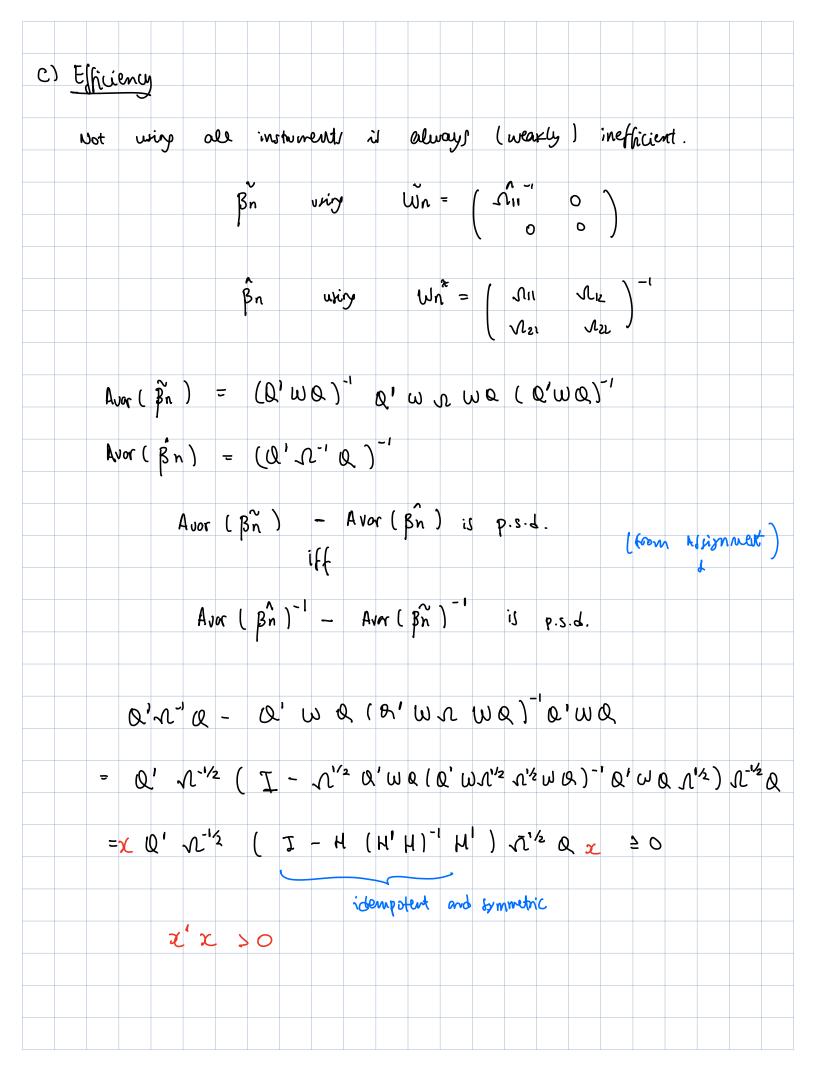
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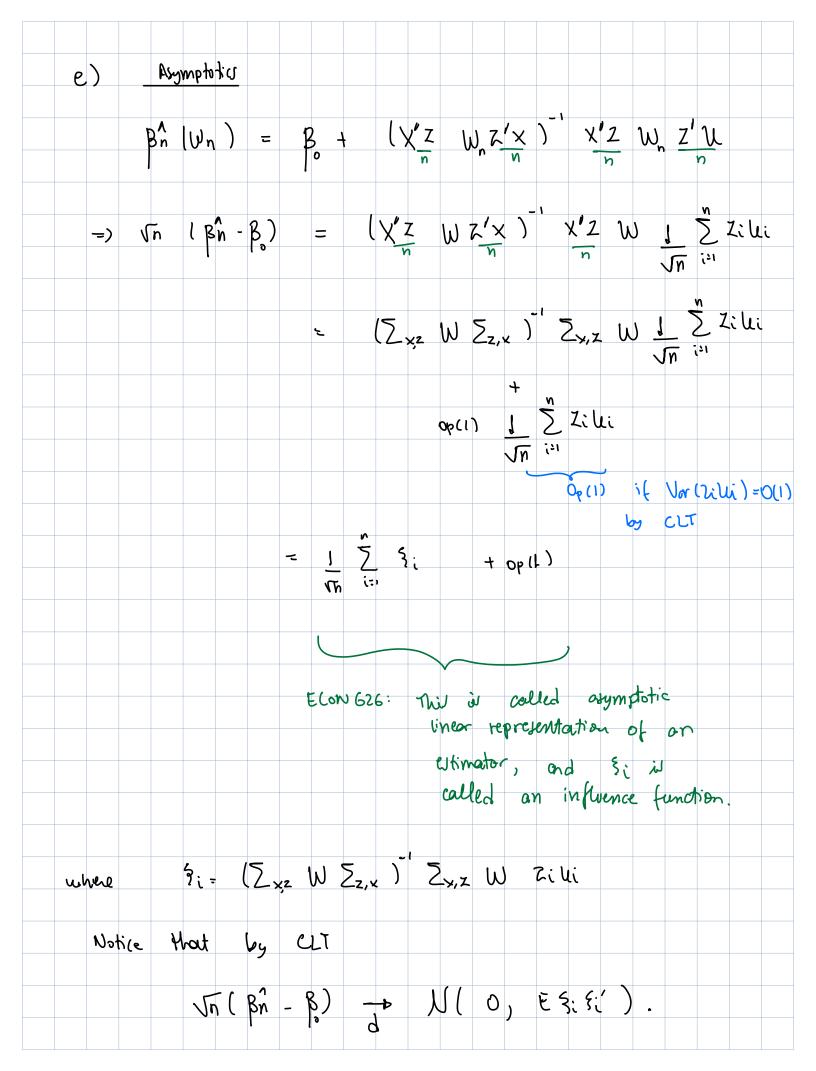
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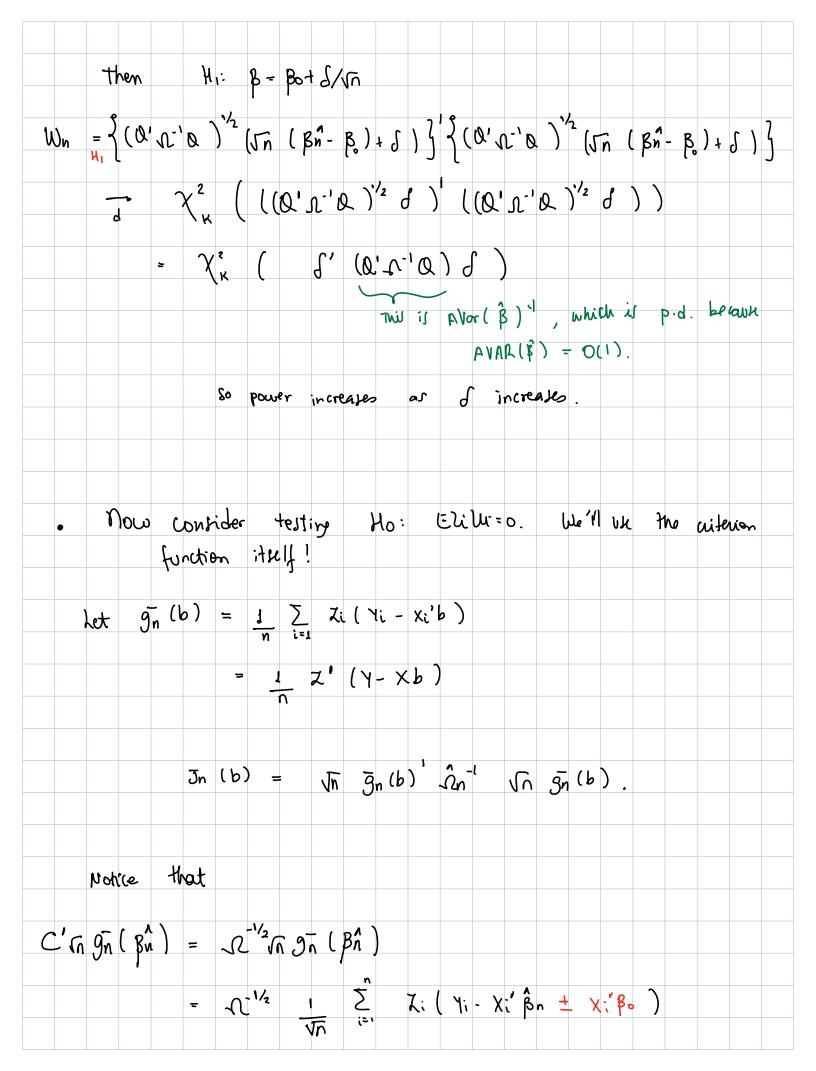
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$$= \mathcal{N}^{1/2} \frac{Z'U}{\sqrt{n}} - \mathcal{N}^{1/2} Z'X (n(\beta^{n} - \beta_{n}))$$

$$= \mathcal{N}^{1/2} Z'U - \mathcal{N}^{1/2} Z'X (x'Z (n' Z'X)' x'Z (n' Z'U))$$

$$= \begin{cases} T_{e} - \mathcal{N}^{1/2} Z'X (x'Z (n' Z'X)' x'Z (n' Z'X)' x'Z (n' Z'U)) \\ \sqrt{n} \end{cases}$$

$$= \begin{cases} T_{e} - \mathcal{N}^{1/2} Z'X (x'Z (n' Z'X)' x'Z (n' Z'U)) \\ \sqrt{n} \end{cases}$$

$$= T_{e} - \mathcal{N}^{1/2} Z'X (x'Z (n' Z'X)' x'Z (n' Z'U)) \\ \sqrt{n} \end{cases}$$

$$= T_{e} - \mathcal{N}^{1/2} Z'X (x'Z (n' Z'X)' x'Z (n' Z'U)) \\ \sqrt{n} \qquad D_{n} \end{cases}$$

$$= T_{e} - \mathcal{N}^{1/2} Z'X (x'Z (n' Z'X)' x'Z (n' Z'U)) \\ = T_{e} - \mathcal{N}^{1/2} EZX' (Exclut (n' Z'X)' x'Z (n' Z'U)) \\ + c_{p}(z)$$

$$= T_{e} - \mathcal{N}^{1/2} EZX' (Exclut (n' Z'X)' + c_{n}(z)) \\ = T_{e} - \mathcal{N}^{1/2} EZX' (Exclut (n' EZX')' + c_{n}(z)) \\ = T_{e} - \mathcal{N}^{1/2} EZX' (EXclut (n' EZX')' + c_{n}(z)) \\ = T_{e} - \mathcal{N}^{1/2} EZX' (EXclut (n' EZX')' + c_{n}(z)) \\ = T_{e} - \mathcal{N}^{1/2} EZX' (EXclut (n' EZX')' + c_{n}(z)) \\ = T_{e} - \mathcal{N}^{1/2} EZX' (EXclut (n' EZX')' + c_{n}(z)) \\ = T_{e} - \mathcal{N}^{1/2} EZX' (EXclut (n' EZX')' + c_{n}(z)) \\ = T_{e} - \mathcal{N}^{1/2} EZX' (EXclut (n' EZX')' + c_{n}(z)) \\ = T_{e} - \mathcal{N}^{1/2} EZX' (EXclut (n' EZX') + c_{n}(z)) \\ = T_{e} - \mathcal{N}^{1/2} EZX' (EXclut (n' Z'Z) (n' Z'Z)) \\ = T_{e} - \mathcal{N}^{1/2} EZX' (EXclut (n' Z'Z$$

Therefore

$$J_{n}(\beta_{n}) = \left[\sqrt{1}^{1/2} \sqrt{n} \tilde{g}_{n}(\beta_{n}) \right]^{1} \sqrt{2}^{1/2} \sqrt{n} \sqrt{n} \sqrt{2} \sqrt{n} \sqrt{n} \sqrt{n} \sqrt{n} \tilde{g}_{n}(\beta_{n}) \right]$$

$$= \left[D_{n} \sqrt{2}^{1/2} \frac{\chi'(u)}{\sqrt{n}} \right]^{1} \left[T_{2} + op(1) \right] \left[D_{n} \sqrt{2}^{1/2} \frac{\chi'(u)}{\sqrt{n}} \right]$$

$$= \left[D \sqrt{2}^{1/2} \frac{\chi'(u)}{\sqrt{n}} + op(1) Op(1) \right]^{1} \left[J_{2} + op(1) \right] \left[D \sqrt{2}^{1/2} \frac{\chi'(u)}{\sqrt{n}} + op(1) Op(1) \right]$$

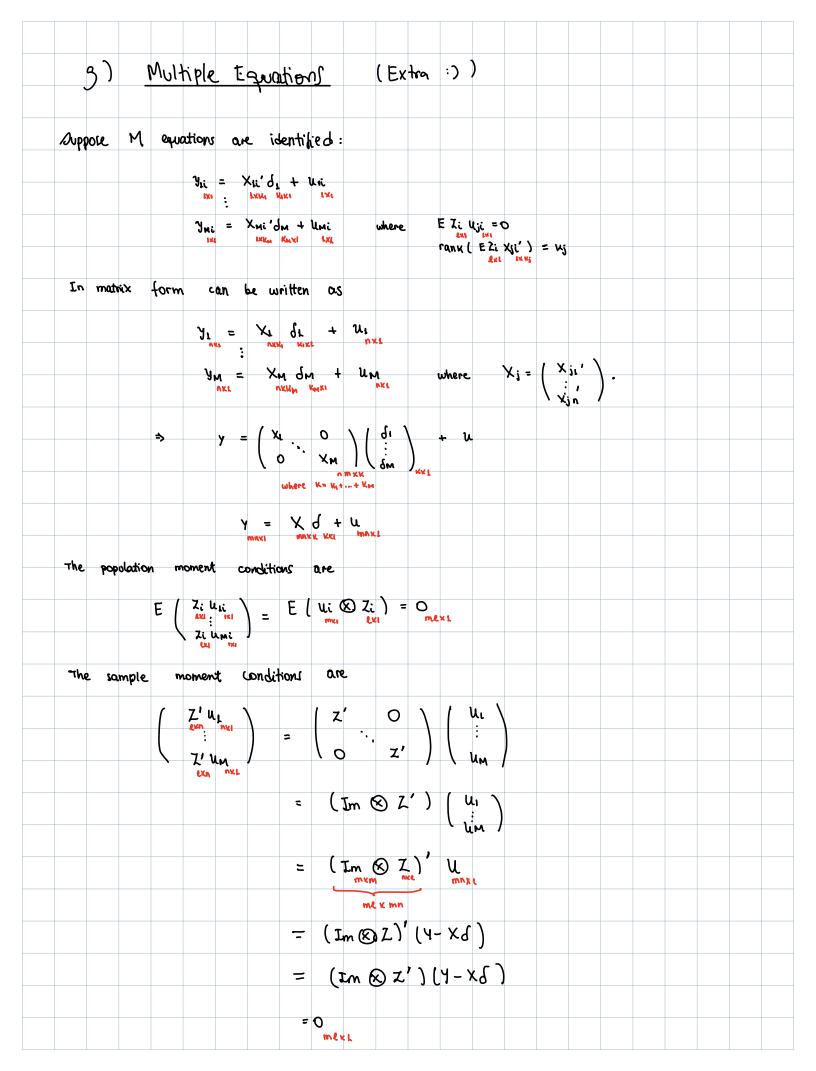
$$= \left[N^{1} D^{1} + op(1) \right] \left[J_{2} + op(1) \right] \left[D N + op(1) \right]$$

$$= N^{1} D N + op(1) because DN = Op(1)$$

$$= N^{1} C N C^{1} N = N^{1} N N = \sum_{i=1}^{N} n_{i}^{1/2} \tilde{n}_{i}^{1/2}$$

$$= \chi^{2} rome(CD) = \chi^{2} + r(D) = \chi^{2} + r N$$

$$T_{DN} atternative hypothesis is the same idea with non-centered standard hypothesis is the same idea with non-centered hypothesis is the same idea with non-centered standard hypothesis is the same idea with non-centered hypothesis is the same idea hypothesis is non-centered hypothesis is index in the same idea hypothesis is$$



We can volve the system as with a regular GMM difficator

$$\int_{n}^{n} = \operatorname{argmin}_{d \in \mathbb{R}^{N}} \left[\left(\operatorname{Im} \bigotimes Z' \right) \left(Y - Xd \right) \right] \|_{U_{n}} \\
= \operatorname{argmin}_{d \in \mathbb{R}^{N}} \left[\left(\operatorname{Im} \bigotimes Z' \right) \left(Y - Xd \right) \right]^{'} \left[\bigcup_{n} \left[\left(\operatorname{Im} \bigotimes Z' \right) \left(Y - Xd \right) \right] \\
= \left(\frac{Z'}{2} \left(Y_{n} - X_{n} d_{n} \right) \right)^{'} \left(\bigcup_{\substack{n \in \mathbb{N} \\ i \in$$

$$\frac{1}{n} - \frac{1}{d} = \begin{bmatrix} X \cdot (\underline{\mathbf{I}}_{\mathbf{N}} \otimes \underline{Z}) \text{ then } (\underline{\mathbf{I}}_{\mathbf{m}} \otimes \underline{Z})' X \end{bmatrix}^{-1} X' (\underline{\mathbf{I}}_{\mathbf{m}} \otimes \underline{Z}) \text{ then } (\underline{\mathbf{T}}_{\mathbf{N}} \otimes \underline{Z})' \text{ the } (\underline{\mathbf{T}})' \text{ the } (\underline{\mathbf{T}}$$

