SmartMoney/Enigma Research Note

September 14, 2021

Balancer ($BAL)

- TYPE: DEX, AM
- CHAIN(S): Ethereum (Polygon, Arbitrum)
- CIRCULATING SUPPLY: 44.6M
- MAX SUPPLY: 100M
- TVL: $3.33B
- MARKET CAP, FDV: $2.6B
- CONTRACT ADDRESS:
- 0xba100000625a3754423978a60c9317c58a424e3d

Product Overview

Balancer is a decentralized exchange, or DEX, that customizes automated market makers, or AMM, to operate digital asset liquidity pools like index funds. Balancer liquidity pools are non-custodial and can aggregate several assets by assigning them weights so their prices automatically adjust to supply and demand. Balancer recently launched v2 that further innovated its custom AMM framework to enable liquidity providers, or LPs, to earn returns with a variety of strategies. The protocol's latest version continues its goal to be the most liquid exchange by creating the best platform for liquidity providers.

Like traditional asset markets, digital asset liquidity takes many forms for distinct purposes. Unlike other DEX platforms, Balancer offers customization of Smart Pools, or custom AMM smart contracts that serve the different stages and users of digital asset markets.

Why it's interesting

Product

Balancer derives its AMM framework from an N-dimensional invariant surface, rather than the more common invariant curve. This means that Balancer can price assets in a multi-asset liquidity pool to increase capital efficiency. Additionally, Balancer LPs can start, customize, and maintain their own liquidity pools for many purposes. Balancer traders will rebalance a liquidity pool according to the custom AMM pricing formula, like an open-ended index fund.

The core Balancer AMM formula assigns weights to pooled assets to enable automated pricing. Different weights can optimize pricing for several uses, including:

- Stable assets, to maintain price near parity;
- Liquidity Bootstrapping Poos, to offer incentive pricing to generate demand for a new project's token; or
- Custom Pools, to maintain specific price dynamics for a portfolio of assets.

These strategies can be customized in Balancer's Smart Pools to optimize for LPs or traders. Smart Pools with incentive pricing can increase demand for a new token if traded for a target token. Traders benefit because they can earn arbitrage profits while the new token project enjoys quick liquidity growth. An investment manager can restrict access to a custom pool with specific pricing parameters to precisely maintain asset balances.

Balancer V2 pools are unique relative to comparable DEXs because they do not maintain asset balances. Instead, Balancer V2 holds all balances in the Vault, a smart contract that aggregates liquidity across the platform. The Vault enables highly complex multi-asset pair exchanges at low cost. Because all balances are managed by one smart contract, less Ethereum gas is required to exchange assets because two or more pools are not required to interact. Fewer smart contract interactions per trade means more trades can occur with Balancer. As a result, Balancer's model is well suited for other decentralized applications to trade in volume, or high-frequency trading algorithms to seek alpha.

Governance

Decentralized governance is an ongoing process for the Balancer protocol. Currently, BAL holders can propose and vote on protocol governance items, off-chain. After approval, Balancer changes are recorded on the Ethereum blockchain with a multi-signature wallet. The wallet's signers are elected by BAL holders and must uphold specific Signer Duties to maintain their position. The multisig does not hold nor control Balancer LP funds and cannot make decisions without governance votes. While controlled by a democratic process, the multisig is a temporary solution until Balancer launches a decentralized autonomous organization, or DAO.

Governance participants must use BAL tokens to vote on protocol improvements. To vote, participants must hold BAL tokens or Balancer Pool Tokens, signifying ownership of a Balancer liquidity pool with BAL. If a participant wants to propose or vote on an item, BAL holders can delegate their staked tokens to their address. This way, an external partner can propose or pass an idea without the need to purchase BAL tokens. Anyone delegated tokens must collaborate with the BAL owner, which maintains BAL owner control over governance.

Balancer uses the Snapshot governance application to hold votes on protocol decisions. Balancer developed the Snapshot application to mitigate voting manipulation risks by recording participants' token balances at a point in time. Governance participants then stake BAL tokens to vote based on their balances as of the snapshot. By using a historically verifiable reference, malicious participants cannot instantly borrow BAL tokens to win a vote. Balancer's Snapshot innovation proved to be so successful for decentralized governance that the application now independently serves multiple decentralized applications.

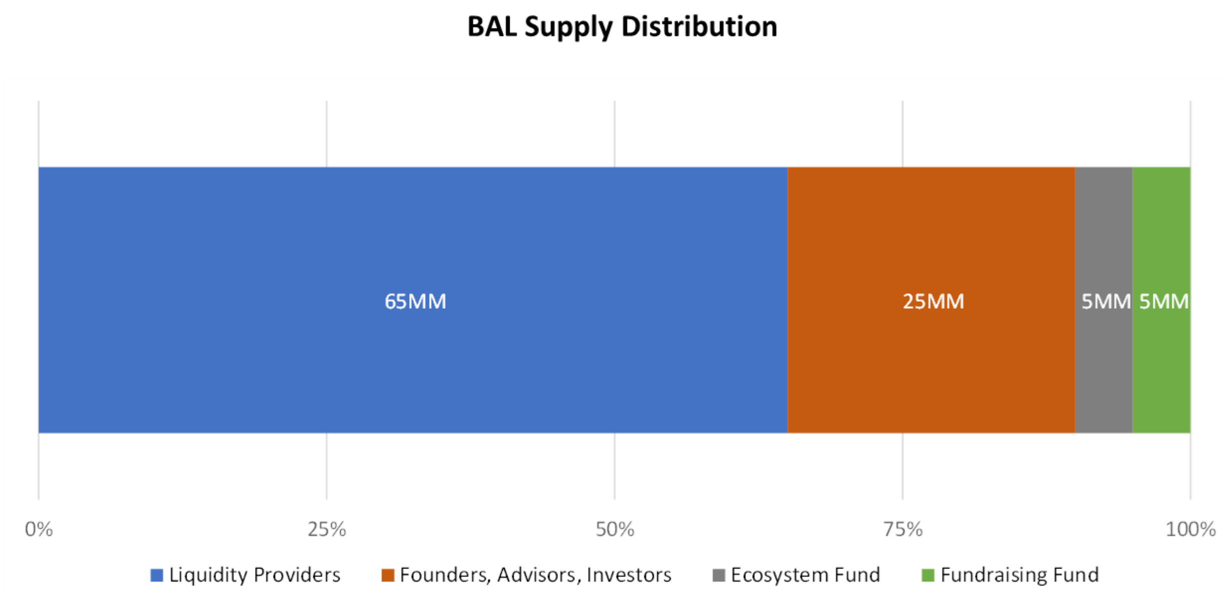
TOKENOMICS

Token Supply

The Balancer Governance Token, or BAL, launched on 6/22/20 after an initial fundraising round. The Seed Round raised $3MM for Balancer and distributed 5MM BAL tokens to four investors led by Accomplice and

Placeholder. After that, a two-part Series A raised $12MM from Alameda Research, DeFiant, and Three Arrows Capital, among other investment firms.

The BAL launch also marked the beginning of BAL emissions to LPs. The protocol team planned to distribute 65MM BAL tokens to LPs over nine years. At that point, the total BAL would reach its 100MM token supply cap. The entire BAL supply will be distributed to platform participants, investors, and builders.



BAL Token,
Balancer Documentation: https://docs.balancer.fi/core-concepts/governance/bal-token#bal-token-supply-and-distribution

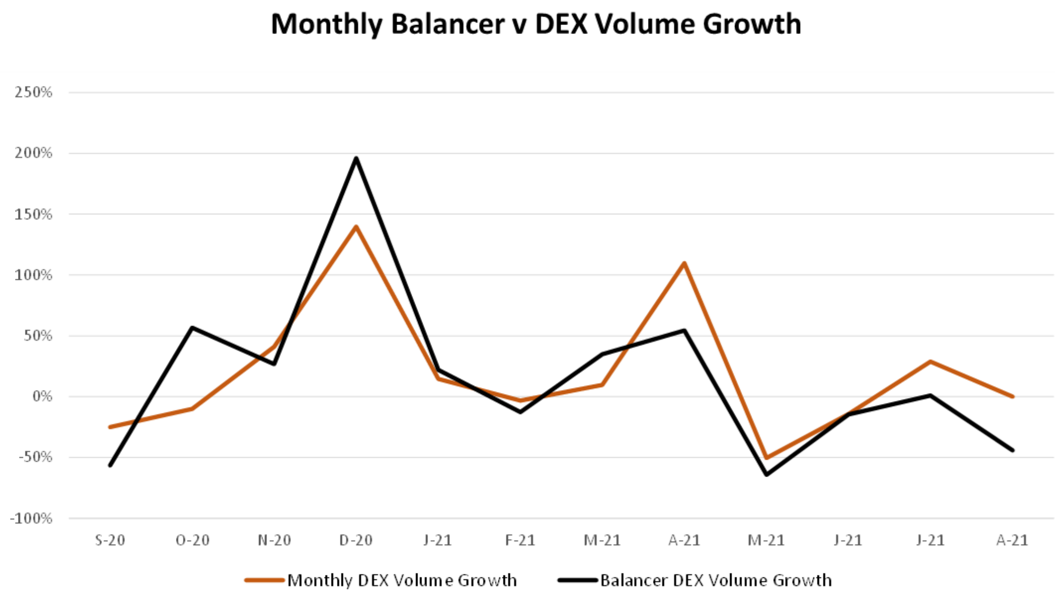
Currently, an estimated 45MM BAL tokens have been created. Unlocked and circulating BAL supply is roughly 10MM BAL with 34MM BAL are locked or vesting. Based on the 100MM maximum supply, about 55MM tokens are yet to be created and rewarded to LPs. At this rate, the Balancer protocol is (ahead/behind) the original BAL distribution schedule.

Value Accrual

Traders pay a percentage of the asset they receive when they execute a trade with Balancer. Like Balancer V1, all trade fees on V2 accrue to LPs. The platform's governance participants, however, can vote to adjust the share of trading fees allocated to the protocol. Instead of increasing the fee rate traders pay, a protocol fee would be taken as a percentage of LP fees. While LPs continue to earn BAL governance tokens, voting to reduce their revenue would not align with their interests.

Balancer's trading fees dynamically adjust to supply and demand per asset. In March 2021, Balancer partnered with Gauntlet to create and maintain trading fee algorithms. Dynamic fee rates enable Balancer and Gauntlet to adjust the take rate to market conditions. When demand is low, Balancer can reduce fees to attract traders. Similarly, if liquidity is low, increased trading fees can attract LPs with competitive expected returns.

Flash loans, on the other hand, can generate fees directly to the Balancer protocol. Flash loan users pay a percentage of the assets used in the loan to the Balancer protocol fee smart contract. Protocol fee usage is determined only by governance votes, regardless of the source. Current flash loan fees and Protocol Fees are set to zero.



Monthly DEX Volume by Project. @hagaetc, Dune Analytics: https://dune.xyz/queries/1847/3261

Balancer exchange revenues over the past year indicate that dynamic fee rates did not offset market effects to platform volume. Over the same period, Balancer volume changed in line with total DEX volume while fees stabilized. With 2021 volume lagging the DEX market, it is unlikely Balancer will break this pattern in the near-term.

Valuation

Historical Balancer valuations provide a useful framework for near-term expectations. Balancer's lack of fee accrual to BAL holders eliminates dividend yield as a value driver. Because Balancer's mission is to attract LPs, it is unlikely governance participants will vote to re-allocate LP fees to the protocol or BAL holders in the near-term.

Revenue Model: Balancer

Fee Pct to Token Holders	0%	*- No Balancer exchange fees accrue to BAL holders; Flash Loan fees are set to 0%*
Fee Pct to Liquidity Providers	100%	*- Only LPs receive Balancer exchange fees*
		**Model includes data through 9/13/21*

Monthly		Historical												
Month End		9/30/20	10/31/20	11/30/20	12/31/20	1/31/21	2/28/21	3/31/21	4/30/21	5/31/21	6/30/21	7/31/21	8/31/21	9/30/21
Platform Volume	USD, MM	**760**	**330**	**518**	**656**	**1,943**	**2,371**	**2,068**	**2,788**	**4,305**	**1,535**	**1,310**	**1,323**	**738**
Growth			-57%	57%	27%	196%	22%	-13%	35%	54%	-64%	-15%	1%	-44%
Platform Fees	USD, MM	**12**	**3**	**2**	**2**	**5**	**7**	**6**	**8**	**11**	**4**	**4**	**4**	**2**
Growth			-79%	-18%	6%	130%	45%	-14%	27%	40%	-67%	-3%	24%	-48%
Fee Rate		**1.6%**	**0.8%**	**0.4%**	**0.3%**	**0.3%**	**0.3%**	**0.3%**	**0.3%**	**0.3%**	**0.2%**	**0.3%**	**0.3%**	**0.3%**
Fee Pct to BAL Holders		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fee Pct to LPs		1.6%	0.8%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%
Total Value Locked	USD, MM	**543**	**379**	**499**	**660**	**972**	**1,507**	**2,400**	**2,980**	**2,422**	**1,578**	**2,721**	**3,166**	**3,335**
Growth			-30%	32%	32%	47%	55%	59%	24%	-19%	-35%	72%	16%	5%
Circulating Supply, Estimated	Tokens, MM	8	8	9	10	11	11	11	11	11	11	11	11	11
Growth			3.6%	11.8%	13.0%	4.1%	-0.2%	0.3%	0.0%	0.1%	-0.1%	0.0%	0.0%	-0.1%
Average Price		$18.54	$13.91	$12.41	$13.24	$19.13	$39.52	$48.71	$56.06	$50.58	$23.01	$20.44	$25.87	$30.43
Monthly Change			-25%	-11%	7%	44%	107%	23%	15%	-10%	-55%	-11%	27%	18%
Market Cap, Average	USD, MM	**$147**	**$114**	**$114**	**$137**	**$207**	**$426**	**$527**	**$606**	**$547**	**$249**	**$221**	**$279**	**$329**
Monthly Change			-22%	0%	20%	50%	106%	24%	15%	-10%	-55%	-11%	27%	18%
Fee Pct to BAL Holders		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Dividend to BAL Holders		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dividend per BAL Token		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Price/Sales		**12.2x**	**44.9x**	**54.9x**	**62.6x**	**40.9x**	**58.3x**	**84.2x**	**76.1x**	**49.1x**	**67.7x**	**62.2x**	**63.5x**	**143.0x**
TVL/MC		**3.7x**	**3.3x**	**4.4x**	**4.8x**	**4.7x**	**3.5x**	**4.6x**	**4.9x**	**4.4x**	**6.3x**	**12.3x**	**11.3x**	**10.2x**
Dividend Yield		**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Balancer fees primarily drive BAL price compared Total Value Locked. Because BAL holders do not stake BAL to earn fees or other yield, TVL does not indicate future BAL value. Platform fees, however, accrue to LPs, which should incentivize them to provide more liquidity as fees grow. More liquidity on Balancer should increase volume as slippage and fee/transactions decrease. As volume grows, LPs should earn more fees. This cycle should continue to compound until Balancer's liquidity grows. Total Value Locked is the result of LPs increasing deposits to maximize returns, so TVL lags platform performance.

Competitive Landscape and Recommendation

In a deeply competitive segment, Balancer should sustain middling valuation among the Top DEXs. Based on TVL, which describes DEX size by its total available liquidity, Balancer ranks fifth. While Balancer offers little advantage to traders, its TVL status is likely due to its unique LP tools. Token holders, depositors, and market makers choose Balancer because its AMM pools are composable while the Vault makes Balancer more capital efficient than Uniswap, Sushiswap, or PancakeSwap.

Comparable Valuation Multiples among Top 5 DEXs by TVL

	BAL: Sep. 2020 - Sep. 2021					**Comparable DEXs: 9/13/21**			
Valuation Multiples	High	Low	Med	Avg	9/13/21	CRV	CAKE	UNI	SUSHI
Price/Sales	143.0x	12.2x	62.2x	63.0x	42.7x	257.7x	5.3x	15.1x	6.3x
TVL/MC	3.3x	3.3x	4.7x	6.0x	12.1x	15.2x	1.2x	0.4x	16.6x

Comps from "Exchange," Token Terminal: https://www.tokenterminal.com/terminal/markets/exchange

Despite Smart Pools and other LP tools, higher returns can be found elsewhere. Curve, for example, compounds LP fees for participating in governance through CRV and veCRV staking. Because CRV yield is not captured in platform fees, P/S is artificially high relative to peers. This does not apply to Balancer. The protocol issues BAL inflation to LPs, with no additional incentive. According to our Balancer valuation model, BAL supply growth stopped over 2021. Without a dividend to BAL holders, BAL P/S multiple can be considered overvalued relative to peers.

Despite high valuations and low chances for increased yield on BAL tokens, the Balancer project exhibits potential. Institutional capital deployed to Balancer over the last year points to significant development on Balancer innovation over the next year. This investment should compound on Balancer's existing innovative technology. No other DEX platform has ventured into the Asset Management segment. Few other Asset Management projects offer comparably simple and composable index-fund tools. Balancer's growth may not come from individual users, rather from peer applications that seek bespoke and affordable asset management solutions.

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