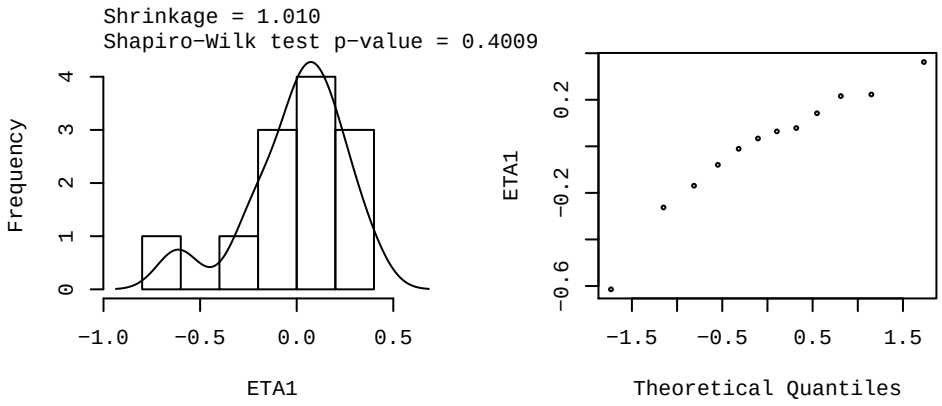
Normality and Population Shrinkage of Etas

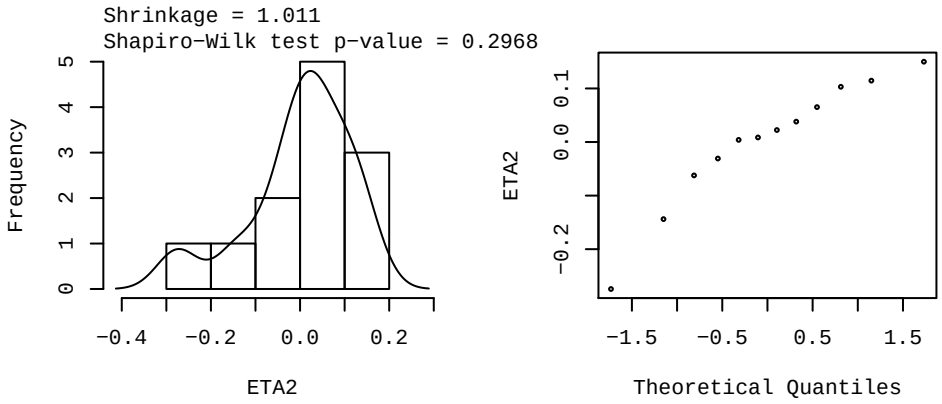
Eta 1

Minimum : −0.6143
1st Qu. : −0.1019
Median : 0.04898
Mean : −0.001352
3rd Qu. : 0.1606
Maximum : 0.3622
Std Dev : 0.2594
t−test p= 0.986



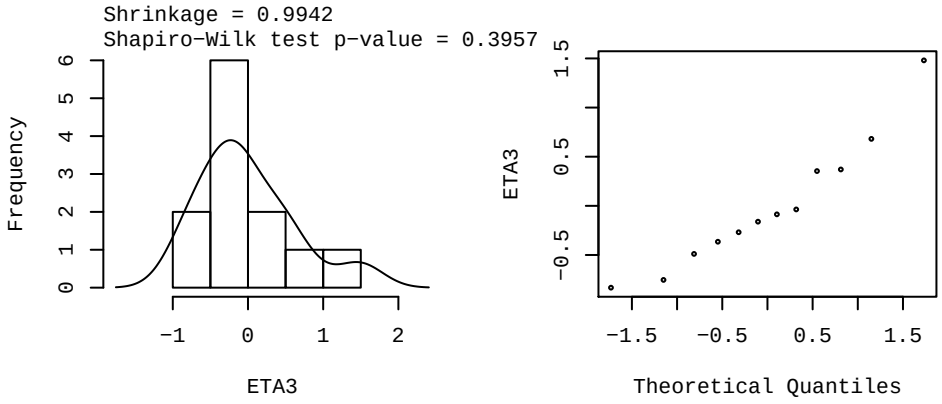
Eta 2

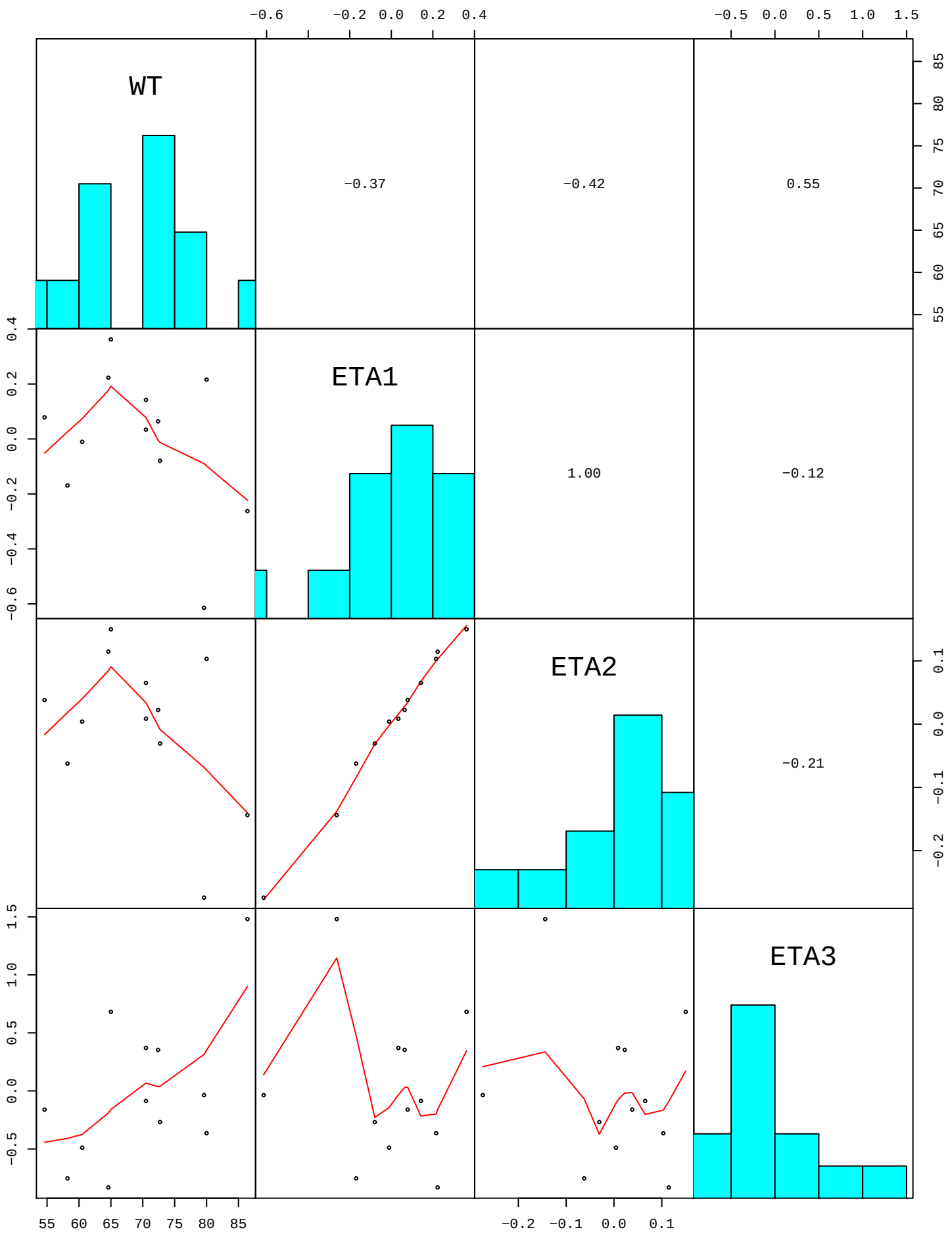
Minimum : −0.2743
1st Qu. : −0.03865
Median : 0.01548
Mean : −0.0004477
3rd Qu. : 0.07466
Maximum : 0.15
Std Dev : 0.1181
t−test p= 0.9898

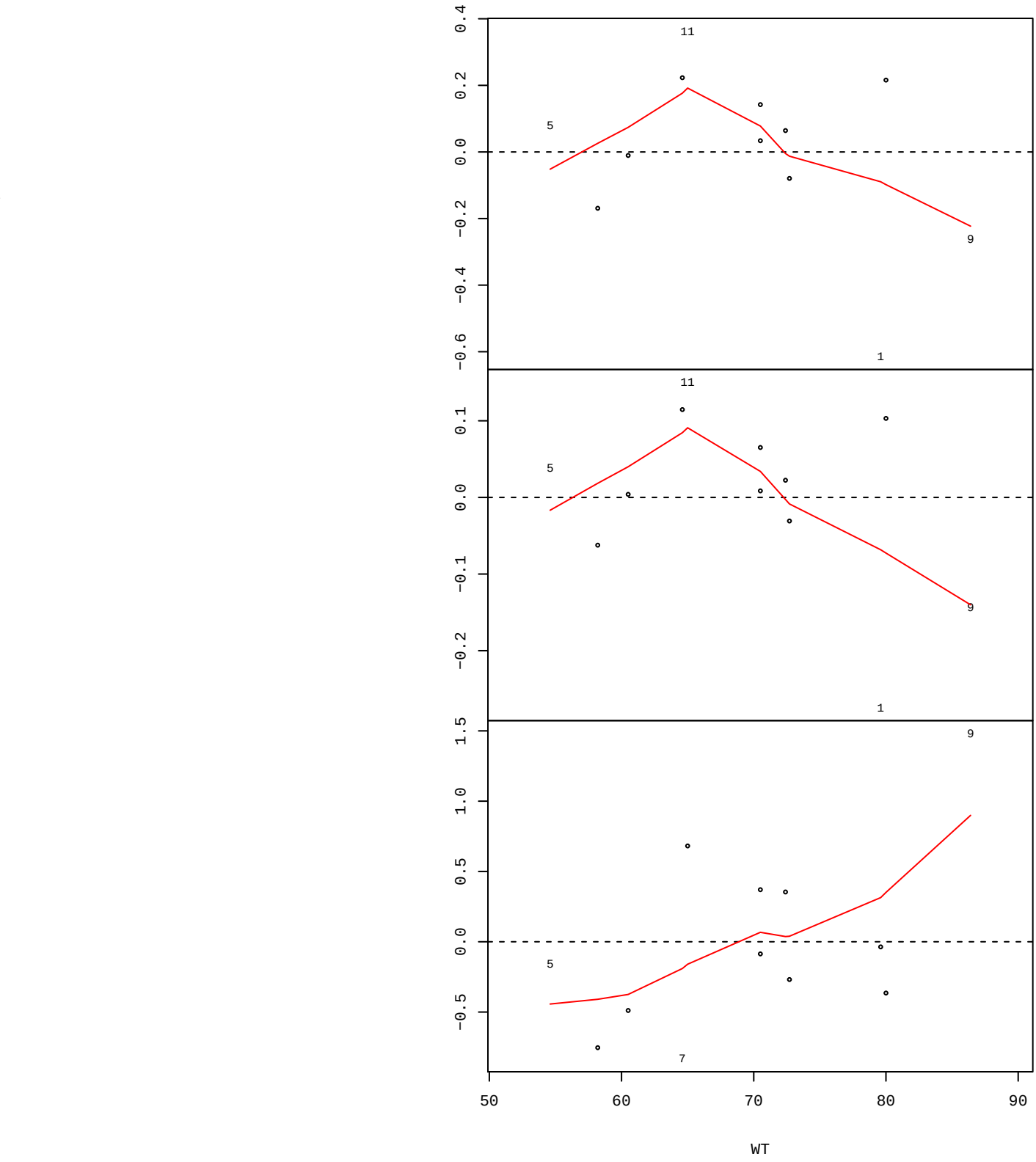


Eta 3

Minimum : −0.8324
1st Qu. : −0.3959
Median : −0.1237
Mean : −0.008862
3rd Qu. : 0.3581
Maximum : 1.48
Std Dev : 0.6507
t−test p= 0.9632




Covariate vs ETA of C07
WT
ETA1
ETA2
ETA3
−0.37
−0.42
0.55
1.00
−0.12
−0.21
−0.6 −0.2 0.0 0.2 0.4
−0.5 0.0 0.5 1.0 1.5
55 60 65 70 75 80 85
−0.6 −0.4 −0.2 0.0 0.2 0.4
−0.5 0.0 0.5 1.0 1.5
−0.2 −0.1 0.0 0.1


ETA1
ETA2
ETA3
WT
50
60
70
80
90
0.4
0.2
0.0
−0.2
−0.4
−0.6
0.1
−0.1
1.5
1.0
0.5
−0.5
11
5
9
1
7

Estimation vs EBE

$`Correlation of Covariates and EBE`

	WT	ETA1	ETA2	ETA3
WT	1.0000000	−0.3744126	−0.4225468	0.5528401
ETA1	−0.3744126	1.0000000	0.9952380	−0.1182867
ETA2	−0.4225468	0.9952380	1.0000000	−0.2145136
ETA3	0.5528401	−0.1182867	−0.2145136	1.0000000

$`Covariance of EBE`

	ETA1	ETA2	ETA3
ETA1	0.06731341	0.03048742	−0.01996908
ETA2	0.03048742	0.01394074	−0.01648045
ETA3	−0.01996908	−0.01648045	0.42339158

$`Omega Matrix`

	Eta 1	Eta 2	Eta 3
Eta 1	0.06602055	0.02984439	−0.01635834
Eta 2	0.02984439	0.01362568	−0.01495194
Eta 3	−0.01635834	−0.01495194	0.42831010

$`Ratios of Cov(EBE)/OM`

	ETA1	ETA2	ETA3
ETA1	1.019583	1.021546	1.2207275
ETA2	1.021546	1.023123	1.1022279
ETA3	1.220727	1.102228	0.9885165

$`Correlation of EBE`

	ETA1	ETA2	ETA3
ETA1	1.0000000	0.9952380	−0.1182867
ETA2	0.9952380	1.0000000	−0.2145136
ETA3	−0.1182867	−0.2145136	1.0000000

$`Correlation from Omega Matrix`

	Eta 1	Eta 2	Eta 3
Eta 1	1.00000000	0.9950480	−0.09727931
Eta 2	0.99504803	1.0000000	−0.19572184
Eta 3	−0.09727931	−0.1957218	1.00000000

$`Ratios of Cor(EBE)/(Cor from OM)`

	ETA1	ETA2	ETA3
ETA1	1.000000	1.000191	1.215950
ETA2	1.000191	1.000000	1.096013
ETA3	1.215950	1.096013	1.000000

Multiple Linear Regression : ETA 1

```
Residuals:
     Min       1Q   Median       3Q      Max
−0.51058 −0.09249 −0.00085  0.15800  0.32369

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.709929   0.561791   1.264    0.235
WT          −0.010222   0.008005  −1.277    0.230

Residual standard error: 0.2523 on 10 degrees of freedom
Multiple R−squared: 0.1402, Adjusted R−squared: 0.0542
F−statistic:  1.63 on 1 and 10 DF,  p−value: 0.2305
```

Multiple Linear Regression − Influence : ETA 1

$`Model Estimates`

	Variable	Estimate	SE	T	p−value
1	Intercept	0.70992939	0.561791080	1.263689	0.2350055
2	WT	−0.01022201	0.008005498	−1.276874	0.2304990

$`Influence Diagnostics with DFBETAs`

	Yhat	Residual	R−Student	hat	Cook's D	COV−Ratio	DFFITS
1	−0.10374254	−0.51057746	−3.0120782	0.18433388	0.567249670	0.3753579	−1.43189979
2	−0.03014408	0.09432208	0.3749253	0.09131968	0.007727508	1.3171718	0.11885607
3	−0.01072226	0.04451126	0.1751763	0.08417920	0.001561688	1.3388994	0.05310953
4	−0.03321068	−0.04621932	−0.1828198	0.09311151	0.001899387	1.3512677	−0.05857980
5	0.15180769	−0.07310969	−0.3327865	0.30932592	0.027220149	1.7442908	−0.22270873
6	−0.10783135	0.32369135	1.5179000	0.19256155	0.243043235	0.9692252	0.74126455
7	0.04958760	0.17333240	0.7091816	0.10833202	0.032149977	1.2418839	0.24719193
8	−0.01072226	0.15289226	0.6131081	0.08417920	0.018425760	1.2421196	0.18588067
9	−0.17325221	−0.08930779	−0.4266333	0.36801345	0.057716155	1.8767917	−0.32556126
10	0.11500846	−0.28416846	−1.3157626	0.21377496	0.219323654	1.1044703	−0.68609224
11	0.04549879	0.31665121	1.3858517	0.10447992	0.102592378	0.9363385	0.47336429
12	0.09149783	−0.10201783	−0.4242937	0.16638872	0.019571295	1.4234712	−0.18956001

	Intercept	WT
1	0.926145163	−1.059917129
2	−0.020131498	0.035149024
3	0.001572308	0.005323781
4	0.011638004	−0.018983451
5	−0.203740724	0.190360210
6	−0.490348591	0.558284881
7	0.145851743	−0.118744761
8	0.005503000	0.018632963
9	0.263835373	−0.286338297
10	−0.586950412	0.535935092
11	0.265974664	−0.212960561
12	−0.150189889	0.133927165

$n
[1] 12

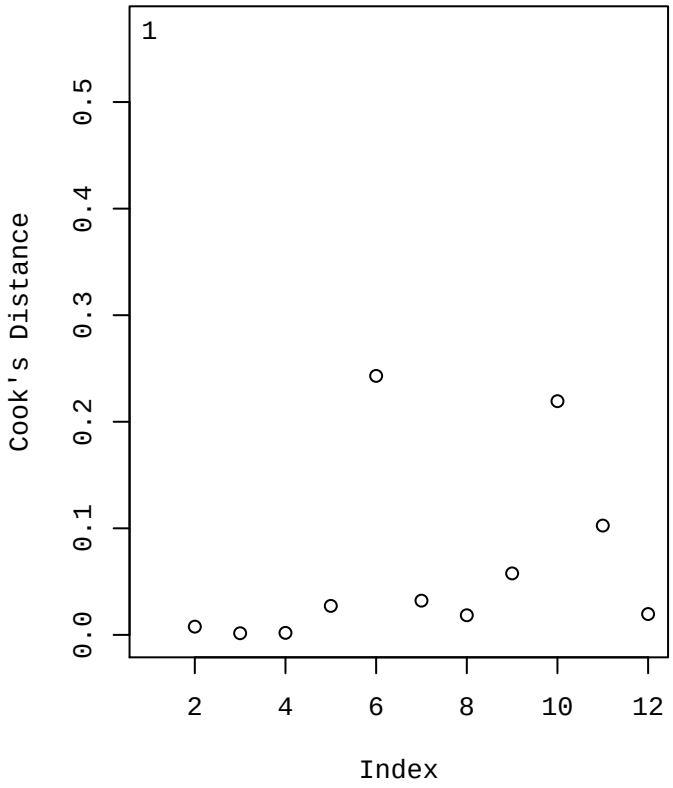
$`Parameter Count`
[1] 2

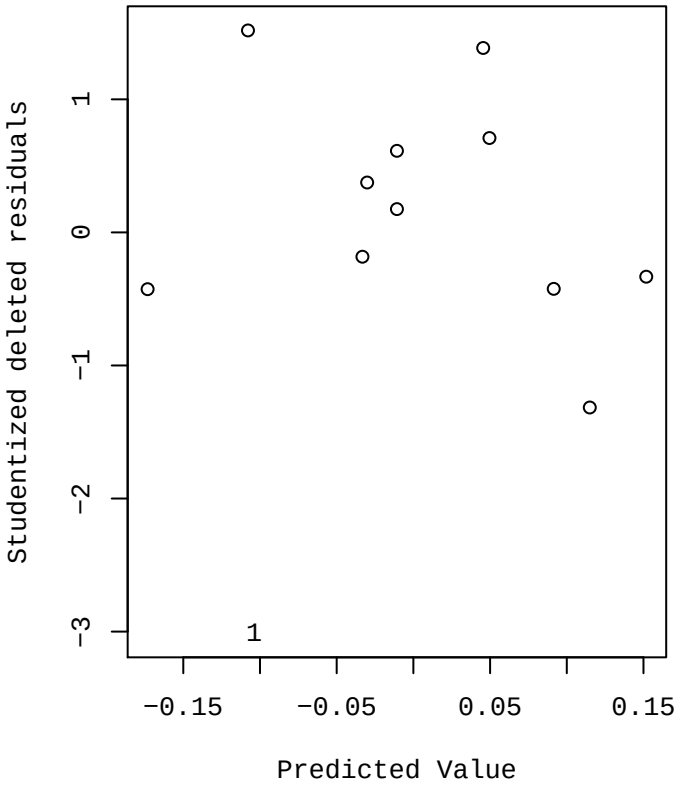
$`Degree of Freedom`
[1] 10

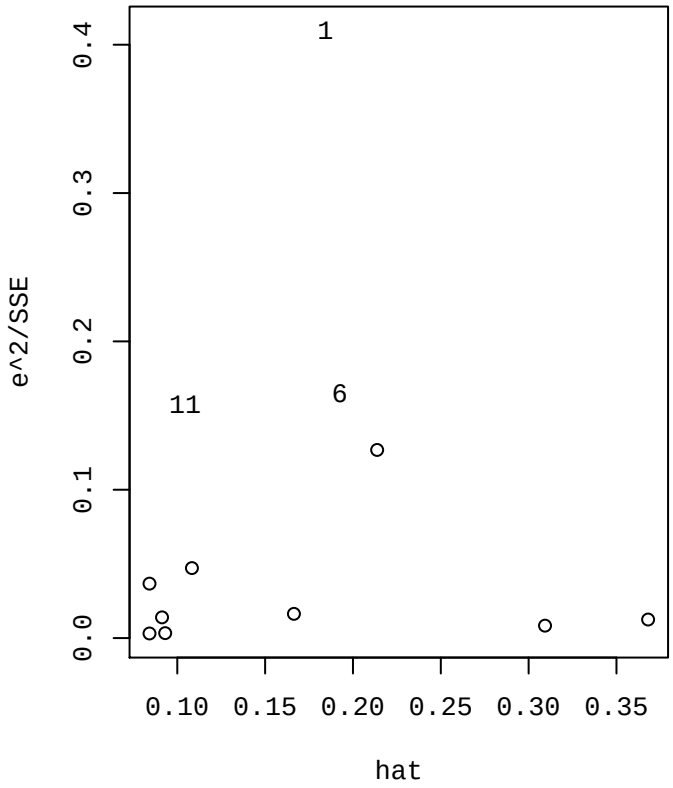
$SSE
[1] 0.636648

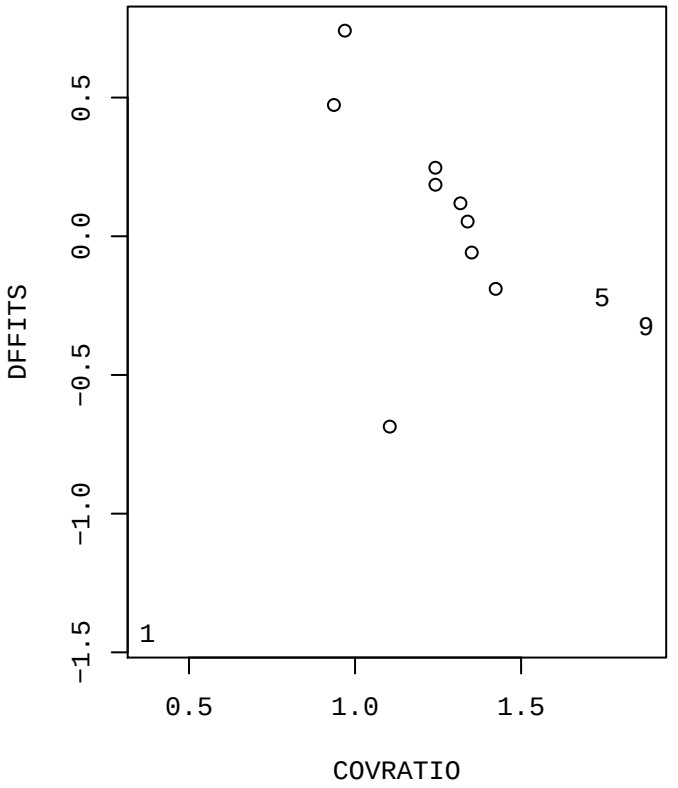
$MSE
[1] 0.0636648

Influence Diagnostics on Eta 1









Multiple Linear Regression : ETA 2

```
Residuals:
      Min        1Q    Median        3Q       Max
−0.221306 −0.046220 −0.000084  0.075051  0.158264

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.364859   0.249894   1.460    0.175
WT          −0.005250   0.003561  −1.474    0.171

Residual standard error: 0.1122 on 10 degrees of freedom
Multiple R−squared: 0.1785, Adjusted R−squared: 0.0964
F−statistic: 2.174 on 1 and 10 DF,  p−value: 0.1712
```

Multiple Linear Regression − Influence : ETA 2

$`Model Estimates`

	Variable	Estimate	SE	T	p−value
1	Intercept	0.364859285	0.249894151	1.460055	0.1749661
2	WT	−0.005249921	0.003560980	−1.474291	0.1711747

$`Influence Diagnostics with DFBETAs`

	Yhat	Residual	R−Student	hat	Cook's D	COV−Ratio	DFFITS
1	−0.053034416	−0.22130558	−2.8630921	0.18433388	0.5386085227	0.4145407	−1.36107387
2	−0.015234985	0.03765799	0.3360075	0.09131968	0.0062253597	1.3251821	0.10651862
3	−0.005260136	0.01378904	0.1218925	0.08417920	0.0007574600	1.3436054	0.03695509
4	−0.016809962	−0.01395704	−0.1239873	0.09311151	0.0008753672	1.3566841	−0.03972848
5	0.078213606	−0.04011761	−0.4118540	0.30932592	0.0414236292	1.7219630	−0.27562260
6	−0.055134384	0.15826438	1.7147792	0.19256155	0.2936467776	0.8686561	0.83741028
7	0.025714397	0.08889560	0.8252974	0.10833202	0.0427384919	1.1965917	0.28766518
8	−0.005260136	0.07043614	0.6359541	0.08417920	0.0197643690	1.2345931	0.19280704
9	−0.088733878	−0.05516612	−0.5980984	0.36801345	0.1113015150	1.8069740	−0.45640522
10	0.059313891	−0.12161389	−1.2569571	0.21377496	0.2030194291	1.1362833	−0.65542865
11	0.023614429	0.12635557	1.2181051	0.10447992	0.0825617869	1.0159887	0.41606721
12	0.047239073	−0.04323847	−0.4039055	0.16638872	0.0177682867	1.4287222	−0.18045126

	Intercept	WT
1	0.880335334	−1.007490550
2	−0.018041818	0.031500501
3	0.001094056	0.003704435
4	0.007892828	−0.012874468
5	−0.252147946	0.235588326
6	−0.553949261	0.630697229
7	0.169732355	−0.138187090
8	0.005708055	0.019327273
9	0.369871532	−0.401418442
10	−0.560717778	0.511982491
11	0.233780489	−0.187183333
12	−0.142972961	0.127491693

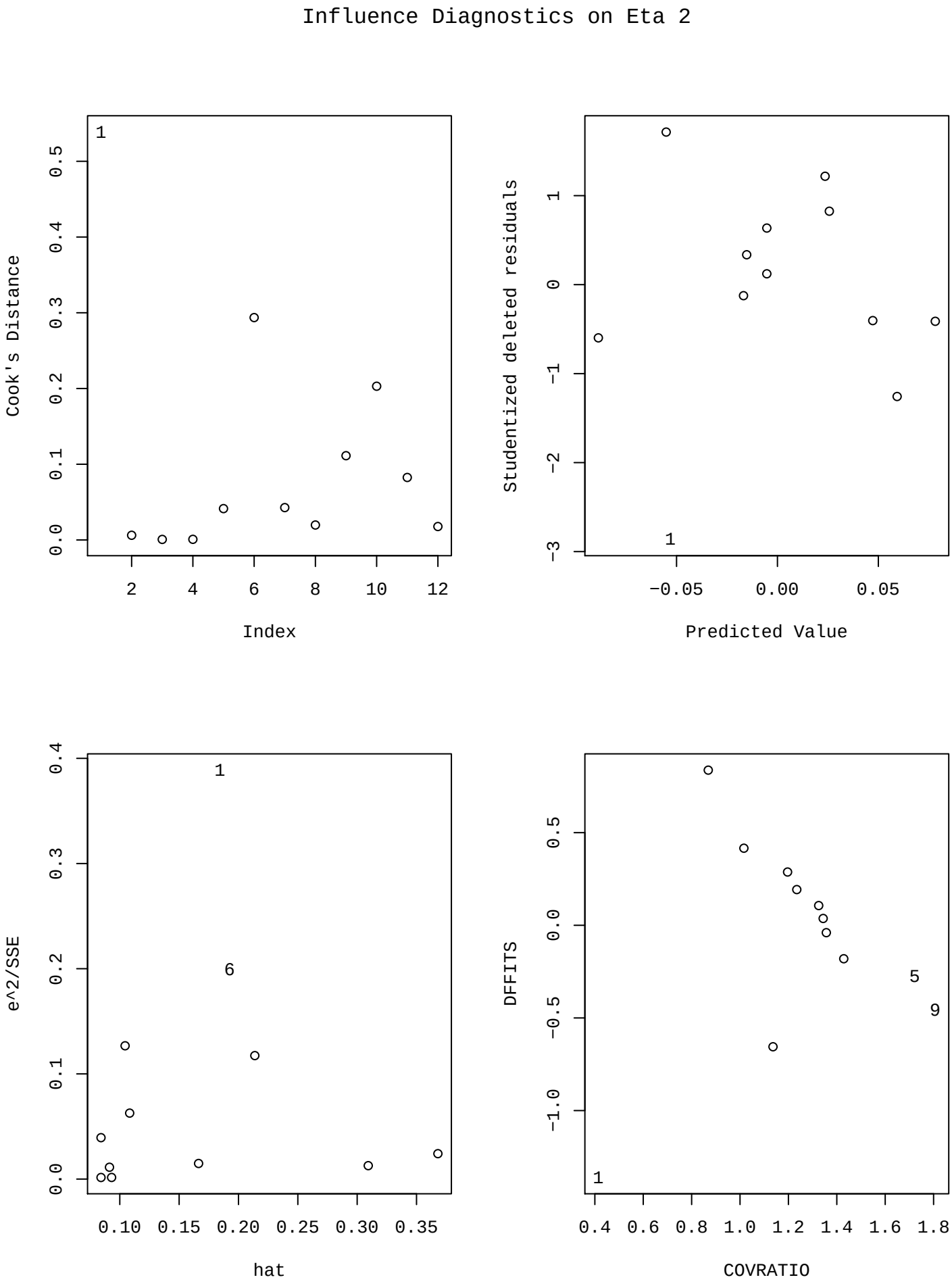
$n
[1] 12

$`Parameter Count`
[1] 2

$`Degree of Freedom`
[1] 10

$SSE
[1] 0.1259685

$MSE
[1] 0.01259685


Influence Diagnostics on Eta 2
Cook's Distance
Index
Studentized deleted residuals
Predicted Value
e^2/SSE
hat
DFFITS
COVRATIO

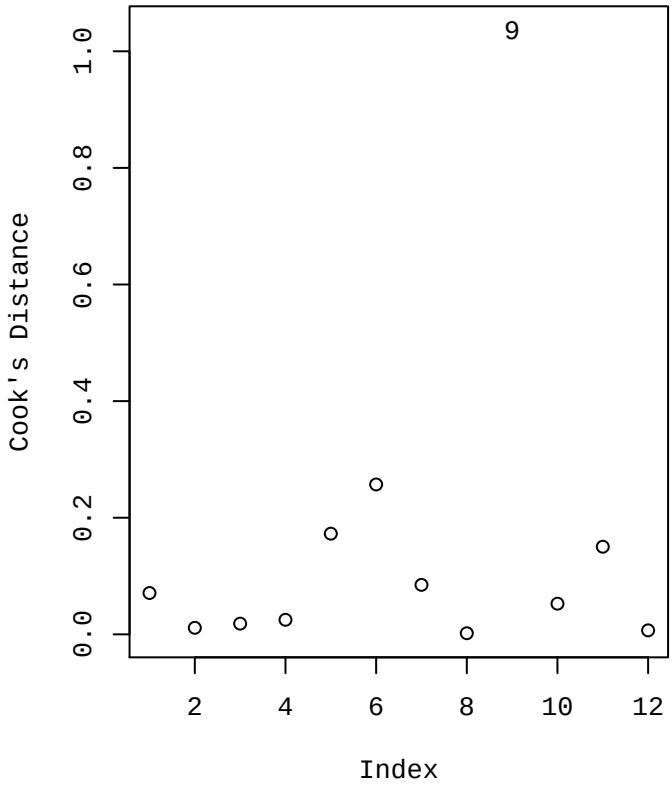
Multiple Linear Regression : ETA 3

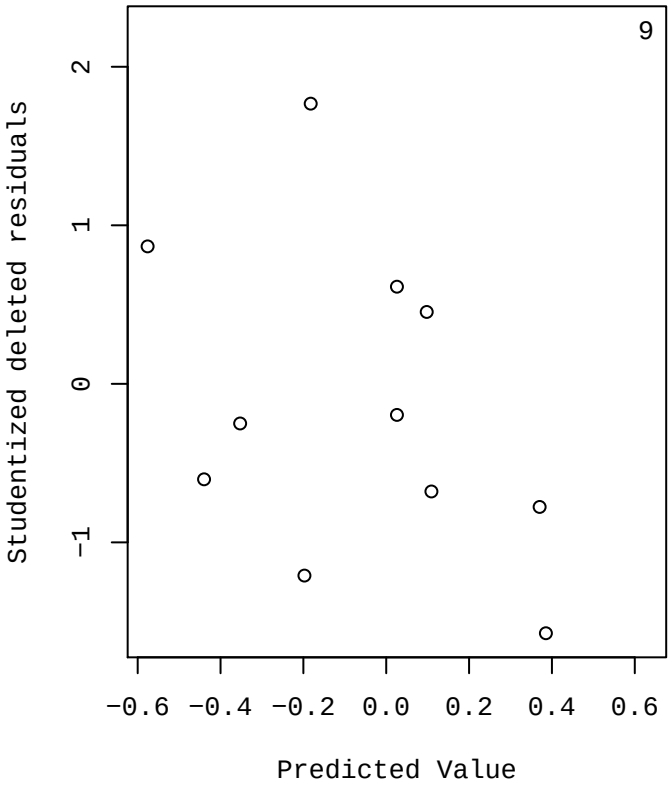
```
Residuals:
    Min      1Q  Median      3Q     Max
−0.7503 −0.3852 −0.1242  0.3621  0.8638

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) −2.64283    1.26616  −2.087   0.0634 .
WT           0.03785    0.01804   2.098   0.0623 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5687 on 10 degrees of freedom
Multiple R−squared: 0.3056, Adjusted R−squared: 0.2362
F−statistic: 4.402 on 1 and 10 DF,  p−value: 0.06229
```

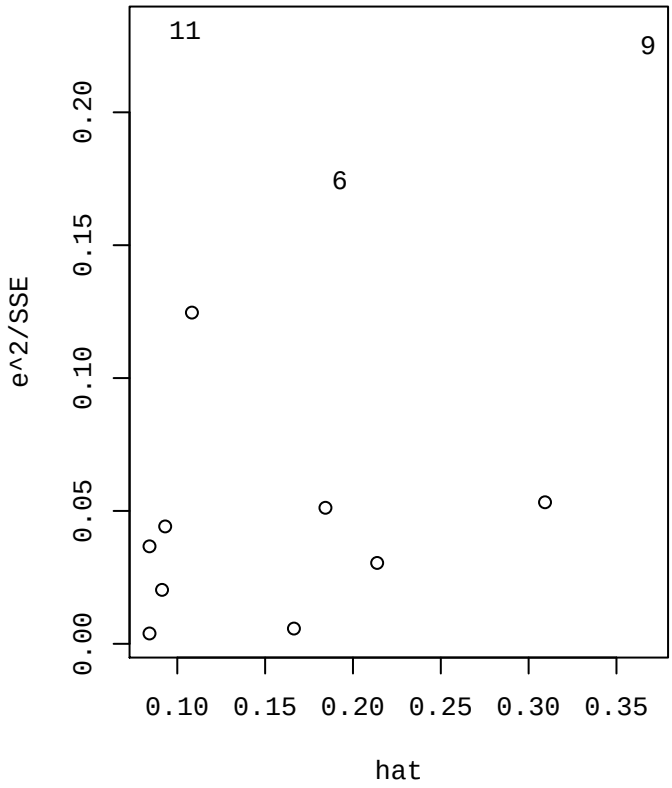
Multiple Linear Regression − Influence : ETA 3

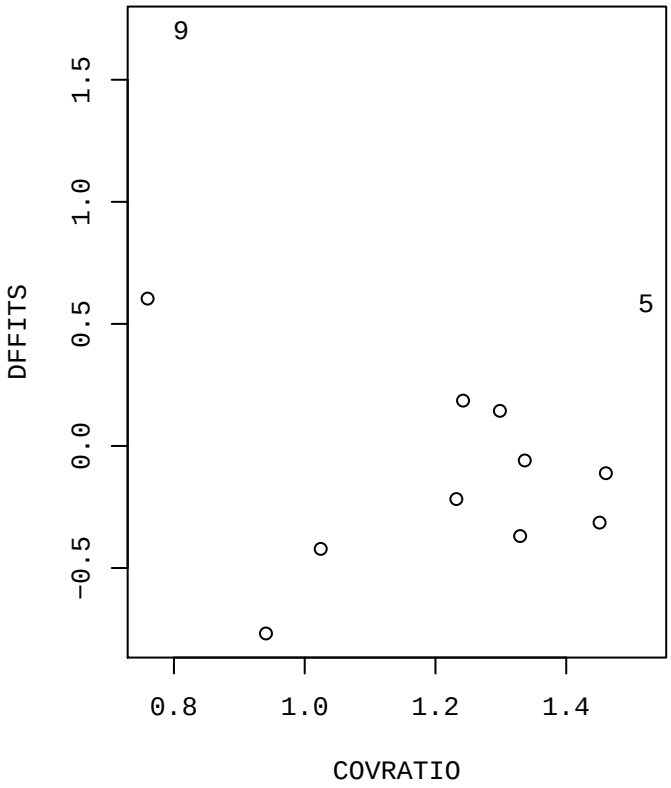
```
$`Model Estimates`
   Variable    Estimate         SE         T    p−value
1 Intercept −2.64283217 1.26615657 −2.087287 0.06341731
2        WT  0.03785346 0.01804267  2.097996 0.06228664

$`Influence Diagnostics with DFBETAs`
          Yhat   Residual  R−Student        hat    Cook's D COV−Ratio      DFFITS    Intercept
1   0.37030353 −0.4068785 −0.7763230 0.18433388 0.070917819 1.3295446 −0.36905310  0.238701579
2   0.09775859  0.2562414  0.4535339 0.09131968 0.011227583 1.2986015  0.14377599 −0.024352363
3   0.02583701  0.3444630  0.6128795 0.08417920 0.018412570 1.2421939  0.18581135  0.005500947
4   0.10911463 −0.3779446 −0.6788170 0.09311151 0.025003307 1.2319443 −0.21750913  0.043212375
5  −0.57603306  0.4150231  0.8672038 0.30932592 0.172687119 1.5224242  0.58035371  0.530925238
6   0.38544491 −0.7503449 −1.5729026 0.19256155 0.257109483 0.9407174 −0.76812499  0.508116844
7  −0.19749843 −0.6348916 −1.2093565 0.10833202 0.084917093 1.0245244 −0.42153262 −0.248718749
8   0.02583701 −0.1121660 −0.1959474 0.08417920 0.001952324 1.3366165 −0.05940686 −0.001758741
9   0.62770708  0.8526929  2.2293218 0.36801345 1.035806972 0.8107876  1.70118161 −1.378640354
10 −0.43976059 −0.3137394 −0.6020441 0.21377496 0.052631619 1.4510202 −0.31393034 −0.268566715
11 −0.18235704  0.8638070  1.7673979 0.10447992 0.150300744 0.7597219  0.60368873  0.339201561
12 −0.35269763 −0.1362624 −0.2498354 0.16638872 0.006873756 1.4606571 −0.11161796 −0.088435793
             WT
1  −0.273179521
2   0.042518535
3   0.018626014
4  −0.070486314
5  −0.496057135
6  −0.578514871
7   0.202493627
8  −0.005955034
9   1.496226705
10  0.245223999
11 −0.271591864
12  0.078859869

$n
[1] 12

$`Parameter Count`
[1] 2

$`Degree of Freedom`
[1] 10

$SSE
[1] 3.233885

$MSE
[1] 0.3233885
```

Influence Diagnostics on Eta 3









ETA 1

	ID	ETA1	seETA1	LL1	UL1	ZERO1	RSE1	SHR1
1	1	−0.614320	0.06625783	−0.74683567	−0.48180433	FALSE	0.1078556	0.2578681
2	2	0.064178	0.06493581	−0.06569361	0.19404961	TRUE	1.0118079	0.2527229
3	3	0.033789	0.06392831	−0.09406762	0.16164562	TRUE	1.8919858	0.2488019
4	4	−0.079430	0.06621705	−0.21186409	0.05300409	TRUE	0.8336529	0.2577094
5	5	0.078698	0.06193235	−0.04516670	0.20256270	TRUE	0.7869622	0.2410338
6	6	0.215860	0.06940705	0.07704591	0.35467409	FALSE	0.3215373	0.2701245
7	7	0.222920	0.06852398	0.08587205	0.35996795	FALSE	0.3073927	0.2666877
8	8	0.142170	0.06576877	0.01063245	0.27370755	FALSE	0.4626066	0.2559648
9	9	−0.262560	0.06638058	−0.39532116	−0.12979884	FALSE	0.2528206	0.2583458
10	10	−0.169160	0.06467833	−0.29851666	−0.03980334	FALSE	0.3823500	0.2517209
11	11	0.362150	0.06343600	0.23527801	0.48902199	FALSE	0.1751650	0.2468858
12	12	−0.010520	0.06432189	−0.13916378	0.11812378	TRUE	6.1142480	0.2503336

ETA 2

	ID	ETA2	seETA2	LL2	UL2	ZERO2	RSE2	SHR2
1	1	−0.2743400	0.02904318	−0.332426362	−0.216253638	FALSE	0.1058656	0.2488084
2	2	0.0224230	0.02848735	−0.034551692	0.079397692	TRUE	1.2704520	0.2440467
3	3	0.0085289	0.02804867	−0.047568437	0.064626237	TRUE	3.2886619	0.2402886
4	4	−0.0307670	0.02908220	−0.088931393	0.027397393	TRUE	0.9452399	0.2491427
5	5	0.0380960	0.02724331	−0.016390626	0.092582626	TRUE	0.7151227	0.2333892
6	6	0.1031300	0.03053480	0.042060402	0.164199598	FALSE	0.2960807	0.2615869
7	7	0.1146100	0.03016098	0.054288032	0.174931968	FALSE	0.2631619	0.2583845
8	8	0.0651760	0.02892774	0.007320526	0.123031474	FALSE	0.4438403	0.2478194
9	9	−0.1439000	0.02913771	−0.202175412	−0.085624588	FALSE	0.2024858	0.2496182
10	10	−0.0623000	0.02841560	−0.119131201	−0.005468799	FALSE	0.4561092	0.2434320
11	11	0.1499700	0.02784982	0.094270364	0.205669636	FALSE	0.1857026	0.2385851
12	12	0.0040006	0.02830641	−0.052612220	0.060613420	TRUE	7.0755411	0.2424966

ETA 3

	ID	ETA3	seETA3	LL3	UL3	ZERO3	RSE3	SHR3
1	1	−0.036575	0.1262323	−0.28903963	0.21588963	TRUE	3.4513278	0.1928819
2	2	0.354000	0.1440026	0.06599478	0.64200522	FALSE	0.4067870	0.2200347
3	3	0.370300	0.1473817	0.07553666	0.66506334	FALSE	0.3980061	0.2251979
4	4	−0.268830	0.1203733	−0.50957661	−0.02808339	FALSE	0.4477674	0.1839293
5	5	−0.161010	0.1154673	−0.39194466	0.06992466	TRUE	0.7171438	0.1764331
6	6	−0.364900	0.1270249	−0.61894977	−0.11085023	FALSE	0.3481088	0.1940929
7	7	−0.832390	0.1111356	−1.05466117	−0.61011883	FALSE	0.1335138	0.1698142
8	8	−0.086329	0.1251014	−0.33653172	0.16387372	TRUE	1.4491232	0.1911538
9	9	1.480400	0.3421102	0.79617953	2.16462047	FALSE	0.2310931	0.5227414
10	10	−0.753500	0.1024728	−0.95844561	−0.54855439	FALSE	0.1359958	0.1565775
11	11	0.681450	0.1633110	0.35482794	1.00807206	FALSE	0.2396523	0.2495378
12	12	−0.488960	0.1096883	−0.70833651	−0.26958349	FALSE	0.2243297	0.1676027