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| A cloud with a bitcoin logo  AI-generated content may be incorrect.  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.  Kyle Hutchinson |

A diagram of a power supply system

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| Feature Comparison | Bitcoin Treasury Companies and Bitcoin Banks | Bitcoin Lightning Banks |
| Financial Products | Centralized Finance (CeFi) | Centralized and Decentralized Finance (CeFi & DeFi) |
| Financial Rails | Traditional | Traditional and the Bitcoin Lightning Network |
| Financial Management | Custodial | Custodial and non-custodial |
| Financial Markets | National market limitations | DeFi is globally accessible |
| Interest Rate Makers | Company | DeFi is an open and free market |
| Bitcoin Participants | Company | Bank, Fiat Investors, and Bitcoin Investors |
| 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** |

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| Bitcoin Lightning Stable Bonds | |
| Flexible Rates | Fixed or variable rates based on percentage of stable Fiat or Bitcoin CAGR |
| Tax-Deductible | Interest payments are tax-deductible bank expenditures |
| Securable | Bitcoin is stored in unique Stable Channels to extract yield |
| Callable or Puttable | Early redemption option based on Bitcoin Growth Yield performance |
| Extendible | If Bitcoin underperforms then the bond can optionally be extended |
| Non-Convertible | Share dilution is not necessary due to the superior yield |

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| 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** |

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| 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** |

**A diagram of a blockchain

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| 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. |

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| 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. |

A diagram of pyramids and arrows

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| 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. |

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| 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 |

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| 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.

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| 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  2 | Standard  Premium | Monthly  Maturity Date | 7.50%  11.16% to 16.42% | Standard | Monthly | 90% | 10% | 6.28% | 8.08% | 9.50% | 11.30% | 11.60% | 13.40% |
| **Premium** | **Monthly** | **80%** | **20%** | **5.08%** | **6.68%** | **8.04%** | **9.64%** | **9.97%** | **11.57%** |
| 3  4 | Standard  Premium | Monthly  Maturity Date | 10.00%  14.88% to 21.89% | Standard | Monthly | 90% | 10% | 4.78% | 6.58% | 8.28% | 10.08% | 10.58% | 12.38% |
| **Premium** | **Monthly** | **80%** | **20%** | **3.59%** | **5.19%** | **6.82%** | **8.42%** | **8.95%** | **10.55%** |
| 5  6 | Standard  Premium | Monthly  Maturity Date | 12.50%  18.60% to 27.36% | Standard | Monthly | 90% | 10% | 3.29% | 5.09% | 7.06% | 8.86% | 9.57% | 11.37% |
| **Premium** | **Monthly** | **80%** | **20%** | **2.09%** | **3.69%** | **7.20%** | **7.20%** | **7.94%** | **9.54%** |
| 7  8 | Standard  Premium | Monthly  Maturity Date | 15.00%  22.32% to 32.84% | Standard | Monthly | 90% | 10% | 1.79% | 3.59% | 5.85% | 7.65% | 8.55% | 10.35% |
| **Premium** | **Monthly** | **80%** | **20%** | **0.60%** | **2.20%** | **4.38%** | **5.98%** | **6.92%** | **8.52%** |
| 9  10 | Standard  Premium | Monthly  Maturity Date | 17.50%  26.05% to 38.31% | Standard | Monthly | 90% | 10% | 0.30% | 2.10% | 4.63% | 6.43% | 7.53% | 9.33% |
| **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%** |

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| Lightning Bank Stability Service Mapping | Customer | Service | Fee | Description |  |  |
| Bitcoin Lightning Stable Bonds  Bitcoin Lightning Stable Preferred Shares  Bitcoin Lightning Stable Savings | 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 | | |
| 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 Lightning Stable Loans | 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 | | |
| **Premium** | **20%** | **Standard plus Bitcoin Drawdown Liquidation Protection. Liquidation can still occur if interest payments are not made or borrowed funds are not returned.** | | |

**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

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| 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%** |

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| 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% |

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| 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. | | | | | |

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