

T 13

$$n = 139$$

$$m = 1000$$

$$\tilde{\sigma}_{\text{leg}} = 5,055 \quad \tilde{\sigma}_{\text{sen}} = 6,161$$

$$\tilde{\sigma}_{\text{leg}} = 5,722 \quad \tilde{\sigma}_{\text{weg}} = 4,612$$

гипотеза:

$$H_0: \tilde{\sigma}_{\text{leg}}^2 = \tilde{\sigma}_{\text{sen}}^2 \quad H_1: \tilde{\sigma}_{\text{leg}}^2 \neq \tilde{\sigma}_{\text{sen}}^2$$

$$S_{\text{leg}} = \frac{n}{n-1} \tilde{\sigma}_{\text{leg}}^2 = 32,9785$$

$$S_{\text{sen}} = \frac{m}{m-1} \tilde{\sigma}_{\text{sen}}^2 = 37,9959$$

$$\tilde{\Delta} = \frac{S_{\text{leg}}}{S_{\text{sen}}} = 0,86795 \quad q(t): F(138, 999)$$

$$p\text{-value} = P(\Delta \geq \tilde{\Delta} | H_0) = \int_{0,86795}^{\infty} q(t) dt =$$

$$\approx 0,87466$$

$$0,025 < p\text{-value} < 0,975$$

нет оснований отвергнуть  $H_0$



Упражнение

$$H_0: \sigma_{weg}^2 = \sigma_{weu}^2$$

$$H_1: \sigma_{weg}^2 \neq \sigma_{weu}^2$$

$$S_{weg}^2 = \frac{11}{11-1} \tilde{\sigma}_{weg}^2 = 21,42468$$

$$S_{weu}^2 = \frac{11}{11-1} \tilde{\sigma}_{weu}^2 = 25,5786$$

$$\tilde{\Delta} = 0,837602$$

$$p\text{-value} = 0,919692$$

$$\frac{\alpha}{2} < p\text{-value} < 1 - \frac{\alpha}{2}$$

Нет оснований  
отб.  $H_0$

$$W(\alpha) = P(\Delta \geq \tilde{\Delta} | H_1) =$$

$$= P\left(\frac{S_x^2}{S_y^2} \cdot \frac{\tilde{\sigma}_y^2}{\tilde{\sigma}_x^2} > \underbrace{1 - \frac{\alpha}{2}}_{a_1} \cdot \underbrace{\frac{\tilde{\sigma}_y^2}{\tilde{\sigma}_x^2}}_{a_2}\right) +$$

$$+ P\left(\frac{S_x^2}{S_y^2} \cdot \frac{\tilde{\sigma}_y^2}{\tilde{\sigma}_x^2} \leq \underbrace{\frac{\alpha}{2}}_{a_1} \cdot \underbrace{\frac{\tilde{\sigma}_y^2}{\tilde{\sigma}_x^2}}_{a_2}\right) =$$

$$= \int_{a_1}^{+\infty} q(t) dt + \int_0^{a_2} q(t) dt$$

