

# LECTURE 2: THE (MACRO)-ECONOMIC WAY OF LOOKING AT LIFE

See Barro Ch. 1

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## CAVEAT EMPTOR

*In general there is no position, to repeat, which cannot be reached by a competent use of respectable economic theory. The reason this does not happen more often than it does is that there is a general consensus among economists that some relationships are stronger than others and some magnitudes are larger than others.*

–George Stigler, 1959

## CAVEAT LECTOR

- ▶ When talking about the real world, we need magnitudes
- ▶ Even in something as straightforward as supply and demand, we need...
  - ▶ elasticities or slopes
  - ▶ magnitudes of shifts
  - ▶ cross elasticities
- ▶ ...before we can say anything
- ▶ Beware armchair economists bearing words but no numbers
- ▶ Always pay attention to empirical magnitudes

# MOTIVATION

- ▶ In 1933, Ragnar Frisch (1933) coined the phrase “Macroeconomics”
- ▶ As a subject, macroeconomics was born out of the great depression
- ▶ Previously, much of it was lumped in money & banking and political economy
- ▶ The Great Depression posed a new problem:
  - ▶ How do we avoid another?
- ▶ The Great Problem of Macroeconomics has been solved (Lucas 2003)
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# MACROECONOMICS AS A SCIENCE

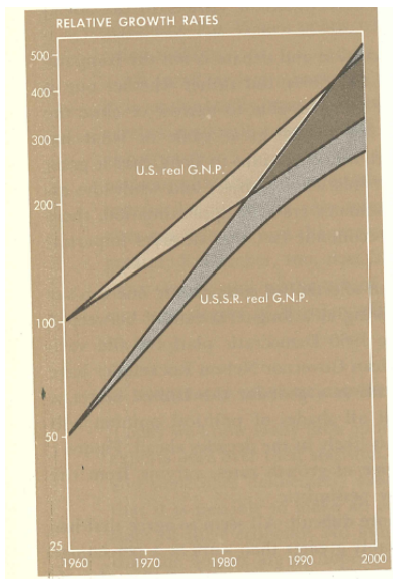
- ▶ Same problem as meteorology, astronomy: experimentation
- ▶ Modern Macroeconomics born in the late 1970's
- ▶ The Ideal:
  - ▶ Take in many “stylized facts”
  - ▶ Build a parsimonious model of microeconomic agents that explains those facts quantitatively
  - ▶ Test the model against new data, developing countries, or non-targeted data
- ▶ Example: The Neoclassical Growth Model
  - ▶ Build model to explain *long-run* growth in a single country
  - ▶ Test to see whether or not it can explain *short-run* fluctuations
  
  - ▶ Test to see whether or not it can explain *long-run* cross-country differences
- ▶ Success! (Mixed success.) NB: Some people hate this!

# MACROECONOMICS AS A SCIENCE-II

- ▶ Paul Samuelson writes “Economics”
- ▶ Discusses command & control, national savings and investment
- ▶ In 1961, predicts Soviet Union will overtake U.S. between 23-36 years
- ▶ Then, Soviet Union about half U.S. GDP

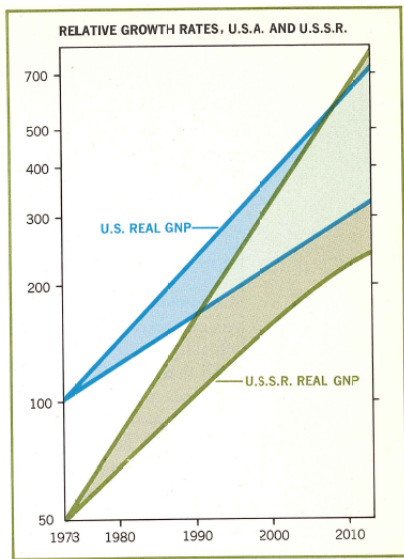


# MACROECONOMICS AS A SCIENCE-SAMUELSON 1961



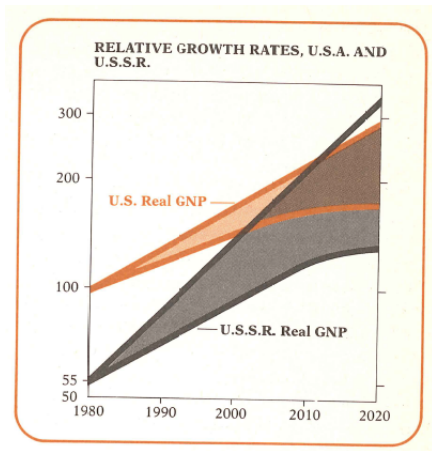
Overtake in 23-36 years

# MACROECONOMICS AS A SCIENCE-SAMUELSON 1973



12 years later, overtake in 17-35 years

# MACROECONOMICS AS A SCIENCE-SAMUELSON 1980



19 years later, overtake in 22-32 years

# MACROECONOMICS AS A SCIENCE-REALITY 1980



# MACROECONOMICS AS A SCIENCE-REALITY 1989

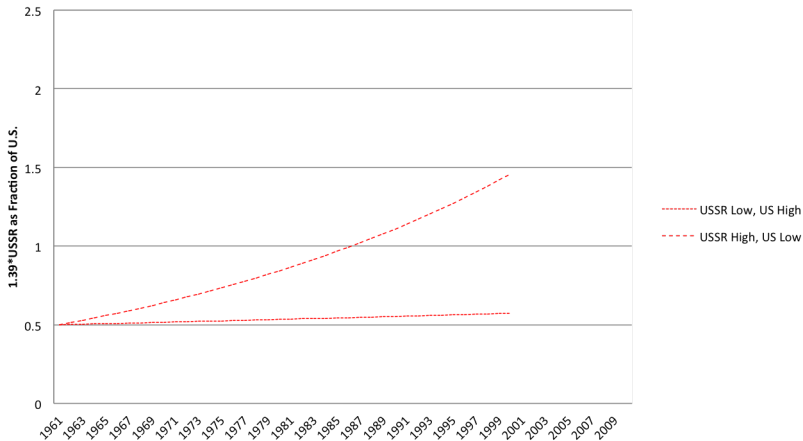


# MACROECONOMICS AS A SCIENCE-REALITY 1989



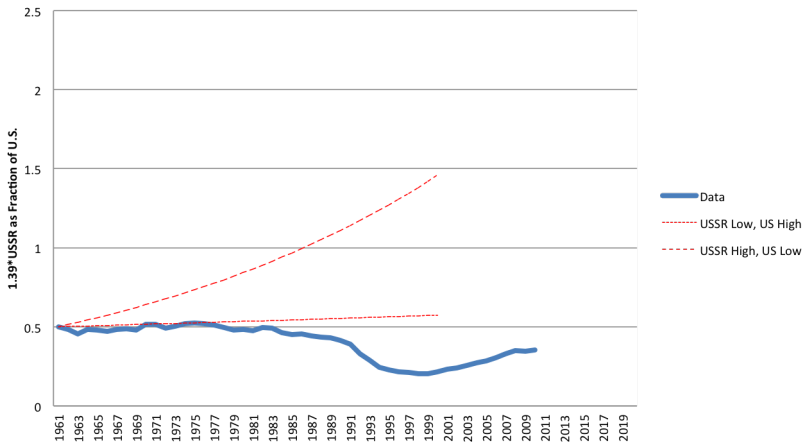
# ECONOMISTS AND REALITY

## USSR as a Fraction of U.S.: Samuelson 1961



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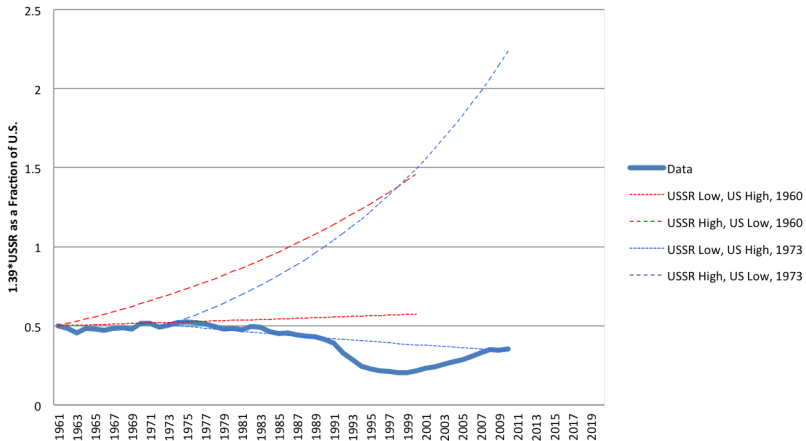
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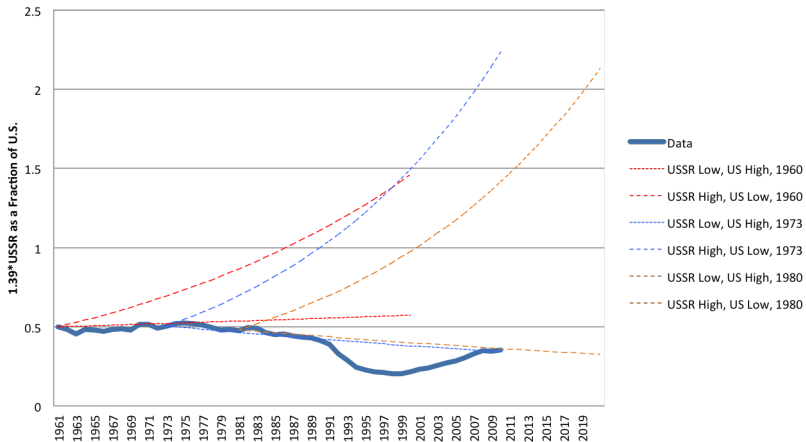
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## USSR as a Fraction of U.S.: Samuelson 1961, 1973, 1980



## ECONOMISTS AND REALITY: SUMMARY

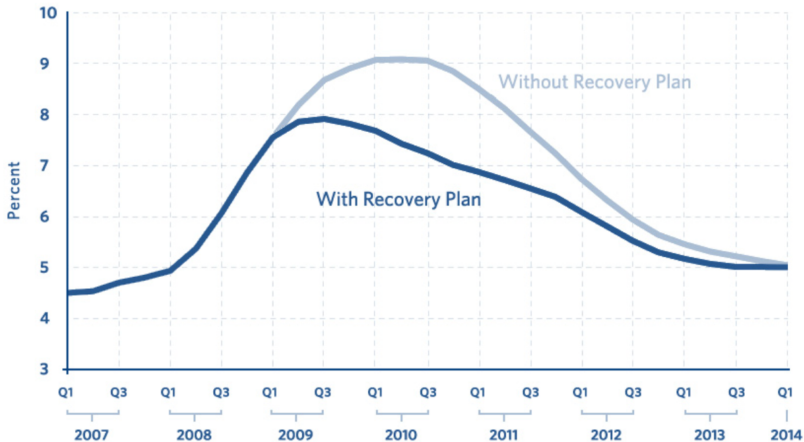
- ▶ Owch.
- ▶ From my perspective, at first this is just a failure of a model
- ▶ Then, it's a failure to do science
- ▶ Interesting to note that the highest US rate and lowest USSR rate actually do an okay job.
- ▶ From a different textbook:
  - ▶ 1963: "Soviet GNP is roughly one-half that of the United States" and "The rate of economic growth is two or three times as great as that of the United States.?"
  - ▶ 1975: "Although the Soviet GNP is only one-half as large as that of the United States, the Soviet GNP has grown more rapidly than ours"
- ▶ Paper by Levy & Peart "Soviet Growth & American Textbooks"

## MACROECONOMICS AS A SCIENCE-III

- ▶ After Obama was elected, before he takes office economy doing extremely poorly
- ▶ Wants to motivate a “stimulus” plan of government spending
- ▶ Christina Romer and Jared Bernstein produce “The Job Impact of the American Recovery and Reinvestment Plan”
- ▶ Show what would happen to unemployment with and without stimulus

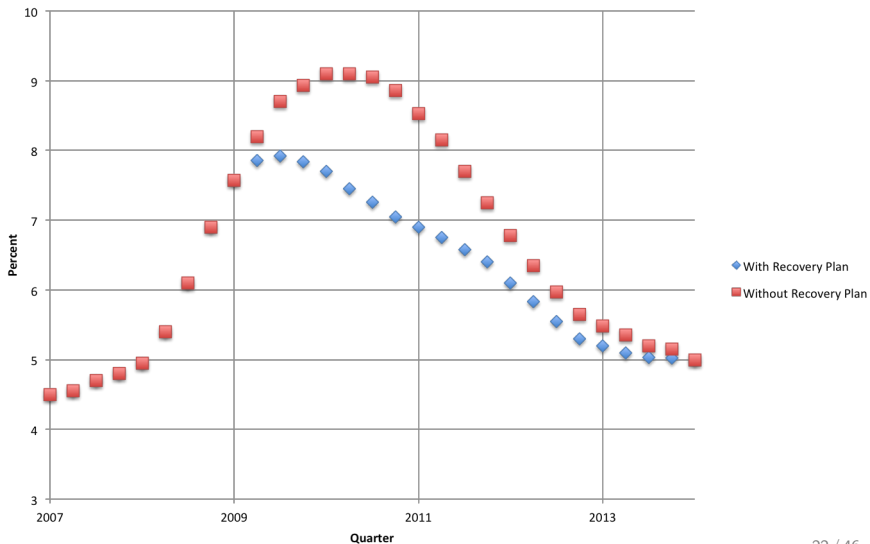
# USING THE MACROECONOMIC SCIENCES-I

Figure 1  
Unemployment Rate With and Without the Recovery Plan



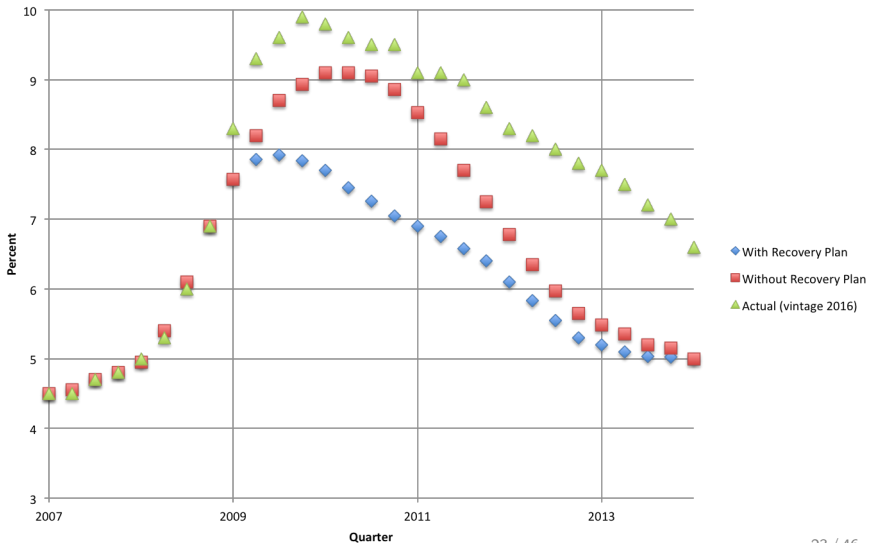
# USING THE MACROECONOMIC SCIENCES-II

## Unemployment Rate With and Without the Recovery Plan



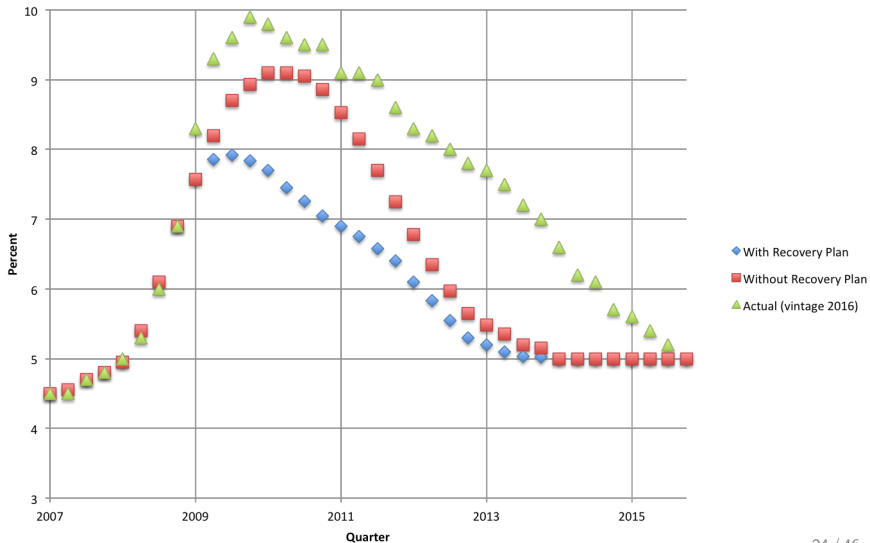
# USING THE MACROECONOMIC SCIENCES-III

## Unemployment Rate With and Without the Recovery Plan



# USING THE MACROECONOMIC SCIENCES-IV

## Unemployment Rate With and Without the Recovery Plan





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- ▶ What we do after failure determines whether or not economics is a science

# THE MACROECONOMIC WAY

- ▶ Aspects of Becker 1992
  - ▶ Individuals maximize welfare *as they see it*
    - ▶ Tautology? Yes.
    - ▶ So is math. Is this a useful tautology?
    - ▶ Yes.
  - ▶ Forward-looking behavior
  - ▶ Markets, Prices, and Equilibrium
- ▶ Dynamics: much more to test
- ▶ Include willingness of people to substitute as well as their ability to substitute (Frisch 1970, Prescott 2004)
- ▶ When choosing policy, recognize past/current behavior isn't necessarily predictive (Lucas 1976)
  - ▶ Colorado Supermax & Guards
- ▶ We want explanatory power, but can't just test everything
- ▶ "Measurement without theory" (Burns and Mitchell, 1946 Koopmans, 1947)
- ▶ The power of markets to trump behavioralism



## EXAMPLE: NEOCLASSICAL GROWTH MODEL

- ▶ Write down a simple model where people like to smooth consumption and work
- ▶ Use *the same basic model* to explain:
  - ▶ Within-country economic growth
  - ▶ The business cycle
    - ▶ Labor
    - ▶ Investment
    - ▶ Consumption
  - ▶ Equity premium (?) (Mehra and Prescott, 1985)
  - ▶ Stock market value (McGrattan and Prescott 2005)
  - ▶ Cross-country differences in labor (!) (Prescott 2005)
  - ▶ The Great Depression (!) (Cole and Ohanian 1999)
  - ▶ Japan's Lost Decade (Hayashi and Prescott 2002)
  - ▶ The Great Recession (!! ) (Mulligan 2010)

## IN OTHER WORDS...

Use something as simple as this:

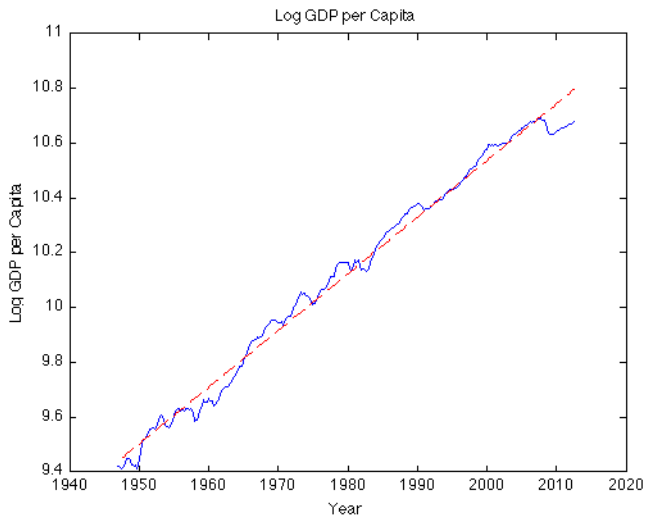
$$c_t + x_t = y_t$$

$$k_{t+1} = (1 - \delta)k_t + x_t$$

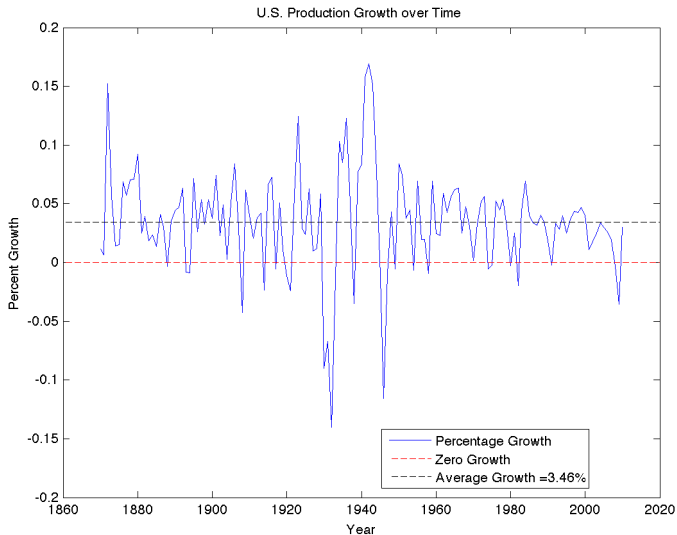
$$\sum_{t=0}^{\infty} u(c_t, 1 - h_t)$$

To explain...

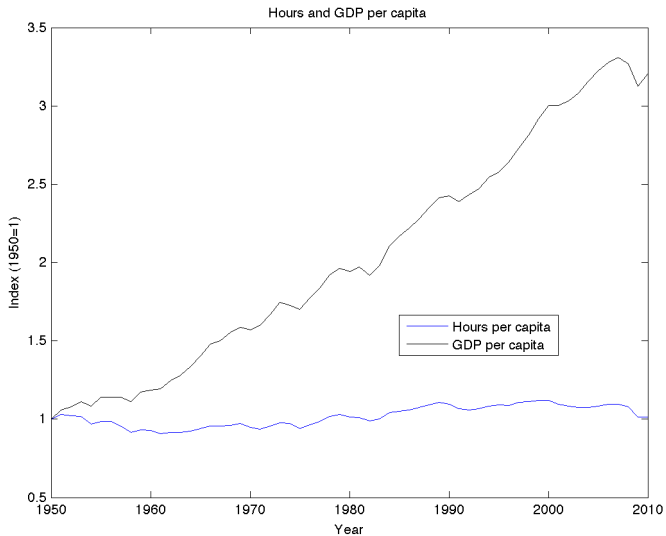
...THIS...



## ...AND THIS...



## ...AND THIS...



## IN OTHER WORDS...

- ▶ The power of the method is comparative
- ▶ Addresses sparsity of data
- ▶ Can a little thing that's sensible explain a lot?

## SECONDARY QUESTIONS

- ▶ Why are rich countries rich and poor countries poor?
- ▶ Why do so many stay that way?
- ▶ Why do people use money, and why is it worth what it's worth?
- ▶ Who suffers when a country devalues its currency?
- ▶ What causes inequality?
- ▶ Why are people “unemployed?”
- ▶ What drives labor market behavior?

# THINKING ABOUT DATA, STEP 1

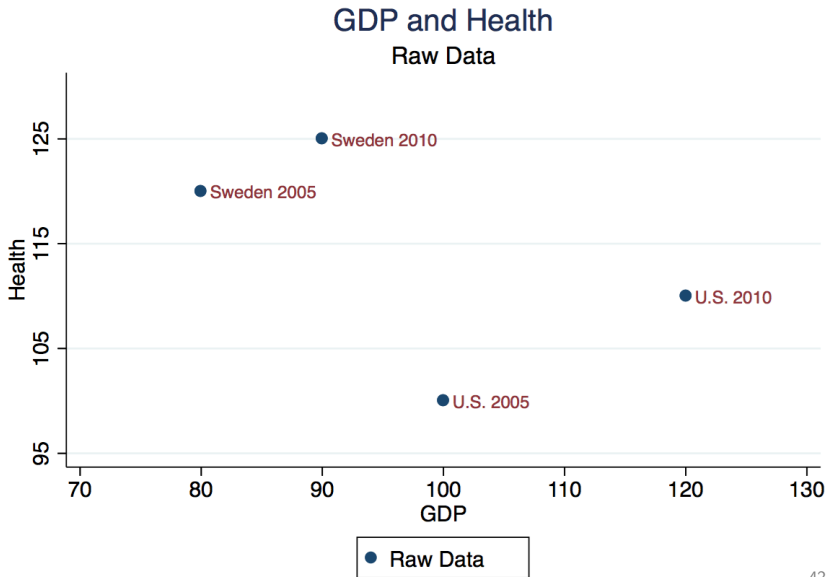
- ▶ People like to use data to make points
- ▶ Frequently compare countries over time to establish relationships
- ▶ Many possible comparisons to be made...



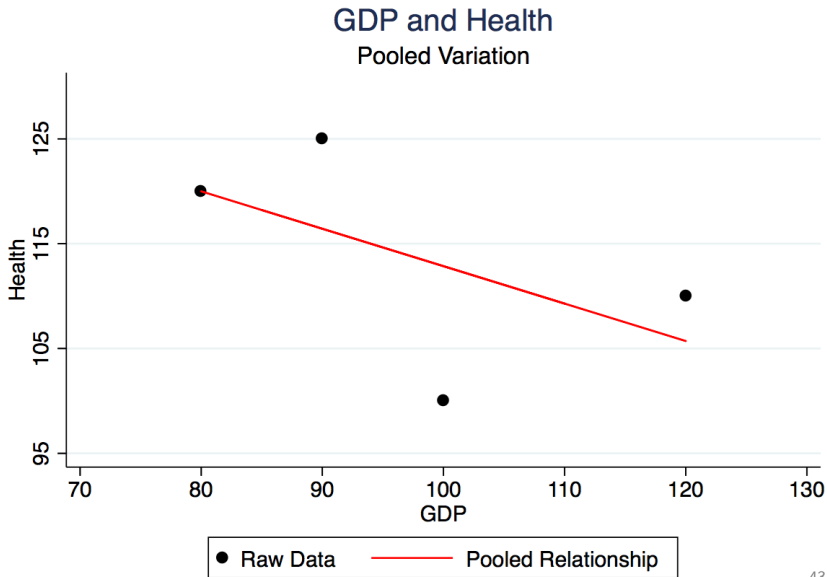
# THINKING ABOUT DATA: RAW DATA

- ▶ Let's say we have two years of data from the U.S. and Sweden on health and GDP
- ▶ How could we find the relationship (statistical correlation) between health and GDP?

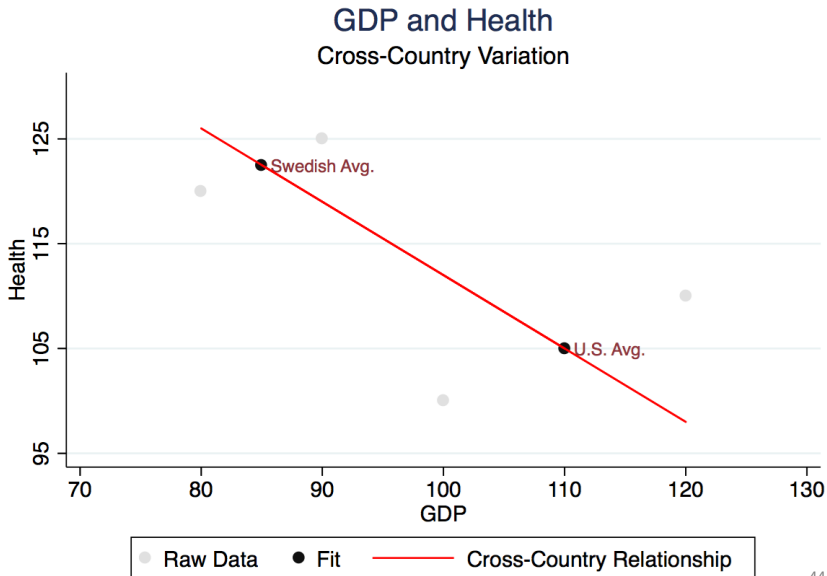
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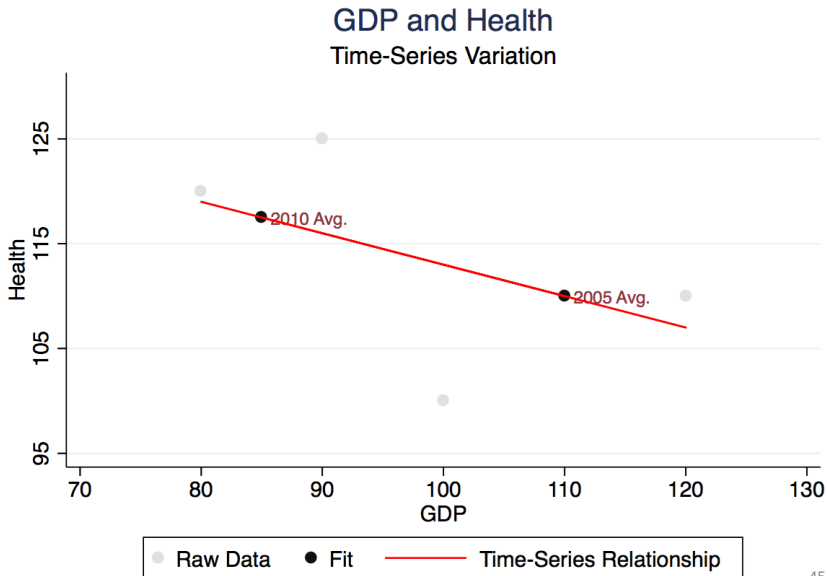
# THINKING ABOUT DATA: POOLED



# THINKING ABOUT DATA: CROSS-COUNTRY



# THINKING ABOUT DATA: TIME-SERIES



# THINKING ABOUT DATA: PANEL

