Below are just some of my opinions, not rigorous arguments.

1. “The goal of TC metric is to estimate how much a user’s signal improves or detracts from the returns of Numerai’s portfolio”

TC is computed as the gradient of the portfolio return for that round wrt user stake, multiplied by some constant. If my understanding is correct, then this seems exactly what it estimates.

1. “With TC as the payout metric, a user’s stake would increase if their model increased portfolio returns and decrease (burn) if the model reduced returns”

You seem to assume that there is a stationary point of optimal portfolio. But as the market evolves, the optimal point changes, there will always be positive and negative TCs to move the portfolio along to chase the optimal point.

taori:

TC

alone is responsible to define the contribution of a model to the Numerai’s portfolio. Stake is not used anymore in this context

My understanding is TC is a measurement of the “would-be” delta of contribution of a model, not “the” contribution of a model. Stake doesn’t need to be used for defining the contribution because the stake will increase with payout which is what TC is supposed to do, rewarding more to “good” models so their stake becomes higher quicker than other models.

My concern with TC is more about the length of the feedback loop, especially if they move to 3-month resolution, but I think TC as a measurement is on-point.

taori:

Payout

can now be a function of TC

TC as it currently stands is already a cumulative measure (within each round).

taori:

Stake

is just there for the user and it’s not part of the reward/punish mechanic

Stake is a expression of user confidence, without this information and using TC solely for deriving portfolio weights will be a problem because there’s no skin in the game. High TC at a certain moment or during some period of time doesn’t mean the model is good.