

$\mathcal{M}(X)^\perp$

$Y$

$\hat{\epsilon}$

$\|Y - \hat{Y}\|$

$\|Y - \bar{y}\mathbf{1}\|$

$\theta_0$

$\hat{Y} = X\hat{\beta}$

$\bar{y}\mathbf{1}$

$\theta$

$\|\hat{Y} - \bar{y}\mathbf{1}\|$

$\mathbf{1}$

$\mathcal{M}(X)$

