OEV Scope

Liquidation bonus leakage in Aave-code lending markets

Sample note · on-chain measurement 6 Aug – 4 Nov 2026

Read-only measurement of public blockchain data. No personal data: aggregates only, liquidators anonymised. Figures in USD at current oracle prices.

Key findings

1. **Aave recaptures most liquidation value.** On Aave v3, Chainlink SVR auctions now cover **91–97 %** of the liquidation bonus:
   - Ethereum Core: 91 %, via a backrun pattern, where the oracle update lands 1–3 transactions before the liquidation.
   - Arbitrum: 97 %, auctioned inside the same transaction.
   - Base: 97 %, auctioned inside the same transaction.

   On Arbitrum, winning bids have taken **97.5–98.9 %** of the bonus every month since July 2026.
2. **SparkLend shows no SVR recapture, and one liquidation carried almost all of its bonus.**
   - No Chainlink SVR auction signal was detected in the window.
   - Liquidation bonus was **≈ $24,400 in 90 days**. **One liquidation on 8 Oct 2026** (≈ $347,000 of debt repaid) accounted for **99 %** of it.
   - In that block the builder paid the validator **≈ 8.6 ETH (≈ $20,900)**. The four blocks before and after paid 0.02–0.05 ETH. So **≈ 86 % of the bonus was bid away to Ethereum validators**, and the liquidator kept a small share.
   - Without an OEV auction, the value still leaves the protocol. Most of it ends with validators instead of liquidators.
3. **Small deployments without SVR have little to recapture.** Aave on Optimism, Linea, Gnosis and Scroll see about **$440 per month combined**.

Liquidation bonus per 30 days

Market	Window	Liquidations	Bonus	Auctioned via SVR	Not auctioned	Senders	Top-5 days
Aave v3 Ethereum Core	90 d	193	273,000	91 %	25,500	117	85 %
Aave v3 Base	30 d	280	22,900	97 %	650	23	93 %
Aave v3 Arbitrum	90 d	178	18,900	97 %	600	56	67 %
SparkLend (Ethereum)	**90 d**	**21**	**8,100**	**0 %**	**8,100**	**11 (one tx 99 %)**	**100 %**
Aave v3 Prime (Ethereum)	90 d	2	1,000	98 %	20	4	100 %
Aave v3 Optimism / Linea / Gnosis / Scroll	90 d	567	440	0 %	440	–	–

All figures per 30 days. Bonus in USD.

What this means for a lending protocol

- **Without an auction, the liquidation bonus still leaves the protocol.** On SparkLend's largest liquidation, liquidators competed in Ethereum's block auction, and ≈ 86 % of the bonus ended with the validator.
- **An OEV auction moves that bid to the protocol.** At the bid levels measured on Aave Arbitrum (≈ 97 % of the bonus), bids for SparkLend's liquidations would have been up to ≈ $23,700 over the same period. How much of that reaches the protocol depends on the auction's revenue split, which this note does not estimate.
- **Leakage comes in rare, large events.** One liquidation made up 99 % of SparkLend's 90-day bonus. A quiet quarter can show almost nothing, and one crash can show far more. The full report uses a longer history and flags each large event.

Method

- **Events.** All `LiquidationCall` events from each market's Pool contract.
- **Bonus.** Bonus = repaid debt × (liquidation bonus − 1) × (1 − protocol fee). We use the current reserve parameters and E-Mode. We verified on-chain in both code versions active during the period that the event's collateral figure is net of the protocol fee.
- **Auction detection.** A liquidation counts as auctioned in either of two cases: a Chainlink `SecondaryRoundIdUpdated` event (SVR) is in the same transaction, as with the Atlas auction on Arbitrum and Base; or the SVR update lands 1–3 transactions before the liquidation in the same block, the backrun pattern on Ethereum.
- **Gas and competition.** From receipts for the 400 largest transactions plus a weighted sample of the rest.
- **Reproducibility.** Scripts are available. They use only read-only RPC calls, with no keys and no transactions.

Limitations

- **Prices.** Current prices are applied to past debt. The error is small for stablecoin debt, larger for volatile debt.
- **Short window.** A 90-day window with few volatile days gives high variance between periods.
- **Auction detection.** The backrun pattern is an indicator, not proof of an auction.
- **Other recapture mechanisms.** We detect Chainlink SVR only. A keeper agreement or another oracle provider's OEV auction would not show up. The full report identifies the dominant liquidator where public information allows.
- **Hidden costs on Ethereum.** Payments to block builders are not visible in receipts. For the SparkLend case we estimated the payment as the builder's payment to the validator in that block, minus a normal level from the neighbouring blocks. Other MEV in the same block could inflate this estimate. For Aave Ethereum Core, net liquidator profit is not measured.
- **Coverage.** Not yet covered: Aave on Avalanche, Polygon and BNB, plus Morpho, Compound III, Euler and Fluid.

Full report (per protocol)

- Monthly series of liquidation bonus and the share recaptured.
- Breakdown by asset and pair, with crash-day concentration.
- Liquidator concentration over time, anonymised.
- Peer comparison with Aave markets that run SVR.
- Recapture scenarios at measured auction bid levels.
- Scripts and data to reproduce every number.

OEV Scope · research@oevscope.com · This note is information about protocols and markets, not investment advice.