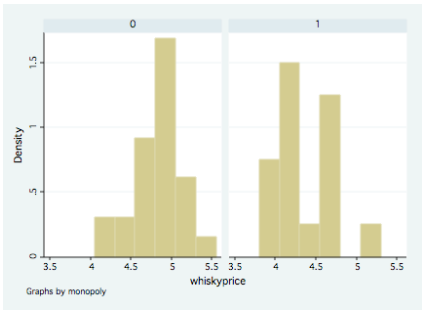
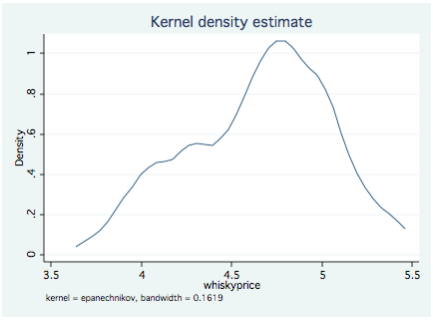
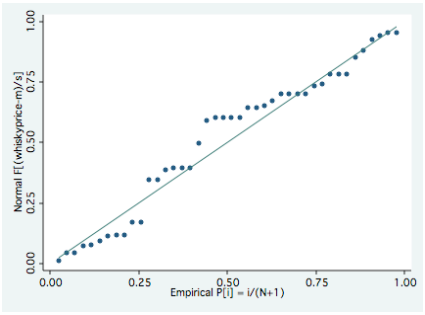
Example A: Whiskey prices

Monopoly States:
$n = 16$
$\overline{X} = 4.34625$
$s = 0.34376$

Private-ownership states:
$n = 26$
$\overline{X} = 4.83846$
$s = 0.26443$







F-max test for equal variances: $H_0 : \sigma_M^2 = \sigma_P^2$ p-value = 0.2385

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	26	4.838462	.0518598	.2644344	4.731654	4.945269
1	16	4.34625	.0859403	.3437611	4.163073	4.529427
combined	42	4.650952	.0586351	.3799988	4.532536	4.769368
diff		.4922115	.0942678		.3016892	.6827338

diff = mean(0) - mean(1) t = 5.2214
Ho: diff = 0 degrees of freedom = 40

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Two-sample t test with unequal variances

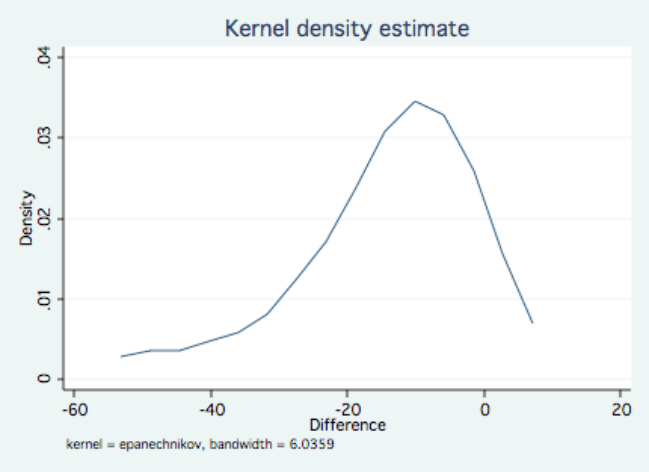
Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	26	4.838462	.0518598	.2644344	4.731654	4.945269
1	16	4.34625	.0859403	.3437611	4.163073	4.529427
combined	42	4.650952	.0586351	.3799988	4.532536	4.769368
diff		.4922115	.1003752		.2858315	.6985915

diff = mean(0) - mean(1) t = 4.9037
Ho: diff = 0 Satterthwaite's degrees of freedom = 25.8561

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Example B: Time needed for 15 teens to send "The quick brown fox jumps over the lazy dog" via SMS

Own Phone	Control Phone	(difference)
37.6	58.8	-21.2
54.87	72.96	-18.09
27.27	37.19	-9.92
65.58	68.2	-2.62
38.35	41.02	-2.67
35.65	42.18	-6.53
38.6	53.8	-15.2
50	61.94	-11.94
21.2	31.8	-10.6
36.55	62	-25.45
43.96	91.1	-47.14
39.17	44.82	-5.65
57.31	56.31	1
30	61.25	-31.25
42.3	51.11	-8.81
$n = 15$ $\overline{X} = 41.227$ $s = 11.744$	$n = 15$ $\overline{X} = 55.632$ $s = 15.311$	$n = 15$ $\overline{X} = -14.405$ $s = 12.712$

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One-sample t test
------------------------------------------------------------------------------
Variable |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
Differ~e |      15   -14.40467    3.282173    12.7118   -21.44423   -7.365105
------------------------------------------------------------------------------
    mean = mean(Difference)                                       t =  -4.3888
Ho: mean = 0                                     degrees of freedom =       14

    Ha: mean < 0                 Ha: mean != 0                 Ha: mean > 0
 Pr(T < t) = 0.0003         Pr(|T| > |t|) = 0.0006          Pr(T > t) = 0.9997
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Sign test: Observed 14 –'s and 1 +. P(1 or fewer +'s | the null hypothesis is true) = _____

Alpha, beta, power, p-value, standard error, null hypothesis, confidence interval,