Pooled Derivatives

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Overview

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Pooled derivatives contribute to solving some major issues of synthetic assets and derivatives

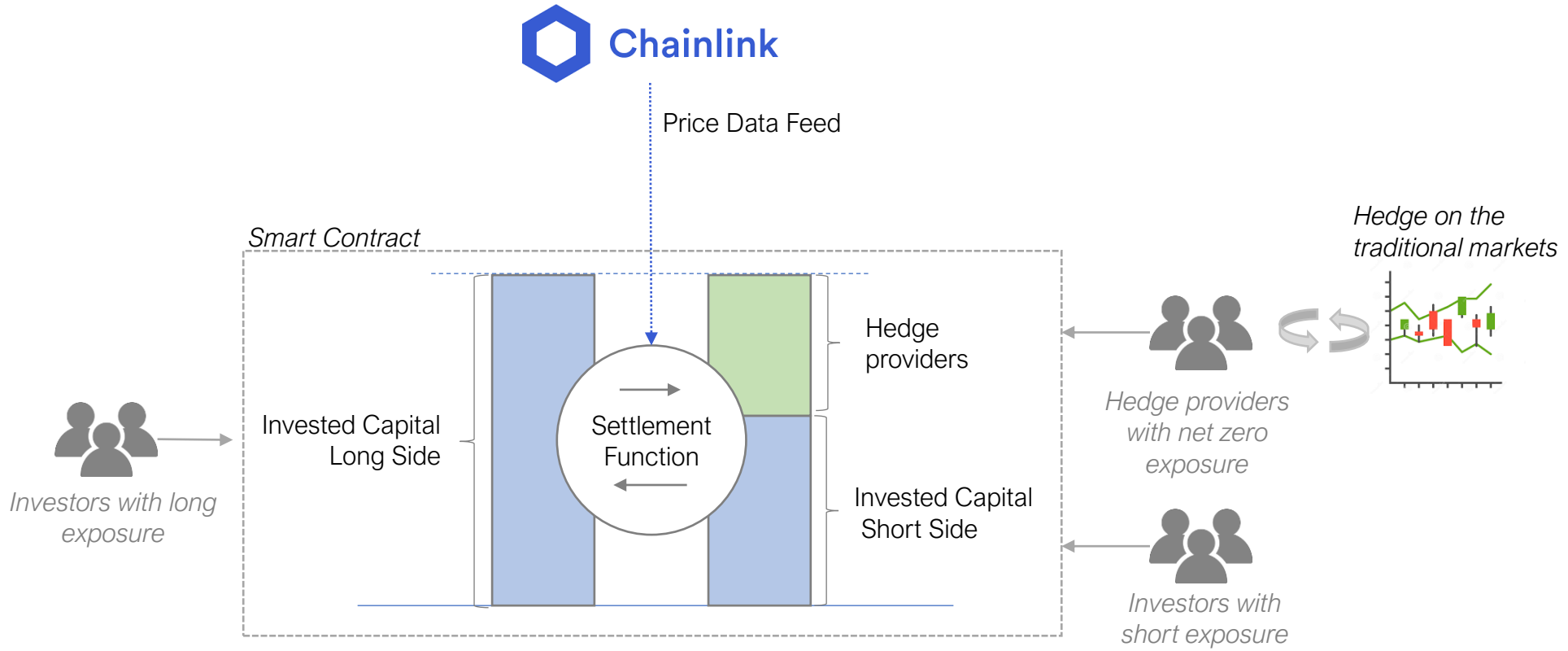
Problem

- Conventional derivatives require a **counterparty** and exhibit therefor counterparty risk. This is not feasible for smart contracts
- Many synthetic assets require **high collateral**
- Often the **exposure rate** depends on the other synthetic asset holders

Approach

- Find a way of creating derivatives that are **based on pools** in order to avoid counterparty risk
- Implement a **balancing mechanism** to ensure that exposure rates stay constant
- Develop a **generalized framework** of this concept such that it can be applied on many different types of derivatives

Pooled derivatives consist of 3 parties



If a hedging party exists, pooled derivatives offer many advantages

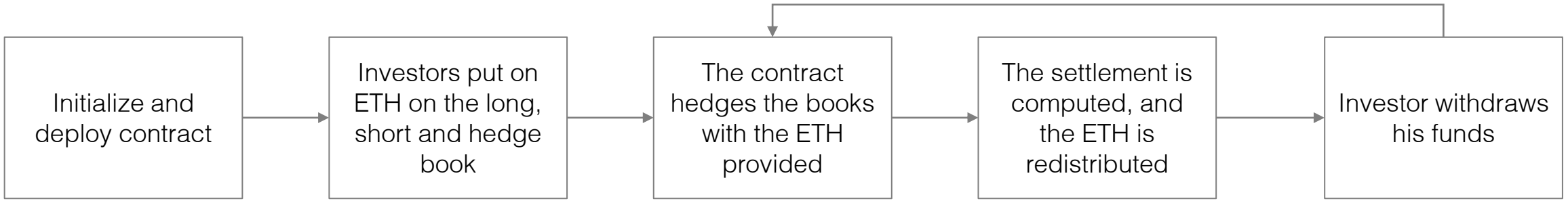
Advantages

- On chain derivative on any underlying price feed with many possibilities for the settlement function
  - E.g. “Pooled Asian option” on Tesla Stock
- High liquidity depending on the hedging cycles
- On chain settlement
- No collateral needed
- Options delta is not dependent on other investors (symmetric exposure)

Challenges

- A hedging party is required that provides hedging capital and hedges the exposure in an automated fashion. This requires some technical expertise
- If the hedging parties are unwilling or unable to provide a hedge the contract defaults back to asymmetric exposure

Project Overview



- Underlying price feed
- Contract description e.g. (“1:1 ETH USD Tracker”, “Asian Option of TSLA in USD”)
- Expiry, timestamp of expiration (can be zero for no expiration)
- Annualized percent fee that is paid to the hedging party

- Long book, short book and hedge book are updated, keeping track of the invested ETH

- Redistribute the ETH from the hedging book that is currently underexposed
- Recompute book shares

- Pull the latest price data
- Compute the settlement
- E.g. 1:1 return tracker, 1:1 return tracker with leverage, currency hedged exposure (Tesla stock in EUR)

- Books are updated, contract is hedged

Outlook

1. Implement path depended settlement function. E.g. Asian options that give the average return for a certain time horizon
2. Implement a settlement frequency. Settlement can only occur only once per hour/day/… This would lower gas prices and reduce the number of times that the hedging party would have adjust the hedge on the convectional markets
3. Bug fixes, performance and gas consumption improvements
4. (Provide a framework for automated hedging)

Thank you!

Repository
https://github.com/Luedman/PooledDerivatives

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