5.1 Measuring the Economy's Performance: GDP

**National income accounting** measures the economy's overall performance. It does for the economy as a whole what private accounting does for the individual firm or for the individual household.

A firm measures its flows of income and expenditures regularly—usually every three months or once a year. With that information in hand, the firm can gauge its economic health. If things are going well and profits are good, the accounting data can be used to explain that success. Were costs down? Was output up? Have market prices risen? If things are going badly and profits are poor, the firm may be able to identify the reason by studying the record over several accounting periods. All this information helps the firm's managers to plot their future strategy.

**National income accounting** operates in much the same way for the economy as a whole. Statistics Canada compiles the national income accounts for the Canadian economy. This accounting allows economists and policy-makers to:

- Assess the health of the economy by comparing levels of production at regular intervals.
- Track the long-run course of the economy to see whether it has grown, been constant, or declined.
- Formulate policies that will maintain and improve the economy's health.

**Gross Domestic Product**

The main measure of the economy's performance is its annual total output of goods and services or, as it is called, aggregate output. Aggregate output is labelled **gross domestic product (GDP)**: the total market value of all final goods and services produced in a given year in a country. GDP includes all goods and services produced by either citizen-supplied or foreign-supplied resources employed within the country. The Canadian GDP includes the market value of the telephone switches produced by a Canadian-owned factory in Quebec and the market value of a Honda produced by a Japanese-owned factory in Ontario.

**A Monetary Measure**

If the economy produces three sofas and two computers in year 1 and two sofas and three computers in year 2, in which year is output greater? We can't answer that question until we attach a price tag to each of the two products to indicate how society evaluates their relative worth.

That's what GDP does. It's a **monetary measure of the output of a nation**. Without such a measure we would have no way of comparing the relative values of the vast number of goods and services produced in different years. In Table 5-1 the price of sofas is $500 and the price of computers is $2000. GDP would gauge the output of year 2 ($7000) as greater than the output of year 1 ($5500), because society places a higher monetary value on the output of year 2. Society is willing to pay $1500 more for the combination of goods produced in year 2 than for the combination of goods produced in year 1.

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual output</th>
<th>Market value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3 sofas and 2 computers</td>
<td>3 at $500 + 2 at $2000 = $5500</td>
</tr>
<tr>
<td>2</td>
<td>2 sofas and 3 computers</td>
<td>2 at $500 + 3 at $2000 = $7000</td>
</tr>
</tbody>
</table>

**Avoiding Multiple Counting**

To measure aggregate output accurately, all goods and services produced in a particular year must be counted only once. Because most products go through a series of production stages before they reach the market, some of their components are bought and sold many times. To avoid counting those components more than once, GDP includes only the market value of **final goods** and ignores **intermediate goods** altogether.

www.mcgrawhill.ca/college/mcconnell
Intermediate goods
Products that are purchased for resale or for further processing or manufacturing.

Final goods
Goods and services that have been purchased for final use and not for resale or further processing or manufacturing.

Multiple counting
Wrongly including the value of intermediate goods in the gross domestic product.

Value added
The value of the product sold by a firm, less the value of the products purchased and used by the firm to produce the product.

Intermediate goods are goods and services that are purchased for resale or for further processing or manufacturing. Final goods are goods and services that are acquired for final use by the purchaser, and not for resale or for further processing or manufacturing.

Why is the value of final goods included in GDP, but the value of intermediate goods excluded? Because the value of final goods already includes the value of all the intermediate goods that were used in producing them. To include the value of intermediate goods would amount to multiple counting, and that would distort the value of GDP.

To see why, suppose that there are five stages to manufacturing a wool suit and getting it to the consumer—the final user. Table 5-2 shows that firm A, a sheep ranch, sells $120 worth of wool to firm B, a wool processor. Firm A pays out the $120 in wages, rent, interest, and profit. Firm B processes the wool and sells it to firm C, a suit manufacturer, for $180. What does firm B do with the $180 it receives? It pays $120 to firm A for the wool and uses the remaining $60 to pay wages, rent, interest, and profit for the resources used in processing the wool. Firm C, the manufacturer, sells the suit to firm D, a wholesaler, who sells it to firm E, a retailer. Then at last a consumer, the final user, comes in and buys the suit for $350.

How much of these amounts should we include in GDP to account for the production of the suit? Just $350, the value of the final product. The $350 includes all the intermediate transactions leading up to the product's final sale. To include the sum of all the intermediate sales, $1140, in GDP would amount to multiple counting. The production and sale of the final suit generated just $350, not $1140.

Alternatively, we could avoid multiple counting by measuring and cumulating only the value added at each stage. Value added is the market value of a firm's output less the value of the inputs the firm bought from others. At each stage, the difference between what a firm pays for a product and what it receives from selling the product is paid out as wages, rent, interest, and profit. Column 3 of Table 5-2 shows that the value added by firm B is $60, the difference between the $180 value of its output and the $120 it paid for the input from firm A. We find the total of the suit by adding together all the values added by the five firms. Similarly, by calculating and summing the values added to all the goods and services produced by all firms in the economy, we can find the market value of the economy's total output—its GDP.

GDP Excludes Non-Production Transactions
Although many monetary transactions in the economy involve final goods and services, many others do not. Those non-production transactions must be excluded from GDP because they have nothing to do with the production of final goods. Non-production transactions are of two types: purely financial transactions and second-hand sales.

**TABLE 5-2 Value Added in a Five-stage Production Process**

<table>
<thead>
<tr>
<th>Stage of production</th>
<th>Sales value of materials or product</th>
<th>Value added</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm A, sheep ranch</td>
<td>$120</td>
<td>$120 (= $120 - $0)</td>
</tr>
<tr>
<td>Firm B, wool processor</td>
<td>180</td>
<td>60 (= 180 - 120)</td>
</tr>
<tr>
<td>Firm C, suit manufacturer</td>
<td>220</td>
<td>40 (= 220 - 180)</td>
</tr>
<tr>
<td>Firm D, clothing wholesaler</td>
<td>270</td>
<td>50 (= 270 - 220)</td>
</tr>
<tr>
<td>Firm E, retail clothier</td>
<td>350</td>
<td>80 (= 350 - 270)</td>
</tr>
<tr>
<td>Total sales values</td>
<td>$1,140</td>
<td>$350</td>
</tr>
</tbody>
</table>

**FINANCIAL TRANSACTIONS**
Purely financial transactions include the following:

- **Public transfer payments** These are the social insurance payments, such as welfare payments, and employment insurance payments that the government makes directly to households. Since the recipients contribute nothing to current production in return, inclusion of such payments in GDP would overstate the year's output.

- **Private transfer payments** Such payments include, for example, the money that parents give children or the cash gifts given at Christmas time. They produce no output. They simply transfer funds from one individual to another and consequently do not enter into GDP.
Stock-market transactions: The buying and selling of stocks (and bonds) is just a matter of swapping bits of paper. Stock-market transactions do not directly contribute to current production and are not included in GDP. Payments for the services of a security broker are included, however, because those services do contribute to current output.

Second-hand sales: Second-hand sales contribute nothing to current production and for that reason are excluded from GDP. Suppose you sell your 2000 Ford Mustang to a friend; that transaction would not be included in calculating this year’s GDP because it generates no current production. The same would be true if you sold a brand-new Mustang to a neighbour a week after you purchased it. (Key Question 3)

Two Ways of Calculating GDP: Spending and Income

Let’s look again at how the market value of total output is measured. Given the data listed in Table 5-2, how can we measure the market value of a suit?

The final-product approach and the value-added approach are two ways of looking at the same thing. (See The Last Word in this chapter for more details on how Statistics Canada uses the value added approach to compute GDP.) What is spent on making a product is income to those who helped to make it. If $350 is spent on manufacturing a suit, then $350 is the total income derived from its production.

We can look at GDP in the same two ways. We can view GDP as the sum of all the money spent in buying final goods and services, called the expenditures approach. Or we can view GDP in terms of the income derived or created from producing final goods and services, or the income approach. Buying (spending money) and selling (receiving income) are two aspects of the same transaction. On the expenditures side of GDP, all final goods produced by the economy are bought either by three domestic sectors (households, businesses, and government) or by buyers abroad. On the income side (once certain statistical adjustments are made), the total receipts from the sale of that total output go to the suppliers as wage, rent, interest, and profit income.

The Expenditures Approach

To determine GDP using the expenditures approach, we add up all the spending on final goods and services that has taken place throughout the year. There are precise terms for the types of spending listed in Table 5-3.

Personal Consumption Expenditures (C)

What we have called “consumption expenditures by households,” the national income accountants call personal consumption expenditures. That term covers all expenditures by households on durable consumer goods (automobiles, refrigerators, DVD players), non-durable consumer goods (bread, milk, vitamins, pencils, toothpaste), and consumer expenditures for services (of lawyers, doctors, mechanics, barbers). The symbol C is used to designate this component of GDP.

<table>
<thead>
<tr>
<th>Table 5-3 Calculating GDP: The Expenditure Approach (Billions of dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal consumption expenditure (C)</td>
</tr>
<tr>
<td>Gross investment (I)</td>
</tr>
<tr>
<td>Government current purchases of goods and services (G)</td>
</tr>
<tr>
<td>Net exports (X)</td>
</tr>
<tr>
<td>Gross domestic product at market prices</td>
</tr>
</tbody>
</table>

Source: Statistics Canada. Data updates may be retrieved from www.mcgrawhill.ca/college/mcconnell. www.mcgrawhill.ca/college/mcconnell
Gross Investment ($I_r$)

Under the heading gross investment ($I_r$), the following items are included:

- All final purchases of machinery, equipment, and tools by businesses
- All construction
- Changes in inventories

Notice that this list, except for the first item, includes more than we have meant by "investment" so far, particularly in our discussion of the production possibility curve in Chapter 2. The second item includes residential construction as well as the construction of new factories, warehouses, and stores. Why is residential construction regarded as investment rather than consumption? Because apartment buildings and houses, like factories and stores, earn income when they are rented or leased. Owner-occupied houses are treated as investment goods because they could be rented to bring in an income return. So, the national income accountants treat all residential construction as investment. Finally, increases in inventories (unsold goods) are considered to be investment because they represent, in effect, "unconsumed output."

POSITIVE AND NEGATIVE CHANGES IN INVENTORIES

Let's look at changes in inventories more closely. Inventories can either increase or decrease over some period. Suppose they increased by $10 billion between December 31, 2002, and December 31, 2003. That means the economy produced $10 billion more output than was purchased in 2003. We need to count all output produced in 2003 as part of that year's GDP, even though some of it remained unsold at the end of the year. This is accomplished by including the $10 billion increase in inventories as investment in 2003. That way the expenditures in 2003 will correctly measure the output produced that year.

Alternatively, suppose that inventories decreased by $10 billion in 2003. This "drawing down of inventories" means that the economy sold $10 billion more of output in 2003 than it produced that year. It did this by selling goods produced in prior years—goods already counted as GDP in those years. Unless corrected, expenditures in 2003 will overstate GDP for 2003. So, in 2003 we consider the $10 billion decline in inventories as "negative investment" and subtract it from total investment that year. Thus, expenditures in 2003 will correctly measure the output produced in 2003.

NON-INVESTMENT TRANSACTIONS

So much for what investment is. You need to know what it isn't. Investment does not include the transfer of paper assets (stocks, bonds) or the resale of tangible assets (houses, jewellery, boats). Such transactions merely transfer the ownership of existing assets. Investment has to do with the creation of new, physical capital assets—assets that create jobs and income. The transfer (sale) of claims to existing capital goods does not create new capital.

GROSS INVESTMENT VERSUS NET INVESTMENT

As we have seen, the category gross investment, or gross capital formation, includes (1) all final purchases of machinery, equipment, and tools; (2) all construction; and (3) changes in inventories. The word gross means that we are referring to all investment goods—both those that replace machinery, equipment, and buildings that were used up (worn out or made obsolete) in producing the current year's output and any net additions to the economy's stock of capital. Gross investment includes investment in replacement capital and in added capital.

In contrast, net investment includes only investment of added capital. The amount of capital that is used up over the course of a year is called capital consumption allowance, or simply depreciation. So:

Net investment = gross investment - depreciation
In most years, gross investment exceeds depreciation. Thus net investment is positive and the nation’s stock of capital rises, as illustrated in Figure 5-1. Such increases in capital shift the Canadian production possibilities curve outward and thus expand the nation’s production capacity. In 2002 gross investment in Canada amounted to $196.8 million.

Gross investment need not always exceed depreciation, however. When gross investment and depreciation are equal, net investment is zero and there is no change in the size of the capital stock. When gross investment is less than depreciation, net investment is negative. The economy then is disinvesting—using up more capital than it is producing—and the nation’s stock of capital shrinks. That happened in the Great Depression of the 1930s.

National income accountants use the symbol $I$ for investment spending, along with the subscript $n$ to signify gross investment. They use the subscript $n$ to signify net investment. But it is gross investment, $I_n$, that they use in determining GDP.

**Government Purchases ($G$)**

The third category of expenditures in the national income accounts is government purchases. Expenditures for goods and services that government consumes in providing public services. Government purchases (federal, provincial, and municipal) include all government expenditures on final goods, investment goods, and all direct purchases of resources, including labour. It does not include government transfer payments, because, as we have seen, they merely transfer government receipts to certain households and generate no production of any sort. Examples of government transfer payments are employment insurance benefits, welfare payments, and Canada Pension benefits. National income accountants use the symbol $G$ to signify government purchases.

**Net Exports ($X_e$)**

International trade transactions are a significant item in national income accounting. We know that GDP records all spending on goods and services produced in Canada, including spending on Canadian output by people abroad. So we must include the value of exports when we are using the expenditures approach to determine GDP.

At the same time, we know that Canadians spend a great deal of money on imports—goods and services produced abroad. That spending shows up in some other nation’s GDP. We must subtract the value of imports from GDP to avoid overstating total production in Canada.

Rather than add exports and then subtract imports, we use “exports less imports,” or net exports. We designate exports as $X$, imports as $M$, and net exports as $X_e$.

Net exports ($X_e$) = exports ($X$) - imports ($M$)
Consider This

Stocks and Flows

An analogy of a reservoir may be helpful in thinking about a nation’s capital stock, investment, and depreciation. Picture a reservoir that has water flowing in from a river and flowing out from an outlet after it passes through turbines. The volume of water in the reservoir at any particular time is a "stock." In contrast, the inflow from the river and outflow from the outlet are "flows." Such flows are always measured over some period of time. Suppose that we measure these inflows and outflows at the end of each week and compare them with our measurements at the beginning of the week.

The volume or "stock" of water in the reservoir will rise if the weekly inflow exceeds the weekly outflow. It will fall if the inflow is less than the outflow. And, it will remain constant if the two flows are equal.

We could simplify further by thinking in terms of the net inflow (inflow minus outflow) into the reservoir, where the net inflow can be positive or negative. The volume of water in the reservoir will rise if the net inflow is positive, decline if it is negative, and remain constant if it is zero.

Now let's apply this analogy to the stock of capital, gross investment, and depreciation. The stock of capital is the total capital in place at any time. Changes in this stock over some period of time, for example, one year, depend on gross investment and depreciation (capital consumption allowance). Gross investment (the addition of capital goods) adds to the stock of capital and depreciation (the using up of capital goods) subtracts from it. The capital stock increases when gross investment exceeds depreciation, declines when gross investment is less than depreciation, and remains the same when gross investment and depreciation are equal.

Alternatively, the stock of capital increases when net investment (gross investment minus depreciation) is positive. When net investment is negative, the stock of capital declines, and when net investment is zero, the stock of capital remains constant.

**Question:** In 2001, gross investment in Canada totalled $216.5 billion and capital consumption allowance amounted to $144.3 billion. How much was added to the Canadian capital stock in 2001?

Table 5-3 shows that in 2002 people from other countries spent $50.3 billion more on Canadian exports than Canadians spent on imports. That is, net exports in 2002 were a positive $50.3 billion. In another year net exports could be negative: imports would be greater than exports in that case.

**Putting It All Together:** \( GDP = C + I_e + G + X_e \)

Taken together, these four categories of expenditures provide a measure of the market value of a certain year’s total output—its GDP.

For Canada in 2002 (Table 5-3):

\[
GDP = 656.2 + 196.8 + 251.6 + 50.3 = 1154.9
\]

Global Perspective 5.1 lists the GDPs of several countries.

**The Income Approach**

Table 5-4 shows how 2002’s $1154.9 billion of expenditures were allocated as income to those producing the output. It would be simple if we could say that it all flowed back to them in the form of wages, rent, interest, and profit, but the Canadian national accounts do not record each of these four factor incomes. Moreover, we have to make a few adjustments to balance the expenditures and income sides of the account. We look first at the items that make up the income approach in Table 5-4. Then we turn to the adjustments.
### TABLE 5-4  Calculating GDP: The Income Approach (Billions of dollars)

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wages, salaries, and supplementary labour income</td>
<td>$597.3</td>
</tr>
<tr>
<td>Profits of corporations and government enterprises before taxes*</td>
<td>140.3</td>
</tr>
<tr>
<td>Interest and investment income</td>
<td>49.4</td>
</tr>
<tr>
<td>Net income of farm and unincorporated businesses</td>
<td>74.7</td>
</tr>
<tr>
<td>Taxes less subsidies on factors of production</td>
<td>53.8</td>
</tr>
<tr>
<td>Indirect taxes less subsidies</td>
<td>84.4</td>
</tr>
<tr>
<td>Capital consumption allowances</td>
<td>155.0</td>
</tr>
<tr>
<td><strong>Gross domestic product at market prices</strong></td>
<td><strong>$1,154.9</strong></td>
</tr>
</tbody>
</table>

Source: Statistics Canada. Data updates may be retrieved from www.mcgrawhill.ca/college/mcconnell.

*Includes adjustments and statistical discrepancy.

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### Wages, Salaries, and Supplementary Labour Income

The largest income category is made up primarily of the wages and salaries paid by businesses and government to suppliers of labour. It also includes wage and salary supplements, in particular payments by employers of employment insurance premiums, workers' compensation premiums, and employer contributions to a variety of private and public pension funds for workers. Economists abbreviate all these as "wages."

### Profits of Corporations and Government Enterprises before Taxes

Corporate profits are the earnings of government enterprises and owners of corporations. Profits of private corporations are divided into three categories:

- **Corporate income taxes** These taxes are levied on the corporations' net earnings and flow to the government.
- **Dividends** These are the part of corporate profits that are paid to the corporate stockholders and thus flow to households—the ultimate owners of all corporations.
- **Undistributed corporate profits** This is money saved by the corporations to be invested later in new plants and equipment. They are also called *retained earnings*.

### Interest and Investment Income

Interest income consists of money paid by private businesses to the suppliers of money capital. This income includes interest on bonds and loans of money capital. Investment income includes rental income received by households and imputed rent; that is, the estimated rent on housing that households use for their own purpose.

### Net Income from Farms and Unincorporated Businesses

This is the earnings of farmers and proprietors from their own businesses. These earnings represent a mixture of labour income and investment income that is impossible to segregate. Farm and non-farm proprietors supplying their own capital earn profits (or losses), interest, and rents mixed in with their labour income.

### Adding Up Domestic Income

When we add up wages, salaries and supplementary labour income, corporate and government enterprise profits, interest and investment income, income of farm and non-farm unincorporated...
Comparative GDPs in trillions of dollars, selected nations, 2001

Canada had the world’s eighth highest GDP. The GDP data charted here have been converted to dollars via international exchange rates.

GDP in Trillions of U.S. Dollars

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP in Trillions</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td></td>
</tr>
<tr>
<td>Britain</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td></td>
</tr>
<tr>
<td>Korea</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td></td>
</tr>
</tbody>
</table>


Business, and make the appropriate inventory valuation adjustment, we get the net domestic income at factor cost, which is all the income earned by Canadian-supplied factors of production as wages, interest, rent and profit. But to arrive at GDP we have to make two adjustments.

**Indirect Taxes**

The first adjustment is to add to net domestic product indirect taxes, less subsidies, which include general sales taxes, including the GST, business property taxes, and custom duties.

To see why we must add indirect business taxes to net domestic income in balancing expenditures and income, assume that a firm produces a good selling at $1. Production of this item creates $1 of wage, rent, interest, and profit income. But now government imposes a 5 percent sales tax on all products sold at retail. The retailer adds the tax to the price of the product, raising its price from $1 to $1.05. But the $.05 is not earned income because government contributes nothing directly to the production of the good in return for the tax receipt. Only $.01 of what consumers pay goes out as wage, rent, interest, and profit income. So national income accountants need to add the $.05 to the $.01 of net domestic income in calculating GDP and make this adjustment for the entire economy.

**Depreciation: Capital Consumption Allowance**

The useful life of capital equipment extends far beyond the year in which it was produced. To avoid understatement of profit and income in the year of purchase, and to avoid overstating profit and income in succeeding years, the cost of such goods must be allocated over their lives. The amount allocated is an estimate of the capital being used up each year in production, called depreciation.

The depreciation charge against gross investment is the capital consumption allowance—the allowance for capital goods "consumed" in producing this year's GDP. It is the portion of GDP that must be set aside to pay for the replacement of the capital goods used up in production. That part of this charge is the difference between gross investment, \( I_g \), and net investment, \( I_n \).
The money allocated to consumption of fixed capital (the depreciation allowance) is a cost of production and thus included in the gross value of output. Unlike other costs of production, it does not add to anyone’s income, so it is not included in national income. We must therefore add consumption of fixed capital to net domestic income to achieve balance with the economy’s expenditures, as in Table 5.4. (Key Question 8)

- Gross domestic product (GDP) measures the total market value of all final goods and services produced within a nation in a specific year.
- When net investment is positive, the economy’s production capacity increases; when net investment is negative, the economy’s production capacity decreases.
- The expenditures approach to GDP sums total spending on final goods and services: \( GDP = C + I + G + X \).
- The income approach to GDP sums the total income earned by a nation’s resource suppliers, then adds in indirect taxes and capital consumption allowance.

5.2 Other National Accounts

Several other national accounts provide additional useful information about the economy’s performance. We can derive these accounts by making various adjustments to GDP.

**Gross National Product (GNP)**

Until 1986, gross national product (GNP) was the main aggregate in the national accounts published by Statistics Canada. GNP is the total income that residents of a country earn within the year. The change was made because in Canada foreign investment is significant, and GDP would give us a better indication of output produced in Canada and the total income derived from that output. GNP measures output by Canadians here and abroad, but excludes the contribution to Canadian output from investments of non-residents. For example, the production of cars in the Honda factory in Alliston, Ontario is included in both Canadian GDP and GNP. But GNP excludes profit (referred to as net-investments from non-residents) sent to foreign shareholders of Honda, but this profit is included in Canadian GDP. Because there are many foreign-owned firms in Canada (compared to Canadian-owned firms abroad), GNP is less than GDP. As Table 5.5 shows, Canadian GNP for 2002 totalled $1070.0 billion, whereas GDP was $1154.9 billion.

**Net Domestic Product (NDP)**

As a measure of total output, GNP does not make allowances for replacing the capital goods used up in each year’s production. As a result, it does not tell us how much new output was available for consumption and for additions to the stock of capital. To determine that, we must subtract from GNP the capital that was consumed in producing the GNP and that had to be replaced. That is, we need to subtract consumption of fixed capital (depreciation) from GNP. The result is a measure of net domestic product (NDP). NDP measures the total annual output that the entire economy—households, businesses, government, and foreigners—can consume without impairing its capacity to produce in ensuing years. For 2002, NDP totalled $915.0 billion.

**Net National Income at Basic Prices (NNI)**

Sometimes it is useful to know how much Canadians earned for their contributions of land, labour, capital, and entrepreneurial talent. Canadian net national income (NNI) includes all income earned through the use of Canadian-owned resources, whether they are located at home or abroad. To derive
TABLE 5-5  The Relationships between GNP, GDP, NDP, NNI, PI, and DI in Canada, 2002

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross domestic product (GDP)</td>
<td>$1,154.9</td>
</tr>
<tr>
<td>Net investments from non-residents</td>
<td>-84.9</td>
</tr>
<tr>
<td>Gross national product (GNP)</td>
<td>1,070.0</td>
</tr>
<tr>
<td>Capital consumption allowance (depreciation)</td>
<td>-155.0</td>
</tr>
<tr>
<td>Net domestic product (NDP)</td>
<td>915.0</td>
</tr>
<tr>
<td>Indirect business taxes less subsidies</td>
<td>-136.2</td>
</tr>
<tr>
<td>Net National income (NNI)</td>
<td>$776.8</td>
</tr>
<tr>
<td>Undistributed corporate profits</td>
<td>-49.0</td>
</tr>
<tr>
<td>Government transfer payments</td>
<td>+71.3</td>
</tr>
<tr>
<td>Personal income (PI)</td>
<td>848.1</td>
</tr>
<tr>
<td>Personal taxes</td>
<td>-152.2</td>
</tr>
<tr>
<td>Disposable income (DI)</td>
<td>$695.9</td>
</tr>
</tbody>
</table>

NNI from NDP, we must subtract indirect business taxes. Because government is not an economic resource, the indirect business taxes it collects do not qualify as payments to productive resources and thus are not included in national income. In 2002, NNI at basic prices amounted to $776.8 billion.

**Personal Income (PI)**

Personal income (PI) includes all income received by households, earned or unearned. It is likely to differ from NNI because some income that is earned—corporate income taxes, undistributed corporate profits, government investment income, and social insurance contributions—is not actually received by households, and conversely, some income that is received—transfer payments—is not currently earned. Transfer payments are made up of such items as (1) Canada and Quebec Pension Plan payments, old age security pension payments, and employment insurance benefits; (2) welfare payments; and (3) a variety of veterans’ payments. To arrive at personal income, we must subtract from NNI income that is earned but not received and add in income received but not currently earned. For 2002, PI totalled $848.1 billion.

**Disposable Income (DI)**

Disposable income is personal income less personal taxes and other personal transfers to government. Personal taxes are made up of personal income taxes and personal property taxes. In 2002, DI amounted to $695.9 billion.

Households use their disposable income in two ways: consumption (C) and savings (S):

\[ DI = C + S \]

Table 5-5 summarizes the relationships among GNP, GDP, NDP, NNI, PI, and DI. (Key Question 9)

- GNP is derived by subtracting net investments from non-residents from GDP.
- Net domestic product (NDP) is equal to GNP minus capital consumption allowances (depreciation).
- Net national income (NNI) is all income earned through the use of Canadian-owned resources, whether located at home or abroad.
- Personal income (PI) is all income received by households, whether earned or not.
- Disposable income (DI) is all income received by households minus personal taxes.

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