Staking Yield Reference Index Solana*, STY_i , and the *Compass Epoch Staking Yield Protocol Reference Index Solana*, $STYP_i$, correspond respectively to the annualised staking yield (respectively to the annualised staking yield linked to the protocol-based rewards only) based on the staking rewards generated by the blockchain during epoch i .

They are calculated based on the formula below:

$$STYP_i = \left(1 + \frac{protocol_reward_i}{active_stake_i} \right)^{\frac{nbSec}{d_i}} - 1 \quad (1)$$

$$STY_i = \left(1 + \frac{(protocol_reward_i + transaction_fee_i)}{active_stake_i} \right)^{\frac{nbSec}{d_i}} - 1 \quad (2)$$

Where,

- $epoch_i$: a fixed timeframe to provide all staking pools a common frame of reference for scheduled events on the blockchain
- $active_stake_i$: in respect of epoch i , the sum of all active staking pool reference balances which are used by the network to calculate the size of rewards.
- $transaction_fee_i$: in respect of epoch i , the transaction fees paid for using the Solana network during epoch i
- $protocol_reward_i$: in respect of epoch i , the protocol-based rewards attributed to epoch i
- nbSec: the number of seconds in 1 year
- d_i : the number of second in epoch i

2.2.2 Compass Staking Yield Reference Index Solana

For each calendar day t , the *Compass Staking Yield Reference Index Solana*, STY_t , and the *Compass Staking Yield Protocol Reference Index Solana*, $STYP_t$, correspond respectively to the annualised staking yield (respectively to the annualised staking yield linked to the protocol-based rewards only) based on the staking rewards generated by the blockchain during calendar day t .

They are calculated based on the formula below:

$$STY_t = \frac{1}{nbSec_t} \times \sum_{i \in E_t} STY_i \times nbSec_t^i$$

$$STYP_t = \frac{1}{nbSec_t} \times \sum_{i \in E_t} STYP_i \times nbSec_t^i$$

- t is any calendar day
- E_t is the set of epochs any part of which falls on the calendar day t

- $nbSec_t^i$: is the number of seconds of epoch i that falls between 4pm London Time on $t - 1$ and 4pm London Time on t
- $nbSec_t$: is the number of seconds that falls between 4pm London Time on $t - 1$ and 4pm London Time on t
- STY_i is the Epoch Staking Yield on epoch i
- $STYP_i$ is the Epoch Staking Yield Protocol on epoch i

2.3 Rounding of Data

Indices values are computed with all decimals available and are published with 6 decimals.

2.4 Calculation Frequency and Dissemination

For epoch i , the Epoch Solana Staking Yield and the Epoch Solana Staking Yield Protocol are computed at the beginning of epoch $i + 1$.

The Compass Staking Yield Reference Index Solana and the Compass Staking Yield Protocol Reference Index Solana are calculated and published for each calendar day as soon as the data necessary to calculate the Epoch Solana Staking Yield for the epochs falling on that day is available.

Indices levels are computed and published at 4:30pm London time.

Indices levels are published on the Compass Financial Technologies website (<https://www.compass-ft.com>) and are distributed to Bloomberg and Refinitiv under the ticker symbols listed in tables of section 10.

3 Index Governance

3.1 Index Administrator

Compass Financial Technologies (France) is the Administrator of the Index ("the Index Administrator"). The Index Administrator is responsible for the day-to-day management of the Index as well as for decisions regarding the interpretation of these rules.

3.2 Index Calculation Agent

Compass Financial Technologies (France) is the Calculation Agent of the Compass Staking Yield Reference Index Solana. It is responsible for the day-to-day management of Indices computation according to this methodology.

3.3 Index Committees – Supervisor

Compass Financial Technologies has established governance functions to review and provide challenges on all aspects of the Indices determination process. Governance functions are managed by the Compass Oversight Committee and by the Compass Staking Yield Reference Index Steering Committee.

Compass Oversight Committee:

The Compass Oversight Committee oversees all areas of the benchmark determination processes. It is responsible for supervising and controlling the Index operations team on all Compass Indices. It is also responsible for:

1. Periodic review of incidents
2. Making final decisions in case the Index operations team is not capable of or not allowed to make decisions
3. Defining and implementing organization procedures for the Index operations team
4. Defining and overseeing measures that allow for mitigation of operational risks
5. Supervising internal or external audit results
6. The implementation and supervision of the potential codes of conduct that must be implemented

The Committee is comprised of senior representatives at Compass Financial Technologies and external industry experts.

Compass Staking Yield Reference Index Steering Committee:

The Compass Staking Yield Reference Index Steering Committee is responsible for:

1. Determining the calculation methodology and the rules governing the publication of the Compass Staking Yield Reference Index
2. Making periodic reviews of the Compass Staking Yield Reference Index to validate the robustness of the methodology and to analyse the impact of methodology changes
3. Organizing consultation with Compass Staking Yield Reference Index stakeholders if necessary
4. Ensuring that Compass Staking Yield Reference Index offers a reliable and representative view of the market

The Compass Staking Yield Reference Index Steering Committee is composed of members from Compass and may include individuals or representatives from companies, academics, external counsels, or market participants.

The Compass Staking Yield Reference Index Steering Committee assembles once a year in April. However, at the request of a committee member, the Committee may meet on any other day of the year to discuss

potential “market emergency” and “force majeure” events or any other situation, that makes an extraordinary meeting necessary.

All Committee decisions will be published without delay following the Committee decision.

The Compass Staking Yield Reference Index Steering Committee members as of February 2023 are:

- Edouard Mouton, Compass Financial Technologies
- Guillaume Le Fur, Compass Financial Technologies
- Wenceslas Sanchez, Compass Financial Technologies
- Michael Petch, Independent

As of August 14th, 2024, Edouard Mouton chairs the Compass Staking Yield Reference Index Steering Committee.

4 Methodology Changes - Maintenance

This methodology may be supplemented, amended in part or in whole, or revised or withdrawn at any time. Supplements, amendments, revisions and withdrawals may also lead to changes in the way the Index is compiled or calculated or affect the Index in another way.

In the absence of exceptional circumstances affecting the Index calculation or methodology, this Methodology is reviewed annually. The review will include, inter alia, the following points:

1. Verify if the methodology and computation are still in line with the original purpose of the Indices
2. Make sure the quality and quantity of the input data remain sufficient

Changes made to this methodology are published after the review date and implemented within a reasonable time horizon.

Compass Financial Technologies may terminate a Compass Staking Yield Reference Index due to certain extraordinary market circumstances. These circumstances include, but are not limited to:

1. The liquidity of the underlying cryptocurrency of a Compass Staking Yield Reference Index declines and becomes not sufficient enough to provide an efficient market
2. The underlying cryptocurrency of a Compass Staking Yield Reference Index experiences a contentious hard fork in which both forks survive

Changes or termination will be subject to the review and approval of the Compass Staking Yield Reference Index Steering Committee which will receive all the information related to the change or termination. In case of material changes, a notice will be provided at least two weeks in advance.

The results of the Compass Staking Yield Reference Index Steering Committee will be published in a press release on Compass Financial Technologies website and distributed to data vendors and major news sources in a timely manner.

5 Expert Judgment

The Compass Staking Yield Reference Indices are based on written and transparent rules and procedures with the purpose of minimizing the exercise of discretion and expert judgment as much as possible.

The Compass Staking Yield Reference Indices are built from input data that is not interpolated, extrapolated or adjusted.

Nevertheless, the exercise of expert judgment may become necessary in the case of errors and Index restatements, delayed and missing data, hard forks, airdrops, or unexpected situations arising from market stress.

In the event that expert judgment is exercised, this will be done by resorting to the written procedures reported in the methodology and by communicating the decisions taken to the Compass Staking Yield Reference Indices Steering Committee and the Internal Compliance Function in order to prevent conflicts of interest and protect the integrity and independence of the Index determinations. The interest of the Index users and market integrity will also be taken into account.

6 Errors and Recalculations

Even though the process of Index calculation is completely automated and pre-defined, an error can be discovered after the publication of the Index.

In case of a material error the Index will be redetermined, and the Index clients will be notified about the error and the date of the publication of the redetermined Index. An error is considered material on the basis of its size, the dates of its discovery and occurrence, and the impact of the Index redetermination on the users. The discovery of any error is reported to the Compass Staking Yield Reference Indices Steering Committee.

In the case that a material error is discovered and the Administrator recognizes a manipulation or an attempted manipulation of the Index level or the input data it will be reported to the regulator.

7 Potential Limitations

The issues presented in the following non-exhaustive list may obstruct the computation of the Indices or may limit the ability of some of the Indices to represent the market they are intended to measure, the ease of replication by investors, and the general usefulness of the Indices to users.

- Input data used to compute the Index may become unavailable due to disruption or outage of the related blockchain
- The market the Index is meant to measure may be volatile. In particular, staking yield may be subject to abnormal market movements much more than traditional asset classes like stocks and bonds as a consequence of illiquidity, market trends and market structure changes
- Lastly, the publication of the Indices may cease. Should this occur, the regulation regarding user transitions will be followed, but the existence of a suitable substitute is not assured

8 Cases not covered in rules

In cases that are not expressly covered in these rules, operational adjustments will take place along the lines of the aim of the index. Operational adjustments may also take place if, in the opinion of the Index Administrator, it is desirable to do so in order to maintain a fair and orderly market in derivatives on this index and/or it is in the best interests of the investors of products based on the Index and/or the proper functioning of the markets. The Index Administrator will report to the Supervisor if it makes a decision about a case which is not specifically covered in the rules for comments and review.

9 Liability

The Index Administrator and the Supervisor are not liable for any losses resulting from supplementing, amending, revising or withdrawing the rules for the index. The Administrator will do everything in its power to ensure the accuracy of the composition, calculation, publication and adjustment of the Index in accordance with relevant rules. However, neither the Index Administrator, nor the Supervisor are liable for any inaccuracies regarding index composition, calculation and publication of the Index, information used to make adjustments to the Index and actual adjustments. Furthermore, the Index Administrator and the Supervisor do not guarantee the continuity of the composition of the Index, the continuity of the method of calculation of the Index, the continuity of the dissemination of the index levels, and the continuity of the calculation of the Index.

10 Compass Staking Yield Reference Index Solana - Codes - Rounding

Compass Staking Yield Reference Index Solana			
Index	Compass API Code	Bloomberg Code	Refinitiv Code
Compass Staking Yield Reference Index Solana	STYSOL	STYSOL	.STYSOL
Compass Staking Yield Protocol Reference Index Solana	STYPSOL	STYPSOL	.STYPSOL

Table 1: Compass Staking Yield Reference Index Solana - Publication Codes and Rounding

Compass Epoch Staking Yield Reference Index Solana			
Index	Compass API Code	Bloomberg Code	Refinitiv Code
Compass Epoch Staking Yield Reference Index Solana	STYESOL	Coming Soon	.STYESOL
Compass Epoch Staking Yield Protocol Reference Index Solana	STYPESOL	Coming Soon	.STYPESOL

Table 2: Compass Epoch Staking Yield Reference Index Solana - Publication Codes and Rounding

11 Disclaimer

Nothing contained herein shall constitute or be deemed to constitute a financial, legal, tax or other advice of any kind, or a solicitation to purchase, sell or invest in any financial products or to engage in any financial strategy. Compass Financial Technologies SA or any of its affiliates (“Compass”) (i) does not guarantee the adequacy, the accuracy, the timeliness, the completeness, the evolution and/or the movements of its indices or any data included therein (the “Indices” or the “Index”), (ii) shall not have any liability for any errors, omissions, delays or interruptions therein and (iii) makes no warranty, express or implied, as to results to be obtained by owners of any securities, or by any other person or entity from the use of the Indices. Compass does not make any express or implied warranties, and expressly disclaims, all warranties of merchantability or fitness for a particular purpose or use with respect to the Indices. Without limiting any of the foregoing, in no event shall Compass have any liability for any lost profits or indirect, punitive, special or consequential damages or losses, even if notified of the possibility thereof.



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