

1. Ceny domov v závislosti od obytnej plochy (sqft = square feet)

Dependent Variable: PRICE				
Method: Least Squares				
Date: 03/17/07 Time: 15:05				
Sample: 1 117				
Included observations: 117				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	47.81931	62.85482	0.760790	0.4483
SQFT	0.613667	0.036246	16.93065	0.0000
R-squared	0.713679	Mean dependent var		1062.735
Adjusted R-squared	0.711189	S.D. dependent var		380.4370
S.E. of regression	204.4512	Akaike info criterion		13.49548
Sum squared resid	4807032.	Schwarz criterion		13.54270
Log likelihood	-787.4857	F-statistic		286.6468
Durbin-Watson stat	1.536096	Prob(F-statistic)		0.000000

2. Ceny domov v závislosti od obytnej plochy (sqft) a polohy (ne = 1 pre severovýchodnú časť mesta, inak 0)

Dependent Variable: PRICE				
Method: Least Squares				
Date: 03/17/07 Time: 15:10				
Sample: 1 117				
Included observations: 117				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	31.08520	65.49015	0.474655	0.6359
SQFT	0.608790	0.036659	16.60705	0.0000
NE	37.20006	40.55259	0.917329	0.3609
R-squared	0.715777	Mean dependent var		1062.735
Adjusted R-squared	0.710790	S.D. dependent var		380.4370
S.E. of regression	204.5922	Akaike info criterion		13.50522
Sum squared resid	4771809.	Schwarz criterion		13.57605
Log likelihood	-787.0554	F-statistic		143.5466
Durbin-Watson stat	1.516132	Prob(F-statistic)		0.000000

3. Cobb-Douglasova produkčná funkcia

Dependent Variable: LOG(VALUEADD)				
Method: Least Squares				
Date: 03/17/07 Time: 14:48				
Sample: 1 27				
Included observations: 27				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.170644	0.326782	3.582339	0.0015
LOG(CAPITAL)	0.375710	0.085346	4.402204	0.0002
LOG(LABOR)	0.602999	0.125954	4.787457	0.0001
R-squared	0.943463	Mean dependent var		7.443631
Adjusted R-squared	0.938751	S.D. dependent var		0.761153
S.E. of regression	0.188374	Akaike info criterion		-0.396336
Sum squared resid	0.851634	Schwarz criterion		-0.252355
Log likelihood	8.350541	F-statistic		200.2489
Durbin-Watson stat	1.885989	Prob(F-statistic)		0.000000

4. Výdavky z kreditných kariet v závislosti od príjmu a veku

Dependent Variable: AVGEXP				
Method: Least Squares				
Date: 03/17/07 Time: 15:17				
Sample: 1 100 IF AVGEXP>0				
Included observations: 72				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-556.3986	572.7069	-0.971524	0.3347
INCOME	78.69547	22.36069	3.519367	0.0008
AGE	34.04839	35.47507	0.959783	0.3406
AGE^2	-0.502075	0.515651	-0.973673	0.3337
R-squared	0.207424	Mean dependent var	262.5321	
Adjusted R-squared	0.172458	S.D. dependent var	318.0468	
S.E. of regression	289.3251	Akaike info criterion	14.22693	
Sum squared resid	5692214.	Schwarz criterion	14.35341	
Log likelihood	-508.1695	F-statistic	5.932075	
Durbin-Watson stat	0.444129	Prob(F-statistic)	0.001177	

Používame dáta, pre ktoré je premenná AVGEXP nenulová (preto podmienka AVGEXP>0 v riadku Sample).

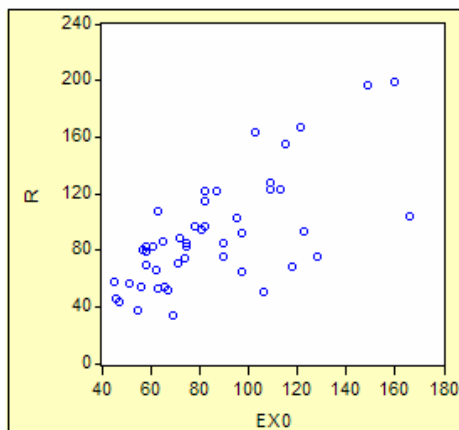
Kde je chyba v nasledujúcej úvahe?

Dáta:

R: Crime rate = # of offenses reported to police per million population in US states in 1960

Ex0: 1960 per capita expenditure on police by state and local government

Závislosť:



Dependent Variable: R				
Method: Least Squares				
Date: 03/17/07 Time: 15:35				
Sample: 1 47				
Included observations: 47				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.44640	12.66926	1.140272	0.2602
EX0	0.894848	0.140861	6.352683	0.0000
R-squared	0.472800	Mean dependent var	90.50851	
Adjusted R-squared	0.461084	S.D. dependent var	38.67627	
S.E. of regression	28.39259	Akaike info criterion	9.571755	
Sum squared resid	36276.26	Schwarz criterion	9.650484	
Log likelihood	-222.9362	F-statistic	40.35658	
Durbin-Watson stat	2.122017	Prob(F-statistic)	0.000000	

Záver:

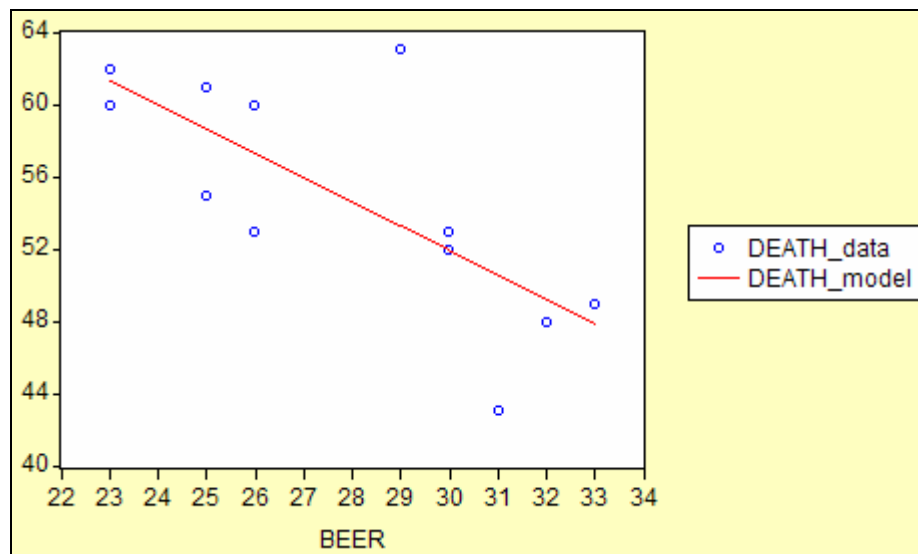
Ak chceme znížiť kriminalitu, mali by sme znížiť výdavky na políciu.

Úmrtnosť detí do jedného roka

1.15. An investigator is interested in the accompanying two series for 1935–1946.

Year	35	36	37	38	39	40	41	42	43	44	45	46
X, deaths of children under 1 year (000)	60	62	61	55	53	60	63	53	52	48	49	43
Y, consumption of beer (bulk barrels)	23	23	25	25	26	26	29	30	30	32	33	31

Závislosť od spotreby piva:



obs	Actual	Fitted
1935	60.0000	61.2942
1936	62.0000	61.2942
1937	61.0000	58.6089
1938	55.0000	58.6089
1939	53.0000	57.2663
1940	60.0000	57.2663
1941	63.0000	53.2384
1942	53.0000	51.8957
1943	52.0000	51.8957
1944	48.0000	49.2104
1945	49.0000	47.8678
1946	43.0000	50.5531

- Prečo nie je vhodné snažiť sa znížiť detskú úmrtnosť zvýšením spotreby piva?
- Čím je spôsobená štatistická závislosť medzi týmito premennými?
- Aké premenné sú vhodné na modelovanie detskej úmrtnosti?

Zdroj dát:

Greene: Econometric Analysis

Johnston, Di Nardo: Econometric Methods

DASL datafiles (<http://lib.stat.cmu.edu/DASL/Datafiles/>)