

Economic Growth, Business Cycles, Unemployment, and Inflation

Chapter 5

Introduction

- Macroeconomics is the study of the aggregate economy.
- The four central issues are:
 - growth
 - business cycles
 - unemployment
 - inflation.

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Two Frameworks: The Long Run and the Short Run

- Issues of growth are considered in a long-run framework.
- Business cycles are generally considered in a short-run framework.
- Inflation and unemployment fall within both frameworks.

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Growth

- Generally the Canadian economy is growing or expanding, at average annual rate of 4 percent over the last 130 years (although about 2.5–3.5 percent recently).
- The primary measurement of growth is change in **real gross domestic product** (**real GDP**) – the market value of goods and services stated in the prices of a given year.

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Growth

- This average annual growth rate is called the **secular growth rate**.
- Since an economy's population is increasing, a useful measure of growth is change in per capita real output.
- **Per capita real output** is real GDP divided by the total population.

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Growth

- The growth trend we now take for granted started at the end of the 18th century.
- At about the same time, markets and democracies became the primary organizing structures of society.

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Benefits and Costs of Growth

- Per capita economic growth allows everyone in society, on average to have more.
- Growth, or predictions of growth, allows governments to avoid hard questions.
- A growing economy creates jobs.

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Benefits and Costs of Growth

- The costs of growth include pollution, resource exhaustion, and destruction of natural habitat.
- Since many believe the environmental costs of growth are important, the result is often an environmental-economic growth stalemate.

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Average Annual Per Capita Income, 1820-2000

	Growth Rates			Income levels (1990 international Dollars)		
	1820-1950	1950-2000	1820-2000	1820	1950	2000
The World	0.9	1.8	1.1	675	2,108	5,672
Western Europe	1.1	2.5	1.5	1,269	6,546	19,846
North America	1.6	1.8	1.6	1,233	9,463	26,224
Japan	0.8	4.8	1.9	675	1,927	20,438
Eastern Europe	1.1	1.0	1.0	803	3,162	5,967
Latin America	1.0	1.4	1.1	671	2,478	6,797
China	-0.2	3.4	0.8	600	439	3,442
Other Asia	0.3	2.4	0.9	560	848	3,269
Africa	0.6	0.8	0.6	400	1,307	1,291

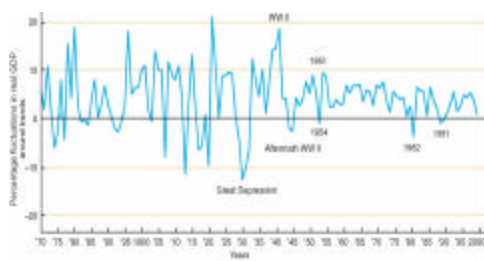
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Business Cycles

- The **business cycle** is the upward and downward movement of economic activity that occurs around the growth trend.
- There are different policies regarding business cycles:
 - **Classical economists** generally favour laissez-faire or noninterventionist policies.
 - **Keynesians** generally favour activist policies.

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Canadian Business Cycles



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Phases of the Business Cycle

- The top of the business cycle is called the **peak**.
 - A **boom** is a very high peak, representing a big jump in output.
- The **downturn** is the phenomenon of economic activity starting to fall from a peak.
 - A **recession** is a decline in output that persists for more than two consecutive quarters in a year.
 - A **depression** is a deep recession.

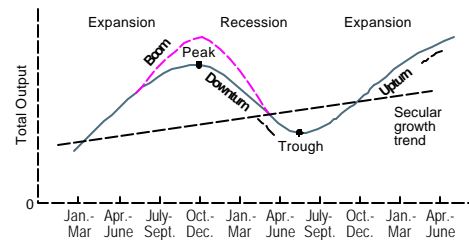
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Phases of the Business Cycle

- A **trough** is the bottom of the recession or depression.
- As total output starts to expand, the economy comes out of the trough into an **upturn**, which may turn into an expansion.
- An **expansion** is an upturn that lasts at least two consecutive quarters of a year.

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Phases of the Business Cycle



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Why Business Cycles Occur

- Recessions and expansions are caused primarily by the demand side of the economy.
- A debate exists about whether these fluctuations can and should be reduced.
- Most economists believe that potential depressions should be offset by economic policy.
- This general view was built into economic policy after the Great Depression of the 1930s.

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Why Business Cycles Occur

- Since the late 1940s, compared to prior years:
 - Downturns and panics have generally been less severe.
 - The duration of business cycles has increased.
 - The average length of expansions has increased while the average length of contractions has decreased.
- Most economists believe that business fluctuations are less severe because of the stronger government role in the economy.

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Leading Indicators

- **Leading indicators** tell us what's likely to happen 12 to 15 months from now.
- To be a **leading indicator**, a variable must reflect economic agents' view of the future.

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Leading Indicators

- Some leading indicators include:
 - Average workweek for production workers in manufacturing.
 - Index of housing starts.
 - U.S. composite leading indicators.
 - Money supply (M1) divided by the price index.
 - New orders for durable goods.
 - Retail orders for durable goods.
 - Durable goods sales, excluding furniture and appliances.

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Unemployment

- The **unemployed** are people who are willing and able to work but are not working.
- **Cyclical unemployment** results from fluctuations in economic activity.
- **Structural unemployment** is caused by economic restructuring making some skills obsolete.

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Unemployment as a Social Problem

- The Industrial Revolution created the possibility of cyclical unemployment.
- What had previously been a family problem, became a social problem.

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Unemployment as Government's Problem

- As capitalism evolved, capitalist societies no longer saw the fear of hunger as an acceptable solution to unemployment.
- **Full employment**— an economic climate in which everyone who wants a job can have one.
- The Federal Unemployment Insurance Act of 1940 assigned government the responsibility for providing assistance to the unemployed.

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Unemployment as Government's Problem

- Initially government regarded 3 percent unemployment as full employment.
- The 3 percent was made up of **frictional unemployment** which is the unemployment caused by new entrants into the job market and people quitting a job just long enough to look for and find another job.

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Unemployment as Government's Problem

- The **target or natural rate of unemployment** is the lowest sustainable rate of unemployment that policymakers believe is achievable under existing institutions.
- Since the 1980s the target rate of unemployment has been between 6 and 8 percent.

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Why the Target Rate of Unemployment Changed

- The target rate of unemployment has changed over time for the following reasons:
 - Demographics have changed – different age groups have different rates of unemployment.
 - Social and institutional structures have changed.
 - Governmental institutions also changed.

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Whose Responsibility Is Unemployment?

- Classical economists believe that individuals are responsible for their own jobs.
- Classical economists believe the equilibrium wage adjusts to supply and demand imbalances, so anyone not working at the current wage is voluntarily unemployed.

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Whose Responsibility Is Unemployment?

- According to Classical economists, a person is unemployed because the equilibrium wage is below his or her **reservation wage**.
- **Reservation wage** is the minimum wage required to induce a person to work.

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Whose Responsibility Is Unemployment?

- Keynesian economists believe that if wages do not adjust quickly enough involuntary unemployment may result.
- Wages are sticky because of
 - Implicit contracts
 - Efficiency wages.

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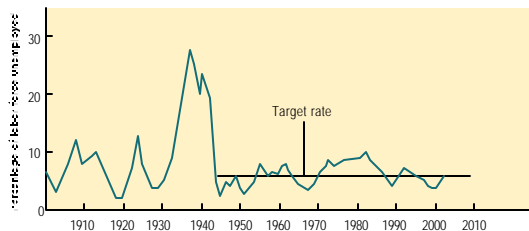
How Is Unemployment Measured?

- The **unemployment rate** is published by Statistics Canada— it is the number of unemployed individuals divided by the number of people in the labour force then multiplied by 100.

$$\text{unemployment rate} = \frac{\text{number unemployed}}{\text{labour force}} \times 100$$

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Unemployment Rate Since 1900



Calculating the Unemployment Rate

- The **labour force**— those people in an economy who are willing and able to work.
- The labour force excludes those incapable of working and those not looking for work.

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How Accurate Is the Official Unemployment Rate?

- The unemployment rate does not include **discouraged workers** – people who do not look for a job because they feel they do not have a chance of getting one.
- The unemployment rate counts as employed those who are **underemployed** – part-time workers who would prefer full-time work.

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How Accurate Is the Official Unemployment Rate?

- The unemployment rate includes as unemployed, people who say they are looking for a job who are really not.
- Others may be working “off the books.”
- Statistics Canada uses the labour force participation rate and the employment rate to gauge the state of the labour market.

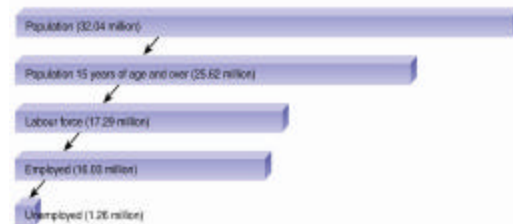
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How Accurate Is the Official Unemployment Rate?

- The **labour force participation rate** measures the labor force as a percentage of the total population at least 15 years old.
- The **employment rate** measures the number of people who are working as a percentage of the population at least 15 years old.

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Unemployment/Employment Figures (in millions)



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Unemployment and Potential Output

- The **capacity utilization rate** indicates how much capital is available for economic growth.
 - It is the rate at which factories and machines are operating compared to the maximum sustainable rate at which they could be used.

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Unemployment and Potential Output

- **Potential output** – output that would be achieved at the target rates of unemployment and of capacity utilization.
- There is debate about its actual level.
- There is an inverse relationship between unemployment and actual output.

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Unemployment and Capacity Utilization Rates (%)

	Capacity utilization			Unemployment			Annual growth in real output
	1975	1985	2000	1975	1985	2000	1975-2000
Canada	83.1	82.5	85.8	6.9	10.5	6.6	2.5
U.S.	74.6	79.8	80.4	8.5	7.2	4.0	2.9
Japan	81.4	82.5	74.6	1.9	2.6	4.4	2.5
Germany	76.9	79.6	85.1	3.4	8.2	10.0	3.0
U.K.	81.9	81.1	81.8	4.6	11.2	5.7	2.2
Mexico	85	92.0	85.7	-	-	2.0	1.6
Korea	86.5	86.4	83.3	-	10.9	4.8	7.7

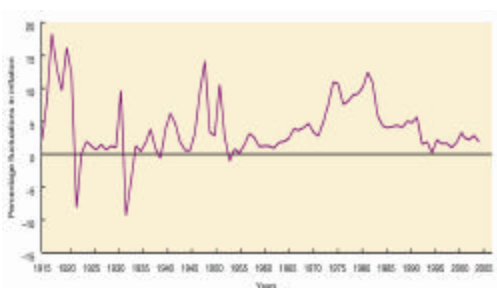
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Inflation

- **Inflation** is a continual rise in the price level.
- Since World War II, the Canadian inflation rate has remained positive and relatively stable.

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Inflation Since 1915



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Measurement of Inflation

- Inflation is measured with changes in price indexes.
- **Price index** – a number that summarizes what happens to a weighted composite of prices of a selection of goods over time.

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Creating a Price Index

- A price index is calculated by dividing the current price of a basket of goods by the price of the basket in a base year then multiplying by 100.

$$\text{Price index} = \frac{\text{Price of basket in current year}}{\text{Price of basket in base year}} \times 100$$

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Simple Year-to-Year Market Basket Comparison

Basket of Goods	Prices		Expenditures	
	2003	2004	2003	2004
10 pairs of jeans	\$20.00/pr.	\$25.00/pr.	\$200	\$200
12 flannel shirts	15.00/ea.	20.00/ea.	180	240
100 lbs. Apples	0.80/lb.	1.05/lb.	80	105
80 lbs. Oranges	1.00/lb.	1.00/lb.	80	80
Total Expenditures			\$540	\$675

$$\text{Price index in 2004} = \frac{\$675}{\$540} \times 100 = 125$$

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Measurement of Inflation

$$\text{Inflation} = \frac{CPI_t - CPI_{t-1}}{CPI_{t-1}} \times 100$$

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Measurement of Inflation

- In the above example, the CPI is 125 in 2004 and 100 in 2003, so we have:

$$\text{Inflation} = \frac{125 - 100}{100} \times 100 = 25\%$$

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Real-World Price Indexes

- Real-world price indexes include the raw materials price index, the CPI, and the GDP deflator.

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Raw Materials Price Index

- The raw materials price index measures the prices of a number of important materials, such as steel.
- It gives an early indication of which way inflation is headed.

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GDP Deflator

- The **GDP deflator** (*gross domestic product deflator*) is an index of the price level of aggregate output (GDP) relative to a base year.
- Most economists favour it since it includes the widest number of goods.

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Consumer Price Index (CPI)

- The **consumer price index** (**CPI**) measures the prices of a fixed "basket" of consumer goods.
- It is weighed according to each component's share of an average consumer's expenditures.
- Many economists believe that the CPI as currently constituted, overstates inflation by half a percentage point per year.

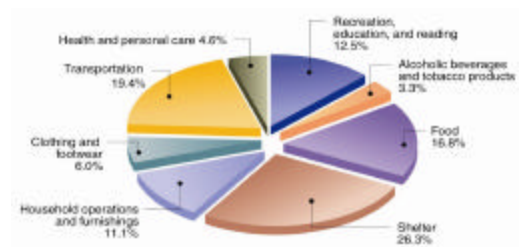
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Consumer Price Index (CPI)

- Measurement problems with the CPI result from:
 - Substitution bias.
 - Quality improvements bias.
 - New products bias.
 - Discounting bias.

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Composition of CPI



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Real and Nominal Concepts

- **Nominal output** is the total amount of goods and services measured at current prices.
- **Real output** is the total amount of goods and services produced, adjusted for price level changes.

$$\text{real output} = \frac{\text{nominal output}}{\text{price index}} \times 100$$

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Expected and Unexpected Inflation

- Expected and unexpected inflation affects behaviour differently.
- **Expected inflation** is inflation people expect to occur.
- **Unexpected inflation** is inflation that surprises people.

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Expected and Unexpected Inflation

- Expectations of inflation play an important role in the inflation process.
- Inflationary expectations can accelerate an inflation.

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Costs of Inflation

- There are two main costs of inflation: redistribution costs and blurring of price information.

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Costs of Inflation

- Inflation may not make a nation poorer.
- It can redistribute income from those who do not raise their prices to those who do.
- It can reduce the amount of information that prices are supposed to convey.

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Costs of Inflation

- As the nominal incomes may rise, after-tax real incomes can fall as consumers move into higher tax brackets – called bracket creep.
- Inflation is usually accepted by governments as long as it stays at a low level.
- What worries policymakers is hyperinflation.

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Costs of Inflation

- **Hyperinflation** – exceptionally high levels of inflation of, say, 100 percent or more a year.
- Canada has not experienced hyperinflation.
- Hyperinflation tends to break down confidence in the monetary system, the government, and the economy.

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Economic Growth, Business Cycles, Unemployment, and Inflation

End of Chapter 5