ROXOM

BITCOIN DENOMINATED MARKETS

Intergalactic Finance

Borja Martel & Nicholas Damico

Abstract

We are travelling at the speed of light towards a new age.
An age denominated by a global internet currency that will define the future of markets.
The internet markets.
In this universe, the world is defined by neutrality, and Bitcoin provides that neutral settlement layer.
Humankind has now based its financial infrastructure on top of a neutral layer that allows the existence of frictionless, universal Internet markets.
In this paper, we present Roxom, a new Bitcoin-denominated market that allows trading all sorts of securities, commodities, derivatives, options, etc., in Bitcoin terms and with Bitcoin. At its inception, this market will operate in a hybrid manner, combining centralized and decentralized elements, and facilitating both on-chain and off-chain money settlements. This approach will continue until the market accumulates sufficient on-chain liquidity to transition into a fully decentralized and on-chain version.
Our paper also introduces the pioneering concept of Roxom's Bitcoin Native IPO, a first-of-its-kind event on the Bitcoin Stock Exchange that disregards traditional stocks.

May 5th, 2024

Table des matières

1 Introduction

In the 17th century, amidst the rise of global empires and flourishing economies, a significant transformation began to reshape the world of finance. The Dutch East India Company, established in 1602, emerged as the world's first Limited Liability Company.

This new corporate structure model allowed the pooling of capital for ambitious maritime expeditions, significantly reducing the financial burden and risk for individual investors. As shares of the company were bought and sold on the Amsterdam Stock Exchange—the world's first stock exchange—the Dutch East India Company quickly became a powerhouse of commerce.

The company's success catalyzed the Dutch Golden Age, propelling the Netherlands to the forefront of global trade and military power. This era saw unprecedented economic growth, artistic flourishing, and scientific advancement in the Netherlands, much of it fueled by the wealth generated through international trade.

The introduction of limited liability corporations represented a pivotal moment that forever altered the landscape of global capitalism, laying the foundational principles that continue to underpin modern financial markets up to this day. This innovation not only secured the Netherlands' position as a dominant economic force but also set the stage for the development of modern corporations and complex economies worldwide.

The Netherlands, an absolute powerhouse of trade and commerce, saw its influence flourish to unprecedented heights with its eastward colonialism. The Guilder became the strongest currency, which gave birth to the strongest stock market of the following two centuries : the Amsterdam Stock Exchange.

Britain expanded its colonial and maritime influence and cemented its dominance following the defeat of Napoleon at Waterloo with the British pound outgrowing the Dutch Guilder's dominance on the market, causing a significant shift in global currency dominance. In a world now denominated in pounds, at John's Coffee House, in the City of London, where John Castaing posted the prices for stocks and commodities, became the preferred place for investors who wanted to allocate their money to profitable expeditions. As traders gathered around the City of London, what started as a Coffee Shop became the London Stock Exchange, which became the preferred financial hub of the world.

For much of the 19th century through the early 20th century, London's financial markets enjoyed a position of prominence, fueled by Britain's global economic dominance and extensive colonial holdings.

The onset of the 20th-century wars plunged the nation into a conflict that

ravaged its economy and severely devalued its currency. Shortly after WWII, the Bretton Woods Agreement established the Dollar, then linked to gold, as the primary global reserve currency. The world was now denominated in USD, and gold was the underlying asset.

As we've seen in previous chapters of history, the most robust markets flourish on top of the strongest currencies. Unsurprisingly, the next chapter in this story saw a global convergence of traders on Wall Street. The allure of this financial hub, with its robust markets and strong currencies, drew traders from all corners of the world. A particular exchange arose on Wall Street after 24 stockbrokers met under a buttonwood tree in 1792, and it would be named the NYSE. A couple of centuries later, Wall Street was the king of the world. And what started as a meeting under a tree was now the largest exchange in the world.

Again, for the third time in history, the financial hub of the world encompassed itself amongst the strongest currencies. The economic center of the world was now Wall Street.

2 Markets & Currencies

Understanding why a strong currency and a strong stock market are strongly correlated and tied is essential. Below are some key factors as to why this happens, although it's important to note that systems are much more complex, and many other factors add up to the equation.

2.1 Market Size

Naturally, the nation with the strongest and most commonly accepted currency tends to host the most significant market. Hosting such a market creates a significant network effect, as foreign companies from various countries aim to raise funds and trade in such markets.

2.2 Market Depth

Such a nation will organically attract many market makers, traders, and institutions to trade its assets. This results in a liquidity abundance that other nations find difficult to match.

2.3 Institutional Trust and Economic Stability

The nation with the strongest currency in the world would inspire the most institutional trust and stability over time. Such status positively at-

tracts foreign participants (issuers and investors) interested in such a market.

3 The next global currency

Every single empire throughout history, without exception, has fallen. From Egypt, Persia, Macedonia, Rome, Britain, Spain, Germany, Japan, the Mayans, to the Aztecs, and beyond, each one eventually suffered a decline and downfall. Like all things in the universe, nations go through cycles. They are born, grow, reach their peak, and eventually begin to decline.

Today, many geopolitical analysts believe that the USA could be in decline. Factors such as staggering inflation, limitless money printing, and geopolitical uncertainty threaten the USA's dominance.

So, which country is next in line ? Some suggest China, others India, and some propose different contenders. But could these countries produce the world's most valuable currency and market ? At Roxom, we don't think so, and we have several reasons to believe this.

3.1 The Inherent Bias of National Currencies

By definition and design, every currency issued by nation-states is entirely biased. Every nation wants to make a standard out of its currency, each nation wants to transact in its currency, and each nation wishes to be "sovereign" by being able to manipulate its currency. This makes it hard to pick a leading currency from a sovereign state in the future, as there is a counter incentive for other nations not to accept it as a standard.

3.2 Belligerence

Having a currency inherently signifies sovereignty. However, sovereignty can also imply dominance over other nation-states. Imagine a world where all countries operated under the ARS standard, with Argentina as the issuer. Argentina could isolate any player from the financial and economic system at any given moment ; could you even imagine that ? Argentina ruling the world... This potential is amplified by the evolution of Central Bank Digital Currencies (CBDCs).

Hence, it is challenging for nations to accept another country's currency as their standard. This is evident in the Russo-Ukrainian conflict, where

extensive sanctions on the SWIFT system have emerged, notably on USD-EUR-denominated assets.

It's worth mentioning the $300B in Russian assets that the US has frozen. These assets will likely be confiscated and transferred to Ukraine, a move that will be a historical milestone and a topic of future history books.

3.3 Seigniorage

The profit from issuing currency naturally accrues to the country that issues the currency. Other countries using this currency forfeit these gains. Furthermore, they may face inflationary pressures directly imported from the issuing country's economic conditions.

4 Bitcoin as a Global & Neutral Settlement Layer

At Roxom, we firmly believe that Bitcoin's unique attribute of neutrality will elevate it to the status of the most reliable global settlement layer. Drawing from instances like the Russo-Ukrainian war, we observe that Bitcoin's resilience, directly resulting from its neutrality, positions it as the most robust currency worldwide. Governments are essentially powerless to halt its operation. This neutrality leads us to believe that Bitcoin will inevitably emerge as the most trusted or trustless global settlement layer, base currency, and store of value.

Unlike conventional (fiat) currencies, which are susceptible to the influence, manipulation, and controls of governments and central banks, Bitcoin operates autonomously on its own decentralized network, impervious to any intervention or oversight. At Roxom, we are committed to donating and supporting Bitcoin mining projects to further bolster this independence. And although this won't translate into direct profits, we believe it will drive our long-term success. This characteristic ensures that Bitcoin does not favor any geopolitical entity nor adhere to the specific economic policies of any nation, instilling confidence in its stability.

But how does neutrality translate into practical benefits ? Well... let's begin...

First and foremost, Bitcoin's neutrality translates into tangible and observable benefits, making it an exceptional settlement layer. It functions as a universally accessible and consistent service, available 24/7 to anyone with

a phone or a computer, and in some cases, not even needing a traditional internet connection. This practicality facilitates seamless value transfer across borders without the need for intermediaries. In our interconnected global village, such features make it an ideal platform for global transactions.

Moreover, Bitcoin's neutrality extends to various political and economic systems, making it a versatile tool in regulatory environments. Whether in regions with stable financial systems or areas experiencing economic turbulence and inflation, Bitcoin remains a reliable and unbiased medium of exchange and store of value. Its ability to transcend turbulent economic conditions and provide a uniform standard for value exchange is a significant feat.

One of the principles of neutrality applied in Bitcoin, the equal treatment of all transactions regardless of their origin, purpose, size, or the wealth of the entities involved, mirrors the foundational ideals seen in the protocols governing the Internet, like TCP/IP. This architectural design promotes fairness and has been instrumental in the Internet's widespread adoption and success. By applying similar principles, Bitcoin is poised to achieve comparable levels of universal acceptance, adoption, and reliance as a digital currency. The same feature of neutrality that made the Internet successful is being applied to Internet Money.

Bitcoin's neutrality also makes it particularly resilient to political and economic pressures that adversely affect traditional currencies. For instance, traditional currencies can undergo severe volatility and collapse during political unrest, economic sanctions, and government interventions such as monetary emissions.

Bitcoin, with no central authority to influence its value or dictate its flow, remains stable and secure (1 BTC = 1 BTC), governed solely by market dynamics and its predefined protocol. This makes Bitcoin a safe haven for value preservation, especially in unstable regions, enhancing its role as a global store of value.

Bitcoin's potential as a neutral financial instrument extends beyond individual transactions to influence broader economic systems. In countries with restrictive financial systems, Bitcoin provides an alternative means of wealth storage and transfer, enabling economic participation without geographic or political barriers. Its adoption in these contexts has demonstrated its role as a liberator of economic interaction, providing a financial voice to the underserved.

This transformative potential of Bitcoin is further evidenced by its growing acceptance in various sectors. From multinational corporations inte-

grating Bitcoin for cross-border transactions to small businesses using it to avoid the inefficiencies, slow processes, hefty transaction fees, or bureaucracy imposed by traditional banking systems, Bitcoin's neutrality supports its integration into the global economy. This widespread adoption not only reinforces its utility but also solidifies its standing as a reliable and efficient financial infrastructure.

The universal applicability of Bitcoin is also a crucial factor in its potential to become a global base currency. As digital economies continue to evolve and integrate with traditional financial systems, Bitcoin stands out as a compatible, efficient, stateless and secure option. Its capacity to facilitate transactions makes it an attractive option for global commerce.

Furthermore, Bitcoin's technological infrastructure, characterized by its blockchain technology, adds another layer of neutrality and security. The blockchain's transparent and immutable ledger ensures that all transactions are recorded and accessible, preventing fraud and manipulation. This transparency is vital for trust in a trustless global financial system, where discrepancies and inaccuracies can have widespread repercussions.

In summary, Bitcoin's neutrality not only enhances its appeal as a nonpartisan and fair medium but also fortifies its position as a future global settlement layer and store of value. By providing a stable, reliable, and unbiased platform, Bitcoin is uniquely equipped to meet the demands of a global economy, promising a more inclusive and balanced financial future. Its rapid growth and integration into various economic sectors underscore its potential and readiness to reshape financial interactions on a global scale.

5 Why Bitcoin Will Be the Largest Market

Our previous historical analysis reveals that the most robust stock and public markets have been associated with the strongest currencies throughout history. Consequently, we read about Bitcoin's future dominance as a global store of value caused by its neutrality.

If we accept these premises, it's not far-fetched to predict that a Bitcoin Native & Denominated Market could succeed the New York Stock Exchange and the NASDAQ.

5.1 Free Flow vs Restricted Flow

Understanding the concept of free flow is essential for grasping market growth. Exchanges and public markets exist worldwide, but some are larger and more successful than others. Why is this ?

At Roxom, we believe that free flow is a significant factor in a market's long-term growth and success.

Several examples support this belief.

Consider the difference between the Hong Kong Market and the Chinese Exchanges. Why is the volume and market development in Hong Kong larger and better ? This disparity is primarily due to Hong Kong's free flow compared to the restricted flow in China.

Recognising flow as a trait that either attracts or deters investors is crucial in understanding the big picture of financial markets.

5.2 About Bitcoin and Free Flow

When we use Bitcoin, we are using the most fluid, free-flowing, neutral, and widely accepted store of value and payment network in the world.

There is nothing with a more liberated flow than Bitcoin. And such a characteristic makes Bitcoin the most suitable host of the largest and most efficient markets.

Such markets would enjoy an extreme lack of friction, allowing users worldwide to access them with just a phone or a computer.

Bitcoin's free flow is one of the most important reasons that make us believe that Bitcoin will be home to the largest markets the world has ever seen.

5.3 Why This is Good for the US and the Largest Economies

For the first time in history, a settlement layer is fully interoperable with payment networks from different countries.

For this reason, capital can flow more freely, resulting in more interconnected markets, where the most interesting and appealing markets for investors will be those where the best companies and financial products are based.

Once we've understood this, it is easy to see how this will bring massive capital and liquidity inflows into the most attractive markets for investors globally.

Now, countries will get faster results when implementing policies that further attract capital and new investors.

Any person from any side of the planet will be able to invest in such markets directly with Bitcoin.

6 Bitcoin's Wild West

6.1 The Tale of MPEX and Satoshi Dice : A Drama of Innovation and Turbulence

6.2 The Early Crypto Landscape

A new concept emerged from the rubbles left by the 2008 financial crisis, largely unnoticed by humanity. Innovators, hackers, and punks started exploring this new concept, a peer-to-peer electronic cash system known as Bitcoin. As the field developed, two intriguing projects emerged. MPEX and Satoshi Dice would stand out as two of the champions of this early cryptocurrency ecosystem.

6.3 MPEX & GLBSE —The Visionary's Platform

Mircea Popescu, a Romanian entrepreneur and fervent advocate of Bitcoin, launched MPEX in 2012. At the time, Bitcoin was still a flourishing idea, largely unexplored by traditional finance. MPEX was not just an exchange ; it was a statement against regulatory encroachment, offering Bitcoin punks the ability to trade securities and futures without the constraints imposed by traditional financial systems.

But MPEX wouldn't be alone. Alongside GLBSE, they were the first Bitcoin Stock Exchanges in history. A massive idea crafted by legendary visionaries.

With groundbreaking features far ahead of its time, MPEX revolutionized the Bitcoin market. It offered users the unprecedented ability to trade options, derivatives, stocks, and currencies, among other assets. Moreover, it provided a platform for users to publicize their companies and projects through an Initial Public Offering (IPO), enabling them to raise significant amounts of Bitcoins to fuel their ambitions. MPEX quickly emerged as one of the largest Bitcoin platforms, generating over 1M BTC in profits and facilitating millions of BTC in trading volume.

But this wasn't all. Users could even buy S.MPOE (MPEX's stocks) via an ETF listed on GLBSE. During this time, we would see Crypto Stock Exchanges trading stocks of other Crypto Stock Exchanges.

6.4 Satoshi Dice—The Betting Revolution

Parallel to the narrative of MPEX was the story of Satoshi Dice, a gambling site introduced by the legendary Erik Voorhees. Unlike traditional online gambling, Satoshi Dice operated entirely on the Bitcoin blockchain, offering a provably fair betting mechanism that quickly gained popularity. In 2012, Satoshi Dice was responsible for a significant portion of all transactions

on Bitcoin, illustrating the cryptocurrency's potential beyond mere currency exchange.

6.5 The MPEX and Satoshi Dice Intersection

In a significant turn of events, MPEX became entwined with Satoshi Dice when Erik Voorhees decided to IPO S.DICE on Popescu's platform. This partnership marked one of the first instances of a Bitcoin enterprise going public in the cryptocurrency space. The IPO was conducted in 2012 and raised an impressive sum, valuing Satoshi Dice at millions of dollars in Bitcoin. This event was a testament to the platform's capability and a spotlight moment that showcased Bitcoin's viability for substantial financial undertakings.

6.6 Regulatory Shadows and Ideological Battles

As MPEX grew, so did the scrutiny. The platform's deliberate avoidance of regulatory compliance became a point of contention. Mircea Popescu's vocal criticisms of government interference and his unyielding stance on privacy and freedom attracted both admiration and criticism. Similarly, Satoshi Dice faced its own challenges. In 2013, Voorhees was charged by the U.S. Securities and Exchange Commission (SEC) for an unregistered offering of securities. This pivotal moment highlighted the increasing intersection between growing crypto businesses and traditional regulatory frameworks.

6.7 Decline and Legacy

The eventual decline of MPEX was gradual but inevitable. The demand for more regulated, transparent, and user-friendly platforms increased as the crypto market matured. Long after MPEX's shutdown, the story came to a tragic and abrupt end with the untimely death of Mircea Popescu in 2021, leading to uncertainties and speculations about the fate of his vast Bitcoin holdings of around 1M BTC. On the other hand, Satoshi Dice was sold by Voorhees in 2013, before the SEC charges, for a reported 126,315 BTC, one of the most significant transactions in Bitcoin history. The platform continues to operate, but its heyday as a pioneer of Bitcoin gambling is a reminiscent echo of the past.

6.8 Reflections on a Bygone Era

The stories of MPEX and Satoshi Dice symbolize the early days of cryptocurrency. They reflect rampant innovation and the inevitable clash with traditional systems. These tales are not merely historical footnotes but foundational episodes that have shaped the discourse around cryptocurrency and its integration into broader financial and regulatory realms. Through their

rise and fall, MPEX and Satoshi Dice have left an indelible mark on the crypto world, illustrating the profound impact of pioneering spirits.

6.9 The Comeback

Even though this space once appeared lifeless, like a phoenix, it shall revive under the name Roxom.

7 Roxom & the Internet Era

7.1 The Internet Era & the Internet Markets

In this day and age, all the assets and forms of value that we know exist in the form of Internet Money. This means they are freely transferable, usable for payments, and exchangeable 24/7.

The base currency of humanity has been **Gold** for most of recorded history. First physical and now digital. In the internet/digital era, **Bitcoin is Internet/Digital Gold.**

What we used to know as stock markets, commodities markets, etc., now co-exist. In the Internet era, markets are Bitcoin-denominated, and what used to function as segregated markets is now a deeply interconnected system.

In these markets, companies issue BTC dividends ; debt yields BTC interest, entities go public raising BTC, and fortunes are measured in BTC.

7.2 About Roxom

Roxom is the first, all-encompassing market in history. It grants access to trade a wide range of Global & Public Assets with Bitcoin, including the most important Stocks, Bonds, ETFs, Commodities, Minerals, and Derivatives worldwide.

For the first time, anyone can trade in a Bitcoin-denominated market. But our ambitions extend beyond that.

Over 14 years ago, pioneers like the founders of MPEX and GLBSE envisioned a future composed of Bitcoin Native Markets. A future where anyone with a BTC wallet could trade any asset, take a company public, conduct debt offerings (bonds), create derivatives, and more, all to establish genuinely internet-native markets.

We are building on the foundation laid by these innovators, introducing several improvements to make sure that this time, we build markets made to last.

And although we're starting from a different angle to ensure that regulations do not hamper us, we are definitely headed in a similar direction. We're here to make history together.

7.3 Legal and Regulatory Considerations

Compliance : At the time of writing, and in contrast with the MPEX times, nation-states such as El Salvador have adopted Bitcoin as a Legal Tender.

Back in the MPEX times, they were considered outlaws. Fortunately, we can start an endeavor of such characteristics today with full regulatory support and coverage.

We are glad to say that, leveraging our experience building crypto companies in Latin America, Roxom will be fully regulated under a friendly jurisdiction and compliant from day 0.

This ensures Roxom's sustainability and long-term success.

More information regarding this topic will be released over time as we ship products.

8 Market Structure

8.1 Market Structure and Participants in Traditional Markets

To conceptualize the market structure for a Bitcoin Economy, it's essential to review the existing frameworks of stock exchanges, commodities exchanges, and derivatives exchanges, amongst others.

What does the structure of today's financial markets look like ?

Let's examine...

8.1.1 Stock Exchanges

They serve as the core of public markets, with all other players revolving around them. Their responsibilities include :

— Matching buyers with sellers
— Listing assets
— Establishing rules for market participants
— Maintaining market liquidity

8.1.2 Clearing Houses

Clearing houses serve as the backbone for all clearing and settlement activities. Their primary responsibilities include :

— Acting as intermediaries between buyers and sellers to manage the transfer of securities and the associated payments.
— Reducing market risk by guaranteeing the performance of financial obligations and overseeing the proper settlement of transactions.

8.1.3 Brokers

Brokers are crucial in bringing retail and other types of investors into the markets. Their primary responsibilities include :

— Facilitating the purchase and sale of securities on behalf of investors.
— Granting clients access to trading platforms.
— Offering additional services like research, investment advice, and portfolio management.

8.1.4 Dealers

Dealers, often considered Market Makers, buy and sell securities from their own accounts, assuming the associated risk. This differs from brokers, who act as agents. Their primary role in the markets is to provide liquidity.

8.1.5 Custodians

Custodians safeguard securities and other assets in either electronic or physical form, ensuring their safety while also servicing these securities. This service includes tasks such as collecting dividends and interest payments.

8.2 Market Structure in Internet Markets

A brief commentary on the current context :

Today, traditional crypto exchanges like Binance, OKEX, and Coinbase handle the entire process, including matchmaking, customer accounts, custody, and clearing. At Roxom, we recognize that while this structure simplifies user onboarding, it may present future challenges.

8.2.1 Interoperability

At Roxom, we recognize the importance of traditional exchanges' infrastructural nature. In the Internet Markets, many complexities associated with exchange interactions have been eliminated, which is why existing exchanges have millions of customers.

8.2.2 About Clearing Houses

One of the innovations from Bitcoin, Blockchain, and Smart Contracts is the creation of a perfect, trustless decentralized ledger. This ledger enables the immutable and flawless processing of all transactions. Therefore, in our long-term vision, clearing houses will not be necessary for the Internet Markets.

8.2.3 About Brokers & Dealers

We anticipate a future where internet markets are full of brokers and dealers. At Roxom, they will be our most valued allies.

8.2.4 About Custodians

We envision a world that enables hybrid market participation, allowing participants to choose their preferred type of custody and custodian.

8.3 Our Approach

For all the reasons mentioned above, we hereby state that Roxom, as an exchange, will :

— Construct the necessary exchange infrastructure to allow anyone to integrate into our markets.

— Facilitate an open, multi-custody experience where users can freely choose their type of custody and the custodians they want to work with.

— Create appropriate incentives for market makers, dealers, and other liquidity providers from both the crypto and traditional worlds to supply as much liquidity as possible to the Internet Markets.

We envision open, global, and 24/7 internet markets. And while retail users will be able to use our products, we are committed to nurturing an entire industry built upon us.

9 The Roadmap

We've created an extensive roadmap that will allow us to fulfill our vision of global, permissionless, and bitcoin-denominated public markets. First of all, we would like to quote our friend Daniel Rabinovich, COO at Mercado Libre, the largest company in Latin America, who once said :

"Start from the end state"

Dani suggests that it is crucial to define the end state of our endeavor before starting.

9.1 Our Endstate

A Bitcoin-native, roxolid (rock solid), denominated, and global Public Market. In this market, several things happen :

1. Participants can trade any asset (Equity, Bonds, ETFs, Commodities, Cryptocurrencies, FX, etc.) directly in Bitcoin or other (crypto)currencies.

2. There's a 24/7/365, always-on market of Bitcoin-denominated Spot, Options, Perpetual, Derivatives, etc., trading against any pair (Equity, Bonds, ETFs, Commodities, Cryptocurrencies, FX, etc.).
3. Entities and/or market participants can conduct IPOs, Debt Offerings, etc., directly on Bitcoin and in Bitcoin terms (Bonds with BTC or other currency interest rates, IPOs raising Bitcoin, etc.)

Please note that the Roadmap is organized in a time-ordered manner. Transitioning from one stage to the next will take at least a couple of months.

9.2 Ignition - the Index

Initially, Roxom introduces a novel way of visualizing the world. We're reshaping financial perspectives and visualizing markets in terms of Bitcoin.

For nearly a century, the worldview has been dollar-centric. However, given the accelerated inflation and a 15-year bear market in Bitcoin terms, it is time for a shift.

Drawing from Argentina's tumultuous economic history, where the nation has cycled through six national currencies in the last 55 years, we at Roxom understand the importance of financial stability. In Argentina, individuals who managed their finances in dollars generally fared exceptionally well, while those who relied on the official national currencies often suffered significant losses. As Argentinians, we aim to prevent global citizens from experiencing the same economic hardships we have faced.

Our first product is the Roxom Index, which will be released immediately at launch. The Roxom Index is an informative platform that shows the Bitcoin-denominated state of Global Public Markets instead of the traditional USD denomination.

The goal of the Roxom Index is for economists, analysts, institutions, and market participants to understand the current state of the global economy from a Bitcoin perspective instead of a USD perspective. The goal is to enlighten millions, if not billions, of citizens worldwide and show them the reality in which they live.

We are transitioning toward a Bitcoin-denominated global economy. From this perspective, we have been in a bear market for the past 15 years. During this time, viewed in Bitcoin terms, markets worldwide have experienced a bloodbath.

9.3 Opening the Gates - a Public, Global Exchange

After the Index, we will focus on launching a centralized trading platform. This platform will be similar to well-established financial exchanges such as Binance, NYSE, Kraken, and Coinbase, which are known for their efficiency, integration-friendliness, and broad market accessibility.

Key Features :

— **Financial Instruments :** Offer various trading including stocks, futures, and derivatives.

— **High Performance :** The platform is designed to handle high volume with low latency, ensuring a seamless trading experience.

In the beginning, the exchange will contain the following spot assets :

Apple, Adobe, AT&T, Alphabet, Amazon, Bank of America, Berkshire Hathaway, CVS, Chevron, Citigroup, eBay, Meta, iShares Silver Trust ETF, GMC, Intel, IBM, iShares Treasury Bond 7-10 Year ETF, iShares Dow Jones, JPM, Microstrategy, Chase, MSFT, Morgan Stanley, Netflix, Nvidia, Oracle, Paypal Holdings, Pepsico, Pfizer, P&G, SDPR S&P500 ETF, Shopify, Starbucks, Tesla, BNY Mellon, Coca Cola, Goldman Sachs, Home Depot, Time Warner, United States Oil Fund, Virgin Galactic Holdings, Visa, Warner Bros, Wells Fargo, Western Union, iShares Gold Trust.

After the initial launch, Roxom will continuously list more assets according to the community's and shareholders' requests.

During this initial stage, only Bitcoin deposits & withdrawals will be eligible. Apart from the mentioned stocks, the BTC/USD pair will be the only other possible trade. This is for customers who might want to revert to fiat-denominated currencies.

About Interoperability : We aim to open our entire infrastructure for other players to access the Roxom Markets and build on top of us.

Integration via APIs :

— **API Access :** Roxom will provide robust API support, allowing brokers and third-party developers to connect directly to our markets. These APIs will facilitate real-time data transfer, trading operations, and more.

9.4 Bitcoin-Denominated Options & Derivatives

Once the initial deployment phase concludes, we aim to push Roxom to the next level.

Creating options over traditional off-chain rails poses a substantial risk due to the denomination of stock exchanges worldwide in USD or other FIAT currencies. This makes it impossible for Roxom to execute off-chain derivative trades, as they are USD-denominated.

This can be seen when someone purchases a Call Option on TSLA/BTC.

In this example, TSLA should gain value in BTC terms for the trade to be profitable.

However, a possible scenario where this occurs is when TSLA depreciates, and BTC depreciates even further in USD terms. In the context of Bitcoin,

the trade would have been successful as Tesla's value increased in terms of BTC. However, if this scenario were enacted in real life as a long call position on TSLA (anticipating that TSLA would outpace BTC), we would have been liquidated and defaulted on the option.

To establish Bitcoin-denominated derivatives Markets, we must develop synthetic markets that leverage on-chain (Bitcoin) liquidity rather than traditional off-chain (FIAT) liquidity.

At Roxom, we are big fans of DYDX's work in Options and derivatives, so we will probably work in the same or similar direction.

The liquidity for these synthetic option markets (think of Puts & Calls of AAPL, TSLA, MSFT, etc., but denominated in BTC) will be sourced from three different players :

1. Institutional market makers
2. Retail traders
3. ROMMA

The first two players will be able to provide liquidity and act as market makers in the Roxom derivatives markets, profiting from the spreads they secure.

On the other hand, ROMMA will provide the exchange with market-making and options liquidity.

The profits from the market making across the exchange will be allocated for i) paying premiums to bondholders, ii) issuing dividends to shareholders, and iii) covering operational expenses.

9.5 Bitcoin Native Markets & Exchange

At this point, Roxom has introduced a new perspective of understanding money by enabling any entity or person to trade traditional assets/real-world assets using Bitcoin and by allowing trading options and derivatives for these asset pairs.

However, our vision at Roxom extends beyond this. We foresee companies, nation-states, and other entities listing their shares, debts, and other assets directly on the Internet and Bitcoin. We envision a future where global markets operate entirely online, on a neutral settlement layer, without any need for physical interaction.

This is the core idea behind The Bitcoin Native Exchange, the grand culmination of Roxom's efforts.

Our goal is to provide a fully decentralized, on-chain Global Exchange experience. This includes, but is not limited to, Bitcoin Native IPOs, Debt Offerings, Decentralized Justice & Disputes, and more.

Market participants can then participate in such listings and trade such assets around the clock. Entities, including nation-states and companies, can

also issue debt that can be traded on such markets. In addition, options and derivatives for such assets will be available.

9.5.1 Decentralized Trading Platform

In parallel with our centralized exchange, we're developing a decentralized platform. Roxom will create a native Rox Solid Layer 2 scaling solution, similar to those used by Coinbase's BASE or DyDx. This might involve the use of Optimistic or ZK (Zero-knowledge) Rollups. We plan to launch a testnet first to ensure usability and scalability without risking real capital before deploying the production Roxolid L2.

Decentralized Trading Mechanics :

— Automated Market Makers (AMMs) : Fully on-chain AMMs for spot (Uniswap like).

— Liquidity Pools : Liquidity pools in which liquidity providers (LPs) contribute assets to collective pools in return for fees.

— Interoperability Protocols : Implement cross-chain trading solutions for seamless asset transfer and trading across different networks.

— Futures & Derivatives : Fully on-chain futures and derivatives (DYDX like).

Infrastructure for Third-Party Development :

— **APIs for Development :** Roxom will provide RESTful APIs for developers to interact with the decentralized platform, enabling them to build custom dApps, fetch data, submit transactions, and integrate existing systems or applications.

— **SDKs and Frameworks :** Roxom will offer comprehensive software development kits (SDKs) and frameworks that support multiple programming languages, simplifying the development of decentralized applications on top of Roxom's infrastructure.

10 Roxolid : Layer 2 Scaling Solution for Roxom's Decentralized Platform

As part of our commitment to advancing financial technology through blockchain, Roxom is developing "Roxolid", a Layer 2 (L2) solution designed to enhance the scalability, speed, and cost-efficiency of our decentralized trading platform. Roxolid aims to provide a robust infrastructure layer that supports high-frequency trading and complex financial applications with minimal latency and reduced transaction costs. All in all, we are creating a rock-solid layer.

10.1 Technical Exploration and Feasibility

Blockchain Selection :

— **Bitcoin Layer 2 Considerations :** Our ideal vision for Roxolid is to develop it as a Layer 2 solution on the Bitcoin network, leveraging Bitcoin's security and widespread adoption. We are studying advanced technologies within the Bitcoin ecosystem :
  — **Lightning Network :** For instant, micro-transaction capabilities, which could enhance trading velocity and efficiency.
  — **RSK (Rootstock) :** As a smart contract platform that bridges the Bitcoin blockchain with Ethereum-style capabilities, RSK offers a unique opportunity for deploying complex smart contracts and decentralized applications directly linked to the Bitcoin network.
  — **Liquid Network :** Focused on asset issuance and trading, Liquid's sidechain technology provides confidential transactions and rapid settlements.
— **Ethereum as an Alternative :** Given Bitcoin's current limitations in scripting for comprehensive smart contract functionality, Ethereum remains a strong alternative for Roxolid. Ethereum's mature ecosystem supports a vast range of development tools and has a large community. We are particularly studying the implementations of dYdX and BASE as follows :
  — **dYdX :** A leading decentralized exchange that offers derivatives and margin trading on a trustless platform, which could serve as a model for creating advanced financial instruments on Roxolid.
  — **BASE :** Coinbase's newly introduced Layer 2 solution is designed to enhance Ethereum scalability and reduce transaction costs. It could provide valuable insights into efficient Layer 2 operations for our platform.

10.2 Design Considerations and Architecture

Hybrid Flexibility : Roxolid is being designed with a dual-framework architecture that could operate atop multiple blockchain networks. This hybrid approach will allow us to pivot between underlying chains based on evolving technological advancements and community feedback.

Scaling Technologies : Depending on the underlying blockchain, Roxolid may implement various scaling solutions :

— **On Bitcoin :** Potential integration of state channels or federated sidechains that can handle substantial transaction volumes off-chain while securing final settlement on the main Bitcoin blockchain.
— **On Ethereum :** Utilization of Optimistic Rollups or ZK-Rollups to batch transactions and execute them off-chain, thus enhancing throughput and reducing gas costs while still ensuring data availability and security on the Ethereum mainnet.

10.3 Security and Performance Optimization

Security Measures : Roxolid will incorporate cryptographic techniques, including zero-knowledge proofs (for privacy and data minimisation) and secure multi-party computation (for enhanced security of off-chain transactions).

Performance Metrics : Tailoring Roxolid for high throughput, low latency, and reduced transaction costs to meet the demanding needs of high-frequency traders and institutional participants in the decentralized finance landscape.

10.4 Roadmap and Development Stages

Research and Development : Focused testing and feasibility studies are ongoing on Bitcoin and Ethereum platforms, examining technologies like RSK, Lightning Network, LRC-20, dYdX, and BASE to ensure Roxolid meets our high standards for performance and security.

Community and Developer Input : We are actively engaging with the blockchain community and soliciting feedback from developers to refine our approach. This collaborative effort is crucial in ensuring that Roxolid aligns with the needs of its users and the broader blockchain ecosystem.

Pilot Testing : Comprehensive pilot testing will precede full deployment, crucial for validating Roxolid's functionality and selecting the most suitable underlying blockchain based on real-world performance data.

11 About Going Public on Roxom & Other Topics

Companies can go public directly on Roxom by creating rosters about their offerings and publicly listing them by issuing shares on the platform.

However, it's important to note that for companies to list natively on Roxom (unlike traditional companies for which we've established a bridge between the crypto and traditional world), they must :

— Generate Bitcoin or Bitcoin-related revenue.

— Shares must pay Bitcoin dividends.

— Bonds or debt issuance must yield Bitcoin interest.

Such decisions have been based on a key concept related to risk management.

Just as companies listed on the NYSE pay dividends in USD and their debt yields interest in USD, Bitcoin markets should do the same. **Bitcoin markets must yield Bitcoin.**

From a risk perspective, the companies best suited to guarantee these dividends and interest rates are those that have Bitcoin or Bitcoin-related revenues and businesses (miners, crypto exchanges and/or broker-dealers, crypto/bitcoin companies, etc.).

11.1 About Incorporating Other Currencies

As Roxom expands, it will include trading different assets, such as cryptocurrencies, which differ from BTC.

While Roxom will ultimately operate in BTC denominations, it will facilitate trading all assets with any currency.

Despite operating within the BTC economy, we believe in financial freedom and the ability for anyone to trade on their terms.

11.2 About Business Opportunities for Our Customers

Our role as a whole is not only to enable internet markets but also to ensure that our customers accumulate as much Bitcoin as possible through long or short trades. This means that our customers are investing successfully.

The Roxom team will create indexes and information portals listing all Bitcoin-related stocks (such as Microstrategy, BitFarms, Marathon, BTC ETFs, etc.) to facilitate this. These portals will visualize the amount of BTC or Satoshis per share each company holds. We will also indicate if a stock trades at a premium or discount compared to BTC.

An example could be the following :

At the time of writing, Microstrategy holds 900k Satoshis per Share, but the stock is trading at 1.8M Satoshis. This suggests the share is trading at a 2x premium and provides an opportunity to potentially short Microstrategy in Bitcoin terms to accumulate more.

In cases like this, Roxom could facilitate the information and issue bonds to execute such trades, offering its investors yields in Bitcoin.

11.3 Example with Current Information

Company Analysis			
Company	Sats per Share (SPS)	Share Price (SATS)	Premium/Discount
Microstrategy	900,000	1,907,667	+111%
IBIT Bitcoin Trust	56,956	55,098	-0,0326%

12 Market Codes

Roxom Standard Identification Codes (RSIC)

To understand the Bitcoin Markets at Roxom uniformly, we need a clear and precise nomenclature for listing assets. Honoring the MPEX structure, we at this moment propose the following structure :

12.1 Cash Equivalents

All CX prefixed RSICs describe some cash equivalent. We don't intend to create a prefix for cash since currency-pegged stablecoins have already solved this issue.

12.2 Bonds

All B. prefixed RSICs refer to some bond. For an asset to qualify as a bond, it must have a fixed maturity date on which the principal is repaid. The instrument may or may not have a specified, fixed, floating, or variable interest rate. The first available bonds will be the Roxom Bonds. An example :

— **B.ROM** - Roxom Liquidity Bond issued by Roxom to raise liquidity for the Options market.

12.3 Funds

All F. prefixed RSICs describe some sort of funds. Funds are purely financial vehicles with a periodically published NAV. Their owner buys typically and sells in a spread around the NAV. They may but do not normally pay dividends. An example :

— **F.RDIX** - Roxom Discount Index Fund, that invests in companies trading on a discount in BTC terms.

12.4 Options

At the time of writing, we wish to clarify that we are quite inspired by DYDX's model and will go in a similar direction regarding codes and nomenclature of the names of the options.

12.5 Stocks

All S. prefixed RSICs describe a natively listed stock. This doesn't apply to Publicly Listed companies from the off-chain world, such as MSTR, AAPL, etc. An example :

— **S.ROX** - Roxom Shares, direct equity on Roxom.

12.6 Futures

All X. prefixed RSICs describe a future. An example :

— **X.MSTR** - Microstrategy Futures.

13 Bitcoin Native Yield

13.1 About Bitcoin Native Yield

For those of us immersed in the world of cryptocurrencies, particularly Bitcoin, we know that 'mining' is the sole method of yielding or producing this digital gold.

Unlike Ethereum and other cryptocurrencies that can be staked, there are few alternatives for producing or gaining Bitcoin, such as providing WBTC liquidity to certain liquidity pools.

13.2 Bringing Bitcoin yield through liquidity

Today's public markets have a robust infrastructure that supports the offering of several financial products, generating USD native yield. These products include but are not limited to, share lending, option selling/writing, and debt issuances like bonds.

However, in the Bitcoin world, unlike other crypto or FIAT currencies, such products are largely unavailable to the broader base of investors. Bitcoin hedge funds, which aim to accumulate Bitcoin (yield Bitcoin), exist, yet they are not widely known.

This is why we at Roxom see a significant opportunity in creating Bitcoin yielding products on the Bitcoin Markets we're establishing.

At Roxom, we strive to create the following yield products either directly or through partnerships with other projects eager to build on our platform :

- **Stock/Asset lending programs :** We aim to replicate such programs from traditional markets but with Bitcoin-denominated interest rates.
- **Bitcoin Dividends :** We plan on listing Bitcoin or Bitcoin-related companies that can pay dividends in Bitcoin.
- **Bitcoin Bonds :** We intend to list Bitcoin-denominated bonds (debt) from Bitcoin or Bitcoin-related companies willing to undertake such initiatives.
- **Market Making :** We aim to collaborate closely with market makers capable of raising capital in Bitcoin, as their business will be Bitcoin-denominated.
- **Bitcoin Native Options :** Similarly to how option sellers receive their premiums in USD, option sellers on Roxom will collect their premiums in Bitcoin.

It's important to note that different yield options come with different types of risk. For example, lending stocks or assets you already own typically involves less risk compared to buying bitcoin-denominated bonds intended for market making. Markets naturally create and offer products to meet the needs

of all types of investors, ranging from the most risk-averse to the most risk-tolerant.

There are also many other ideas not listed here, which will undoubtedly arise in the bright future we're heading towards.

For such, we hereby establish that Roxom will be the first of its type to offer such kinds of Native Yields in the form of Dividends and Bonds by making a public, on-chain IPO and a public, on-chain bond offering for market-making efforts.

14 The Roxom IPO

14.1 The Offering

Roxom has 210,000,000 outstanding $ROX Shares, equivalent to 10 shares per BTC. For the time being, the shares have no voting rights. This is expected to evolve into a DAO model.

14.1.1 Investor Rights

— Shares have no nominal value.
— Shares have no voting rights.
— Owners are not responsible for any net loss from Roxom's activity.
— Owners are entitled to a fraction of the net profit of each month equal to the fraction of total stocks they hold.

Currently, the Roxom team owns the entirety of the 210,000,000 shares block. This ensures we can execute our long-term roadmap, managing the operations, regulatory relationships, etc., until we can slowly but steadily decentralize Roxom.

The initial offering of Roxom will consist of 21,000,000 shares, equivalent to 10% of the total outstanding shares.

14.2 How It Works

14.2.1 Prospectus

— **Total Outstanding Shares :** 210 million shares.
— **Shares Offered in IPO :** 21 million shares (10%).
— **Bid Price Range :** Roxom shall not provide a price recommendation. The market shall price it via an auction.
— **Auction Window :** From xyz of a certain year to zyx of that same year.

14.2.2 Bid Submission

Sealed Bids Investors submit their bids confidentially, specifying :

— **Number of Shares Desired :** How many shares they wish to purchase.
— **Bid Price per Share :** The price in Bitcoin they are willing to pay per share.

Bitcoin Escrow : Bidders must accompany their bids with a Bitcoin deposit equal to their bid's total value. The deposit will not be eligible for withdrawal until the entire bid process has finished.

14.2.3 Auction Closing and Bid Review

— **Closing the Bidding :** After the deadline, we shall not receive more bids.
— **Ordering of Bids :** Roxom will arrange all bids from highest to lowest based on the bid price. This is essential for determining the clearing price.

14.2.4 Determining the Clearing Price

— **Clearing Price Calculation :** We shall identify the lowest bid price within the highest price segment that covers the sale of all 21 million shares. This price becomes the clearing price, ensuring all winning bidders pay the same price.

14.2.5 Allocation of Shares

— **Pro Rata Allocation :** If bids at the clearing price exceed the available shares, we shall allocate shares on a pro-rata basis to these bidders.
— **Full Allocation to Lower Bids :** Bidders below the clearing price receive no shares, and their Bitcoin deposits are promptly refunded.

14.2.6 Distribution and Refunds

— **Share Distribution :** We distribute the shares to the successful bidders' wallets as specified in their bid submissions.
— **Refund Excess Bitcoin :** We return any surplus Bitcoin from bids above the clearing price or from bidders who did not receive all the shares they bid for.

14.2.7 Auction Process

— **Registration :** Each participant registers their interest by registering on the auction platform. They receive a unique auction ID in return.

— **Bid Submission :** Within the Auction portal, participants enter their bid amount for the number of shares they want to purchase. They can choose to pay for their bid using either the balance already available in their Roxom account or by sending Bitcoin to a unique address provided by the platform for this specific auction.
— **Bid Recording and Commitment :** After submitting the bid and completing the payment, the platform automatically generates a hash of the bid details, including the bidder ID and amount. This hash serves as a bid commitment. The bid details are recorded on Bitcoin using an OP_RETURN transaction. This ensures the bid is transparently logged while maintaining confidentiality through encryption.
— **Clearing and Allocation :** The auctioneer processes all verified bids to determine the clearing price, allocates shares accordingly, and returns excess funds to bidders or transfers Bitcoins according to the auction's outcome.
— **Verification :** After bids are revealed and processed, the auctioneer publishes all verified bids, the decryption method, and the results, allowing anyone to verify the correctness of the auction outcome using the published blocks OP_RETURN field.

14.2.8 Secondary Market Opening

Trading on Roxom : After publishing the auction results, trading of the shares on Roxom's platform will begin to allow further price discovery and liquidity.

15 About Dividends, Earnings & Shareholders

15.1 Investor Rights to Earnings

Investors are entitled to Roxom's monthly net profits, defined by their equity. Dividends will be paid on a monthly basis to all shareholders.

15.2 Dividend Calculation Example

Let's assume the following for a given month :
— **Roxom's Net Profit :** 500 BTC
— **Total Outstanding Shares :** 210,000,000 shares
— **Shares Available Publicly :** 21,000,000 shares
— **Public Share Fraction :** 10% of total shares

15.2.1 Step-by-Step Dividend Distribution

Monthly Dividends Per Share : The net profit attributable to each share is calculated by dividing the total net profit by the total number of

outstanding shares.

$$\text{Dividend per Share} = \frac{\text{Net Profit}}{\text{Total Outstanding Shares}}$$

For our example :

$$\text{Dividend per Share} = \frac{500 \text{ BTC}}{210,000,000 \text{ shares}} = 0.000002381 \text{ BTC}$$

Total Dividend for Public Shares : We multiply the dividend per share by the number of publicly available shares to find the total dividend distributed to public shareholders.

$$\text{Total Dividend for Public Share} = \text{Dividend per Share} \times \text{Public Shares}$$

For our example :

$$\text{Total Dividend for Public Share} = 0.000002381 \text{ BTC} \times 21,000,000 = 50 \text{ BTC}$$

Example Scenario for a Shareholder : Suppose an investor owns 210,000 shares (1% of the public shares or 0.1% of the total shares).

— **Dividend for the Investor :** We multiply the investor's shares by the dividend per share.

$$\text{Dividend for Investor} = \text{Dividend per Share} \times \text{Investor Shares}$$

For our example :

$$\text{Dividend for Investor} = 0.000002381 \text{ BTC} \times 210,000 = 0.5 \text{ BTC}$$

15.2.2 Key Points to Note :

— **No Voting Rights :** Since the shares have no voting rights, shareholders do not influence company decisions but are entitled to profits.

— **No Liability for Losses :** Shareholders are not responsible for any net losses incurred by Roxom.

— **Profit Distribution :** Profits are distributed monthly, offering a regular income stream based on the company's performance.

Each shareholder receives a portion of the net profits proportional to their shareholding, fostering an incentive to invest in the company while Roxom maintains control over its strategic direction.

16 IPO Scenario

To understand how the process would go, we have created this section.

16.1 Example : Scenario Setup

Total Shares Offered : 21 million shares.

Bidding Window : Investors have submitted bids within the specified window.

Example Bids Received : For simplicity, let's consider a sample of bids received by Roxom :

Bidder	Bid Price (BTC per Share)	Shares Requested
Alice	0.0035	5 million
Bob	0.0032	10 million
Charles	0.0030	8 million
Diego	0.0028	3 million
Wen	0.0025	4 million
Fox	0.0022	2 million

16.1.1 1. Arrange Bids by Price

Sort the bids from the highest price per share to the lowest :

— Alice : 0.0035 BTC for 5 million shares
— Bob : 0.0032 BTC for 10 million shares
— Charles : 0.0030 BTC for 8 million shares
— Diego : 0.0028 BTC for 3 million shares
— Wen : 0.0025 BTC for 4 million shares
— Fox : 0.0022 BTC for 2 million shares

16.1.2 2. Accumulate Bids to Cover Offered Shares

Sum the shares from the highest bids downward until reaching or exceeding the total shares offered (21 million) :

— **Alice's bid :** 5 million shares
— **Bob's bid :** 10 million shares (cumulative 15 million)
— **Charles's bid :** 8 million shares (cumulative 23 million)

At this point, the cumulative bid covers the 21 million shares Roxom is offering. The bid from Charles is the lowest, and it still allows the total number of bids to cover all offered shares.

16.1.3 3. Determining the Clearing Price

The clearing price is the lowest bid that allows for the sale of all offered shares. In this scenario, that is Charles's bid of 0.0030 BTC per share.

16.1.4 4. Share Allocation

— Alice receives 5 million shares at 0.0030 BTC.
— Bob receives 10 million shares at 0.0030 BTC.
— Charles receives the remaining 6 million shares at 0.0030 BTC, even though they bid for 8 million shares.

16.1.5 5. Refunds

Charles had bid for 2 million more shares than they received ; they will get a refund for the excess BTC they deposited for the extra 2 million shares at 0.0030 BTC each.

16.1.6 6. Aftermath

In this example :
— The clearing price is set at 0.0030 BTC per share.
— All successful bidders pay the same price per share.
— Bids lower than the clearing price (from Diego, Wen, and Fox) do not receive shares, and their full Bitcoin deposits are refunded.

17 Solving Bitcoin Native Options

Understanding options denominated in Bitcoin, a unique financial instrument, can be quite complex.

How would options function in a world where Bitcoin is the only currency ?

Considering options in terms of dollars is considerably easier.

The process of selling or writing options on a Bitcoin/USD pairing would be relatively straightforward.

Let us take into account the following scenario :
— Contract Seller : Alice
— 1 Contract = 1 Bitcoin
— Put Strike Price = $50,000.00
— Expiry Price = $40,000.00

The margin or reserve requirements for writing options function as follows :
— Call Option : The maximum margin or reserve required for one contract (1 BTC) is always one Bitcoin, regardless of the strike and expiry price.

$$\text{Call Reserve} = \text{Outstanding Calls} \times 1\,\text{BTC}$$

— Put Option : The maximum margin or reserve required is : In a one-contract scenario with a strike price of $50,000.00, the total reserve required would be $50,000.00.

$$\text{Put Reserve} = \text{Outstanding Puts} \times \text{Strike Price} = 1 \times \$50,000.00 = \$50,000.00$$

The option buyer would receive $50,000.00 at expiry for an asset worth $40,000.00. This means that he has earned a $10,000.00 difference between the expiry price and the strike price.

In a scenario where the sole goal of this person is to accumulate Bitcoin, such a contract would've earned him/her a total of 0.25 BTC since he bought a contract for 1 Bitcoin and he now has the equivalent of 1.25 Bitcoin

$$\text{Total Bitcoin at Expiry} = \frac{\text{Strike Price}}{\text{Expiry Price}} = \frac{\$50{,}000.00}{\$40{,}000.00} = 1.25 \text{ BTC}$$

However, when we go to a Bitcoin world, several issues arise.

18 Understanding Bitcoin options in a Bitcoin-only world

In this section, we will go over the following scenarios :
— Option Buyers :
  — Calls
  — Puts
— Option Sellers :
  — Calls
  — Puts

First of all, let's set the scenario of the current market conditions :
— Bitcoin Price for the Exercise : $50,000.00
— Bitcoins per Option : 1 BTC

Where :
— EP : Expiry Price
— SP : Strike Price
— Δ Call or Delta Call = EP (Expiry Price) - SP (Strike Price)
— ψ Put or Omega Put = SP (Strike Price) - EP (Expiry Price)
— The BTC owed to a buyer is on a per-contract basis
— CO : Contracts Owned
— TBTCO : Total BTC Owed
— BTCOPC : BTC Owed per Contract
— OSR : Outstanding Seller Reserve
— SCP : Seller Contract Premium

— SPL : Seller Profit & Loss
— PCB : Premium Cost for Buyer
— PRS : Premium Received by Seller

18.1 Calls for option buyers

1. **Long CALLs**
   Long means you buy the contracts and thus hold the option to exercise at any moment.

   Buy 100 CALL @$100,000.00 contracts expiring this month at $1000 each. The total cost is $100,000.00, but must be paid in BTC, so the total cost is : 2 BTC ($100,000.00 / $50,000.00)

   $$\text{Premium Cost} = \text{CO} \times \text{Price per Contract} = 100 \times \$1000 = \frac{\$100,000}{\$50,000} = 2\text{BTC}$$

2. *Example : If the price goes to $110,000.00, you are entitled to the difference between the price and the strike (so, $110,000 - $100,000 = $10,000) in BTC.*

   $$\text{BTCOPC} = \frac{\text{EP - SP}}{\text{EP}} = \frac{\$110k - \$100k}{\$110k} = 0.909090 \text{ BTC}$$

   $$\text{TBTCO} = \frac{\Delta}{\text{EP}} \times \text{CO} = \frac{\$110k - \$100k}{\$110k} \times 100 = 90.90 \text{ BTC}$$

   In this case, because you paid 2 BTC and earned 90.90, you have a net gain of 88.90 BTC (TBTCO — 2BTC of Premiums).

3. *Example : If the price goes to $101,000.00, you are entitled to the difference between the price and the strike (so, $101,000 - $100,000 = $1,000) in BTC.*

   $$\text{TBTCO} = \frac{\$101\text{k - }\$100\text{k}}{\$101\text{k}} = 0.009900 \text{ BTC} \times 100 = 0.99 \text{ BTC}$$

   In this case, because you paid 2 BTC and earned 0.99 BTC, you have a net loss of -1.009900 BTC (TBTCO — 2BTC of Premiums).

4. *Example : If the price goes to $90,000.00, you are entitled to nothing, so you make a 2 BTC loss.*

18.2 Puts for Option Buyers

18.2.1 Long Calls

Long means you buy the contracts and thus hold the option to exercise at any moment.

Buy 100 PUT @$50,000.00 contracts expiring this month at $1000 each. The total cost is $100,000.00, but must be paid in BTC, so the total cost is : 2 BTC ($100,000.00 / $50,000.00)

$$\text{Premium Cost} = \text{CO} \times \text{Price per Contract} = 100 \times \$1000 = \frac{\$100,000}{\$50,000} = 2\text{BTC}$$

18.2.2 Example : If the price goes to $49,500.00

You are entitled to the difference between the strike and the price (so, $49,500 - $50,000 = $500) in BTC.

$$\text{BTCOPC} = \frac{\text{SP - EP}}{\text{EP}} = \frac{\$50k - \$49.5k}{\$49.5k} = 0.001010 \text{ BTC}$$

$$\text{TBTCO} = \frac{\psi}{\text{EP}} \times \text{CO} = \frac{\$50k - \$49.5k}{\$49.5k} \times 100 = 1.010101 \text{ BTC}$$

In this case, because you paid 2 BTC and earned 1.010101 BTC, you have a net loss of 0.989898 BTC (TBTCO — 2BTC of Premiums).

18.2.3 Example : If the price goes to $45,000.00

You are entitled to the difference between the strike and the price (so, $45,000 - $50,000 = $5,000) in BTC.

$$\text{BTCOPC} = \frac{\text{SP - EP}}{\text{EP}} = \frac{\$50k - \$45k}{\$45k} = 0.111111 \text{ BTC}$$

$$\text{TBTCO} = \frac{\psi}{\text{EP}} \times \text{CO} = \frac{\$50k - \$45k}{\$45k} \times 100 = 11.111111 \text{ BTC}$$

In this case, because you paid 2 BTC and earned 11.111111 BTC, you have a net gain of 9.11 BTC (TBTCO—2BTC of Premiums).

18.2.4 Example : If the price remains above $50,000.00

You are entitled to nothing, so you make a 2 BTC loss.

18.3 Calls for option sellers

1. **Short CALLs**
   Short means you sell the contracts and thus are obligated to honour your contract at expiry.

   Sell 100 CALL @$100,000.00 contracts expiring this month at $1000 each. The total premium is $100,000.00, received in BTC, so the total premium received is 2 BTC ($100,000.00/$50,000.00). On a 1 BTC per contract reserve, your total reserve is 100 BTC.

$$\text{PRS} = \text{CO}\times\text{Premium per Contract} = 100\times\$1000 = \frac{\$100,000}{\$50,000} = 2\text{BTC}$$

   Upon selling the options and locking the reserve/collateral, you will receive your 2 BTC Premium ($1000 per contract × 100 contracts / $50,000 BTC price) for the contracts you sold.

   If the CALLs are never exercised during their lifetime, upon expiration, you receive your original 100 BTC, thus making a 2 BTC profit.

   Let us see some examples of the contracts being exercised :

   — **Example :** If the price goes to $110,000.00, the buyer is entitled to 90.9090 BTC (example above). You will receive 9.1 BTC from your 100 BTC reserve, thus losing about 88.9 BTC (9.1 + 2 BTC from premiums - 90.9090 BTC).

$$\text{Reserve at Expiry} = (\text{Initial Reserve} + \text{PRS} - \text{TBTCO})$$

$$\text{Reserve at Expiry} = (100\text{BTC}+2\text{BTC})-90.9090\text{BTC} = 11.1\text{BTC}$$

$$P\&L = \text{Reserve at Expiry} - \text{Initial Reserve}$$

$$P\&L = (9.1\ \text{BTC} + 2\text{BTC}) - 100\text{BTC} = -88.9\text{BTC}$$

   — **Example :** If the price goes to $101,000.00, the buyer is entitled to 0.99 BTC (example above). You will receive 99.01 BTC from your 100 BTC reserve, thus gaining about 1.01 BTC (99.01 + 2 BTC from premiums - 0.99 BTC).

$$P\&L = \text{Reserve at Expiry} - \text{Initial Reserve}$$

$$P\&L = (99.01\ \text{BTC} + 2\text{BTC}) - 0.99\text{BTC} - 100\text{BTC} = 1.01\text{BTC}$$

   As demonstrated, selling options doesn't pose issues with CALLs. In a hypothetical situation where the price of Bitcoin reaches infinity at expiry, the Options Seller could cover the call using his entire 100 Bitcoin reserve.

   However, when it comes to PUTs, the scenario is entirely different. Let's delve deeper...

18.4 Puts for option sellers

1. **Short CALLs**
   Short means you sell the contracts and thus are obligated to honour your contract at expiry.

   Sell 100 PUTs @$50,000.00 contracts expiring this month at $1000 each. The total premium is $100,000.00, received in BTC, so the total premium received is 2 BTC ($100,000.00/$50,000.00). On a 1 BTC per contract reserve, your total reserve would be 100 BTC.

   Upon selling the options and locking the reserve/collateral, you will receive your 2 BTC Premium ($1000 per contract $\times$ 100 contracts / $50,000 BTC price) for the contracts you sold.

   If the PUTs are never exercised during their lifetime, upon expiration, you receive your original 100 BTC, thus making a 2 BTC profit.

   Let us see some examples of the contracts being exercised :
   — **Example :** If the price goes to $45,000.00, the buyer is entitled to 11.11 BTC (example above). You will receive 88.89 BTC from your 100 BTC reserve, thus losing about 9.11 BTC (88.89 + 2 BTC from premiums - 100 BTC your initial reserve).

$$P\&L = \text{Reserve at Expiry } - \text{Initial Reserve}$$

$$= (100\ \text{BTC} + 2\text{BTC} - 11.11\text{BTC}) - 100\text{BTC} = -9.11\text{BTC}$$

   — **Example :** If the price goes to $15,000.00, the buyer is entitled to 333 BTC. In normal USD-denominated options, the option buyer would have received $\$50k$ per BTC, amounting to $5,000,000 for his 100 options, which would allow him to buy 333 BTC (5,000,000/$15,000).

$$P\&L = \text{Reserve at Expiry } - \text{Initial Reserve}$$

$$P\&L = ((100\ \text{BTC} + 2\text{BTC}) - 333\text{BTC}) - 100\text{BTC} = -331\text{BTC}$$

   In this example, there aren't enough reserves to cover the buyer's profit in this PUT option.

   Selling 100% Bitcoin-denominated puts could be impossible because a reserve of 1 BTC per contract would be insufficient.

   If the price decreases by more than 50%, then the amount of Bitcoin owed exceeds the Bitcoin in reserve.

At Roxom, we've developed a new approach to Bitcoin Native options pricing in relation to their USD value. This strategy doesn't expose the option seller to default risks, but it does limit the potential profit for the buyer.

18.4.1 The Roxom Bitcoin Put Standard (RBPS)

In order to create bankruptcy remote Put Options, we need to incorporate the following concepts.

OPBTC : Owed Put BTC = SP / EP × Contracts Owned

$$\text{OPBTC} = \frac{\text{SP}}{\text{EP}} \times \text{CO}$$

So from our example above, we could derive :

$$\text{OPBTC} = \frac{\$50,000}{\$15,000} \times 100 = 333\text{BTC}$$

This formula allows us to calculate the amount of Bitcoin each option buyer should receive at expiry if their trade is profitable.

Next, we need to ensure that, at a formula level, the option seller has enough in reserve to cover the trade.

18.4.2 Introducing the concept of the Lowest Expected Market Price

To calculate the necessary collateral that an option seller should place, we introduce the concept of LEMP (Lowest Expected Market Price).

We understand the maximum threshold that the traditional 1 BTC per contract holds is up to a 50% decrease from the strike price to the expiry price. Beyond this, the option seller would owe more than 1 BTC.

To rectify this, we propose an over-collateralization framework.

In this framework, when writing the option, the seller needs to determine two crucial data points :

— Strike Price : The strike price of the option
— Lowest Expected Market Price : The minimum price the seller is willing to accept before their option gets liquidated.

With these two data points, we can establish that the Required Reserve equals to :

$$\text{Required Reserve} = \frac{\text{SP}}{\text{LEMP}} \times \text{CO}$$

For instance, in the case above, the option seller's reserve should have been 333 BTC.

If the expiry price had been $\$15,000.00$, the option would have been exercised at that price point. The option seller would have concluded the transaction with no reserve, retaining only his premium.

From this, we can derive that the Liquidation Price (LP) equals the LEMP.

The proposed framework sets a price at which the option is liquidated and exercised. This prevents delinquency or default from the option writers by capping the buyer's gains once the total reserve of the option seller is depleted.

Let's consider another example. Suppose I'm an option seller, and I establish the following :

Strike Price = $25,000

LEMP = $17,000

Contracts = 100

Then :

$$\text{Required Reserve} = \frac{\$25,000}{\$17,000} \times 100 = 147.05\text{BTC}$$

The required reserve to sell 100 put options with a strike price at a liquidation rate of $17,000 is 147.05 BTC. If the option expires at that price, the entire reserve will be lost. However, if the option expires below that price, the buyer's profits are limited to the total reserve.

This approach enables a fully native Bitcoin Options market without using other currencies besides Bitcoin.

18.4.3 Other Terms

Total Put Reserve : Defined as the total reserve in Bitcoins required as collateral from a Market Maker.

$$\text{TPR} = \frac{\text{Average Strike Price}}{\text{Average LEMP}}$$

19 Derivative Liquidity on Roxom & ROMMA

As outlined in section 9, Roxom is committed to proactive market-making and liquidity provision. We hereby state these as essential, and core initiatives are core to Roxom, and we will actively push them to guarantee a deep,

highly liquid market.

> The liquidity for these synthetic option markets (think of Puts & Calls of AAPL, TSLA, MSFT, etc., but denominated in BTC) will be sourced from three different players :

1. Institutional market makers
2. Retail traders
3. ROMMA

19.1 ROMMA

ROMMA (Roxom Options Market Making Algorithm) is our proprietary market-making algorithm that will provide liquidity and market-making to the Roxom Option Markets.

ROMMA will not have proprietary capital and will fund itself by issuing Bitcoin-denominated bonds that yield Bitcoin interest.

Raised capital from such bonds will be used as working capital and liquidity for the market-making operations.

Consider ROMMA as a self-sufficient, self-operating entity that not only generates profits from market-making but also secures funding from external human investors. This model underscores the potential for ROMMA to evolve into a fully independent entity in the future.

The Roxom team will be responsible for the continuous maintenance and improvement of ROMMA's operations. This oversight will help us create a highly reliable and adaptable algorithm in the long term.

With AI's advancement, we envision transforming ROMMA into a fully self-living and decentralised entity. Some AI agent whose job is to be a market maker.

20 Roxom Bonds

20.1 Overview

For the foreseeable future, ROMMA will not hold any proprietary capital to operate the options markets. The market operations will be entirely supported by Roxom's proprietary market-making and pricing algorithms—ROMMA. In routine operations, ROMMA borrows the requisite

capital to adequately cover all assumed risks.

This entails securing BTC equivalent to the aggregate of all open CALLs and USD corresponding to the total of all PUTs multiplied by their respective strike prices.

$$\textbf{Total Required Capital} = (\text{OC} \times 1 \text{ Bitcoin}) + (\text{OP} \times \text{TPR})$$

$$= (\text{Outstanding Calls} \times 1 \text{ Bitcoin}) + (\text{Outstanding Puts} \times \text{Total Put Reserve})$$

Consequently, Roxom ensures its capability to fulfill BTC obligations irrespective of the market price fluctuations, extending to both hypothetical extremes of zero and infinity.

All market participants are entitled to finance Roxom's algorithms in exchange for a fixed premium on the capital lent.

Considering the potential for high profitability, as demonstrated by historical precedents like MPEX, the initial premium rates for financing Roxom's algorithms are projected to range from 0% to 2%.

Submitting bids includes specifying the quantity of bitcoin to be deposited and the anticipated premium rate.

20.2 Roxom Bond Offering

At the culmination of each month, the Roxom Algorithm will organise the list of capital deposits in ascending order by the premium rates and delineate the threshold where the month's capital requirements are met.

All participants above this threshold will receive the premium rate of the last accepted offer, akin to the method employed in treasury bond sales. To elucidate this mechanism, consider the following example :

Bidder	Allocated BTC	Desired Premium
Alice	10 BTC	1.2%
Bob	100 BTC	1.5%
Wen	50 BTC	1.65%
Diego	500 BTC	1.9%

20.2.1 An Illustrative Example

Suppose in a particular month, the total capital requirement is 115.217 BTC ; the allocation would be as follows :

— Alice, with 10 BTC at 1.65%,
— Bob, with 100 BTC at 1.65%,
— Wen, with 5.217 BTC at 1.65%.

If, in another month, the financing need is 577.571 BTC, the allocation would include :

— Alice, with 10 BTC at 1.9%,
— Bob, with 100 BTC at 1.9%,
— Wen, with 50 BTC at 1.9%,
— Diego, with 417.571 BTC at 1.9%.

It should be noted that since liquidity is initially limited, the Roxom Algorithm's ability to engage in market-making is confined to the extent of capital available. Although financiers do not partake in the profits generated by Roxom, only in their premiums, their investment is not devoid of risk as their capital is proportionately utilised to cover shortfalls.

20.2.2 A Hypothetical Adverse Scenario

Consider a given month when the net results were a deficit of -5,775710 BTC. This loss would be distributed and divided by the total capital (577.571 BTC), resulting in a loss of 1% (equivalent to 1 Bitcoin cent per bitcoin). Consequently, the adjusted capital holdings for each financier in the subsequent month would be :

— Alice holds 9.900000 BTC, seeking a 1.2% premium,
— Bob holds 99.000000 BTC, seeking a 1.5% premium,
— Wen holds 49.500000 BTC, seeking a 1.65% premium,
— Diego holds 495.000000 BTC, seeking a 1.9% premium.

Thus, each financier lost a small amount of BTC : Alice 0.1 BTC, Bob 1 BTC, etc. Conversely, in months where Roxom realises a profit, financiers would receive their stipulated premiums without any deduction from the principal.

It is important to clarify that only capital contributions calculated for whole months will be eligible for participation in financing. Therefore, deposits made after the commencement of a month will be deferred to the subsequent month for financing consideration. Investors retain the right to withdraw their investments, which will be processed at the end of each month

after any necessary adjustments for losses, if applicable.

20.2.3 Bond Details

Auction/Offering Process

- **Auction Type :** Sealed-bid auction to determine the premium rates and allocate bonds based on competitive bidding.
- **Process :** Investors submit bids indicating the amount of BTC they are willing to invest and the premium rate they accept. Bids are sorted from the lowest to the highest premium rates. Bonds are allocated starting with the lowest bids until the total amount needed for the month's expenses is reached.
- **Subscription Details :** Bids must be submitted via our dedicated platform during the specified subscription window. Each bid must include the desired premium rate and the amount of BTC invested.

20.2.4 Risk Management and Capital Protection

Risk Mitigation Pool Funded by a small fraction of the trading fees, this pool covers unexpected shortfalls and financial discrepancies, ensuring the protection of bondholders' principal.

Automated Management via Smart Contracts All bond transactions, including issuance, premium payments, and redemptions, are managed via smart contracts on **Roxolid**. Transparency and immutability of records are guaranteed.

20.2.5 Secondary Market and Liquidity

Secondary Market Roxom will facilitate a secondary market on its platform, allowing bondholders to sell their bonds before maturity. Market-making strategies will be implemented to ensure liquidity and fair pricing.

20.2.6 Recap

Roxom's bond offering is designed to provide a stable funding mechanism for its operational needs while offering a robust investment opportunity for those in the cryptocurrency community. Roxom fosters a mutually beneficial relationship with its investors by aligning bondholder returns with the exchange's performance.

21 Bond Offering Scenario

21.1 An Example

21.1.1 Initial Auction and Bond Issuance

Roxom issues monthly bonds, with the proceeds specifically earmarked to provide liquidity in the options trading market.

21.1.2 Bond Offering and Auction for Market Making

Let's go over the scenario :

— **Total Monthly Liquidity Requirement :** Estimated at 2,000 BTC to adequately market make and cover positions in the options market.
— Premium rates are determined through the auction, reflective of market demand and the perceived risk of the month.

21.1.3 Auction Mechanism

Investors submit sealed bids indicating the BTC amount they wish to invest and the premium rate they are willing to accept.
Bonds are ordered ascendingly by the premium. A line is drawn under (or through) the offer, which fills the capital needs of the respective month. All the people above the line will receive the last accepted premium.

21.1.4 Example Auction and Outcome

Monthly Auction

— **Date :** August 1, 2024
— **Bids Received :**
  — Investor Bob : 800 BTC at 1.2%.
  — Investor Diego : 1,200 BTC at 1.4%.
  — Investor Claude : 500 BTC at 1.6%.
  — Investor Wen : 700 BTC at 1.1%.

Auction Sorting and Allocation Bids are sorted by premium rate from lowest to highest.
We draw a line through the offer, filling the respective month's capital needs. All the people above the line will receive the last accepted premium (a system much like the one used for treasury bond sales). To understand better, here is an example :

— Investor Wen : 700 BTC at 1.4% (accepted fully)
— Investor Bob : 800 BTC at 1.4% (accepted fully)
— Investor Diego : 1,200 BTC at 1.4% (500 BTC accepted, 700 BTC excess)

Funds Raised A total of 2,000 BTC, directly used for market-making activities.

21.1.5 Use of Funds for Market Making

Liquidity Provision The entire 2,000 BTC raised from the bond auction provides liquidity in the options market. This involves :

- Setting bid and ask prices to ensure a stable and liquid market.
- Covering positions and managing the spread effectively to reduce slippage and improve trading conditions.

21.1.6 Monthly Premium Payments

Premium payments are calculated and distributed from the profits generated by market-making activities.
Calculations :

- Investor Wen receives 700×0.014 BTC.
- Investor Bob receives 800×0.014 BTC.
- Investor Diego receives 500×0.014 BTC.

21.1.7 Transparency and Monitoring

Record Keeping

- **Voluntary Blockchain Recording :** While Roxom isn't fully decentralised, key financial transactions and records, particularly those related to bonds and market-making activities, will be recorded on a blockchain ledger.
- **Data Publication :** Roxom will periodically publish comprehensive logs of all bond transactions and market-making activities. These logs are not only stored on Roxom but are also recorded on a blockchain, ensuring all stakeholders have full access to our operations and can independently verify their integrity.

21.1.8 Renewal and Adjustment

The bond issuance process is repeated monthly, with adjustments based on the current needs of the market and the financial health of Roxom.
Investors are provided with regular reports detailing the performance of the market-making operations and the returns generated from these activities.

This example is intended to demonstrate the direct connection between funds raised through bonds and their utilisation to enhance the liquidity and functionality of the options market on Roxom. This strategy supports the exchange's operational needs and contributes significantly to the market's efficiency and appeal to traders.

22 References

Find below :

[1] Anna Schwartz, Milton Friedman "A Monetary History of the United States"
[2] Kenneth Rogoff ""Foundations of International Macroeconomics"
[3] Barry Eichengreen "Globalizing Capital : A History of the International Monetary System"
[4] Bitcointalk "S.DICE - SatoshiDICE 100% Dividend-Paying Asset on MPEx"
[5] Bitcointalk "GLBSE vs MPEX"
[6] Diego Gutierrez Saldivar
[7] W.C.
[8] Bitcointalk "MPEX goes live!"
[9] whitepaper.dydx.exchange
[10] https ://github.com/akitamiabtc/LRC-20/blob/main/LRC20-current.pdf