

```

-----
name: <unnamed>
log: C:\henry\hgdrhenryglick.com\statafiles\univaranal\univariateanal.log
log type: text
opened on: 31 May 2021, 17:04:48

```

```

.
. clear

. set more off

.
. use eeict2011

.
. sum

```

Variable	Obs	Mean	Std. Dev.	Min	Max
id	500	250.5	144.4818	1	500
treat	500	.5	.5005008	0	1
cost	500	3027.5	1389.921	315	10499
qaly	500	.5941653	.2121148	.05679	.96822
dissev	500	.347486	.1124773	.025	.729
race	500	.506	.5004647	0	1
male	500	.484	.5002444	0	1
blcost	500	1634.859	770.5504	111.0891	4926.931
blqaly	500	.7857801	.145283	.4895464	1

```

.
.
. *** EVALUATE POTENTIAL EXPLANATORY VARIABLES ***
.
. * Disease severity
. ttest dissev,by(treat)

```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	250	.349204	.0070944	.1121721	.3352313	.3631767
1	250	.345768	.0071455	.1129805	.3316946	.3598414
combined	500	.347486	.0050301	.1124773	.3376031	.3573689
diff		.003436	.0100692		-.0163473	.0232193

diff = mean(0) - mean(1) t = 0.3412  
 Ho: diff = 0 degrees of freedom = 498

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0  
 Pr(T < t) = 0.6335 Pr(|T| > |t|) = 0.7331 Pr(T > t) = 0.3665

```
.
. * Baseline cost
. ttest blcost,by(treat)
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	250	1630.481	48.88649	772.9633	1534.198	1726.765
1	250	1639.237	48.67728	769.6554	1543.365	1735.109
combined	500	1634.859	34.46006	770.5504	1567.155	1702.564
diff		-8.755804	68.98817		-144.2995	126.7879
diff = mean(0) - mean(1)				t = -0.1269		
Ho: diff = 0				degrees of freedom = 498		
Ha: diff < 0		Ha: diff != 0		Ha: diff > 0		
Pr(T < t) = 0.4495		Pr( T  >  t ) = 0.8991		Pr(T > t) = 0.5505		

```
.
. * Baseline QALY
. ttest blqaly,by(treat)
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	250	.7845201	.0088465	.1398753	.7670966	.8019436
1	250	.78704	.0095354	.1507673	.7682598	.8058203
combined	500	.7857801	.0064973	.145283	.7730147	.7985454
diff		-.0025199	.0130071		-.0280754	.0230355
diff = mean(0) - mean(1)				t = -0.1937		
Ho: diff = 0				degrees of freedom = 498		
Ha: diff < 0		Ha: diff != 0		Ha: diff > 0		
Pr(T < t) = 0.4232		Pr( T  >  t ) = 0.8465		Pr(T > t) = 0.5768		

```
.
```

```
. * Race
. tab race treat,col exact
```

```
+-----+
| Key |
+-----+
| frequency |
| column percentage |
+-----+
```

race	Rx group		Total
	0	1	
0	121	126	247
	48.40	50.40	49.40
1	129	124	253
	51.60	49.60	50.60
Total	250	250	500
	100.00	100.00	100.00

```
Fisher's exact = 0.721
1-sided Fisher's exact = 0.360
```

```
.
. * Male
. tab male treat,col exact
```

```
+-----+
| Key |
+-----+
| frequency |
| column percentage |
+-----+
```

male	Rx group		Total
	0	1	
0	128	130	258
	51.20	52.00	51.60
1	122	120	242
	48.80	48.00	48.40
Total	250	250	500
	100.00	100.00	100.00

```
Fisher's exact = 0.929
1-sided Fisher's exact = 0.464
```

```
.
```

```
. * Correlations
.
. corr dissev blcost blqaly race male
(obs=500)

-----+-----
      | dissev  blcost  blqaly    race    male
dissev |  1.0000
blcost |  0.1828  1.0000
blqaly | -0.0573 -0.0268  1.0000
race   |  0.2540 -0.2818  0.0174  1.0000
male   | -0.0122  0.0486  0.0536 -0.0036  1.0000
```

```
.
.
. *** INSPECT THE COST DATA ***
.
. sum cost if treat==0,detail
```

cost				
-----				
Percentiles		Smallest		
1%	622	315		
5%	899	589		
10%	1093	622	Obs	250
25%	1819	640	Sum of Wgt.	250
50%	2825.5		Mean	3015
		Largest	Std. Dev.	1582.802
75%	3752	7361		
90%	4952	7540	Variance	2505262
95%	6103	8232	Skewness	1.03501
99%	7540	10483	Kurtosis	4.910192

```
. local median0=r(p50)
```

```
.
.
. sum cost if treat==1,detail
```

cost				
-----				
Percentiles		Smallest		
1%	1093	681		
5%	1426	899		
10%	1832	1093	Obs	250
25%	2226	1170	Sum of Wgt.	250
50%	2900.5		Mean	3040
		Largest	Std. Dev.	1168.737
75%	3604	6296		
90%	4404	6470	Variance	1365946
95%	5085	6520	Skewness	1.525386
99%	6470	10499	Kurtosis	9.234913

```
. local median1=r(p50)
```

```
.
.
```

. \*\* T-TEST OF COST \*\*

. \*\* Evaluate Normality and SDs \*\*

. \* Test normality

. sktest cost if treat==0

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	joint Prob>chi2
cost	250	0.0000	0.0002	37.08	0.0000

. local normjointp0=r(P\_chi2)

. sktest cost if treat==1

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	joint Prob>chi2
cost	250	0.0000	0.0000	73.47	0.0000

. local normjointp1=r(P\_chi2)

. \* Evaluate equality of SDs

. sdtest cost,by(treat)

Variance ratio test

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]
0	250	3015	100.1052	1582.802	2817.839 3212.161
1	250	3040	73.91742	1168.737	2894.417 3185.583
combined	500	3027.5	62.15917	1389.921	2905.374 3149.626

ratio = sd(0) / sd(1) f = 1.8341  
Ho: ratio = 1 degrees of freedom = 249, 249

Ha: ratio < 1	Ha: ratio != 1	Ha: ratio > 1
Pr(F < f) = 1.0000	2*Pr(F > f) = 0.0000	Pr(F > f) = 0.0000

. local uneqvarp=r(p)

.

```
. * Perform T-test For Cost With Unequal SDs
```

```
.
```

```
. ttest cost,by(treat) unequal
```

```
Two-sample t test with unequal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	250	3015	100.1052	1582.802	2817.839	3212.161
1	250	3040	73.91742	1168.737	2894.417	3185.583
combined	500	3027.5	62.15917	1389.921	2905.374	3149.626
diff		-25	124.4381		-269.5399	219.5399

```
diff = mean(0) - mean(1) t = -0.2009
Ho: diff = 0 Satterthwaite's degrees of freedom = 458.304
```

```
Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.4204 Pr(|T| > |t|) = 0.8409 Pr(T > t) = 0.5796
```

```
.
```

```
. local cost0=r(mu_1)
```

```
. local cost1=r(mu_2)
```

```
. local costdiff=`cost1'-'cost0'
```

```
. local costse=r(se)
```

```
. local costp=r(p)
```

```
. local costdof=r(df_t)
```

```
. local costt=r(t)
```

```
. local costdiffll=`costdiff'-abs((invt(r(df_t)), 0.025)*`costse')
```

```
. local costdifful=`costdiff'+abs((invt(r(df_t)), 0.025)*`costse')
```

```
.
```

```
.
```

```
. *** ALTERNATIVE 1: NONPARAMETRICS ***
```

```
.
. * Wilcoxon, Difference in Medians
.
. ranksum cost,by(treat)
```

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

treat	obs	rank sum	expected
0	250	61183.5	62625
1	250	64066.5	62625
combined	500	125250	125250

```
unadjusted variance 2609375.00
adjustment for ties      -3.51
-----
adjusted variance    2609371.49
```

```
Ho: cost(treat==0) = cost(treat==1)
      z =  -0.892
      Prob > |z| =  0.3722
```

```
. local ranksump=2*normal(r(z))
```

```
.
. * Kolmogorov-Smirnov, Difference in Distribution Functions
.
. ksmirnov cost,by(treat)
```

Two-sample Kolmogorov-Smirnov test for equality of distribution functions

Smaller group	D	P-value	Corrected
0:	0.1640	0.001	
1:	-0.0640	0.359	
Combined K-S:	0.1640	0.002	0.002

```
Note: Ties exist in combined dataset;
      there are 476 unique values out of 500 observations.
```

```
. local cksmirp=r(p_cor)
```

```
.
.
```

```
. *** ALTERNATIVE 2: LOG TRANSFORMATION ***
```

```
.
```

```
. capture drop lcost
```

```
. gen lcost=ln(cost)
```

```
.
```

```
.
```

```
. *** INSPECT THE LOG OF COST DATA ***
```

```
.
```

```
. preserve
```

```
. sort treat
```

```
. by treat: sum lcost,detail
```

```
-----  
-> treat = 0
```

```
-----  
lcost  
-----  
Percentiles      Smallest  
1%      6.43294      5.752573  
5%      6.801283      6.378426  
10%     6.996678      6.43294      Obs      250  
25%     7.506042      6.461468      Sum of Wgt.      250  
  
50%     7.946439  
Largest      Mean      7.863486  
75%     8.230044      8.903951      Std. Dev.      .57603  
90%     8.50754      8.927978      Variance      .3318105  
95%     8.716536      9.015784      Skewness      -.6045795  
99%     8.927978      9.25751      Kurtosis      3.303408  
-----
```

```
-----  
-> treat = 1
```

```
-----  
lcost  
-----  
Percentiles      Smallest  
1%      6.996682      6.523562  
5%      7.262629      6.801283  
10%     7.513151      6.996682      Obs      250  
25%     7.707962      7.064759      Sum of Wgt.      250  
  
50%     7.972624  
Largest      Mean      7.95014  
75%     8.189799      8.74767      Std. Dev.      .3787148  
90%     8.390255      8.774931      Variance      .1434249  
95%     8.53405      8.78263      Skewness      -.3017813  
99%     8.774931      9.259035      Kurtosis      3.896575  
-----
```

```
. restore
```

```
.
```



```
. ** T-TEST OF THE LOG OF COST **
.
. ** Evaluate Normality and SDs **
.
. * Test normality
.
. sktest lcost if treat==0
```

```

Skewness/Kurtosis tests for Normality
----- joint -----
Variable |      Obs   Pr(Skewness)   Pr(Kurtosis)   adj chi2(2)   Prob>chi2
-----+-----
      lcost |      250       0.0002       0.2663       13.07       0.0015
```

```
.
. local lnormjointp0=r(P_chi2)
```

```
.
. sktest lcost if treat==1
```

```

Skewness/Kurtosis tests for Normality
----- joint -----
Variable |      Obs   Pr(Skewness)   Pr(Kurtosis)   adj chi2(2)   Prob>chi2
-----+-----
      lcost |      250       0.0496       0.0174       8.70       0.0129
```

```
.
. local lnormjointp1=r(P_chi2)
```

```
.
. * Evaluate equality of SDs
.
. sdtest lcost,by(treat)
```

Variance ratio test

```
-----
Group |      Obs      Mean   Std. Err.   Std. Dev.   [95% Conf. Interval]
-----+-----
      0 |      250   7.863486   .0364313   .57603     7.791734     7.935239
      1 |      250   7.95014   .023952   .3787148     7.902965     7.997314
-----+-----
combined |      500   7.906813   .0218642   .4888993     7.863856     7.94977
```

```

ratio = sd(0) / sd(1)                                f = 2.3135
Ho: ratio = 1                                         degrees of freedom = 249, 249
```

```

Ha: ratio < 1          Ha: ratio != 1          Ha: ratio > 1
Pr(F < f) = 1.0000    2*Pr(F > f) = 0.0000    Pr(F > f) = 0.0000
```

```
.
. local luneqvarp=r(p)
```

```
. * Perform T-test For Log of Cost With Unequal SDs
```

```
.
. ttest lcost,by(treat) unequal
```

Two-sample t test with unequal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	250	7.863486	.0364313	.57603	7.791734	7.935239
1	250	7.95014	.023952	.3787148	7.902965	7.997314
combined	500	7.906813	.0218642	.4888993	7.863856	7.94977
diff		-.0866533	.0435998		-.1723483	-.0009583

```
diff = mean(0) - mean(1)                                t = -1.9875
Ho: diff = 0                                             Satterthwaite's degrees of freedom = 430.373
```

```
Ha: diff < 0                                Ha: diff != 0                                Ha: diff > 0
Pr(T < t) = 0.0238                        Pr(|T| > |t|) = 0.0475                        Pr(T > t) = 0.9762
```

```
.
. local lcost0=r(mu_1)
. local lcost1=r(mu_2)
. local lcostdiff=`lcost1'-'lcost0'
. local lcostse=r(se)
. local lcostp=r(p)
. local lcostdof=r(df_t)
. local lcostt=r(t)
. local lcostdiffll=`lcostdiff'-abs((invt(r(df_t)), 0.025)*`lcostse')
. local lcostdifful=`lcostdiff'+abs((invt(r(df_t)), 0.025)*`lcostse')
.
. ** RETRANSFORMATION **
.
. capture drop resid
. capture drop eresid
.
. gen resid=lcost
. quietly replace resid=resid-`lcost0' if treat==0
. quietly replace resid=resid-`lcost1' if treat==1
.
. gen eresid=exp(resid)
.
. * Calculate Common Smearing Factor
.
. sum eresid
```

Variable	Obs	Mean	Std. Dev.	Min	Max
----------	-----	------	-----------	-----	-----

```

-----+-----
      eresid |          500      1.115652      .5210662      .1211272      4.031037

. local csmear=r(mean)

.
. * Calculate Subgroup-Specific Smearing Factors
.
. sum eresid if treat==0

      Variable |          Obs          Mean      Std. Dev.          Min          Max
-----+-----
      eresid |          250      1.159361      .6086362      .1211272      4.031037

. local ssmear0=r(mean)

. sum eresid if treat==1

      Variable |          Obs          Mean      Std. Dev.          Min          Max
-----+-----
      eresid |          250      1.071943      .4121117      .2401294      3.702082

. local ssmear1=r(mean)

.
. * Retransformation Assuming Common SDs (Common Smearing Factor)"
.
. local logcs0=`csmear'*exp(`lcost0')

. local logcs1=`csmear'*exp(`lcost1')

. local dlogcs=`logcs1'-'logcs0'

.
. display `logcs0', `logcs1', `dlogcs'
2901.3324 3163.9566 262.62425

.
. * Retransformation Assuming Varying SDs (Subgroup Smearing Factor"
.
. local logss0=`ssmear0'*exp(`lcost0')

. local logss1=`ssmear1'*exp(`lcost1')

. local dlogss=`logss1'-'logss0'

.

```

. \*\*\* ALT 2A: EVALUATE RETRANS THAT YIELDS MOST NORMAL DIST \*\*\*

.

. ladder cost

Transformation	formula	chi2(2)	P(chi2)
cubic	cost^3	.	0.000
square	cost^2	.	0.000
identity	cost	.	0.000
square root	sqrt(cost)	11.48	0.003
log	log(cost)	35.80	0.000
1/(square root)	1/sqrt(cost)	.	0.000
inverse	1/cost	.	0.000
1/square	1/(cost^2)	.	0.000
1/cubic	1/(cost^3)	.	0.000

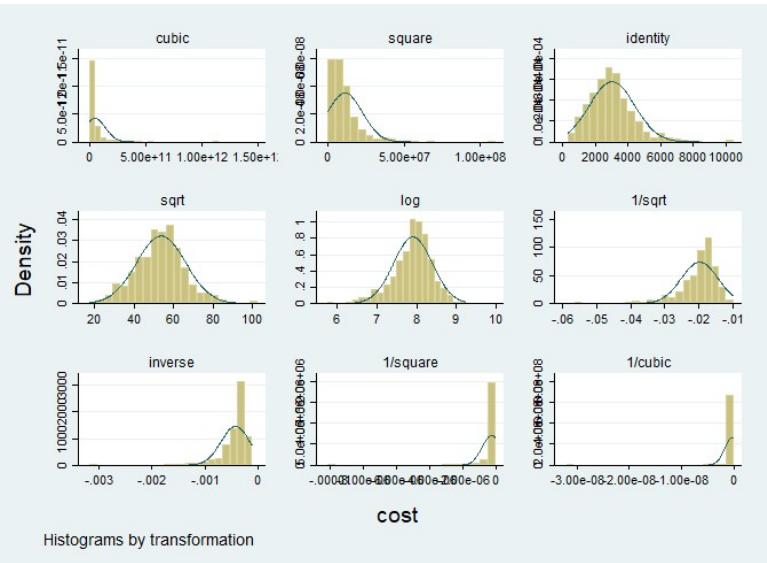
. local optrans="Square Root"

. local opchi2=r(sqrt)

. local oppval=r(P\_sqrt)

. gladder cost

. capture graph export gladderall.png,replace



. gen srcost=(cost^.5)

.

.

```
. ** Evaluate Normality and SDs **
```

```
.
```

```
. * Test normality
```

```
.
```

```
. sktest srcost if treat==0
```

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	joint Prob>chi2
srcost	250	0.1892	0.6707	1.92	0.3829

```
. local srnormjointp0=r(P_chi2)
```

```
. sktest srcost if treat==1
```

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	joint Prob>chi2
srcost	250	0.0012	0.0005	18.65	0.0001

```
. local srnormjointp1=r(P_chi2)
```

```
. * Evaluate equality of SDs
```

```
.
```

```
. sdtest srcost,by(treat)
```

Variance ratio test

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	250	53.02489	.9037197	14.28906	51.24498	54.8048
1	250	54.19748	.6420133	10.15112	52.93301	55.46195
combined	500	53.61119	.5543426	12.39548	52.52205	54.70032

```
ratio = sd(0) / sd(1) f = 1.9814
Ho: ratio = 1 degrees of freedom = 249, 249
```

```
Ha: ratio < 1 Ha: ratio != 1 Ha: ratio > 1
Pr(F < f) = 1.0000 2*Pr(F > f) = 0.0000 Pr(F > f) = 0.0000
```

```
. local sruneqvarp=r(p)
```

```
.
```

```
. * Perform T-test For Square Root of Cost With Unequal SDs
```

```
.
```

```
. ttest srcost,by(treat) unequal
```

```
Two-sample t test with unequal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	250	53.02489	.9037197	14.28906	51.24498	54.8048
1	250	54.19748	.6420133	10.15112	52.93301	55.46195
combined	500	53.61119	.5543426	12.39548	52.52205	54.70032
diff		-1.172587	1.108553		-3.35118	1.006006

```
diff = mean(0) - mean(1) t = -1.0578
Ho: diff = 0 Satterthwaite's degrees of freedom = 449.312
```

```
Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.1454 Pr(|T| > |t|) = 0.2907 Pr(T > t) = 0.8546
```

```
.
```

```
. local srcost0=r(mu_1)
```

```
. local srcost1=r(mu_2)
```

```
. local srcostdiff=`srcost1'-'srcost0'
```

```
. local srcostse=r(se)
```

```
. local srcostp=r(p)
```

```
. local srcostdof=r(df_t)
```

```
. local srcostt=r(t)
```

```
. local srcostdiffll=`srcostdiff'-abs((invt(r(df_t)), 0.025)*`srcostse')
```

```
. local srcostdifful=`srcostdiff'+abs((invt(r(df_t)), 0.025)*`srcostse')
```

```
.
```

```
.
```

```

. *** ALTERNATIVE 3:  NONPARAMETRIC BOOTSTRAP,  COST ***
.
. local runbs=0

. local runbs=1

.
. if `runbs'==1 {
.
. preserve
. drop _all
. set obs 1
obs was 0, now 1
. gen bscmean0=.
(1 missing value generated)
. gen bscmean1=.
(1 missing value generated)
. save bseeic,replace
file bseeic.dta saved
. restore
.
. forvalues i=1/2000 {
2.
. preserve
3.
. drop _all
4. use eeict2011
5.
. capture drop lcost
6. capture drop resid
7. capture drop eresid
8.
. bsample,strata(treat)
9.
. sum cost if treat==0,meanonly
10. local c0=r(mean)
11. sum cost if treat==1,meanonly
12. local c1=r(mean)
13.
. quietly gen lcost=ln(cost)
14.
. sum lcost if treat==0,meanonly
15. local lcost0=r(mean)
16. sum lcost if treat==1,meanonly
17. local lcost1=r(mean)
18.
. quietly gen resid=lcost
19. quietly replace resid=resid-`lcost0' if treat==0
20. quietly replace resid=resid-`lcost1' if treat==1
21. gen eresid=exp(resid)
22. quietly sum eresid,meanonly
23. local csmear=r(mean)
24. quietly sum eresid if treat==0
25. local ssmear0=r(mean)
26. quietly sum eresid if treat==1
27. local ssmear1=r(mean)
28.
. local bslogcs0=`csmear'*exp(`lcost0')
29. local bslogcs1=`csmear'*exp(`lcost1')
30. local bslogss0=`ssmear0'*exp(`lcost0')
31. local bslogss1=`ssmear1'*exp(`lcost1')
32.
. quietly keep if _n==1

```

```

33.
. gen bscmean0=`c0'
34. gen bscmean1=`c1'
35. gen bscsmean0=`bslogcs0'
36. gen bscsmean1=`bslogcs1'
37. gen bsssmean0=`bslogss0'
38. gen bsssmean1=`bslogss1'
39.
. quietly keep bscmean0-bsssmean1
40.
. append using bseeic
41. quietly save bseeic,replace
42. restore
43.
. }
.
. preserve
.
. drop _all
. use bseeic
.
. gen bscdiff=bscmean1-bscmean0
. gen bscsdiff=bscsmean1-bscsmean0
. gen bsssdiff=bsssmean1-bsssmean0
.
. quietly drop if bscdiff==.
.
. save bseeic,replace
file bseeic.dta saved
.
.
. * Use bootstrap to calculate p-values
.
. * Analysis of cost
.
. sum bscdiff if bscdiff<0

```

Variable	Obs	Mean	Std. Dev.	Min	Max
bscdiff	826	-91.94686	70.61734	-417.8601	-.0361328

```

. local N=r(N)/_N
.
. if `N'>0.5 {
. local N=1-`N'
. }
.
. local bscdiffp=2*`N'
.
. sort bscdiff
. sum bscdiff if _n==1+round((0.025*_N),1),meanonly
. local bscnonp11=round(r(mean),.01)
. sum bscdiff if _n==round((0.975*_N),1),meanonly
. local bscnonpul=round(r(mean),.01)
.
. sum bscdiff

```

Variable	Obs	Mean	Std. Dev.	Min	Max
bscdiff	2000	25.03447	123.5498	-417.8601	499.104

```

.
. local bscdiffse=r(sd)
. local z=abs(`costdiff'/`bscdiffse')
. local bscparp = 2*(1-normal(`z'))

```



```

.
. local bscparll=round(`costdiff'-(1.96*`bscdiffse'),.01)
. local bscparul=round(`costdiff'+(1.96*`bscdiffse'),.01)
.
. * Bootstrap analysis of log cost
.
. * Common Smearing
.
. sum bscscdiff if bscscdiff < 0

      Variable |          Obs       Mean   Std. Dev.      Min      Max
-----+-----
      bscscdiff |           42   -44.23139    42.28185   -167.1482   -1.479736
.
. local N=r(N)/_N
.
. display `N'
.021
.
. if `N'>0.5 {
. local N=1-`N'
. }
.
. display `N'
.021
.
. local bscscdiffp=2*`N'
.
. display `bscscdiffp'
.042
.
. sort bscscdiff
. sum bscscdiff if _n==1+round((0.025*_N),1),meanonly
. local bscscdiffll=round(r(mean),.01)
. sum bscscdiff if _n==round((0.975*_N),1),meanonly
. local bscscdifful=round(r(mean),.01)
.
. * Sub-Group Specific Smearing
.
. sum bssscdiff if bssscdiff < 0

      Variable |          Obs       Mean   Std. Dev.      Min      Max
-----+-----
      bssscdiff |          826   -91.94687    70.61733   -417.8599   -.0361328
. local N=r(N)/_N
.
. if `N'>0.5 {
. local N=1-`N'
. }
.
. local bssscdiffp=2*`N'
.
. sort bssscdiff
. sum bssscdiff if _n==1+round((0.025*_N),1),meanonly
. local bssscdiffll=round(r(mean),.01)
. sum bssscdiff if _n==round((0.975*_N),1),meanonly
. local bssscdifful=round(r(mean),.01)
.
. restore
. }
.
.

```

```

. *** DISPLAY RESULTS ***
.
. forvalues i=1/1 {
2. display ""
3. display ""
4. display " RESULTS FROM UNIVARIATE ANALYSIS OF COST"
5. display ""
6. display " Untransformed Cost Scale"
7. display ""
8. display " P-value"
9. display ""
10. display " Test for between-group difference in SDs: " %9.4f `uneqvarp'
11. display " Test for normality of cost, Rx group 0 " %9.4f `normjointp0'
12. display " Test for normality of cost, Rx group 1 " %9.4f `normjointp1'
13. display ""
14. display " Rx 0 Rx 1 Diff P-value --- 95% CI -
--"
15. display ""
16. display " Mean cost: "%9.0f `cost0' %9.0f `cost1' %9.0f `costdiff' %9.4f
`costp' " " %9.0f
> round(`costdiffll',1),"to", round(`costdifful',1)
17. display ""
18. display " Alternative 1: Nonparametric Tests of Cost Differences
19. display ""
20. display " Median cost: "%9.0f `median0' %9.0f `median1' %9.0f (`median1'-
`median0')
21. display " Rank Sum p-value " %9.4f `ranksump'
22. display " Kolm-Smirn p-val " %9.4f `cksmirp'
23. display ""
24. display " Alternative 2: Log of Cost Scale
25. display ""
26. display " P-value"
27. display ""
28. display " Test for between-group difference in SDs: " %9.4f `luneqvarp'
29. display " Test for normality of cost, Rx group 0 " %9.4f `lnormjointp0'
30. display " Test for normality of cost, Rx group 1 " %9.4f `lnormjointp1'
31. display ""
32. display " Rx 0 Rx 1 Diff P-value --- 95% CI -
--"
33. display ""
34. display " Mean log cost: "%9.5f `lcost0' %9.5f `lcost1' %9.5f `lcostdiff' %9.4f
`lcostp' " " %
> 9.5f `lcostdiffll', "to", round(`lcostdifful',.00001)
35. display ""
36. display " Retrtransformed Log of Cost Scale
37. display ""
38. display " Common Smearing Factor: " `csmear'
39. display ""
40. display " Common: "%9.0f `logcs0' %9.0f `logcs1' %9.0f `dlogcs' %9.4f
`bscscdiffp' " " %
> 9.0f `bscscdiffll', "to", round(`bscscdifful',1) " *"
41. display " * P-value and CI from bootstrap
42. display ""
43. display " Subgroup-specific smearing factors
44. display ""
45. display " Rx 0 " `ssmear0'
46. display " Rx 1 " `ssmear1'
47. display ""
48. display " SG Spec: "%9.0f `logss0' %9.0f `logss1' %9.0f `dlogss' %9.4f
`bssscdiffp' " "
> %9.0f `bssscdiffll', "to", round(`bssscdifful',1) " *"
49. display " * P-value and CI from bootstrap
50. display ""

```

```

51. display " Alternative 2a. Optimized Transformed Scale
52. display ""
53. display " Optimal Transformation: Square Root
54. display " Lowest Chi-square: " %9.4f `opchi2'
55. display " P-value: " %9.4f `oppval'
56. display ""
57. display "
                    Rx 0      Rx 1      Diff  P-value      --- 95% CI -
--"
58. display ""
59. display " Mean SR cost: "%9.0f `srcost0' %9.0f `srcost1' %9.0f `srcostdiff'
%9.4f `srcostp' "
> " %9.5f round(`srcostdiff1',.00001),"to", round(`srcostdiff1',.00001)
60. display ""
61. display " Alternative 3: Nonparametric Bootstrap on Cost Scale
62. display ""
63. display " From Point Estimates
64. display " Mean cost: "%9.0f `cost0' %9.0f `cost1' %9.0f `costdiff'
65. display ""
66. display " From Bootstrap
67. display " Nonparametrics: " %9.4f `bscdiffp' %9.0f
`bscnonp11', "to",
> round(`bscnonp11',1)
68. display " Parametrics *: " %9.4f `bscparp' %9.0f
`bscparp11', "to", r
> round(`bscparp11',1)
69. display " * Uses SE from replicates
70. display ""
71. display " Additional bootstrap statistics
72. display ""
73. display " SE, difference in cost: "%9.0f `bscdiffse'
74.
. }

```

# RESULTS FROM UNIVARIATE ANALYSIS OF COST

## Untransformed Cost Scale

		P-value
Test for between-group difference in SDs:		0.0000
Test for normality of cost, Rx group 0		0.0000
Test for normality of cost, Rx group 1		0.0000

	Rx 0	Rx 1	Diff	P-value	--- 95% CI ---
Mean cost:	3015	3040	25	0.8409	-220 to 270

## Alternative 1: Nonparametric Tests of Cost Differences

Median cost:	2826	2901	75	
Rank Sum p-value				0.3722
Kolm-Smirn p-val				0.0017

## Alternative 2: Log of Cost Scale

		P-value
Test for between-group difference in SDs:		0.0000
Test for normality of cost, Rx group 0		0.0015
Test for normality of cost, Rx group 1		0.0129

	Rx 0	Rx 1	Diff	P-value	--- 95% CI ---
Mean log cost:	7.82845	7.98039	0.08665	0.0475	0.00096 to .17235

## Retransformed Log of Cost Scale

Common Smearing Factor: 1.1157242

Common:	2901	3164	263	0.0420	16 to 505 *
* P-value and CI from bootstrap					

## Subgroup-specific smearing factors

Rx 0	1.1656503				
Rx 1	1.065798				
SG Spec:	3015	3040	25	0.8260	-214 to 263 *
* P-value and CI from bootstrap					

## Alternative 2a. Optimized Transformed Scale

Optimal Transformation: Square Root

Lowest Chi-square: 11.4790

P-value: 0.0032

	Rx 0	Rx 1	Diff	P-value	--- 95% CI ---
Mean SR cost:	53	54	1	0.2907	-1.00601 to 3.35118

### Alternative 3: Nonparametric Bootstrap on Cost Scale

From Point Estimates

Mean cost:           3015       3040       25

From Bootstrap

Nonparametrics:                   0.8260       -214 to 263

Parametrics \*:                    0.8396       -217 to 267

\* Uses SE from replicates

Additional bootstrap statistics

SE, difference in cost:           124

.

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