$$\frac{Z_I(0,T)}{\underbrace{Z_0(0,T)}} = e^{-\int_0^T \lambda_s \, ds}$$

$$Z_I(0,T) = e^{-r(T-0)} \, e^{-\int_0^T \lambda_s \, ds} = e^{-\int_0^T (r+\lambda_s) ds}$$

$T_1, \ldots, T_i, T_{i+1}$

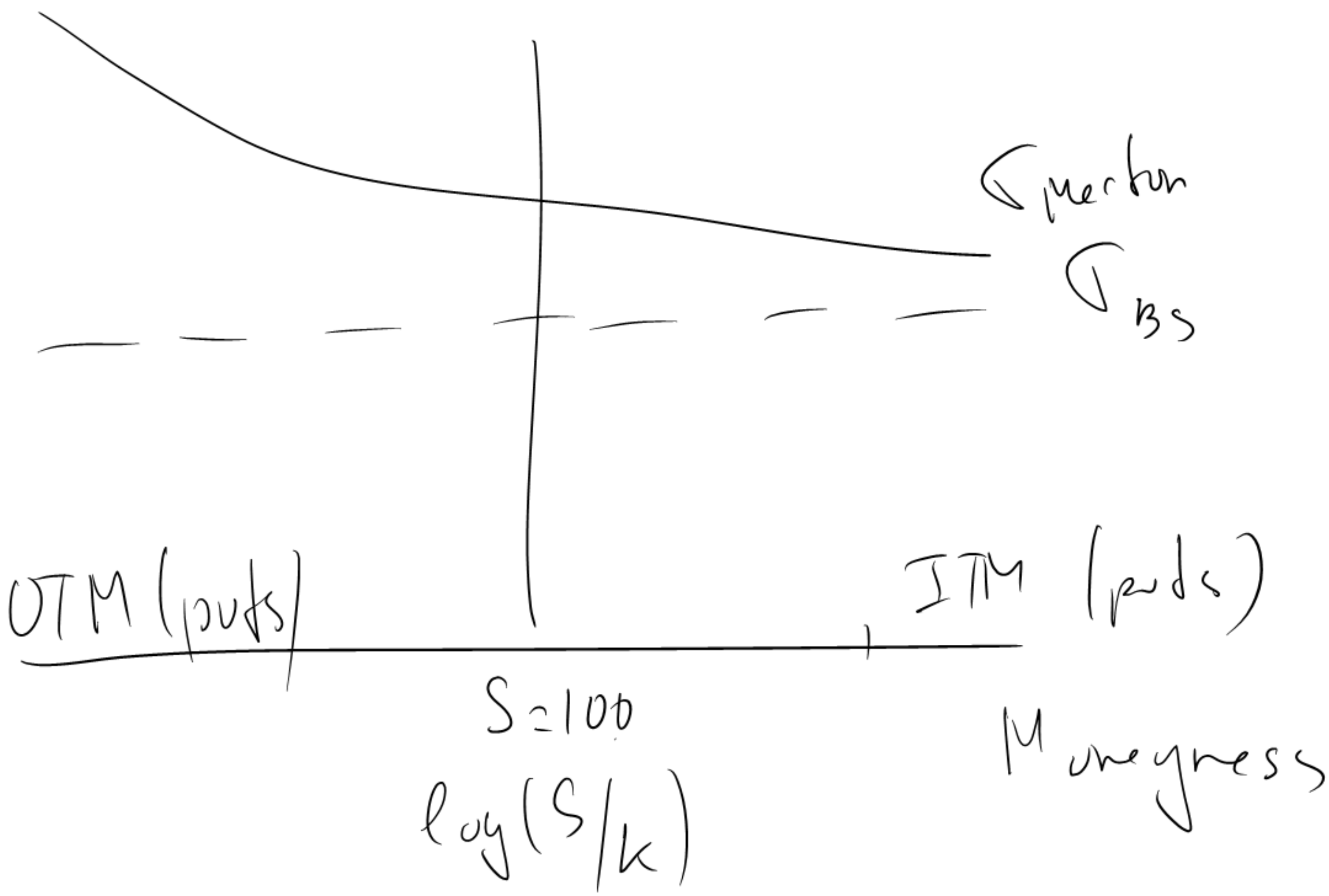
HW Method

Credit Metrics

↳ Value of portfolio due to
credit risk

$$\frac{dV}{dt} + \frac{1}{2}\sigma^2 S^2 \frac{d^2V}{dS^2} + (r+p)S\frac{dV}{dS} - (r+p)V = 0$$

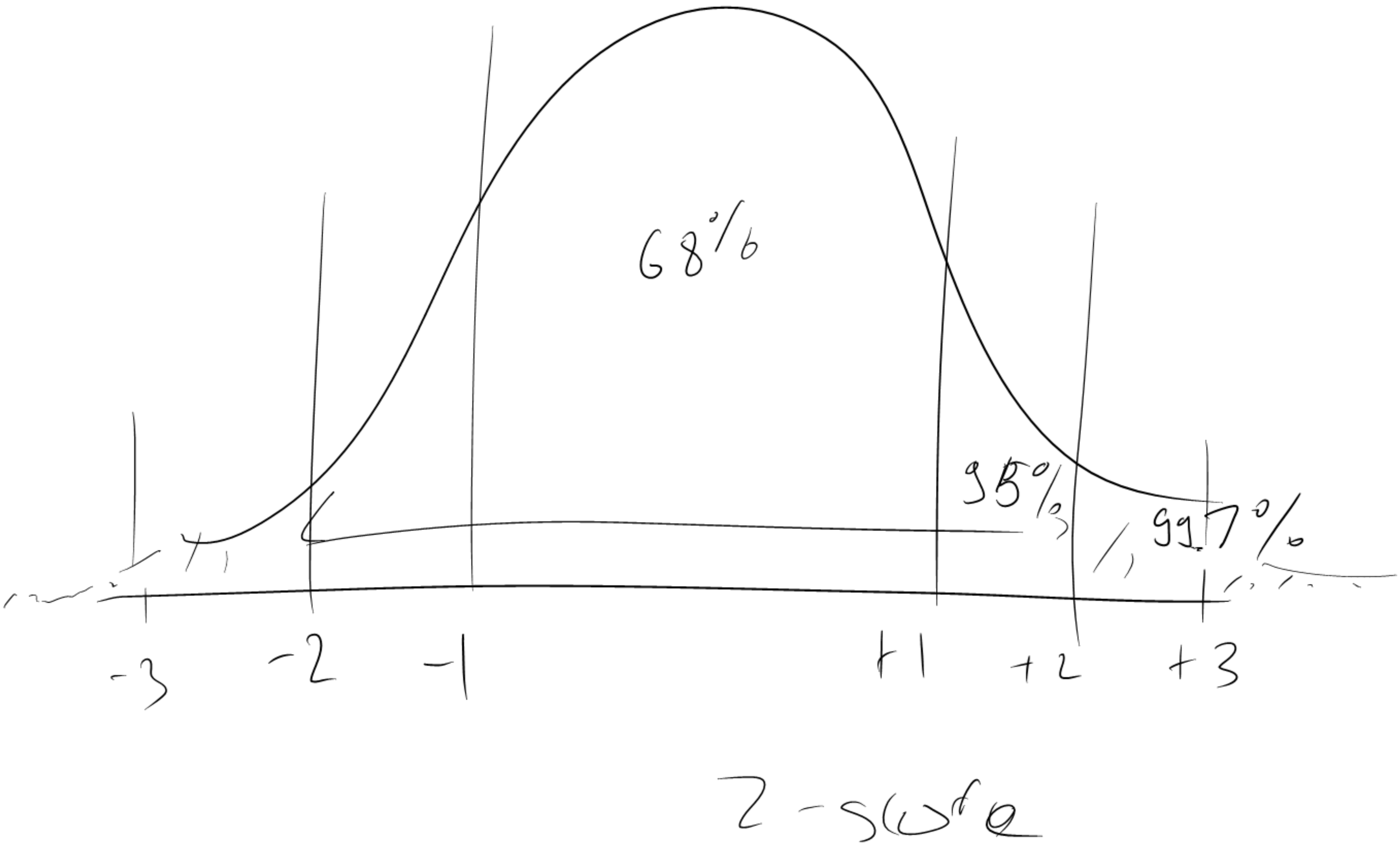
Merton Model



ATM S=K

0

Normal Tables



$$g(p) = \log \frac{p}{1-p} \quad \text{Link}$$

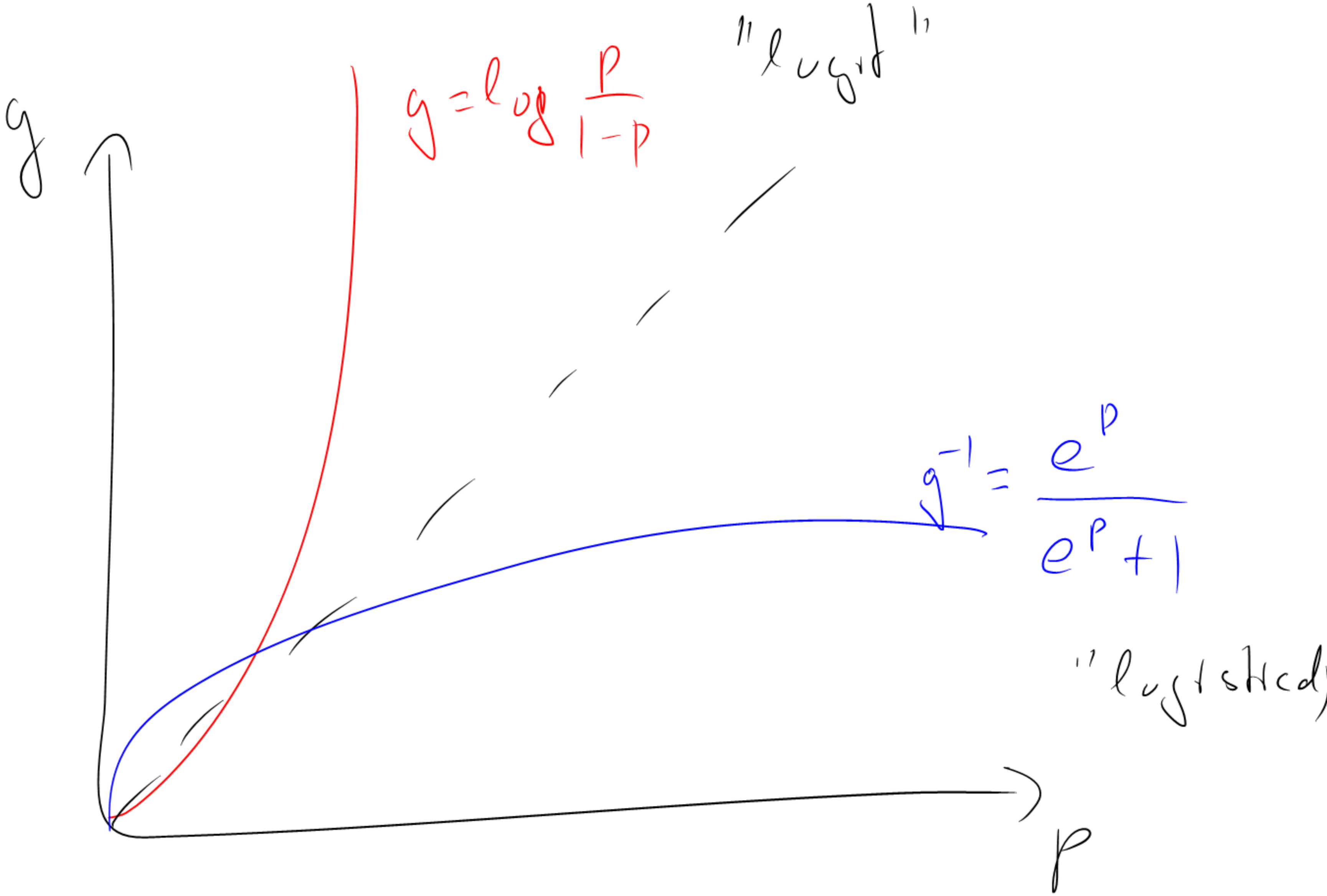
$$g^{-1}(g(p)) = p$$

$$e^g + 1 = \frac{\cancel{p}}{1-p} + \frac{1-\cancel{p}}{1-p} = \frac{1}{1-p}$$

$$1 - p = \frac{1}{e^g + 1}$$

$$\frac{e^g+1}{e^g+1} - \frac{1}{e^g+1} = p$$

$$\frac{e^g}{e^g+1} = p \qquad p(g) \quad \text{Inverse Link.}$$



$g(p)$

Matrix P

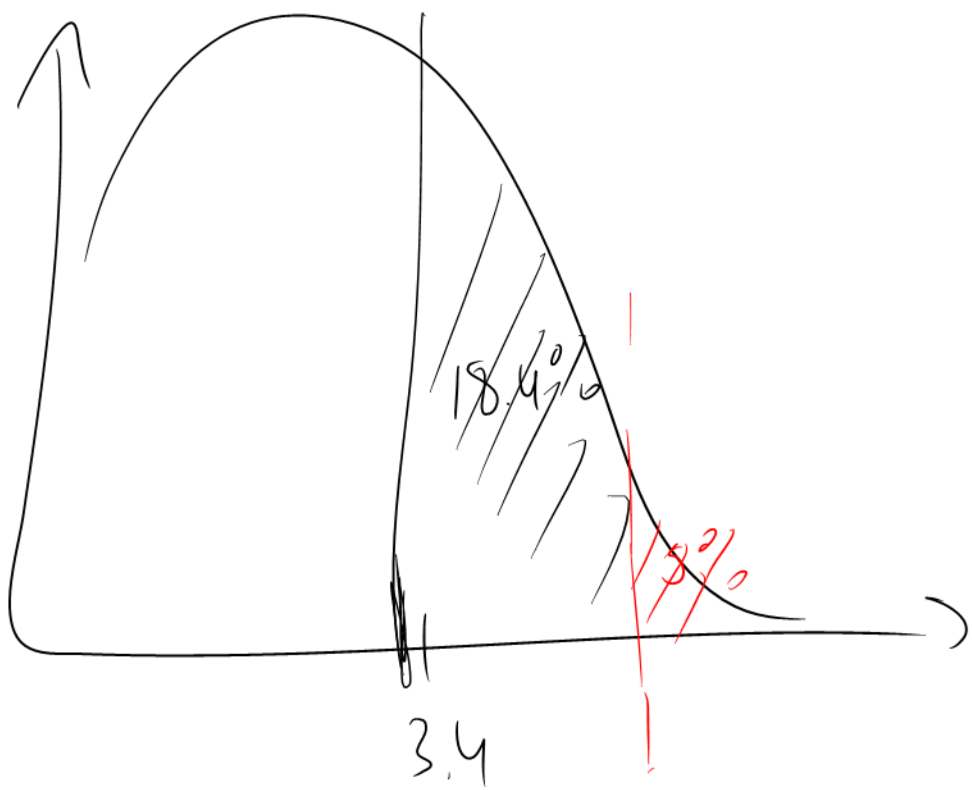
$$\begin{pmatrix} PD_1(1-PD_1) & & & 0 \\ & PD_2(1-PD_2) & & \\ & & \ddots & \\ 0 & & & PD_T(1-PD_T) \end{pmatrix}$$

LR-Test.

HT

$H_0 : \ell - \ell_0 = 0$

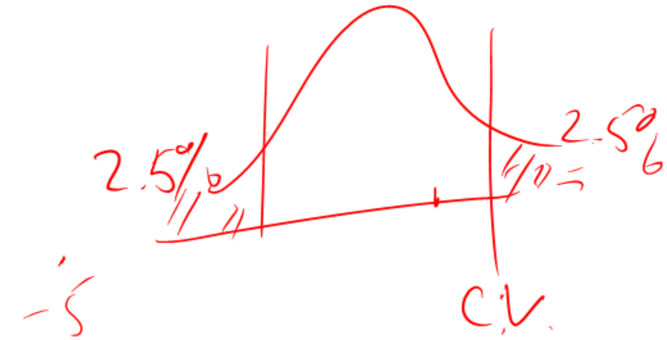
$H_1 : \ell - \ell_0 \neq 0$



Significance

$H_0 : \beta_i = 0$

$H_1 : \beta_i \neq 0$



two-tail

Ordered Probit

$\beta' X$ ..... Normal Variable Z_j