Introduction to Topics in Macroeconomics 2

Chapter 1

Topics in Macroeconomics 2

Economics Division
University of Southampton

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Topics in Macroeconomics 2

Alice Schoonbroodt

- E-mail:
  alicesch@soton.ac.uk
- Web site:
  http://www.economics.soton.ac.uk/staff/alicesch/Teaching.htm
- Office Hours:
  Wednesdays from 14:00 to 16:00 or by appointment

Topics in Macroeconomics 2

Textbook

- Williamson, Stephen D., “Macroeconomics” Pearson / Addison Wesley.

Meetings (see Timetable.pdf)

- **20 Lectures:** Weeks 18 to 23; Weeks 29 to 32

  Note 1: Independent study week: Week 24 but...

  Note 2: February 26: cancelled, recup March 15 (Week 24)

  Note 3: May 3: Bank Holiday, recup May 17 (Week 33)

- **8 Master Classes:** Weeks 20 to 23; Weeks 29 to 32

Topics in Macroeconomics 2

Assessment

	Weight	Date
Quiz I	5%	March 8, 2010 during Lecture
Quiz II	5%	May 14, 2010 during Lecture
Exam	90%	During the final exam period

Macroeconomics

What Do We Study in Macroeconomics?

- The behaviour of large collections of economic agents
- The behaviour of governments
- The overall level of economic activity
- The economic interaction among nations
- The effects of fiscal and monetary policy

Main Issues in Macroeconomics

- Long-run growth
- Business Cycles

Course Outline

Part I: Intro and Measurement Issues

1. Introduction
2. Measurement
3. Business Cycles Measurement

Part II: A One-period Model of the Macroeconomy

4. Consumer and Firm behaviour
5. A Closed-Economy One-Period Macroeconomic Model

Part III: Economic Growth (independent study week)

Course Outline (cont.)

Part IV: Savings, Government Deficits and Investment

8. A Two-Period Model: The Consumption-Savings Decision
9. A Real Intertemporal Model with Investment

Part V: Money and Business Cycles

10. A Monetary Intertemporal Model: The Neutrality of Money
11. Market-Clearing Models of the Business Cycle
12. Keynesian Business Cycle Theory: The Sticky Wage Model (if time allows)

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Aggregate Production

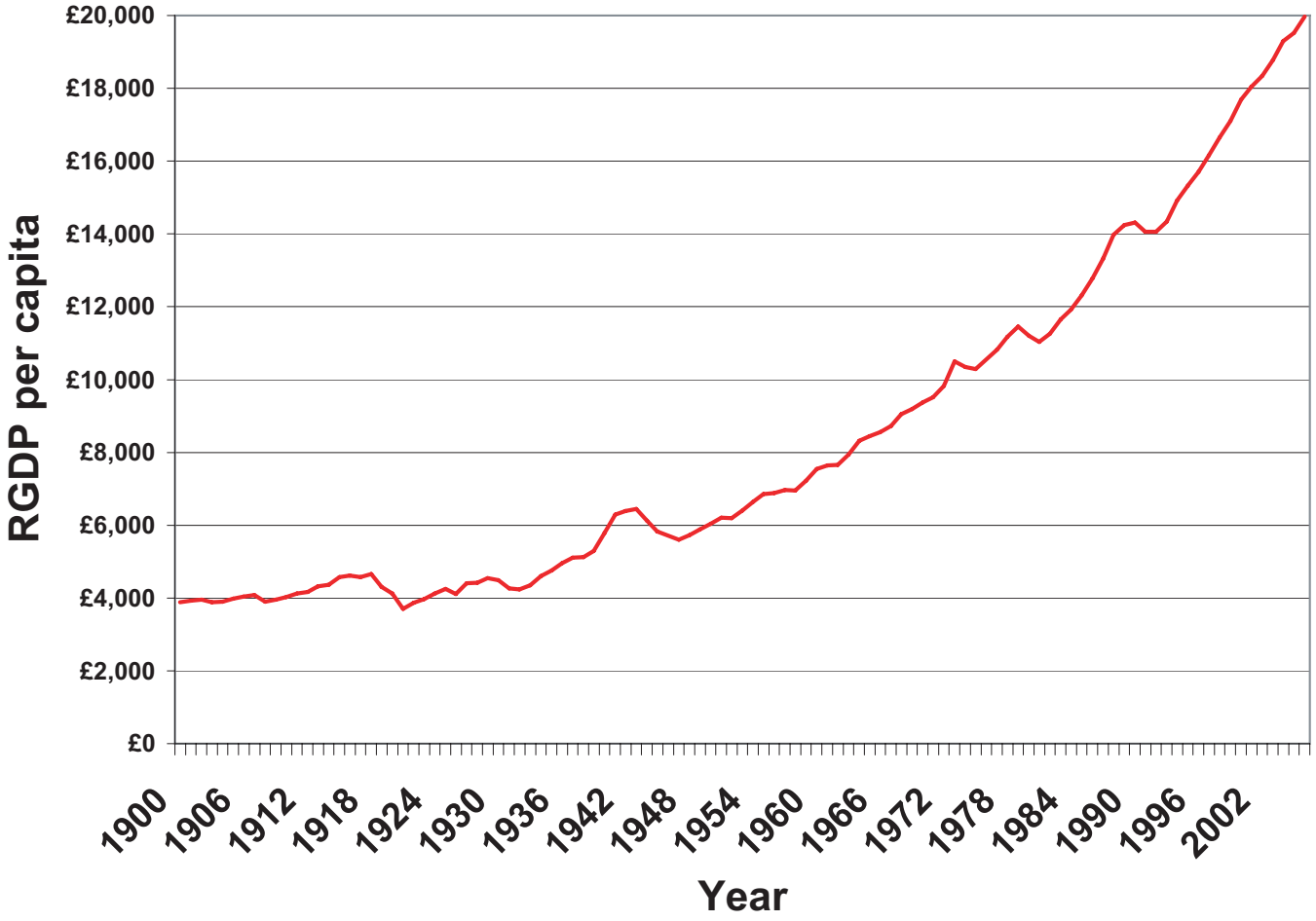
Gross Domestic Product (GDP)

Monetary value of final output produced during a given period of time within the borders of a country

Real GDP per capita (adjusts for inflation and population growth)

One measure of a country's standard of living

Figure 1: Real GDP per capita since 1900
(year 2003 pounds)



Source: Lawrence H. Officer, "What Was the U.K. GDP Then?", MeasuringWorth.Com, 2007.

Some Observations

- There has been sustained economic growth in per capita GDP during the 20th century
- In 1900 the average income for a Brit was approx. £4,000 (2003 pounds)
- In 2006 it was almost £20,000
- Average Brit became almost 5 times richer in real terms in 100 years
- Although growth was sustained it was not constant
- These fluctuations are called business cycles

Unusual Business Cycle Events

- The Inter War and Great depression (1919–1937)
  - In 1918, Real GDP was 20% higher than in 1921 and 10% higher than in 1932!
- The Second World War
  - From 1932 to 1943, real GDP per capita increased by 52%!
- Current events???

Questions raised by Figure 1

Motivation for this Course

- What causes sustained economic growth?
- Could economic growth continue indefinitely, or is there some limit to growth?
- Is there anything that governments can or should do to alter the rate of economic growth?
- What causes business cycles?
- Could the dramatic decreases and increases in economic growth that occurred during the Great Depression and WWII be repeated?
- Should governments act to smooth business cycles?

A Useful Transformation for Growing Time Series

The Natural Logarithm and the Rate of Growth

Fact

If x is small, $\log(1+x) \approx x$

Consider a time series y_t, $t = 1928, 1929, \ldots$
Let g_t denote the growth rate from period $t-1$ to period t:

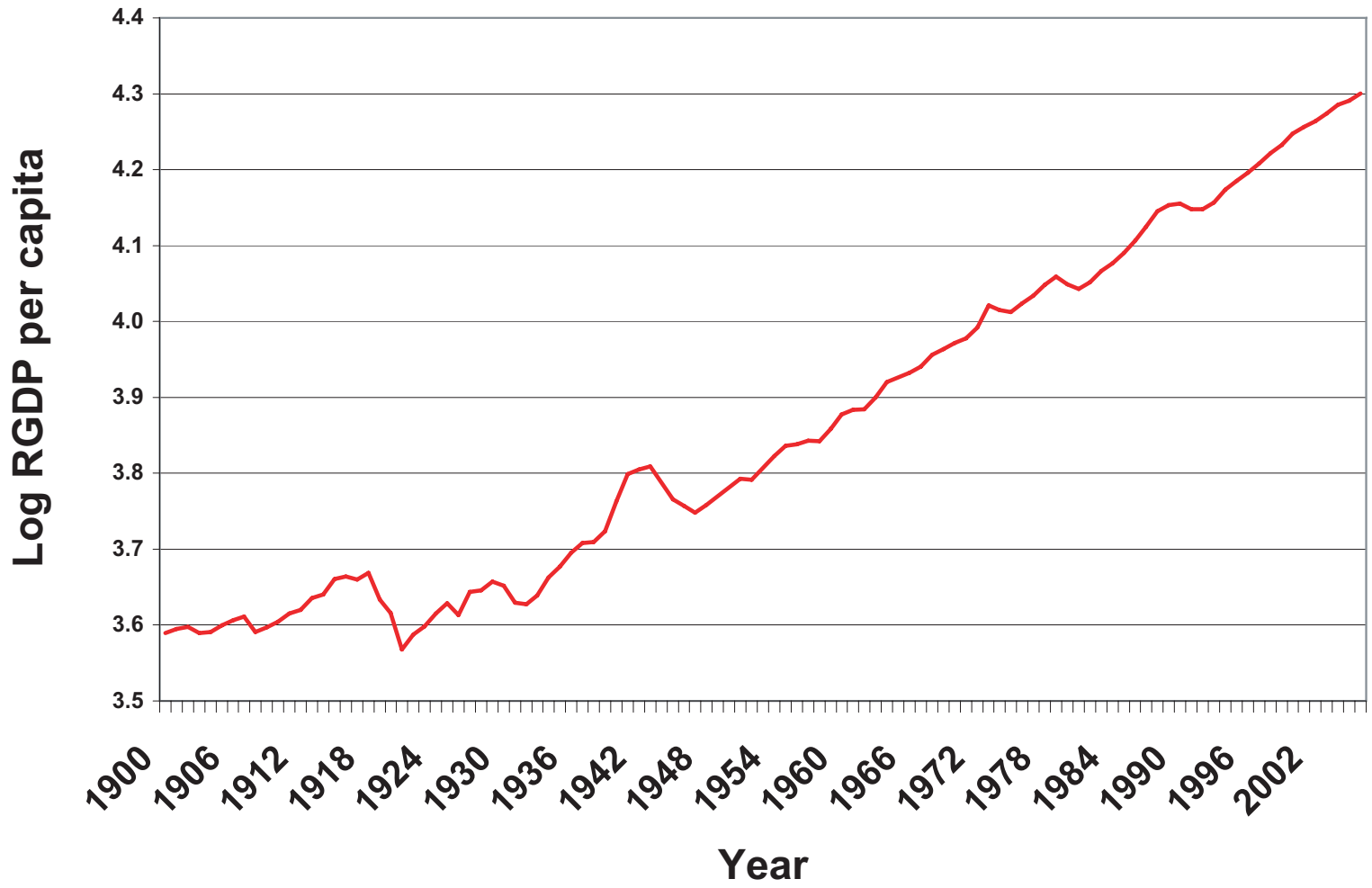
$$g_t = \frac{y_t}{y_{t-1}} - 1$$

If g_t is small, $\log(y_t/y_{t-1}) = \log(1+g_t) \approx g_t$

If we plot the natural log of GDP, the slope is the growth rate:

$$\log(y_t) - \log(y_{t-1}) = \log(y_t/y_{t-1}) \approx g_t$$

Figure 2: Natural Logarithm of Per Capita Real GDP



Some Observations

- Growth was very low (negative) during the Great Depression
- Growth was very high during WWII
- Other than these “unusual” events, log GDP is almost a straight line
- That means growth is fairly constant, around 2% per year

Other Useful Transformations

Time series can be decomposed into two components:

- A growth or trend component
  For the most part, close to 2% per year for GDP
- A cyclical or business cycle component
  These are fluctuations around trend GDP

Figure 3: Natural Logarithm of RGDP pc and Trend

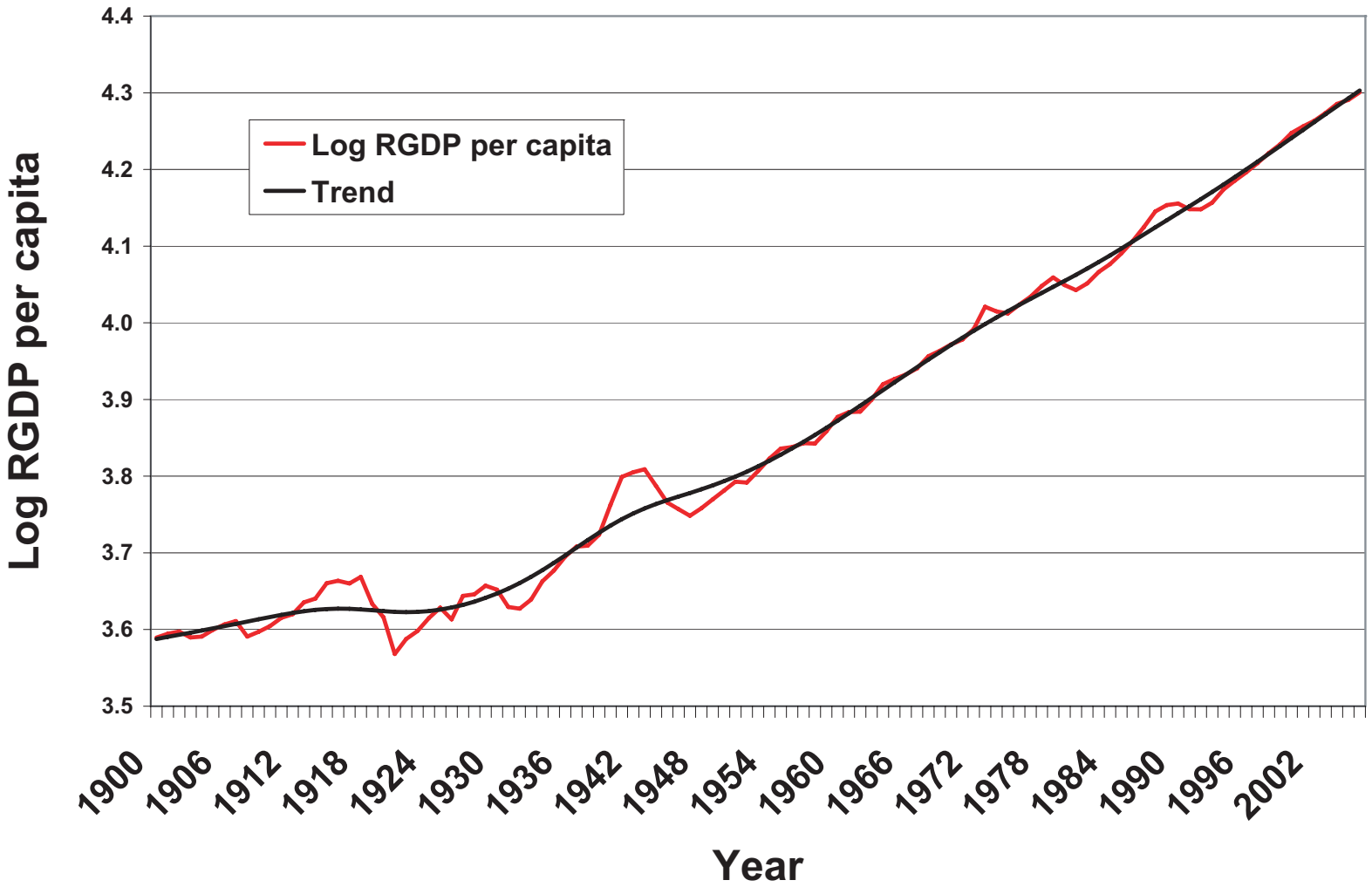
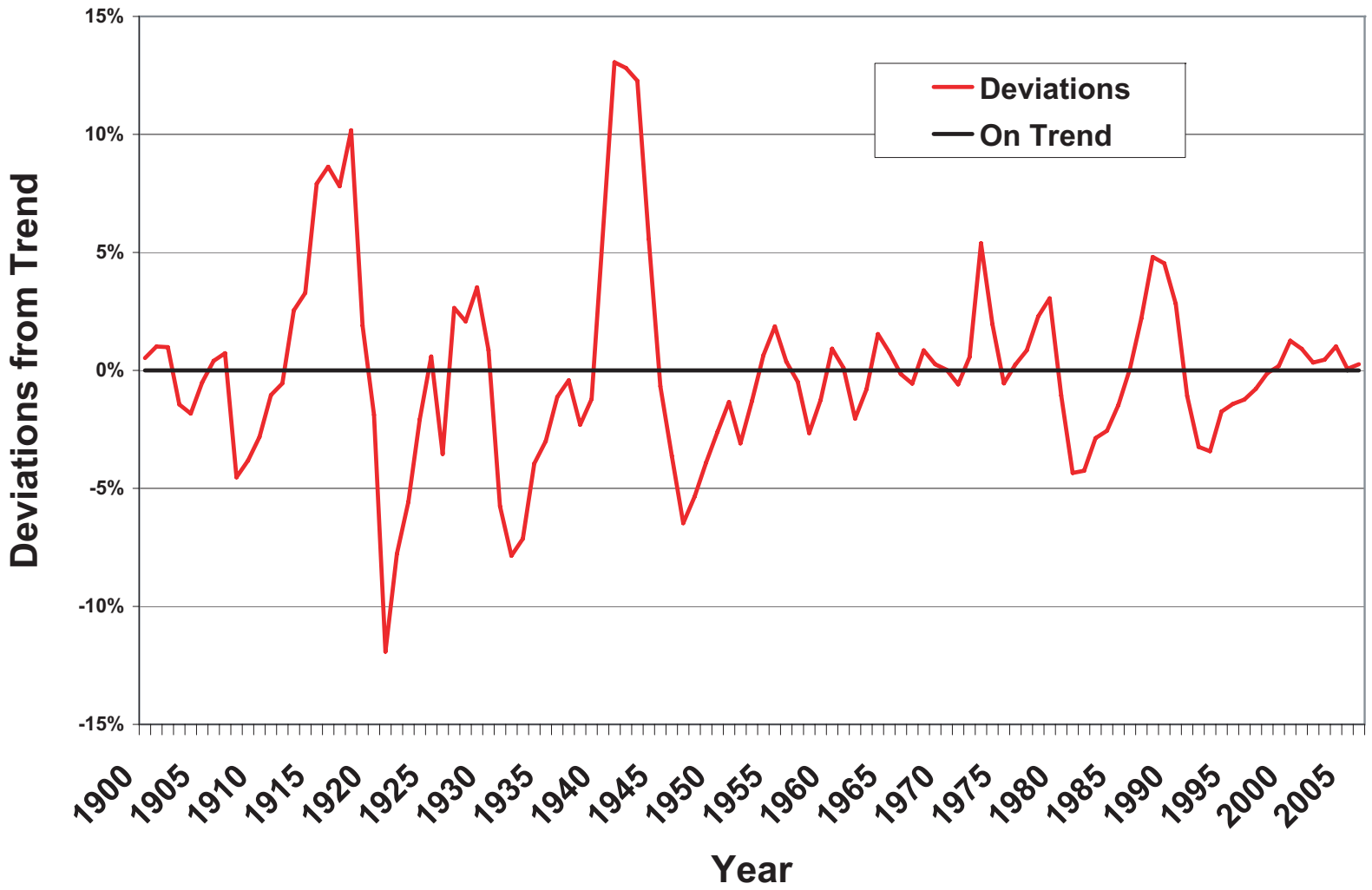


Figure 4: Percent Deviations from Trend in RGDP pc



Macroeconomic Models

- Simplification of reality
- We want to keep models as simple as possible
- Capture the relevant features of the actual economy for the question one is trying to address
- Models are specific to the economic problem we want to study
- Abstracts from other features, even realistic ones

Basic Structure of Macroeconomic Models I

- The consumers and firms that interact in the economy
- The set of goods that consumers wish to consume
- Consumers' preferences over goods
- The technology available to firms for producing goods
- The resources available

Note: Models usually have a mathematical representation, which we will try to analyze in graphical terms

Basic Structure of Macroeconomic Models II

- The behaviour of economic agents
  - We will assume that consumers and firms optimize
- How is consistency achieved between consumers and firms?
  - The economy must be in equilibrium
- We will use the competitive equilibrium concept
  - Goods are bought and sold on markets where consumers and firms are price takers
  - Equilibrium is achieved when prices are such that supply equals demand for all markets

What Are Macroeconomic Models Used for?

- Before using the model for any purpose
  - We want to make sure that the model makes sense for the particular problem we want to study
  - For example: if you study growth, there better be growth in the model to start with
  - This can be done analytically, graphically, or numerically

What Are Macroeconomic Models Used for?

- Use the model to answer questions of interest
  - Unlike the test above, we now want to answer questions for which we don't know the answer!
  - Example 1: how fast would the UK have grown in the last century if capital income taxes had remained zero throughout the century?
  - Example 2: how should government expenditures be financed in order to maximize growth (or welfare)?

Microeconomic Principles

- The macroeconomy ultimately consists of many consumers and firms
- Macroeconomic behaviour results from many microeconomic decisions
- Government policies may affect behaviour in ways that are virtually impossible to model at the aggregate level
- This is generally known as the Lucas Critique
- We now deal with rational expectations models, which emphasize microeconomic foundations

What Are we Going to Learn?

- What is produced and consumed in the economy is determined jointly by the economy's productive capacity and the preferences of consumers
- In free market economies, there are strong forces that tend to produce socially efficient economic outcomes (Adam Smith's invisible hand)
- There is no such thing as a free lunch — In particular, tax cuts are not free, nor are taxes in general
- What consumers and firms anticipate for the future will have an important bearing on current macroeconomic events
- Improvements in a country's standard of living are brought about in the long run by technological progress

Figure 5: Interest Rates and Inflation Rate

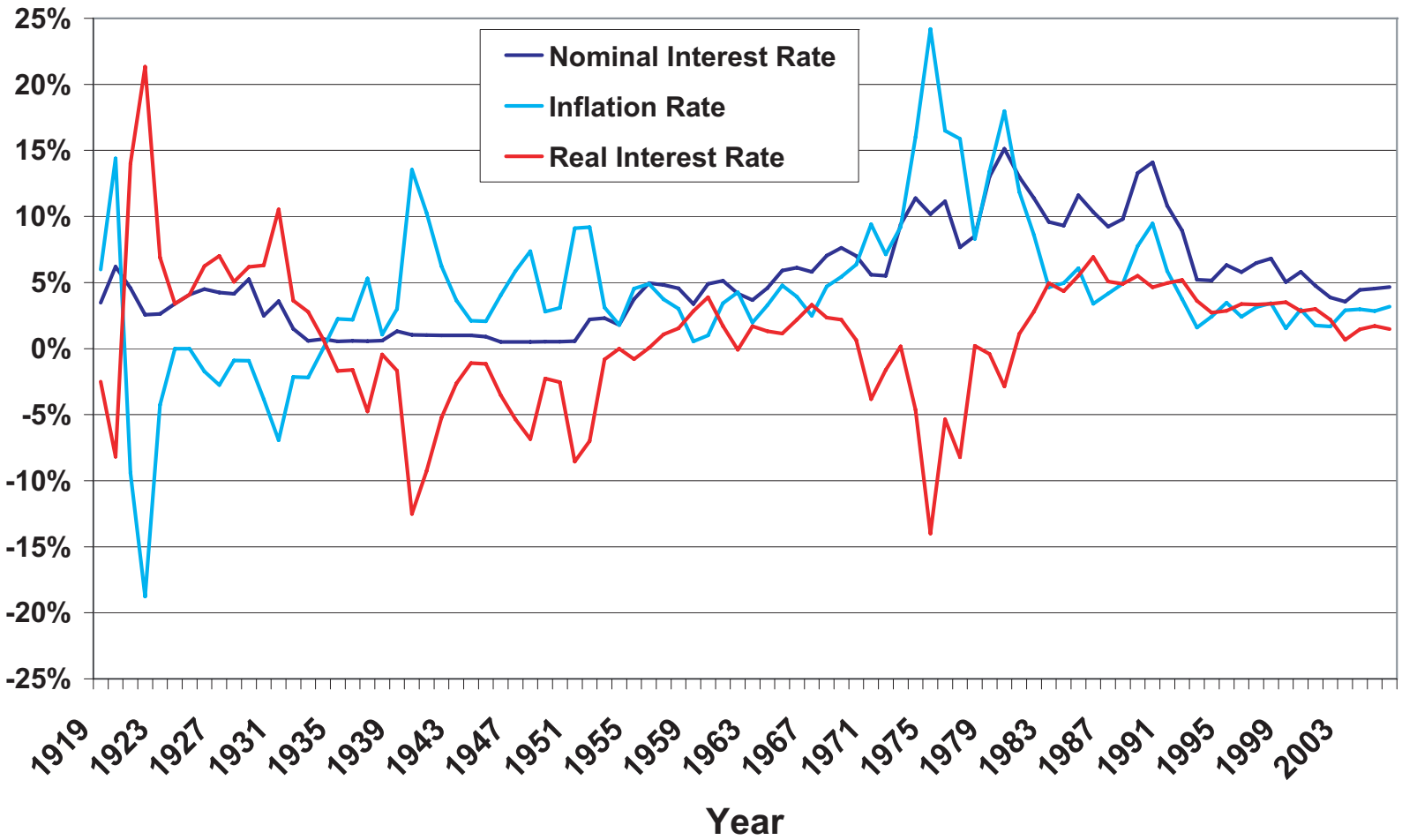


Figure 6: Unemployment Rate

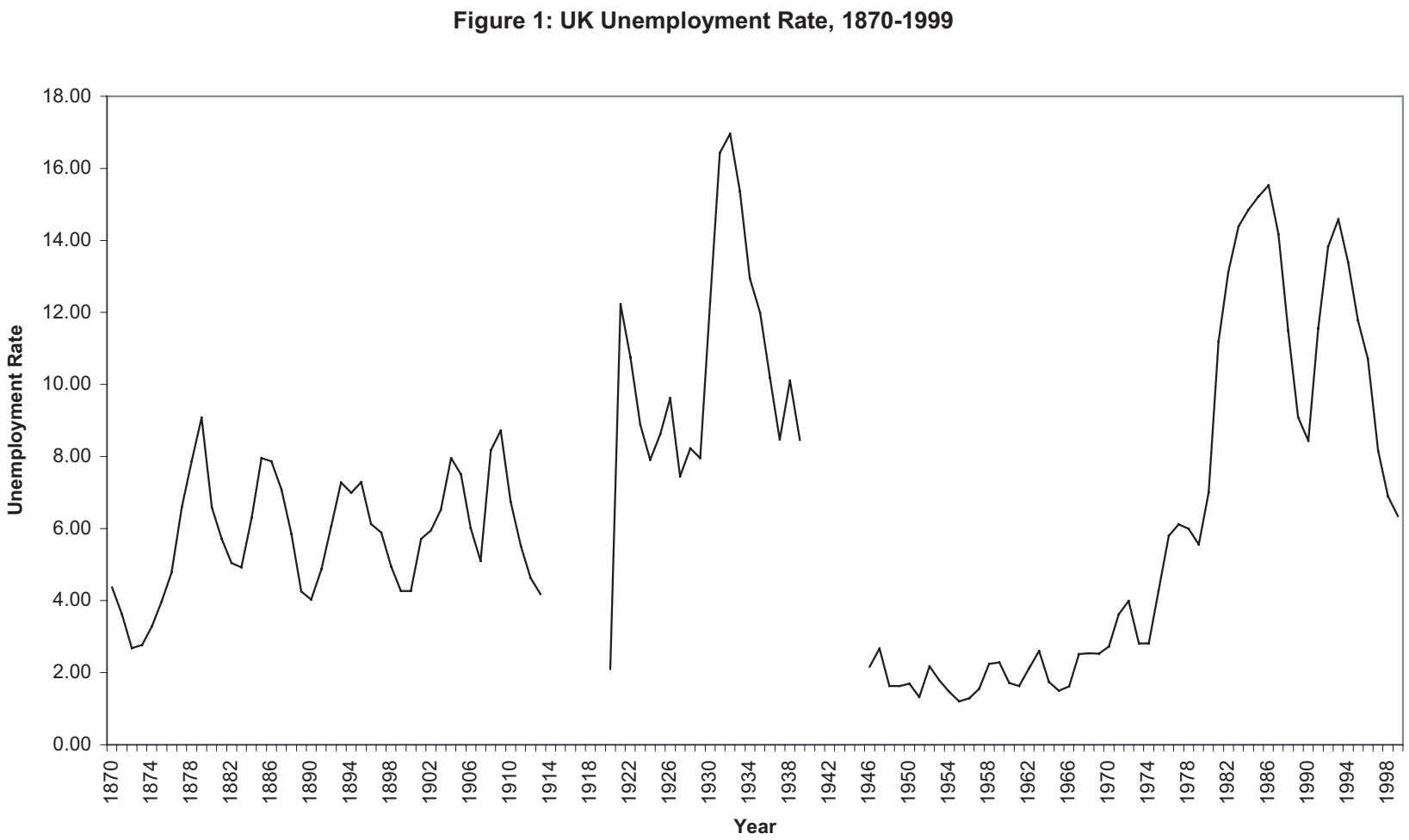
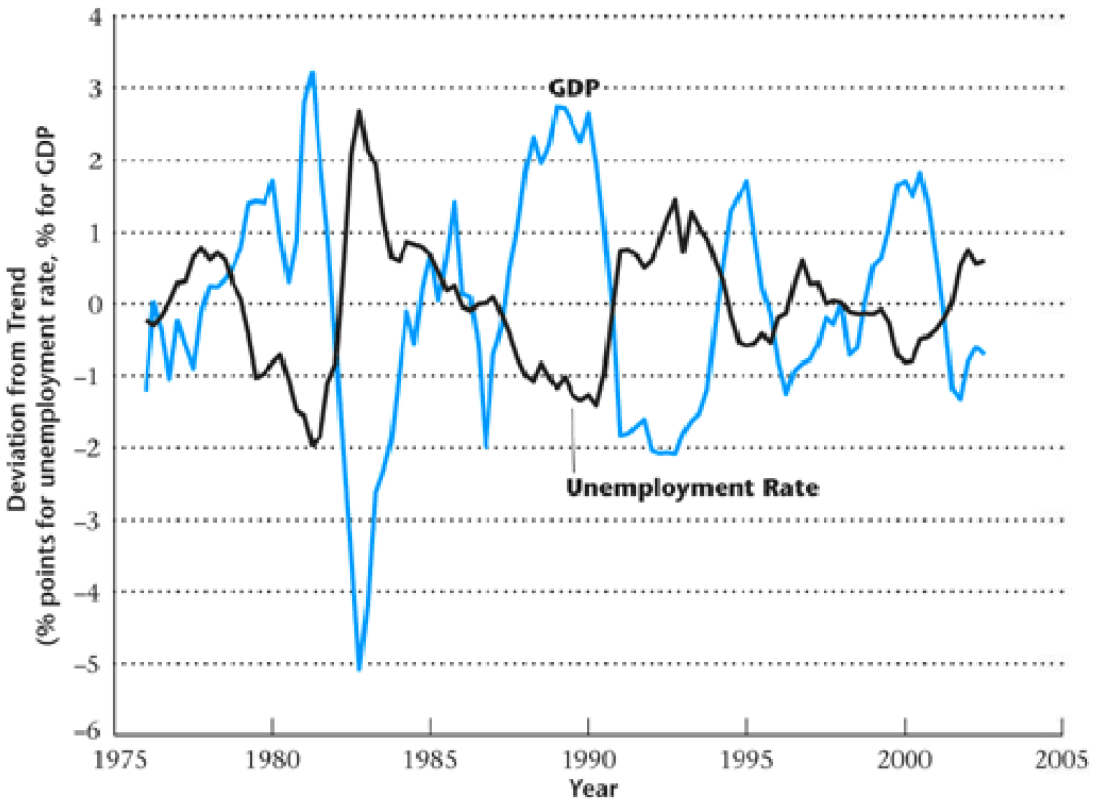


Figure 7: Deviations from Trend for Unemployment and GDP (U.S.)



To do:

- Read Chapter 1 in Williamson's book
- Make sure you know the definitions and understand the "KEY TERMS" from this chapter (p. 32–34)
- Practice your knowledge by attempting to answer the questions for review and solving (at least some of) the problems (p.34–35)
- Let me know if you have any problems understanding early on!!!