

ECON 583 Lec 6

Note Title

1/28/2013

Topics

- Efficient GMM
- 2-step efficient GMM
- Iterative efficient GMM
- Continuous updating GMM
- Testing in GMM

Iterative efficient GMM

After 2-step GMM we could re-estimate S

$$\hat{S} = \hat{S} (\hat{S}^{-1} (\hat{\omega}_1)) = \frac{1}{n} \sum_t \hat{x}_t \hat{x}_t' \hat{e}_t^2$$

$$\hat{e}_t = y_t - z_t' \hat{\delta} (\hat{\delta}^{-1} (\hat{\omega}_1))$$

$$\hat{\delta} (\hat{\omega}_1) = \text{initial consistent GMM estimator}$$

Then, re-compute efficient GMM estimator

$$\hat{\delta} (\hat{S}) = (S_{xz}' \hat{S}^{-1} S_{xz})^{-1} S_{xz}' \hat{S}^{-1} S_{xy}$$

If we keep iterating in this way, the updated estimates of δ will eventually converge — this gives the iterated efficient GMM estimator:

$$\hat{\delta}(\hat{\Sigma}_{iter}^{-1})$$