Define "relative efficiency" (RE) as the ratio of variances: $8^{2}\frac{1}{3h} = (h+1)^{2}(h+2)$ > | ⇒ MLE is

higher the sample size the bigger the MLE's advantage is over the MM estimator. Maybe we should be comparing the ratio of MSE's? True... but in this case the tiny amount of bias in the MLE (see simulation) won't matter if n is large.

this means the

"better" as measured by variance.

X, .., X, il Bern (8).

$$\hat{\mathcal{O}}_{\text{bap}} = \frac{1}{2} \quad \text{MSE} \left[\hat{\mathcal{O}}_{\text{bm}} \right] \left(\mathcal{O} = \frac{1}{2} \right) = \mathbb{E} \left[\left(\hat{\mathcal{O}}_{\text{bap}} - \mathcal{O}_{\text{s}}^{-1} \right) \right] = \mathbb{E} \left[\left(\frac{1}{2} - \frac{1}{2} \right)^{2} \right] = \mathbb{Q}$$
This means that thetahat-BAD does amazingly well at theta=half.

other values of

Define: a uniformly minimum variance unbiased estimator (UMVUE) is the estimator thetahat-star s.t. for all theta and all other unbiased estimators theta-hat,

CRLB. XI,..., Xy ild DGP(0), Contin for any unbiased estimator 8 (T(P)-1) the numerator is an irrducible core quantity based on the DGP and based on theta.

and it's called the "Fisher Information" defined by Fisher in

IO):= E[L(O;x)2]

5:= = [h f(x,...x; 0)] (dof1)

$$\frac{df}{df} = \frac{1}{2} \left[\frac{1}{2} \left(\frac{\partial f}{\partial x} \times \frac{\partial f}{\partial x} \right) \right] = 0$$

$$\frac{df}{df} = \frac{1}{2} \left[\frac{\partial f}{\partial x} \times \frac{\partial f}{\partial x} \right] = \frac{1}{2} \left[\frac{\partial f}{\partial x} \times \frac{\partial f}{\partial x} \right] = \frac{1}{2} \left[\frac{\partial f}{\partial x} \times \frac{\partial f}{\partial x} \right] = \frac{1}{2} \left[\frac{\partial f}{\partial x} \times \frac{\partial f}{\partial x} \right] = \frac{1}{2} \left[\frac{\partial f}{\partial x} \times \frac{\partial f}{\partial x} \times \frac{\partial f}{\partial x} \right] = 0$$

$$\frac{\partial f}{\partial x} = \frac{\partial f}{\partial x} \times \frac{\partial f$$