

Distribution of staking incentives (COMP/StkAAVE)

- When a new expiry is created, a `PendleYieldTokenHolder` contract is also deployed alongside the OT and XYT contract
- The `PendleYieldTokenHolder` will hold all the aToken/cToken
- All the transfers of aToken/cToken is done from/to the `PendleYieldTokenHolder`
- There will be COMP/StkAAVE rewards accrued in the `PendleYieldTokenHolder`
- Whenever there is new COMP/StkAAVE rewards coming into the `PendleYieldTokenHolder`, it will be distributed equally to the current OT holders
 - At time `t0`: total amount of OT is `totalOT_0`, a new user `A` mints `balanceA` OTs
 - At time `t1`: There is `rewards_0` coming in, A should get:
 - $\text{balanceA} / \text{totalOT}_0 * \text{rewards}_0$
 - At time `t2`: There is `rewards_1` coming in, A should get:
 - $\text{balanceA} / \text{totalOT}_1 * \text{rewards}_1$
 - In total: A should get $\text{balanceA} * (\text{rewards}_0 / \text{totalOT}_0 + \text{rewards}_1 / \text{totalOT}_1)$
 - As such, we can generalise it and let:
 - $L(t+1) = (\text{rewards}_0 / \text{totalOT}_0 + \text{rewards}_1 / \text{totalOT}_1 + \dots + \text{rewards}_t / \text{totalOT}_t)$
 - Then, rewards for a user A with `balanceA` for holding OT from `t1` to `t2` is:
 - $\text{balanceA} * (L(t2) - L(t1))$
- As such, before any action that changes the totalOT, we will then need to:
 - claim the COMP/StkAAVE rewards

- update $L(t)$, based on the previous totalOT , and the amount of rewards that came in since the last $L(t)$ update
- Another note is that this way of accounting the rewards is exactly the same as how we account for the interests for a generic pool, especially when the "rewards/interests" do not grow by itself (same as a Compound Market, or Compound liquidity mining contract)
 - Therefore, we try to keep the implementation to be as similar as possible, to reduce potential bugs and mistakes