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Tokenomics Beyond 2023: Why Now More than Ever Before

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In 2018, I dared to ask the question on the inaugural issue of the Journal of the British Blockchain Association: Why do we need tokenomics¹?

I was one of the very first to note the importance of token economics, but also the potential that tokenomics brings to revolutionise multiple industries and society.

The innovations behind Ethereum gave rise to the creation of token economies that can align complex incentives. Then many other projects followed. From new Layer 1 solutions, like Solana and Avalanche, to Layer 2s, like Polygon and Optimism, and interoperability blockchains like PolkaDOT and Cosmos.

This has made tokenomics ever more important. What used to be a fringe interest in 2018, has now become a recognised area of expertise.

Therefore, I thought it would be good to revisit the original article published in 2018. No-one questions the importance of tokenomics. However, the answer to the question "why do we need tokenomics?", is more complicated than it was four years ago. The rise of areas such as DeFi, NFTs and the metaverse has created a multitude of new opportunities, and challenges, which tokenomics as a field needs to solve.

Tokenomics in 2018

In the original article in 2018, I had identified three types of tokens:

1. Equity tokens
2. Security tokens
3. Utility tokens

NFTs were primarily unheard of back then, and most tokens belonged in the utility token category.

In the original article I had also voiced this opinion:

"The use of blockchain-based tokens allows the creation of new kinds of economies, completely customisable and adaptive, while at the same time ensuring security and transparency without a central authority."

There are many possibilities, and in this article, we are going to see three different examples:

- 1) Improved incentivisation schemes for different agents of an ecosystem
- 2) Automatic control of inflation
- 3) Automatic reward/punishment of different actions within the ecosystem

All these things are as true back then, as they are now. However, I think that this list needs to be further expanded and commented upon.

Tokenomics in 2023 and beyond

Revisiting the original discussion

In terms of the first point (improved incentive mechanisms), I think that this is something proven beyond doubt. Tokenomics is an effective mechanism for aligning incentives in ways that traditional economic models cannot. What is surprising in the blockchain space is the multitude and constant discovery of new mechanisms to achieve these objectives. Here are some great examples:

1. Automated market makers
2. Borrowing/lending protocols
3. Yield farming

In terms of inflation, I hadn't foreseen back then is how of an important problem inflation would be in the current fiat system. Could crypto have solved this problem? At the current level of maturity and volatility, probably not. But could self-adjusting cryptocurrencies be the solution to future inflation challenges? It is very likely that the answer is yes.

Artificial intelligence's role in society and the industry is becoming more and more prevalent. Newer generations will take AI as a given. Given the policy fallacies of central banks over the last decade, it's likely that automated and

¹ <https://jbba.scholasticahq.com/article/3636>

decentralised systems will play a larger role in the global economy. A self-adapting financial system will be more resilient than one based on human policy. The rise of CBDCs might facilitate such a transition. However, this development does not depend only on technological advancements, but also political will.

With regards to the third point (automatic reward/punishment of different actions within the ecosystem), I think the tokenomics community has mostly focused on rewards, with punishment being restricted to mechanisms such as proof-of-stake. This point ties in with the first point of tokenomics being able to create new incentive structures that would not be able to exist otherwise.

The new frontier in tokenomics

In addition to those three points, I would add some more.

A fourth point would be "tokenomics enables the unlocking of latent demand". The best example of this are NFTs in the art world. I mention the art world, because the use of NFTs in areas such as land registries and car ownership is largely a technological improvement over the currently centralised state of the art.

The explosion of the total value of the NFT space, while partially funded by speculation, clearly demonstrated there is "latent demand". The term latent demand is referring to demand for a certain good or service which was unable to express itself unless the invention of a certain technological innovation.

If there would be one key application of tokenomics to focus on, this would be the best one. The term "latent demand" encapsulates countless use cases in the world of Web3.0. Other great examples of this concept are decentralised exchanges, since they allow trading assets 24/7, across all time zones. Another great example of this is borrowing and lending protocols. Indeed, most of DeFi can be seen as an attempt to unlock latent demand for financial services which is not satisfied by mainstream finance.

A fifth point is around interoperability. Projects like Cosmos and PolkaDOT are focused on bridging together multiple blockchains. The revised tokenomics of Cosmos demonstrate how complex incentives can be used for more than the simple transaction of value. Cosmos' new tokenomics system incentivises (amongst other things) the preservation of security. PolkaDOT's parachain slot auctions incentivise efficient allocation of resources. Both go beyond traditional tokenomics applications.

A sixth point is around interconnectedness with the physical world. The metaverse is a relatively recent development which has been partially fuelled by Facebook's transition to Meta. While the jury's still out as to whether Meta's vision will be successful, this development is a clear transition towards a

trend of connecting the physical world with the digital. To that extent, it can be seen as within the same group of technologies like augmented reality. One thing that's clear is that this trend will persist in one form or another, irrespective of whether it can be successful or not.

The new risks in tokenomics

The conversation, up to this point, focused on the positives of tokenomics. However, tokenomics are much needed for another reason. As the blockchain industry grows, it faces unprecedented financial risks which can wreak financial havoc on investors.

There are two excellent examples from recent history. One is the Terra-Luna crash, which spelled financial disaster for many users of the stablecoin. The crash eliminated about \$60 billion of total value².

Another example is the FTX scandal, which wiped out a \$30 billion empire³. A post-mortem indicated that there were many issues, with the primary culprit being that FTX had created a complicated structure, which allowed it to essentially enter overleveraged positions, by printing its own token and using it as collateral.

Therefore, we need to add one more point to the ones outlined above. Tokenomics should test the robustness of a network and inspire consumer and investor confidence. This is what the new field of tokenomics auditing has been designed to do. A tokenomics audit of any of the tokenomics structures above would have prevented these collapses.

Conclusion: So, why do we need tokenomics in 2023 and beyond?

Here's an updated list:

1. Improved incentivisation mechanisms
2. Automation of real-world financial mechanisms and metrics
3. Unlocking latent demand
4. Interoperability incentives
5. Interconnectedness with the physical world
6. Ensuring robustness and inspiring investor confidence.

It's clear that this list might be incomplete since other experts in tokenomics might add more items. However, I can only imagine this list growing over the next few years. The Web3.0 narrative has now been widely adopted with a new wave of entrepreneurs innovating in this area.

² <https://www.forbes.com/sites/qai/2022/09/20/what-really-happened-to-luna-crypto/?sh=47fa074c4ff1>

³ <https://www.theguardian.com/technology/2022/nov/28/crypto-ftx-collapse-bitcoin-ethereum-prices-us-cryptocurrencies>

This makes tokenomics more important than ever. However, the whole area still has a long way to go until it matures.

On one hand there is progress, with tokenomics becoming more popular as a field. At the time of writing, a google scholar search for the term “tokenomics” returns about 1200 results.

On the other hand, there is a lack of formalisation in the field. A recent development which is assisting with this direction is the development of tokenomics auditing, which has also been discussed in this journal⁴. Also, tools like agent-based modelling can assist in this direction.

One thing that is evident is that this decade will witness a virtuous loop of more Web3.0 projects, more complicated tokenomics designs, more data from past projects to guide the design of new projects, as well as new and more robust tokenomics frameworks.

Therefore, the question “why do we need tokenomics” is at the same time relevant, and contrived, given that tokenomics, as a field, has proven its importance beyond any doubt. In the next few years, asking “why do we need tokenomics” will be like asking “why do we need physics?”, or “why do we need the internet?”. No-one would take such a question of this type as meaningful, for the fact that both physics and the internet have parts of the fabric of science and society.

So, in a few years, when this question is revisited, the right thing to ask might not be “why do we need tokenomics”, but rather “how can we make the most out of tokenomics to build better systems for the economy and society?”. And this is a question that will be answered in more clarity over the next few years as the Web3.0 community collectively experiments with new ways of creating and transferring value.

⁴ <https://jbba.scholasticahq.com/article/34696-auditing-tokenomics-a-case-study-and-lessons-from-auditing-a-stablecoin-project>