□ Summary:

- Group mean for Angus animals M_{AN}

$$M_{AN} = \frac{1}{N_{AN}} \sum_{i=1}^{N_{AN}} y_{1\cdot}$$

- Group mean M_{Li} for Limousin

$$M_{Li} = \frac{1}{N_{Li}} \sum_{i=1}^{N_{Li}} y_{2\cdot}$$

- From regression of body weight on breed code

{ Angus: 0 ; Limousin: 1 }

$$\hat{b}_0 = M_{AN}$$

$$\hat{b}_0 + \hat{b}_1 = M_{Li}$$

Define vector $\hat{b} = \begin{bmatrix} \hat{b}_0 \\ \hat{b}_1 \end{bmatrix}$

$$m = \begin{bmatrix} M_{AN} \\ M_{Li} \end{bmatrix}$$

$$m = \begin{bmatrix} 1 & 0 \\ 1 & 1 \end{bmatrix} \cdot \begin{bmatrix} \hat{b}_0 \\ \hat{b}_1 \end{bmatrix}$$

$$= L^T \cdot \hat{b}$$

□ Add Simmental by regression of body weight on breed code

{ Angus: 0 ; Simmental: 1 }