APPLIED ECONOMETRICS
(MACRO MODULE)

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COURSE OUTLINE

• Time Series
• Models
• Inference
• Forecasting
• Structural Analysis
PART I: “TIME SERIES”

OUTLINE

• Macroeconomic Data
• Serial Correlation
• Trends and Breaks
• Methodology
READINGS AND MATERIALS

• Stock and Watson, C. 12
• Hansen, JEP
• Hoover, Ch.5
• Sims, JEP
• HW#1 posted (due Tuesday, March 23)
• GAUSS lite
TIME SERIES?
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- collection of observations for a variable (e.g., aggregate output) over time

\[ \{ y_1, y_2, \ldots, y_T \} \]
MACRO DATA

- Aggregate (Normality)
- US (availability, quality)
- FRED, BEA, SourceOECD, WRDS
KEY SERIES (I)

• Real GDP, Components, Population
• Inflation (GDP Deflator, PCE Deflator, CPI)
• Unemployment Rate
Consumer Price Index For All Urban Consumers: All Items (CPIAUCSL)

Shaded areas indicate US recessions.
2010 research.stlouisfed.org
KEY SERIES (II)

• Deficits/Debt
• Interest Rates
• Exchange Rates
• Stock Returns
DATA ISSUES

• Seasonality

• Revisions

• Measurement Error

• Chain Weighting
SERIAL CORRELATION

- persistence in time series
- less independent information
- potential for forecasting
WHY DOES SERIAL CORRELATION MATTER?

• less independent information
• potential for forecasting
Real Change in Private Inventories, 1 Decimal (CBIC1)
Source: U.S. Department of Commerce: Bureau of Economic Analysis

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SUMMARY

- Start with data
- Provides context
- First issue: serial correlation