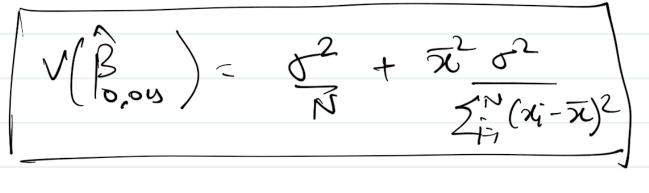
Econometrics-1 [2.02.262] Lecture 9 from prev. lecture V(ax+by) $-a^2V(x)+b^2V(y)$ $+2ab^2a^2$ V(B) $+2ab^2$ $+2ab^2$ + $= \sqrt{(\overline{y})} + \overline{\chi}^2 \sqrt{(\beta_{1,0LS})} - 2\overline{\chi} Cov(\beta_{1}, \overline{y})$ $= \overline{\chi}^2 - 2\overline{\chi}^2 = 2$ $= \overline{\chi}^2 - 2$ $= \overline{\chi}$ $V\left(\sum_{i=1}^{N}\frac{y_{i}}{N}\right) = \sum_{i=1}^{N}\frac{1}{N^{2}}V(y_{i}) = \sum_{i=1}^{N}\sqrt{2}$ $\operatorname{Cov}(\hat{\beta}, \hat{y}) = \left[\frac{3^2 \cdot N}{N^2} \right] = 0$ $\operatorname{Cov}(\hat{\beta}, \hat{y}) = \left[\frac{3^2 \cdot N}{N^2} \right] = 0$ $\operatorname{Cov}(\hat{\gamma}, \hat{y}) = \left[\frac{3^2 \cdot N}{N^2} \right] = 0$



Sealer

Sealer

J. = Brin+ Briz+ --- + Brik + Ui

whatin

Grime; wages wages i=1,2,--, N

Luites inalternation [=1,2,---, N] actuites Jobs avenues vage i = Bo + B, reduci / + ui = Yo + YI for i Y + Ei + 1/2 (feti) 1/2

→ wager = Bo+B, coluci+B, copen; + Bageita

Alternative matix notation Y = [BX] + U (OK?) NXI [XK KXN NXI (IXN) (B' x') = XB Y=XB+U)

55 - Yi = XIB, + XIB2 + -- + XIKFK + Ui 12-1,2,-,N-

SLRM: (as spend ase of MLRM) Ji = B, + B2 xi + Ui MLRM:

y = xB+y Xi1 = 1 + i= 812,-N3 X12 = 76 +1= 21,5-19

Assumptions on the multiple linear repression model.

A1:
$$E(u|x) = 0$$

- · more general, it applies abouther X is a r.v.
- · Y Xis fixed, then E(U)=0
- · Implication of A1 : E(X'L) = 0 [CETERIS]

brook of E(X'U)=0 given E(UIX). Uses: LAW OF ITERATED Expectations [LIE] Consider 7 and y are random LIE \Rightarrow $E(z) = E_y E_z(zy)$ Use -LIE for our proof -> Ex [Eu (x'ulx)] = Fn [X' Fu(ulx)]

||LIE

E(x'u) == 0

Hence Porred