

0 Point Estimation: An Overview

1. We have a sample from a known family of distribution, but we do not know the parameters θ .
 - Example: tossing an unfair coin, where $P(H)$ is unknown.
2. We want to use the sample to infer or make hypothesis about the unknown parameters.
3. What do we do? Choose a function of the sample: estimator/statistic. Note that this estimator is a RV too.
4. However, we could choose infinite functions of the sample...
5. Evaluating (choosing) estimators:
 - Unbiasedness
 - Efficiency
 - MSE
 - Consistency
 - Asymptotically efficient
6. How can we come up with possible estimators?
 - MM (matching moments)
 - MLE (maximizing the likelihood/probability of observing what was observed)