

ORIGIN := 1

$$x_1 := \begin{pmatrix} 0.103 \\ 0.231 \\ 0.294 \\ 0.361 \\ 0.487 \\ 0.557 \\ 0.686 \\ 0.796 \\ 0.869 \end{pmatrix} \quad \gamma_1 := \begin{pmatrix} 3.107 \\ 2.603 \\ 2.397 \\ 2.212 \\ 1.814 \\ 1.642 \\ 1.385 \\ 1.203 \\ 1.099 \end{pmatrix} \quad \gamma_2 := \begin{pmatrix} 1.011 \\ 1.051 \\ 1.083 \\ 1.158 \\ 1.306 \\ 1.443 \\ 1.925 \\ 2.850 \\ 4.294 \end{pmatrix}$$

i := 1 .. 9

$$x_{2_i} := 1 - x_{1_i}$$

$$Gex_i := x_{1_i} \cdot \ln(\gamma_{1_i}) + x_{2_i} \cdot \ln(\gamma_{2_i})$$

$$y_i := \frac{Gex_i}{x_{1_i} \cdot x_{2_i}}$$

$$\text{line}(x_1, y) = \begin{pmatrix} 1.15 \\ 1.309 \end{pmatrix}$$

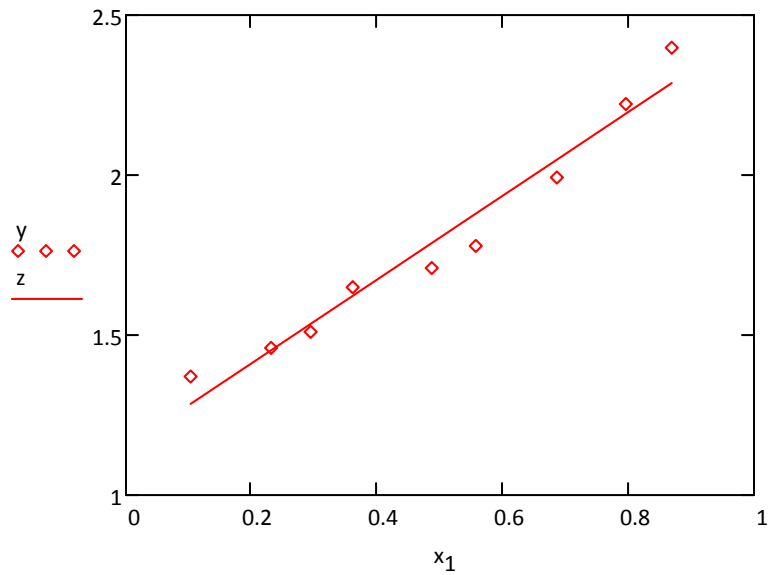
$$z_i := \text{line}(x_1, y)_2 \cdot x_{1_i} + \text{line}(x_1, y)_1$$

$$\text{corr}(x_1, y) = 0.979$$

$$B := \frac{\text{line}(x_1, y)_2}{2} = 0.655$$

$$A := \text{line}(x_1, y)_1 + B = 1.804$$

$$\gamma_{1\text{inf}} := \exp(A - B) = 3.157 \quad \gamma_{2\text{inf}} := \exp(A + B) = 11.69$$



**Alternative Solution**

$$\begin{bmatrix} \sum_i (x_{1_i} \cdot x_{2_i}) & \sum_i [x_{1_i} \cdot x_{2_i} \cdot (x_{1_i} - x_{2_i})] \\ \sum_i [x_{1_i} \cdot x_{2_i} \cdot (x_{1_i} - x_{2_i})] & \sum_i [x_{1_i} \cdot x_{2_i} \cdot (x_{1_i} - x_{2_i})^2] \end{bmatrix}^{-1} \cdot \begin{bmatrix} \sum_i Gex_i \\ \sum_i [Gex_i \cdot (x_{1_i} - x_{2_i})] \end{bmatrix} = \begin{pmatrix} 1.787 \\ 0.649 \end{pmatrix}$$