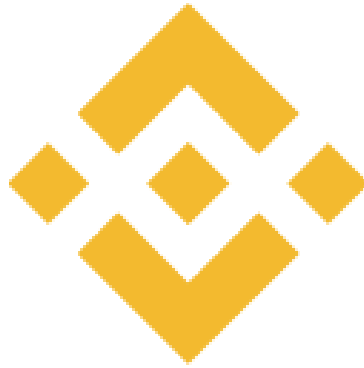


MULTICOIN CAPITAL

BINANCE COIN (\$BNB) Analysis and Valuation



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Multicoin Capital is a thesis-driven cryptofund that invests in tokens reshaping entire sectors of the global economy. We rigorously research blockchain protocols, teams, and market opportunities to deliver venture capital economics with public market liquidity.



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Definitions

For the purposes of this document we outline the following definitions to help clarify distinctions between similar products and entities.

1. Binance: The business that is domiciled in Malta.
2. Binance centralized exchange (CEX): Binance's existing trading platform.
3. Decentralized exchange (DEX): an exchange which is not entirely controlled by a central operator.
4. Binance Chain: The blockchain that hosts the Binance DEX.
5. Binance DEX: The DEX that lives on Binance Chain.
6. Binance fiat-crypto exchanges: The entities being established in jurisdictions around the world (e.g. Uganda, Singapore, Jersey).



Binance Overview

[Binance](#) is a crypto exchange domiciled in Malta that provides a system for users to spot trade cryptoassets. In June of 2017, the company raised [\\$15 million](#) in an initial coin offering (ICO) for its native token, Binance Coin (BNB). Since then, the company has grown the platform to become the world's [highest volume](#) crypto exchange. Recently, Binance announced plans to build [Binance Chain](#), its own distributed ledger with a built-in decentralized exchange (DEX).

In this analysis, we will examine the Binance token: [BNB](#). We will begin with an overview of our investment thesis, including the exchange's history, growth opportunities for Binance, upcoming catalysts, and the token design of BNB in the context of Binance's centralized exchange (CEX). We will then examine the CEX market landscape. Next, we outline potential expansionary opportunities for Binance, such as derivatives products, Binance Chain, and fiat-crypto exchanges. Finally, we'll discuss risks and conclude the analysis by discussing BNB's current and future forms of utility. After the introductory analysis, we will provide a valuation framework for BNB tokens.

BNB Thesis

BINANCE CENTRALIZED EXCHANGE

Binance has experienced tremendous growth since launching on July 14, 2017. The CEX processed [\\$1.56B](#) of average daily trading volume in 2018, and as of December, 2018 it was facilitating [36.6%](#) of global crypto spot volumes¹. Today, among its peers (Coinbase, Bitfinex, Kraken, Bittrex, Poloniex), Binance is the top traded exchange for [82%](#) of the top 50 tokens². The exchange has customers in [190+ countries and supports 14 languages](#), with plans to support more countries and languages in the coming months. Binance [employs](#) over 400 people across more than 43 countries.

Exchanges are one of the few businesses that have strong [network effects](#). Liquidity attracts more liquidity. That is why most nations only have [one dominant stock exchange](#), as this is the natural market equilibrium. Given the international nature of crypto trading, there is natural pressure toward one dominant global crypto-to-crypto exchange. Binance's centralized exchange already handles [\\$803,572,552](#) of daily trading volume (as of December 2018), and it plans to leverage its

¹ Adjusted to remove exchanges which allow wash trading to boost volumes - Source: <https://www.blockchaintransparency.org/>

² Binance's centralized exchange hosts the highest volume trading pair among its peers (Coinbase Pro, Bitfinex, Kraken, Bittrex, Poloniex) for 41 of the top 50 assets on [messari.io](#), according to [CoinMarketCap.com](#) market statistics.



market-leading position to dominate the DEX space as well. For context, Bitfinex processes [\\$400,962,539](#) of daily volume, roughly half that of Binance; Kraken processes [\\$161,066,450](#); and Coinbase Pro processes [\\$159,777,775](#)—each representing roughly 20% of Binance.

FIAT CURRENCY SUPPORT

Binance has been a crypto-to-crypto exchange for the bulk of its existence, however, it recently [announced plans](#) to add fiat support. The team is [projecting](#) to launch at least five, and up to 10, fiat-crypto exchanges by year-end 2019. The company currently operates fiat currency exchanges in [Uganda](#) and [Jersey](#), and according to [The Block](#), Binance [will](#) add fiat support soon in Malta, Singapore, South Korea, Lichtenstein, Argentina, Russia, Turkey, and possibly Bermuda. These countries are likely being strategically chosen because they support not only their local populations, but also populations in nearby countries. For example, Binance Jersey supports GBP in the United Kingdom and EUR across the European Union. Additionally, Binance recently added [support](#) for credit / debit card functionality, allowing customers to use Visa and MasterCard to buy BTC, ETH, LTC and XRP. It's impressive that Binance has become so dominant without offering any fiat pairs. With the addition of fiat pairs, we expect Binance to take market share from its competitors while also simultaneously expanding the market.

Country	Launch date	Currencies	Crypto
Uganda	October 2018	UGX	Bitcoin, Ethereum
Jersey	January 2019	GBP, EUR	Bitcoin, Ethereum
Singapore	Planned for 2019	SGD	Bitcoin, Ethereum
Malta	Planned for 2019	EUR	Bitcoin, Ethereum
South Korea	Intended	KRW	Bitcoin, Ethereum
Liechtenstein	Intended	CHF	Bitcoin, Ethereum
Argentina	Intended	ARS	Bitcoin, Ethereum
Russia	Intended	RUB	Bitcoin, Ethereum
Turkey	Intended	TRY	Bitcoin, Ethereum
Bermuda	Being considered	BMD	Bitcoin, Ethereum

Source: [Binance starts spreading its fiat-to-crypto wings - The Block](#)

Similar to [The Pirate Bay](#), Binance is able to “sail” across the Internet, set up operations across many jurisdictions, and work directly with regulators to create jobs and generate more tax revenues. The Binance team has already moved jurisdictions [5 times](#): beginning in Hong Kong, followed by moves to Singapore, Japan, Taiwan, Cayman Islands, and finally settling in Malta, also known as “Blockchain Island.”



It is [not widely known](#) where Binance's servers are hosted, making the exchange itself quite difficult to censor. Additionally, it is unclear which government has jurisdiction over Binance, if any. The company's financial assets are exclusively comprised of cryptocurrencies such as BTC, ETH, and BNB. In fact, when a vendor requests an invoice denominated in fiat currency, Binance [trades](#) its crypto holdings for the fiat equivalent on other crypto exchanges to fulfill the payment.

In doing this, Binance is executing on a strategy of [regulatory arbitrage](#). By targeting smaller nations, Binance executives are able to [work directly](#) with top government officials, ensuring preferential treatment. The company has [signaled](#) to regulators that they can earn meaningful tax revenues if they support Binance in their respective countries.

BINANCE ORGANIZATION

The Binance team is one of the most technical, business-savvy, and well-capitalized organizations in crypto. In our view, [Changpeng Zhao](#), better known as "CZ," is one of the best entrepreneurs in the crypto ecosystem. We believe Binance has been one of if not the best-executing team(s) in the space over the past 18 months. The exchange has stayed operational during periods of excessive demand (whereas almost every other exchange was regularly [overloaded](#) in 2017); it has never suffered a serious hack where user funds were lost; and it has excellent trade execution and APIs (with over [1.4M](#) orders per second). The platform offers 24/7, [world-class](#) customer support, inspiring tremendous [brand loyalty](#). On July 4, 2018 Binance announced that it would create a [Secure Asset Fund for Users \(SAFU\)](#), in which the company would deposit 10% of all trading fee revenue into an insurance fund to offer protection for users in the unlikely event of an exchange hack. As a result of all of the above, Binance skyrocketed out of nowhere to surpass all of its well-capitalized



competitors around the planet, culminating in an announcement 12 months after launch that over [10M customers](#) had signed up.

BINANCE CHAIN

On March 13, 2018, Binance announced plans to launch [Binance Chain](#), a blockchain with a native on-chain decentralized exchange (DEX). We expect Binance to incentivize market makers to bridge liquidity across the centralized and decentralized exchanges, and in doing so, expect that Binance Chain will quickly surpass all other DEXs in terms of volume because of brand affiliation with Binance's CEX, liquidity, the DEX's ease-of-use, and the DEX's technical specs.

Binance Chain will likely adversely impact the centralized Binance exchange revenues on the margin, but is actually value accretive for BNB holders. The Binance team [expects](#) the chain to increase the value of BNB (causing the value of the company's [large BNB holdings](#) to grow in value). Additionally, [90%](#) of Binance's employees receive a portion of their salaries in BNB (this is core salary, and should not be conflated with traditional stock options). That such a large percentage of Binance's employees are betting on BNB is an incredibly bullish signal for the token.

BNB TOKENS

Lastly, the BNB token has thoughtful and well designed token mechanics. Binance pioneered the [discount token model](#), which we believe is one of the few ways Layer-2 tokens will capture value. Additionally, BNB token holders have a claim on Binance's cash flow because the company buys back and burns BNB from the market every quarter with 20% of its profits. Thus far, BNB holders have received [\\$125M](#) in buyback-and-burn cash flows over the 18 months since Binance's launch.

After dissecting Binance's activities and strategy, one unintuitive but profound thread has become clear: Binance will be the first company to start out centralized, achieve scale, and then decentralize itself, migrating value capture from Binance equity to the BNB token. We believe that the Binance Chain is the future of Binance and expect that the majority of trading volume will eventually migrate to the Binance Chain's DEX, though this transition will take years. The fiat onramps that Binance is building are as decentralized as possible, in that they're redundant and exist across many jurisdictions. As Binance executes on this strategy to decentralize itself, Binance will become the first internet-sovereign organization, and the largest [decentralized autonomous corporation \(DAC\)](#).

In summary, Binance is steered by a team of skilled operators that have designed an extremely compelling long-term vision compounded by numerous short-term bullish catalysts. We believe that the Binance token, BNB, is dramatically undervalued at \$10.06.



Centralized Exchange Landscape

INTRODUCTION

Exchanges are arguably the most important infrastructure providers in the cryptocurrency space. There are currently [2,104](#) cryptocurrencies traded globally across [235](#) exchanges, with new tokens issued regularly. Approximately 20 assets trade over \$50 million daily, with a substantial amount attributable to crypto-to-crypto trades (BTC-to-ETH for example).

CENTRALIZED EXCHANGE CONCERNS

There are many centralized exchanges in the market today. These trading platforms provide invaluable services for investors and the industry as a whole by allowing for organic price discovery. Unfortunately, many exchanges are [suspected](#) of regularly falsifying volumes, trading against customers, and tolerating wash trading.

The Blockchain Transparency Institute [recently examined](#) 131 exchanges and their reported volumes. The report found that [80 of the 131](#) exchanges it examined support wash trading, and that 66% of the volume reported by these exchanges was wash trading. According to the analysis, Binance's entire reported volume is real (no wash trading). In the last month, we've spoken with the largest OTC desks, liquidity providers, and market makers in the crypto industry. Every single firm we've spoken with said that Binance is by far and away the most liquid spot trading exchange.

KEY FEATURES FOR CENTRALIZED EXCHANGES

The following traits make a successful centralized crypto exchange:

1. High liquidity
2. Low fees
3. Fast and fair trade execution
4. Robust safety practices to keep deposited funds secure
5. Well-documented and highly functional APIs
6. Wide variety of assets to trade
7. Support for a number of financial products (leverage, shorting, derivatives)



8. Low regulatory risk
9. High number of fiat currencies supported
10. Large populations of countries that can access the exchange

For purposes of our analysis, we'll compare the [top crypto exchanges by adjusted volume](#), excluding wash trading volumes.

Key Features of Prominent Centralized Exchanges							
Exchange	Fees (highest pricing tier)	Fees (lowest pricing tier)	Daily Trading Volume	Trading pairs	Fiat Currencies	Previously hacked?	Advanced Financial Products
Binance	0.100% maker, 0.100% taker	0.015% maker, 0.030% taker	\$803,572,552	435	UGX, GBP, EUR	No	N/A
Bitfinex	0.100% maker, 0.200% taker	0.000% maker, 0.055% taker	\$400,962,539	330	USD, EUR, GBP, JPY	Yes	Margin trading, Lending, Dark pool
Coinbase Pro	0.000% maker, 0.300% taker	0.000% maker, 0.100% taker	\$159,777,775	61	USD, EUR, GBP	No	N/A
Kraken	0.160% maker, 0.260% taker	0.000% maker, 0.100% taker	\$161,066,450	73	USD, EUR, CAD, JPY, GBP	No	Margin trading, Dark pool
Bitstamp	0.250% maker, 0.250% taker	0.100% maker, 0.100% taker	\$106,295,715	14	USD, EUR	Yes	N/A
Bittrex	0.250% maker, 0.250% taker	0.250% maker, 0.250% taker	\$47,672,353	302	USD	No	N/A

Sources: Exchange websites, [Blockchain Transparency Institute](#), [CoinMarketCap](#), [Diar.co](#)

Based on analysis of the market, it is easy to conclude that Binance is the clear global market leader for spot trading. The exchange offers the lowest fees in the industry, the largest number of trading pairs, and has the most liquidity.

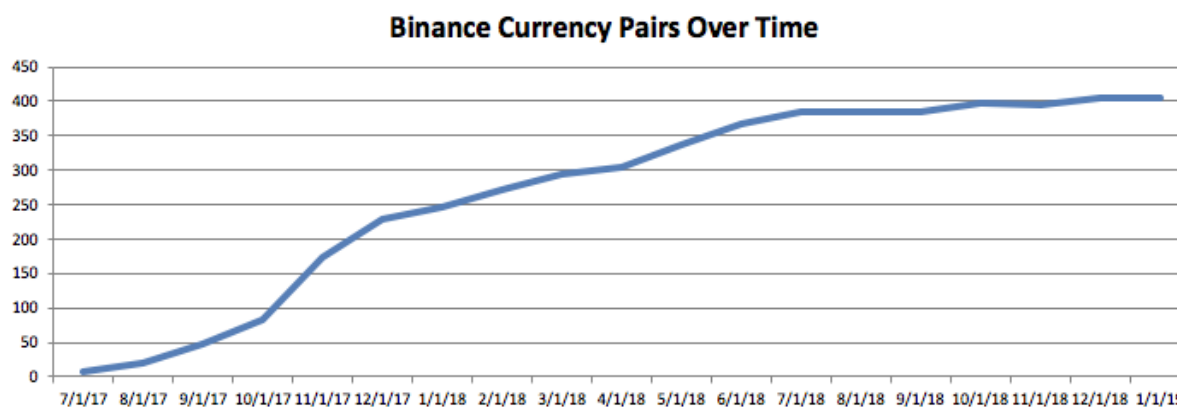
Binance Exchange

Binance is by far the most aggressive crypto exchange. It has exploded over the last 18 months to become the dominant global crypto exchange in terms of volume and daily active users. According to Blockchain Transparency Institute's [December 2018 rankings](#), Binance attracts 361,458 unique daily visitors, whereas [Coinbase](#) attracts 323,409 daily visitors, [Bitfinex](#) 84,666, and [Poloniex](#) 69,620.



ASSET LISTINGS

Binance has grown into one of the most profitable businesses in crypto due in part to the team's willingness to list new assets. The company launched the first version of the crypto-to-crypto exchange with support for just five tokens: BTC, ETH, LTC, NEO, and BNB. Since launching the exchange 18 months ago, Binance has listed [435](#) pairs encompassing 164 tokens and 8 base pairs.



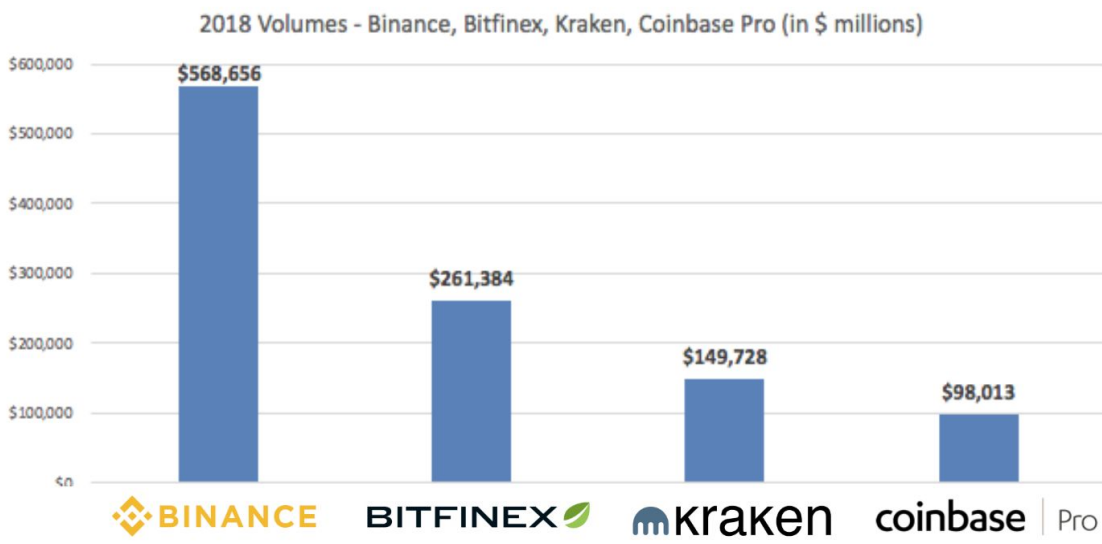
We expect Binance's recent acceleration of [fiat-backed stablecoin](#) (fiat-coin) listings to drive significant new volume to the exchange, which currently offers four fiat-coins as base pair assets: [USDT](#), [PAX](#), [USDC](#), and [TUSD](#). It has been far more aggressive than its competitors in listing [fiat-coins](#), and as full-time crypto investors, we see immense value in being able to trade volatile tokens again price-stable assets.

Note: for more information about stablecoins, please see Multicoin Capital's blog post: ["An Overview of Stablecoins"](#).

VOLUMES OVER TIME

The company rapidly grew monthly trading volumes from \$2.21B in August, 2017 to \$133.35B in January, 2018, representing a 5,925% increase over four months. As the crypto bear market of 2018 depressed prices, liquidity across the industry [also fell](#). By December 2018, volumes on Binance fell 82% from peak to \$23.56B. This is in line with competitors, Coinbase Pro, Bitfinex, and Kraken's volumes were down 84%, 82%, and 75% respectively.

It is worth noting that since Q2 2018, Binance consistently has as much volume as Bitfinex, Coinbase Pro, and Kraken combined. We expect that volumes in cryptocurrency trading will follow a power law distribution and Binance is the clear leader.

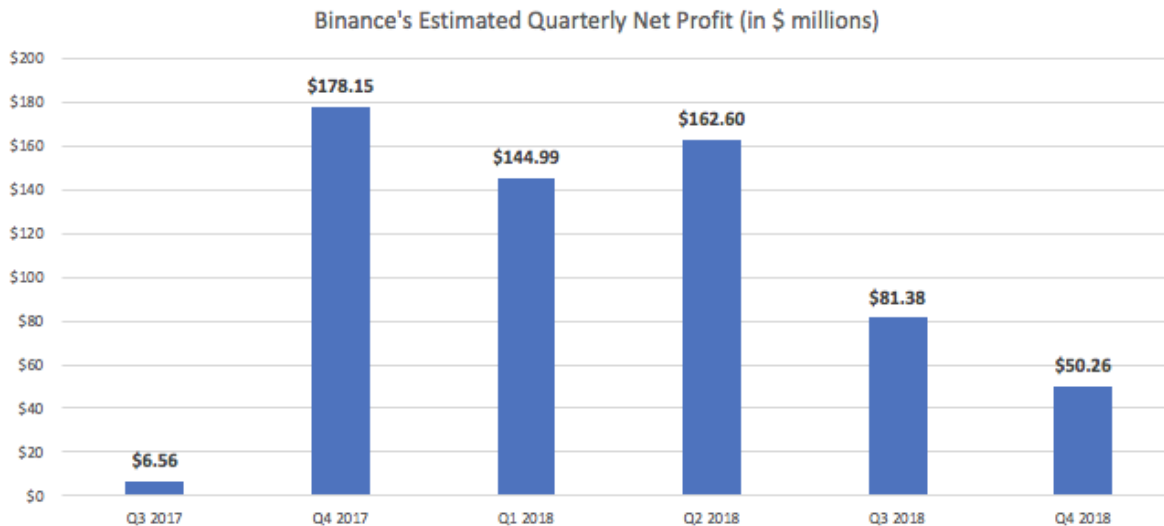


QUARTERLY PROFITS

Each quarter, Binance returns 20% of its net profits to BNB investors via a [buyback program](#). The company will continue to do so until 100 million BNB are burned, at which point the buyback program will end. Using this equation & the number of BNB burned, we can derive Binance’s quarterly profitability over the past 18 months:

Binance’s Quarterly BNB Token Burn Estimates					
Quarter	BNB Burned	BNB Price on Token Burn Date	Estimated USD Burned	Estimated Quarterly Net Profit	Estimated Quarterly Net Profit (BTC Terms)
Q3 2017	986,000	\$1.33	\$1,311,380	\$6,556,900	1,172.82
Q4 2017	1,821,586	\$19.56	\$35,630,222	\$178,151,111	12,891.01
Q1 2018	2,220,314	\$13.06	\$28,997,301	\$144,986,504	17,407.20
Q2 2018	2,528,767	\$12.86	\$32,519,944	\$162,599,718	22,060.04
Q3 2018	1,643,986	\$9.90	\$16,275,461	\$81,377,307	12,434.59
Q4 2018	1,623,818	\$6.19	\$10,051,433	\$50,257,167	13,750.21

In its first 3 months of operations beginning July 14, 2017, Binance earned an estimated \$6,556,900 in net profits. In Q4 2017, Binance took home approximately \$178,151,111 in net profits, exhibiting tremendous growth as crypto prices skyrocketed. Despite the fact that prices fell sharply from January 2018 to July 2018, Binance’s profits remained relatively steady, demonstrating that their go-to-market strategy and marketing plans paid off:



TEAM

Binance has assembled one of the best technical and operational teams in crypto. The organization was built from the ground up with operators who have experience building large-scale, high-performance trading systems for financial institutions. A majority of Binance's executives, including CZ, founded [BijieTech](#) in September, 2015, a company that provides cloud-based systems to exchange operators. That company earned \$5.3 million in revenue in its first year without accepting venture capital or outside investment, and purportedly was cash flow-positive from inception. Below, we provide an overview of Binance's management team:

[Changpeng Zhao, or "CZ", CEO:](#) CZ worked as the Head of Development at Bloomberg Tradebook Futures for four years where he managed the team responsible for Bloomberg's futures trading platform. He then went on to co-found Fusion Systems Ltd. in 2005, a business that builds ultra-low-latency trading systems for brokerage firms. CZ was responsible for deploying trading systems at Credit Suisse, Goldman Sachs, and Deutsche Bank, among others. CZ then pivoted to crypto, where he was the 3rd employee at Blockchain.info. He then transferred to OKCoin, a crypto exchange, where he launched their futures trading platform, proof-of-reserves program, and international site. CZ has extensive experience building trading infrastructure from the ground up, and has been one of the most impressive entrepreneurs we've come across.

[Roger Wang, CTO:](#) Roger began his career as a Tech Leader at Morgan Stanley, where he designed and built a data warehouse and served as a core developer for the algorithmic trading systems that served institutions, such as Blackstone and Wellington Fund. He then went on to work at Nomura Securities where he was an architect for a smart-bond matching engine and a global credit booking,



analytics, and marketing system. The bond system purportedly generates \$100 million per year for Nomura.

Wei Zhou, CFO: Previously Wei served as CFO at Zhaopin.com and Charm Communications, leading both companies through IPO listings on the NYSE and NASDAQ. He also led the acquisition of Grindr, the world's largest LGBTQ+ social networking app, where he currently serves as its Vice Chairman. Wei started his career at Goldman Sachs in Investment Banking, later moving to its Asian Special Situations Group.

Binance Growth Opportunities

ADVANCED FINANCIAL PRODUCTS

The crypto market's infrastructure is improving rapidly and creating opportunities to trade more advanced products and derivatives. As a result of the maturation, more SEC-qualified custodians are coming online, OTC volumes have ballooned (Circle Trade executed [\\$24 billion](#) of OTC volume in 2018), and borrowing opportunities for short-selling are becoming more accessible (Genesis Capital originated [\\$1.1 billion](#) of loans in 2018).

Bitfinex today allows margin trading with up to [3.3x](#) leverage, Poloniex allows up to [2.5x](#) leverage, and Kraken allows up to [5x](#) leverage. Margin trading is a clear opportunity and a logical next step for Binance. Given that Binance is already the dominant exchange without margin trading, adding margin would likely advance their position in the market.

According to CryptoCompare's [November Exchange review](#), spot trading markets make up 75% of crypto volumes, while derivatives markets—such as those on [BitMEX](#) and [BitFlyerFX](#)—comprise the other 25%. However, we expect that to change over the next 12-24 months as crypto markets professionalize. Today, Binance offers no derivatives. These are clear growth opportunities, and Binance is well positioned to offer futures, options, and swaps as the market matures.

BINANCE CHAIN

Since launching in July, 2017, Binance has masterfully executed on its vision to become the world's largest centralized exchange provider. However, the tide is shifting toward [open finance](#) (self-sovereign money) and the [Web3 vision](#) (self-sovereign ownership of data). Hence, on a long enough timescale, the biggest threat to Binance's core business is the emergence of highly scalable,



decentralized exchanges. To that end, it appears Binance is aiming to disrupt itself by building a DEX-chain. In doing so, Binance is unlocking a new growth avenue in the short run while also hedging against existential long-term risk.

Decentralized exchange technology is one of the most exciting innovations in crypto. DEXs allow for zero counterparty risk, superior speed (no need to wait 60 minutes for a deposit), lower costs, and censorship resistance.

The number of centralized crypto exchanges that have been hacked is too large to list in entirety. The most notable, [Mt. Gox](#), lost [850,000 BTC](#), worth \$450 million at the time (over \$3B today), in a hack that sent shockwaves through the entire industry. [Bitfinex](#), another exchange, lost [\\$65 million](#) in a 2016 hack. [Cryptopia](#) was hacked in January 2019, losing [\\$16 million](#) of ETH and various ERC-20 tokens in the process. These events have become so common that they are actually expected. The #1 rule of crypto is “never leave your tokens on an exchange,” otherwise stated as “not your keys, not your tokens.” No matter how secure a centralized exchange is, an exchange which never takes custody of user assets will always be more secure. Due to this fact, Binance has [confirmed](#) that the Binance DEX will support hardware wallets from launch.

While users know they are at risk every time they use a centralized exchange, they continue to do so because the exchanges are a necessary piece of infrastructure for trading. Thus, we can’t overstate the immense value that a successful DEX would bring to the ecosystem. The most important feature of decentralized exchanges is that users maintain control of their cryptoassets at all times. For the first time ever, people all over the world can instantly exchange tokens without any counterparty risk.

We recognize that Ethereum’s token ecosystem is by far the largest and most robust (Etherscan currently [shows](#) 163,036 ERC-20 token contracts). However, decentralized exchanges on Ethereum have [yet to achieve meaningful traction](#). Below, we provide the top five Ethereum DEX volumes over the past 24 hours. The [VWAP](#) for ETH during this period is \$123, implying that the leading Ethereum based DEX trades less than \$1M/day:





EXCHANGE	VOLUME (ETH)	24H CHANGE
 IDEX	6895	+14%
 Bancor	3839	-1%
 Paradex	3650	+777%
 Kyber	3023	+36%
 EtherDelta	489	+31%

Chart Source: [DEXWatch](#)

[IDEX](#), the largest Ethereum DEX by volume, processes [\\$848,085](#) of daily volume. [Paradex](#), the largest [0x](#) relayer, processed [\\$345,670](#) of daily average volume over the past 30 days.

We posit that there are three reasons that Ethereum DEXs have not seen meaningful volume:

1. [Chicken-and-egg](#) problem of bootstrapping liquidity.
2. [Throughput, latency, and fee issues](#) associated with the Ethereum blockchain.
3. [Lack of deterministic order execution](#) because of proof of work (POW) mining, making it difficult for market makers to make markets.

Binance Chain will likely solve each of these problems in one fell swoop. Binance will incentivize market makers to bridge liquidity across Binance's centralized exchange and the on-chain DEX. Thus, DEX traders will be able to leverage Binance's massive existing liquidity pool. Second, Binance Chain will utilize [Tendermint's](#) consensus algorithm that provides much higher throughput, faster block times, and lower time to finality than Ethereum's POW. As a Tendermint-based chain, Binance Chain will finalize transactions in 1 second, enabling performant trading and offering more deterministic trade execution than DEXs built on POW chains. The architecture will likely deter, though not completely eliminate, [front-running](#), [order collisions](#), and other second-order problems associated with trading on Ethereum DEXs.



[Binance DEX Preview 2](#)

Binance Chain will likely offer the best features of the decentralized and centralized exchange models. Binance knows how to build trading engines and user interfaces, and is applying that expertise to build a world-class DEX experience.

In order to trade on the Binance chain, users will need to send tokens to Binance Chain. Because Binance Chain will support the [Inter-Blockchain Communication](#) (IBC) protocol invented by [Cosmos](#), it will support trustless asset transfers for all assets that Cosmos supports. For assets that don't conform to the IBC standard, most notably Bitcoin, we expect Binance will encourage many gateways to bridge assets in as decentralized of a way as possible. Although this model requires more trust assumptions than using IBC, it's more decentralized and robust than a single exchange that holds customer funds. [BitShares](#) and [Ripple](#) pioneered the gateway model, and we see it as a massive benefit that gateways must compete on transparency of user funds, KYC/AML requirements, spreads, deposit/withdrawal fees, and more. [BitGo](#) will likely be the first 3rd-party gateway given that they've already [announced](#) WBTC for use on the Ethereum blockchain.

Many DEX critics rightly observe that even with Tendermint consensus, Binance Chain cannot offer deterministic order execution (DOE), even though a Tendermint-based chain will offer much better guarantees than a proof-of-work chain like Ethereum. Based on this, critics say that high-frequency trading (HFT) firms and many market makers will never trade on Binance Chain. While these criticisms are technically valid, they don't preclude a future in which exchange operators (likely including Binance itself) host order books and match trades off-chain, and then settle trades on-chain afterwards. Combined with some prime brokerage services, this architecture provides the best traits of both CEXs and DEXs, and should simultaneously support HFT firms who demand DOE and individual traders who don't care about DOE. Additionally, nascent technologies like [zk-STARKs](#) from



[Starkware](#) (disclosure: Multicoïn is an investor) already [promise](#) to greatly improve the scalability, the privacy, and the trustworthiness of DEXs. As the technology matures, it is possible that we will see zk-STARK circuits designed specifically to provide DOE for Binance Chain.

FIAT-CRYPTO EXCHANGES

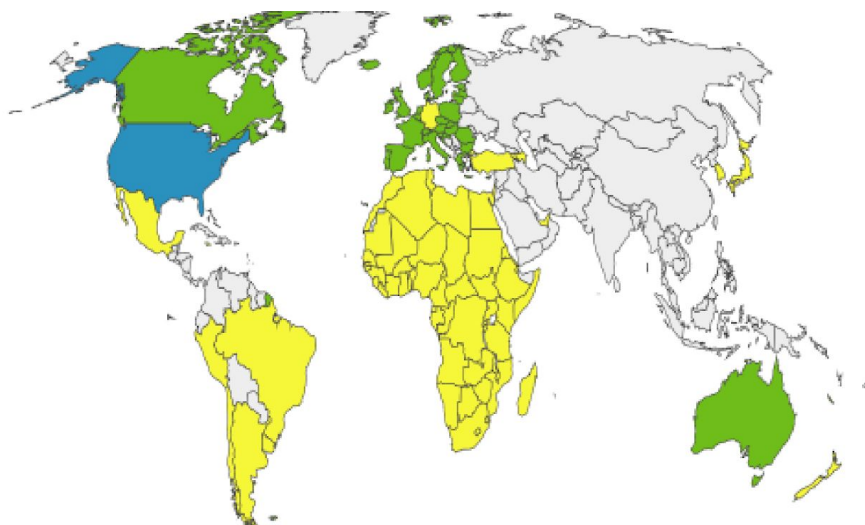
In many countries, government manipulation and poorly performing economies have led to high inflation rates for fiat currencies. This is especially apparent in countries like Venezuela, where the bolivar's current annualized inflation is [1,300,000%](#). In these cases, citizens have very few options:

1. They can keep their local fiat in bank accounts, where it rapidly decreases in value and may be subject to bank freezes and seizures.
2. They can purchase valuable goods like art or jewelry to preserve value. These are difficult to move and secure and are relatively illiquid.
3. They can purchase other fiat currencies, usually on the black market, and store them under mattresses (because of tight capital controls).
4. They can purchase cryptoassets like Bitcoin, Ether, or stablecoins.

In countries like Argentina, purchasing foreign fiat became [the norm](#), as citizens who had lost faith in the Argentine peso bought USD and EUR on the black market to store their wealth.

Cryptocurrencies that are built on open, permissionless blockchains provide a better alternative than keeping one's wealth in paper fiat money. They can be stored far more securely, can be easily transferred across borders, cannot be manipulated by corrupt governments, and are not subject to seizures or capital controls. Exchanges that only offer crypto-to-crypto trades [constitute](#) 66.7% of global spot market volumes, while fiat-crypto markets constitute the other 33.3%. Binance [recognizes](#) the largely untapped opportunity to offer fiat onramps in developing nations. Limited options exist today for most people in the world to access crypto ([LocalBitcoins](#), [Bitcoin ATMs](#)), and Binance's goal is to onboard as many users into crypto as possible.

[Coinbase](#) was the first large player in the fiat-crypto space, and they have commenced expanding their offering to new users. Today, Coinbase is available in [42 countries](#), including one in Asia, 38 in Europe, two in North America, and one in Australia. However, there are many countries that are underserved by Coinbase's fiat offerings (particularly in Southeast Asia, Africa, and South America). Binance is targeting these underserved people. For example, [Binance Jersey](#) currently supports [58 jurisdictions](#), which include Argentina, Brazil, South Korea, and Japan, none of which are currently served by Coinbase. The total population of the 58 jurisdictions supported by Binance Jersey is [1.4B](#).



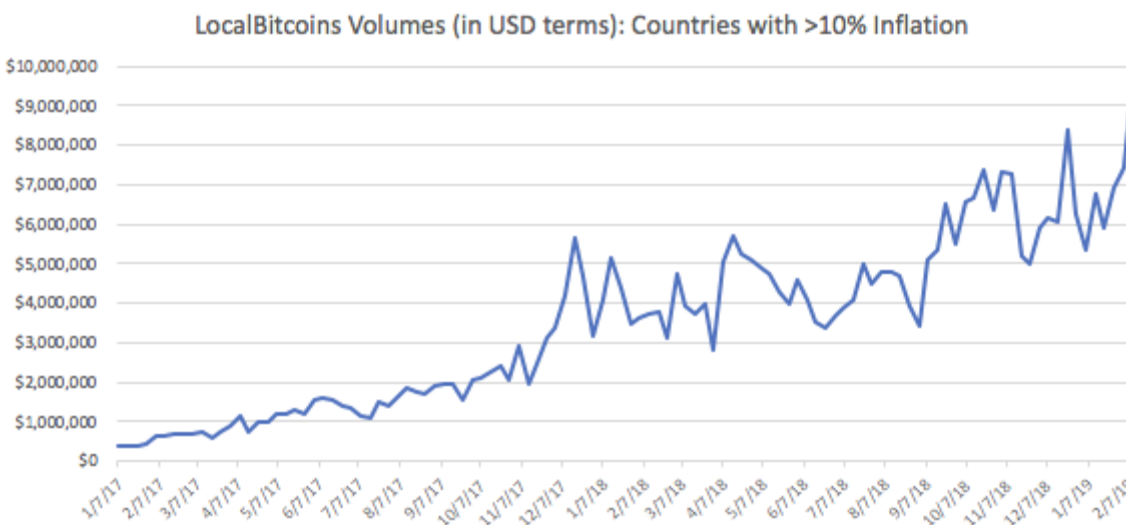
Supported Nations: Binance Fiat-Crypto Exchanges (Yellow), Coinbase Fiat-Crypto Exchanges (Blue), Both (Green)

[Binance Uganda](#), which operates across the entire African continent, aims to support the [1.3B](#) people of the African continent. While this is not yet feasible given that users need to have Ugandan Shillings, we expect Binance to add support for more African currencies quickly.

P2P Bitcoin volumes in South America [dramatically increased](#) over the course of 2018. In countries such as Argentina and Venezuela, citizens are increasingly looking to exit their rapidly inflating local fiat currencies. We see onboarding South American citizens to crypto as a massive expansion opportunity for Binance. Thus, we expect Binance to launch a fiat on-ramp with support for several South American currencies in 2019.

Collectively, all of the crypto exchanges around the world are serving less than half of the global population. And in general terms, we believe the customers who are not yet being served are the ones who need crypto the most. The fiat-crypto opportunity represents a massive expansion of Binance's addressable market.

By bringing fiat-crypto exchanges to smaller countries, Binance is capturing the long tail of users in nations that benefit the most from crypto. Binance's fiat-crypto exchange in Uganda reportedly signed up over [40,000](#) users in its first week. Within 24 hours of launch, Binance Jersey became [backlogged](#) with KYC verifications. Along with [increasing LocalBitcoins volumes](#) in smaller countries ([Argentina](#), [Colombia](#), [Venezuela](#)), we now have ample evidence that the residents of these countries are anxious to get their hands on crypto, and Binance is positioning to capitalize on this opportunity. Below, we provide a sum of the weekly LocalBitcoins volumes (in USD terms) in 5 countries that experienced [>10% inflation](#) in 2018: Venezuela, Argentina, Iran, Turkey, and Egypt. As BTC fell 74% over the course of 2018, total weekly LocalBitcoins volumes in USD terms rose 52%.



Data Source: [Larry Cermak, The Block](#)

Regulatory Arbitrage

Binance has demonstrated a stellar track record with regards to regulatory arbitrage. Because of the entirely virtual nature of crypto (no inventory or massive immobile infrastructure), Binance can easily manage operations anywhere in the world. The team can, and already has, travelled the globe in search of the most friendly regulatory environments in which to operate. Binance's team has [stated](#) that the company is a decentralized organization with no headquarters. Binance has [IP registered in BVI](#) (British Virgin Islands) and in other locations, ensuring that no single regulatory body can shut down its business. Most importantly, Binance [famously](#) doesn't have any bank accounts for its flagship crypto-to-crypto exchange, making it extremely challenging for an individual government to seize Binance's financial assets.

There are three major types of regulatory risk that all crypto exchanges face: the risk of trading unregistered securities, the risk of violating money transmission laws (including KYC/AML), and the risk of front-running customers. We'll touch on all three forms of risk in this section.

TRADING UNREGISTERED SECURITIES

Given the breadth of assets that exchanges trade, it's likely that every major crypto exchange has been and still engages in trading unregistered securities. Despite this, none have stopped. In fact, what has been the most conservative exchange, Coinbase, has recently gotten more [aggressive](#) with asset listings. Given this, we don't think Binance is more exposed to this form of risk than its



competitors. And given how decentralized Binance is as an organization, it's very difficult for regulators to enforce meaningful actions against Binance, reducing Binance's risk relative to its peers.

MONEY TRANSMISSION LAWS

Next, let's examine Binance's approach to money transmission laws.

Binance doesn't explicitly ban users based on their IP addresses. Other exchanges, like Kraken and Poloniex, [block](#) users with IP addresses that originate in New York State and Washington State (these states have strict money-transmission laws). Binance [doesn't impose](#) any bans on these users, and although the exchange provides a disclaimer to follow local laws and regulations, it does very little to restrict customer trading activity in these locations.

Although Binance is famous for not requiring KYC for some customer accounts (however, their withdrawals are capped at 2 BTC/24 hours), Binance adheres to KYC/AML laws more rigorously than most of its critics recognize. In fact, Binance has [partnered](#) with industry-leading security firms, [Refinitiv](#) and [Chainalysis](#), to strengthen KYC/AML compliance and aggressively monitor suspicious activity on the platform. Other than the smallest accounts, Binance generally matches its peers in compliance. Given the risk, why does Binance even bother supporting the smaller accounts?

We suspect that Binance expects these accounts to be used by users in third-world countries who are subject to strict capital controls. As Binance CEO CZ recently [said](#) on the Unchained podcast: *"Our whole point is to increase the freedom of choice. Because of the new technology it has a few uncertainties in terms of regulations or what the regulators want to do with it but I'm not against or for regulation. We just want to help increase this adoption of crypto around the world where we can."* Recognizing the added risk associated with these accounts, Binance does actively monitor these accounts, and will freeze assets for non-KYC'ed accounts if they engage in suspicious behavior.

To our knowledge, Binance only knowingly violates some rules when they believe it's in the users' best interests. The company is dedicated to fighting illegal activity on the exchange. For example, in October, 2018, a user on WEX, a re-branded version of now defunct BTC-e, a crypto exchange known for laundering money, [attempted to send](#) 93,000 ETH to Binance. Almost immediately, Binance [froze](#) the identified accounts and announced plans to work directly with regulators in order to stamp out the potential fraud. Cryptopia recently endured a [hack](#) of nearly \$16 million of Ether (and various ERC-20 tokens). The attacker initially [attempted to send](#) the funds to Binance, but instead [found](#) that their ETH had been frozen by the Binance team.



PROVABLE EXCHANGE FAIRNESS

In order to prove they are operating above board, many heavily regulated exchanges (Gemini, Coinbase) are required to “verifiably prove” they are not trading against or front-running their customers. They must also prove that they are not allowing wash trading. Because of the fact that all DEX trades are transparent and verifiable on-chain, it’s clear that Binance’s new DEX is a great alternative for proving that the exchange is operating legitimately.

For example, if users’ trades are being manipulated on a DEX, it is easily verifiable by looking at data on the blockchain. This is possible because blockchains’ ledgers are immutable, openly accessible, and distributed among tens of thousands of computers around the world. While centralized exchange operators can mislead regulators by altering data in their centrally controlled databases, DEXs make that impossible. The open nature of blockchains deters fraud better than any regulator or centralized exchange operator can. Accordingly, Binance’s DEX will be better at proving legitimacy than alternative, “more regulated” exchanges, which are inherently hosted on centralized servers.

Risks

COMPETITORS ACCELERATE TOKEN LISTINGS

Binance’s competitors, such as Coinbase, Bitfinex, and Kraken, have historically been conservative in listing new assets. The consumer products on these exchanges currently support 16, 122, and 20 assets respectively.

As these trading platforms begin to feel pressure to grow, they will likely ramp up token listings. Coinbase began aggressively [listing new assets](#) on its Coinbase Pro product in December to remain competitive, however Coinbase has failed to attract any significant volume on these new listings.

In fact, Binance remains the top exchange for CVC, LOOM, MANA, and GNT despite Coinbase listing these assets. It is unlikely that Coinbase and other exchanges listing more assets would be a meaningful threat to Binance.



Asset Symbol	Date Added to Coinbase Pro	Coinbase Pro Volume from Launch Date to Jan. 31	Global Volumes in Same Period for Each Asset	% of Global Volume Attributable to Coinbase Pro
CVC	Dec. 10	\$462,090	\$30,090,701	1.54%
LOOM	Dec. 10	\$562,490	\$66,397,836	0.85%
MANA	Dec. 10	\$744,785	\$144,464,544	0.52%
DAI	Dec. 19	\$2,354,519	\$356,359,276	0.66%
GNT	Dec. 19	\$719,755	\$256,677,541	0.28%
Totals	-	\$4,843,639	\$853,989,898	0.57%

Sources: Coinbase Pro API, [Coin Metrics](#)

Binance has already captured the liquidity pool for many of these longer-tail assets. Thus, exchanges that attempt to offer trading pairs for these tokens will likely find themselves late to the party, and unable to catch up to Binance's leading market share. There are simply no real reasons for traders to leave Binance's liquidity pool to move to a smaller liquidity pool with higher fees.

REGULATORY RISK

While Binance has been successful in executing its regulatory arbitrage strategy thus far, this may not always be the case. Binance's legal structure is rather opaque, so it may attract the attention of global regulators. Given BitMEX's recent [decision](#) to shut down several United States customers' accounts, exchanges domiciled outside the U.S. are not immune to regulation. Moreover, Bitfinex elected to [stop serving](#) U.S. customers entirely in late 2017.

Many of the tokens that have been listed on Binance previously conducted ICOs, and thus they may have conducted unregistered securities offerings. While this wouldn't be a problem if Binance restricted its users to outside the U.S., it places minimal restrictions on who can trade on the exchange. In fact, Binance revealed one month after its initial launch that [23.2%](#) of its exchange visitors hailed from the U.S. As the global regulatory crackdown on crypto continues, Binance's exchange operation, which has largely avoided regulatory oversight and government action, faces some risk.

Beyond the exchange's regulatory risk, there is a chance that BNB will be deemed an unregistered security by the [U.S. Securities and Exchange Commission](#). Through Binance's buyback-and-burn token model, BNB holders have a claim on the cash flows of the business. While Binance is decentralizing its exchange operations by introducing the DEX, we acknowledge that BNB is possibly an unregistered security. Fortunately for BNB holders, the token is [not traded](#) on any large exchange which the S.E.C.



can easily compel to delist the token. Additionally, Binance is rapidly decentralizing and we expect it will in the future meet the requirements under the [Hinman test](#) (as per the [SEC's comments](#) on Ethereum starting out as a security but no longer being a security).

BINANCE CHAIN IS UNTESTED

While we are excited about the imminent launch of Binance Chain, we recognize that it is a complex and experimental system. [Tendermint](#), Binance Chain's chosen consensus algorithm, has not yet been released to production, and its security assumptions may not hold in practice.

There are few teams in the world that are capable of building a decentralized exchange from scratch and Binance is one of them. Given Binance's fantastic execution in establishing the world's largest crypto exchange, we remain optimistic that they will ship a great DEX product. However, there is always execution risk when launching a new public blockchain.

Beyond the technical risk, Binance's DEX may suffer the same fate as existing decentralized exchanges. Thus far, decentralized exchanges have yet to gain any meaningful traction, and while we contend the reason is Ethereum's performance (high latency, slow block times, and transaction fees), this may not be the root cause. Alternatively, the reason may be that users don't actually care about custodialing their own funds and remaining anonymous. Instead, they may only care about speed, performance, low fees, and liquidity. In March, CZ [told Bloomberg](#) that the DEX will operate more slowly than the centralized exchange for the foreseeable future. As a result, we expect Binance's centralized and decentralized exchanges to co-exist and serve different types of customers.

ANOTHER LARGE EXCHANGE LAUNCHES A DEX

Binance is the first, large centralized exchange to shift its focus entirely to building a decentralized blockchain. While others such as [Bitfinex](#) ([EOSfinex](#)) and [Coinbase](#) ([Paradex](#)) have also begun launching decentralized exchanges, their goals are to prioritize centralized exchange operations over the DEXs. Binance is specifically looking to [disrupt itself](#) by porting as many of its existing users over to the DEX as possible, diminishing its centralized exchanges' customer base in the process. Binance is embracing DEXs in a way that no one else has.

A major reason we are bullish Binance Chain is because traders will be able to leverage the centralized exchange's massive liquidity pool. However, if another large centralized exchange (Poloniex, Bitfinex, Bittrex) decides to launch their own blockchain with an on-chain DEX, they could potentially outcompete Binance on chain performance and fees. Further, if they incentivize bridged



liquidity across their centralized and decentralized exchanges, they might also be able to bootstrap volumes on their DEX.

Binance Coin (BNB) Utility and Valuation

Binance Coin (BNB) is currently an [ERC-20 token](#) issued on top of Ethereum. Binance launched an ICO for BNB on June 26, 2017, raising \$15 million. The team distributed the 200,000,000 tokens in the following manner:

1. Binance retained 80,000,000 BNB (40% of the total supply) in order to fund exchange operations. These tokens vest on a 4-year schedule: 20% released at launch, with a subsequent 20% release each year.
2. 100,000,000 BNB (50% of the supply) were sold to the public in the ICO.
3. 20,000,000 BNB (10% of the total BNB supply) were allocated to angel investors.

The long-term non-speculative value of BNB tokens is a function of:

1. Binance's net profits which are primarily determined by the volume and fees on Binance's crypto exchange and various fiat onramp exchanges
2. Utility of BNB as a discount token and payment token on Binance's CEX
3. Number of BNB held by users
4. The volumes and the parameters of the Binance Chain DEX

Let's review these in order.

CASH FLOW

Binance has committed to using 20% of its net profits to execute token buybacks of BNB and has approved a buyback program for up to 100M BNB tokens. This represents 50% of total BNB in existence. It is key to note that BNB is not your typical share in a company and that there are additional factors to consider in the valuation. Once the 100M BNB are burned, there is no guarantee that Binance will continue to return cash to investors. However, this 100M token buyback program is only 10.8% complete and is likely to remain active through the course of multiple market cycles.



In 2018 Binance returned [\\$88M](#) to BNB investors through token buybacks. The current, fully diluted valuation of the BNB token is [\\$1.9B](#) which implies a 4.6% backwards looking yield. Profits have decreased alongside broader crypto prices, in Q4 of 2018 Binance returned [\\$10M](#) to investors for an annualized yield of 2.1%.

We are impressed with Binance’s ability to maintain profitability and continue to return cash to investors even through the depths of a historic bear market. We expect that Binance will be able to grow volumes substantially with the addition of fiat-crypto exchanges.

DISCOUNT AND PAYMENT TOKEN

Binance pioneered the [discount token model](#), which was subsequently copied by exchanges such as [Huobi](#), [Bibox](#) and [KuCoin](#). Binance users can purchase BNB tokens and use them to pay trading fees on the platform in order to receive discounted fees. Below is the discount schedule for Binance users who choose to use BNB for trading fees on the centralized exchange:

	1st Year	2nd Year	3rd Year	4th Year	5th Year
Discount Rate	50%	25%	12.50%	6.75%	no discount

Pursuant to [Binance’s whitepaper](#), the discount rate was [adjusted](#) from 50% to 25% on July 19, 2018, meaning that users who choose to pay trading fees with BNB currently receive a 25% discount on their trades on Binance. We estimate that the majority of fees paid to the Binance CEX are paid in BNB tokens due to the large economic incentive to do so. Users who pay trading fees on the Binance DEX with BNB will [receive](#) 60% discounts on their fees. Thus, we believe that a majority of trading fees on the Binance DEX will also be paid in BNB tokens.

BNB HELD BY USERS

Users receive 20% trading fee commissions for referring friends to Binance. For accounts holding 500 BNB or more, the rate [increases to 40%](#).

From our research talking to retail and professional traders, we have found that users who pay for exchange fees using BNB tokens do not buy them at the time of trade but rather hold some BNB to pay for future trading fees. This provides a velocity sink for the BNB token.

Moreover, users who hold large amounts of BNB receive additional discounts on trades (otherwise known as VIP status). This provides a sound incentive for large traders to purchase BNB tokens from



the open market and hold them:

Tier	BNB Balance	Past 30-Day Trading Volume	Maker	Taker
General	0 BNB	<100BTC	0.100%	0.100%
VIP 1	50 BNB	≥100 BTC	0.090%	0.100%
VIP 2	200 BNB	≥500 BTC	0.080%	0.100%
VIP 3	1,000 BNB	≥4,500 BTC	0.070%	0.090%
VIP 4	2,000 BNB	≥10,000 BTC	0.060%	0.080%
VIP 5	3,500 BNB	≥20,000 BTC	0.050%	0.070%
VIP 6	6,000 BNB	≥40,000 BTC	0.040%	0.060%
VIP 7	9,000 BNB	≥80,000 BTC	0.030%	0.050%
VIP 8	11,000 BNB	≥150,000 BTC	0.020%	0.040%

[Binance VIP Levels](#)

BNB is one of the few layer-2 tokens with well-designed token economics. The Binance team [is continuously seeking to provide](#) additional utility to BNB, and it's clear that they are devoted to providing value for BNB holders.

BINANCE DEX

BNB is inherently a “centralized” Layer-2 token of the Binance company. Binance controls cash flows to BNB token holders without providing audited financial statements, creates new use-cases for the token on their proprietary exchange, and has unilateral control over how they use their vested tokens. In an attempt to decentralize BNB and the core exchange, Binance is creating [Binance Chain](#), a blockchain with a built-in decentralized exchange.

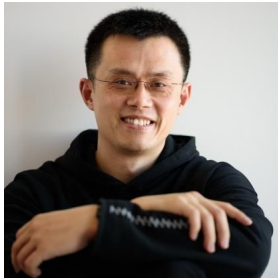
Binance Chain will enable new use-cases for BNB tokens. Traders will be incentivized to hold BNB in order to trade on the DEX (the token will be used to pay discounted transaction fees to validators). High frequency traders, market makers, and arbitrageurs will likely purchase and hold large amounts of BNB in order to trade several thousand times a day. We expect validators on Binance Chain will have to stake BNB in order to vote on DEX coin listings, process trades, and earn transaction fees, transforming BNB into a yield-generating asset.

Everyone in crypto knows that the exchanges are tremendously profitable, but no one other than the equity owners of exchanges have realized those profits. For the first time, BNB will allow users to not only reduce their own trading fees, but also allow users to directly participate in the economics of the platform without any barriers.



BINANCE'S BET ON BNB

Counterintuitively, if Binance DEX successfully disrupts Binance's CEX, Binance stands to generate even more revenues, despite cannibalizing its largest revenue source. Because Binance holds BNB, they will likely run validating nodes on the Binance Chain and collect trading fees as validators on the Binance Chain.



[Binance CEO CZ](#): *"From an earnings standpoint, Binance DEX will not directly increase profitability for Binance, but it will certainly increase the utility of BNB in a big way. That should be good for BNB holders. Binance is also a larger holder of BNB, so we benefit the same way as all BNB holders. The more people using Binance Chain, the more value is created, or the more successful we all become".*

Binance is betting its future on BNB, and in doing so aligning itself with its users in a way that no other organization ever has. BNB is the mechanism by which Binance transforms from a company into a decentralized autonomous corporation (DAC).

Conclusion

Binance has been the fastest-growing crypto exchange over the past 18 months. Exchanges are one of the few businesses that have strong network effects because liquidity often centralizes into large pools. Binance has masterfully executed regulatory arbitrage thus far, and the team's jurisdictional flexibility is one of the major reasons Binance has been so successful. Instead of slowing down, Binance is launching ambitious new growth initiatives to strengthen their network effects. The two most important such initiatives are: 1) launching fiat currency support—which will be launching in 10 nations across five continents in 2019; and 2) releasing Binance DEX, a powerful new decentralized exchange (DEX), which we expect will become the dominant DEX shortly after launch in the first half of 2019. Binance's leadership sees the enormous opportunity in front of them and is moving quickly to conquer the market before anyone else can.

BNB is the best example of the discount token model we've come across. Discount tokens are elegantly designed because increased exchange usage should lead to an increase in the price of the token. Additionally, BNB token holders have a claim on Binance's cash flow (they have received [\\$125M](#) in cash flows through token buybacks over the past 1.5 years since Binance was launched). Binance Chain will likely diminish the centralized Binance exchange revenues over the long-term, but



the new DEX is actually good for BNB token holders. BNB holders will likely stake their tokens to process trades on Binance Chain, transforming BNB into a yield-generating asset.

In summary, Binance's team has designed an extremely compelling long-term vision for the company. Binance Chain and the introduction of fiat-crypto exchanges are massive near-term catalysts for BNB holders (through yield-generating staking and increased revenues for Binance). We expect the Binance DEX and Binance CEX to serve different types of customers in the near-term, but that a majority of Binance's trading volumes will eventually migrate to the DEX.

For these reasons, we are bullish on BNB at [current valuations](#) (\$10.06), and expect Binance Chain to host the de facto DEX for the blockchain-enabled [Web3 Stack](#).