BRC-20 Tokens:
A Primer

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1 Key Takeaways

- ❖ BRC-20 tokens are the latest innovation of the Ordinals Protocol and have taken over timelines across Crypto Twitter in recent weeks.

- ❖ BRC-20 is an experimental token standard that has enabled the deployment, minting, and transferring of fungible tokens on the Bitcoin blockchain. While total market capitalization for these tokens has even touched US$1B, the tokens themselves are relatively simplistic and do not have any smart contract functionality, like ERC-20 or BEP-20 tokens.

- ❖ Due to the minting frenzy in early May, the Bitcoin mempool saw high congestion, and transaction fees on the network spiked.

- ❖ Many in the ecosystem have welcomed higher fees, given the importance of supplementing miner revenue as block rewards decline over time. However, others have been more critical in discussing the disadvantages of pricing out users in more price-sensitive areas.

- ❖ In this early stage of the market, BRC-20 tokens bring considerable risks and need more supporting infrastructure. As stated by the founder, this is an experiment, and potential risks should be rigorously scrutinized.

- ❖ Ordinals, Inscriptions, and BRC-20 tokens have helped to demonstrate that there is clear organic demand for Bitcoin blockspace outside of the traditional monetary use case. This could be a critical factor for the long-term sustainability of the Bitcoin security model.

- ❖ Developments in Bitcoin layer-2s, infrastructure support for BRC-20, and further token design innovation are the likely next steps in this saga.

② Introduction

Since the Ordinals Protocol first went live at the start of the year and Inscriptions (i.e., Bitcoin NFTs) started flooding the scene, there has been a resurgence of innovation in the Bitcoin ecosystem. BRC-20 tokens are the latest result of this Ordinal-driven innovation and have been all the rage in the last few weeks.

First conceptualized in March 2023, **BRC-20 is an experimental token standard that has enabled the deployment, minting, and transferring of fungible tokens on the Bitcoin blockchain.** This latest innovation means that both fungible tokens and non-fungible tokens (Inscriptions) have become part of the broader Bitcoin ecosystem. The total market capitalization ("market cap") of these tokens has been on the rise and even exceeded US$1B in early May. Additionally, the leading BRC-20 token, $ORDI, has already seen listings on several exchanges.

Though many are excited by the increased activity within Bitcoin and the new energy that seems to be reverberating among the community, others see this as a deviation from what Bitcoin was "designed to do" and are less satisfied with the effect these innovations are having on Bitcoin's transaction fees.

In this report, we explore the origins of BRC-20, the current market outlook, how they compare to ERC-20 tokens, their effects on Bitcoin's metrics, the community's division, potential risks, and what we believe the future holds.

Disclaimer: BRC-20 tokens are extremely risky and in a very early stage of price discovery. This material is not intended to be relied upon as a forecast or investment advice and is not a recommendation, offer, or solicitation to buy or sell any securities, cryptocurrencies, or to adopt any investment strategy (See our General Disclosure on page 26). The creator of the BRC-20 token standard, a pseudonymous Crypto Twitter user named domo, has himself named the GitBook for this token standard as the "brc-20 experiment" and starts the page with:

brc-20

Read every word if you decide to test. These will be worthless. Use at your own risk.

Please keep this in mind when learning about this latest development in the market through this Binance Research report.

③ Background

What are Ordinals and Inscriptions?

ORD, which is open-source software[1] that can run on top of any Bitcoin full node, enables the tracking of individual Satoshis based on what founder Casey Rodarmor termed "Ordinal Theory." Satoshis ("sats") are the smallest unit of the Bitcoin network, and 1 Bitcoin = 100,000,000 sats. **Ordinal Theory ascribes a unique identifier to every single sat on Bitcoin**. Furthermore, these individual sats can be "inscribed" with arbitrary content (e.g., text, images, video) to create an "Inscription" (i.e., a Bitcoin-native digital artifact)[2], which can also be called an NFT.

> *"...individual sats can be "inscribed" with arbitrary content (e.g., text, images, video) to create an "Inscription" (i.e., a Bitcoin-native digital artifact), which can also be called an NFT."*

To learn about Ordinals and Inscriptions in more detail, including their history, technical background, specifications vs. other NFTs, and their effects on the market, please check out our recent report: **A New Era for Bitcoin?**

Where do BRC-20 tokens fit in?

With Inscriptions allowing for non-fungible tokens ("NFTs") to be available on Bitcoin, one of the natural questions being asked was, "What about fungible tokens?" That is where BRC-20 comes in.

On March 9, a pseudonymous Crypto Twitter user named domo tweeted a thread theorizing a method called BRC-20 that could create a fungible token standard on top of the Ordinals Protocol. **The idea is that JSON[3] data could be inscribed onto individual sats via Ordinals to deploy, mint, and transfer fungible BRC-20 tokens.** JSON is essentially a text-based data format, so in essence, the method is about inscribing text onto sats to create fungible tokens. The initial design only allows for three different operations: deploying a token, minting a token, and transferring a token (we will explore this and other limitations later in this report).

The first token contract to be deployed was for the $ORDI token with a limit of 1K tokens per mint and 21M max supply (in an homage to Bitcoin's max supply). The launch created some buzz in a sub-sector of the Bitcoin community, and in less than a day, all 21M $ORDI tokens had been minted. It wasn't long before other tokens emerged, such as $MEME, $PEPE (not the viral Ethereum version), and $PUNK.

Figure 1: The humble beginnings of BRC-20 tokens (domo's first thread on the subject)

Figure 2: The three initial operations possible for BRC-20 tokens (p = protocol name, op = operation, tick = ticker / identifier, max = max supply, lim = mint limit, amt = amount)

What does the BRC-20 market look like?

With BRC-20 conceptualized only a couple of months ago – and Ordinals and Inscriptions having a history of fewer than six months – it is fair to say that this market is in its nascent stage. Nonetheless, developers and enthusiasts have been experimenting day and night. As of May 16, 2023, there are over 18K BRC-20 tokens, with a total market cap of US$500M. This market cap was closer to US$1B in the first few days of May, but as is expected with any such frenzy, the market is correcting itself to find a more stable equilibrium.

Figure 3: The top five BRC-20 tokens by market cap at this stage

Logo	Ticker	Market Cap (US$M)	24H Volume (US$K)	Total Supply (M)
	$ORDI	331	503	21
	$VPMX	18	81	109
	$PEPE	16	23	42
	OG	11	6	21
	$piza	10	75	21

Source: ordspace.org, as of May 16, 2023

The Ordinals ($ORDI) token, the first BRC-20 token, remains the market leader by far. This is evident in both market cap and volume and could be contributed to by its recent listings on a few different exchanges.

How do BRC-20 tokens look vs. tokens using other standards?

Despite the name "BRC-20" being a play on Ethereum's "ERC-20" token standard, there are significant differences between them.

Different blockchains
BRC-20 tokens exist on the Bitcoin blockchain, while ERC-20 exists on the Ethereum blockchain, BEP-20 on BNB Smart Chain, etc. Therefore, BRC-20 tokens rely upon various qualities of the Bitcoin chain that differ significantly from ERC-20s or BEP-20s, e.g., transaction speed and fees, to name two key factors. This means that your experience with

BRC-20s could be widely different from what you might have experienced when transacting on other chains.

Lack of smart contract functionality

ERC-20 tokens and BEP-20 tokens are created using smart contracts on the Ethereum and BNB Smart Chain blockchains, respectively. Thus, they have a significant degree of programmable functionality and the ability to enforce various operations and rules. This is very different from the comparably simplistic BRC-20 tokens, which are not based on smart contracts and have fairly limited functionality (as shown in Figure 2).

Market Infrastructure

ERC-20 and BEP-20 tokens are much more mature than BRC-20 tokens. While the former have been around for many years and have led to the creation of various types of infrastructure (e.g., DEXes, centralized exchange compatibility, fiat on-ramps, cross-chain capabilities, and so on), the same cannot be said for BRC-20 tokens. Naturally, BRC-20s have only been around for a couple of months, so we cannot expect them to have a similar level of infrastructure. Still, this fact is worth keeping in mind as it illustrates the significant difference in risk profile between them and more established standards like ERC-20 and BEP-20.

4 Effects of BRC-20 on the Bitcoin Market

Fungible vs. non-fungible

To start with, let's have a quick look at how the overall Inscription market has changed since BRC-20 tokens emerged. Remember, BRC-20 tokens were first conceptualized on March 9, 2023, while Inscriptions have been available since December 2022. As we can see, **in February, images were the dominant Inscription type utilized by the market**. This was when the Ordinals buzz began, and Bitcoin NFT collections started popping up. Even from February through early April, although text Inscriptions became more common, there were still days when images were the most widely Inscribed media type.

Now, if we look at the **second half of April into May, we see a notable change. Text-based Inscriptions (primarily related to BRC-20 tokens) have been extremely dominant** and have essentially crowded out any other media type. Additionally, the **number of daily Inscriptions (depicted by the height of the bar charts) became multiple times the amount we saw from January to early April.** This demonstrates the immense popularity and amount of buzz that BRC-20 tokens have been able to generate since their conception.

Figure 4: Daily Inscriptions have spiked significantly, with the majority being text-based
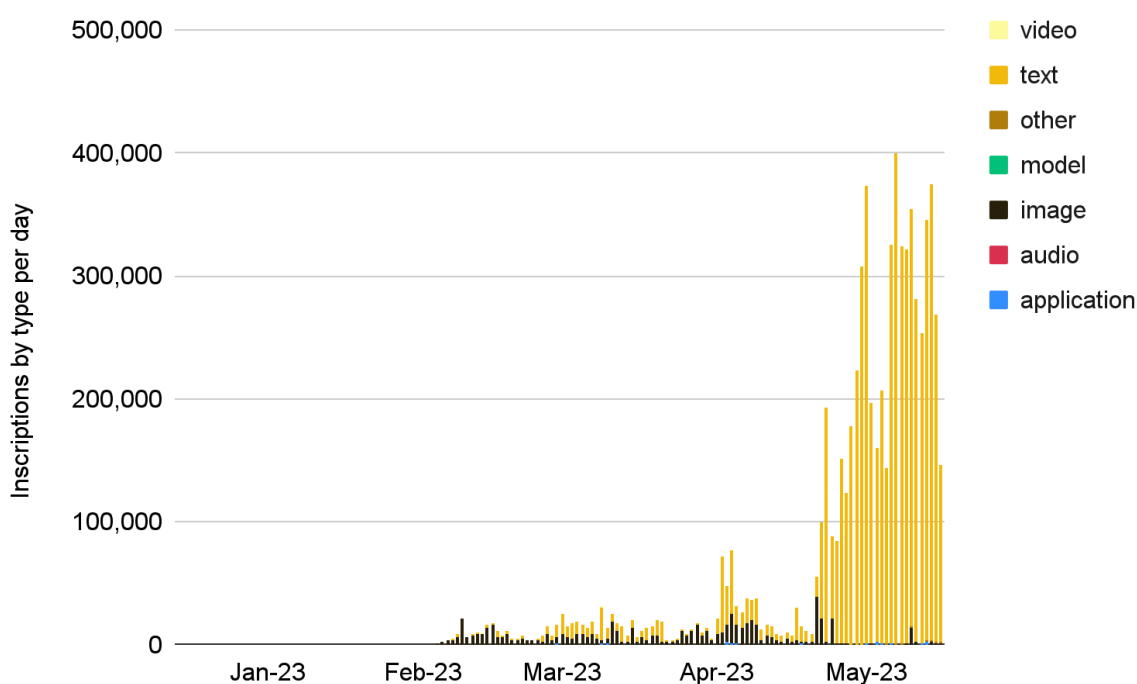
Source: Dune Analytics (@dgtl_assets), as of May 16, 2023

In our report – **A New Era for Bitcoin?** – we provided a chart of the types of Inscriptions that had been inscribed as of March 30. We can compare how those numbers look with the current composition of the Inscription market, and it becomes even more apparent how BRC-20 tokens have come to dominate the overall market for Inscriptions. As we see below, **text-based Inscriptions have more than doubled their dominance in just six weeks, while image-based Inscriptions are down over fivefold**. In terms of the total number of Inscriptions, between **March 30 and May 13, they have increased from ~650K to over 6.1M - a nearly tenfold increase.**

Figure 5: Text-based Inscriptions have come to dominate the market in recent weeks
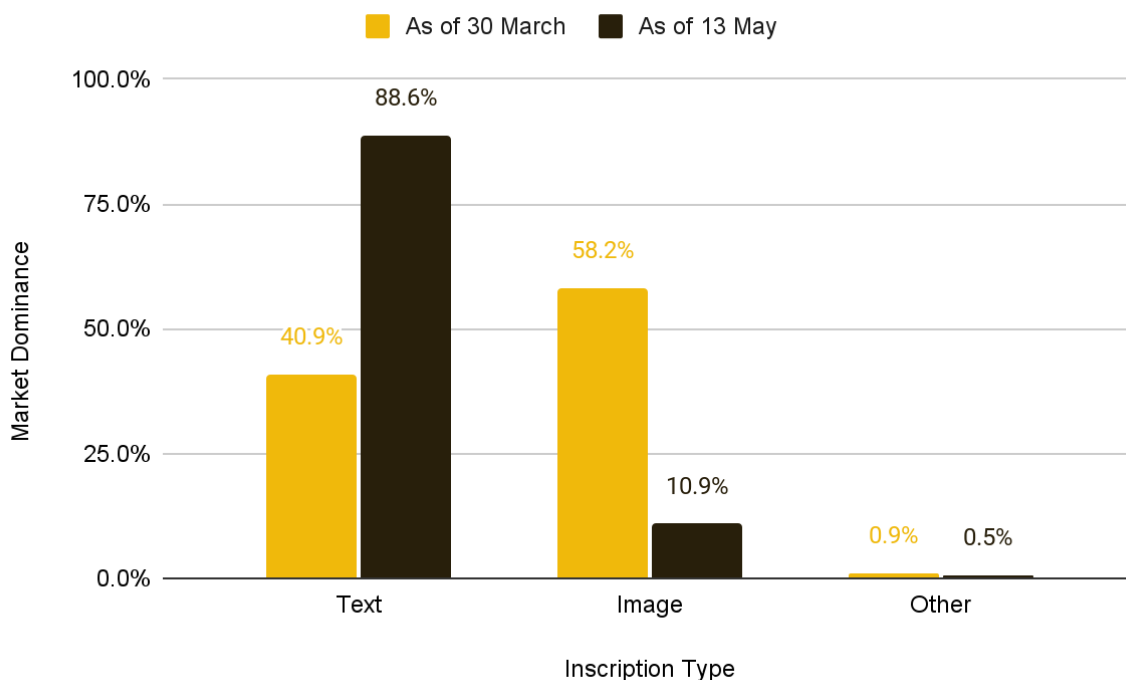

Source: Dune Analytics (@dgtl_assets), Binance Research, as of May 13, 2023

Mempool

As a reminder, the **mempool is essentially a waiting room for unconfirmed transactions yet to be put into a block**. These are ordered by the attached fee, and a more crowded mempool implies more competition to get your transaction into the next available block.

Bitcoin's total number of unconfirmed transactions – i.e., the mempool transaction count – has consistently risen in 2023 so far. More recently, the interest generated from Inscriptions and BRC-20s has meant that the mempool transaction count has spiked significantly (relative to the last year). This, in turn, has affected how much it costs to execute a transaction on the Bitcoin blockchain (explored further below).

Figure 6: Bitcoin's mempool transaction count has been on a steady rise this year, at least partially helped along by Ordinals, Inscriptions, and BRC-20s
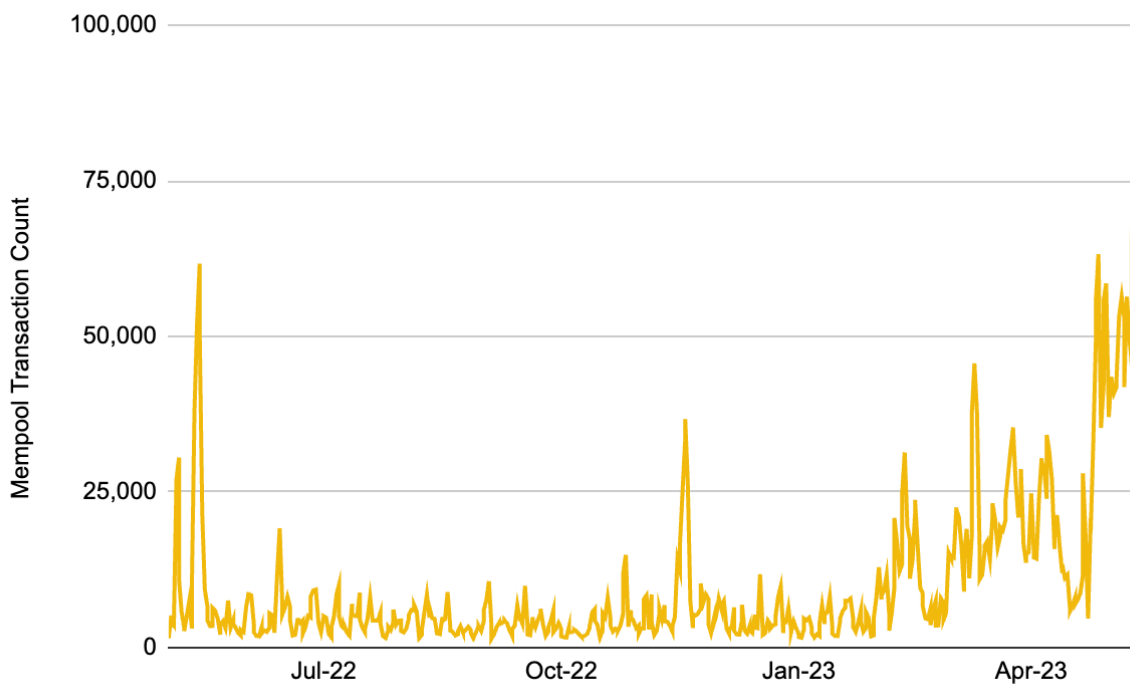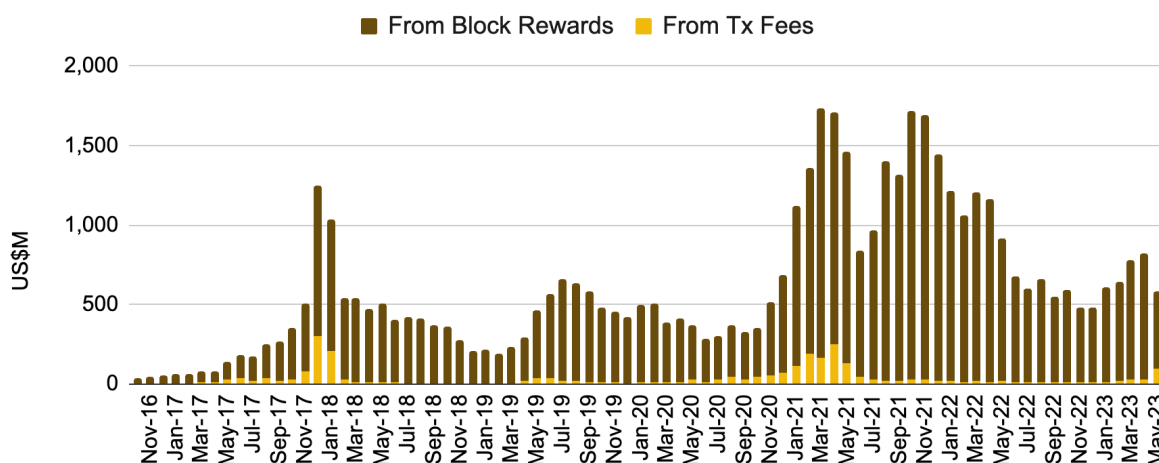
Transaction Fees

As the metric that has caused perhaps the most discussion among the Bitcoin community, fees have been a critical point of contention dating back to the Block Size Wars[4] of 2015 - 2017.

As a brief overview of the situation, let's recall that **Bitcoin's model entices miners to secure the network through two economic incentives: block rewards and transaction fees.** Block rewards are halved roughly every four years and will reduce to zero in the long term. Thus, **eventually, Bitcoin's transaction fees will be the sole compensation for miners,** i.e., for the security budget of the chain. Given the relatively limited use cases of Bitcoin until this year (primarily asset transfers), these fees have been a historically small part of the miner revenues and a consistent concern among many in the Bitcoin community.

Figure 7: Bitcoin's annual security budget (block rewards + transaction fees) is largely composed of block rewards which are halved every four years and will eventually go to zero

Legend: ■ From Block Rewards ■ From Tx Fees

Source: Dune Analytics (@niftytable), Binance Research, as of May 16, 2023

However, looking more closely at **recent data from the last year, we can see transaction fees have increased from 1-2% of total miner rewards to 2-3% at the start of the year and have shot up to over 20% through May**. While we cannot conclude that this is only due to Inscriptions and BRC-20s, we have relatively strong reason to think that a large part of this move has been due to these innovations within Bitcoin.

Figure 8: Transaction fees as a percentage of miner revenues are approaching all-time highs (note that the last peak came in December 2017, when Bitcoin was in the middle of a historic bull market)
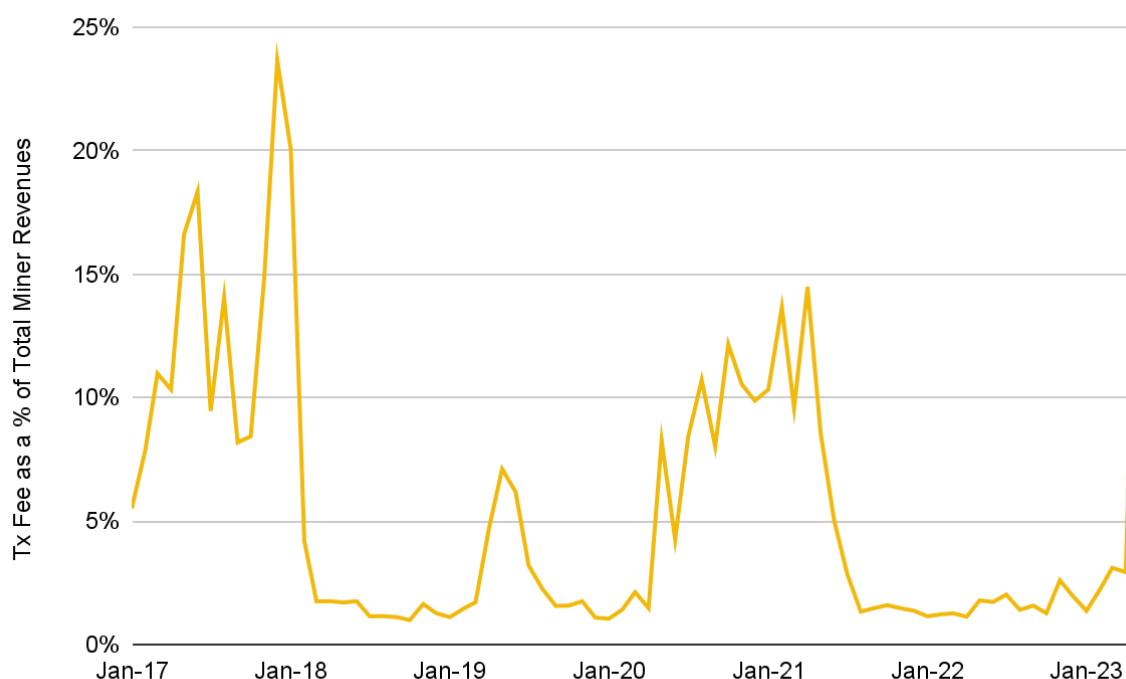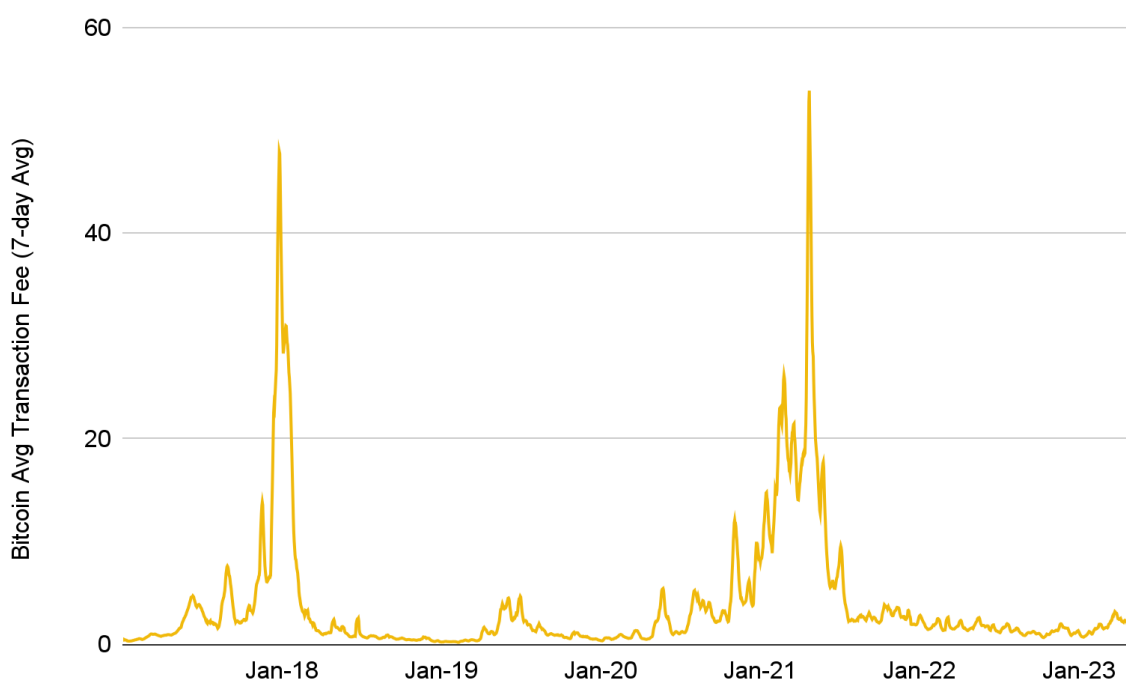

Source: The Block Data, Binance Research, as of 14 May 2023

Of course, not everyone is overjoyed about the increasing transaction fees on the Bitcoin blockchain. Another effect of this is a corresponding increase in the fees it takes to send Bitcoin to another party (which many argue is the "true" utility of Bitcoin – more on this later).

Bitcoin transaction fees have spiked before, notably in December 2017 and April 2021. However, both of these were in the middle of strong bull markets for Bitcoin and crypto. This is the first time fees have spiked notably in the middle of what many would argue is a bear market.

Figure 9: Average fees to conduct a transaction on Bitcoin have recently spiked

Source: The Block Data, Binance Research, as of May 14, 2023

Still, it is worth remembering that **Bitcoin transaction fees have spiked before;** this is not a unique or extreme event. The latest spike could even be considered a warning shot of sorts, an event showing that there is a need for innovation on Bitcoin in preparation for further increases in the future.

Ultimately, **Ordinals, Inscriptions, and BRC-20 tokens have helped to unlock a sizable chunk of demand for the Bitcoin blockchain.** They have created a demand for blockspace that has not been seen in quite some time for Bitcoin. Bitcoin has been seen by many as losing the attention game to the likes of Ethereum, but the creation of Inscriptions and BRC-20s seems to be changing this narrative. From a financial perspective, **Bitcoin miners need to continue to be paid, even as block rewards diminish, and fees will have to**

compensate for this loss in revenue, as would be the case for any business which might be expecting a core chunk of their income to continue decreasing until it goes to zero.

"Bitcoin has been seen by many as losing the attention game to the likes of Ethereum, but the creation of Inscriptions and BRC-20s seem to be changing this narrative."

5 Community Response

The initial innovation of tracking individual sats using Ordinal Theory and further inscribing them with data to create Inscriptions sparked a sizzling debate within the Bitcoin community. As you would imagine, BRC-20 tokens have taken this debate to the next level.

The "pro-fees" crowd

As we discussed above, the **sustainability of Bitcoin's security model has been a key concern for many in the community**[5]. How will miners get paid in the future as block rewards continue to diminish? What could this mean for Bitcoin long-term if miners don't get sufficient compensation for securing the chain? There is simply no getting away from the fact that miners need to be compensated for providing security, and for this, Bitcoin transaction fees need to be higher. For this reason, many in the community have been pleasantly surprised by the amount of attention Ordinals and BRC-20s have received and how this has impacted the relatively subdued Bitcoin fee market.

Figure 10: Many prominent crypto personalities are optimistic about this new unlock

Dan Held 🎩 ✓
@danheld

If you're upset about high fees on Bitcoin, then you never understood how Bitcoin was going to scale.

nic 🚀 carter ✓ @nic_carter · May 9
The market price of a commodity can never be "wrong"

Source: Twitter (@danheld, @nic_carter)

"There is simply no getting away from the fact that miners need to be compensated for providing security, and for this, Bitcoin transaction fees need to be higher."

One specific sub-sector of the community that has particularly benefited from this recent development within Bitcoin is the **mining community**. To add more context to our above discussions, see Figure 11 for the Bitcoin block reward halving cycles that have transpired so far.

Figure 11: Bitcoin block reward per successful block

Time Period	Block Rewards (BTC)
Dec 2008 - Nov 2012	50
Dec 2012 - Jul 2016	25
Jul 2016 - May 2020	12.5
Jun 2020 - Present	6.25
May 2024 (Expected)	3.125

Source: Bitcoin Visuals, Binance Research

While the Bitcoin price has been up significantly since the 50 BTC block reward era, the table illustrates the trickiness of the Bitcoin miner business model. With transaction fees supplementing their income and perhaps indicating a bright future ahead in terms of blockspace demand, this equation looks more favorable for miners and could potentially entice more to join the network. Remember, the more independent miners, the better the decentralization and, ultimately, the better the security of the Bitcoin blockchain.

Quite notably, **early May even saw Bitcoin blocks with transaction fees greater than the 6.25BTC block reward.** This is a remarkable achievement, considering that transaction fees have averaged 1-2% of miner revenues throughout most of 2022 and not much higher in earlier years (see Figure 8). It is a testament to the growing blockspace demand that Ordinals and BRC-20s have helped usher in – that too, without the backdrop of a significant bull market.

Figure 12: Total fees for block 788795 were 6.46BTC compared to a 6.25BTC block reward

Block ‹ 788795 ›				✕
Hash	000000...9dce4b5 📋	Fee span	601 - 3,684 sat/vB	
Timestamp	2023-05-08 15:21 *(7 days ago)*	Median fee	~614 sat/vB $24.06	
Size	1.73 MB	Total fees	6.463 BTC $180,871	
Weight	3.99 MWU	Subsidy + fees	12.713 BTC $355,783	
Health ⓘ	99.65%	Miner	Luxor	

Source: mempool.space

The "low-fees" camp

While many are excited by the increased activity and buzz around the Bitcoin ecosystem and encouraged by the increasing fees from a sustainability perspective, others are more critical. **This camp of individuals is more interested in the idea that Bitcoin's "true purpose" is to serve as a form of hard, non-fiat money and that the chain should be used exclusively to facilitate peer-to-peer transactions.** This group believes that data-intensive Ordinal-related transactions, i.e., Inscriptions and BRC-20s, primarily serve to congest the Bitcoin network and drive up fees, which ultimately discourages peer-to-peer transactions.

While some argue that the increase in fees is pricing out users in countries where Bitcoin is relied upon as an alternative to the local fiat system, others are more extreme in their view and even think of Ordinals and BRC-20s as an attack on the chain.

Figure 13: Some are concerned about pricing out Bitcoin users

Marce Romero ✓
@MarceMR19 •••

I'm in El Salvador 🇸🇻 right now. Just witnessed a cash withdrawal via #btc ₿

This individual now had to pay $20 in fees for getting $100 out in a country where the avg. salary is $300-350

I want you to think about this when enabling gambling on fkn jpegs or meme coins.

This is real.

Source: Twitter (@MarceMR19)

Figure 14: Others take a more extreme view

iris.to/jogi
@proofofjogi

· · ·

Bitcoin is under DoS attack. High transaction fees are the chosen pain point by the attacker, probably to makes bitcoin unusable for smaller players.

Source: Twitter (@proofofjogi)

Some in the community have even gone as far as to suggest that Bitcoin core developers should censor Ordinal-related transactions. We do not have to explain why that sort of censorship would go wholly against the ethos of Bitcoin, given its incredible focus on decentralization.

While certainly true that transaction fees are up on the Bitcoin network, and this will inevitably price out some consumers across the world, is this really an issue? The question we ask is, if users want to send US$10 to their friends, do they have to use the base Bitcoin L1 to do so? This is what the **Lightning Network** was created for and the reason why it is Bitcoin's chosen solution for fast and secure peer-to-peer payments. In fact, as you can see in our recent report, **A New Era for Bitcoin?**, Lightning Network capacity continues to grow year-by-year, and fees remain affordable.

"The question we ask is, if users want to send US$10 to their friends, do they have to use the base Bitcoin L1 to do so? This is what the Lightning Network was created for and the reason why it is Bitcoin's chosen solution for fast and secure peer-to-peer payments."

Transacting on the base L1 layer has never been guaranteed to remain extremely cheap. **Even if Bitcoin grew significantly in popularity and attracted a few million new users using it for peer-to-peer transactions, it would have the same effect on transaction fees.** So, the argument that more Bitcoin usage is bad because it prices out consumers does not hold up, especially considering future growth prospects for the network. In truth, the **focus should be on making it more efficient and easy to onboard onto the Lightning Network and to do further work on L2 solutions for Bitcoin** so transactions can occur on a layer other than the base Bitcoin L1.

BINANCE RESEARCH

The BUIDLers

Before getting into this section, we would remind readers to read the Disclaimer on Page 3 and our General Disclosure on Page 26. As mentioned, we are here discussing things at the very frontier of the crypto market and covering them to better educate and inform our readers. These technologies are very new and extremely risky. Please exercise extreme caution when interacting with any of these projects or builders.

Perhaps the most important group of all – those that are building the tools and infrastructure to take these innovations to the next level. Naturally, the first couple of key builders to mention are the founder of the Ordinals Protocol, Casey Rodarmor, and the creator of the BRC-20 token standard, domo. Trevor.btc and Leonidas.og have also covered the Ordinals and BRC-20 saga in plenty of detail and help host **The Ordinal Show** podcast, which covers the latest happenings in this part of crypto.

In terms of key projects, **UniSat Wallet** has been a player in this early stage of the Ordinals/BRC-20 story. While initially providing a wallet for Ordinals and then BRC-20s, UniSat now also helps users inscribe sats and has recently released a BRC-20 marketplace (currently labeled an "experimental test"). It is worth noting that at the start of the marketplace, in order to trade on UniSat, you were required to have made a certain amount of transactions before being allowed to trade. This meant that early traders were extremely crypto native (i.e. DeFi degens). These restrictions have since been removed and other trading venues are also popping up. UniSat have also been working on a BRC-20 indexer and have released some preliminary features related to this (more on this later). The website further states that UniSat is in a beta stage, so again, please exercise caution if interacting with this protocol.

Another participant worth mentioning is ALEX. **ALEX is a project built upon the Bitcoin L2, Stacks, and seeks to develop DeFi on Bitcoin while using Bitcoin as the settlement layer and Stacks as the smart contract layer.** Before BRC-20, they focused on swaps, liquidity pools, staking, farming, and bridging (the classic DeFi primitives). They recently got into BRC-20 tokens and launched the beta version of a decentralized exchange ("DEX") for trading them called B20. To trade BRC-20s, users can bridge USDT to Stacks USDT ("sUSDT") from Ethereum or BNB Chain, and they then use the sUSDT to trade BRC-20s. As mentioned, the DEX is currently in beta and was built very recently, so of course, please keep this strongly in mind if you're considering checking it out.

The last project we will mention here is doing something a bit different. The **Rare Satoshi Society is in the business of finding the rarest sats available in the market and connecting them with collectors.** Using Casey Rodarmor's descriptions of different rarities to define these sats, they employ a novel method of collecting Bitcoin and running them through software to scan for uncommon and rare sats within each Bitcoin. As we all know from collectors markets, people will collect anything – from first edition newspapers to

stamps to sports cars – so it's not surprising that this group has decided to get into the sat collectors market. While some are looking for an uncommon sat to inscribe a particular picture onto, others are looking for sats from particular blocks, e.g., the famous 10,000 BTC [pizza transaction](#) from 2010.

Figure 15: Casey Rodarmor's Ordinal rarity index

Level of Rarity	Criteria
Common	Any sat that is not the first sat of its block
Uncommon	The first sat of each block
Rare	The first sat of each difficulty adjustment period
Epic	The first sat of each halving epoch
Legendary	The first sat of each cycle
Mythic	The first sat of the genesis block

Source: rodarmor.com/blog/ordinal-theory

6 Risks and Challenges

As previously stated, Ordinals, Inscriptions, and BRC-20 tokens are extremely recent innovations and are very risky at this early stage, sitting at the frontier of crypto. These are neither the same instruments nor occupy the same markets as Ethereum, BNB, or Bitcoin itself. This is at the cutting edge of what is being worked on in crypto today. Correspondingly, there are a few key risks for any reader to be aware of.

1. Limited to no infrastructure

To put it bluntly, **BRC-20 tokens are just an idea borne out of an experimental token standard created by a pseudonymous Twitter user.** While we do not say this to discount the innovation and potential of the idea, we have to state it upfront to illustrate how early we are in this story.

The token standard has been around for a couple of months and has only seen considerable activity in the last few weeks. While builders are working fast, and we highlighted a few project teams that are trying to ship relevant tooling and infrastructure, not much exists at this stage. Yes, we have seen the beginnings of marketplaces and a DEX, but much of the trading is still being done over-the-counter ("OTC") through Discord servers. Without a fully-fledged indexer, keeping track of tokens and holders is a tricky process.

In fact, the risk of centralized indexing is quite significant because, theoretically, one exchange might not recognize what you bought on another exchange if they are not using the same indexer. These instruments are not native to the Bitcoin blockchain but come from Ordinal Theory, which essentially "associates" certain sats with certain characteristics. If we don't have social consensus on this method, some parties may not recognize certain Ordinals and thus not recognize particular BRC-20 tokens.

Much work remains to be done if we are to see a market of more than a few thousand holders, and while we remain optimistic about what BRC-20 tokens have unlocked and what they can offer, **the infrastructure has a long way to go.**

2. No real utility

The majority (if not all) of the BRC-20 tokens currently exchanging hands are [meme tokens](#). Almost by definition, these tokens have no utility and are largely influenced by social media and community sentiment. While this brings attention and creates hype, the **lack of utility and, thus, the lack of a serious holder base means that these tokens could collapse suddenly and without warning.**

This risk is something every reader should keep in mind, and also, if you see a new token offering some form of utility, you should be digging deep and questioning if this is true or just a marketing gimmick.

3. High scam risk

In keeping with the theme of how new this whole experiment is, we should remember that this means there is a high risk of scams. For example, OTC token trading on Discord servers is naturally a very high-risk activity and has led to plenty of people getting scammed out of money. The projects building infrastructure for Ordinals or BRC-20s are also uncertain and could pose a potential security risk at this early stage. While we are not trying to scare readers away, given how early it is in the history of these tokens and this new technology, the scam risk is high and should be taken seriously.

(7) Future Outlook

Bitcoin Layer-2s

This entire frenzy has made it evident that **Bitcoin is not scaling** to match its grand ambitions, and if it wasn't Ordinals, Inscriptions, or BRC-20s, it would have been something

else. **We would have had the same result, with spiking transaction fees, if only a few million more people had decided to use Bitcoin for peer-to-peer transactions; the fact that this spike resulted from BRC-20s is irrelevant.** If anything, we should treat this as a warning for the future and understand that much work has to be done on Bitcoin if it is to truly become a global peer-to-peer payments system for millions, if not billions, of people.

This further illustrates that the scaling methodology used by other chains is crucial for Bitcoin too. Do we need to send US$5 transactions on the Bitcoin L1, or could this be done on an L2 level? Many would argue that base-layer transactions are a scarce commodity, and if the chain is to grow, they cannot be expected to remain cheap forever. The conclusion to draw here is simple: **the use case for Bitcoin L2s is clear, and this is where developer attention should be focused.** Scalability solutions will be the next key step for Bitcoin to take if it is to become a technology that millions can use on a regular basis.

In our report, **A New Era for Bitcoin?**, we looked closely at potential solutions, including the Lightning Network, Stacks, and Rootstock, as well as quick primers on Liquid Network and Rollkit. **Stacks' upcoming sBTC release[6] looks particularly interesting** and might provide a significantly more decentralized way to use BTC on an L2 than what is currently possible. **Lightning Network usage** continues to rise, with **Binance recently announcing that they are looking to integrate** it, while startups like **Lightspark[7] are creating "enterprise-grade" entry points** to the network in order to onboard businesses. Spiral, the Jack Dorsey-backed Bitcoin open-source development platform, recently released an **ambitious new roadmap[8] for their Lightning Development Kit ("LDK") project**.

The future for Bitcoin L2s looks promising, and with more and more users and developers seeing a clear use case for Bitcoin scalability, we remain optimistic about developments in this space over the next year.

Infrastructure

As mentioned above in the Risks and Challenges section, very limited infrastructure is built around BRC-20 tokens at this early stage. While many different parties, like Unisat and ALEX, have released beta versions or are working on solutions, we remain at a very early and experimental stage.

The trading process has to become significantly smoother, and peer-to-peer Discord server trading should ideally be phased out over the next weeks and months. The **complete deployment of a fully-functioning and efficient DEX is a crucial step** to take BRC-20s to the next level and should be closely monitored.

Furthermore, as BRC-20 token standard founder domo has stated in recent Twitter spaces, **his number one goal is to get a fully on-chain and trustless indexer released**. Indexers are software that read the Bitcoin chain and can **compile all transactions to create an agreed-upon global state of balances**. UniSat and ALEX are both working on solutions for

this, and a working indexer will be crucial as it will add a further sense of legitimacy to BRC-20s.

We expect significant development in relevant infrastructure in the next few months. For instance, Bitcoin Frontier Fund recently announced[9] that they have accepted eight new startups in their accelerator program. These startups are working on all sorts of solutions, from Ordinals lending to development kits for Bitcoin Web3 games to cross-chain bridging for Ordinals. The developer interest in the Bitcoin ecosystem has clearly benefited from this recent buzz, and we are excited to see what sort of innovations can come from this.

Innovation in token design

Finally, in terms of specific BRC-20 innovations, we should again note that this is a very simple token standard with limited flexibility.

One key feature is that all BRC-20 token mints are fair launch, i.e., you cannot take a team allocation or have a traditional "whitelist" function to allow some users to mint before others. While the original design used this feature to reduce the prevalence of rug pulls and scams, there are, of course, legitimate reasons to have "whitelists" and have team allocations for tokens, etc. Builders are trying to work out solutions to this, and whether the solution comes within BRC-20s or perhaps with another token standard remains to be seen.

Similarly, builders are also trying to find a solution to "burn" tokens. Given the lack of smart contract functionality with BRC-20s, this is not possible at this point and, again, might have some very real and legitimate use cases, especially when considering adding different utilities to these tokens.

Outside BRC-20, builders have been quick and innovating at a fast pace. **ORC-20 tokens** have recently appeared on timelines and aim to address some of the limitations of BRC-20s. For instance, BRC-20 tokens are currently limited to a four-character naming convention. ORC-20s do not have such a restriction and add a degree of flexibility for developers. We have also seen the beginnings of **SRC-20 tokens**, which have been associated with "**Bitcoin Stamps.**" SRC-20 tokens store data differently from BRC-20 tokens, potentially making them more secure than BRC-20s due to some technical specifications, but it also means that they can store significantly less data than BRC-20s.

These are just a few examples of token design features that builders are trying to innovate on. We are sure plenty of other things will come up, and we will monitor closely to see how the development process progresses.

8 Closing Thoughts

Ordinals, Inscriptions, and BRC-20 tokens have helped to demonstrate to the world that **there is indeed a demand for Bitcoin blockspace outside the classic peer-to-peer payment model**. Users want to do the same things that are possible on Ethereum and BNB Chain but on Bitcoin. While Casey and domo have helped to spur innovation with their unlocks, it is now up to the community and developers to take it to the next level.

The lack of miner revenue from transaction fees has been a key concern for many Bitcoin supporters, and this recent flurry of activity has been an apt demonstration of the possibilities that exist out there. Recent developments have been encouraging, and help represent a **potential path to sustainability for Bitcoin in the long term**.

Bitcoin layer-2 scaling solutions will be critical, and we expect to see growth in this area. Further infrastructure development and token innovation are also on the menu.

Before concluding, we would like to remind readers that **growth in crypto is often exponential**. For example, after the first Inscription on December 14, 2022, it took over a month to reach 100. However, between February 2 and February 15, the number of Inscriptions went from 1K to 100K. By April, we had hit 1M and are now upwards of 7M. **The market grows slowly and then all at once.** While we cannot say how big this market could get, we can all but predict that we will breach the 10M Inscription milestone very soon. Keep a close eye on this space.

Figure 16: Inscriptions' exponential growth so far

Date	# of Inscriptions
Dec 14, 2022	1
Jan 26, 2023	100
Feb 2, 2023	1,000
Feb 7, 2023	10,000
Feb 15, 2023	100,000
April 8, 2023	1,000,000
May 9, 2023	5,000,000
May 16, 2023	7,196,570

Source: Dune Analytics (@dgtl_assets), Binance Research, as of May 16, 2023

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