REPORT DATE: 8/11/2022

CRYPTO PRAGMATIST PRO

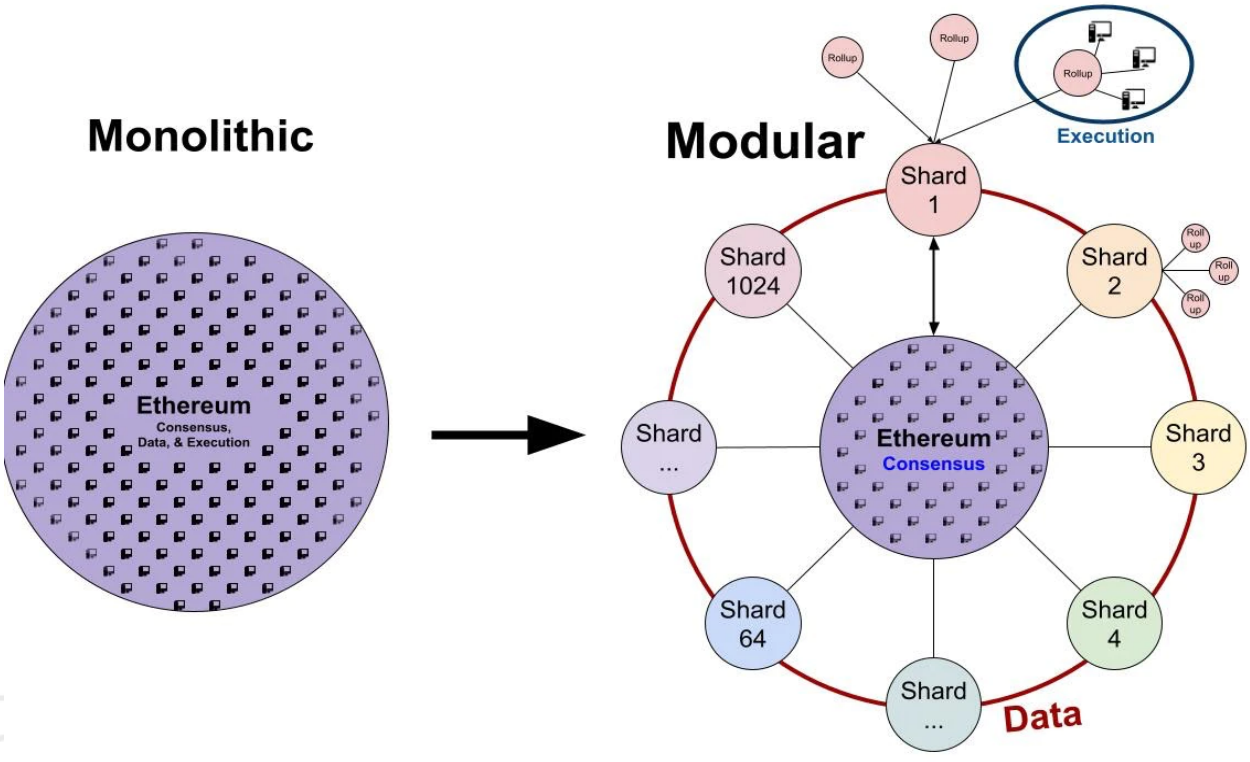
All views are solely my opinions. This is written exclusively for informational purposes. It is not an inducement to invest nor is it advice to follow any particular investment strategy. Data points are taken from various online sources that may or may not be accurate as of publication.

Intro

Different blockchains take different approaches in how they believe blockchain technology and cryptocurrency will be integrated into our everyday lives. We can compare the two largest networks to better understand this dilemma:

1. **Bitcoin**: The most rudimentary and basic blockchain, allows users to send transactions back and forth with a high level of security but minimal composability.
2. **Ethereum**, which maintains its own security, data availability, and transaction execution (this is known as a monolithic blockchain). Developers can build complex applications via smart contracts directly on this infrastructure.
3. **Cosmos IBC**, Application-specific blockchains with their own sovereignty that can communicate across a shared protocol will ultimately provide the infrastructure that developers and entrepreneurs want.

Ethereum has taken up most attention over the last several years. As it gained popularity and increased in its user and dApp count, there was an increasing need to improve upon its scalability. These scaling solutions known as Layer 2s are secured through various methods of cryptographic proofs and zero-knowledge technology. These L2s moved the execution layer of the blockchain to a faster and cheaper network, while utilizing Ethereum as the consensus and data availability layer (securing the transactions across networks). As Ethereum shifted towards modularity, new blockchains found unique ways to address these issues.



Bankless

Solana, the hyper-fast and cheap monolithic L1, has also aimed at solving the scalability issue. In releasing the Solana Phone and focusing on the composability of the wallet, Phantom, the network places a concentrated bet that a **great user experience** (for consumers and devs alike) will drive the true growth of blockchains.

Cosmos

To break it down step by step, Cosmos stepped into the playing field by offering a solution to an issue of *sovereignty*. The applications built on Ethereum are ultimately ruled by the governance of the Ethereum network itself. If the application could be improved with an update to the Ethereum Virtual Machine (EVM), the upgrade needs to be approved and applied to the entire chain.

The Cosmos ecosystem solves this by creating **application-specific** blockchains that maintain their own sovereignty (implement their own upgrades), and can communicate (transfer value) throughout the network.

In other words, you can think of Cosmos and its IBC protocol as a ‘states-rights’ blockchain. Cosmos allows you to make your own rules, while still being able to participate in a larger system. And many devs and entrepreneurs have seen this as advantageous.

Cosmos networks: [mapofzones]

The thesis rests on the fact that blockchains built specifically on the application level will be more efficient despite higher costs to spin up, and that building within Cosmos will be the optimal strategy.

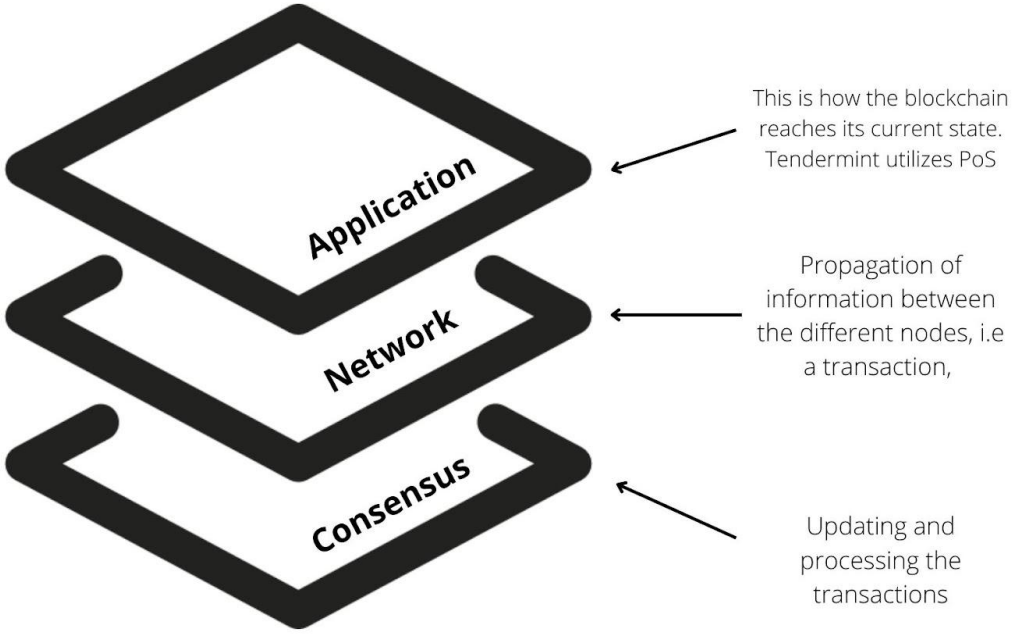
This efficiency is made possible with a technology stack consisting of Tendermint Core, Cosmos SDK, and the Inter Blockchain Communication protocol (IBC). Before diving into how these application chains benefit from increased composability and communication, we need to understand (at a basic level) how the above acronyms work.

The Tech Stack

The above-mentioned EVM allowed developers to create complex applications using smart contracts. However, the production of blockchains themselves are not simple and difficult to customize. Developers who were interested in building a blockchain either forked a current blockchain, or just built their application on top of an existing one.

Tendermint Core

The benefit of Tenderment lies in minimizing the effort in blockchain production. There are three layers to a blockchain:

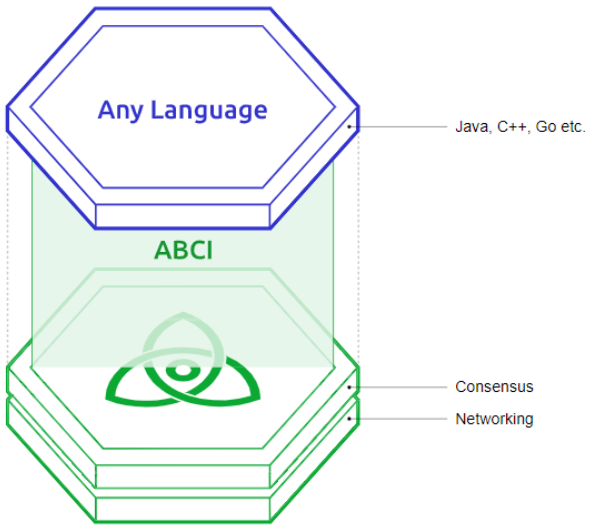


Canva

Tendermint packages the consensus and network layers of a blockchain in a single engine and allows developers to drastically cut the time it would take to build application-specific blockchains (also known as “app-chains”). Thus, application developers don’t need to worry

about any of the base infrastructure where they are deploying their application. It's an 'out-of-the-box' blockchain.

A key feature of the Tendermint engine is that there is instant finality, meaning that transactions are finalized as soon as a block is created. Additionally, developers can program in any language they want because of Application Blockchain Interface (ABCI), which is effectively a router that helps convert the preferred programming language to a Tendermint-readable one.



Cosmos Documentation

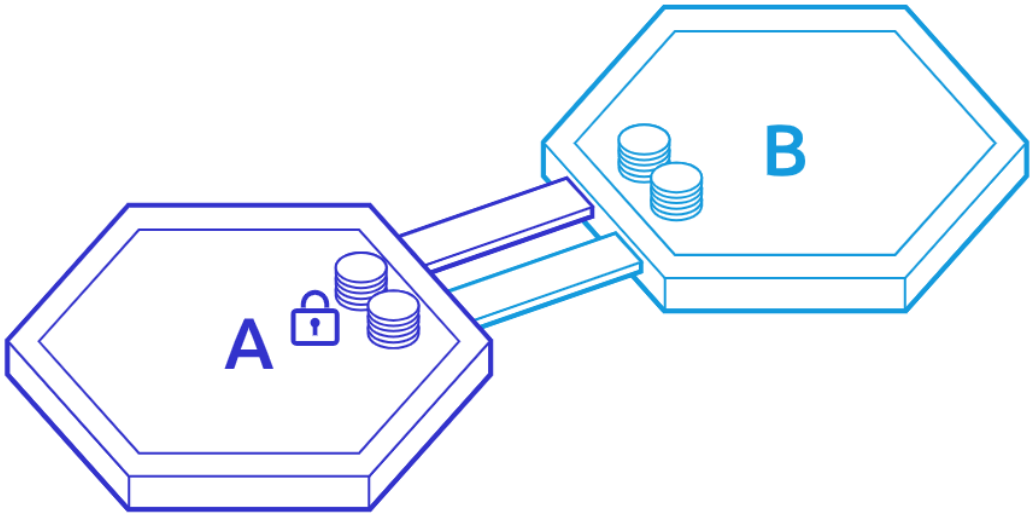
Cosmos SDK
Cosmos SDK is a generalized framework for an application being built on a given chain. Think of the SDK as a library of different pre-programmed features of a given application, such as staking, slashing, governance, minting, and more. As the network grows and developers continue to build more complex applications, the database of available modules will grow to increase the efficiency of development and growth in the network. The full list of SDK modules can be viewed here.

IBC
Last but not least, the Inter-Blockchain Communication (IBC) protocol allows for these custom built blockchains to communicate. The main requirement for networks to leverage the IBC is to have instant or fast-finality. More than just "talking to one another," the IBC allows separate blockchains to transfer valuable tokens and data to each other.

It's possible that other networks decide to move to IBC in an effort to become more cross-compatible. It's not that far-fetched for something like Solana, NEAR, or even EVM compatible chains to end up connecting to the rest of the Cosmos ecosystem. And these integrations would likely be great for the Cosmos token.

Each IBC-enabled network will have to run a light-client of the other chains it will interact with in order to verify different states of the blockchain. Here is an example of someone wanting to send tokens from one IBC chain to another.

- Chain A has an original 10 $ATOM tokens and wants to send them to Chain B
- Chain A sends a proof showing that the 10 tokens are locked in a contract so they can be used on Chain B
- Chain B compares this proof against its own knowledge of Chain A (because it has been running the *light-client*).
- Chain B can mint $ATOM vouchers on its own chain (**not** *real* $ATOM tokens



Cosmos Documentation

There is much left unsaid on the above mechanisms, but those are the basics. Now we can better understand the value proposition and competitive advantage posed by the Cosmos ecosystem.

App-Chains
As understood by the explanation above, the app-chains provide greater flexibility on a number of developmental levels.

When building these chains, developers can decide what consensus mechanism they want to use (Proof of Stake, Proof of Authority, which would be a private chain, and more). This provides an advantage on multiple levels in terms of security and composability.

Cosmos Hub

There are two common ways to reference the blockchains in the Cosmos ecosystem: hubs and zones. While essentially the same thing, hubs are the chains that connect a large majority of the ecosystem, and zones participate in the ecosystem a bit more isolated.

The *previous* largest hub, and still the most popular, is Cosmos, native token $ATOM.

ATOM
$ATOM is the primary token used in the entirety of the IBC and the main one for the Cosmos chain. The main three uses right now are:

- Staking for validator rewards
- Governance voting
- Paying transaction fees in the network

The most popular way to stake $ATOM and earn rewards is by assigning your tokens to a delegator in your Keplr wallet, also known as delegated proof of stake (DPoS). The maximum active validator amount set by Cosmos is 175, but the distribution of stake by the validators is widespread which helps validate the decentralization aspect of the chain:

Name	Reward	Users	Balance
stakefish	18.88%	43,532	$113,036,855 5.69%
Everstake	18.68%	-	$61,350,276 3.09%
Chorus One	18.19%	-	$40,290,579 2.03%
P2P Validator	18.09%	-	$37,807,024 1.9%
Staking Facilities	17.7%	-	$14,272,831 0.72%

The top 5 validators account for roughly 14% of staked $ATOM value: stakingrewards

Rewards are paid out in part by transaction revenue and inflation rewards. Because of the rewards, there is no cap to the total $ATOM supply so dilutive effects of inflation must be considered. Currently, the net staking APR after inflation is 5.61%. Here are some of the key data when looking at $ATOM staking:

- **Staking Ratio:** How much of the total supply is staked. Target rate is 67% staked, which ensures the security of the chain. The percent staking ratio determines the inflation rate.
- **Inflation Rate:** The inflation rate of $ATOM token rewards for stakers. Inversely correlated to the staking ratio, currently at 13% and usually around 10%.
- **Commission:** This is the cut that validators will take. Some set it to 100% meaning they do not want anyone else to delegate to them. Find the lowest commission for a validator that fits your ethos.

$ATOM had an ICO and fundraiser take place in 2017, and all founder and initial contributor allocation (totaling 25% across different categories) is fully vested.

Like all of crypto, the token has taken quite a hit through this bear market, down over 70% YTD. The tokenomics make $ATOM likely not the best buy in terms of upside, but with consistent staking rewards and strong network effects if the IBC/crypto market as a whole gains traction, it is a safer play on the whole ecosystem.

Tradingview

To argue against ourselves on the above point, one of the things lacking in $ATOM is a consistent need to own the token. It **is** valuable to secure the network, and rewards are nothing to sneeze at, but a unique situation has led to other Hubs, like Osmosis, to drain demand away from $ATOM.

Strengths

NFT, Gaming, and Metaverse specific platforms are all significantly easier to comprehend when thinking about the scalability of app-chains. Rather than each use case listed above competing for blockspace and clogging transaction speed, increasing price, etc., they can instead live in their own blockchain but remain interoperable.

Weaknesses
Despite the wide distribution of $ATOM across different wallets, there is only a maximum of 175 validators, which is significantly lower than most competitors (ethereum has over 200,000). Even though it is not detrimental to the ecosystem, this means there is *some* level of centralization in the network. Users choosing to participate in Cosmos know this, but it is worth extra consideration when thinking about the potential scale of the network. Infact, it is not just Cosmos, but three of the largest chains in the IBC that suffer from this:

Blockchain	Nakamoto Coefficient
Juno	7
Osmosis	7
Cosmos	7

(The Nakamoto coefficient reflects how many nodes must collude to negatively affect the network)

Although $ATOM was the initial token for the IBC ecosystem and the supposed “hub” for all activity, it has turned into somewhat of a bridge into the rest of the ecosystem. This is because of Osmosis, a DEX which will be discussed further below.

As more IBC tokens are listed on centralized exchanges, $ATOM, despite its slot as the ‘main ecosystem token’ will likely be cut out of the equation, and users will just head straight to $OSMO to begin exploring the ecosystem.

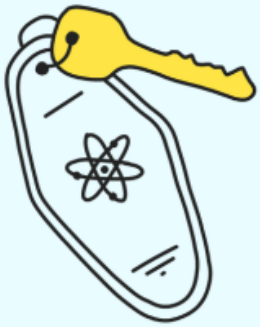
Opportunities
One of the biggest opportunities for the entire IBC right now is in liquid staking derivatives (LSD for simplicity). Across all blockchains, liquid staking has become increasingly popular, especially seen with Lido’s $stETH (staked Ether). $stETH creates ample opportunity for users to compound on their continuously accruing $ETH staking rewards through various DeFi protocols.

Because the Cosmos IBC relies so heavily on the PoS consensus mechanism, a lot of user assets are locked up in staking contracts that cannot be used. While these tokens are helping secure the network and earn rewards, allowing stakers to utilize a liquid version of their asset across the IBC would introduce a massive pipeline of money into the ecosystem–it could potentially unlock billions in borrowing, lending, and trading of assets.

1

Stake

Stake your tokens on Stride from any Cosmos chain. See your rewards accumulate in real time.
No minimum.
It's that simple.



2

Mint

Receive stTokens when you stake. These can be freely traded, and can be redeemed with Stride at any time to receive your original tokens. (+ staking rewards!)

3

DeFi

Stride lets you use your staked assets to compound your yield. Continue to earn staking yield, and earn additional yield by lending, LPing, and more. Set your own risk tolerance in Cosmos DeFi.

stridezone

The protocol currently building this, and launching soon is called Stride. Here's how this will be game-changing:

- Stake $ATOM to earn ~6% real APR
- Receive $stATOM that represents your share of $ATOM tokens
- LP $stATOM and $ATOM pool on an IBC dex
- Earn LP emissions rewards, trading fees, and $ATOM staking rewards

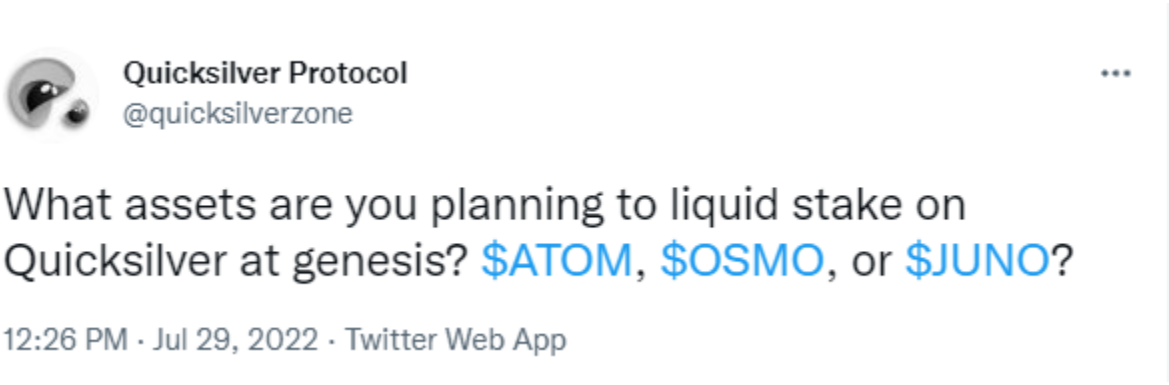
Not only does this allow users to earn significantly more on their assets, but it also eliminates the risks that come with the unbonding period for usual staking on Cosmos (21 days).

As with many IBC assets, Stride is doing an airdrop to kickstart activity. They are obviously utilizing $ATOM as a “host zone”, and announced $JUNO as well. There are no airdrop details released, but it can be reasonably assumed that a snapshot will be (possibly already has been) taken of $ATOM and $JUNO stakers.

To visualize just how far this can go, $stETH, which launched at the beginning of 2021, saw its market cap shoot to a peak of $10B, or 3% of total $ETH market cap at the time. This would put **Stride at roughly a $94m market cap** *if* it were to have the same level of success in the ecosystem.

As of 8/10/22	Market Cap	As of 8/10/22	Market Cap
ETH	224,229,753,187.37	Cosmos	3,421,272,859.96
stETH	6,180,185,530.76	**Strite Potential**	**94,296,589.66**
% of ETH	2.76%		

Stride will face some competition with Quicksilver. The latter has announced it will support $OSMO staking on top of $JUNO and $ATOM, so it is likely that Stride will follow suit. No airdrop has been announced for quicksilver, so staking on any of the above-mentioned networks will likely be a qualification.



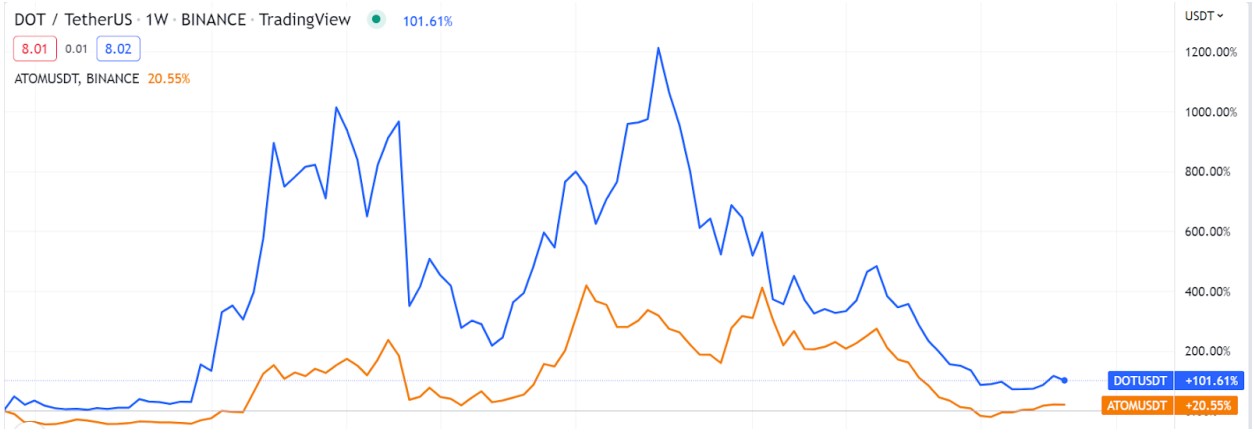
Threats

The merge will heavily compete with EVM-based Cosmos chain, Evmos. The main selling point is to allow Ethereum application developers a chance to access the benefits of PoS in terms of

scalability and interoperability. While the latter is still a feature unique to the Cosmos ecosystem, Ethereum 2.0 will eventually lead to a much faster network (when sharding is implemented).

Polkadot
Nearly a carbon copy of the IBC, Polkadot directed all of its development attention towards the issues of scalability and composability. The co-founder of Ethereum, Gavin Wood, took his skills to build out the Polkadot ecosystem.

The technical details of Polkadot vs. Cosmos slightly differ: where Cosmos allows individual chains to maintain sovereignty and create either own consensus mechanisms, Polkadot "parachains" rely on the relayer chain (Polkadot), for security. In order to participate in the network, the new chains must go through an auction and lockup process with $DOT. This creates a **systemic buy-side pressure** for $DOT that $ATOM does not have. The other functions of the token are similar, but with a larger retail and institutional crowd, $DOT has been able to enjoy larger returns over a long time frame:



Tradingview

Where $ATOM **does** have the edge is market capitalization. Currently at $3 billion and ranked #28, there is clearly more upside to be had in $ATOM than $DOT, which sits at $9 billion and spot #10.

We are choosing to focus on the IBC today, but if you do choose to dive deeper into Cosmos, it is worth the effort to look into Polkadot as well.

Osmosis
We noted above that Cosmos hub *used* to be the most used chain in the IBC, until Osmosis gained massive popularity. Osmosis is a cross chain dex that allows users to interact with the entire IBC ecosystem.

$OSMO token is used in a similar way that $ATOM is used in the Cosmos Hub: it secures the network through its PoS system, can be used for voting, and is used as a base network transaction currency.

Here is the 30 day historical data for the top IBC chains by volume:

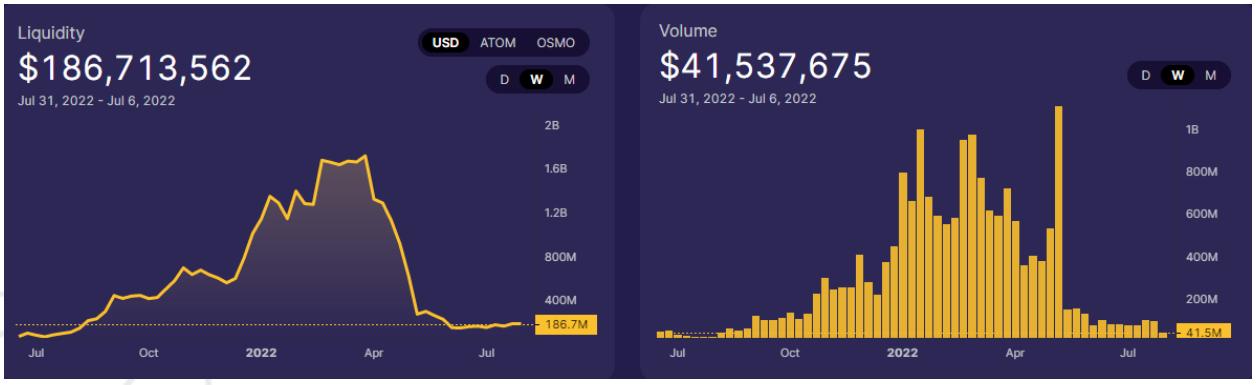
#	Zone	IBC volume, $	IBC volume in, $	IBC volume out, $	Total txs	IBC transfers
1	Osmosis	**$277,941,445** $259,006	$102,736,801 $48,070	$175,204,644 $210,936	25,624,149	978,993 1,208
2	Cosmos Hub ▲1	**$139,402,449** $124,567	$68,182,491 $89,752	$71,219,958 $34,815	2,082,507	251,912 1,073
3	Axelar ▼-1	**$116,967,011** $0	$80,541,884 $0	$36,425,127 $0	835,708	64,220 2,019
4	Juno ▲2	**$31,582,672** $20,928	$17,240,054 $18,338	$14,342,618 $2,590	1,383,425	155,562 557
5	Evmos ▲2	**$29,793,931** $3,843	$13,264,386 $1,175	$16,529,545 $2,668	2,082,151	206,769 1,712

[Mapofzones]

Clearly, a large majority of IBC volume takes place on Osmosis. Inflationary rewards are a large part of the incentive structure. In fact, the current **real APR** (staking yield via inflation) sits at nearly -20%. This situation has led to a low staking ratio of roughly 43%, which does not help in the case of securing the chain.

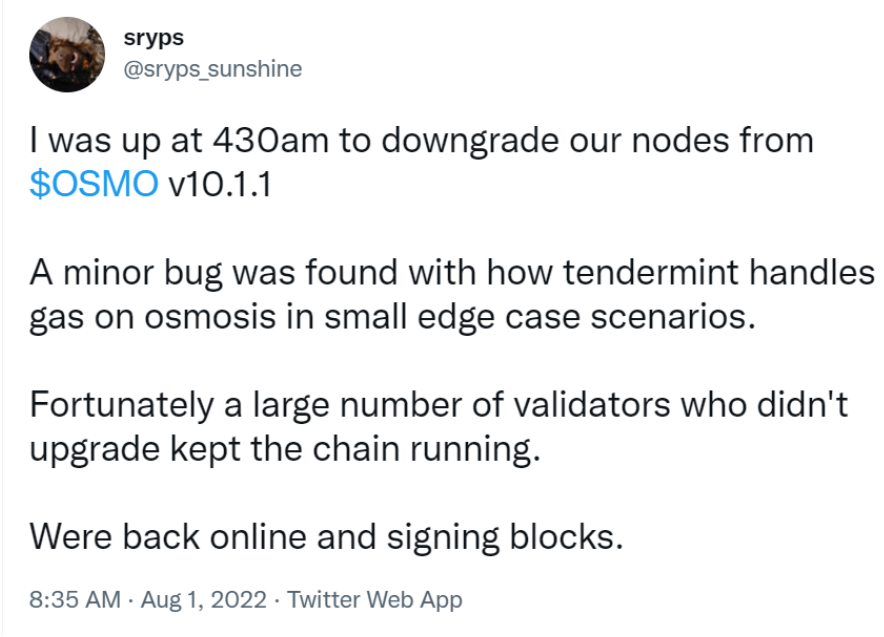
Superfluid Staking
One of the reasons inflation is so high is due to the newly implemented superfluid staking. This is similar to LSD discussed above, except the protocol does the work for you. When providing liquidity in one of the available pools, Osmosis will mint the same amount of $OSMO tokens originally deposited and accrue staking rewards on your behalf. This means in addition to staking rewards for the network, you can also earn LP rewards from the most active DEX in the IBC.

The Numbers
Liquidity on the network and trading volume has all but dried up over the past 3 months:



$OSMO token value is down to $1 from a peak of about $8, which accounts for a lot of the dollar value of liquidity leaving the network. But even when looking at TVL denominated in $OSMO, there is still a slight decline–which should not be the case for a hyper-inflationary token.

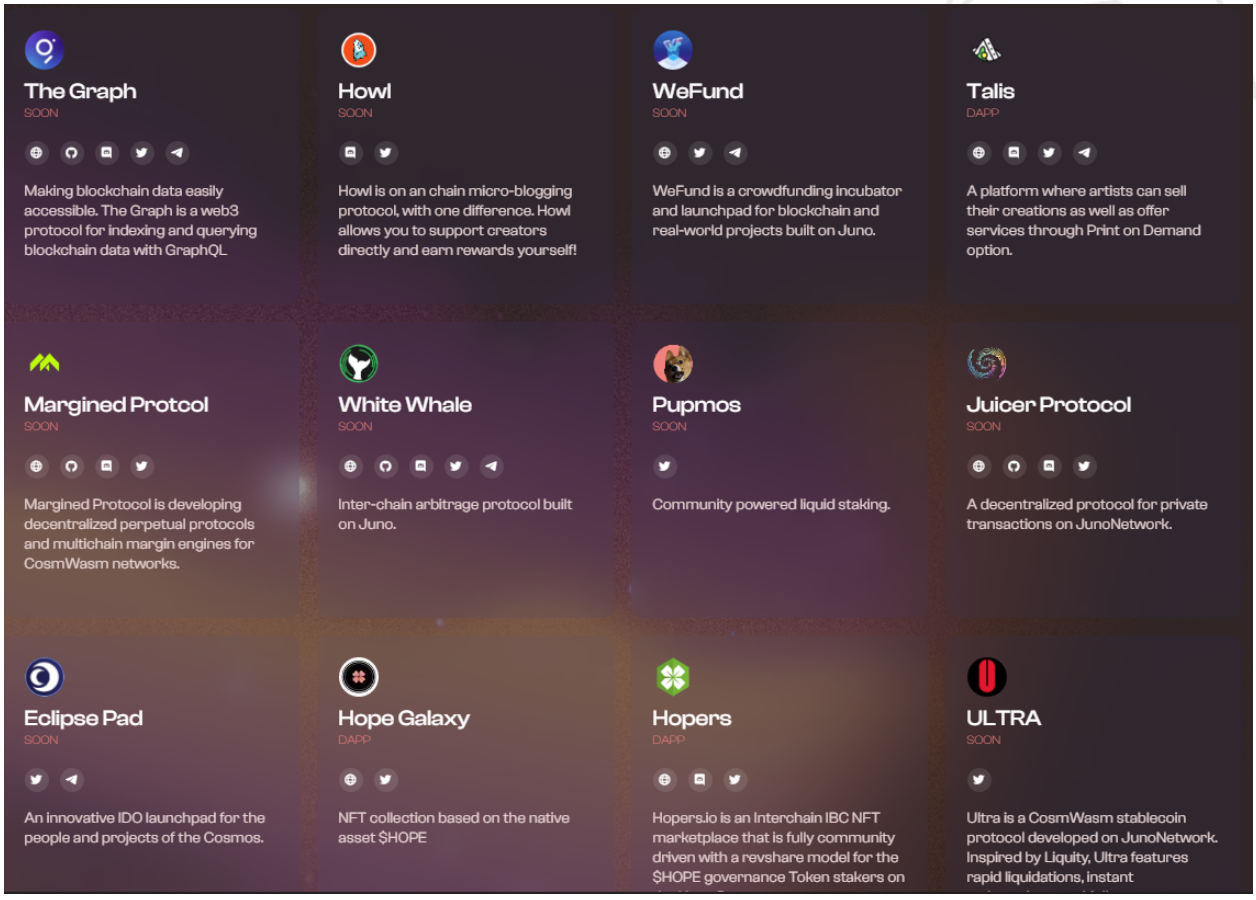
In addition to the decrease in trading activity, Osmosis has had its fair share of bugs and network halts:



In general, $OSMO would likely stand to benefit the most in the case that Cosmos season does return. Understand, however, that the negative real staking rate could lead to security compromises and other extreme endogenous events in the future.

Juno

Juno is another large chain in the ecosystem that has developed its own smart contract framework, CosmWasm. They continue to ship dapps at a **very** high rate, so if you are looking for a place to find as many new projects as possible, this is a good spot to look at.



JunoNetwork

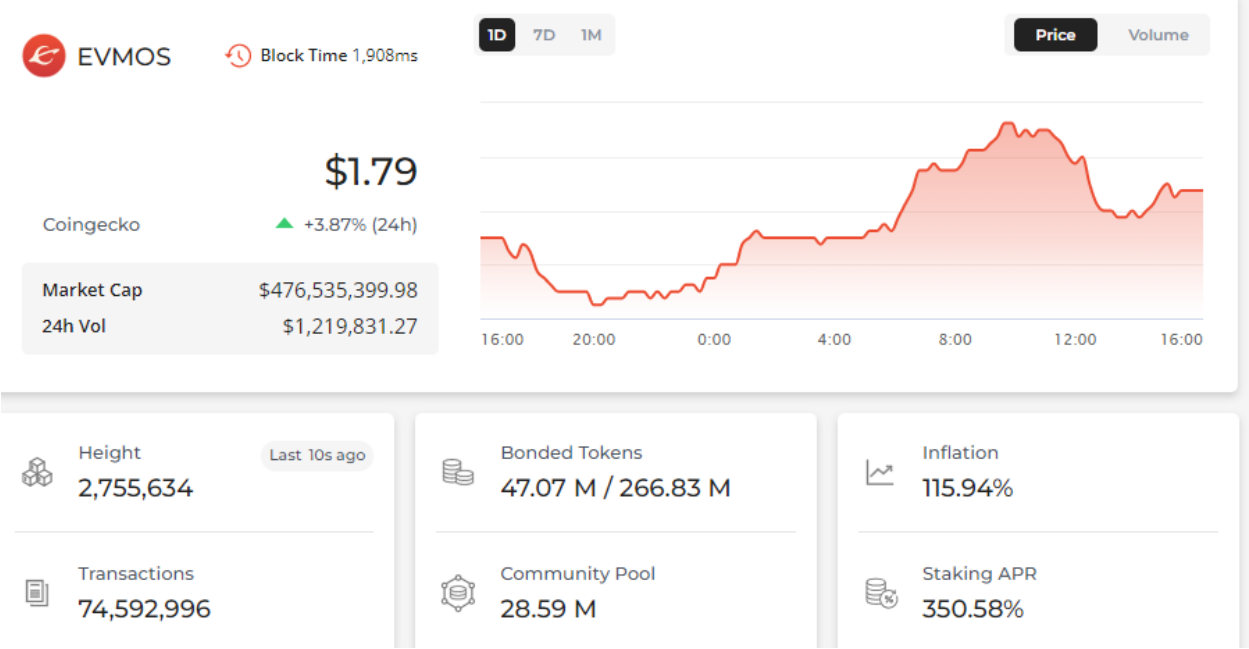
Unfortunately, Juno network had a vote that seized tokens from a whale who allegedly “gamed a community airdrop”. In [this proposal](), the community and ecosystem makes it pretty clear that they are willing to bend the generally accepted principles of crypto.

Evmos

One of the initial propositions in the Cosmos community was an initiative called Ethermint, which would allow EVM-compatible apps to be deployed using Tendermint. While proposed many years earlier, the project was not pushed forward until April 2021 with Evmos.

EVM-compatibility made it possible to fork Ethereum based solidity code and insert it as an appchain on Evmos. As discussed in the weaknesses section, the advantage offered here was to allow Ethereum developers the ability to leverage a PoS and instant-finality ecosystem, along with all the network effects of the IBC.

To save our breath, we won't be diving deep into the technical side of Evmos but [this]() is a good summary if interested.



[Mintscan]

Evmos has a massively high staking reward at the moment despite the inflationary economics. Like other chains, the lockup period is 14 days, so it could be a solid way to accrue rewards over the short term (although the dilution will likely occur in real time, largely cutting into profits)

The Not So Good

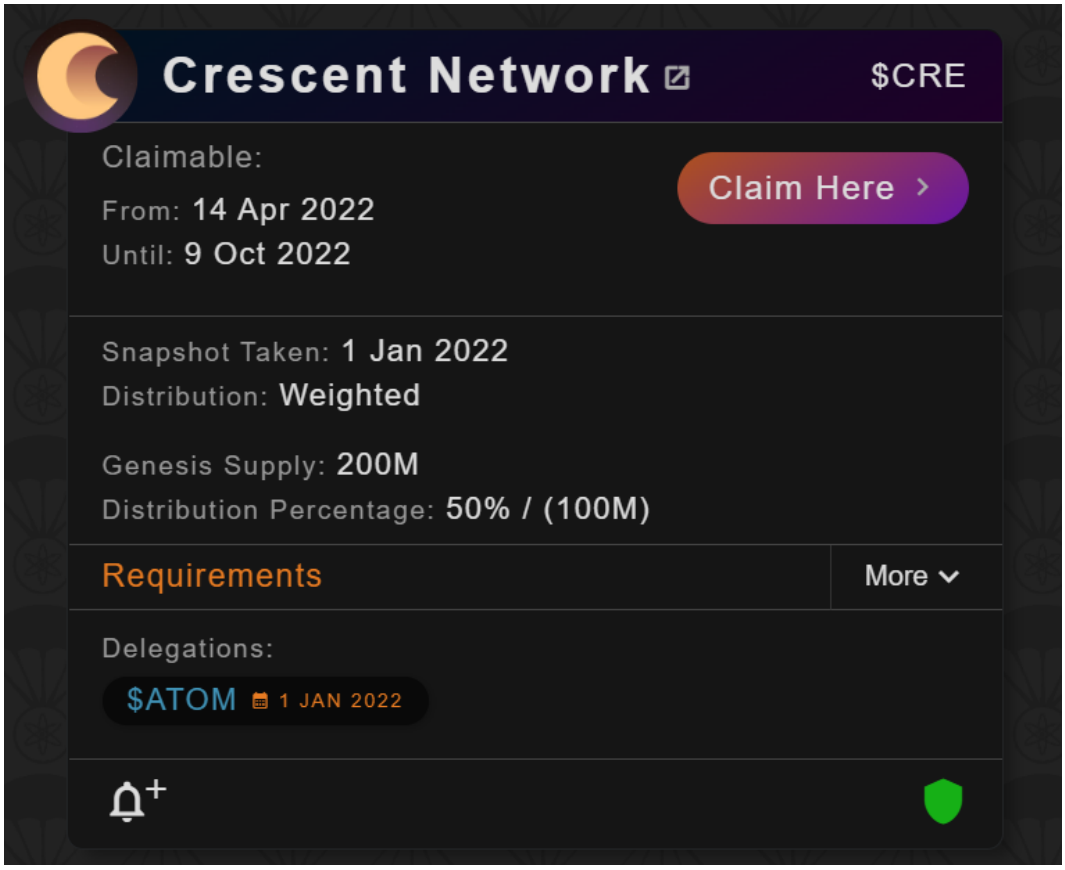
Despite a promising scope of the project, Evmos drastically failed in their airdrop and launch back in March of this year. Due to an abundance of technical issues, the network had to be shut down and the launch was postponed. Although things have been working for quite some time recently, there was of course the very recent Nomad bridge hack, which is the bridge that connects the Evmos chain with Ethereum mainnet. Nearly all stable coin liquidity was drained from the network, and they are currently running a decaying airdrop over the month of August.

The Nomad bridge, which connects ERC-20 tokens with the Evmos chain, was exploited recently. These are two major issues, and greatly hurt the validity of the network. Developer activity is essentially none, look for that to be a key catalyst if anything with the chain is to turn around.

Airdrop Galore

Early 2022 was the season for Cosmos airdrops. So many new projects were dropping on a weekly basis and gifting tokens to stakers of some of the top networks in the IBC universe. While some of the projects that came out were noteworthy, more often than not the best use of airdropped funds is to cover costs of staking and cycle the profits into more persistent areas.

For future airdrop speculation, **Cosmos Airdrops** provides a thorough list on both past and present events, with all relevant information:



CosmosAirdrops

By delegating to validators and being involved in governance, you drastically increase the likelihood that you will receive some portion of future airdrops, which has been profitable in the past.

Conclusion

The IBC networks place a concentrated bet that the future of blockchains will be interoperable and highly customizable. While this is inherently different from Ethereum's view, we do not see the blockchains as mutually exclusive. As discussed before, it is more likely than not that multiple blockchain networks will thrive in the future and find a market share for a specific solution they are solving. Cosmos is the first to tackle the situation of interconnectivity.

Some issues that prevail despite everything good that has been mentioned:

- Token supplies are highly inflationary and will dilute holders that do not stake
- Competition for network volume may create a zero-sum environment rather than a synergistic one
- Network security is still very early stage and will likely be put through more stress tests
- There is minimal value accrual for $ATOM besides as a bridge into the IBC ecosystem

The Cosmos developers are working to address the last point as seen in the speculative $ATOM 2.0 whitepaper release:

The monetary policy listed here would introduce the Cosmos Hub as an incubator for up and coming ecosystem chains, which will give them participation in the upside that could be returned to stakers (sounds a bit too much like a security, but that is a completely different tail risk).

Additionally, they reference “sound money” tokenomics, which could implement a burn or fixed supply mechanism.

Either way, these updates are largely speculative but still worth taking note: the Cosmos development team is attempting to move value towards $ATOM while building the innovative and communication-driven network.

Overall, we see the Cosmos ecosystem playing an important role in the proliferation of on-chain adoption. It is a developers playground and removes a massive headache for devs of building blockchains and blockchain infrastructure.