Uygulamalı Ekonometri I dersi isteğe bağlı ödev cevapları (12.12.2019)

1. Şirketlerin BETA değerlerini hesaplayıp, sınıflandırıp, sıralayınız. Sadece Orijinden geçen regresyon modeli uygulayınız.

```
. reg  r_petkm r_bist100, nocons
```

Source	SS	df	MS		
Model	.075221448	1	.075221448	Number of obs	= 477
Residual	.179427495	476	.000376949	F(1, 476)	= 199.55
				Prob > F	= 0.0000
Total	.254648943	477	.000533855	R-squared	= 0.2954
				Adj R-squared	= 0.2939
				Root MSE	= .01942

r_petkm	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.9195215	.0650927	14.13	0.000	.791617	1.047426

```
. reg  r_gsray r_bist100, nocons
```

Source	SS	df	MS		
Model	.058940525	1	.058940525	Number of obs	= 477
Residual	.400298729	476	.000840964	F(1, 476)	= 70.09
				Prob > F	= 0.0000
Total	.459239255	477	.000962766	R-squared	= 0.1283
				Adj R-squared	= 0.1265
				Root MSE	= .029

r_gsray	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.8139506	.0972254	8.37	0.000	.6229066	1.004995

```
. reg  r_fener r_bist100, nocons
```

Source	SS	df	MS		
Model	.048241251	1	.048241251	Number of obs	= 477
Residual	.363213673	476	.000763054	F(1, 476)	= 63.22
				Prob > F	= 0.0000
Total	.411454924	477	.000862589	R-squared	= 0.1172
				Adj R-squared	= 0.1154
				Root MSE	= .02762

r_fener	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.7363772	.0926123	7.95	0.000	.5543977	.9183567

```
. reg  r_sise r_bist100, nocons
```

Source	SS	df	MS		
Model	.06678658	1	.06678658	Number of obs	= 477
Residual	.169198308	476	.000355459	F(1, 476)	= 187.89
				Prob > F	= 0.0000
Total	.235984888	477	.000494727	R-squared	= 0.2830
				Adj R-squared	= 0.2815
				Root MSE	= .01885

r_sise	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.8664343	.06321	13.71	0.000	.7422293	.9906394

```
. reg  r_bjkas r_bist100, nocons
```

Source	SS	df	MS		
Model	.067909769	1	.067909769	Number of obs	= 477
Residual	.416763052	476	.000875553	F(1, 476)	= 77.56
				Prob > F	= 0.0000
Total	.484672821	477	.001016086	R-squared	= 0.1401
				Adj R-squared	= 0.1383
				Root MSE	= .02959

r_bjkas	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.8736896	.0992047	8.81	0.000	.6787564	1.068623

```
. reg  r_ttkom r_bist100, nocons
```

Source	SS	df	MS		
Model	.12809141	1	.12809141	Number of obs	= 477
Residual	.197852143	476	.000415656	F(1, 476)	= 308.17
				Prob > F	= 0.0000
Total	.325943553	477	.00068332	R-squared	= 0.3930
				Adj R-squared	= 0.3917
				Root MSE	= .02039

r_ttkom	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	1.199917	.0683531	17.55	0.000	1.065606	1.334228

```
. reg  r_vakif r_bist100, nocons
```

Source	SS	df	MS		
Model	.220456529	1	.220456529	Number of obs	= 477
Residual	.111299796	476	.000233823	F(1, 476)	= 942.83
				Prob > F	= 0.0000
Total	.331756326	477	.000695506	R-squared	= 0.6645
				Adj R-squared	= 0.6638
				Root MSE	= .01529

r_vakif	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	1.574173	.0512666	30.71	0.000	1.473436	1.67491

```
. reg  r_arclk r_bist100, nocons
```

Source	SS	df	MS		
Model	.067404903	1	.067404903	Number of obs	= 477
Residual	.167083503	476	.000351016	F(1, 476)	= 192.03
				Prob > F	= 0.0000
Total	.234488406	477	.00049159	R-squared	= 0.2875
				Adj R-squared	= 0.2860
				Root MSE	= .01874

r_arclk	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.8704359	.0628137	13.86	0.000	.7470095	.9938623

```
. reg  r_koc r_bist100, nocons
```

Source	SS	df	MS		
Model	.073095105	1	.073095105	Number of obs	= 477
Residual	.091501906	476	.000192231	F(1, 476)	= 380.25
				Prob > F	= 0.0000
Total	.16459701	477	.000345067	R-squared	= 0.4441
				Adj R-squared	= 0.4429
				Root MSE	= .01386

r_koc	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.9064319	.0464839	19.50	0.000	.8150929	.997771

```
. reg  r_thy r_bist100, nocons
```

Source	SS	df	MS		
Model	.156429485	1	.156429485	Number of obs	= 477
Residual	.189353159	476	.000397801	F(1, 476)	= 393.24
				Prob > F	= 0.0000
Total	.345782644	477	.000724911	R-squared	= 0.4524
				Adj R-squared	= 0.4512
				Root MSE	= .01994

r_thy	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	1.326021	.0668688	19.83	0.000	1.194626	1.457415

Şirket	Beta	Hisse Senedi Tipi
VAKBN	1.574	Agresif H.S. Tipi
THYAO	1.326	Agresif H.S. Tipi
TTKOM	1.199	Agresif H.S. Tipi
PETKM	0.920	Savunma H.S. Tipi
KCHOL	0.906	Savunma H.S. Tipi
BJKAS	0.874	Savunma H.S. Tipi
ARCLK	0.870	Savunma H.S. Tipi
SISE	0.866	Savunma H.S. Tipi
GSRAY	0.814	Savunma H.S. Tipi
FENER	0.736	Savunma H.S. Tipi

2. BİST 100 endeksinin %10 artması ve azalması durumunda hisse senetlerinin muhtemel kazanç ve kayıplarını hesaplayınız.

Şirket	Beta	BİST100 %10 Artarsa		BİST100 %10 Azalırsa	
PETKM	0.920	9.20%	Artış	9.20%	Azalış
GSRAY	0.814	8.14%	Artış	8.14%	Azalış
FENER	0.736	7.36%	Artış	7.36%	Azalış
SISE	0.866	8.66%	Artış	8.66%	Azalış
BJKAS	0.874	8.74%	Artış	8.74%	Azalış
TTKOM	1.199	11.99%	Artış	11.99%	Azalış
VAKBN	1.574	15.74%	Artış	15.74%	Azalış
ARCLK	0.870	8.70%	Artış	8.70%	Azalış
KCHOL	0.906	9.06%	Artış	9.06%	Azalış
THYAO	1.326	13.26%	Artış	13.26%	Azalış

3. Veri seti 2018 ve 2019 olarak ikiye ayrılması durumunda şirketlerin BETA larının değişimlerini yorumlayınız.

- 2018 Yılı için hesaplanan Beta katsayıları

```
. reg  r_petkm r_bist100 if zaman>227 , nocons

      Source |       SS       df       MS              Number of obs =     250
-------------+------------------------------           F(  1,   249) =   90.64
       Model |  .049651957     1  .049651957           Prob > F      =  0.0000
    Residual |  .136403358   249  .000547805           R-squared     =  0.2669
-------------+------------------------------           Adj R-squared =  0.2639
       Total |  .186055315   250  .000744221           Root MSE      =  .02341

------------------------------------------------------------------------------
     r_petkm |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   r_bist100 |    1.01785   .1069129     9.52   0.000     .8072851    1.228423
------------------------------------------------------------------------------

. reg  r_gsray r_bist100 if zaman>227, nocons

      Source |       SS       df       MS              Number of obs =     250
-------------+------------------------------           F(  1,   249) =   53.28
       Model |  .034583162     1  .034583162           Prob > F      =  0.0000
    Residual |  .161630418   249  .000649118           R-squared     =  0.1763
-------------+------------------------------           Adj R-squared =  0.1729
       Total |   .19621358   250  .000784854           Root MSE      =  .02548

------------------------------------------------------------------------------
     r_gsray |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   r_bist100 |   .8494731   .1163802     7.30   0.000      .620258    1.078688
------------------------------------------------------------------------------

. reg   r_fener r_bist100 if zaman>227, nocons

      Source |       SS       df       MS              Number of obs =     250
-------------+------------------------------           F(  1,   249) =   53.17
       Model |  .038777803     1  .038777803           Prob > F      =  0.0000
    Residual |  .181611576   249  .000729364           R-squared     =  0.1760
-------------+------------------------------           Adj R-squared =  0.1726
       Total |  .220389379   250  .000881558           Root MSE      =  .02701

------------------------------------------------------------------------------
     r_fener |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   r_bist100 |    .899516   .1233643     7.29   0.000     .6565455    1.142486
------------------------------------------------------------------------------

. reg   r_sise r_bist100 if zaman>227, nocons

      Source |       SS       df       MS              Number of obs =     250
-------------+------------------------------           F(  1,   249) =   59.12
       Model |  .025158591     1  .025158591           Prob > F      =  0.0000
    Residual |  .105966678   249  .000425569           R-squared     =  0.1919
-------------+------------------------------           Adj R-squared =  0.1886
       Total |  .131125269   250  .000524501           Root MSE      =  .02063

------------------------------------------------------------------------------
      r_sise |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   r_bist100 |   .7245368   .0942328     7.69   0.000     .5389418    .9101319
------------------------------------------------------------------------------

. reg   r_bjkas r_bist100 if zaman>227, nocons

      Source |       SS       df       MS              Number of obs =     250
-------------+------------------------------           F(  1,   249) =  131.90
       Model |  .045964654     1  .045964654           Prob > F      =  0.0000
    Residual |   .08677274   249  .000348485           R-squared     =  0.3463
-------------+------------------------------           Adj R-squared =  0.3437
       Total |  .132737394   250   .00053095           Root MSE      =  .01867

------------------------------------------------------------------------------
     r_bjkas |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   r_bist100 |   .9793305   .0852726    11.48   0.000     .8113831    1.147278
------------------------------------------------------------------------------

. reg   r_ttkom r_bist100 if zaman>227, nocons

      Source |       SS       df       MS              Number of obs =     250
-------------+------------------------------           F(  1,   249) =  136.49
       Model |  .059487277     1  .059487277           Prob > F      =  0.0000
    Residual |  .108521594   249  .000435883           R-squared     =  0.3541
-------------+------------------------------           Adj R-squared =  0.3515
       Total |  .168008871   250  .000672035           Root MSE      =  .02088

------------------------------------------------------------------------------
    r_ttkom |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   r_bist100 |   1.114113   .0953621    11.68   0.000     .9262941    1.301932
------------------------------------------------------------------------------

. reg  r_vakif r_bist100 if zaman>227, nocons

      Source |       SS       df       MS              Number of obs =     250
-------------+------------------------------           F(  1,   249) =  405.17
       Model |  .108906118     1  .108906118           Prob > F      =  0.0000
    Residual |  .066928626   249  .000268793           R-squared     =  0.6194
-------------+------------------------------           Adj R-squared =  0.6178
       Total |  .175834744   250  .000703339           Root MSE      =  .01639

------------------------------------------------------------------------------
     r_vakif |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   r_bist100 |   1.507452     .07489    20.13   0.000     1.359953    1.65495
------------------------------------------------------------------------------

. reg  r_arclk r_bist100 if zaman>227, nocons

      Source |       SS       df       MS              Number of obs =     250
-------------+------------------------------           F(  1,   249) =  114.27
       Model |  .035119071     1  .035119071           Prob > F      =  0.0000
    Residual |  .076524821   249  .000307329           R-squared     =  0.3146
-------------+------------------------------           Adj R-squared =  0.3118
       Total |  .111643892   250  .000446576           Root MSE      =  .01753

------------------------------------------------------------------------------
     r_arclk |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   r_bist100 |   .8560297    .080079    10.69   0.000     .6983111    1.013748
------------------------------------------------------------------------------

. reg  r_koc r_bist100 if zaman>227, nocons

      Source |       SS       df       MS              Number of obs =     250
-------------+------------------------------           F(  1,   249) =  130.19
       Model |  .032845681     1  .032845681           Prob > F      =  0.0000
    Residual |  .062819228   249  .000252286           R-squared     =  0.3433
-------------+------------------------------           Adj R-squared =  0.3407
       Total |  .095664909   250   .00038266           Root MSE      =  .01588

------------------------------------------------------------------------------
       r_koc |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   r_bist100 |   .8278591   .0725544    11.41   0.000     .6849605    .9707577
------------------------------------------------------------------------------

. reg   r_thy r_bist100 if zaman>227, nocons

      Source |       SS       df       MS              Number of obs =     250
-------------+------------------------------           F(  1,   249) =  210.21
       Model |  .102879043     1  .102879043           Prob > F      =  0.0000
    Residual |  .121860799   249  .000489401           R-squared     =  0.4578
-------------+------------------------------           Adj R-squared =  0.4556
       Total |  .224739842   250  .000898959           Root MSE      =  .02212

------------------------------------------------------------------------------
       r_thy |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   r_bist100 |   1.465146   .1010531    14.50   0.000     1.266118    1.664173
------------------------------------------------------------------------------
```

- 2019 Yılı için hesaplanan Beta katsayıları

```
. reg  r_petkm r_bist100 if zaman<228 , nocons
```

Source	SS	df	MS	Number of obs = 227
Model	.026574053	1	.026574053	F(1, 226) = 142.93
Residual	.042019575	226	.000185927	Prob > F = 0.0000
				R-squared = 0.3874
Total	.068593628	227	.000302175	Adj R-squared = 0.3847
				Root MSE = .01364

r_petkm	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.8046898	.0673087	11.96	0.000	.6720569	.9373227

```
. reg  r_gsray r_bist100 if zaman<228, nocons
```

Source	SS	df	MS	Number of obs = 227
Model	.02448846	1	.02448846	F(1, 226) = 23.20
Residual	.238537215	226	.001055474	Prob > F = 0.0000
				R-squared = 0.0931
Total	.263025675	227	.001158703	Adj R-squared = 0.0891
				Root MSE = .03249

r_gsray	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.7724677	.1603701	4.82	0.000	.4564558	1.08848

```
. reg  r_fener r_bist100 if zaman<228, nocons
```

Source	SS	df	MS	Number of obs = 227
Model	.012228462	1	.012228462	F(1, 226) = 15.45
Residual	.178837084	226	.000791315	Prob > F = 0.0001
				R-squared = 0.0640
Total	.191065546	227	.000841698	Adj R-squared = 0.0599
				Root MSE = .02813

r_fener	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.5458654	.1388591	3.93	0.000	.2722413	.8194894

```
. reg  r_sise r_bist100 if zaman<228, nocons
```

Source	SS	df	MS	Number of obs = 227
Model	.043719846	1	.043719846	F(1, 226) = 161.61
Residual	.061139773	226	.00027053	Prob > F = 0.0000
				R-squared = 0.4169
Total	.104859619	227	.000461937	Adj R-squared = 0.4144
				Root MSE = .01645

r_sise	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	1.032141	.0811909	12.71	0.000	.8721528	1.192129

```
. reg  r_bjkas r_bist100 if zaman<228, nocons
```

Source	SS	df	MS	Number of obs = 227
Model	.023104551	1	.023104551	F(1, 226) = 15.84
Residual	.328830876	226	.001455004	Prob > F = 0.0001
				R-squared = 0.0656
Total	.351935427	227	.001550376	Adj R-squared = 0.0615
				Root MSE = .03814

r_bjkas	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.7503232	.1882919	3.98	0.000	.3792909	1.121356

```
. reg  r_ttkom r_bist100 if zaman<228, nocons
```

Source	SS	df	MS	Number of obs = 227
Model	.069369008	1	.069369008	F(1, 226) = 177.01
Residual	.088565673	226	.000391884	Prob > F = 0.0000
				R-squared = 0.4392
Total	.157934682	227	.000695747	Adj R-squared = 0.4367
				Root MSE = .0198

r_ttkom	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	1.300117	.0977188	13.30	0.000	1.10756	1.492673

```
. reg  r_vakif r_bist100 if zaman<228, nocons
```

Source	SS	df	MS	Number of obs = 227
Model	.112012913	1	.112012913	F(1, 226) = 576.54
Residual	.043908668	226	.000194286	Prob > F = 0.0000
				R-squared = 0.7184
Total	.155921581	227	.000686879	Adj R-squared = 0.7171
				Root MSE = .01394

r_vakif	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	1.65209	.0688051	24.01	0.000	1.516508	1.787671

```
. reg  r_arclk r_bist100 if zaman<228, nocons
```

Source	SS	df	MS	Number of obs = 227
Model	.032307394	1	.032307394	F(1, 226) = 80.65
Residual	.09053712	226	.000400607	Prob > F = 0.0000
				R-squared = 0.2630
Total	.122844514	227	.000541165	Adj R-squared = 0.2597
				Root MSE = .02002

r_arclk	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.8872594	.0988004	8.98	0.000	.6925715	1.081947

```
. reg  r_koc r_bist100 if zaman<228, nocons
```

Source	SS	df	MS	Number of obs = 227
Model	.040890821	1	.040890821	F(1, 226) = 329.56
Residual	.028041281	226	.000124076	Prob > F = 0.0000
				R-squared = 0.5932
Total	.068932101	227	.000303666	Adj R-squared = 0.5914
				Root MSE = .01114

r_koc	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	.9981884	.054985	18.15	0.000	.8898396	1.106537

```
. reg  r_thy r_bist100 if zaman<228, nocons
```

Source	SS	df	MS	Number of obs = 227
Model	.055561343	1	.055561343	F(1, 226) = 191.76
Residual	.065481459	226	.000289741	Prob > F = 0.0000
				R-squared = 0.4590
Total	.121042802	227	.000533228	Adj R-squared = 0.4566
				Root MSE = .01702

r_thy	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
r_bist100	1.163553	.0840242	13.85	0.000	.9979814	1.329124

Şirket	Beta	2018 Beta	2019 Beta	Durum	Fark
SISE	0.866	0.72	1.03	2019 yılında Beta katsayısı artmış	0.308
TTKOM	1.199	1.11	1.30	2019 yılında Beta katsayısı artmış	0.186
KCHOL	0.906	0.83	1.00	2019 yılında Beta katsayısı artmış	0.170
VAKBN	1.574	1.51	1.65	2019 yılında Beta katsayısı artmış	0.145
ARCLK	0.870	0.86	0.89	2019 yılında Beta katsayısı artmış	0.031
GSRAY	0.814	0.85	0.77	2019 yılında Beta katsayısı azalmış	-0.077
PETKM	0.920	1.02	0.80	2019 yılında Beta katsayısı azalmış	-0.213
BJKAS	0.874	0.98	0.75	2019 yılında Beta katsayısı azalmış	-0.229
THYAO	1.326	1.47	1.16	2019 yılında Beta katsayısı azalmış	-0.302
FENER	0.736	0.90	0.55	2019 yılında Beta katsayısı azalmış	-0.354