

# Introduction to Metrics : Homework 2

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11/3/2018

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## 1 Learning Objectives and Due Date

- Continue practicing to use Stata/R to analyze data.
- Better understanding of multiple OLS regression
- Using markdown file to generate the report.

## 2 Due Date and Formats

- Due to Nov.18 12:00 pm
- *Please send your homework to: [jl2017f@126.com](mailto:jl2017f@126.com) on time.*

- **Subject:** 学号 \_ 姓名 \_ 专业 \_HW1
- **Rename your file with ID\_Name\_Major\_HW1** (eg. 151090001\_ 户纳东 \_ 经济 \_HW1.scml) **The homework with wrong filename will not be archived or scored properly.**
- **Format**
  - *English or Chinese (Note: may not be supported in some cases)*
  - *Word or PDF files generated by markdown*
    - \* **Stata** : use **markstat** command ([help](#)) to generate Word or PDF(need Latex setup) files.
    - \* **R** : use Rmarkdown files to generate Word or PDF(need Latex setup) files.
- **Important Rule: Plagiarism Will Be NOT Tolerant!**. If TAs have enough evidence to make me believe that your homework is very very “similar” with another finished by one of your classmates, then both of you will score **ZERO** directly!

### 3 Exercises in SW textbooks

- 7.1-7.6
- 8.3
- 8.6
- 9.2
- 11.1-11.7
- E7.1
- E8.1
- E9.1

- E11.1
- E11.2

## 4 Family origins and Earnings (50 points)

### 4.1 Background: Li,Ling and Qu(2018)

- This study examines the long-term effect of family socioeconomic status on personal income in urban China. Using information about the “class origin”(家庭成分) in Mao-era from a national household survey in 2002,we would like to see whether and how people from “elite” families earn more than those with “non-elite” backgrounds.

### 4.2 Data: The CHIP data set contains the following variables:

Variable Names	Descriptions
lnhw	对数小时工资
male	= 1 男性; = 0 女性
rank3_al	家庭成分: 新精英 =1, 旧精英 =2, 非精英 =3
edu	教育年限
ew	工作经验
cparty	是否为党员?

### 4.3 Question:

1. Please label variables with the descriptions in the table above and generate corresponding dummy variables for categorized variables.
2. Please draw a bar graph(柱图) to describe the average logarithm values of hourly earnings for the new elite, old elite, and non-elite, respectively. What is the basic scenario? (Please denote which group is the highest, the middle and the lowest, respectively? And are there earning gaps between the elite groups(“the new” and “the old”) and

non-elite group. How much about them?

3. Can you make sure that the statement you just made in Question 1?(Hint: making inferences for the two earnings gaps). Could you provide one reasonable explanation why the earnings of elite groups are higher?
4. Using a multiple OLS regression to prove you point in Question 2. Please write down a regression model which you justify it,denote about which parameter(s) we care the most? and explain what are the economic meanings about these parameters?
5. Report the result in the above regression(Hint: including both estimation and inference). Can these results prove your explanation in Question 3?(Please explain the economic meanings about these results in details)
6. What is the underlying assumption about the regression? Can you suggest some potential biases in the above estimation? And guess the directions about these biases?
7. Could you see if there are some differences in CCP(Chinese Communist Party) memberships across the three groups? Can you determine the difference is significant when other things equal? (Runing a regression and report the result to answer the question) How to explain economic meanings about the key parameter and what is the implication to the study?
8. If there are some differences as to CCP memberships across the three groups,then could you provide some evidence that the wage differentials between elite groups and non-elite groups(two differentials) change along with the status of CCP memberships? (Runing a regression and report the result to answer the question). How to explain economic meanings about the key parameter and what is the implication to the study?

#### 4.4 Appendix: More backgrouds: definitions of “elite” groups

Soon after the establishment of the People’s Republic of China, one important supplementary policy to support the “land reform” and the “Socialist Transformation” campaigns, is the classification of family origins, which is determined according to one’s social status, occupation and wealth. For children and young adults who are not financially independent, a family origin is defined as the “social status, occupation and wealth of his/her parents.” Specifically, people are classified into several categories such as Poor peasant or landless, Lower middle-peasant, Rich-middle peasant, Rich peasant, Landlord, Manual worker, Office worker, Enterprise owner, Petty proprietor, Revolutionary cadre, Revolutionary soldier, etc. Once a person is determined, as one of the most critical political labels in Mao-era, family origins could directly influence one as to education, choice of occupation, marriage, membership of the communist party, career advancement, joining the army and many other opportunities.

- **non-elite:** Including Poor peasant or landless, Lower middle-peasant, Rich-middle peasant, Manual worker, Office worker, and Petty proprietor. People in this category were at the bottom of society prior to 1949 and owned little social or political capital. After the socialist transformation, these people were labeled as “good classes” and became beneficiaries of the revolution as they were once the “keystones” of the revolution.
- **old elite:** Including Rich peasant, Landlord and Enterprise owner. Individuals from these family class origins were at the top rung of the old social hierarchy before 1949 and hence controlled most resources of the social and political capital. After these socialist campaigns, they fell to the bottom of the society dramatically and lost almost all their social and political resources in the “new” society.
- **new elite:** Including Revolutionary cadre and Revolutionary soldiers. Individuals in this category directly led or participated in the socialist revolution. Although they came from diverse strata of the old society,

they were on the top rung of the new sociopolitical hierarchy and benefited most from the revolution.

- Extending Readings in Chinese
  - 《家庭出身代码》的兴废始末
  - 《家庭出身代码》国家标准的出炉与废除