

## Chapter Two: Tools of Positive Analysis (pg 18 - 32)

### The Role of Theory (18)

#### **Theory provides us a mental map of the world**

Economists have certain theoretical tools that we depend on

Milton Friedman: econ 101 (price theory)

You can't get far without theory – it's just lots of numbers otherwise

*The Philips Curve and the Great Inflation*

#### **Example: A tax on income**

As we tax income, its value goes down (price goes up)

We would normally expect to get less of it

As the relative price of something rises, consumption increases

Note: This is a partial equilibrium argument

Income/Leisure analysis

Time is allocated between Income and Leisure

As wages go down, we substitute from work to Leisure

But as Income goes down, we re-evaluate our goods/leisure trade-off

An income effect

#### **Three Definitions**

*Inferior Goods: As Income rises, Consumption falls*

*Normal Goods: As Income rises, Consumption rises by a smaller percent*

*Luxury (superior) Goods: as income rises, consumption rises by a larger percent*

*In public finance, especially cross country comparisons, this is important  
Chinese Pollution, U.S. Health Care*

**Likewise – Theory tells us what to look for**  
*Airbags*

### Causation vs. Correlation (20)

Example: Marriage leads to higher wages

### Experimental Studies (21)

#### **Conducting an Experimental Study**

Fortunately, politicians usually don't let us in public finance

Identifying the Subject group

Identifying the Control group

The Counterfactual gets tested here

#### **Problems and Difficulties of Experimental Studies**

Identifying treatment and control groups (marriage)

Biased Estimates (uncontrolled variables)

Some other person's wife's mom's car

Follow up response rates

Changed behavior as part of the study....  
Does what applies to a group apply to society as a whole?  
Give everybody in Rayong 2 million baht

### **Observational Studies (24)**

**An empirical study that relies on pre-existing data sets**

**Conducting Observational Studies**

**Econometrics**

OLS, and many, many, many other tests....

**Econometrics has reached the law of diminishing returns**

**Nobody is convinced by new econometrics anymore**

**Regression lines, standard error, etc**

**Data types**

Cross-sectional – Data of different people at the same time

Time-series – Data about the same people over time

Panel data – Both of the above (longitudinal data)

### **Problems and Difficulties with Observational Studies**

The reliability of the data

People are self-interested

How many students cheated on their final exam last semester?

Lao Kao

**The counterfactual (what would have happened had we done nothing)**

The 2009 U.S. Stimulus

Can we compare to European Stimulus/Austerity?

### **Quasi-Experimental Studies (27)**

Also Known as Natural experiments

When something big happens and clearly changes conditions

Example: The great depression, Hiroshima

Good Example: John Snow on the Cholera outbreak in England, 1855

**Conducting a Quasi-experimental Study**

**Difference on Difference experiments**

Change in the control group compared to the subject group

Beer taxes on Teen driving deaths

**Instrumental Variables and Quasi Experiments**

A way to deal with self-selection problems

**Regression-discontinuity analyses (looks for threshold effects)**

### **Problems and Difficulties with Quasi Experimental Studies**

*The Krugman vs. Rogoff/Reinhart debate on debt*

**Conclusions**

**Summary**

**Problems**