Lightning Bank Case Study

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| Personas | |
| Participants | **Description** |
| Liquidity Service Provider | A Lightning Bank that sells Corporate Bonds which are used for the purchase of Bitcoin to add to the protocols Bitcoin Total Value Locked (BTC TVL) then earn yield for its Bitcoin Treasury. It also provides the Lightning Stable Channel liquidity services to facilitate Bitcoin DeFi by pairing Stable Receivers with Stable Providers and distributing yield. |
| Fiat Investors | Investors such as Corporate Bond purchasers, money market funds, or high-interest savers that are unable or uncomfortable to participate in the volatility of Bitcoin but are seeking to maximize yield earning potential by capturing a portion of the Bitcoin Compound Annual Growth Rate (BTC CAGR). Essentially positioning themselves as Bitcoin shorts. |
| Bitcoin Investors | Investors seeking maximize yield earnings on their Bitcoin holdings by being paired with Fiat Investors to capture a portion of the Bitcoin Compound Annual Growth Rate (BTC CAGR). Essentially positioning themselves as Bitcoin 2X Leverage Longs. |

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| Scenarios | | | |
| Participants | **Fully Custodial (CeFi)** | **Partially Custodial (DeFi)** | **Non-Custodial (DeFi)** |
| Stable Receiver | Liquidity Service Provider on behalf of Fiat Investors | Liquidity Service Provider on behalf of Fiat Investors | Fiat Investors |
| Stable Provider | Liquidity Service Provider | Bitcoin Investors | Bitcoin Investors |

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| Interest Rate Risks and Rewards | | | | |
| Participants | **Fixed - Percentage of Stable Fiat** | | **Variable - Percentage of Bitcoin CAGR** | |
| **Risk** | **Reward** | **Risk** | **Reward** |
| Stable Receiver | **Low** risk because interest is guaranteed by Stable Provider | **Low** reward because interest is based off the percentage of fiat principal | **High** risk because interest is dependent on Bitcoin price appreciation | **High** reward because interest is based off the percentage of Bitcoin CAGR |
| Stable Provider | **High** risk because interest obligation is taken on | **High** reward because majority of the Bitcoin CAGR is earned | **Low** risk because interest is dependent on Bitcoin price appreciation | **Low** reward because some of the Bitcoin CAGR is shared |

# Stable Channel Logistics

**Stable Provider account top-ups are required to ensure enough liquidity is available for making payments otherwise they face liquidation risk to the Liquidity Service Provider.**

## Fixed Interest Rate - Percentage of Stable Fiat

1. Stable Provider sends Bitcoin to the Liquidity Service Provider account for yield disbursement to Stable Receiver and Liquidity Service Provider

## Variable Interest Rate - Percentage of Bitcoin CAGR

1. Stable Provider Bitcoin balance is recorded when liquidity is added
2. When the Bitcoin price increases:
   1. If the Stable Provider Bitcoin balance is less than the recorded balance, then Stable Receiver sends Bitcoin to Stable Provider
      1. **Yield NOT Collected**
   2. If the Stable Provider Bitcoin balance is greater than or equal to the recorded balance, then Stable Receiver sends Bitcoin to the Liquidity Service Provider account for yield disbursement to Stable Receiver and Liquidity Service Provider
      1. **Yield Collected**
3. When the Bitcoin price decreases:
   1. If the Liquidity Service Provider account balance is greater than zero, then the Liquidity Service Provider sends Bitcoin to the Stable Receiver
      1. **Yield Reduced**
   2. If the Liquidity Service Provider account balance is equal to zero, then the Stable Provider sends Bitcoin to the Stable Receiver
      1. **Yield Exhausted or Never Existed**