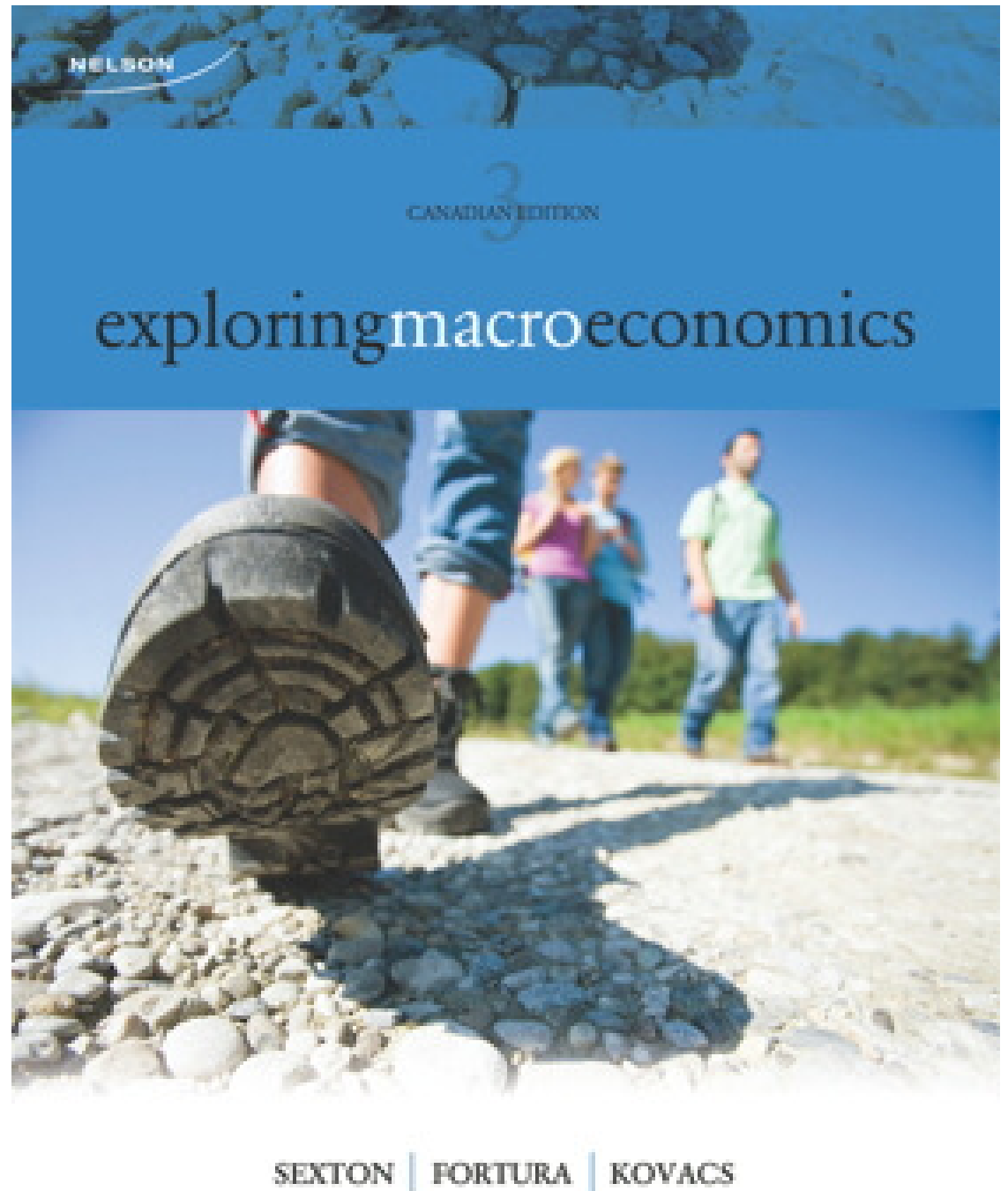PowerPoint
Presentations *for*
Exploring
Macroeconomics

Adapted for the
Third Canadian Edition by
Sarah E. Arliss
Seneca College

exploring**macro**economics

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Chapter 6

MEASURING ECONOMIC PERFORMANCE

Chapter 6: Learning Outcomes
Measuring Economic Performance

- **6.1 NATIONAL INCOME ACCOUNTING: MEASURING ECONOMIC PERFORMANCE**
  - Why do we measure our economy's performance?
  - What is gross domestic product (GDP)? ◆

- **6.2 THE EXPENDITURE APPROACH TO MEASURING GDP**
  - What is the expenditure approach to measuring GDP?
  - What is consumption?
  - What is investment
  - What are government purchases?
  - What are net exports? ◆

Chapter 6: Learning Outcomes
Measuring Economic Performance

- **6.3 THE INCOME APPROACH TO MEASURING GDP**
  - What is the income approach to measuring GDP?
  - What do personal income and disposable income measure? ♦

- **6.4 ISSUES WITH CALCULATING AN ACCURATE GDP**
  - What are the problems with GDP in measuring output?
  - How is real GDP calculated?
  - What is real GDP per capita? ♦

- **6.5 ISSUES WITH CALCULATING AN ACCURATE GDP**
  - What are some of the deficiencies of GDP as a measure of economic welfare? ♦

Chapter 6

6.1 **National Income Accounting**

6.2 **The Expenditure Approach to Measuring GDP**

6.3 **The Income Approach to Measuring GDP**

6.4 **Problems in Calculating an Accurate GDP**

6.5 **Problems with GDP as a Measure of Economic Welfare**

6.1 National Income Accounting

- Why do we measure our economy's performance?

- What is gross domestic product (GDP)?

6.1 National Income Accounting

Why do we measure our economy's performance?

- Measuring Economic Performance
  - Important in setting goals and developing policy recommendations.
  - Important to individuals and businesses in making economic decisions.

6.1 National Income Accounting

Why do we measure our economy's performance?

- Measuring Economic Performance
  - National income accounting - a uniform means of measuring economic performance.
  - Several measures of aggregate national income and output have been developed.
  - Gross Domestic Product (GDP) - the value of all final goods and services produced in a given period.

6.1 National Income Accounting

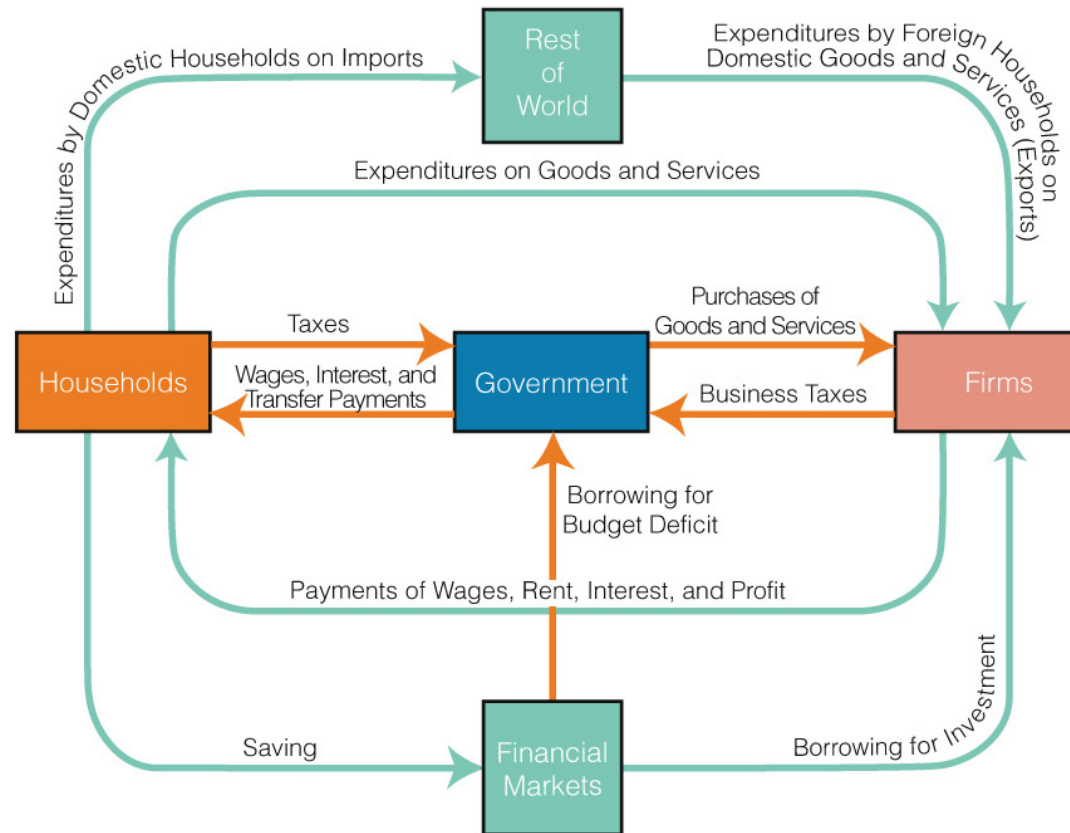What is gross domestic product (GDP)?

- Measuring GDP

  - Final good – one that is ready for its ultimate designated use.

  - Intermediate good – one that is used in the production of another good.

  - GDP uses only final goods and services to avoid double counting.

6.1 National Income Accounting

What is gross domestic product (GDP)?

The Expanded Circular Flow Model

6.1 National Income Accounting

Section Check

- We measure our economy's status in order to see how its performance has changed over time. These economic measurements are important to government officials, private businesses, and investors.

- Gross domestic product (GDP) is the value of all final goods and services produced in a country during a given time period. The two different ways to measure GDP are the expenditure approach and the income approach.

6.2 The Expenditure Approach to Measuring GDP

What is the expenditure approach to measuring GDP?

- What is consumption?

- What is investment

- What are government purchases?

- What are net exports?

6.2 The Expenditure Approach to Measuring GDP

- **The Expenditure Approach**
Calculation of GDP by adding the expenditures of market participants on final goods and services over a given period.

$$GDP = C + I + G + (X\text{-}M)$$

6.2 The Expenditure Approach to Measuring GDP

- Consumption (C)

    - Purchases of consumer goods and services by households.

    - In Canada, currently 58% of GDP.

    - Does not include purchases by business or government.

6.2 The Expenditure Approach to Measuring GDP

- Consumption
  - Includes nondurable goods, durable goods, and services.
  - Nondurable goods - tangible items that are consumed in a short period of time.
  - Durable goods - longer-lived consumer goods, such as automobiles.
  - Services – intangibles such as haircuts.

6.2 The Expenditure Approach to Measuring GDP

- Investment (I)
  - The creation of capital goods to augment future production.
  - Inputs like machines whose **purpose is to produce other goods**
  - Currently about 20% of GDP.

6.2 The Expenditure Approach to Measuring GDP

- Investment (I)

  - **Fixed investment**– all new spending on capital (or producer) goods by producers

  - **Inventory investment** – purchases that add to the stocks of goods kept by the firm to meet consumer demand.

6.2 The Expenditure Approach to Measuring GDP

- **Investment (I)**
  - Most volatile component of GDP.
  - Fluctuates considerably with changing business conditions.

6.2 The Expenditure Approach to Measuring GDP

- Government Purchases (G)
  - Government expenditures on goods and services.
  - Currently 26% of GDP.
  - Includes employee salaries, payments to suppliers.
  - Highway construction
  - Does not include transfer payments.
    - Employment Insurance, CPP
    - Why?

6.2 The Expenditure Approach to Measuring GDP

- Net Exports (X – M)

  - Goods produced in Canada but exported to other countries ("exports") are included in GDP.

  - Goods produced in other countries but consumed in Canada ("imports") are not included in GDP.

  - What is our current Net Export Value?

  - http://www.tradingeconomics.com/canada/balance -of-trade

6.2 The Expenditure Approach to Measuring GDP

- Net Exports (X – M)

  - Net exports are - 2% of GDP: (2010)

    - Exports of goods and services - 29% of GDP

    - Imports of goods and services – 31% of GDP

  - Canada is an open economy, highly dependent on foreign trade.

Calculate GDP using the Expenditure Approach

- Transfer Payments $54
- Interest Income $150
- Depreciation $36
- Wages $67
- Gross Private Investment $124
- Net Business Profits $200
- Indirect Business Taxes less subsidies $74
- Rental Income $75
- Exports $36
- Imports $18
- Net Foreign Factor Income $12
- Government Purchases (G) $156
- Household Consumption (C) $304

6.2 The Expenditure Approach to Measuring

Section Check

- The expenditure approach to measuring GDP involves adding up the purchases of final goods and services by market participants. Four categories of spending are used in the GDP calculation: consumption (*C*), investment (*I*), government purchases (*G*), and net exports (*X* *M*).

- Consumption includes spending on nondurable consumer goods—tangible items that are usually consumed in a short period of time; durable consumer goods— longer-lived consumer goods; and services— intangible items of value.

6.2 The Expenditure Approach to Measuring

Section Check

- Fixed investment includes all spending on capital goods, such as machinery, tools, and buildings. Inventory investment includes the net expenditures by businesses to increase their inventories.

- Purchases of goods and services are the only part of government spending included in GDP. Transfer payments are not included in these calculations because that spending is not a payment for a newly produced good or service.

- Net exports are calculated by subtracting total imports from total exports.

6.3 The Income Approach to Measuring GDP

- What is the income approach to measuring GDP?

- What do personal income and disposable income measure?

- If you spend $10 on groceries at the supermarket where does that money go?

6.3 The Income Approach to Measuring GDP

What is the income approach to measuring GDP?

- The Income Approach
  - Calculation of GDP by adding up the incomes received by owners of resources used in the production of goods and services.
  - Factor payments - wages (salaries), rent, interest payments, and profits paid to the owners of productive resources.

6.3 The Income Approach to Measuring GDP

What is the income approach to measuring GDP?

- Factor Payments
  - Incomes received by people for providing goods and services

6.3 The Income Approach to Measuring GDP

What is the income approach to measuring GDP?

- Which of the following would be considered factor payments?

    - Wages for labour services

    - Rent for land

    - Payments for use of capital goods (interest)

    - Profits for entrepreneurs

6.3 The Income Approach to Measuring GDP

- The Income Approach

- Add it all up and make **2 adjustments** to net domestic income at factor cost to arrive at GDP:
  - Add <u>indirect taxes and subtract subsidies</u>.
  - <u>Add depreciation</u> (or capital consumption allowances).

6.3 The Income Approach to Measuring GDP

$$NI = W + R + i + PR$$

GDP =   Net Income

+ Indirect Business Taxes - Subsidies

+ Depreciation

6.3 The Income Approach to Measuring GDP

Remember!

- The Circular Flow

  - The two methods for calculating GDP will give the same result.

  - People earn income and then spend it on goods and services.

  - Aggregate expenditures are equal to aggregate income.

6.3 The Income Approach to Measuring GDP

What do personal income and disposable income measure?

- Personal and Disposable Income

  - **Personal income** - the amount of income received by households (including transfer payments) <u>before income taxes.</u>

  - **Disposable income** – personal income available <u>after taxes.</u>

  - Disposable income can be used in two ways: <u>consumption or saving.</u>

Calculate GDP using the Income Approach

- Transfer Payments $54
- Interest Income $150
- Depreciation $36
- Wages $67
- Gross Private Investment $124
- Net Business Profits $200
- Indirect Business Taxes less subsidies $74
- Rental Income $75
- Exports $36
- Imports $18
- Net Foreign Factor Income $12
- Government Purchases (G) $156
- Household Consumption (C) $304

6.3 The Income Approach to Measuring GDP
Section Check

- The income approach to measuring GDP involves adding together the incomes received by the producers of goods and services. These payments to the owners of productive resources are also known as *factor payments.*

- The income approach to GDP adds together wages and salaries, corporate profits, interest income, and net income of farm and unincorporated businesses to get net domestic income at factor cost. Adding indirect taxes less subsidies and depreciation to net domestic income gives us GDP.

6.3 The Income Approach to Measuring GDP

Section Check

- Personal income measures the amount of income received by households (including transfer payments) before taxes. Disposable income is the personal income available after taxes.

6.4 Issues with Calculating an Accurate GDP

- How is real GDP calculated?

- What is real GDP per capita?

- What can cause <u>nominal GDP</u> to increase?

6.4 Issues with Calculating an Accurate GDP

What are the problems with GDP in measuring output?

- Problems in Calculating GDP
  - Increases in GDP could be from **increases in output** OR increases in prices (**inflation**).
  - Adjust for the changing purchasing power of the dollar by constructing a price index.
  - **Price index** – a measure of the trend in prices of goods and services over time.

6.4 Issues with Calculating an Accurate GDP

How is real GDP calculated?

- Calculating Real GDP

- Real GDP - a measure of GDP in **constant dollars** that have been corrected for inflation.

  - Use <u>GDP deflator</u> to correct the current dollar GDP values for inflation.

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{GDP Deflator}} \times 100$$

6.4 Issues with Calculating an Accurate GDP

What is gross domestic product (GDP)?

Nominal GDP, Real GDP, and the GDP Deflator

Year	Nominal GDP (billions of current dollars)	GDP Deflator (2002 = 100)	Real GDP (billions of 2002 dollars)
2002	$1152.9	100.00	$1152.9
2003	1213.2	103.29	1174.6
2004	1290.9	106.58	1211.2
2005	1372.6	110.15	1246.1
2006	1450.5	112.90	1284.8
2007	1535.6	116.36	1319.7
2008	1603.4	121.44	1320.3
2009	1529.0	119.11	1283.7
2010	1624.6	122.61	1325.0

SOURCE: Statistics Canada.

6.4 Issues with Calculating an Accurate GDP

Real Economic Growth Rate

$$= \frac{\text{New} - \text{Old}}{\text{Old}} \times 100$$

6.4 Issues with Calculating an Accurate GDP

We have 2 groups of people:

- In Group 1 there are 10 people with 10 cupcakes.
- In Group 2 there are 18 people with 20 cupcakes.

Which group is better off? How did you determine this?

6.4 Issues with Calculating an Accurate GDP

- What is Real GDP for Canada? The US?
  - What does this figure represent?
  - Can we compare the 2?

6.4 Issues with Calculating an Accurate GDP

What is real GDP per capita?

- Real GDP per Capita
    - Real output of goods and services **per person**.
    - Most often used measure of economic well-being, or standard of living.
    - Adjusts for **changes in population**.

Real GDP per capita = Real GDP / Population

6.4 Issues with Calculating an Accurate GDP

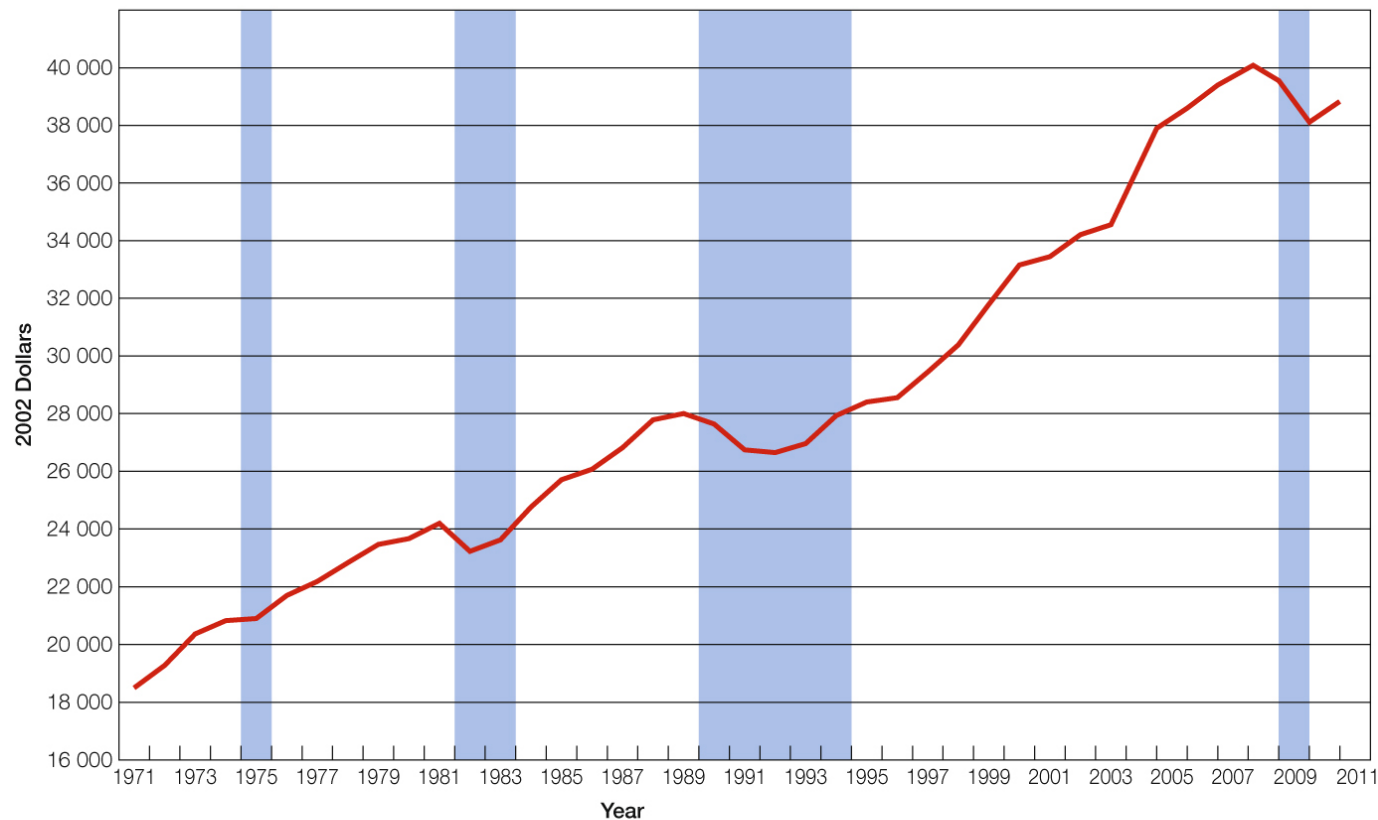- Which country (currently) has the highest GDP per capita?

Check your guesses at:

- www.tradingeconomics.com

6.4 Issues with Calculating an Accurate GDP

What is gross domestic product (GDP)?

Canadian Real Gross Domestic Product per Capita

SOURCE: Statistics Canada.

6.4 Issues with Calculating an Accurate GDP

Section Check

- It is difficult to compare nominal GDP over time because of the changing value of money over time.

- The GDP deflator is a price index that measures the average level of prices of all final goods and services produced in the economy. It is used to convert nominal measures of GDP into equivalent real measures of GDP.

6.4 Issues with Calculating an Accurate GDP

Section Check

- Per capita real GDP is the real output of goods and services per person. In some cases, real GDP may increase but per capita real GDP may actually drop as a result of population growth.

6.5 Problems with GDP as a Measure of Economic Welfare

- What are some of the deficiencies of GDP as a measure of economic welfare?

6.5 Problems with GDP as a Measure of Economic Welfare

What are some of the deficiencies of GDP as a measure of economic welfare?

- Several important factors are excluded from calculation of GDP:
    - Non-market transactions
    - Underground economy
    - Leisure
    - Externalities
    - Quality of goods

6.5 Problems with GDP as a Measure of Economic Welfare

What are some of the deficiencies of GDP as a measure of economic welfare?

- Non-Market Transactions
  - Transactions for which no money is exchanged.
  - Value of the good or service is not included in GDP calculations.
  - More serious in less-developed countries, where a significant amount of food and clothing is produced in the home.

6.5 Problems with GDP as a Measure of Economic Welfare

What are some of the deficiencies of GDP as a measure of economic welfare?

- Underground Economy
  - Unreported income from both legal and illegal sources.
  - Illegal activities are hidden, therefore unreported.
  - Legal activities unreported to avoid taxes.
  - Estimates of the size of the underground economy vary from 5% to 15% of GDP.

6.5 Problems with GDP as a Measure of Economic Welfare

What are some of the deficiencies of GDP as a measure of economic welfare?

- Leisure
  - Leisure has a positive value that does not show up in GDP accounts.
  - Can pose a significant problem in comparisons between countries, or over time.

6.5 Problems with GDP as a Measure of Economic Welfare

What are some of the deficiencies of GDP as a measure of economic welfare?

- Externalities
  - Production of some goods and services has costs and benefits not included in price.
  - Means the true value to society is not being reflected.

6.5 Problems with GDP as a Measure of Economic Welfare

What are some of the deficiencies of GDP as a measure of economic welfare?

- Quality of Goods

- GDP can also miss important changes in the quality of goods.

- Makes it difficult to measure GDP accurately.

6.5 Problems with GDP as a Measure of Economic Welfare

Section Check

- Several factors make it difficult to use GDP as a welfare indicator, including nonmarket transactions, the underground economy, leisure, and externalities.

- Nonmarket transactions are the exchanges of goods and services that do not occur in traditional markets, and so no money is exchanged.

- The underground economy is the unreported production and income that come from legal and illegal activities. The presence of positive and negative externalities also make it difficult to measure GDP accurately.

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