



BITCOIN LIGHTNING BANK CASE STUDY

The Decentralized Strategy

October 2025

ABSTRACT

The Bitcoin Compound Annual Growth Rate (CAGR) was 76.93% over a 10-year timespan from January 1, 2015, to January 1, 2025. Institutions are investing into Bitcoin Exchange Traded Funds (ETFs) which shoulder all the Bitcoin volatility, while many corporations are implementing creative fund-raising initiatives referred to as “accretive dilution” to sell shares and purchase Bitcoin for their Bitcoin Treasury. In August 2020, MicroStrategy (now Strategy) made news headlines of their Bitcoin accumulation initiative. In recent years, many Bitcoin Treasury Companies have followed in Strategy’s footsteps however they are all highly centralized entities that use traditional financial products in traditional markets. Bitcoin Lightning Banks have a substantial competitive advantage to the industry by integrating all borrowing and lending products into the Bitcoin Layer 2 Lightning Network, which offers an open, global, and instantaneous settlement layer to provide superior yield while receiving revenue generating service fees. This case study shines a light on the massive potential that a Bitcoin Lightning Bank has when fusing Bitcoin and innovative Lightning Network technologies with traditional markets to challenge the status quo. Additional research and development are required to prove the feasibility of a Lightning Bank; however, I believe that it is not out of reach for those willing to put in the effort and resources.

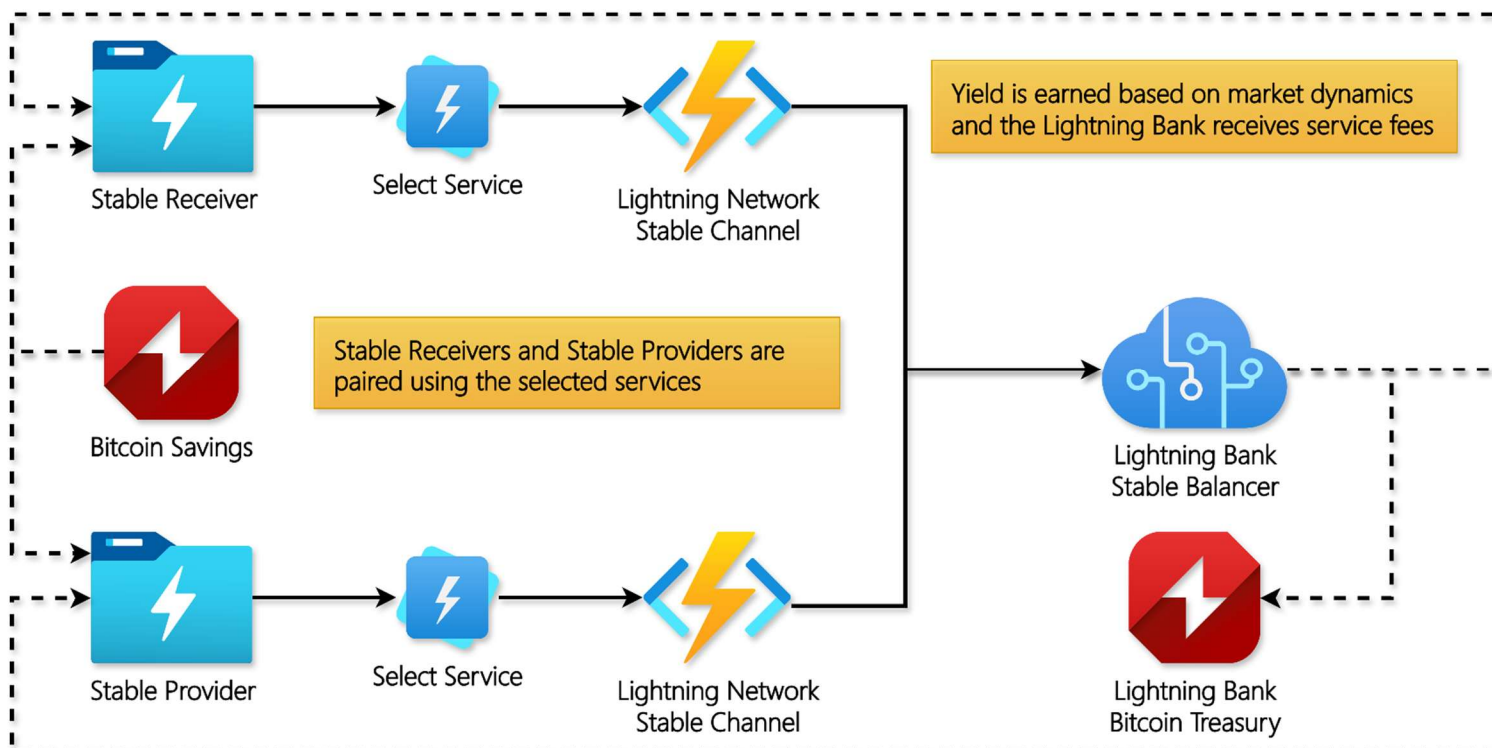
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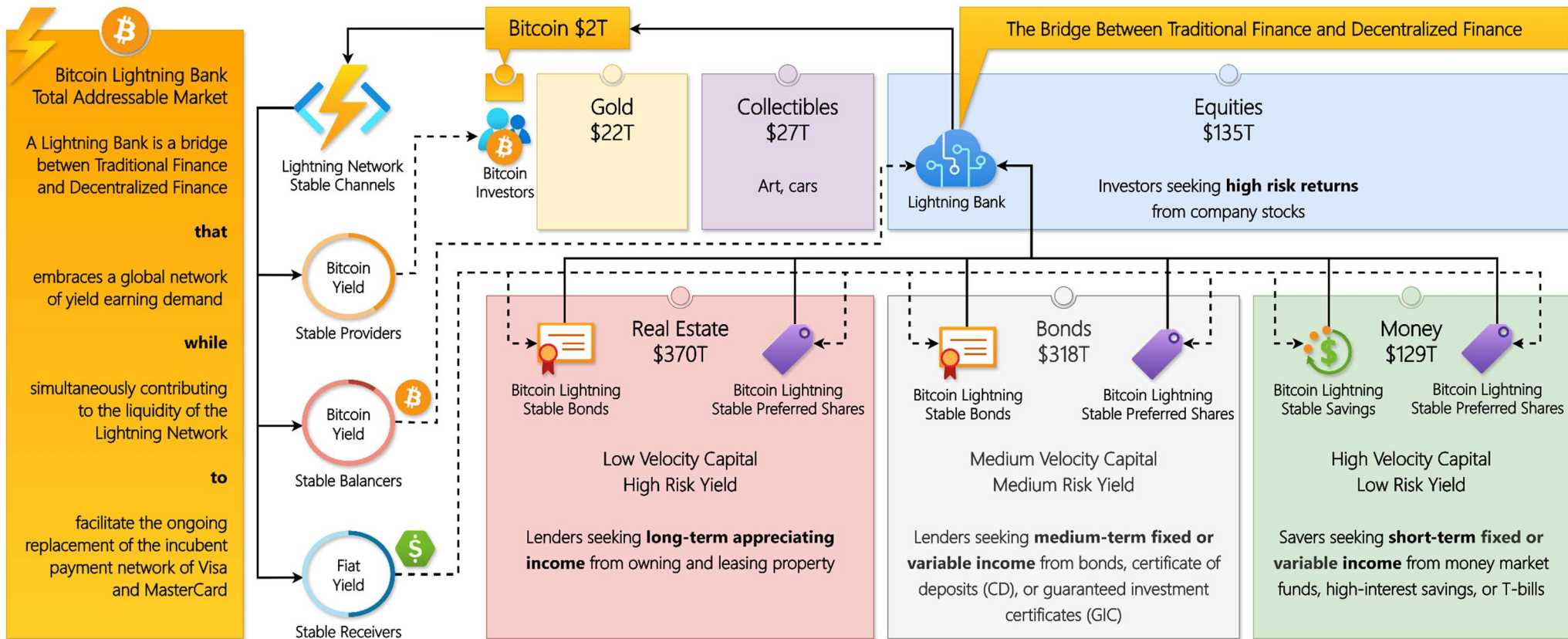
Bitcoin Lightning Bank Overview and Features

Stable Receivers are Fiat Investors that Buy Bitcoin with Fiat Price Stability to Earn Yield

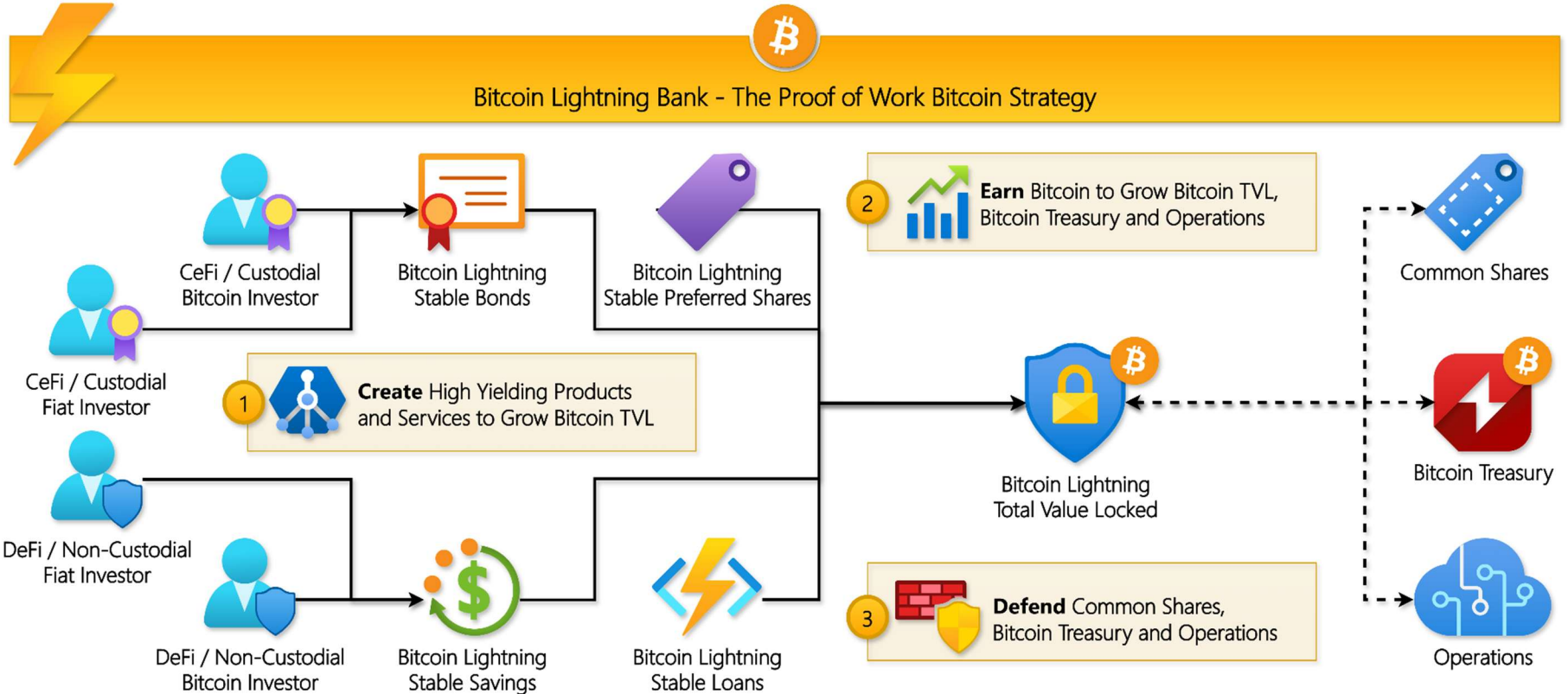
Stable Providers are Bitcoin Investors that 2X Long Bitcoin to Earn Yield



Feature Comparison	Bitcoin Treasury Companies and Bitcoin Banks	Bitcoin Lightning Banks	Bitcoin Lightning Stable Bonds	
Financial Products	Centralized Finance (CeFi)	Centralized and Decentralized Finance (CeFi & DeFi)	Flexible Rates	Fixed or variable rates based on percentage of stable Fiat or Bitcoin CAGR
Financial Rails	Traditional	Traditional and the Bitcoin Lightning Network	Tax-Deductible	Interest payments are tax-deductible bank expenditures
Financial Management	Custodial	Custodial and non-custodial	Securable	Bitcoin is stored in unique Stable Channels to extract yield
Financial Markets	National market limitations	DeFi is globally accessible	Callable or Puttable	Early redemption option based on Bitcoin Growth Yield performance
Interest Rate Makers	Company	DeFi is an open and free market	Extendible	If Bitcoin underperforms then the bond can optionally be extended
Bitcoin Participants	Company	Bank, Fiat Investors, and Bitcoin Investors	Non-Convertible	Share dilution is not necessary due to the superior yield
Bitcoin Yield Distribution	Concentration within Company	Distributed fairly between market participants		
Bitcoin Liquidation Risk	Concentration within Company	Distributed between Stable Providers		
Bitcoin Liquidation Priority	Bond holders are paid first	Bank is paid first by liquidated Stable Providers		
Bitcoin Service Fees	None	Bitcoin-denominated liquidity service fees		
Bitcoin Strategy Tools	Profit, Stock, Debt, and Bitcoin Treasury	Same + Bitcoin TVL to defend Bitcoin Treasury		
Bitcoin Total Value Locked Growth Rate	CeFi = 1 Bitcoin buy adds 1 Bitcoin to BTC TVL 500K BTC buys 500K BTC TVL in Custody	DeFi = 1 Bitcoin buy adds 2 Bitcoin to BTC TVL 500K BTC buys 1M BTC TVL in Lightning Network		



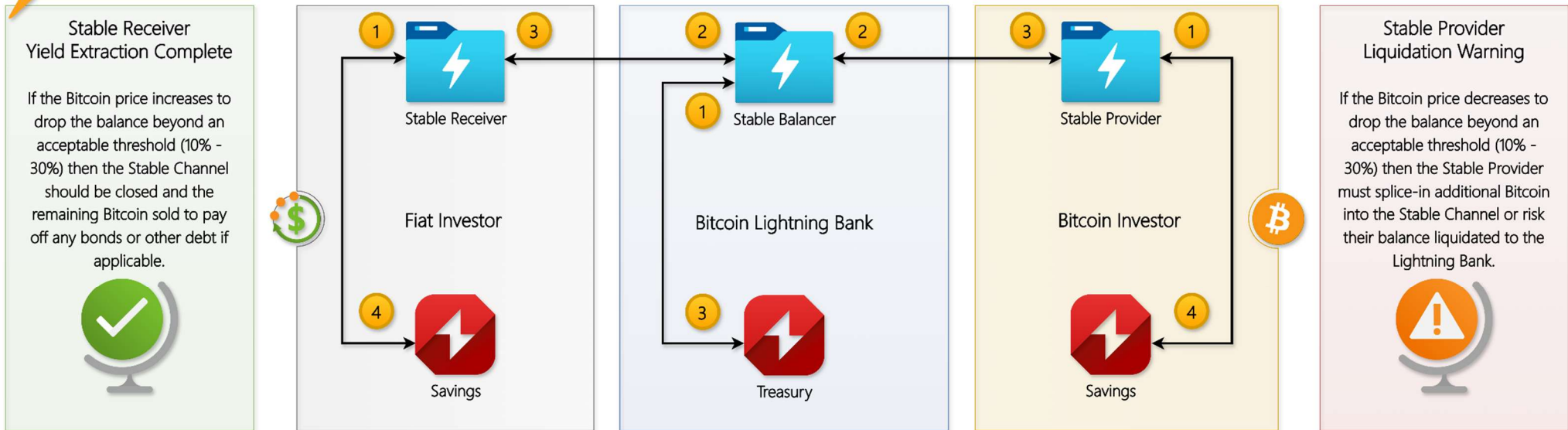
Use Cases		Centralized Finance (CeFi)	Decentralized Finance (DeFi)		
		Custodial	Non-Custodial Stable Receiver	Non-Custodial Stable Provider	Non-Custodial
Stable Channel	Stable Receiver	Lightning Bank	Fiat Investors	Lightning Bank	Fiat Investors
	Stable Provider	Lightning Bank	Lightning Bank	Bitcoin Investors	Bitcoin Investors
Lightning Bank	Goal	Store Bitcoin that was procured from liabilities (ex: bonds, preferred stock) into a Stable Receiver and/or Bitcoin Treasury into a Stable Provider then provide liquidity services to extract and distribute yield			Provide liquidity services to extract and distribute yield
Fiat Investor	Goal	Purchase TradFi products to earn interest or dividends	Self-custody Bitcoin in Stable Channel for greater control	Purchase TradFi products to earn interest or dividends	Self-custody Bitcoin in Stable Channel for greater control
	Risk	Low	Low	Low	Low
	Reward	High	High	Maximum	Maximum
Bitcoin Investor	Goal	Send Bitcoin to Lightning Bank to manage the 2X Leverage Long Stable Channel while maintenance is required to avoid liquidation			Self-custody Bitcoin in 2X Leverage Long Stable Channel while maintenance is required to avoid liquidation
	Risk	High	High	High	High
	Reward	High	High	Maximum	Maximum



PoW Bitcoin Strategy	Create and Earn in Breadth	Defend in Depth
Bitcoin Lightning Stable Bonds	Bank sells bonds to Fiat or Bitcoin Investors then buys Bitcoin on their behalf and deposits into a custodial portion of a Lightning Network Stable Channel to grow Bitcoin Lightning TVL and earn yield	Mitigate risks by implementing market optimization techniques. If Bitcoin overperforms then the bank closes the Stable Channel and sells remaining Bitcoin to pay back the bond. If Bitcoin underperforms then the bank can either extend the bond or buy it out.
Bitcoin Lightning Stable Savings & Loans	Bank provides service for Fiat or Bitcoin Investors to deposit owned Bitcoin into a non-custodial or custodial portion of a Lightning Network Stable Channel to grow Bitcoin Lightning TVL and earn yield. Lending USAT / USDT with interest offers another source of revenue.	Mitigate risks during Bitcoin drawdowns by ensuring Bitcoin Investors either top-up their positions or face liquidation to the Bank
Bitcoin Lightning Revenue	Bank receives Lightning Network service fees to grow Bitcoin Lightning TVL and earn yield as a Stable Balancer or Stable Provider	Mitigate risks by earning Bitcoin revenue from products and services
Bitcoin Lightning Total Value Locked	Bank enables custodial and non-custodial access to Lightning Network Stable Channels & Enterprise Channels to earn yield and grow Treasury or Operations	Mitigate risks during Bitcoin drawdowns by ensuring Bitcoin Investors either top-up their positions or face liquidation to the Bank
Preferred Shares	Bank sells Preferred Shares to buy Bitcoin to grow Bitcoin Lightning TVL and earn yield as a Stable Receiver and distribute it is dividends to shareholders	Mitigate risks by allocating revenue to Stable Receivers so that Bitcoin Yield covers dividend and can be called back when the channel closes
Common Shares	Bank sells Common Shares to buy Bitcoin and grow Treasury or Operations	Share dilution is protected by above practices if done efficiently
Bitcoin Treasury	Bank can deposit Bitcoin Treasury into the Bitcoin Lightning TVL to earn yield	Treasury liquidation is protected by above practices if done efficiently



Bitcoin Lightning Bank - Stable Channel Life Cycle

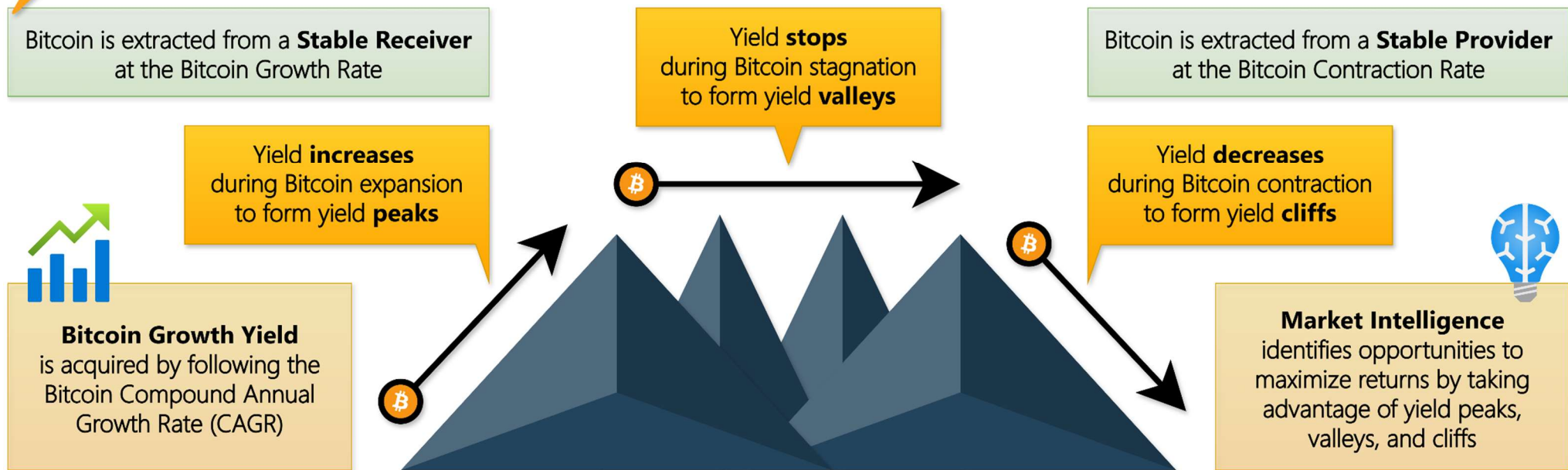


The Lightning Bank Stable Balancer is an intelligent automated market maker (AMM) that maintains a liquidity pool to splice in and out of the Lightning Channels between a Stable Receiver and Stable Provider so that the Stable Receiver has a guaranteed stable Fiat balance backed by Bitcoin.

Stable Channel Life Cycle		Description
1	Start or Splice-In Stable Channel	Stable Receiver, Stable Balancer, and Stable Provider add Bitcoin into the Lightning Channel to either initiate the connection or keep it active and just splice-in liquidity.
2	Upon Bitcoin Price Movement, Send Bitcoin to Stable Balancer	If the Bitcoin price increases, then the Stable Receiver sends Bitcoin to the Stable Balancer. If the Bitcoin price decreases, then the Stable Provider sends Bitcoin to the Stable Balancer.
3	Rebalance Stable Receiver and Stable Provider then Distribute Bitcoin Yield	Stable Balancer periodically sends Bitcoin to the Stable Receiver to ensure a stable Fiat balance, sends Bitcoin to the Stable Provider to ensure a stable Bitcoin balance, and distributes the remaining Bitcoin Yield to all participants based on the pre-defined yield allocation agreements.
4	Close or Splice-Out Stable Channel	Stable Receiver and Stable Provider remove Bitcoin from the Lightning Channel to either close the connection or keep it active and just splice-out liquidity.



Bitcoin Lightning Bank - Bitcoin Growth Yield and Market Intelligence



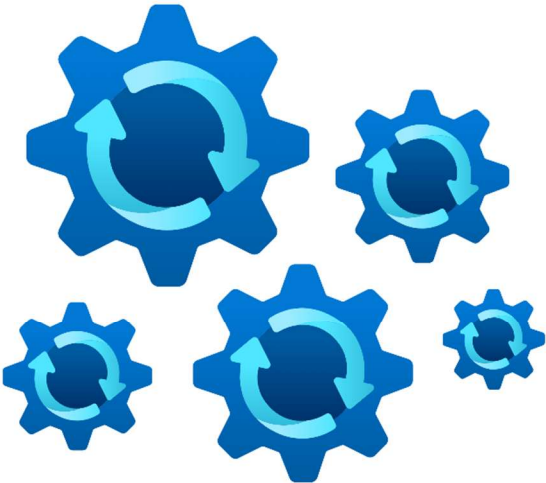
Bitcoin Growth Yield Scenario		Market Intelligence Strategy
Yield Peak	Yield increases during Bitcoin expansion	When the Bitcoin price rises to reach a yield threshold it is ideal to close the Stable Channel, buyout or sell the remaining Bitcoin, and then call the bond back for repayment. Afterward, new bonds can be issued with the yield to extract and duration terms reset. When the bank sells the remaining Bitcoin during market overperformance it frees liquidity so that it can issue new bonds then purchase Bitcoin again later during market underperformance thereby maximizing returns that leverages the Bitcoin volatility.
Yield Valley	Yield stops during Bitcoin stagnation	When the Bitcoin price stagnates then the yield is dynamically reduced or stopped entirely. If the yield returns have been underwhelming throughout an entire bond lifespan, then the bond can be extended to capitalize on future positive Bitcoin price movements or hedged with a put option to sell back the bond to the Bank. Stable Providers offer a fixed interest rate to Stable Receivers so that the yield is immune to Bitcoin price stagnation, so this is just a Bitcoin Investor concern.
Yield Cliff	Yield decreases during Bitcoin contraction	When the Bitcoin price decreases then any yield not yet distributed is given back to the Stable Receiver as well as Bitcoin is transferred from the Stable Provider to the Stable Receiver to make their fiat balance whole. When the Bitcoin rises again then Bitcoin is sent back to the Stable Provider to make their Bitcoin balance whole. If Bitcoin experiences a significant drawdown and a balance threshold is reached, then the Stable Provider must top-up their balance or risk liquidating their entire position to the Bank. If liquidated, the bank will take all the profit once Bitcoin recovers but is now on the hook for making interest payments.



Lightning Stable Receivers

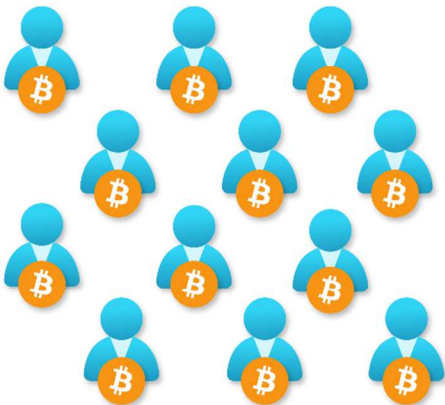
Fiat Investors seeking **ultra-high yield on a stable fiat principal balance** using:

- Bitcoin Lightning Stable Bonds
- Bitcoin Lightning Stable Preferred Shares
- Bitcoin Lightning Stable Savings



Lightning Stable Balancers

Lightning Bank seeking to **bridge traditional finance with decentralized finance** using Lightning Network enterprise-grade stable channels



Lightning Stable Providers

Bitcoin Investors seeking **ultra-high yield non-custodial services** by providing bitcoin collateral using:

- Bitcoin Lightning Stable Savings
- Bitcoin Lightning Stable Loans

The Decentralized Strategy	Lightning Channel Role
Fiat Investor	Stable Receiver holds a Bitcoin balance and remains stable in fiat terms. Centralized / Custodial products such as Bitcoin Lightning Stable Bonds or Preferred Shares are purchased or Decentralized / Non-Custodial products such as Bitcoin Lightning Stable Savings are used.
Lightning Bank	Stable Balancer holds a Bitcoin balance and provides stability mechanisms to ensure both participants have the proper balance while distributing yield based on pre-defined yield allocations.
Bitcoin Investor	Stable Provider holds a Bitcoin balance and remains stable in Bitcoin terms. Decentralized / Non-Custodial products such as Bitcoin Lightning Stable Savings are used.

Lightning Bank Products	Customer	Balance	Mechanics	Custodial	Redeemable	Yield Sources
Bitcoin Lightning Stable Bonds	Fiat Investor	Stable USD backed by BTC	Deposited bitcoin is stabilized by an over collateralized network of Bitcoin Lightning Stable Providers	Yes	Yes, by both customer and issuer	Fixed Income from Stable Providers
Bitcoin Lightning Stable Preferred Shares	Fiat Investor	Stable USD backed by BTC	Deposited bitcoin is stabilized by an over collateralized network of Bitcoin Lightning Stable Providers	Yes	Yes, by both customer and issuer	Fixed Income from Stable Providers
Bitcoin Lightning Stable Savings	Fiat Investor	Stable USD backed by BTC	Deposited bitcoin is stabilized by an over collateralized network of Bitcoin Lightning Stable Providers	No	Yes	Fixed Income from Stable Providers
	Bitcoin Investor	Leveraged BTC	Deposited bitcoin is leveraged by a network of Bitcoin Lightning Stable Receivers	No	Yes	Bitcoin Growth 2X and Lightning Transactions
Bitcoin Lightning Stable Loans	Bitcoin Investor	Stable BTC	Deposited bitcoin with the ability to borrow USAT / USDT at competitive fixed rates	Yes	Yes	None
	Bitcoin Investor	Leveraged BTC	Deposited bitcoin leveraged by a network of Bitcoin Lightning Stable Receivers with the ability to borrow USAT / USDT at competitive fixed rates	Yes	Yes	Bitcoin Growth 2X and Lightning Transactions
Loan Annual Percentage Rate Comparisons LTV = Loan-to-Value	Lightning Bank (40% LTV)	Strike (40% LTV)	Arch (60% LTV)	Ledn (50% LTV)	Nexo (50% LTV)	
	9%					
	0% Leveraged BTC with CAGR greater than 20% *	9.5%	9.5%	12.4%	18.9% 2.9% with Nexo Tokens	

* 0% Loan Interest Rate is acheivable by deducting the regular rate from the Bitcoin Growth Yield accumulated from the BTC 2X Leverage Long position.

Lightning Bank Stability Service Mapping	Customer	Service	Fee	Description
Bitcoin Lightning Stable Bonds	Fiat Investor	Standard	0%	Enterprise-grade Lightning Network Stable Channel liquidity services which provide efficient USD principal balance stability coupled with high-yielding USD interest payments
Bitcoin Lightning Stable Preferred Shares				
Bitcoin Lightning Stable Savings		Premium	0%	Standard plus ultra-high yielding USD interest payments generated by locking funds and compounding interest in Bitcoin over the duration of the lock
Bitcoin Lightning Stable Savings	Bitcoin Investor	Standard	10%	Enterprise-grade Lightning Network Stable Channel liquidity services which provide efficient BTC principal balance stability coupled with high-yielding BTC interest payments
Bitcoin Lightning Stable Loans		Premium	20%	Standard plus Bitcoin Drawdown Liquidation Protection. Liquidation can still occur if interest payments are not made or borrowed funds are not returned.

Lightning Bank Fixed Income Bitcoin-Backed Securities (Bonds & Preferred Shares)								Bitcoin Compound Annual Growth Rate Scenarios					
Fiat Investor				Bitcoin Investor				20%	20%	30%	30%	40%	40%
#	Service	Payment Frequency	Annual Rate (USD)	Service	Payment Frequency	BTC Yield Allocation	Fee	BiGY Only	BiGY & 1% BiTY	BiGY Only	BiGY & 1% BiTY	BiGY Only	BiGY & 1% BiTY
1	Standard	Monthly	7.50%	Standard	Monthly	90%	10%	6.28%	8.08%	9.50%	11.30%	11.60%	13.40%
2	Premium	Maturity Date	11.16% to 16.42%	Premium	Monthly	80%	20%	5.08%	6.68%	8.04%	9.64%	9.97%	11.57%
3	Standard	Monthly	10.00%	Standard	Monthly	90%	10%	4.78%	6.58%	8.28%	10.08%	10.58%	12.38%
4	Premium	Maturity Date	14.88% to 21.89%	Premium	Monthly	80%	20%	3.59%	5.19%	6.82%	8.42%	8.95%	10.55%
5	Standard	Monthly	12.50%	Standard	Monthly	90%	10%	3.29%	5.09%	7.06%	8.86%	9.57%	11.37%
6	Premium	Maturity Date	18.60% to 27.36%	Premium	Monthly	80%	20%	2.09%	3.69%	7.20%	7.20%	7.94%	9.54%
7	Standard	Monthly	15.00%	Standard	Monthly	90%	10%	1.79%	3.59%	5.85%	7.65%	8.55%	10.35%
8	Premium	Maturity Date	22.32% to 32.84%	Premium	Monthly	80%	20%	0.60%	2.20%	4.38%	5.98%	6.92%	8.52%
9	Standard	Monthly	17.50%	Standard	Monthly	90%	10%	0.30%	2.10%	4.63%	6.43%	7.53%	9.33%
10	Premium	Maturity Date	26.05% to 38.31%	Premium	Monthly	80%	20%	-0.90%	0.70%	3.17%	4.77%	5.90%	7.50%
Lightning Bank Service Fees				Standard	Monthly	10%	-	1.20%	1.40%	1.46%	1.66%	1.63%	1.83%
				Premium	Monthly	20%	-	2.39%	2.79%	2.92%	3.32%	3.26%	3.66%

Derivatives NAV (DNav) = Bitcoin Growth Yield (BiGY) generated from Bitcoin Compound Annual Growth Rate

Lightning NAV (LNav) = Bitcoin Transaction Yield (BiTY) generated from Lightning Network Routing Fees

Credit NAV (CNav) = Preferred Shares are non-convertible, callable and retractable | **Bonds** are non-convertible, callable, puttable, extendible and secured | **Premium Bonds** are tax-exempt zero coupons with the same annual rate in USD as **Standard Bonds** but instead compounded in Bitcoin and then is sold at maturity to provide a lump sum USD payment

Bitcoin Lightning Stable Loan Test Cases				Bitcoin Compound Annual Growth Rate Scenarios		
#	Configuration	USD Value	BTC Yield Allocation	20% BTC CAGR BiGY & 1% BiTY	30% BTC CAGR BiGY & 1% BiTY	40% BTC CAGR BiGY & 1% BiTY
1	Bitcoin Deposited	10 BTC	\$1M			
	Service	Standard	90%			
	Duration	5 Years				
	Stable Receiver Interest Rate	15% USD				
	Stable Receiver Interest Payment Frequency	Monthly				
	Loan-to-Value at 9% USD	40% (max)	\$400K			
	BTC Yield Payment Frequency	Monthly				
	Annual BTC Yield (Negative means a deduction)	→		1.44%	5.89%	8.88%
2	Bitcoin Deposited	10 BTC	\$1M			
	Service	Premium	80%			
	Duration	5 Years				
	Stable Receiver Interest Rate	15% USD				
	Stable Receiver Interest Payment Frequency	Monthly				
	Loan-to-Value at 9% USD	40% (max)	\$400K			
	BTC Yield Payment Frequency	Monthly				
	Annual BTC Yield (Negative means a deduction)	→		0.04%	4.23%	7.05%
3	Bitcoin Deposited	10 BTC	\$1M			
	Service	Standard	90%			
	Duration	5 Years				
	Stable Receiver Interest Rate	7.5% USD				
	Stable Receiver Interest Payment Frequency	Monthly				
	Loan-to-Value at 9% USD	40% (max)	\$400K			
	BTC Yield Payment Frequency	Monthly				
	Annual BTC Yield (Negative means a deduction)	→		5.93%	9.55%	11.94%

Annual Bitcoin Growth Yield Burndown Estimates		Duration	20% BTC CAGR	30% BTC CAGR	40% BTC CAGR
Bitcoin Growth Yield Remaining * Indicates remaining yield to be farmed from Fiat Investor * Highlighted row indicates when majority of the yield has been farmed as an ideal channel closure guideline * Bitcoin Growth Yield (BiGY) generated from Bitcoin Compound Annual Growth Rate (BTC CAGR)		Year 1	83.33%	76.92%	71.43%
		Year 3	57.87%	45.52%	36.44%
		Year 5	40.19%	26.93%	18.59%
		Year 7	27.91%	15.94%	9.49%
		Year 10	16.15%	7.25%	3.46%

Lightning Bank 5 Year Bitcoin Revenue Summary			Bitcoin Compound Annual Growth Rate Scenarios		
Total Value Locked	Forward Metric	BTC Yield Allocation	20% BTC CAGR BiGY & 1% BiTY	30% BTC CAGR BiGY & 1% BiTY	40% BTC CAGR BiGY & 1% BiTY
20K BTC	Bitcoin Earnings Annual Average	10%	122	148	165
		20%	243	296	330
	Bitcoin Assets Cumulative Total	10%	608	741	824
		20%	1,216	1,481	1,648
400K BTC	Bitcoin Earnings Annual Average	10%	2,432	2,963	3,296
		20%	4,865	5,925	6,593
	Bitcoin Assets Cumulative Total	10%	12,162	14,813	16,481
		20%	24,325	29,627	32,963
1M BTC	Bitcoin Earnings Annual Average	10%	6,081	7,407	8,241
		20%	12,162	14,813	16,481
	Bitcoin Assets Cumulative Total	10%	30,406	37,034	41,203
		20%	60,812	74,067	82,407
2.1M BTC	Bitcoin Earnings Annual Average	10%	12,771	15,554	17,305
		20%	25,541	31,108	34,611
	Bitcoin Assets Cumulative Total	10%	63,853	77,770	86,527
		20%	127,706	155,541	173,054

The goal is to offer the highest interest Bitcoin-backed products and services on the market to generate demand and build the world's largest decentralized Bitcoin Total Value Locked (TVL) located in Lightning Network channels that dual serve as routing nodes to provide more liquidity and scalability to the Lightning Network.

The pathway to 2.1 million Bitcoin TVL on the Lightning Network has never been clearer.



Bitcoin Lightning Backed Securities - Stable Bonds and Preferred Shares

* Interest rate ranges estimated from Bitcoin Growth Yield (CAGR) between 20% and 40% and Bitcoin Transaction Yield at 1%

