

SECTION 6.4 PROBLEMS IN CALCULATING AN ACCURATE GDP

- n The primary problem in calculating accurate GDP statistics is that the “yardstick” used in adding together the values of different products, the Canadian dollar, also changes in value over time. In order to compare GDP values over time, a common or standardized unit of measure, which only money can provide, must be used in the calculations.
- n We adjust for the changing purchasing power of the dollar by constructing a **price index**, which attempts to provide a measure of the trend in prices paid for a certain bundle of goods and services over time. The price index can be used to deflate the nominal or current dollar GDP values to a real GDP expressed in dollars of constant purchasing power.
- n There are many different types of price indices. The best known index, the **consumer price index (CPI)**, provides a measure of the trend in the prices of goods and services purchased for consumption purposes. The CPI is the price index that is most relevant to households trying to evaluate their changing financial positions over time. The price index used to correct GDP statistics for changing prices is an even broader index called the **GDP deflator**. The GDP deflator measures the average level of prices of all final goods and services produced in the economy.
- n Constructing a price index is complicated. To begin with, there are literally thousands of goods and services in our economy. Therefore, a “bundle” or “basket” of representative goods and services is selected by Statistics Canada.
- n A price index that can be used to measure the inflation rate is equal to the cost of the representative market basket in the current year divided by the cost of the same market basket in the base year, times 100.
- n The CPI is not a completely accurate measure of the cost of living. First, goods and services change in quality so a change in price may reflect a change in quality rather than a change in the purchasing power of the dollar. Second, new products are developed that were not in existence in the base year. Third, by measuring the change in cost of a fixed bundle of goods, the CPI does not capture the effect of consumers avoiding inflation by adjusting their consumption by substituting less expensive goods for goods whose prices have increased relatively quickly.
- n As a result, the CPI tends to overestimate changes in the cost of living.
- n The formula for converting any year’s nominal GDP into real GDP (in base year dollars):
Real GDP equals nominal GDP divided by the price level index, times 100.

Exhibit 1: Nominal GDP, Real GDP, and the GDP Deflator

- n The measure of economic welfare most often cited is **real gross domestic product per capita**. To calculate real GDP per capita, we divide the real GDP by the total population to get the value of real output of final goods and services per person. Ceteris paribus, people prefer more goods to fewer, so a higher GDP per capita would seemingly make people better off.

Exhibit 2: Canadian. Real Gross Domestic Product Per Capita

- n One purpose of using GDP as a crude welfare measure is to provide a measure of individual well-being. To do this, we need to adjust for population change. An equal percentage increase in population and real GDP would result in a bigger economy, but no change in individual well-being.