Econ 3040 - Assignment 4: Heteroskedasticity and IV

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Due date: December 8. Worth 2% of your final grade.
Instructions: Submit your assignment in the "Assignment 4" drop box on UM Learn. Include your name and student number. Submit the `R` code that you use for each question in your assignment.

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1. Use the house price data from class:

   ```
   houses <- read.csv("http://rtgodwin.com/data/houseprice.csv")
   ```

   Estimate a model with `Price` as the dependent variable, and using all other variables as regressors:

   ```
   mod <- lm(Price ~ ., data = houses)
   ```

   Which variables change significance levels (e.g. from 5% to 10%) when you use White's robust standard errors?

2. Use the Fulton fish market dataset from class.

   ```
   fish <- read.csv("https://rtgodwin.com/data/fish.csv")
   ```

   See the table in the notes for a description of the variables.

   a) Plot the quantity/price data. Does it look like a demand curve?

   b) Estimate the demand curve using LS. Add the estimated line to the plot. What is the problem with using LS to estimate the demand curve?

   c) In class, we used the `ivreg()` function in order to perform instrumental variables regression to estimate the elasticity of the demand curve in the Fulton fish market. We used measures of wave heights as the instruments. Reproduce the results of the `ivreg()` function from class, using *only* the two-stage least squares method.