```
 1 . clear all

 2 .
 3 . set seed 123

 4 .
 5 . set obs 500
   number of observations (_N) was 0, now 500

 6 .
 7 . gen Y = runiform(0,10)

 8 .
 9 . gen X1 = 0.01*(Y + runiform(0,10)^2)

10 .
11 . gen X2 = 0.01*(Y + 2*runiform(0,10))

12 .
13 . reg Y X1
```

Source	SS	df	MS
Model	32.8053672	1	32.8053672
Residual	3884.74884	498	7.80070047
Total	3917.5542	499	7.85081003

Number of obs	=	500
F(1, 498)	=	4.21
Prob > F	=	0.0408
R-squared	=	0.0084
Adj R-squared	=	0.0064
Root MSE	=	2.793

Y	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X1	.8481948	.413609	2.05	0.041	.0355611	1.660828
_cons	4.780537	.2083689	22.94	0.000	4.371146	5.189928

```
14 .
15 . egen weight = fill(1 1 1 1 1)

16 .
17 . svyset [pw=weight]
```

```
18 .
19 . svy: reg Y X1
   (running regress on estimation sample)

   Survey: Linear regression

   Number of strata  =          1              Number of obs    =        500
   Number of PSUs    =        500              Population size  :        500
                                               Design df        =        499
                                               F   1,     499)  =       4.31
                                               Prob > F         =     0.0384
                                               R-squared        =     0.0084
```

		Linearized				
Y	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X1	.8481948	.4086071	2.08	0.038	.0453924	1.650997
_cons	4.780537	.2034622	23.50	0.000	4.380789	5.180285

```
20 .
21 . estimates store X1alone

22 .
23 . svy: reg Y X1 X2
   (running regress on estimation sample)

   Survey: Linear regression

   Number of strata  =          1              Number of obs    =        500
   Number of PSUs    =        500              Population size  :        500
                                               Design df        =        499
                                               F   2,     498)  =      88.76
                                               Prob > F         =     0.0000
                                               R-squared        =     0.1820
```

		Linearized				
Y	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X1	.4910762	.3802251	1.29	0.197	-.2559632	1.238116
X2	17.81967	1.359105	13.11	0.000	15.14939	20.48994
_cons	2.189504	.269722	8.12	0.000	1.659573	2.719435

```
24 .
25 . estimates store X1paired

26 .
27 . suest X1alone X1paired

   Simultaneous survey results for X1alone, X1paired

   Number of strata  =          1              Number of obs    =        500
   Number of PSUs    =        500              Population size  :        500
                                               Design df        =        499
```

	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf. Interval]
X1alone						
X1	.8481948	.4086071	2.08	0.038	.0453924	1.650997
_cons	4.780537	.2034622	23.50	0.000	4.380789	5.180285
X1paired						
X1	.4910762	.3802251	1.29	0.197	-.2559632	1.238116
X2	17.81967	1.359105	13.11	0.000	15.14939	20.48994
_cons	2.189504	.269722	8.12	0.000	1.659573	2.719435

```
28 .
29 . lincom _b[X1alone:X1] - 0
```

(1) **[X1alone]X1 = 0**

	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
(1)	.8481948	.4086071	2.08	0.038	.0453924	1.650997

```
30 .
31 . di _b[X1paired:X1]
  .49107625

32 .
33 . lincom _b[X1alone:X1] - 0.4910762
```

(1) **[X1alone]X1 = .4910762**

	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
(1)	.3571186	.4086071	0.87	0.383	-.4456838	1.159921

```
34 .
35 . lincom _b[X1alone:X1] - _b[X1paired:X1]
```

(1) **[X1alone]X1 - [X1paired]X1 = 0**

	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
(1)	.3571185	.1735211	2.06	0.040	.0161965	.6980405

```
36 .
37 . suest X1alone X1paired

    Simultaneous survey results for X1alone, X1paired

    Number of strata   =           1          Number of obs   =        500
    Number of PSUs     =         500          Population size :        500
                                              Design df       =        499
```

	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf.	Interval]
X1alone						
X1	.8481948	.4086071	2.08	0.038	.0453924	1.650997
_cons	4.780537	.2034622	23.50	0.000	4.380789	5.180285
X1paired						
X1	.4910762	.3802251	1.29	0.197	-.2559632	1.238116
X2	17.81967	1.359105	13.11	0.000	15.14939	20.48994
_cons	2.189504	.269722	8.12	0.000	1.659573	2.719435

```
38 .
39 . matrix list e(V)

    symmetric e(V)[5,5]
                       X1alone:     X1alone:    X1paired:    X1paired:    X1paired:
                            X1        _cons          X1           X2        _cons
         X1alone:X1    .16695974
      X1alone:_cons  -.06568641    .04139685
        X1paired:X1    .14071065   -.05277357     .14457114
        X1paired:X2  -.00636692   -.00701353    -.04509822    1.8471676
     X1paired:_cons  -.05198836    .03367866    -.04611954   -.27413687    .07274995

40 .
41 . di (.8481948-.4910762)/sqrt(.16695974)
    .87399026

42 .
43 . di (.8481948-.4910762)/sqrt(.16695974+.14457114-2*.14071065)
    2.0580699

44 .
45 . test _b[X1alone:X1] = _b[X1paired:X1]

    Adjusted Wald test

     ( 1)  [X1alone]X1 - [X1paired]X1 = 0

           F(  1,    499) =    4.24
                Prob > F =    0.0401

46 . log close
        name:  <unnamed>
         log:  C:\Users\L.J\Desktop\Untitled.smcl
    log type:  smcl
    closed on:  9 Nov 2019, 22:13:58
```