$$\log Y = \beta_0 + \frac{\nu}{\rho} \log\left(\alpha x_1^{\rho} + (1-\alpha) x_2^{\rho}\right) + e$$

$Y = EG\_total$

$x_1 = EC\_c\_alt$

$x_2 = EC\_d\_alt$

```
. use "/Users/piamahajan/Downloads/Econometrics Data/PSS2017/PSS2017.dta"

.
. gen y= log(EG_total)

.
. nl (y = {b0 = 0} + {nu = 1}/{rho = 1}*log({alpha = 0.5}*EC_c_alt^{rho}+ (1- {alpha})*EC_d_alt^{rho})),
> variables(y EC_c_alt EC_d_alt)

Iteration 0:  residual SS =  15.32679
Iteration 1:  residual SS =  12.72688
Iteration 2:  residual SS =  12.71378
Iteration 3:  residual SS =  12.71368
Iteration 4:  residual SS =  12.71368
Iteration 5:  residual SS =  12.71368
Iteration 6:  residual SS =  12.71368
Iteration 7:  residual SS =  12.71368


      Source |       SS           df       MS
-------------+----------------------------------   Number of obs =       338
       Model |  768.35943          3  256.119809   R-squared     =    0.9837
    Residual |  12.713675        334  .038064896   Adj R-squared =    0.9836
-------------+----------------------------------   Root MSE      =   .1951023
       Total |   781.0731        337  2.31772434   Res. dev.     =  -149.5618

------------------------------------------------------------------------------
           y | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
         /b0 |  -12.58216   .1845737   -68.17   0.000    -12.94523   -12.21909
         /nu |   1.042579    .007826   133.22   0.000     1.027185    1.057974
        /rho |   .4114824   .0584956     7.03   0.000     .2964162    .5265485
      /alpha |   .3194286   .0115813    27.58   0.000     .2966471    .3422102
------------------------------------------------------------------------------
Note: Parameter b0 is used as a constant term during estimation.
```