

```
DATA C;
INFILE squid;
INPUT x1 x2 x3 x4 x5 y;

proc reg;
model y=x1 x2 x3 x4 x5;
title 'Regression Y on (I) x1 x2 x3 x4 x5';
```

```
proc reg noprint;
model y=x1 x2;
output out=c residual=e1;

proc reg noprint;
model x3 x4 x5=x1 x2;
output out=c residual=e3 e4 e5;
```

```
proc reg;
model e1=e3 e4 e5 / noint;
title 'Regression RESIDUALS(y on (i) x1 x2) on RESIDUALS(x3 x4 x5 on (i) x1 x2)';
run;
```

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Regression Y on (I) x1 x2 x3 x4 x5

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	5	208.00723	41.60145	84.070	0.0001
Error	16	7.91752	0.49485		
C Total	21	215.92475			
SS _{Err} (Full)					
Root MSE	0.70345	R-square	0.9633		
Dep Mean	4.19500	Adj R-sq	0.9519		

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > T
INTERCEP	1	-6.512215	0.93356074	-6.976	0.0001
X1	1	1.999413	2.57333840	0.777	0.4485
X2	1	-3.675096	2.77365962	-1.325	0.2038
X3	1	2.524486	6.34749500	0.398	0.6961
X4	1	5.158082	3.66028320	1.409	0.1779
X5	1	14.401162	4.85599380	2.966	0.0091

} Estimated
Model 1
(Full)

Regression RESIDUALS(y on (i) x1 x2) on RESIDUALS(x3 x4 x5 on (i) x1 x2)

NOTE: No intercept in model. R-square is redefined.

EX SS

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	3	8.73523	2.91174	6.620	0.0033
Error	18	7.91752	0.43986		
C Total	21	16.65275			
SS _{Err} (Red.)					
Root MSE	0.64553	R-square	0.5246		
Dep Mean	0.00000	Adj R-sq	0.4495		

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > T
E3	1	2.524486	5.98447568	0.422	0.6781
E4	1	5.158082	3.45094810	1.495	0.1523
E5	1	14.401162	4.57827486	3.146	0.0056

} Estimated
Model 4
(Regression
of residuals)

STAT 615 (Baron)

Extra SS
principle