

# **CHAPTER 1**

## **Introduction**

### **CHAPTER KEY IDEAS**

1. The primary questions of interest in macroeconomics involve the causes of long-run growth and business cycles and the appropriate role for government policy in influencing the economic performance of a nation.
2. Modern macroeconomics analyzes issues associated with long-run growth and business cycles, using models that are based on microeconomic principles.
3. Macroeconomists rely primarily on abstract models to draw conclusions about how the macroeconomy works because it is usually very costly or impossible to experiment with the real world economy.
4. There is relatively little disagreement among macroeconomists concerning approaches to modeling economic growth, but there are contentious issues in modeling business cycles.

### **NEW IN THE THIRD EDITION**

1. A new section on the financial crisis has been added.
2. All data and graphs have been updated.
3. The revised discussion on recent and current macroeconomic events incorporates information contained in newly available data.

### **TEACHING GOALS**

Macroeconomics is a field of economics which primarily studies economic growth and business cycles. Over time, there is a prevailing upward trend in the standard of living. However, such growth can be rather erratic. There are some periods of rapid growth, some periods of rather anemic growth, and also some periods of temporary economic decline. Explanations for the overall upward trend in standards of living are the subject of economic growth analysis. Explanations of variations in growth over shorter time horizons are the subject of business cycle analysis. Students should be able to distinguish between microeconomic topics and macroeconomic topics. Students should understand the distinction between growth analysis and business cycle analysis.

Although microeconomics and macroeconomics are separate branches of study, both branches are guided by the same set of economic principles. Standard economic theory is guided by the assumption of maximizing behaviour. As a first approximation, we therefore view the macroeconomy as a collection of markets with maximizing participants. These participants are price-taking agents and the economy is closely approximated by a competitive equilibrium.

Because the economy as a whole is extremely complex, macroeconomists must rely on somewhat abstract models. Although the structure of such models does not correspond to all the details of life in a complex society, these models offer the best hope of providing simple, yet accurate, descriptions of how the macroeconomy works, and how government policies may affect macroeconomic outcomes.

Economists are in broad consensus about the mechanisms of economic growth. There is less agreement about the causes and consequences of business cycles. Careful study concludes that most business cycles are very similar in many ways. Therefore, macroeconomists are in search of a logically consistent paradigm for the typical business cycle. Currently popular explanations of the “typical” business cycle include Keynesian sticky-price models, money supply surprise models, real business cycle models, and Keynesian coordination failure models.

## **CLASSROOM DISCUSSION TOPICS**

One good way to get the ball rolling is to list some macroeconomic concerns like stagnant economic growth, unemployment, inflation, government budget deficits, tax burdens, balance of trade deficits, financing of social security, and the like. Ask students whether they are personally concerned about such problems and what original prejudices they might have about causes and effects. Sometimes students express concerns about topics which are perhaps more microeconomic in nature, like inequality in the distribution of income and environmental concerns. Emphasize that economic growth may provide enough extra resources to help deal with these issues.

It would be worthwhile to take a little time to review the definition of macroeconomics and review the distinction between microeconomics and macroeconomics. Take care to point out that their understanding of how the demand and supply model of microeconomics works is the key to the understanding how markets in macroeconomics work. This approach should help retain students' motivation as they switch from microeconomics to macroeconomics.

Students often have conflicting ideas about the current state of the economy. Sometimes their perspectives may be governed by their individual circumstances, what they read in the paper, what they see on TV, and so forth. Ask them whether they believe that times are currently good or bad. Ask them why they think the way they do. Ask them how they can more objectively back up or check out their casual impressions about the current state of the economy.

Students are interested in economic growth, unemployment, inflation, government budget deficits, and trade deficits. An effective way to motivate this chapter and attract students' attention would be to cast these topics in terms of what the economy will be like when they graduate. The quantity of goods and services has expanded more than twenty-fold in the last 100 years. Ask them whether they expect this to continue. Ask them if they think the economy will be booming or in a recession when they graduate. Will jobs be plentiful or scarce when they graduate? Ask them what observations led them to their forecasts. Present a selection of published forecasts to show students the range of what economists are forecasting for the upcoming years. Emphasize that economists forecast the path of the economy but they cannot do so with certainty.

Students may be particularly interested in the financial crisis and how macroeconomic theory can help us to understand it. Emphasize that there is plenty of off-the-shelf theory that can be brought to bear to organize our thinking about the crisis. However, the crisis has also changed some of the emphasis in macro towards understanding credit markets and credit market frictions.

## **OUTLINE**

- 1. What Is Macroeconomics?**
- 2. Gross Domestic Product, Economic Growth, and Business Cycles**
  - a) Adjustments for Inflation and Population Growth
  - b) Historical Per Capita Real GDP Growth Perspectives
  - c) The Great Depression and World War II: Business Cycles
  - d) Growth Measurement
  - e) Trend and Cyclical Components
- 3. Macroeconomic Models**
  - a) Modelling in General
  - b) Rational Behaviour
  - c) Competitive Equilibrium
- 4. Microeconomic Principles**
  - a) When Do Microeconomic Reactions Affect Macroeconomic Outcomes?
  - b) Rational Expectations and the Lucas Critique
- 5. Disagreement in Macroeconomics**
  - a) Endogenous Growth Models
  - b) Money Surprise Theory
  - c) Real Business Cycle Theory
  - d) Keynesian Sticky-Wage Model
  - e) Keynesian Coordination Failure Theory

**6. What Do We Learn from Macroeconomic Analysis?**

- a) Fundamentals: Preferences and Productive Capacity
- b) The Efficiency of Economic Outcomes
- c) Expectations in Macroeconomics
- d) The Cost of Government Activities
- e) Technological Progress
- f) Money Is a Socially Useful Contrivance
- g) Business Cycles Are Remarkably Similar
- h) Foreign Events May Have Domestic Consequences
- i) Inflation and Money Growth
- j) Unemployment Can Be a Valuable Use of Time
- k) Is There an Inflation–Aggregate Output Tradeoff?

**7. Understanding Recent and Current Macroeconomic Events**

- a) The Productivity Slowdown
  - i) Average Labour Productivity
  - ii) The Slowdown: Early 1970s–Mid-1980s
  - iii) Measurement Error?
  - iv) Adjustment to New Technology?
- b) Government Income, Government Outlays, and the Government Deficit
  - i) The Upward Trend in the Size of Government
  - ii) Crowding Out the Private Sector
  - iii) The Government Deficit and Government Saving
  - iv) Ricardian Equivalence Theorem
- c) Inflation
  - i) The Historical Record
  - ii) Inflation and Money Growth
- d) Interest Rates
  - i) Nominal and Real Interest Rates
  - ii) Inflation and Nominal Interest Rates
- e) Energy Prices and Macroeconomic Activity
  - i) The Historical Record
  - ii) Possible Causes of Recent Recessions
- f) Trade and the Twin Deficits of the 1980s
  - i) The Current Account and International Financial Transactions
  - ii) Current Account Deficits and Government Budget Deficits
- g) Unemployment
  - i) Unemployment and Aggregate Economic Activity
  - ii) The Structure of the Population
  - iii) Government Intervention
  - iv) Sectoral Shifts
- h) The Financial Crisis
  - i) Brief Review of Events
  - ii) Useful Tools for Understanding the Crisis
  - iii) The Role of Government Policy in Response to the Crisis

**TEXTBOOK PROBLEM SOLUTIONS**

## 1. Calculating Growth Rates Data:

## a) Actual Percentage Growth Rates, 1996–2007

1996	0.560735
1997	3.196525
1998	3.235738
1999	4.677135
2000	4.258845
2001	0.691501
2002	1.824878
2003	0.959996
2004	2.149553
2005	1.901271
2006	2.065057
2007	1.615071

## b) Approximate Percentage Growth Rates, 1996–2007

1996	0.559169
1997	3.146499
1998	3.18449
1999	4.571052
2000	4.170651
2001	0.689121
2002	1.808427
2003	0.955417
2004	2.126776
2005	1.883423
2006	2.044024
2007	1.602167

The approximation is close. The approximation works well for small percentage changes.

## c) Actual Percentage Growth Rates for Decades, 1950–2000

1960	21.01151
1970	37.10775
1980	29.17616
1990	16.82803
2000	20.33284

Approximate Percentage Growth Rates, 1950–2000

1960	19.07155
1970	31.55969
1980	25.60069
1990	15.55329
2000	18.50914

The approximation errors are larger because the growth rates are larger. Note that the approximation formula actually calculates the continuously compounded growth rate.

- d) Growth is fastest in the 1960s. Growth is slowest in the 1980s.
2. A problem with controlled experiments in economics is that we may cause irreparable harm. However, it would be hard to imagine a policy change that would make the Great Depression any worse than it actually was. Some obvious possibilities include Bank of Canada making open market purchases to keep the money supply from shrinking, instituting bank reforms before the depression started, and avoiding high tariff rates.
  3. Newton's model of falling bodies:
    - Ignores air resistance.
    - Works well for most dense objects and does not work well for feathers.

Diagrams of plays in football and basketball:  
Ignore the characteristics of individual players and the reactions of opponents.  
Work well for evenly matched teams.

Scale models of new aircraft designs:  
Ignore working engines and interior contents.  
Wind tunnel testing approximates aerodynamics of actual aircraft.
  4. During a recession, the government spends more on unemployment insurance compensation and other social insurance programs.
  5. Taxes as a percentage of GDP rose, and at the same time, spending as a percentage of GDP fell.
  6. In the early 1980s, inflation and money supply growth were moving in opposite directions. Also, since the mid-1980s, fluctuations in the money supply growth rate have occurred in the absence of fluctuations in the rate of inflation. However, the relationship between money supply growth and inflation is consistently confirmed over longer time spans. The period of time from the late 1960s through the early

1980s was characterized by higher inflation and higher money growth relative to the periods before and after.

7. As one possibility, fundamental changes in the supply and demand for lending may explain changes in the real rate of interest. Alternatively, the mid-1970s was a period of rising inflation. Borrowers' willingness to pay interest depends on their expectations of future inflation. If higher inflation were expected to be temporary, the low observed real interest rates of the period would be consistent with somewhat higher expected real interest rates.
8. Exports as a percentage of GDP were rising and rising higher than imports as a percentage of GDP.
9. Strong economic activity led to employment creation and a reduction in the unemployment rate.