Problem Set 3

1. (Instrumental Variable) You will use data Pse3Q1.dta to solve this problem.
2. Run an OLS regression to estimate the return to an additional year of schooling. Regress the weekly log wage onto educ and dummies of years of birth.
3. Instrument the years of schooling using the quarters of birth dummies. Report the return to an additional year of schooling with the standard error. Compare the estimate with the one obtained in (i) and explain why they are different.
4. State whether your model is just identified or overidentified and explain why.
5. Test whether the instruments are weak using the Kleibergen-Paap F-statistic.
6. Test whether you can reject the exogeneity of the instruments using the Hansen J-test.
7. Now, instrument the years of schooling using the quarters of birth X year dummies. Report the return to the years of schooling with the standard error.
8. Test whether the new instruments in (iv) are weak using the Kleibergen-Paap F-statistic.
9. Test whether you can reject the exogeneity of the new instruments in (iv) using the Hansen J-test.
10. (Fixed effect) You will use data Pset3Q2.dta to solve this problem.
11. Examine the data and state whether the data is a balanced or unbalanced panel.
12. Run the following OLS regression and report the estimate of the marital premium for **males** with the standard error.
13. Explain why the OLS regression coefficient may be biased.
14. Run the following fixed effect regression and report the estimate of the marital premium for **males** with the standard error. Cluster the standard error at the individual level.
15. Explain why the FE regression may solve the concern in (iii).