

AULA T20 – Inferência

1. Testes sobre uma combinação linear de coeficientes

$$\log(\text{wage}) = \beta_0 + \beta_1 \text{educ} + \beta_2 \text{exper} + \beta_3 \text{tenure} + u$$

a) Testes de significância individual

Dependent Variable: LOG(WAGE)

Included observations: 526

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.284360	0.104190	2.729230	0.0066
EDUC	0.092029	0.007330	12.55525	0.0000
EXPER	0.004121	0.001723	2.391437	0.0171
TENURE	0.022067	0.003094	7.133070	0.0000
R-squared	0.316013	Mean dependent var		1.623268
Adjusted R-squared	0.312082	S.D. dependent var		0.531538
S.E. of regression	0.440862	Akaike info criterion		1.207406
Sum squared resid	101.4556	Schwarz criterion		1.239842
Log likelihood	-313.5478	Hannan-Quinn criter.		1.220106
F-statistic	80.39092	Durbin-Watson stat		1.768805
Prob(F-statistic)	0.000000			

Matriz de variâncias-covariâncias

C	EDUC	EXPER	TENURE
0.010856	-0.000729	-8.66E-05	2.93E-05
-0.000729	5.37E-05	3.96E-06	-2.56E-06
-8.66E-05	3.96E-06	2.97E-06	-2.70E-06
2.93E-05	-2.56E-06	-2.70E-06	9.57E-06

b) Teste de igualdade dos 2 últimos coeficientes

Wald Test:

Equation: EQ01

Test Statistic	Value	df	Probability
t-statistic	-4.236923	522	0.0000
F-statistic	17.95151	(1, 522)	0.0000
Chi-square	17.95151	1	0.0000

Null Hypothesis: C(3)=C(4)

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(3) - C(4)	-0.017946	0.004236

Restrictions are linear in coefficients.

Método alternativo para realizar o teste anterior

Dependent Variable: LOG(WAGE)

Included observations: 526

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.284360	0.104190	2.729230	0.0066
EDUC	0.092029	0.007330	12.55525	0.0000
EXPER	-0.017946	0.004236	-4.236923	0.0000
EXPER+TENURE	0.022067	0.003094	7.133070	0.0000
R-squared	0.316013	Mean dependent var		1.623268
Adjusted R-squared	0.312082	S.D. dependent var		0.531538
S.E. of regression	0.440862	Akaike info criterion		1.207406
Sum squared resid	101.4556	Schwarz criterion		1.239842
Log likelihood	-313.5478	Hannan-Quinn criter.		1.220106
F-statistic	80.39092	Durbin-Watson stat		1.768805
Prob(F-statistic)	0.000000			

2. Testes sobre várias combinações lineares de coeficientes

$$\log(\text{salary}) = \beta_0 + \beta_1 \log(\text{sales}) + \beta_2 \log(\text{mktval}) + \beta_3 \text{profits} + u$$

a) Teste de significância global

Dependent Variable: LSALARY

Included observations: 177

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.686924	0.379729	12.34280	0.0000
LSALES	0.161368	0.039910	4.043299	0.0001
LMKTVAL	0.097529	0.063689	1.531333	0.1275
PROFITS	3.57E-05	0.000152	0.234668	0.8147
R-squared	0.299337	Mean dependent var		6.582848
Adjusted R-squared	0.287186	S.D. dependent var		0.606059
S.E. of regression	0.511686	Akaike info criterion		1.520127
Sum squared resid	45.29524	Schwarz criterion		1.591904
Log likelihood	-130.5312	Hannan-Quinn criter.		1.549237
F-statistic	24.63628	Durbin-Watson stat		2.096546
Prob(F-statistic)	0.000000			

b)Teste de nulidade conjunta dos dois últimos coeficientes

Dependent Variable: LSALARY

Included observations: 177

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.961077	0.199960	24.81038	0.0000
LSALES	0.224279	0.027129	8.267131	0.0000
R-squared	0.280858	Mean dependent var		6.582848
Adjusted R-squared	0.276748	S.D. dependent var		0.606059
S.E. of regression	0.515418	Akaike info criterion		1.523560
Sum squared resid	46.48983	Schwarz criterion		1.559448
Log likelihood	-132.8350	Hannan-Quinn criter.		1.538115
F-statistic	68.34546	Durbin-Watson stat		2.098568
Prob(F-statistic)	0.000000			