



A X I O N

*Axion is an ethical, community-driven cryptocurrency
that rewards long-term investing with high-yield
interest rates and weekly dividends.*

WHITEPAPER

v 1.0



WHY AXION?

How Investors Favor Axion



An Investment Vehicle.

Axion offers a first-of-its-kind blockchain powered venture capital fund alongside high interest time-locked savings deposits (stakes) that earn high interest via our smart contracts.



A Global Cryptocurrency.

Axion is a scalable, spendable global currency - **AXN**. Axion's professional partnership allows for a true world class VISA-sponsored crypto credit card that works directly with AXN.



Orderly Passive Income.

Our innovative dividend mechanisms provide investors and AXN shareowners with rewards in Bitcoin and other top cryptocurrencies, which are immediately liquid while your AXN accrues interest upon its principal.

Why Investors Choose The Axion Network



Our Auction Platform.

Where Axion Network investors participate in separate avenues of bids and purchases on upcoming auctions in return for AXN and different bonuses.



Our Staking Platform.

Where AXN investors utilize their AXN tokens to earn SHARES by executing time-locked deposits, which in turn awards dividends over a period of time.



Our Rewards Mining Platform.

Where network participants can utilize liquidity mining mechanisms in return for real-time bonuses in AXN tokens.

AXION BY THE NUMBERS



212B+
Total
Staked



452B+
Total
Supply



78B+
Staked **5555**
Days



\$2M+
BTC Paid to
Stakers

As of March 25, 2021.

For up-to-date statistics visit axion.network



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Updated March 2021

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02. Executive Summary

Axion offers a first of its kind blockchain powered venture fund alongside high interest time-locked savings deposits (stakes) that earn investors high interest of ~8% plus additional dividends. Axion also acts as a scalable, spendable global currency with its native token AXN. Pay for anything in everyday life using AXN and BTC dividends with our strategic partnership with Connect Financial, who offer a true world class VISA-sponsored crypto credit card that works directly with our native digital token AXN, Bitcoin, and more.

Axion allows anyone to earn on their investment via venture capital auctions and time-locked deposits on the blockchain with the AXN token. Share rates in the Axion ecosystem are the most valuable asset as they determine the payouts drawn from reward pools / investment pools / dividend pools. Shares as they are in the Axion ecosystem are earned by staking AXN, with the share rate determined by the accumulation of users' share(s) divided by the total shares in the ecosystem multiplied by the payout for each day's reward cycle. Network participants earn higher share rate(s) by staking AXN for larger and longer periods of time (much like CDs) in order to accumulate more dividends/rewards.

Staking AXN tokens earns investors liquid dividends while simultaneously earning interest on their principal AXN that is staked on our platform. Our innovative dividend-producing mechanisms provide investors and AXN shareholders rewards in Bitcoin and other top cryptocurrencies, which are immediately liquid while their AXN accrues interest upon its principal via our smart contracts for the users' desired period of time, based on their stake length.

Trust and transparency in the Axion network is based on mathematical principles, blockchain technology, and smart contracts on the Ethereum network. Additionally, our highly experienced team and cooperative community members offer an unparalleled level of support to ensure a simplified, safe, and secure process in understanding and participating in our decentralized platform.





03.



AXION'S MISSION

is to build an ethical ecosystem designed for digital asset portfolio growth and a scalable passive-income solution

FOR ALL INVESTORS.

Welcome to a #betterwaytocrypto

04. Why Axion Exists

In the last few decades, adoption and growth of financial technology (FinTech) products and services have increased in a rather substantial and secular fashion - into the multiple trillions of dollars of market capitalization. FinTech is both the innovative technology, and the industry in which new financial service-based applications, business models, processes and operations, and products are created and utilized by corporations, entrepreneurs, and consumers. The digitization of financial instruments has proven to be ever more useful and prominent in more recent times, due to the global pandemic of ~2020-2021. Two examples of accelerated growth in FinTech services throughout the pandemic include the digitization of payments and otherwise conventional financial services being delivered digitally. From being unable to visit local bank branches in order to make deposits to obligatory work-from-home requirements, more often we see consumers and clients utilize services that are entirely digital.

QUICK STATS:

Bitcoin Market Capacity
\$912B

As of March 1, 2021
via coinmarketcap.com

Ethereum Market Capacity
\$178B

As of March 1, 2021
via coinmarketcap.com

Number of Bitcoin wallets worldwide
68M

As of March 1, 2021
via statista.com

The emergence of blockchain technology has demonstrated disruption in centralized economies by introducing decentralized economies of scale, transparency, and of user control. The introduction and rise of Bitcoin illustrated the strength of distributed ledger technology (DLT) by showcasing and retaining immutable data and an unprecedented level of security on the blockchain - thus reducing fraud and maintaining global accessibility in a digital payments system; cryptocurrency.

Beyond Bitcoin there exist other blockchains and cryptocurrencies, most notably Ethereum - another decentralized, global ecosystem that not only introduces digital money and worldwide payments, but applications as well.

Building upon the foundational layers of financial services, systems, and blockchain technology has brought forth one of the most substantial and innovative growth economies on the Ethereum network - decentralized finance (DeFi). These particular applications utilize cryptocurrencies to offer a new paradigm in typical banking systems and products like lending, private payments, and earning interest.

DeFi had amassed over USD \$39.11B on March 1st, 2021 from just roughly USD \$1.01B exactly one year prior, exhibiting an exponential 39x growth in Total Value Locked (TVL).

Total Value Locked (USD) in DeFi

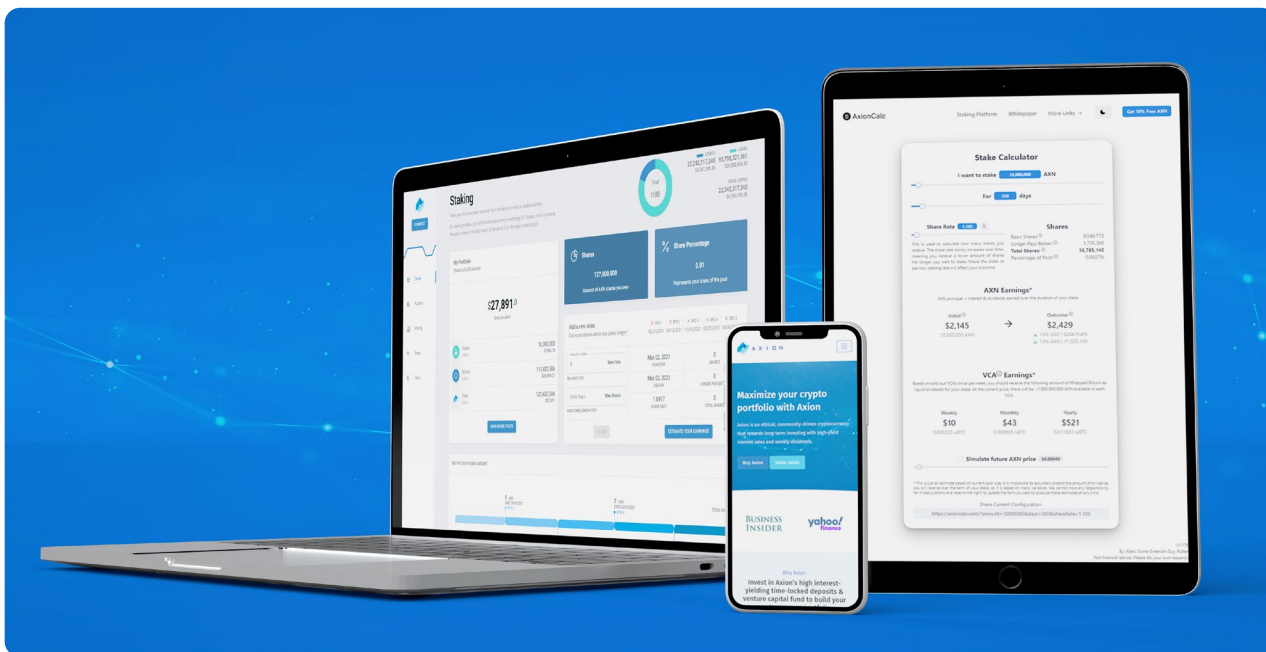


As of March 1, 2021 Courtesy of defipulse.com



Enter Axion. Axion is a decentralized finance application and network that is designed to increase the purchasing power of its ecosystem participants through providing a mathematically viable interest accrual model (through inflation) in its platform, executed via blockchain smart contracts.

While Axion provides ecosystem participants (stakers) with interest paid in its native digital token AXN at the end of mutually agreed upon staking period(s), it also utilizes Bitcoin's liquidity on the Ethereum network by awarding tokenized Bitcoin (wBTC) to stakers in the form of liquid dividends. Axion's "staker" class can earn and spend tokenized Bitcoin globally, efficiently, and with trust and integrity on the blockchain, with the amount of both dividends and interest earned based on the aforementioned share rate that individual users have accrued by staking.



Pictured: the Axion Staking platform, calculator, and mobile website.

*Axion is an ethical, community-driven cryptocurrency
that rewards long-term investing with high-yield
interest rates and weekly dividends.*

WITH AXION, YOU CAN.



05. The Axion Solution

Axion aims to solve common traditional finance concerns and issues, which range from antiquated banking practices, centralized governance and authority, and immensely low interest rates and returns on investment(s).

THE PROBLEM

LOW INTEREST RATES

Interest rates, globally, are the lowest they have ever been in history and represent true economic fragility. Over several decades, there has been significant downtrend in interest rates and are expected to continue to stagnate. Even if interest rates begin to rise, the process of such would take several years, or even decades to be at sound investment levels.

THE AXION SOLUTION

SUPERIOR INTEREST RATES

Axion generates an 8% interest rate directly to the network participants through fixed inflation, in an optimized system built for scalability. This minimum 8% yield generates market-beating returns, in addition to the other token benefits such as liquid dividends.

LEGACY BANKING CD'S

A certificate of deposit is a product traditionally offered by banks, brokerages, and credit unions worldwide, that provide their customers a favorable interest rate compared to a standard savings account. The premium is offered in return for the customer locking up their funds for an agreed-upon time period (months, years). Unfortunately, traditional CDs just don't offer any outstanding or appealing interest rates, with a majority of them well under 1.5-2%- yet the amount of capital invested in CDs worldwide is well into the trillions of dollars.

CRYPTOCURRENCY CD'S

Axion's investment product is the crypto equivalent of a CD. Axion provides its network participants a CD-equivalent product at a minimum/baseline interest rate of 8%, on the blockchain, for maximum safety, security, and transparency. Axion also introduces similar traditional CD features such as emergency unstake/withdrawal penalties to incentivize successful, longer stake periods. The interest rate that Axion offers its stakers is far more than any traditional CD investment/lock-in period on the planet.



THE PROBLEM

LEGACY FIAT DOLLARS

Fiat currencies are inherently locked to their representative governments and are subject to fiscal policies influenced by politics, changing administrations, and foreign policy. They also serve limited purposes, like the paying of goods and services, and are not reliable as stores-of-wealth and do not inherently offer any “smart” features or provide their owners opportunities for growth.

THE AXION SOLUTION

CRYPTO SMART CONTRACTS

Axion is a cryptocurrency that allows for important and beneficial functions that can be programmed into the smart contract(s) on and within the Ethereum Network. Your investment is secured by trustless blockchain technology, in addition to allowing unique, secure and verifiable Smart Contracts to run on the network, giving your Axion the power to grow and develop over time as new features are expertly coded.

What are Smart Contracts?

Axion is a cryptocurrency that runs on the Ethereum network, which is a decentralized blockchain network that not only manages transactions from one currency to another, or one wallet to another, but also allows for unique code to be run on its network in a secure, verifiable manner. Smart Contracts can be summarized as computer code that self-executes or automatically executes specific function(s) or agreement to run on the decentralized network - the blockchain.

The functions of the Axion smart contract(s) include:

- Daily auctions.
- Token buybacks.
- Staking tokens from auctions.
- Early exit and withdrawal fees.
- Fixed inflation rate.
- Network staking.
- Share distribution.
- Bonus multipliers.
- Implementation of longer stakes paying better.
- Calculation of payout pools.
- Automation of payouts.
- “BigPayDays” accruing yearly for stakers.
- Referral programs
- Payouts of wrapped Bitcoin (wBTC) dividends.

Within all of these functions exists complex code that has taken expert development over several months. The majority of the code is also public for transparency on [GitHub](#). There has also been an independent economics audit to ensure the platform has infinite operability for decades to come. These are the benefits of Axion being a cryptocurrency on the world’s most popular and trusted blockchain- Ethereum.

06. Axion's Business Model

Axion's business model can be explained in just a few steps. There is the act of acquiring Axion (AXN), staking it, and then receiving dividends based on how a user chose to stake.

**In the most simple terms,
staking is locking up cryptocurrencies to earn rewards.**



Staking within the Axion ecosystem is different from other definitions of staking within a blockchain-based ecosystem. Traditionally, staking refers to the consensus algorithm that supports a blockchain network with regards to operability and security- referred to as Proof of Stake (PoS). Axion's network is already secured by the underlying blockchain, which at the moment is Ethereum- the most utilized blockchain in decentralized finance.

Step 1: Acquiring Axion through auctions or Uniswap.

A user will perform one of two actions- purchase Axion by trading it from Ethereum (ETH) on Uniswap (a popular decentralized automated market maker) or by participating in the Auctions. There are two separate auctions, Regular Auctions and Venture Capital Auctions.

Regular Auctions

The regular auction “raffles” accumulated Axion tokens between users, in proportion to the participants’ bid in Ethereum (ETH). Any leftover AXN from the auction rolls over into the next weekly auction. When a user places a bid in ETH, 80% of the received ETH is used to instantly buy back AXN on Uniswap and the received AXN is distributed as dividends to the staker class. 19% of the ETH is Axion Foundation profit whereas 1% goes to The Eden Reforestation Project where every \$0.10 donated plants one tree. The Axion founder owns no AXN tokens and is paid directly through the Axion Foundation.



All Axion received from this auction including referral bonuses must be staked for a minimum of 60 days upon withdrawal. The stake length may be increased to 5555 days. By increasing the stake length, the more shares the user receives in return which results in more dividends received from the auction buybacks.

Venture Capital Auctions

There are two Venture Capital Auctions per week, on Tuesday and Friday. Each of these particular auctions have a maximum cap of 1B (billion) AXN, for a total of 2B per week. Venture Capital Auctions bring in a new dividend asset class in the form of wrapped Bitcoin (wBTC) which simply utilizes Bitcoin's liquidity on the Ethereum network. The Venture Capital Auction investor also receives an immediate 10% bonus in the form of liquid wBTC direct to their wallet, as soon as their bid transaction is confirmed.

The auto-stake period for VCA's are a minimum of 120 days- longer than the normal auctions in order to offset the additional reward paid in wBTC. VC auction investors may choose to stake for anything between 120 days up to a maximum of 5555 days by adjusting a sliding scale with the date attached. Longer auto-stake periods for purchased AXN benefit greatly due to the BigPayDays and LongerPaysBetter bonuses while also securing a better share rate.

The rewards for VCA's are wBTC, where 85% of all ETH raised is used to purchase wBTC and distribute it across the staker class- these dividends are liquid and withdrawable at any time. A further 10% is a wBTC bonus to the bidder, and 5% is Axion Foundation profit. In the near future, additional alternative coin (altcoin) dividends will be introduced.

Users can find the auction portal and more information [here](#).

Step 2: Staking Axion on the Axion platform.

The Axion staking platform is where users lock up their Axion in exchange for shares to earn dividends over time. The staking contract temporarily burns AXN in return for shares. Shares in the Axion ecosystem are the most valuable asset as they determine the payouts drawn from reward pools / investment pools / dividend pools. A user's share rate is determined by the accumulation of users' share(s) divided by the total shares in the ecosystem multiplied by the payout for each day's reward cycle. Network participants earn higher share rate(s) by staking AXN for larger and longer periods of time (much like CDs) in order to accumulate more dividends over time.

Users can find the staking portal and more information [here](#).

Step 3: Earn dividends, spend Bitcoin

Axion shareholders that are staked in the ecosystem earn dividends in the form of tokenized Bitcoin (wBTC) which they can withdraw and spend, while the principal AXN accrues interest that is able to be withdrawn at the end of the stake period, alongside the principal amount of AXN. When a user ends their stake, their shares cease to exist and their AXN is minted and sent to their respective wallet.

07. Ecosystem Features

SHARES & INTEREST

The principle behind the staking system is to lock the Axion amount for a period and convert it to Shares (on the *StartDay* of the stake) that rewards longer staking according to the *LongerPaysBetter* bonus mechanism. These Shares are used to calculate a daily interest (in Axion) over the stake period. Each day a total interest to be shared among all stakeholders called *TotPayoutAxn(Day)* is calculated and given in equation (1)

(1)

$$TotPayoutAxn(Day) = APD (TotLiquidAxn(Day - 1) + TotStakedAxn(Day - 1)) + AuctionBuyBackAxn(Day - 1)$$

where the different parameters are

- *APD* is the daily interest $APY/(100 \times 365) = 8\%/(100 \times 365)$.
- *TotLiquidAxn(Day-1)* is the total liquid Axion amount on the previous day.
- *TotStakedAxn(Day-1)* is the total staked Axion amount on the previous day.
- *AuctionBuyBackAxn(Day-1)* is the payout from Regular Auction events from the previous day.

Each stakeholder's daily interest *PayoutAxn(Day)* is calculated proportional to the *Stakeholder-Share-Percentage* (SSP) {or PerCentage-of-Pool, PoP as in calc.axion.network }

(2)

$$PayoutAxn(Day) = \frac{1}{100} SSP(Day) TotalPayoutAxn(Day)$$

The SSP at the current *Day* is

(3)

$$SSP(Day) = \frac{100 Shares(StartDay)}{TotShares(Day)}$$

where *Shares(StartDay)* is calculated at the start of the stake and is constant over the whole stake and *TotShares(Day)* is the sum of all stakeholders shares at the current *Day*. *TotShares(Day)* will change from day-day depending on the added and subtracted shares from new stakes and unstakes.

At the end of the stake the stakeholder's unstake amount *UnstakeAxn(EndDay)* is calculated as the sum of all days of interest and the principal *StakeAxn(StartDay)*

(4)

$$UnstakeAxn(EndDay) = StakeAxn(StartDay) + \sum_{Day=StartDay+1}^{EndDay} PayoutAxn(Day)$$

In addition each stakeholder will receive liquid dividends in form of wBTC from the Venture Capital Auctions proportional to the stakeholder's SSP.

LONGER PAYS BETTER

The idea behind Axion's *LongerPaysBetter* (LBP) functionality is to reward users that stake for longer periods of time, much like that of a standard certificate of deposit. The longer duration of the stake, the more shares are earned as a bonus.

The total number of Shares earned at the *StartDay* of staking is given by the equation

(5)

$$\text{Shares}(\text{StartDay}) = \text{BasicShares}(\text{StartDay}) + \text{LpbShares}(\text{StartDay})$$

where *BasicShares* is given by

(6)

$$\text{BasicShares}(\text{StartDay}) = \frac{\text{StakedAxi}}{\text{GSR}(\text{StartDay})}$$

and *LpbShares* is given by

(7)

$$\text{LpbShares}(\text{StartDay}) = \frac{1}{1820} \frac{\text{StakedAxi} (\text{NumDaysStaked} - 1)}{\text{GSR}(\text{StartDay})}$$

where the “minus 1” accounts for the minimum stake period of 1 day.

The $\text{GSR}(\text{StartDay})$ is the so-called Global-Share-Rate (see next chapter for details) which is used to control the inflation, such that the number of Shares for a new stake is reduced over time by increasing the GSR factor a small amount every day. A new GSR update procedure was introduced on February 15th 2021 with a start value of 1.09 and with the current rate of change an estimate (equation 14) gives a GSR value of 1.55 and 2.22 for stakes starting one and two years later.

In order to illustrate the multiplication effect of *LongerPaysBetter* we assume a stake of **1 Axion**. Then we can define a *BonusMultiplier* by using equation (5) and insert equation (6) and (7) and get the equation

(8)

$$\text{BonusMultiplier}(\text{StartDay}) = \text{BasicMultiplier}(\text{StartDay}) + \text{LpbMultiplier}(\text{StartDay})$$

where *BasicMultiplier* is given by

(9)

$$\text{BasicMultiplier}(\text{StartDay}) = \frac{1}{\text{GSR}(\text{StartDay})}$$

and *LpbMultiplier* is given by

(10)

$$\text{LpbMultiplier}(\text{StartDay}) = \frac{1}{1820} \frac{\text{NumDaysStaked} - 1}{\text{GSR}(\text{StartDay})}$$



The number of Shares may thus alternatively be calculated using the *BonusMultiplier* (BM) equation
(11)

$$\text{Shares}(\text{StartDay}) = \text{StakedAxn} \text{ BonusMultiplier}(\text{StartDay})$$

The *BonusMultiplier* (BM) equation (8) is shown in Figure 1 below for all staking days from 1-5555 where BM example values are shown every other year using the 3 GSR values of 1.09, 1.55 and 2.22 for stakes starting at February 15th in 2021,2022 and 2023 respectively. The maximum BM value at 5555 days (~15.2 year) is 3.72,2.61,1.83 which is equivalent to a multiplier effect of 372%,261% and 183%.

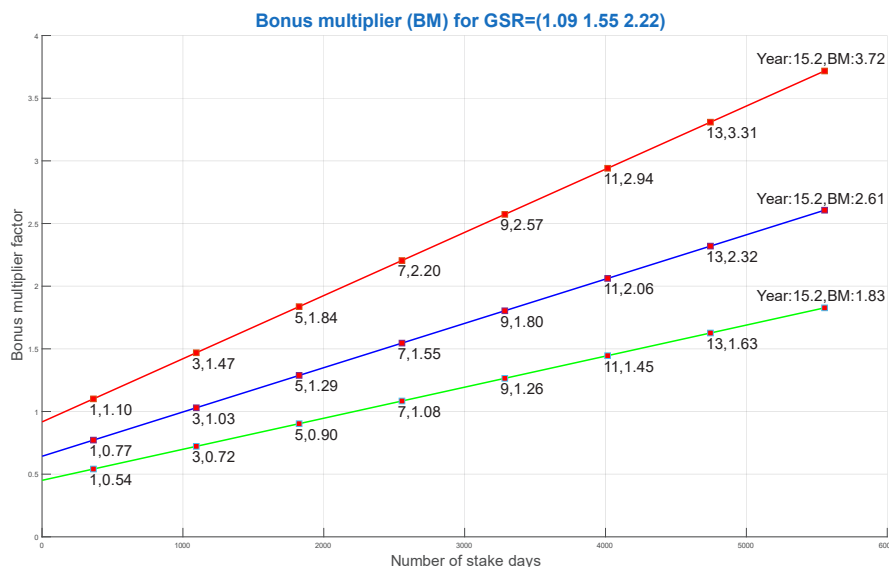


Figure 1 BonusMultiplier vs. number of stake days for GSR values (1.09 – red, 1.55 – blue, 2.22 – green). Red square markers show (number of staked years, BM).

In Figure 2 below we use the BonusMultiplier example in Figure 1 and shows the *number of Shares* versus the *number of stake days* for a staked amount of 10 Million AXN. The same results may be derived from Figure 1 by directly multiplying the BM values by 10 Million.

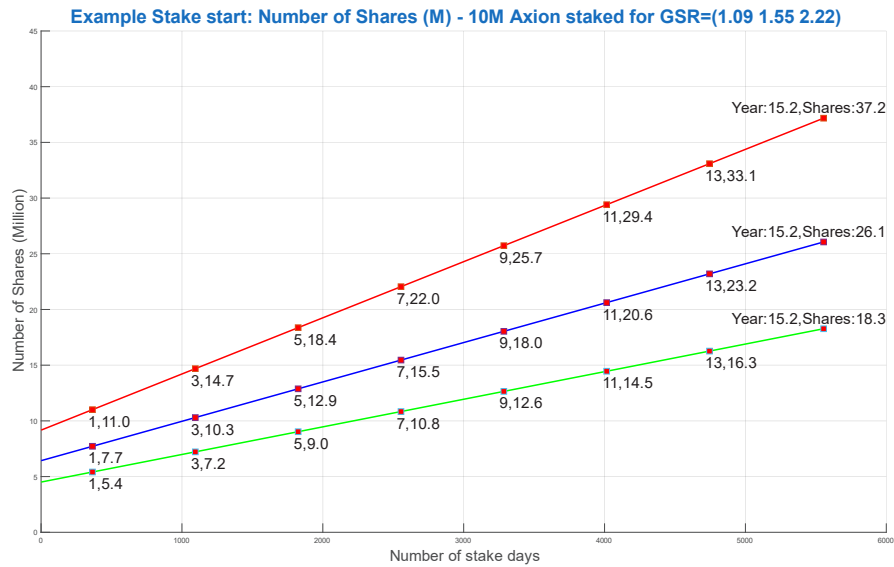


Figure 2 Example of Shares received from 10 Million Axion versus number of stake days for GSR values (1.09 – red, 1.55 – blue, 2.22 -green). Red square markers show (number of staked years, BM).



LIQUIDITY MINING

Axion has created its own liquidity mining platform that allows participants to provide liquidity on Uniswap (Axion's preferred open marketplace to buy and sell AXN), to earn additional rewards in AXN. Users deposit Liquidity Provider (LP) tokens on Uniswap and get rewarded in liquid AXN rewards that are calculated on a block-by-block basis. On average, a new block is created every 13 seconds and therefore users can both see their rewards withdraw their rewards, in real time.

This initiative incentivizes liquidity trading pool provision for the Axion ecosystem where rewards are accrued on top of the standard fee generation from Uniswap.

In order to participate, users must deposit into a mine on our platform page found below, and then follow these simple steps:

- **Purchase or own AXN tokens.**
- **Fund the Uniswap liquidity pool with AXN and an ETH equivalent.**
- **Upon adding liquidity, Uniswap generates you LP tokens as a proof of deposit.**
- **Deposit these LP tokens in the portal to earn rewards in AXN while supporting the ecosystem.**

Within this platform, there exists three non-fungible tokens (NFTs) that interact directly with this particular contract- the OG 5555 2.5M V2, the OG 5555 100M V2, and the Liquidity Provision NFT. Each NFT provides a 10% bonus to the liquidity allocation if held in a user wallet.

All of the statistics of the rewards/liquidity mining platform can be found [here](#).



GLOBAL SHARE RATE

The Axion ecosystem has a built-in inflation over time since the total Axion volume $TotSupplyAxn(Day) = TotLiquidAxn(Day) + TotStakedAxn(Day)$ is increased for every unstake, auction and BigPayDay event where additional Axions are minted. This means that the total interest $TotPayoutAxn(Day)$ increases over time which in turn increases the daily $PayoutAxn(Day)$ per stake. In order to control the inflation, the number of Shares for a new stake is reduced over time by increasing the Global-Share-Rate (GSR) factor a small amount every day. This means that a new stake converts to fewer Shares if a user starts a new stake tomorrow or later instead of today with the same amount of Axion. This is also an efficient way to reward long staking over “gaming” strategies with multiple “staking-unstaking-staking” over short periods of time (see Appendix A 1.3 for details).

A new GSR update procedure was introduced on February 15. 2021 with a start value of 1.09 and increased each day according to the following equation

(12)

$$GSR(Day) = GSR(Day - 1) (1 + ScalingFactor(Day) GrowthFactor(Day))$$

where the different parameters are

- $GSR(Day-1)$ is the GSR value on the previous day.
- $GrowthFactor(Day)$ is the main parameter used to automatically control GSR increase
- $ScalingFactor(Day)$ is an inflation rate change control parameter that may be used for additional decrease or increase rate of the GSR update amount. Currently fixed at 1.0.

The $GrowthFactor(Day)$ for the current Day is calculated as

(13)

$$GrowthFactor(Day) = APD + \frac{AuctionBuyBackAxn(Day - 1)}{TotLiquidAxn(Day - 1) + TotStakedAxn(Day - 1)}$$

The current $GrowthFactor(Day)$ measured over 15 days from February 15th is 0.0009733 where APD is fixed at 0.0002198 and the average contribution from the auction buybacks are 0.0007541.

In order to illustrate the effect of the $GrowthFactor(Day)$ on GSR update, the current GSR update function may thus be written using $DaysRelative$ to February 15. 2021 as

(14)

$$GSR_{example}(DaysRelative_20210215) = 1.09 \cdot 1.0009733^{DaysRelative}$$

This gives a small increase from day-day, but after 1 year and 2 years the GSR value is increased from 1.09 to 1.55 and 2.22 respectively with a corresponding decrease in number of Shares for the same amount of staked Axion.



Note that the GSR-example equation above is assuming a constant $GrowthFactor(Day)$, but it will vary in the future due to the variations in the daily payout amounts from the auctions as shown in the $GrowthFactor(Day)$ equation above.

When a user stake for a longer period, in addition to increased number of Shares from the LongerPaysBetter mechanism, the total interest is also earned over a longer period resulting in an exponential effect on the interest versus $NumDaysStaked$.

In order to describe the relationship we assume that $TotSupplyAxn$ and $AuctionBuyBackAxn$ are constant for each day and may thus simplify equation (4) to

(15)

$$UnstakeAxn(EndDay) = StakedAxn(StartDay) + \frac{Shares(StartDay) (NumDaysStaked - 1) (APD TotSupplyAxn + AuctionBuyBackAxn)}{TotShares}$$

Inserting equation 6, 7 in 15 and simplify we get

(16)

$$\begin{aligned} UnstakeAxn(EndDay) = & StakedAxn(StartDay) \\ & + \frac{1}{1820} \frac{StakedAxn (APD TotSupplyAxn + AuctionBuyBackAxn) NumDaysStaked^2}{TotShares GSR(StartDay)} \\ & + \frac{909}{910} \frac{StakedAxn (APD TotSupplyAxn + AuctionBuyBackAxn) NumDaysStaked}{TotShares GSR(StartDay)} \\ & - \frac{1819}{1820} \frac{StakedAxn (APD TotSupplyAxn + AuctionBuyBackAxn)}{TotShares GSR(StartDay)} \end{aligned}$$

which shows a quadratic effect from the $NumDaysStaked$.

Equation 16 is used in 2 examples to illustrate the effect of the start day of staking with the following assumptions:

- $TotShares(Day)$ is fixed at 392 Billion
- $TotSupplyAxn(Day) = TotLiquidAxn(Day) + TotStakedAxn(Day)$ is fixed at 264 Billion
- 3 Stakes of 10 Million Axn starting at February 15th in 2021, 2022 and 2023 (as in Figure 2 example) with GSR values of 1.09, 1.55 and 2.22
- **Case A:** No auction buybacks
- **Case B:** Regular auction buyback, current 80 Million 4 times per week -> average 45.7 Million/day. No minting and 60 days auto-staking effects of the buybacks are included that would further increase the inflation by increasing $TotSupplyAxn$.



Case A: Figure 3 below depicts the Axion payout (principal + interest) at the end of the stakes for 10 Million staked giving a net interest ranging from 6-305 %, 4-214 % and 3-150 % after 1 year to 15.2 year for the 3 different GSR values.

Case B: Figure 4 below depicts the Axion payout (principal + interest) at the end of the stakes for 10 Million staked giving a net interest ranging from 11-546 %, 7-383 % and 5-268 % after 1 year to 15.2 year for the 3 different GSR values.

These 2 examples illustrate that the Regular auctions buyback mechanism have a significant inflation effect that will be important to control over time. See Appendix A where all inflation effects and possible control mechanisms are simulated in detail.

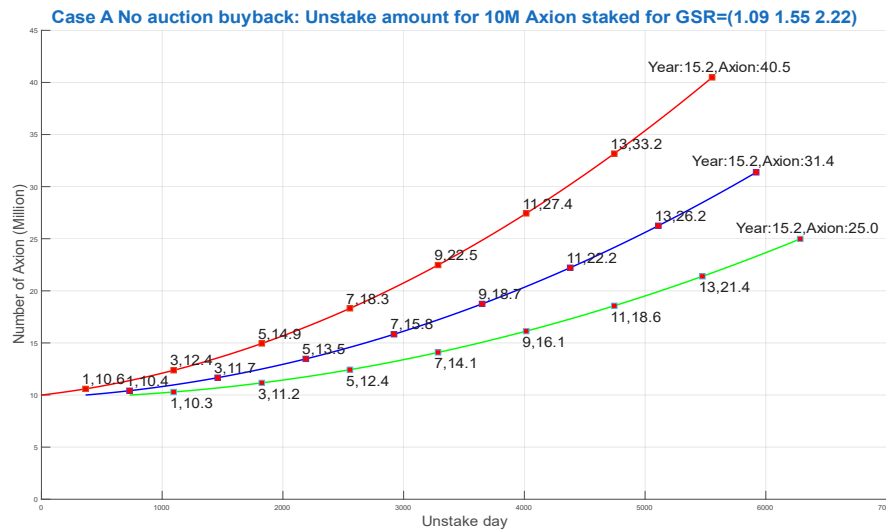


Figure 3 Case A – No auction buyback Axion payout (principal+interest) received from a 10 Million Axion stake versus number of stake days and GSR as a function of start of stake date. GSR,Start date: (1.09,2021-02-15) -red,(1.55,2022-02-15)-blue,(2.22,2023-02-15)-green. Red square markers show (number of staked years,Unstake amount).

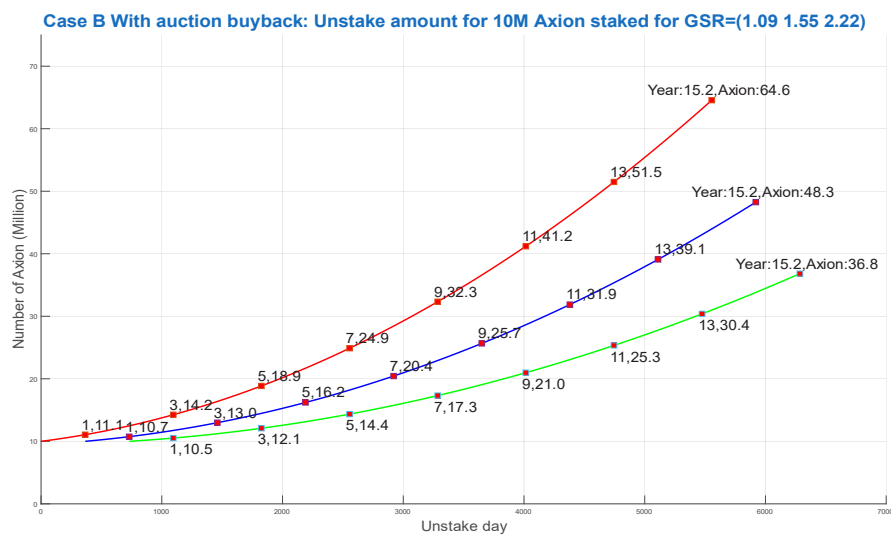


Figure 4 Case B – With auction buyback: Example of Axion payout (principal+interest) received from a 10 Million Axion stake versus number of stake days and GSR as a function of start of stake date. GSR,Start date: (1.09,2021-02-15) -red,(1.55,2022-02-15)-blue,(2.22,2023-02-15)-green. Red square markers show (number of staked years,Unstake amount).



BIG PAY DAYS

Big Pay Days (BPD) are a valuable reward mechanism that was built into the Axion ecosystem to incentivize longer stakes. There are 50,000,000,000 AXN tokens allotted to the Big Pay Days over five years for stakes that are locked for the required amount of days or more. Users that stake at least 350 days will be eligible to receive the first BPD reward allotment, and users that stake at least 700 days will be eligible for the second, and so forth, until the fifth BPD has been released.

The BPD contract holds the Big Pay Day tokens and releases them on the appropriate day(s) based on the stored information and user data within the contract.

The calculations for the amount of tokens distributed across the five BPD's are:

- **Year 1: 10% of the tokens are distributed.**
- **Year 2: 15% of the tokens are distributed.**
- **Year 3: 20% of the tokens are distributed.**
- **Year 4: 25% of the tokens are distributed.**
- **Year 5: 30% of the tokens are distributed.**

08. Ecosystem Penalties

EARLY UNSTAKES

The staking feature allows the user to unstake before the committed time in which they staked for, although the user will incur a penalty for this action. Once a user initiates an unstake, a warning will occur to inform the user that there will be a penalty inducted. The payout due to an early unstaker is calculated based on the days that they were staked for- thus the payout is their principal + the summation of the payout they've received per day.

The penalty is a percentage of how early the user unstaked versus their committed time frame- the number of committed days left of the stake / total committed days.

For example, a user stakes 100 AXN and receives 50 AXN as their share in the payout pools for the days that they are staked for.

The user commits to stake for 100 days, but unstakes early after day 20.

The payout penalty is $80/100$ or 80% of the final payout.

The final payout is 20% of earned interest + the principal.

Only 30 AXN will be returned, which is 20% of 150 AXN.

All early unstake penalties for the day are tabulated and added to the auction pool the next day.



LATE UNSTAKES

The system penalizes a user for leaving their stake unattended after their committed period has ended, although there is a grace period of 14 days.

The final payout (principal + payout) is penalized at a rate of 0.143% per day, or 1% per week.

For example, if a user's payout of 100 AXN is available to claim at the end of a 50 day stake period, the grace period will be from day 51 to 64 (14 days). The penalty period initiates after day 64, whereas the 0.143% is deducted from the matured stake reward. In ~2 years, an unclaimed stake will have been lost entirely. All early un stake penalties for the day are tabulated and added to the auction pool the next day.



09. Token Technology



Token

The Axion (AXN) token is an ERC20 token on Ethereum, which is the technical standard for the network. The functionality of the token allows minting via **Staking, Sub Balances, the Auction Manager, and the Auction Contract**. It is important to note that minting tokens is only permitted for required function calls.



Staking

Briefly and on a technical level, staking within the Axion code can be presented as follows:

The *Stake* method allows a user to stake for a maximum of 5555 days. The *Unstake* method allows a user to unstake their Axion and Receive, based on the parameters below.

There are 2 main functions to calculate the staking interest; *calculateStakingInterest* & *getAmountOutAndPenalty*.

Token buybacks (AXN) from the Auction are sent to the *Staking* contract. The *Make Payout* function is called once per day, which burns the bought back tokens. Once the tokens are burned, they are distributed to stakeholders via the payout variable within the contract. The staking contract holds data from the version 1 (V1) staking contract address to allow cross compatibility between V1 and V2 contracts. The staking contract also holds the total share supply and the total staked supply.



Auction Contract

The Axion Auction Contract operates with both Daily and Weekly auctions. Additional rewards to daily auctions are attributed from early and late stake penalties. The daily auctions are filled via the Auction Manager. Additional rewards for the weekly auctions are filled via previously undersold auctions, and are primarily filled via the Auction Manager. Ethereum deposited on regular auctions is used to buy back AXN from the open market in order to distribute them to stakeholders, and the Foundation, on an 80/20 basis.

The Venture Capital Auctions (VCA's) occur on Tuesday and Friday of every week. VCA's that simultaneously land on weekly auction days will disperse additional tokens as per the contract functionality. The Auction contract holds the data for all prior auctions in Axion's ecosystem.



Auction Manager

The Auction Manager fills BigPayDays (BPD's) with tokens (maximum 50,000,000,000) over five years. It also fills the Auction pools with a maximum of 200,000,000,000 tokens over five years. The Auction Manager is operated by the Foundation and secured with Gnosis Safe- the most trusted multisignature wallet on Ethereum.



BPD (Big Pay Day)

The BPD contract holds the BigPayDay tokens, and stores all of the requisite information about each of the five BigPayDays. On the day(s) of BPD, the contract transfers BPD tokens to the SubBalances contract.



SubBalances

The SubBalances contract is utilized by the Staking contract to hold stake session information. The stake session information is used to calculate BPD rewards to stakeholders. SubBalances are what pays BPD rewards to users. The BPD rewards are only payable after stake(s) are withdrawn after the BPD (day) is over. SubBalances also hold data from the V1 staking contract address to allow for cross compatibility between V1 and V2 contracts.

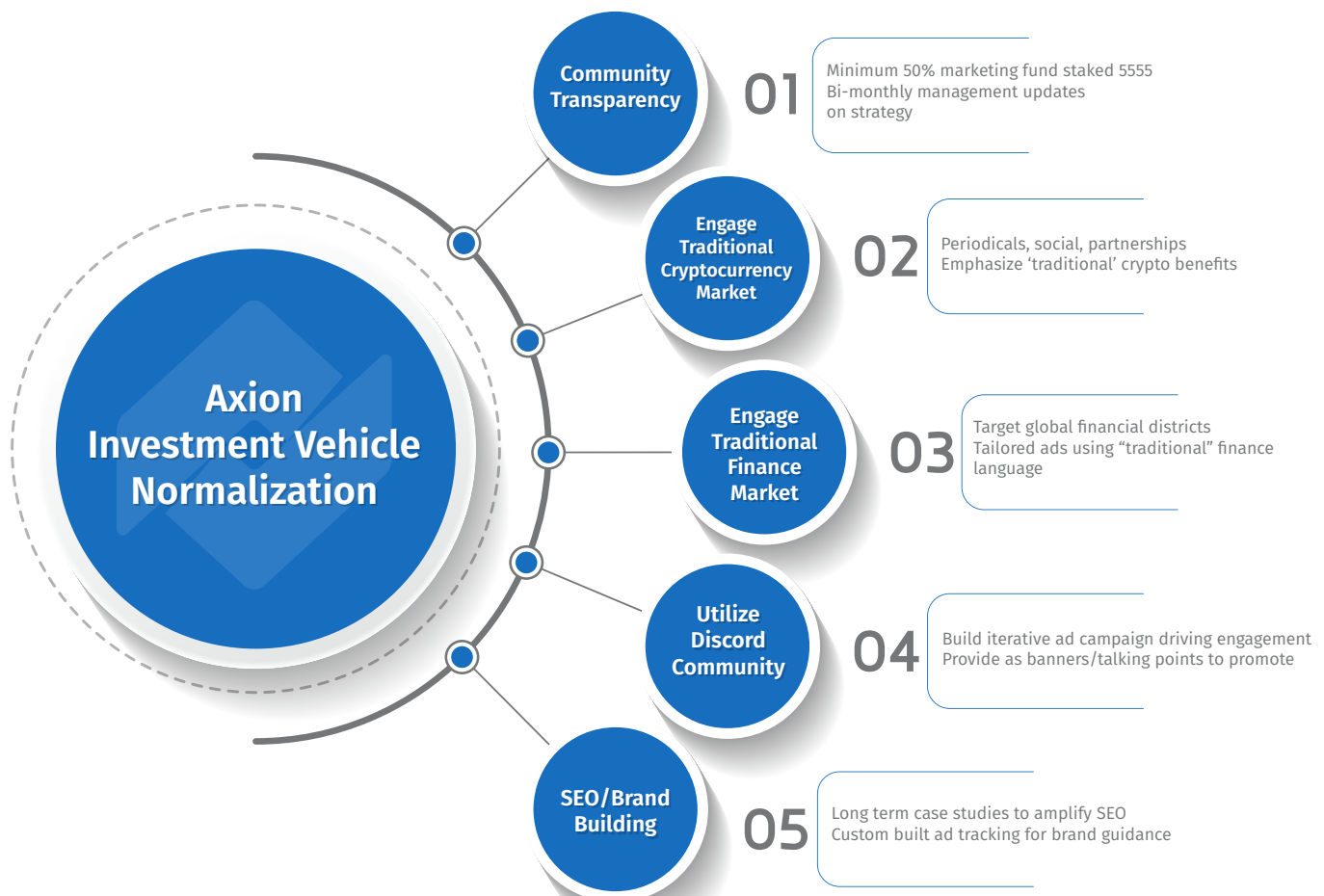


10. Marketing & Branding

Marketing our community centered and ethical finance approach is vital for Axion to achieve adoption. After the community approved a \$50,000/month marketing budget from the development fund in December 2020, Axion hired a marketing team to roll out full scale marketing in January 2021. The Marketing team came from within the community, bringing a strong and diverse set of marketing skills. The team rolled out a 3 phase plan to promote Axion throughout the year 2021 with a steady increase in marketing spend. This came with core promises from the marketing team that:

1. **The Administration fee of the marketing team would be 50% Staked to Max Shares.**
2. **New team member onboarding would work first to build the team from within the community, and promote contracts that include long term investments by employees.**
3. **There would be full transparency of marketing spend available to the community.**

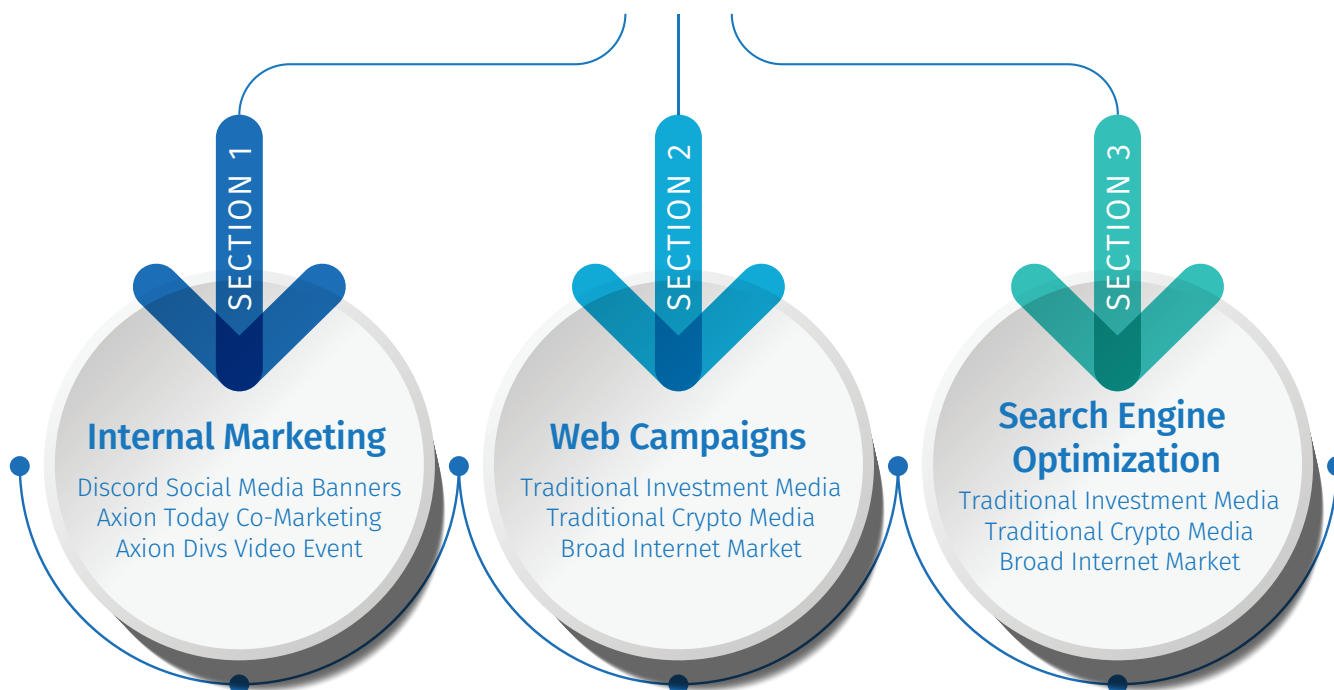
The underlying marketing strategy is about transforming Axion into a #BetterWaytoCrypto. This starts with branding Axion as an Ethical Finance, Community based investment vehicle. This strategy revolves around 5 pillars, presented here:



With these 5 pillars as our guide, Axion Marketing is split into 3 phases for 2021. Phase 1 is all about asset creation and team building, followed by our online campaign coinciding with the launch of VCA.

Phase 1: Q1 & Q2 2021

Build and Distribute



By focusing on our overall web presence, marketing set out to build a world class committed internal team to execute on this plan. In Q1, Marketing launched its initial campaign with a team of 5 to announce Axion VCA to the globe. Strategic Partnerships with [Denver Digital](#) for SEO, the onboarding of a [creative director](#), and the formation of an internal marketing team built from Axion investors came together. The team not only produced and launched a full campaign in 8 weeks, but did so with a full revamp of the website and a fully released Branding Guide viewable by the entire community.

This Branding Guide lays out the Do's and Don'ts of Axion Marketing, including tone, audience, commitments, logo and brand look control. This branding book serves a compass to guide the Marketing efforts, making sure that it remains true to the ever-developing Axion brand. It is with documents like the brand book that helps separate and distinguish Axion from the noise.



Axion Brand Book

The brand book was developed as a proof-of-concept for the Axion brand. Many of the design principles and language in that book are present here in this whitepaper. We are including the Brand Book in its entirety in the following pages to showcase the thought the team put into the Axion brand.



01.



AXION'S MISSION

is to build an ethical ecosystem designed for digital asset portfolio growth and a scalable passive-income solution
FOR ALL INVESTORS.

Everything we do at Axion should reflect these core values.
Axion is here to provide an ethical, long-term investment platform for anyone.
We are here to provide a transparent, welcoming, and fruitful community dedicated to mutual growth.
We are a haven for tech-savvy day traders AND tech-illiterate first-time investors.
We are here to change how the world sees crypto investments and investing in general.

This is a #betterwaytocrypto.

02. Brand Foundation

The brand foundation expresses the essence of Axion and provides a compass heading for all design decisions and executions moving forward.

PURPOSE

Axion is an ethical, community-driven cryptocurrency.

POSITION

Axion rewards long-term investing with high-yield interest rates and weekly dividends.

PROMISE

With Axion... you can.

- ...join an exciting new community.
- ...interact with a global currency.
- ...invest no matter how much or how little you have.
- ...watch your investment grow.
- ...find help along the way.
- ...be excited about your future.



03. Personality Attributes

Our personality attributes express the tone and feeling of Axion to outside viewers.

AUTHENTIC.

Everything Axion does is real.
We don't sugarcoat or over-hype.
We don't make promises we can't keep.

NOT: Cheesy, fake, spurious, cheap

ENTERPRISING.

We're re-imagining the financial investment world. We do everything with courage, passion, and excitement.

NOT: Aggressive, reckless, foolhardy

FORWARD-THINKING

We're grounded in the present but our eyes are to the future. We're playing the long-game, our sights set on 15 years.

NOT: Shortsighted, wandering, indecisive

COMMUNITY FOCUSED

When Axion prospers, the individual prospers too. We're here to help anyone become investors and help them grow.

NOT: Self-centered, isolationist, haughty

ACCEPTING

We welcome all members to our community, no matter their race, gender, past experiences, or financial goals.

NOT: Close-minded, judgmental

ETHICAL

We strive to maintain transparency and longevity. We will make Axion valuable to all investors regardless of entry price.

NOT: Unprincipled, dishonorable

04. Narrative & Messaging

Our core messaging and the way we communicate about Axion helps distinguish us in a noisy crypto marketplace.

NARRATIVE CORE VALUES

In everything we communicate, we should strive for authenticity, transparency, and confidence. Axion is a unique and powerful financial tool, part of a larger investment portfolio. We're about giving investors a unique growth opportunity in the cryptocurrency space with powerful smart contracts. We are excited about the future of Axion and convey it regularly. We strive to be inclusive, whether an individual is a "crypto-bro" or a stay-at-home mom, a college student or a CEO, Axion is for everyone. We respect people's privacy, acknowledging that Axion's founder and core members of the team are anonymous-by-choice. We don't shy away from Axion's history, choosing instead to adopt the reality that our wounds make us stronger.

We believe, absolutely, that **With Axion, You Can.**

WITH AXION, YOU CAN.



PRIMARY MESSAGING

Axion offers a first of its kind blockchain powered venture fund alongside high interest time-locked savings deposits (stakes) that earn investors high interest of ~8% plus additional dividends. Axion also acts as a scalable, spendable global currency with its native token AXN.

Axion allows anyone to earn on their investment via venture fund auctions and time-locked deposits on the blockchain with the AXN token.

Axion is dedicated to making the onboarding process for new investors as efficient and accessible as possible with dedicated fiat to Axion onramp and support specialists available at any point through the Axion website.

AD COPY:

- With Axion, you can.
- Stake Axion, earn Bitcoin.
- Max shares, max dividends.
- Grow your investment with Axion.
- Grow your stack with Bitcoin divs.
- Upgrade your portfolio with Axion.
- Relax 'n Divs.

MESSAGING DO'S AND DON'TS

DO:

- Promote Axion as an investing tool
- Talk about 8% APY minimum yield
- Advertise longevity (5555 stakers)
- Emphasize Bitcoin dividends
- Describe Axion as a new cryptocurrency
- Promote our strong community
- Describe our ethical and transparent financing
- Use quality designs and professionalism in all advertising.
- Talk about a #betterwaytocrypto

DON'T:

- Imply Axion should be anything more than a small part of a broader investment portfolio
- Encourage FOMO / overemphasize past APY
- Talk about retirement or getting rich quick
- Put in lots of hype/buzz words
- Compare Axion to other cryptos
- No sexually suggestive print or images
- No tribalism / excluding anyone for any reason

05. Visual Identity

With our logo and design elements, consistency is key. There are many moving parts with lots of community-created content and features being developed on a daily basis. What will help separate official Axion communication and development is the consistency of public-facing branding, fonts and colors across all mediums. All Axion Foundation websites, tools and content, whether created internally or by third-party vendors, should follow these approved guidelines when creating and delivering content.

PRIMARY LOGO



Use case:
In all Axion official content over a lighter background. The logo text is Axion Blue.

PRIMARY LOGO REVERSED



Use case:
In all Axion official content over a darker background. The logo text is white.



Primary Logo usages to avoid:



Using the Reversed logo with the white text over white background



Using the logo with non Axion-branded colors



Putting the logo copy over visually dense areas



Rotating or slanting the logo and copy



AXION

Filling the logo with a solid color or changing the logo colors



Adding thick/soft drop shadows to make the logo more visible. See the next page for procedures with drop shadows.

Secondary Logos

SECONDARY LOGO MARK



Use case:
Wherever the Axion logo needs to appear on its own

SECONDARY LOGO BLUE CUTOUT



Use case:
Whenever a simplified logo is needed. Note the white bands "cut out" of the logo.

SECONDARY LOGO WHITE CUTOUT



Use case:
Whenever a simplified logo is needed over a solid dark colored background.

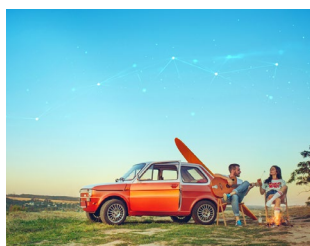
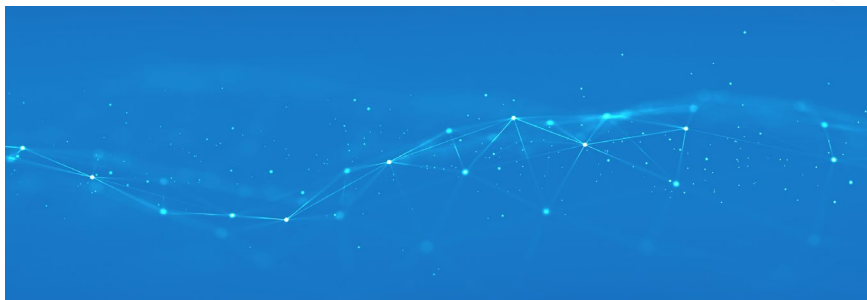
Drop Shadows



Whenever drop shadows are needed, use a solid non-blurred drop shadow with minimal offset and a 33% opacity with a shadow color of black.

Design language

Beyond just logos and colors, the design language must be consistent. The current branding uses the "Axion Tech" look across all its graphic design, primarily noted by a graphic with dots connected by lines set into perspective with an "out of focus" look. This design element is blended with the Axion Blue color. When possible, all graphic design elements should use the following or similar graphic in some manner.



Note the subtle use of the Axion Tech asset in the background of each element

Colors

As above, consistency of colors helps a user/investor recognize they're in the right spot, as a part of the overall Axion ecosystem. Using only approved primary/secondary/accent colors is crucial to our brand. The color palette is blue, avoid all oranges.

PRIMARY COLOR "Axion Blue"



HEX: #176ebf
RGB: 23, 110, 191
HSL:
H 208.93
S 0.79
L 0.42

Use: All Axion themed elements including background, text, and logos.

SECONDARY COLOR



HEX: #0faad6
RGB: 15, 170, 214
HSL:
H 193.27
S 0.87
L 0.45

Use: Good for backgrounds, do not use for text.

ACCENT COLOR



HEX: #0eccc3
RGB: 14, 204, 195
HSL:
H 177.16
S 0.87
L 0.43

Use: Useful as a contrasting color for Axion Blue. Primarily used in the Staking Portal.



Fonts

Just as with colors, using consistent fonts helps create brand stability. While it may be entertaining to use a wide selections of fonts to create variety, keeping within our selected font families helps keep the branding consistent across all our communication channels.

PRIMARY FONT

Fira Sans

Fira Sans Ultralight
Fira Sans ExtraLight
Fira Sans Book
Fira Sans Medium
Fira Sans Bold
Fira Sans Heavy

Use: all published text including this document, marketing, whitepaper, and professional communications.

[Download Fira Sans here](#)

[Adobe Fonts link](#)

HEADLINE FONT

BEBAS NEUE

BEBAS NEUE LIGHT
BEBAS NEUE BOOK
BEBAS NEUE REGULAR

Use: all Axion display ads headline font and banner ads, alternate text.

[Download Bebas Neue here](#)

[Adobe Fonts link](#)

LOGO FONT

I N V E R S I O N Z
U N B O X E D

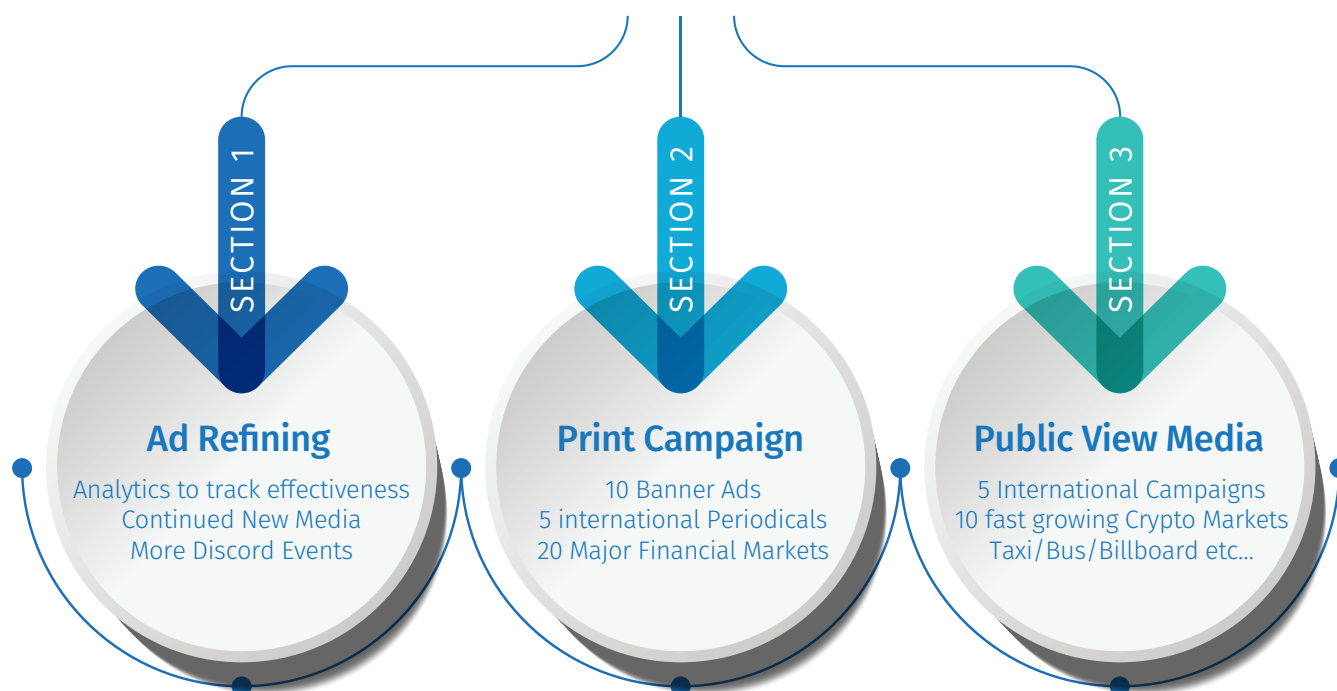
Use: The primary logo font. Should not be used in any other case. Should be used if needing to create an additional Axion "brand" like:

A X I O N S U P P O R T
A X I O N V E N T U R E S
A X I O N F O U N D A -

[Download Inversionz Unboxed here](#)

Phase 2: Q2 & Q3 2021

Global Growth Phase



Phase 2 will continue to refine our message and ads. This means branching into new media, building our megaphone to reach the full and expanded investor population beyond discord, and facilitate the building of Axion as a dynamic investment tool. This phase will target a minimum of 10 major financial districts and build on the ethical finance brand. This will include potential public media campaigns like buses, taxis, billboards, etc...





Phase 3: Q4 2021 - Q1 2022

BPD Push/Bridge



Phase 3 will last from Q3 into Q1 2022, and comprise the build up to and execution of BPD 1. As we reach this important milestone, and dependent on the global travel situation, the team is building up for an international celebration event in Bali for community investors. This event will be a celebration of the tremendous work done by the entire community, and be the launching platform for the next very important phase of Axions evolution, its Deflationary Mechanisms. This will be the announcement of the full plan for long term inflationary stability that the community will use to make Axion a truly permanent fixture in the world of cryptocurrency.

The Axion team also recognizes that marketing and cryptocurrency landscapes can change overnight. Since the marketing team is staffed, created, and funded by its community, it will always be flexible to make sure to deliver the absolute highest value to Axion Community investors.





11. Summary

We hope that this whitepaper has shown you, a potential Axion investor, the quality of the token that the team has created. Axion is pushing the boundaries of what's possible in the crypto community, and we hope that you will consider being a part of it.

From the incredible deflationary tokenomics, to the twice-weekly Bitcoin dividends, the incredible community, and the rock-solid branding and marketing plan... There's something for everyone to get excited about. The following pages are packed-full of information, from a deep dive into the mathematical mechanics of the token itself, hypothetical investing scenarios to prove the benefits of the staking system, and a useful glossary featuring definitions of all the crypto-lingo that you'll need as an investor.

We're incredibly excited about where Axion is going, and we're excited to have investors like you along for the ride.

Sincerely,

The Axion Team





Appendix

1 Axion ecosystem monitoring and control

1.1 Introduction

Axion was launched on 13th November 2020. The ecosystem was initially implemented using immutable contracts, but due to the lack of flexibility and some weaknesses discovered during the first month of operation, it was decided to change the whole system to be mutable in the so-called “Layer2” upgrade on 17th December 2020. This decision was a gamechanger where the new system may be continuously monitored and optimized for user’s profitability, and where new features and services may be added.

In this session we will explain how the Axion ecosystem works in more detail using real data from the launch and up to the current date. The data is fed into a simulation system that has the following features:

- Playback of real data showing the history of main system parameters
- Continuous monitoring of the system performance using recent data
- Extracting statistics from historic data to simulate and predict future behavior, and if needed use analysis and simulations to adjust parameters or functionality for optimized user’s profitability and system longevity

The staking system is a main feature of Axion’s ecosystem, which rewards longer staking using the *LongerPaysBetter* bonus mechanism. The daily interest payout to stakeholders can also be viewed as an inflation on the token itself. It is thus vital to make sure that the ratio between liquid and staked tokens is in optimum balance since this will have direct influence on the token exchange value which is central to make the system profitable.

Note that the optimum interest value is dependent on several parameters and will change over time as the ecosystem grows with more users and new services. In the next chapters it will be shown examples on how the interest payout system works and how it can be continuously monitored and controlled to ensure optimum balance for the investor’s longterm profitability.

Note that the future prediction examples which spans over 6 years are based on staking statistics over a short period on time and may very well change in the future and the examples should therefore only be used as an illustration. The main intention is to show that the Axion ecosystem has the necessary instruments to continuously tune the system for optimum performance.

1.2 Retrospective

1.2.1 Main days

Axion Layer1 was launched on 13th November 2020 which will be called Day0 throughout this session. All days in this session are referred relative to Day0. Main days are

- 16th December 2020 – Day33 = Day0+33. It was discovered during the first month of operation that the GSR update procedure was less robust to un-staking than intended and a large GSR jump occurred on the day before Layer2 launch from 1.08 on the previous day to 1.27 which clearly demonstrated the need for a procedure upgrade.
- 17th December 2020 - Day34 = Day0+34 the Layer2 ecosystem was launched. On the launch date GSR was set to 1.08.
- 19th December 2020 - Day36 = Day0+36 a new GSR jump from 1.09 on the previous day to 1.29 occurred. In order to ensure sufficient time for a robust procedure upgrade GSR was fixed at 1.09 from Day37
- 15th February 2021 – Day94 = Day0+94 the new GSR procedure was launched.
- 27th February 2021 – Day106 = Day0+106 is the last day for the real data playback used in this section for statistics and as a base for future prediction examples

1.2.2 Statistics

Figure A.1 shows the stake statistics from Day0-Day106. The upper plot shows the stake amount distribution with an average of 25.0 Million and the largest group is from 0-50 Million. The lower plot shows stake length distribution with an average of 1036 days. The largest group is from 1-364 days, but a significant number is the group 5110-5555 days.

Figure A.2 and A.3 show the same statistics divided into 2 periods of Day0-Day33 and Day34-Day106. The proportions on both amount and staking days are quite equal apart from the staking days group of 5110-5555 day which has grown significantly between Day34-Day106. Note that the *MaxShares-5555* upgrade stakes are not included so the difference is expected to be even larger.

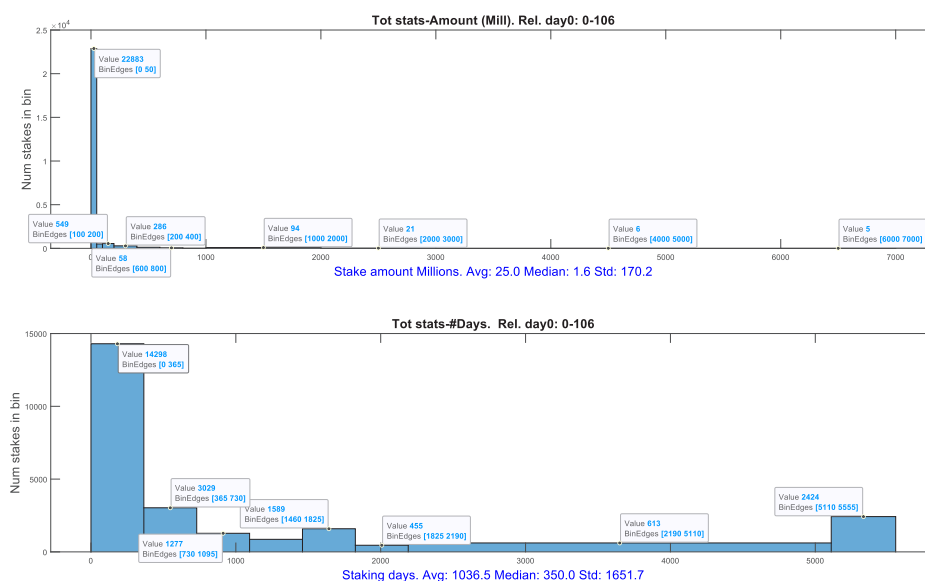


Figure A.1 Stake statistics Day0-Day106 (13th November – 27th February)

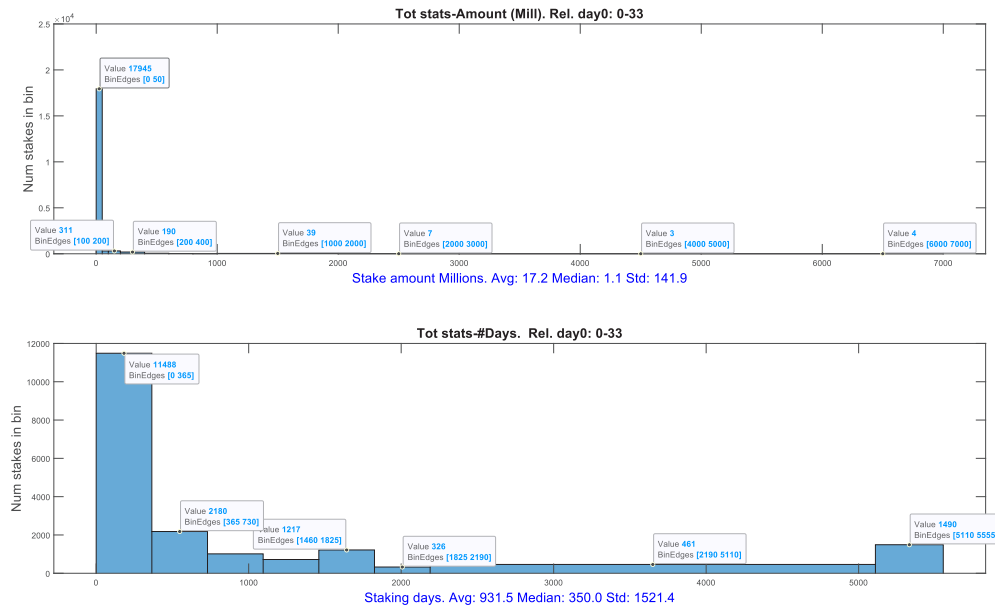


Figure A.2 Staking statistics Day 0-33 (13th November – 16th December)

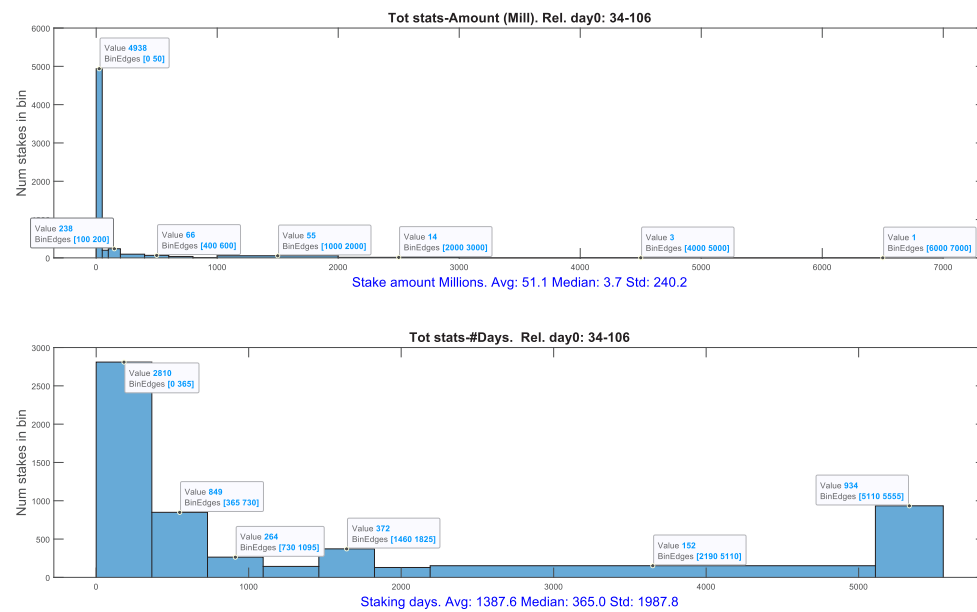


Figure A.3 Staking statistics Day 34-106 (17th December – 27th February)



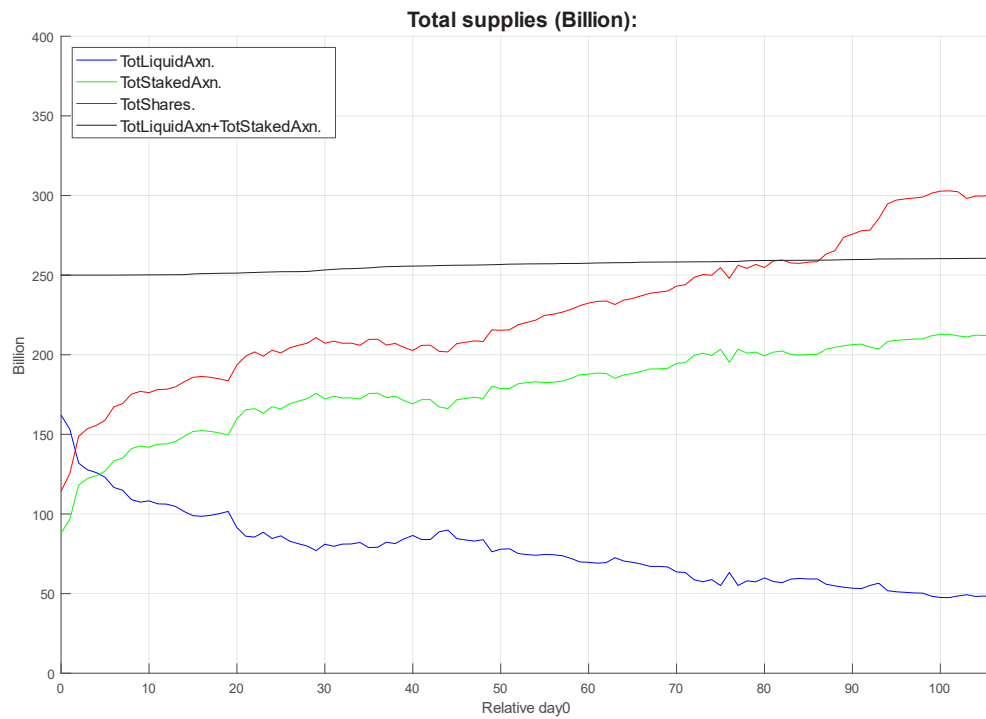
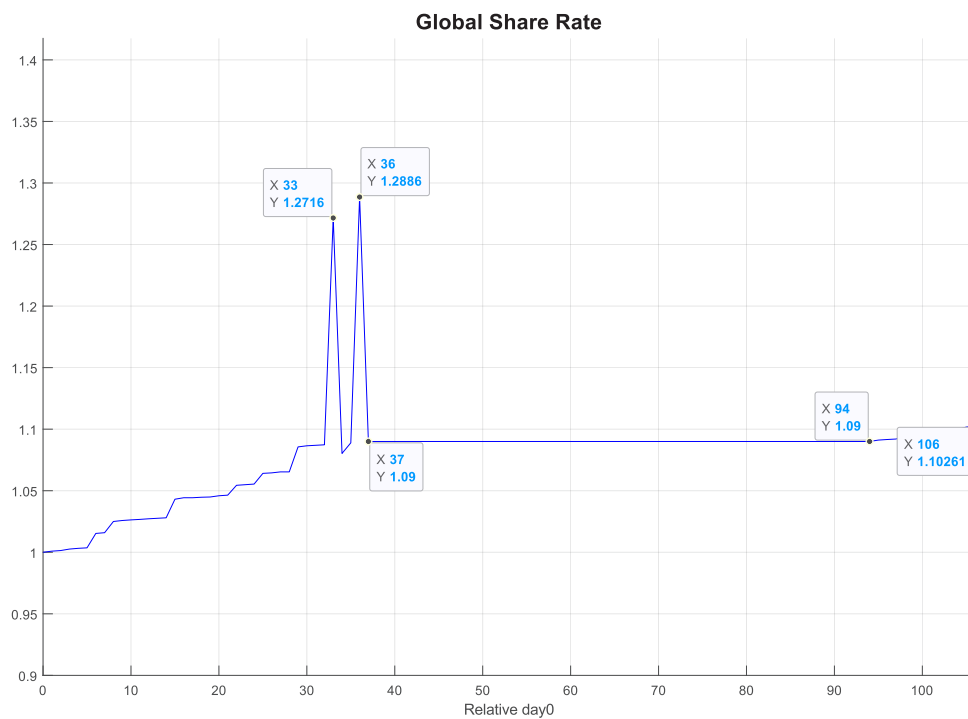
1.2.3 Main system parameters

Figures A.4-A.9 show the main system parameters in the period of Layer1 (Day0-33), Layer2 launch (Day34) and new GSR procedure (Day 94).

- Figure A.4: Total supplies in the period
- Figure A.5: The Layer1 GSR procedure shows significant jumps at the so-called “Mega” auctions (Figure A.6) and 2 spikes at Day33 and Day36. At Day37 GSR was fixed at 1.09 and the current GSR procedure was launched on Day106.
- Figure A.6: Auction amounts reduced significantly after Day34
- Figure A.7: Same as Figure A.6 in percentage. Daily percentage much higher than $APD=0.0219\%$.
- Figure A.8: Figure A.6 accumulated. Day0-35 Avg 470.7 M/day, Day35-Day106 Avg 208.3/day
- Figure A.9: Figure A.7 accumulated. Day0-35 Avg 0.188 %/day $\rightarrow 68.7\%$ /year, Day35-106 Avg 0.0833 %/day $\rightarrow 30.4\%$ /year.

The main findings are

- Layer1: GSR procedure does not work well in Layer 1 and the Mega auctions give a very high interest equivalent to 68.7 %/year which is much higher than the minimum APY of 8 %/year.
- Layer2: GSR fixed to Day93 and new procedure works well from Day94-Day106. Interest is more than half relative Layer1 but still equivalent to 30.4 %/year which is much higher than the minimum APY of 8 %/year.

**Figure A.4 Total supplies****Figure A.5 Global Share Rate**

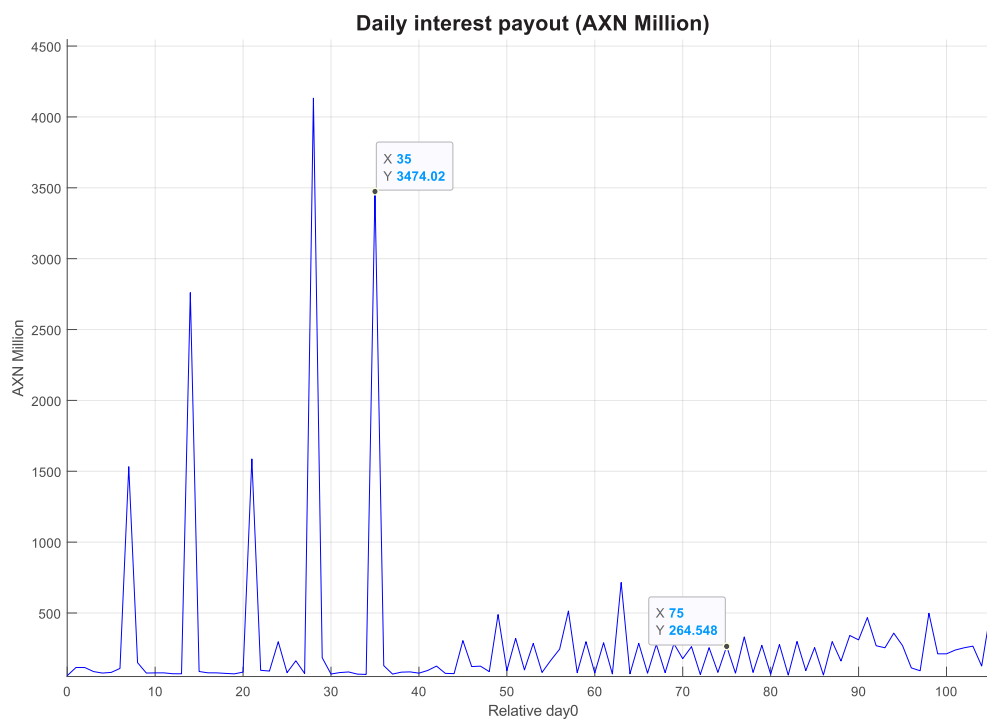


Figure A.6 Daily interest payout (AXN Million)

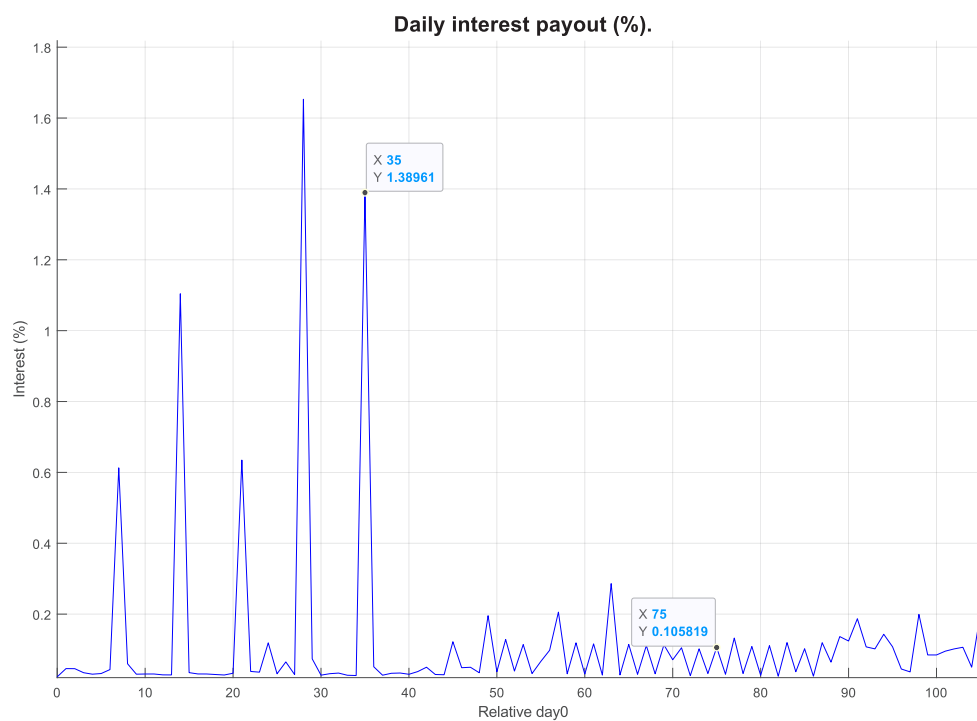


Figure A.7 Daily interest payout (%)

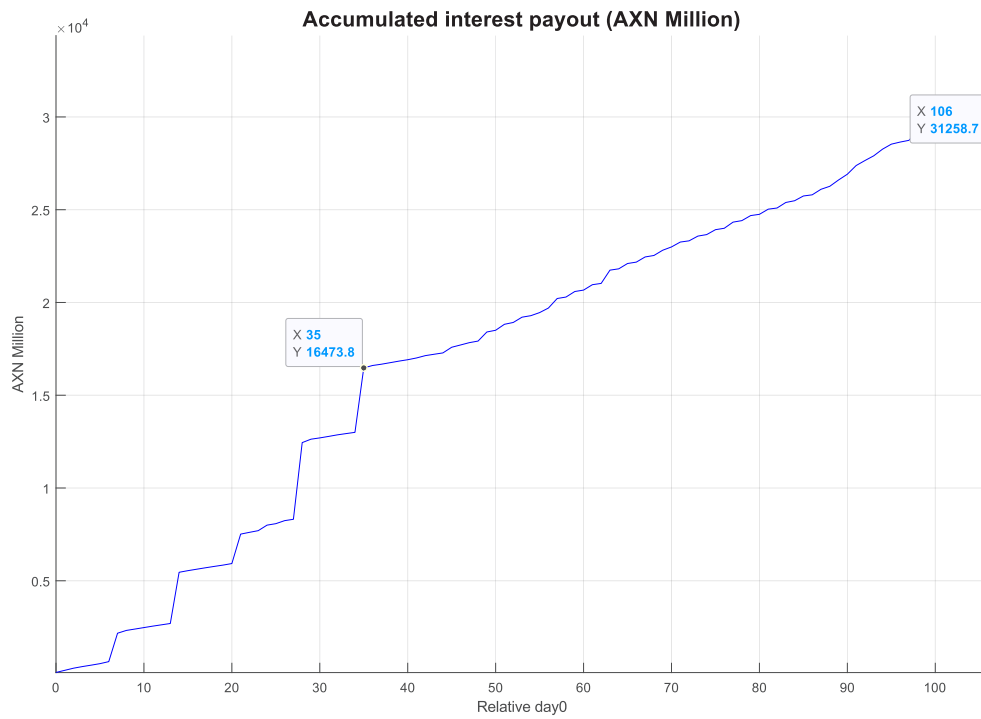
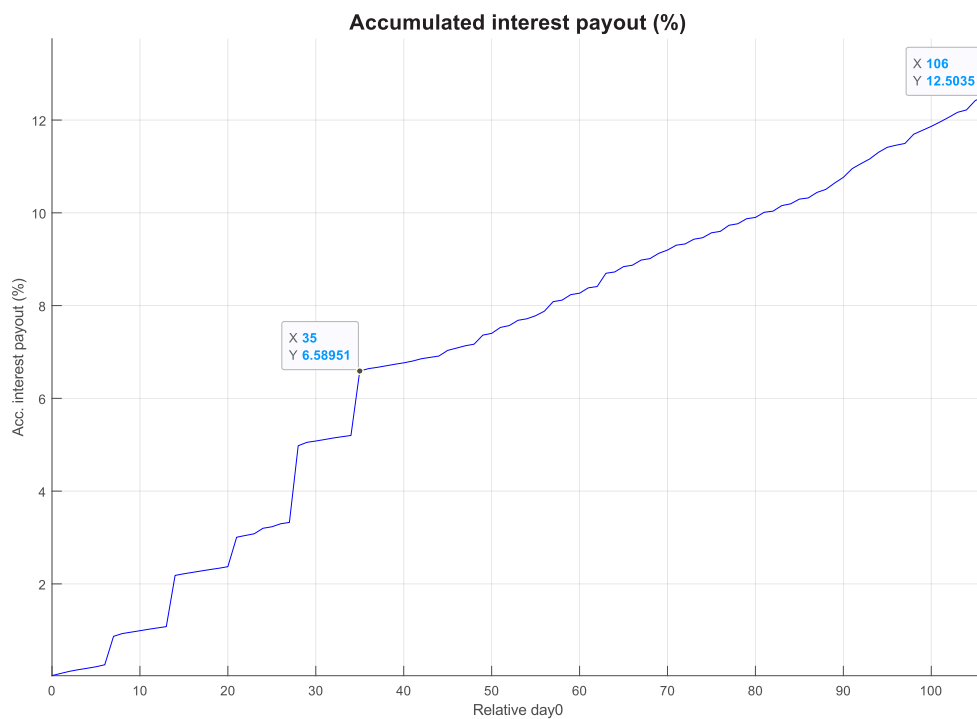


Figure A.8 Accumulated interest payout (AXN Million)



1.3 Interest effects and control

In this chapter we will show some simulation examples that illustrate how the ecosystem interest is influenced particularly by staking strategy, auctions and BigPayDays and how it can be controlled.

In the simulations real data is included from Day0-Day106 (13th Nov.-27th Feb.) and Day37- Day106 (20th Dec. – 27th Feb.) is used to extract staking statistics which is used to drive the simulations from Day107 to the last simulation day with similar staking statistics. The extract period is set to start from Day37 after the last big GSR jump on Day36 to have the most correct statistics for simulating future behavior.

The simulated stakeholders from Day107 are called:

- **RealDataHolders:** Random stakeholders with similar statistics as Day37-Day106
- **FixedDataHolders:** A set of 4 stakeholders which are used to show the interest depending on their different staking strategies.

The FixedDataHolders are all staking 10 Million Axion and are described as:

- **S1:** Start stake Day107, stake 1800 days (4.93 years)
- **S2:** Start stake Day107, stake 300 days and the day after unstaking, restakes the total amount (stake amount + interest) over a total of 1805 days
- **S3:** Start stake Day107, stake 30 days and the day after unstaking, restakes the total amount (stake amount + interest) over a total of 1797 days
- **S4:** Start stake at Day472, stake 1800 days (4.93) (as S1, but start 1 year later)

Four scenarios are simulated and all contain Real data playback, RealDataHolders and FixedDataHolders and are described by:

1. **Regular auctions** 300 Mill 6 days/week, buyback 240 Mill/auction – 60 days autostaking. ScalingFactor = 1.0 (SF)
2. **Regular auctions** 100 Mill 4 days/week, buyback 80 Mill/auction – 60 days autostaking + **Venture Capital auctions** 1 Billion 2 days/week, no Axion buyback – 120 days autostaking. ScalingFactor = 1.0 (SF)
3. **Regular auctions** 100 Mill 4 days/week, buyback 80 Mill/auction – 60 days autostaking + **Venture Capital auctions** 1 Billion 2 days/week, no Axion buyback – 120 days autostaking + **5 BigPayDays** (5,7.5,10,12.5,15 Billion). ScalingFactor = 1.0 (SF)
4. **Regular auctions** 100 Mill 4 days/week, buyback 80 Mill/auction – 60 days autostaking + **Venture Capital auctions** 1 Billion 2 days/week, no Axion buyback – 120 days autostaking + **5 BigPayDays** (5,7.5,10,12.5,15 Billion). 3 different ScalingFactors (equation 8): 0.999, 1.0 (current) and 1.001 which are used to control the rate of change of Global-Share-Rate.



The following observations are noted from the figures:

- **Figure A.10 GSR:** The minimum GSR growth (without auctions and BigPayDays and $SF=1.0$) from Day107-Day2301 is 1.103-1.784. Scenario 1 has the highest GSR of 4.11 due to the large amounts of 1.8 Billion/week and 1.44 Billion/week buyback in the Regular auctions. Scenario 2 has 2.4 Billion/week in auctions but only 320 Mill/week buyback since VCA has no Axion buyback which reduces the GSR increase rate significantly to 2.12 at Day2301. The addition of BigPayDays in Scenario 3 has very little impact on the GSR decreasing from 2.12 to 2.11 at Day2301 (due to increase in $TotLiquidAxn(Day-1)$ in eq. 9) . In Scenario 4 we use Scenario 3 parameters and show that the ScalingFactor may be used to change the rate of GSR increase. An SF value of 0.999 gives a lower GSR at Day2301 than the minimum calculated of 1.784 with $SF = 1.0$.
- **Figure A.12 Yearly (Daily x 365) payout (%):** The daily payouts in Figure A.11 are converted to equivalent yearly interest in order to illustrate the effect of the auctions and BigPayDays.
- **Figure A.13 Accumulated interest payout (%):** The daily payouts in Figure A.12 are accumulated to show the interest over time. An approximated average yearly interest (calculated as the average of start and end value) in scenario 1-4 are 49.7, 28.5, 29.3 and 29.3 % respectively. The reduction in interest from Scenario 1 to 2 is significant and due to reduced buybacks from the 4 Regular auctions and no buybacks from the Venture Capital auctions. In scenario 3 the BigPayDays add 0.8 % interest. Note that in scenario 4 the different GSR developments has negligible effect on the total interest payout since the effect of GSR change only redistribute the payout proportion between stakeholders.
- **Figure A.14 4 different staking strategies:** All scenarios show that the best strategy is S1 - stake once for the wanted period since the Global-Share-Rate increases over time. Even S4 that starts one year later than S2 and S3 has a better outcome at the end of the stake. Scenario 4 also shows how the scaling factor may be used to tune profitability of staking.

The main findings are:

- The auction amounts and buyback factors are the main inflation/interest drivers and reducing the Regular auctions and starting the Venture Capital auctions will reduce the inflation significantly but will still be high with the planned amounts. An obvious control mechanism is to reduce the auction amounts over time.
- Longer staking is a better strategy for total outcome than repetitive staking-unstaking-staking.
- The scaling factor may be used as a control mechanism to change the rate of the Global Share Rate and thus balance the profitability of staking.

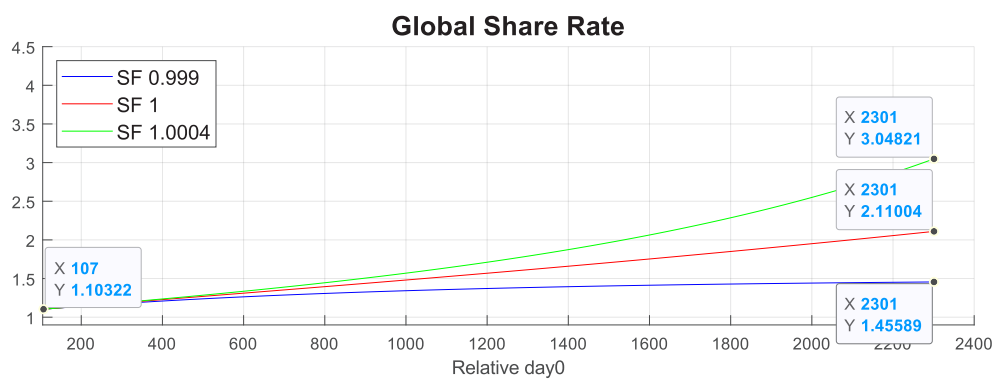
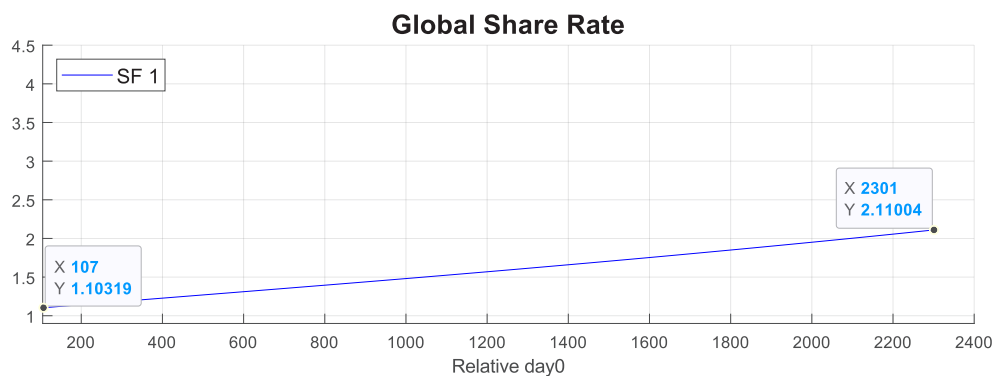
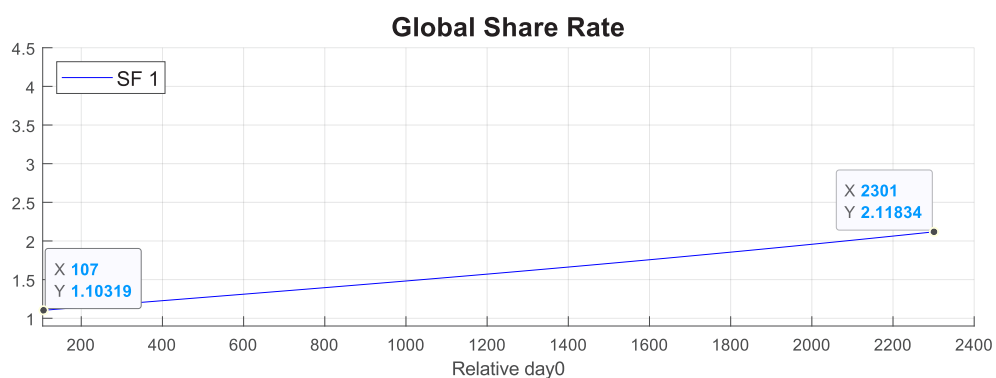
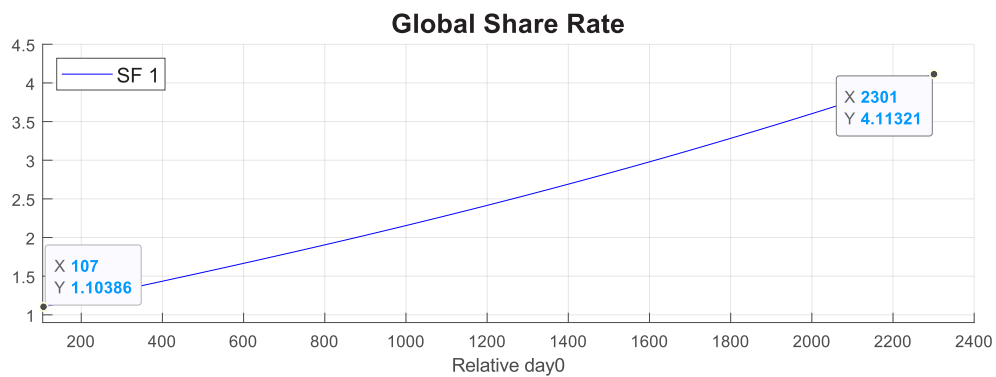
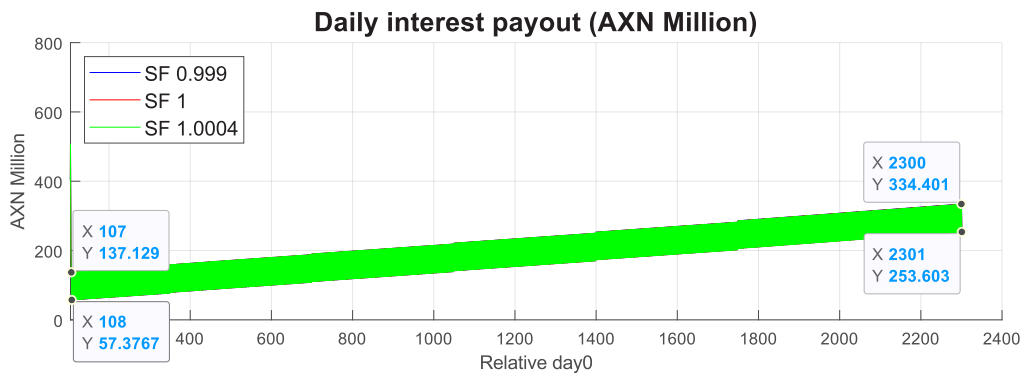
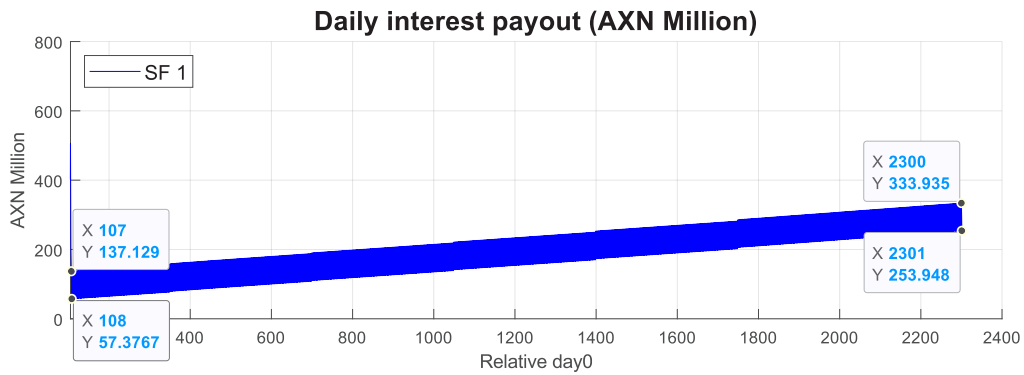
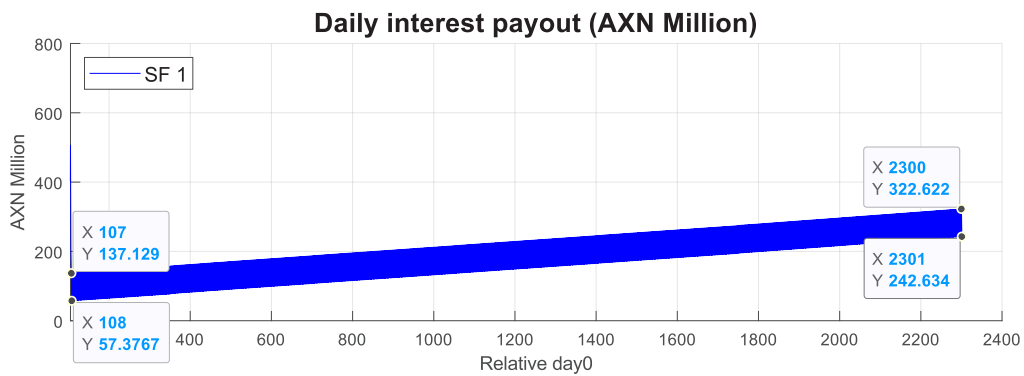
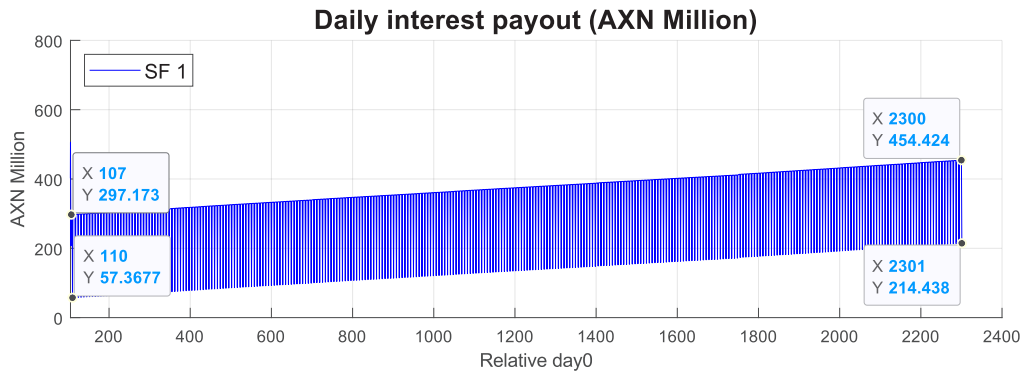


Figure A.10 Global-Share-Rate (upper scenario 1 – lower scenario 4)



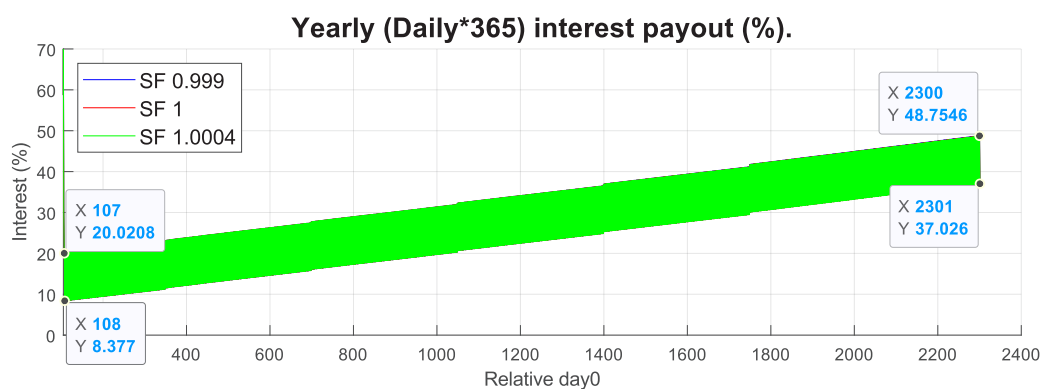
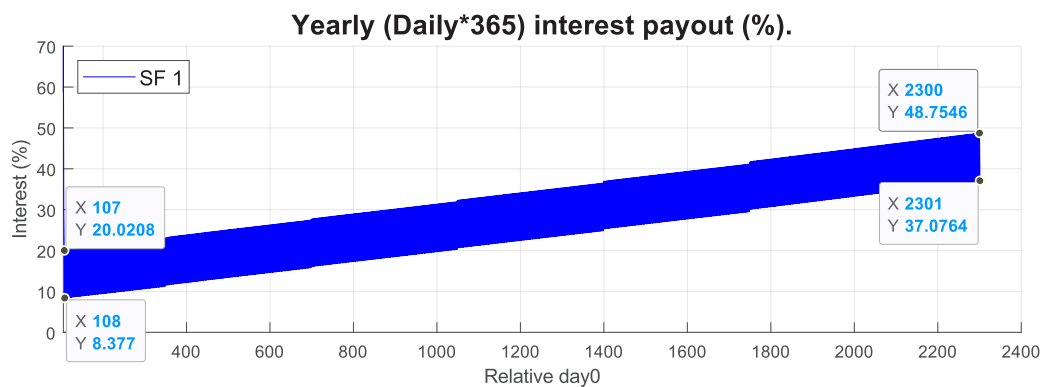
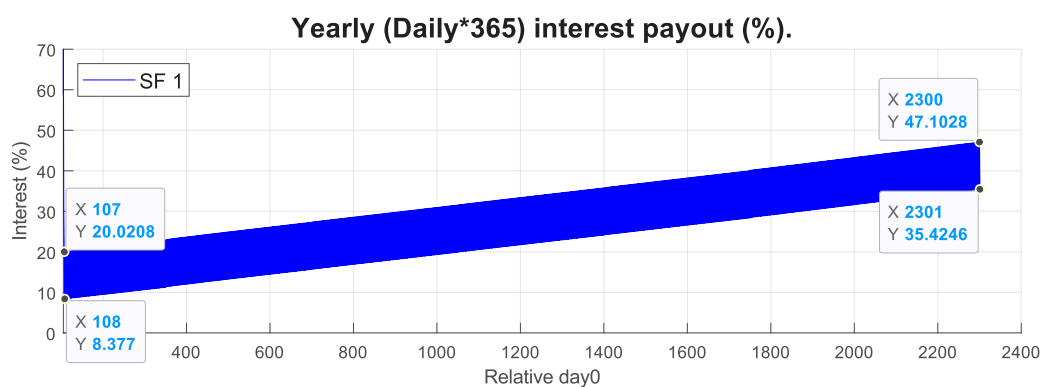
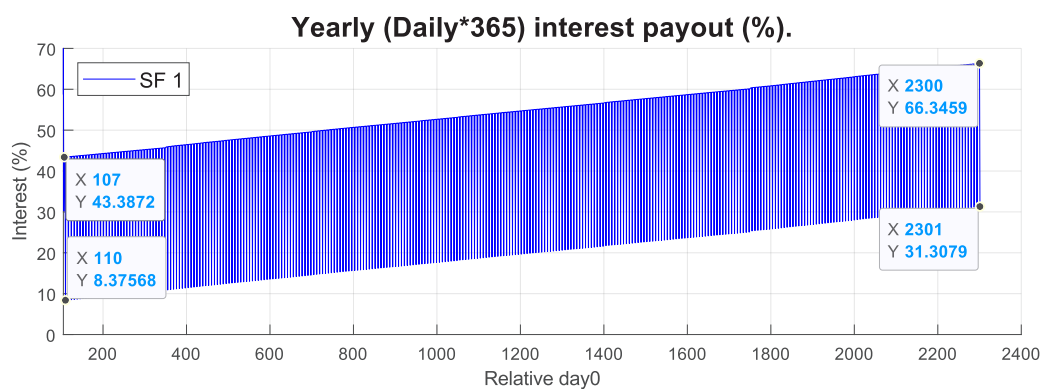


Figure A.12 Yearly (Daily X 365) payout (%) (upper scenario 1 – lower scenario 4)

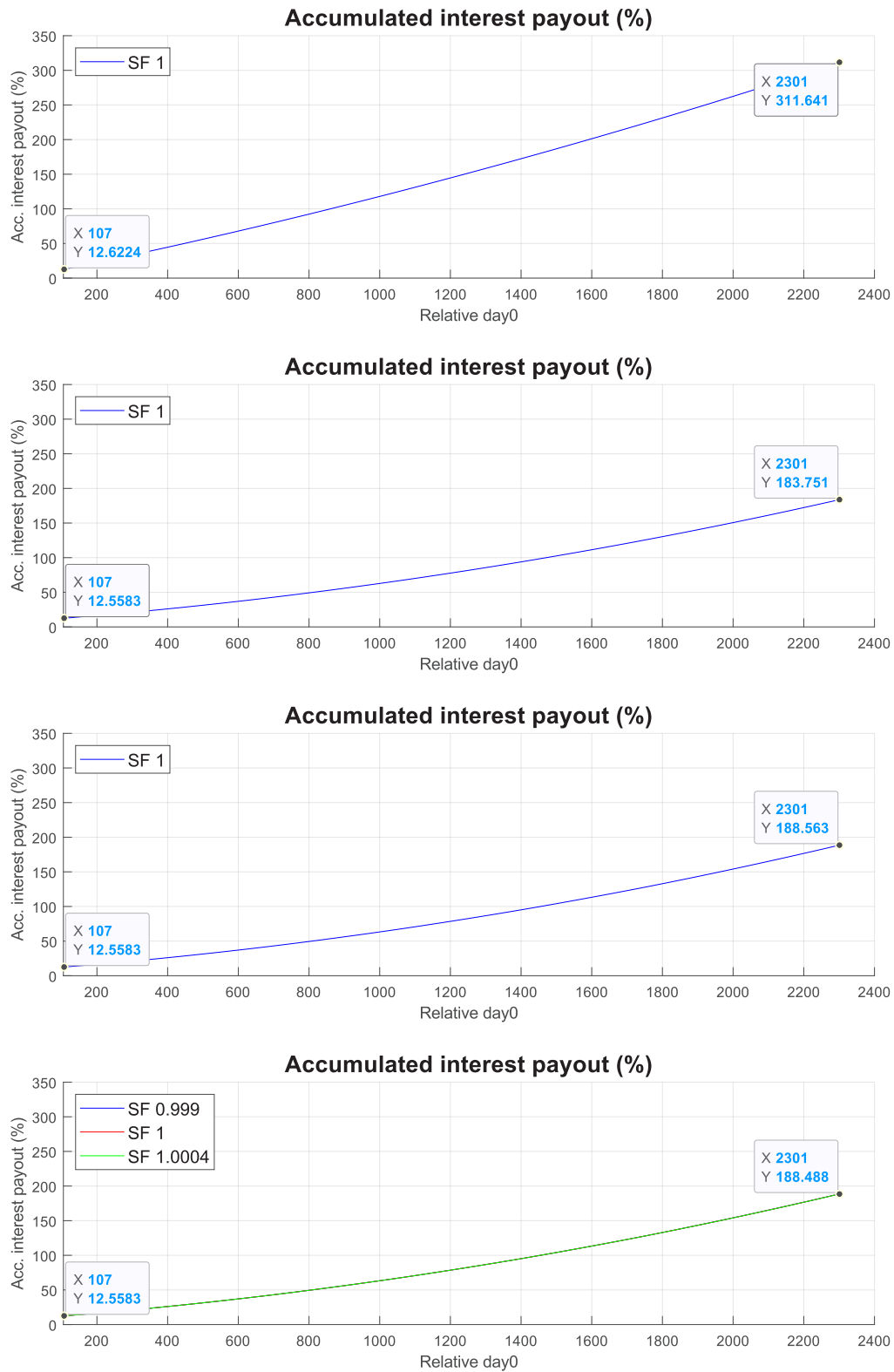
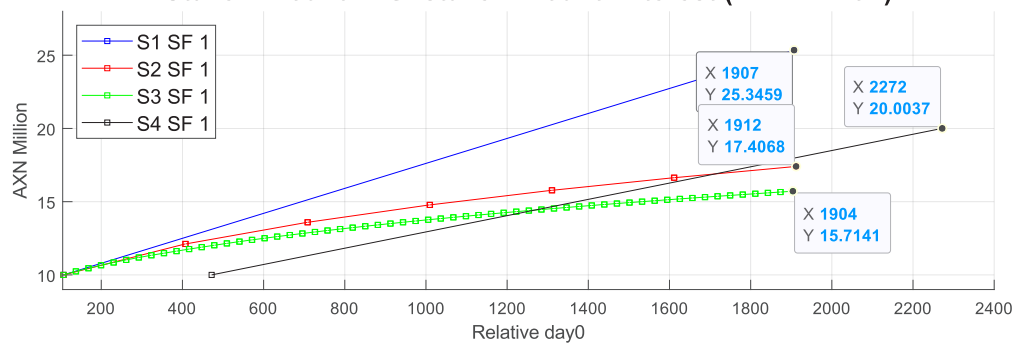
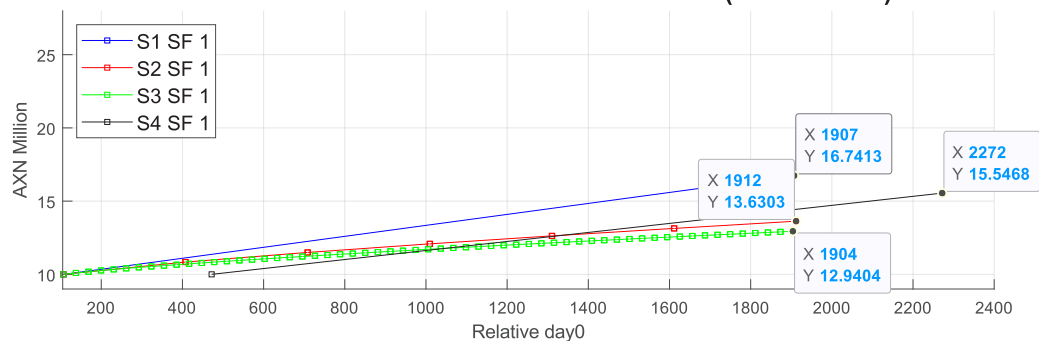


Figure A.13 Accumulated interest payout (%) (upper scenario 1 – lower scenario 4)

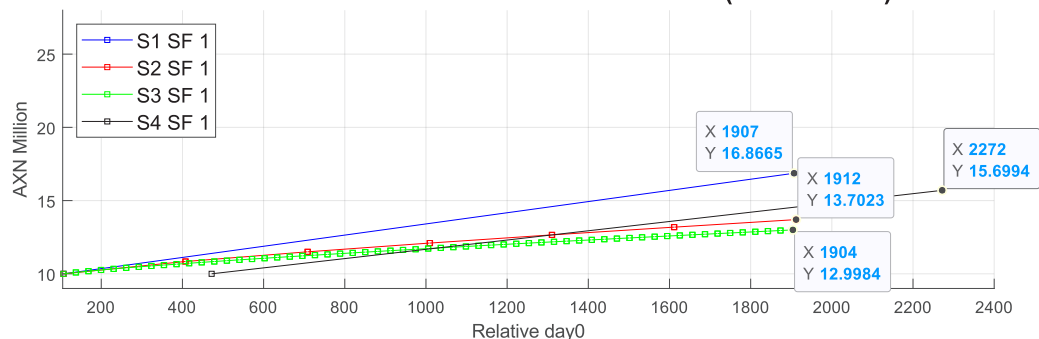
Stake Amount -> Unstake Amount+Interest (AXN Million)



Stake Amount -> Unstake Amount+Interest (AXN Million)



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Stake Amount -> Unstake Amount+Interest (AXN Million)

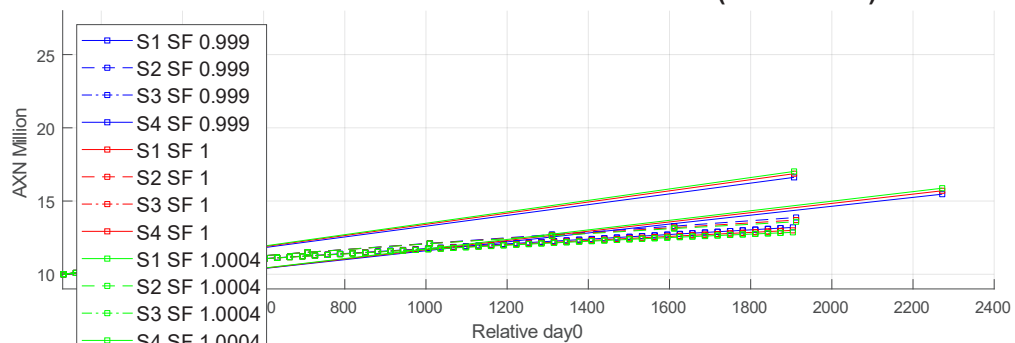


Figure A.14 Unstake amount (principal + interest) with 4 different staking strategies (upper scenario 1 – lower scenario 4)

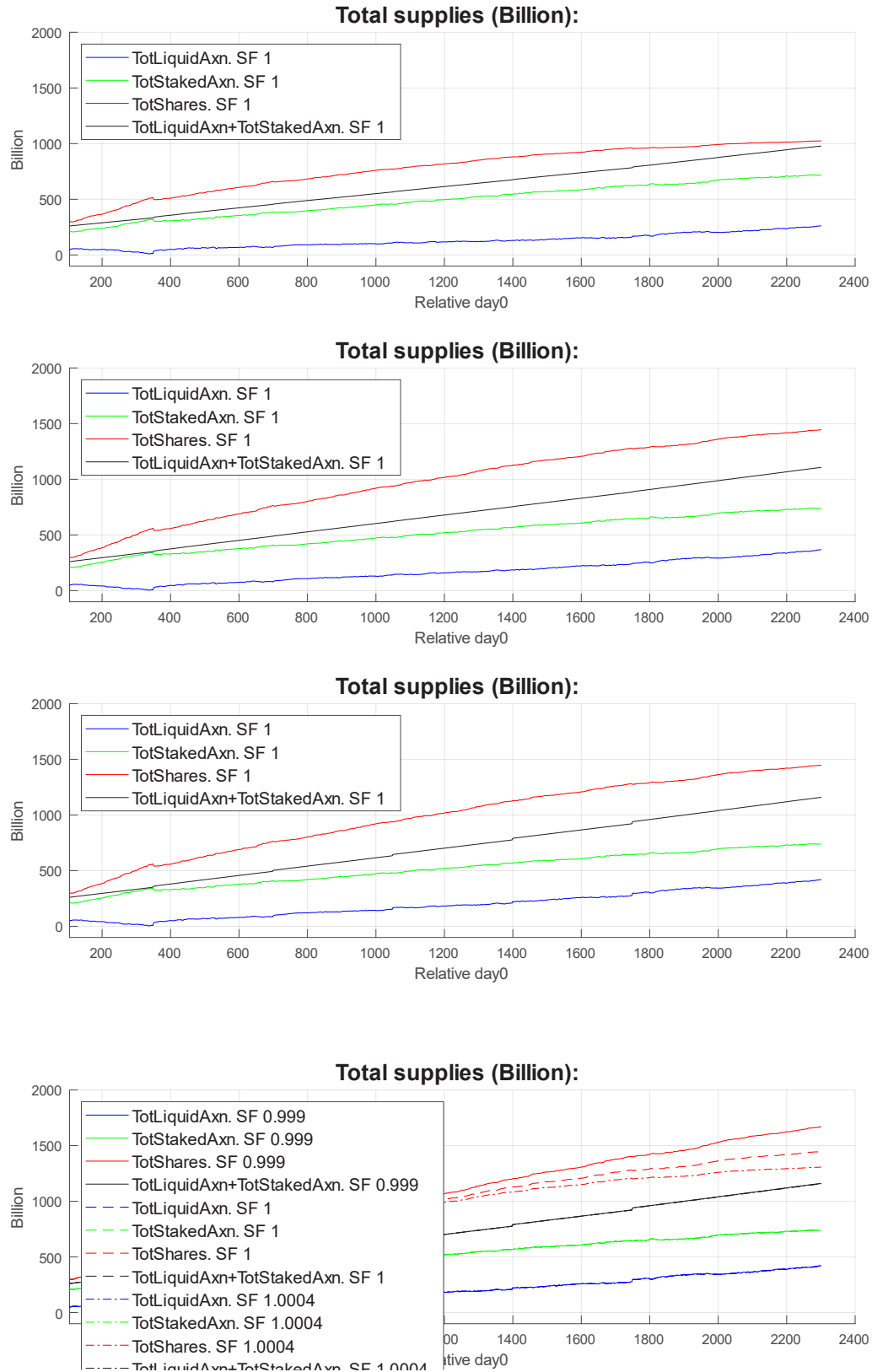


Figure A.15x Total Axion and Shares supplies (upper scenario 1 – lower scenario 4)



Glossary

Address

A string of characters and numbers that represent a destination where crypto can be sent to or from.

AltCoin

A term used to define all crypto assets other than Bitcoin. Alt simply stands for Alternative.

ATH

All Time High - An acronym referring to the all time high price of an asset.

ATL

All Time Low - An acronym referring to the all time low price of an asset.

Arbitrage

Purchase and sale of the same asset in different markets to profit from price differences.

Audit

Comprehensive analysis of code with the intent of discovering bugs or security breaches. Audits can also be done for the economics or legal aspects of a project

Auction

Where Axion investors enter a bid of ETH, in return for their fair share of AXN from the daily auction pool.

Bidder

A person who bids into our auctions.

Bitcoin

Founded & released in January 2009, Bitcoin is the first digital currency of its kind & ground zero for the entire crypto world as we know it. You can earn Bitcoin simply by staking Axion!

Block

A block is a data file used for recording and storing permanent transactions pertaining to a specific network. A block records some or all of the most recent transactions in chronological sequence. This data is a permanent record such that a block acts like a page of a ledger or record book. Once a block is filled a new block is added which ensures that once written, the records cannot be altered or removed. A block can be thought of as a link in an ever-growing chain of cryptocurrency transactions that are collectively known as a blockchain.

Block Height

A numeric representation showing the number of the current block being hashed.

Blockchain

A blockchain is a type of database, or ledger, that is stored electronically on a computer system in the form of data files called blocks. These blocks allow for the sending and receiving of cryptocurrency transactions. These blocks are strung together in a "chain" comprising millions of blocks that are constantly being added to as transactions are processed. The blockchain is decentralized allowing public access to the data that is freely accessible to anyone and beyond the reach of a single controlling government, agency, or group.

BPD - BigPayDays

Big Pay Days are a valuable reward mechanism that was built into the Axion ecosystem to incentivize longer stakes. There are 50 billion AXN tokens allotted to the Big Pay Days over five years for stakes that are locked for the required amount of days or more.

BuyBacks

Token BuyBacks, are a function of our auction contract. When someone bids ETH into our auctions, a portion of that ETH is instantly used to purchase either AXN or wBTC from Uniswap, which is then used to reward stakers.



Centralized

Something that is controlled by a single authority or managed in one place. Examples of centralized finance include banks and Federal Reserves, or centralized data like that owned and managed by big tech companies.

CEX

Centralized exchanges most commonly facilitate trades between users by maintaining an order book: a collection of buy and sell orders posted by individual traders. Orders are requests to buy or sell a certain amount of a specific cryptocurrency at a certain price. CEXs aggregate orders from their users and then use special software to match and execute the corresponding buy and sell orders.

Cold Wallet

Used to describe a cryptocurrency wallet that is not connected to the internet, and thus cannot be used to process transactions without first being reconnected (and turning into a “hot wallet”). Cold Wallets are more secure and less prone to unauthorized use.

Confirmation

In the blockchain, all transactions must be validated by 6 or more independent nodes in order to be considered “confirmed.” This validation process proves that the action was truly intended by its submitter, preventing unauthorized transactions from being posted to the blockchain.

Consensus

A consensus is a fault-tolerant mechanism that is used in the blockchain to achieve the necessary agreement amongst all the decentralized processors that are computing transactions for the network. Simply put, all nodes must agree on verified transactions, reaching a consensus.

Cryptocurrency

A form of digital currency that is secured by cryptography, making it nearly impossible to counterfeit due to the resiliency and distributed ledger that is called the blockchain. Axion is a type of Ethereum-based cryptocurrency.

DAO

Decentralized Autonomous Organization. A DAO is a group of people or organizations that are unified in purpose such that they act as one organizational body.

DAPP

Decentralized APPLication. A DAPP operates in such a way that it is not tied to a central governing application or database. Its main benefits are immutability, accountability, anonymity, bandwidth, and the user maintaining total control over their personal data.

Decentralized

Owned by no one entity, government, organization, group, person, or community. Ownership is spread out to anyone and everyone wants to join. True decentralization is possible with cryptocurrencies.

DeFi

Decentralized Finance. Meaning no one entity like a bank or government can control or have access to an individual's finances.

Deflation

Deflationary items are limited in supply and thus high in demand, resulting in an upward price/valuation movement.

DEX

Decentralized EXchange. DEXs allow cryptocurrency holders to exchange with each other directly, on a peer-to-peer basis, without needing to trust an intermediary or centralized exchange to create the transaction.

Discord

A chat platform where most of the Axion community is based. Head to <https://discord.gg/axion> to join.

Dividends

Dividends are what you earn from Staking Axion, in the form of more AXN or even WBTC (Bitcoin). Often abbreviated to Divs.



DLT - Distributed Ledger Technology

DLT refers to the technological infrastructure and protocols that allows simultaneous access, validation, and record updating in an immutable manner across a network that's spread across multiple entities or locations.

DM

Direct Message. A message that is sent directly from one user to another on a messaging application such as Discord.

ERC-20

ERC-20 tokens are a type of cryptocurrency written for and running on the Ethereum network. Axion is a type of ERC-20 token.

ERC-721

ERC-721 tokens are smart contracts used primarily to verify the "digital uniqueness" of the piece of data it holds, such as a picture. Used primarily for NFT's.

ETH - Ethereum

Ethereum (shortened to ETH) is the second largest cryptocurrency following Bitcoin based on market capacity. It was released in July of 2015 and gained widespread adoption due to its ability to run code on the blockchain in the form of "smart contracts."

Fiat Currency

Fiat currencies are currencies that are backed by political/governmental institutions and reinforced by its global trading strength. Fiat currencies are primarily used to pay for goods or services and are centralized around the governments that control them.

FOMO

Fear Of Missing Out. The phenomenon by which someone will choose to participate (or invest) in something not because of sound reasoning or logic, but because they feel they will "miss out" if they do not participate. FOMO often leads to regret.

FUD

Fear Uncertainty and Doubt. It is used to refer to very dark and unsettling times regarding the future of something. Someone who spreads FUD (FUDding) is often doing so without any supportive evidence or the ability to back up their claims and is often just spreading rumors with the purpose of discouraging others.

Gas

Gas refers to the method of payment (often in fractions of a token) that is given to the processing nodes that are computing transactions on the blockchain. Also referred to as Network Fees, the price by which you pay to have your transaction processed on the network.

Gas Limit

The gas limit is the maximum amount of Gas that a transaction will consume before 'failing', used as a safeguard to make sure that a user does not spend more in Gas than they would like.

GitHub

A digital repository and code hosting platform for software that allows for version control and collaboration. Here is [Axion's GitHub](#).

GSR - Global Share Rate

The share rate of the Axion token that converts Axion into Shares during the staking process. The higher the share rate, the less shares you receive when you stake.

Gwei

Gwei is a very small unit of the Ethereum network's Ether (ETH), represented as 1 Billionth of an Ether. Gwei is a useful unit to measure network transaction fees, also known as Gas.

Hardware Wallet

A hardware wallet is a special type of cryptocurrency wallet which stores the user's private keys in a very secure manner, preventing these private keys from being hacked or stolen. A transaction cannot be submitted to the blockchain without first being authenticated by the hardware device itself, preventing fraud or unauthorized use.

Hash

A hash is a function that converts an input of letters and numbers into an encrypted output of a fixed length. A hash is created using an algorithm and is essential to blockchain management in cryptocurrency.



HODL

An intentionally misspelled version of HOLD, often referred to colloquially as someone who invests with no intention of selling, no matter how high or low the price fluctuates.

Hot Wallet

A hot wallet is a tool that allows a cryptocurrency owner to receive and send tokens by remaining connected to the internet, unlike a cold wallet. They are inherently less secure because they can be accessed via the internet itself.

Immutable

Not susceptible to any alteration, change, manipulation, or editing after its original creation. In the blockchain, once a block is processed, it is immutable and thus cannot ever be changed. This is why transactions on the blockchain are permanent, meaning they cannot be erased or undone. Because of this, it is always good to verify transactions before submitting them to be processed!

Impermanent Loss

When one of the assets in a liquidity pool goes up in value compared to the other, the dollar value of the assets provided by a liquidity miner is lower compared to just holding the initial deposit. If one of the assets doubles in price while the other stays the same, the impermanent loss is around 5.7%.

Inflation

An increase in the price level of good relative to its economic standing. When the general price level rises, each unit of currency buys fewer goods and services and thus becomes weaker over time.

Interest

Interest, represented in % APY (or Annual Percentage Yield) is the amount your investment is paid back over time.

KYC

Know Your Customer. A set of rules laid out by the government for companies to obtain a certain amount of information from their participants, used for fraud and tax detection.

Layer 2

Also called second layer; it is a protocol that is built on top of another protocol in order to operations to be preformed to the first layer and manipulate the parameters of the first layer from within the second layer. Layers can continually be added, though they tend to become more complex with each additional layer.

Ledger

Ledger is a type of Hardware Wallet used to store cryptocurrencies in a highly secure manner. With a Ledger, transactions must be approved by physically clicking buttons on the device itself, which ensures that hackers cannot withdraw cryptocurrency without access to the physical device and its protective password.

Liquid

When used in the sense of 'Liquid BTC', we mean this BTC is available to withdraw or spend immediately, its not staked.

Liquidity

Liquidity is the ability of a coin to be easily converted into cash or other coins. Axion uses significant liquidity stored on an exchange like Uniswap to allow for simpler transactions and price stability. Liquidity also represents the health of the token, the more liquidity the more there is available for trade.

Liquidity Mining

Also known as "software mining," where network participants can submit their liquidity in the form of contributing equally matching ETH and AXN to the Uniswap liquidity pool, in return for real-time bonuses in AXN tokens.

Longer Pays Better

A core component of the Axion token, Longer Pays Better means that an investor will get significantly more return on their investment (ROI) in the form of higher APY and Bitcoin dividends by staking their investment for as long as possible, up to a maximum of 15 years. The longer the stake, the greater the shares an investor receives, thus the better dividends.



Mainnet

Mainnet is when a blockchain protocol, such as Ethereum, is fully developed and deployed, allowing real transactions be broadcast, verified and recorded on the blockchain.

MetaMask

MetaMask is a type of software hot wallet that allows for easy trading, swapping, and integration into websites that allow for wallet addresses to be read. MetaMask does not store cryptocurrencies for you, it merely allows you to load or generate secret keys into the software that are then read by or submitted to the blockchain.

Mining

Mining is the process in which computing nodes compete with each other to verify and publish transactions on the blockchain. A successful transaction process yields payment to the node that was the first to process the transaction block to the blockchain, often called the “block reward.”

Mutable

Opposite of immutable. Meaning it is liable or susceptible to change by being edited, adjusted or otherwise manipulated. Mutable blocks on the blockchain would mean transactions could be reverted at best, or at worst the funds in question could be redirected to an unauthorized address.

NFT

Non-Fungible Token. An NFT is a unit of data on the blockchain where each NFT can represent a unique digital item, and thus are not interchangeable. NFTs can represent digital files such as art, audio, videos, items in video games and other forms of creative work.

Node

A computer/device that connects to a cryptocurrency network and helps strengthen the network’s resilience by adding its processing power to the overall group.

Nonce

Number used only ONCE. A pseudo-random number, generated in order to satisfy the parameters required by the mining and hashing algorithms as a part of the security check.

Open Source

Software or protocols that are available to the public at no cost and can be used by anyone.

Overbid

Once our auctions have ‘sold out’, if more bids are placed and the price becomes higher than simply buying on Uniswap, we class the auction as ‘overbid’.

Paper Wallet

A very secure way of storing crypto in a wallet that is stored “offline” by writing the secret keys down on a piece of paper and unloading those keys from any software or hardware wallets until they need to be used again.

Passive Income

Income that is generated passively, without any doing on the investor’s part. Healthy passive income should be the desire of any investor, such that enough passive income generation means never having to work at a job!

Penalties

The fees or deductions from the value of a stake that has not been withdrawn within the withdrawal period (typically 2 weeks).

Private Key

The private key is a specific string of words that is used to unlock a crypto wallet. Think of a private key as the key to a house. Whoever has the key can enter the house and add or remove any items from the house that they wish. Just as you would not share your home key with a stranger, Private Keys should be treated with the utmost caution and should NEVER be given away to anyone, and should especially not be photographed or otherwise stored on a computer. Write a private key down on multiple pieces of paper and store



Proof of Stake (PoS)

Proof of stake is a type of consensus mechanism by which a cryptocurrency blockchain network achieves distributed consensus. In PoS-based cryptocurrencies the creator of the next block is chosen via various combinations of random selection and wealth or age vs sheer processing power in a Proof of Work (PoW) type of consensus.

Referral

A unique URL that is generated for each wallet address connected to the Axion Staking Portal. By giving out this address, both the referrer and the referee will receive a 10% bonus in Axion.

Ropsten

Ropsten Ethereum, also known as “Ethereum Testnet” is a testing network that runs the same protocol as Ethereum but is used for testing purposes before deploying on the main network (Mainnet)

Satoshi Nakamoto

The mysterious pseudonym/entity that created and released the first iteration of Bitcoin, Blockchain, and Distributed Ledger technology to the world.

Satoshi

In honor of Satoshi Nakamoto, a Satoshi is the most micro unit of splitting a bitcoin, representing 0.00000001 of a Bitcoin.

Scamcoin/Shitcoin

A colloquial terminology used to refer to crypto projects that are either poorly constructed, scammy or fraudulent, dead-end investments, or fakes. It is generally advisable to avoid or ignore these types of coins.

Shares

Shares of ownership of Axion, given in exchange for Axion tokens. Shares generate interest and produce dividends in the form of Bitcoin and are proportionally distributed based on amount of Axion staked and the duration of the stake term.

Smart Contract

Smart Contracts are the product of software that is run on the blockchain itself, resulting in an unalterable agreement that has specific logic operations akin to a real-world contract. Once signed, it can never be altered. Smart Contracts are easily verifiable and authenticated because of their persistence on the blockchain.

Stakeholder

Someone who has an active stake in Axion (represented by an amount of Shares)

Stakers Share Percentage (SSP)

The Share Percentage is how much of the Share Pool you own. If the pool has 1,000,000,000 shares in it, and you own 10,000,000 shares yourself, you own 1% of the Share Pool.

Staking

Where AXN investors utilize their AXN tokens to earn shares by executing time-locked deposits, which in turn awards dividends over a period of time.

Testnet

Examining and predicting price movements in the financial markets, by using historical price charts and market statistics

Technical Analysis (TA)

An online ecosystem (such as the Ropsten test network) where developers can freely interact with the code of a blockchain to experiment around with it before launching to the Mainnet.

Tipping

A function of the Axion Discord community whereby users can tip other users (or a group of users) in actual Axion by typing !tip in the discord chat box. Users can add or withdraw actual Axion to and from their tipping wallet like a normal software wallet. It's pretty cool!



Token Protocol/Token

Tokens are a framework that bridges the physical and digital realms of value. ERC-20 tokens, for example, allows for interaction + access with the Ethereum's decentralized DAPP ecosystem, carrying both value and processing components all on the blockchain.

Tokenomics

A combination of Token and Economics. Used to address the metrics and token role within its ecosystem.

Total Supply

The absolute maximum amount of a cryptocurrency that can be produced, or "minted."

Transaction - TX

The fee (often referred to as Gas) that a user pays in order to have their transaction processed. By paying miners to process a transaction, it ensures security and competitiveness to the ecosystem that keeps it ever developing and ever supported. Without gas fees, the network would fall apart due to the immense power requirements needed to process transactions.

Transaction ID - TxID

The unique ID that is assigned to a transaction. The TxID is used to access a specific transaction block and the information it holds. When submitting a transaction on MetaMask, a TxID is generated, allowing a user to check the status of the transaction on a website such as etherscan.io.

Trezor

Trezor is a type of Hardware Wallet used to store cryptocurrencies in a highly secure manner. With a Trezor wallet, transactions must be approved by physically clicking buttons on the device itself, which ensures that hackers cannot withdraw cryptocurrency without access to the physical device and its protective password.

Uniswap

Uniswap is a popular decentralized automated market maker, allowing users to interact with its liquidity pools to trade many types of Ethereum-based tokens for other tokens. Uniswap is currently the only exchange site where you can directly purchase Axion.

VCA - Venture Capital Auction

VCA auctions are special events in the Axion ecosystem happening on Tuesdays and Fridays where 1 Billion Axion tokens are available to buy. All investors who participate on those days immediately get 10% of their bid returned as liquid Bitcoin, with 85% of the auction value being distributed to active stakers as Bitcoin.

Wallet

The digital equivalent to a real world wallet, used to store cryptocurrencies. Readily available software allows users to store their cryptocurrencies on the blockchain and be accessed through their crypto wallet. Wallet types vary, including types like paper wallets, web wallets, desktop wallets, hardware wallets, and mobile wallets.

wBTC (tokenized Bitcoin)

Wrapped Bitcoin (wBTC) is an ERC-20 token that represents Bitcoin (BTC) on the Ethereum blockchain. Ethereum and Bitcoin are not compatible tokens as they run on entirely different types of networks. So wBTC allows Bitcoin to enter the Ethereum network and be used in Ethereum wallets, dapps, and smart contracts.

Whale

The term used to refer to an investor who carries a very high net worth of crypto. A whale typically owns sufficiently enough of a cryptocurrency such that their decisions as what to do with it on the open markets would directly and noticeably impact the assets trading price should they sell or buy. Whales generally move into and out of crypto projects in very noticeable ways.

Whitepaper

The foundational a report or guide that is used to inform the public of a project's specifications; equivalent of a business prospectus or plan, but used to describe the crypto project itself. Generally speaking, the amount of time and care given to a crypto's whitepaper is indicative of the quality of the crypto itself. Axion prides itself in its whitepaper.



Disclaimer

This whitepaper (document), or the content and/or materials thereof are not intended to be financial advice or a solicitation to purchase any digital asset, token, or financial instrument, nor is it any recommendation to purchase the AXION token (AXN). This document is for informational purposes only. Before deciding to invest in the AXION token, ensure that you understand that this document as of March 23rd, is subject to change. A “best practice” may suggest that you are educated and informed by an advisor before deciding to invest in the AXION token, or any other tokens or cryptocurrencies. There are risks involved investing in cryptocurrencies - investments in digital assets such as token(s) are inherently speculative. Valuations of the AXION token can or may fluctuate due to market volatility. All of the assumptions, ecosystem simulations, opinions, and statements in this document are idiosyncratic of the Axion Network, and therefore are subject to change.





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