Assignment 1

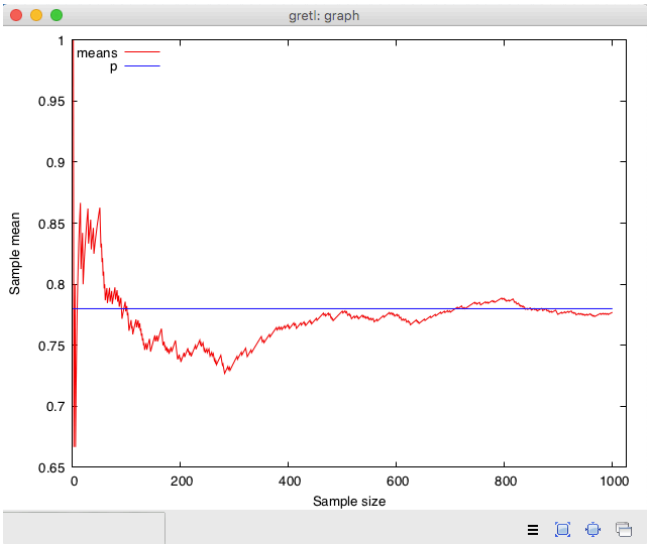
of Econometrics 1 (fall 2019)

Answer the following questions by writing scripts in gretl. Save all your scripts in a single file and send it via email to huangjp@szu.edu.cn no later than 23:59:59 on Oct 20, 2019.

1. Demonstrate the law of large numbers

Demonstrate the law of large numbers by follow the steps below.

1. Create a null dataset with 1000 observations.
2. Create an index variable use command `genr`.
3. Generate a variable "X" which stores random observations from a Bernoulli distribution with success probability 0.78.
4. Create a variable "means" where the *i*-th element stores the average of the first *i* observations of "X". You may use loop statement in this step.
5. Draw a graph like the one given on the right. You may use `gnuplot` to create a graph.

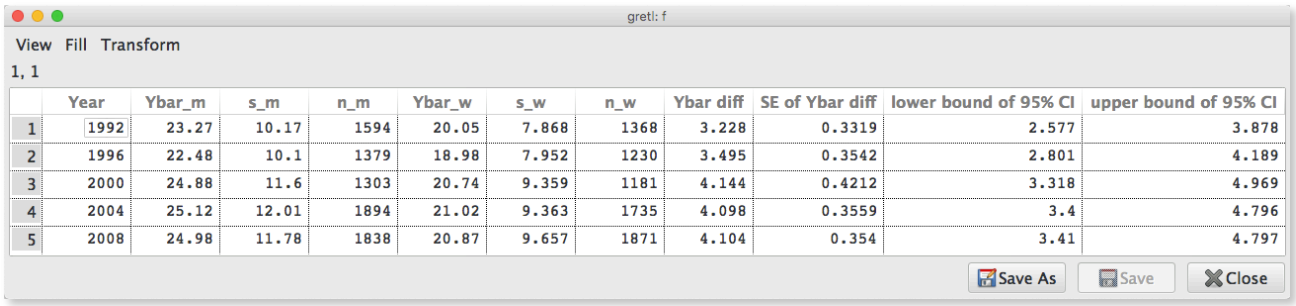


2. Reproduce Table 3.1 in Chapter 3

Reproduce Table 3.1 in Chapter 3.

The data is given in "cps_ch3.xlsx". Store the calculated statistics in a matrix as shown below. A matrix can be generated by command `matrix`. Learn how to work with matrices from Chapter 16 of the *Gretl User's Guide*.

You can view the saved matrix from the icon view window.



	Year	Ybar_m	s_m	n_m	Ybar_w	s_w	n_w	Ybar diff	SE of Ybar diff	lower bound of 95% CI	upper bound of 95% CI
1	1992	23.27	10.17	1594	20.05	7.868	1368	3.228	0.3319	2.577	3.878
2	1996	22.48	10.1	1379	18.98	7.952	1230	3.495	0.3542	2.801	4.189
3	2000	24.88	11.6	1303	20.74	9.359	1181	4.144	0.4212	3.318	4.969
4	2004	25.12	12.01	1894	21.02	9.363	1735	4.098	0.3559	3.4	4.796
5	2008	24.98	11.78	1838	20.87	9.657	1871	4.104	0.354	3.41	4.797