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User Guide: Canadian System of Macroeconomic Accounts

Chapter 5 Income and expenditure accounts

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User Guide: Canadian System of Macroeconomic Accounts

Chapter 5 Income and expenditure accounts

What this chapter seeks to do

The purpose of this chapter is to explain Canada's **income and expenditure accounts**. The income and expenditure accounts are essentially the middle part of *SNA 2008*'s **sequence of accounts** that is described in chapter 3 (the beginning and end of the sequence are explained in depth in chapter 4 and chapter 6). The chapter focuses on the internal structure of the income and expenditure accounts, their relationship to the rest of the Canadian system of macroeconomic accounts and how these accounts are used to interpret economic developments.

This chapter links primarily to *SNA 2008* chapters 7, 8, 9 and 10.

5.1 Introduction

Income and expenditure accounts statistics have been produced in Canada since the late 1940s. They are available on an annual basis from 1926 forward and on a quarterly basis from 1947 to date.[1] The statistical estimates are released about 60 days after the reference quarter and are revised in subsequent periods as additional source data become available.[2]

The accounts include the two top-level GDP-by-income-and-expenditure tables that are familiar to most users of the national accounts. In addition, they include a number of statistical tables elaborating the allocation and redistribution of income among the institutional sectors, the spending of income by the institutional sectors and the resulting amounts saved and invested in gross capital formation by each of the institutional sectors. Each of these tables has a **balancing item** that becomes the starting point in the next account. These latter tables are referred to as the **sequence of accounts** and the way they are structured in *SNA 2008* is explained in chapter 3.

Text box 5.1
Balancing items

A **balancing item** is, in the case of transaction flows, the difference between the sum of one set of market transactions and that of another set of transactions, or in the case of stocks, the difference between one aggregate of stocks and another. A balancing item is an accounting construct and is not, in itself, an observable transaction or stock, although it is derived from transactions or stocks. Some examples of balancing items are gross value added, gross saving and net worth

The income and expenditure accounts are a key tool for understanding Canada's macro-economy. The most widely known and utilized aggregate from the accounts, real gross domestic product at market prices, summarizes how the economy is performing over time, revealing the growth trend and informing about recessions when the country's total output is in decline. The accounts show how GDP, when viewed from the income perspective, is shared between labour and capital and they also record how GDP is spent on final consumption of goods and services, gross capital formation and exports to, net of imports from the rest of the world. Period-to-period changes in nominal GDP are also decomposed into distinct 'volume' and 'price' components, thereby providing estimates of 'real' economic growth or decline and the rate of inflation or deflation.

This chapter begins by explaining the two top-level tables of Canada's system of macroeconomic accounts that present income- and expenditure-based gross domestic product at market prices. These two tables are directly related to material discussed in the previous chapter. The chapter then proceeds to discuss Canada's current and capital institutional accounts, showing how the components of these accounts fit into the *SNA 2008* sequence and discussing their characteristics and structure. Then the chapter moves on to review the provincial and territorial breakdown of the income and expenditure accounts. This is followed by a brief explanation of the decomposition of the CSMA's various time series for final expenditure on goods and services into separate volume and price components (a fuller discussion of this topic is in chapter 7). The chapter ends with two small concluding sections,

one on how the income and expenditure accounts compare to the supply and use accounts (discussed in chapter 4) and the other on the uses of the income and expenditure accounts and the role they play in Canada's business, government and social structure.

5.2 Estimates of income- and expenditure-based GDP at market prices

At their highest and most visible level, Canada's income and expenditure accounts consist of two tables. One determines income-based gross domestic product at market prices and the other expenditure-based GDP. The tables consolidate the six institutional sectors and they originate from the fundamental national accounts identity that is presented in chapter 4. That identity states that the total value of all goods and services **supplied** in the economy—by means of domestic production and importing products from other countries—must equal the total value of all goods and services **used**:

(5.1)

Total supply at market prices = Total use at market prices

which means that:

(5.2)

Output + imports + taxes less subsidies on products =

Intermediate consumption + final consumption

+ fixed capital formation + inventory change + exports

Rearranging terms we have:

(5.3)

Output – intermediate consumption + taxes less subsidies

on products = Final consumption + fixed capital

formation + inventory change + exports – imports

Recognizing that the left-hand side of equation (5.3) is gross value added at market prices, we have:

(5.4)

Output – intermediate consumption + taxes less subsidies =

Compensation of employees + gross operating surplus +

gross mixed income + taxes less subsidies on production, products and imports

Finally, substituting from equation (5.4) into equation (5.3) we have the equation forming the basis for the two high-level tables:

(5.5)

Compensation of employees + gross operating surplus + gross mixed

income + taxes less subsidies on production, products and

imports = Final consumption expenditure + gross fixed capital

formation + investment in inventories + exports – imports

The left-hand side of the equation corresponds to the income-based GDP table and the right-hand side to the expenditure-based GDP table.

The fundamental equation indicates that the main aggregates in the two tables—income-based GDP and expenditure-based GDP—are equal. It should not be surprising, though, that when the components of the two tables are measured using surveys and other real-world data sources their bottom lines seldom if ever turn out to be exactly equal. Nevertheless it is desirable for the accounts to provide a single, coherent measure of GDP rather than two similar but unequal ones. In Canada, the long-established practice is to calculate the difference between the two GDP estimates and assign half of this difference to the smaller estimate and subtract half from the other so as to make the two adjusted GDP estimates identical. This is equivalent to averaging the two measures. The amount added to one estimate and subtracted from the other is called the **statistical discrepancy**. Every country that compiles national accounts faces this issue and it can be dealt with in a number of different ways.[3] Equation (5.6) shows the modified version of equation (5.5) that is obtained by including the statistical discrepancy:

(5.6)

Compensation of employees + gross operating surplus + gross mixed

income + taxes less subsidies on production, products and

imports + **statistical discrepancy** = Final consumption expenditure

+ gross fixed capital formation + investment in inventories

+ exports – imports – **statistical discrepancy**

5.2.1 Income-based GDP at market prices

Table 5.1 displays the first of the two top-level tables, for the year 2009 as an example. It shows GDP at market prices as the sum of compensation of employees, gross operating surplus, gross mixed income, taxes less subsidies on production, products and imports, and the statistical discrepancy.

Table 5.1
Gross domestic product, income-based, 2009

Components of gross domestic product at market prices	2009
	millions of dollars
Compensation of employees	812,073
Wages and salaries	705,172
Employers' social contributions	106,901
Gross operating surplus	395,390
Net operating surplus: corporations	173,580
Consumption of fixed capital: corporations	171,755
Consumption of fixed capital: general governments and NPISHs	50,055
Gross mixed income	187,181
Net mixed income	140,702
Consumption of fixed capital: unincorporated businesses	46,479
Taxes less subsidies on production	69,652
Taxes less subsidies on products and imports	102,216
Statistical discrepancy	853
Gross domestic product at market prices	1,567,365

Source: Statistics Canada, table 36-10-0103-01.

5.2.1.1 Compensation of employees

SNA 2008 defines **compensation of employees** as "the total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done by the latter during the accounting period" (page 131). The word 'total' deserves emphasis. Compensation of employees includes not just regular paycheques, but also cost of living allowances, overtime pay, hazard pay, expatriation allowances, holiday pay, tips, commissions, bonuses, retroactive pay, stock options, directors' fees, compensation in kind such as automobile allowances, board and

lodging and gifts, pension benefits, health insurance benefits, other insurance benefits and various other types of compensation.[4] It is the largest component of income-based GDP, accounting for over half.[5]

In broad terms compensation of employees consists of two components. One is **wages and salaries** by which is meant, essentially, the paycheques and all other forms of direct compensation of employees. The other is **employers' social contributions** which refers to the actual or imputed contributions that employers make on behalf of their employees to both government-sponsored social security schemes—in Canada, these include the Employment Insurance program, the Canada and Quebec Pension Plans and provincial and territorial government workers' compensation plans—and employer-sponsored health and disability insurance, pensions, maternity, dental, life insurance and other benefit schemes.

A major difference between the two components is that wages and salaries provide employees with income that can be spent on goods and services, transferred to other institutional units or saved at their discretion, whereas employers' social contributions give employees particular benefits under specific circumstances (sickness, retirement, etcetera) over which they have little or no discretion. The benefits accrue over time as the employee works and there are no actual payments directly to the employee unless and until the specific circumstances arise.

Employers' social contributions, like wages and salaries, are defined on an accrual basis, rather than a cash basis, and typically they must be partially or entirely **imputed**. To understand this point, consider a newly established enterprise that is providing its employees with a defined pension benefit and is administering the benefit scheme itself. The pension benefit the employees will ultimately receive on retirement is tied to their years of service in the enterprise. In any given accounting period the employees accrue a larger benefit than they were entitled to at the end of the previous accounting period and the implied cost to the employer, when the employees retire, is also correspondingly larger. However, the increase in the employer's ultimate cost might not result in any cash requirement during the given accounting period, since in the example no employees would yet have retired. For this reason the cost is implicit rather than explicit and would have to be imputed. This imputation would not likely be required if the employer contracted with a trustee to administer the pension scheme on its behalf since in that case regular (explicit) contributions would typically be made to the trustee in order to fund the ultimate pension benefits.

Compensation of employees includes the remuneration of all persons working for resident Canadian businesses, whether those persons are citizens, immigrants or temporary foreign workers. Canadian military personnel and government employees working outside the country are also included since military bases, embassies and consulates abroad are deemed to be Canadian territory.[6] However, the remuneration of Canadians working for companies located outside the economic territory of Canada is excluded from compensation of employees.

5.2.1.2 Gross operating surplus and gross mixed income

The *SNA 2008* definition of **gross operating surplus plus gross mixed income** is "the surplus or deficit accruing from production before taking account of any interest, rent or similar charges payable on financial assets or natural resources borrowed or rented by the enterprise, or any interest, rent or similar receipts receivable on financial assets or natural resources owned by the enterprise" (page 132).

The enterprise referred to can be either incorporated or unincorporated. If incorporated, the surplus (or deficit) is referred to as **gross operating surplus**. If unincorporated, it is called **gross mixed income**. The reason for the distinction is that corporate entities are legally separate from their owners, whereas this is not true for unincorporated businesses. The implication is that while the compensation of employees paid out by a corporation to its employees can be readily separated from the corporate operating surplus, there is no clear separation between the two for an unincorporated business in the case of owner-employees. The owners of the latter kind of business can pay out money from the business to themselves either as wages and salaries or as dividends, with the choice of withdrawal format being arbitrary.

The concepts of gross operating surplus and gross mixed income are similar, in some ways, to the concept of 'profit' in common usage. However they differ from that concept in a number of ways, one of the most important of which is that gross operating surplus and gross mixed income take no account of investment income (interest, dividends) received or paid out by the business. As such, they are best thought of as the return to the capital **used** by the business, as distinct from the return to the owners of the business. The latter concept is addressed later in the sequence of accounts and is called the balance of primary incomes.

Note that gross operating surplus and gross mixed income are balancing items, derived as residuals after compensation of employees and taxes less subsidies on production, products and imports are deducted from gross value added (that is, GDP). This is explained further in chapter 4.

Gross operating surplus and gross mixed income are both 'gross' in the sense that no deduction is made for the cost of replacing capital that is consumed as a result of the production process.[7] The corresponding net concepts, which do make the deduction, are better measures of the sustainable return to the capital employed by the business. This latter return represents the reward to those who risk the capital by using it in production.

Gross operating surplus is invariant, at the aggregate total-economy level, whether the capital is owned by the corporations themselves or by some other sector. The capital could be owned by resident or non-resident entities and the fixed capital including land and natural resources could be owned, leased or licensed. The capital income accrues to the user of the capital, not the owner, for purposes of the operating surplus concept. In addition, operating surplus is invariant, whether own-account funds or borrowed funds are deployed to finance the capital used. In the allocation of primary income account, the property income flows show the reallocation of income earned from production by the users of the capital to the ultimate owners of the capital.

In Canada's income and expenditure accounts, gross mixed income has three major components: farm income, non-farm income excluding rent and rental income.

Gross mixed farm income comprises gross proceeds from the sale of agricultural products by unincorporated farmers, including payments made to farmers under government programs, plus the imputed value of farm output consumed by farming households, plus the value of investment in farm-held inventories, less farm operating expenses (excluding depreciation).

Non-farm mixed income excluding rent consists of the net earnings of unincorporated proprietors from their own businesses in all industries except agriculture. It includes the gross mixed income of unincorporated private consultants, accountants, lawyers, doctors and other independent professionals.

Finally, the rental portion of gross mixed income of non-farm unincorporated business includes all gross mixed rental income of individuals in their capacity as owners, including the implicit income they generate by inhabiting a dwelling they own. The latter component is included because, in national accounting, households who own the dwellings in which they live are treated as owning unincorporated enterprises that produce housing services that are consumed by the households of which the owners are members. This imputation is made partly to ensure the measure of production will not vary when shifts occur between owner-occupancy and the renting of residential dwellings.

Gross operating surplus and gross mixed income are more cyclically volatile than the other items in the table. In the year shown, 2009, they account for 37% of GDP at market prices. Not quite half is attributable to consumption of fixed capital and on a net basis operating surplus and mixed income account for just 20% of GDP. Note that consumption of fixed capital of general governments and NPISH units is included as a part of gross operating surplus.[8]

5.2.1.3 Taxes less subsidies on production, products and imports

SNA 2008 defines **taxes less subsidies on production, products and imports** as "taxes payable or subsidies receivable on goods or services produced as outputs and other taxes or subsidies on production, such as those payable on the labour, machinery, buildings or other assets used in production" (page 131).

As explained in chapter 4, taxes net of subsidies on production, products and imports must be included in the income-based GDP table because GDP is measured at market prices, which includes the direct impact of these taxes and subsidies. If the measurement was at basic prices, only taxes net of subsidies on production would be included.

5.2.2 Expenditure-based GDP at market prices

The other top-level table, displaying expenditure-based GDP at market prices, is shown in Table 5.2. Using 2009 as an example, the table shows GDP at market prices as the sum of final consumption expenditure, gross fixed capital formation, investment in inventories, exports of goods and services, imports of goods and services (a negative item) and the statistical discrepancy. The table includes an additional aggregate called **final domestic**

demand, which is the sum of final consumption expenditure and gross fixed capital formation. This aggregate reveals the strength of domestic spending in the economy by excluding investment in inventories and exports of goods and services, and by not subtracting imports of goods and services.

Table 5.2
Gross domestic product, expenditure-based, 2009

Components of gross domestic product at market prices	2009
	millions of dollars
Final consumption expenditure	1,246,307
Household final consumption expenditure	878,202
Goods	394,542
Durable goods	109,741
Semi-durable goods	66,118
Non-durable goods	218,683
Services	483,660
NPISH final consumption expenditure	22,968
General governments final consumption expenditure	345,137
Gross fixed capital formation	350,517
Business gross fixed capital formation	276,216
Residential structures	101,253
Non-residential structures, machinery and equipment	143,602
Non-residential structures	76,308
Machinery and equipment	67,294
Intellectual property products	31,361
NPISH gross fixed capital formation	2,224
General governments gross fixed capital formation	72,077
Investment in inventories	-5,460
Of which: business investment in inventories	-5,423
Non-farm	-4,744
Farm	-679
Exports of goods and services	445,692
Exports of goods	367,211
Exports of services	78,481
Less: imports of goods and services	468,838
Imports of goods	373,985
Imports of services	94,853
Statistical discrepancy	-853
Gross domestic product at market prices	1,567,365
Final domestic demand	1,596,824

Source: Statistics Canada, table 36-10-0104-01.

5.2.2.1 Final consumption expenditure

Final consumption expenditure is, in a sense, the ultimate purpose of the economy as it is portrayed in the national accounts. The other GDP expenditure components—gross fixed capital formation, investment in inventories and exports net of imports—contribute only indirectly, not directly, to national well-being. So this component warrants special attention.

Final consumption expenditure has three major sub-components as shown in Table 5.2, one for households, one for NPISH institutional units and one for general governments. Households are the only consuming institutional sector, but the other two sectors also produce or purchase consumer goods and services for consumption by households. The breakdown in the table shows how total consumption is paid for across the three institutional sectors.[9]

Household final consumption expenditure consists of consumer spending by household institutional units on their own behalf.[10] It includes all the goods and services that consumers normally purchase to satisfy their needs and wants: food, clothing, transportation, shelter, and so on. The table shows this aggregate broken down into four principal product-class sub-aggregates: durable goods, semi-durable goods, non-durable goods and services. Canada's national accounts also provide considerable additional product-class detail for household final consumption expenditure, broken down according to purpose using the international standard Classification of Individual Consumption According to Purpose (COICOP).[11] In 2009, the year shown in Table 5.2, household final

consumption expenditure accounted for 71% of total final consumption expenditure, 56% of GDP and 56% of final domestic demand, so it is in many respects the most important component of expenditure-based GDP.

NPISH final consumption expenditure, in contrast, is quite small and accounted for just 2% of total final consumption expenditure in 2009. This component consists of expenditures made by non-profit institutions on behalf of households.

General governments final consumption expenditures were equivalent to 26% of total final consumption in 2009, or 21% of GDP. As with NPISH final consumption expenditures, general government final expenditures are made for the benefit of households.

General government and NPISH final consumption expenditure are similar in that they include both **collective consumption expenditure** (outlays by governments and NPISH units for the benefit of the community as a whole) and **individual consumption expenditure** (spending by governments and NPISH units for the benefit of specific households or identifiable groups of households). The former expenditures include government spending on national defence, law enforcement, justice and public administration among others. They also include expenditures by political parties, advocacy groups, some charities and other NPISH units with the aim of benefiting the community as a whole. Individual consumption expenditures by governments and NPISH units, in contrast, are undertaken in order to make social transfers in kind. These can include purchases of goods and services from market producers by governments and NPISH units that are then provided to households either without charge or at prices that are not economically significant. An example is food distributed to needy households via food banks. They also include non-market production by governments and NPISH units for the benefit of households. Leading examples of such expenditures are outlays for education and health care, in the case of governments, and NPISH spending to deliver religious and sport-related services to participating households.

Table 5.2 records final consumption expenditures based on the sector that made the expenditures: households, NPISH units or governments. In this presentation, all household consumption expenditures are 'individual' while NPISH and government expenditures are split between 'individual' and 'collective' as described in the previous paragraph. There is an alternative presentation of these statistics, mentioned again later in this chapter, wherein final consumption expenditures are recorded not based on the sector that made the expenditures, but instead based on the sector that benefits from the expenditures. In this presentation the 'individual' expenditures by NPISH units and governments are recorded as part of the **actual individual final consumption expenditures** of the household sector, in addition to the expenditures by the households themselves. The remaining portions of NPISH and government expenditures are recorded as **actual collective final consumption expenditures** of the NPISH and government sectors.

5.2.2.2 Gross fixed capital formation

Gross fixed capital formation expenditures (also referred to as fixed investment expenditures) are distinguished from final consumption expenditures by their characteristic that the goods purchased under this category are expected to yield a stream of production benefits over a period of time exceeding one year.[12]

As seen in Table 5.2, gross fixed capital formation can be broken out by the type of institutional sector making the expenditure and by the type of capital product involved in the expenditure. In this context the 'business sector' refers to a composite from the corporation and household sectors—the universe of incorporated and unincorporated enterprises—and normally accounts for the bulk of gross fixed capital formation.[13] Governments also account for a significant share and NPISH units typically represent a very small portion of the total. Gross fixed capital formation expenditures in the household sector consist of residential construction for owner-occupation and other investments by unincorporated businesses. As noted previously, home-owner-occupiers are treated as unincorporated businesses that invest in residential housing and rent the housing units back to themselves. The non-resident sector, as it is defined in the SNA, never makes gross fixed capital formation expenditures.[14]

Four broad classes of gross fixed capital expenditure are identified in Table 5.2:[15]

- Residential structures
- Non-residential structures
- Machinery and equipment
- Intellectual property products

The **residential structures** category consists of new construction of single- and multi-family homes, renovations to existing homes and ownership transfer costs associated with the purchase and sale of new and existing homes. **New construction expenditures** are estimated according to the work-put-in-place concept, which means that the total market value of a new home typically enters the accounts over a span of several quarterly accounting periods. The **renovations** component includes expenditures for major renovations, such as the installation of a new roof or heating system, and excludes normal upkeep and maintenance such as painting and minor repairs (which are treated as intermediate consumption expenditures in the production process for imputed rent).

Finally, the **ownership transfer costs** component of residential structures investment includes real estate commissions and legal costs associated with buying or selling homes.

The **non-residential structures** component of gross fixed capital formation includes non-residential buildings (factories, stores, malls, office towers, warehouses, schools, hospitals, etcetera) and engineering structures (power and communication networks, hydroelectric dams, nuclear reactors, pipelines, ports, railroads, airports, highways, etcetera). As with residential construction, non-residential construction is measured according to the work-put-in-place concept.

The measurement of both residential and non-residential construction investment excludes the value of the land that is usually implicit within the market price of the structures.[16] This is because land is considered to be a non-produced asset in the national accounts and as such its value does not contribute to the market value of investment expenditures on structures. However, activities aimed at improving land (or preventing its deterioration) such as land clearance or the building of dykes or irrigation systems are considered to be fixed capital investment and are included with non-residential construction.

The **machinery and equipment** category includes a wide range of capital goods. The main sub-categories are industrial machinery and equipment, computers and computer peripheral equipment, communications and audio and video equipment, other electrical and electronic machinery and equipment, furniture, fixtures and prefabricated structures, passenger cars used for production purposes, trucks, buses and other motor vehicles, and aircraft and other transportation equipment.

Finally, the **intellectual property products** category is comprised of three major sub-components which are mineral exploration and evaluation, research and development, and software. *SNA 2008* also includes entertainment, literary or artistic originals as a component of intellectual property assets, but these are not included in Canada's system of macroeconomic accounts at present due to source data limitations. Similarly, while databases are also included in the intellectual property products category, these are also absent in Canada's accounts because they are not considered to be material in this country.

SNA 2008 recognizes two other categories of gross fixed capital formation that are not recognized by Canada due to source data limitations.

One of these is **cultivated live assets** such as orchards or cattle herds. Productive assets of this kind can certainly be used over a lengthy period of time to produce other products. However, these assets are not capitalized in Canada's system of macroeconomic accounts at present. Rather, they are treated as investment in inventories.

The other missing category is **valuables**.

> "Valuables are expensive durable goods that do not deteriorate over time, are not used up in consumption or production, and are acquired primarily as stores of value. They consist mainly of works of art, precious stones and metals and jewellery fashioned out of such stones and metals. Valuables are held in the expectation that their prices, relative to those of other goods and services, will tend to increase over time, or at least not decline. Although the owners of valuables may derive satisfaction from possessing them, they are

not used up in the way that consumption goods, including consumer durables, are used up over time." (*SNA 2008*, p. 186)

Canada's system of macroeconomic accounts does not presently distinguish expenditures on valuables as a type of gross fixed capital formation due to lack of source data. Instead they are included implicitly in final consumption expenditure when acquired by households, NPISH units or government units. Some artwork and other valuables are also included implicitly in the intermediate consumption of corporations.

5.2.2.3 Investment in inventories

The production of an institutional unit in a given accounting period consists not only of its production of products in that period for sale during that period, but also its production in that period for sale in subsequent accounting periods. The latter item is referred to as production for inventory and it is another form of gross capital formation.

While an institutional unit can add to inventories, it can also draw down inventories during an accounting period. It is the net addition (positive) or withdrawal (negative) that is referred to as **investment in inventories**. For the economy as a whole, the change in inventories is effectively the gap between aggregate production plus imports and final demand during the accounting period.

SNA 2008 distinguishes five categories of inventories which are:

- Materials and supplies
- Work-in-progress
- Finished goods
- Military inventories
- Goods for resale

The first category, inventories of **materials and supplies**, consists of products acquired by a business for intermediate consumption in some future period. A wide variety of products can be in this category such as office supplies, agricultural and industrial raw materials, fuels, packaging materials and so on. However, natural resource assets 'in the ground'—forests and minerals, for example—while they are recognized as non-financial, non-produced assets in the balance sheet accounts, are not counted as inventories.

Work-in-progress inventories consist of output that is partially completed by a business during the accounting period. This would include a partially completed ship or airplane, for example. However, in Canada work-put-in-place on uncompleted structures, such as new residential or non-residential buildings, is treated as gross fixed capital formation immediately, rather than as work-in-progress inventories.

Finished goods are the outputs of a business that are completed but remain unsold at the end of the accounting period.

Military inventories consist of single-use military items such as ammunition, missiles and bombs held for possible use in future periods.

Finally, **goods for resale** inventories are products that have been acquired by a company for the purpose of reselling to their customers. Wholesalers and retailers are the main holders of goods for resale inventories.

In Canada, statistics on inventories are compiled according to the following breakdown:[17]

- Business investment in inventories
    - Non-farm inventories
        - Manufacturing inventories
            - Durable goods
            - Non-durable goods

        - Trade
            - Retail inventories
                - Durable goods
                - Of which: motor vehicles
                - Non-durable goods
            - Wholesale inventories
                - Durable goods
                - Non-durable goods
        - Non-monetary gold inventories
        - Other non-farm inventories
    - Farm inventories
        - Grain inventories
        - Other farm-held inventories
            - Livestock
            - Other crops
        - Grain in commercial channels
- NPISH investment in inventories
- General government investment in inventories

Farm inventories figure prominently in Canada's national accounts. Grain stocks, in particular, can be quite volatile depending on weather and the irregular pattern of export shipments. Other farm-held inventories also fluctuate a lot, but generally less than grain inventories.

The measurement of inventories for national accounts purposes is complicated by the fact that the valuation of stocks held in inventory can change over time. An item is entered into inventory at the prevailing market price, but when it is withdrawn from inventory in a subsequent period the price may have changed, implying a capital gain or loss for the institutional unit holding the inventory. Such capital gains and losses are excluded from the calculation of gross value added and are instead recorded in the revaluation account (see chapter 6). Thus, the value of the change in inventories is calculated by first converting inventory stocks to constant price valuation, then calculating the change at constant prices and finally converting the change at constant prices to the market price valuation of the accounting period.

Inventory change is considered to be among the most difficult components to measure in the national accounts. Unlike other items in the income and expenditure accounts, investment in inventories is not formally reconciled with the estimates of inventory change in the supply and use accounts.

The investment in inventories component of GDP can sometimes have a large influence on the growth of GDP. For example, when the economy experiences a sharp and unexpected downturn in demand, businesses often produce more goods than the market can absorb, causing a spike in their inventories. In subsequent periods, as businesses reduce those stocks by cutting production, there will be a decline in inventories. Swings in inventories, as in this example, can amplify the business cycle considerably.

There can also be significant trend influences on investment in inventories. Of particular importance in recent years is the fact that businesses have made remarkable progress in using information technology to manage inventory levels more effectively, with the goal of keeping them as low as possible. Holding inventories entails significant costs and the steps to reduce average inventory levels have led to significant cost savings in some industries, while also reducing their volatility.

5.2.2.4 Exports of goods and services

Canada is a trading nation and exports of goods and services comprise a significant share of GDP. In 2009 that share was 29%. The United States remains the number one destination for Canadian exports by a wide margin. However, exports are sold to countries all over the world and indeed, efforts have been made in recent decades to broaden the access of Canadian businesses to global markets through a variety of 'free trade agreements'.

The level of exports is sensitive to economic cycles outside Canada and also responds flexibly to movements in the international value of the Canadian currency and in commodity and other prices.

Statistics on exports of goods are estimated from Customs data collected by the Canada Border Services Agency (CBSA). They are very detailed, both by product class and by country of destination.[18] Among the more significant product classes are energy products, farming and fishing products, metal ores and non-metallic minerals and associated products, basic industrial products such as chemicals and plastics, forestry products and building materials, industrial, electronic and electrical machinery and equipment, motor vehicles and parts, aircraft and other transportation equipment and parts, and a variety of consumer goods.

While Customs data are the source of the information, the conceptual basis for the measurement of exports (and imports) is the set of conventions that have been developed for purposes of Canada's balance of international payments statistics (discussed in more depth in chapter 8). These statistics are consistent with *SNA 2008* and with the International Monetary Fund's *Balance of Payments Manual*, sixth edition. Numerous balance of payments adjustments are applied to the Customs data to correct problems related to coverage, timing, valuation for inland freight, other valuation issues and residence. These adjustments are discussed in more detail in chapter 8.

Statistics on exports of services are more difficult to estimate because unlike flows of goods, flows of services crossing the border are 'invisible'. For this reason services exports cannot generally be detected by CBSA and must be measured by surveys or other means.

Services accounted for 17% of total exports in 2009. They include travel (accommodation, food and other services for visitors to Canada), transportation (air, shipping and trucking), commercial (financial services including FISIM, insurance, legal services, management services, computer and information technology services, engineering and other technology services) and general government services (largely expenditures in Canada by foreign governments and by their staff recruited abroad, as well as overheads to administer official assistance to other countries).

The world economy has become increasingly integrated in recent decades, due in substantial part to new and improved transportation and communication technologies. In this rapidly changing environment it has become more and more common for enterprises to ship goods from one country to another for additional processing, after which they are returned to the original country. Traditionally the export and import of such goods for processing has been measured on a gross basis, which serves to inflate the magnitude of both exports and imports and also requires the imputation of associated financial transactions that, in fact, do not take place. In a situation where there is no change in ownership of the goods being shipped, processed and returned, a more accurate depiction of the circumstance is one in which a goods processing service is being traded, rather than the export and import of two goods, one prior to the processing and the other after processing. *SNA 2008* recommends a change from the traditional gross treatment of goods being shipped, processed and returned to the just-described goods-for-processing approach and Canada is aiming to do this in a few years' time. When this change is eventually made there will be important implications for the magnitude and interpretation of merchandise and non-merchandise trade flows, for the supply and use accounts and for the financial accounts.

5.2.2.5 Imports of goods and services

As a trading nation, Canada imports as well as exports goods and services. Sometimes imports exceed exports, implying a trade deficit, and sometimes they are less than exports, indicating a trade surplus.

Imports are embedded implicitly within the other lines of Table 5.2—final consumption expenditures, gross fixed capital formation, investment in inventories and exports of goods and services. For example, when households purchase food and clothing (final consumption expenditures) or a business invests in a new piece of machinery (gross fixed capital formation), those products might have been imported into Canada. Imports are deducted in Table 5.2 to net out these imports so the table's grand total—gross domestic product at market prices—measures only Canadian gross value added.

Imports of goods, like exports of goods, are recorded at the border by CBSA and this permits them to be tabulated in considerable detail by product class and country of origin.[19] They are then adjusted to a balance of payments basis in a manner similar to that for exports. The types of products imported give greater weight to industrial, electronic and electrical machinery and equipment, motor vehicles and consumer goods. As for exports, imports of services are available in less detail, with a breakdown into the same four categories: travel, transportation, commercial and general government services.

5.3 Canada's current and capital institutional accounts

This section explains the middle portion of the *SNA 2008* sequence of accounts that was described in chapter 3, as those accounts are released in Canada. The accounts are shown separately for each of the six top-level sectors: households, non-profit institutions serving households, non-financial corporations, financial corporations, governments and non-residents.

The first two accounts of the full sequence, the production account and the generation of primary incomes account, are not presently available in Canada by sector, although as discussed in chapter 4 they are available by industry. In addition, the entrepreneurial income account, the allocation of other primary income account, the redistribution of income in kind account and the use of adjusted disposable income account have not yet been developed. Estimates for the elements in these six accounts will be released in the future.

Finally, the last four accounts of the sequence, the financial account, the other changes in the volume of assets account, the revaluation account and the balance sheet account, are explained in chapter 6 and will not be further discussed here.

Accordingly this section focuses on the following four accounts, which are central to the full sequence of accounts: the allocation of primary income account, the secondary distribution of income account, the use of disposable income account and the capital account. For each of the six institutional sectors, these four accounts are combined into a single table.

While reviewing these tables in the sub-sections that follow, take note of the fact that the "payment to" elements in one table correspond exactly to "receipt from" elements in other tables. Thus, for example, payments of interest by non-financial corporations to non-residents in the allocation of primary income account of the non-financial corporations sector are, not surprisingly, matched by receipts of interest by non-residents from non-financial corporations in the allocation of primary income account of the non-residents sector. Similarly, current transfers paid by households to general governments in the form of personal income tax as shown in the secondary distribution of income account of the household sector are exactly matched by current transfers received by general governments from households in the form of personal income tax as shown in the secondary distribution of income account of the general governments sector.

5.3.1 Households sector

Table 5.3 shows the four accounts for the households sector. The first 11 lines of the table are the allocation of primary income account for the sector, with the balancing item being primary household income (that is, the gross balance of primary incomes of households, in strict *SNA 2008* terminology). The next 18 lines show the secondary distribution of income account with household disposable income as the balancing item. The use of disposable income account is in the next five lines with household net saving as the balancing item. Finally, the capital account is in the remaining lines with net lending or borrowing as the balancing item.

Recall that the allocation of primary income account focuses on households in their capacity as recipients of primary income. The table shows that in 2009 they received just over $1 trillion, of which most was in the form of compensation of employees. Although the vast majority of the employee compensation was paid by resident entities, over $1 billion was also paid by non-resident institutional units. Mixed income accounted for 13% of household primary income, with rental income (including imputed rental income on owner-occupied dwellings) being the largest contributor. Property income received was $152 billion and property income paid (the only 'use' in the account) was $56 billion. The property income inflows include interest and dividends received by households, mainly from banks, other corporations and governments, while the outflows include mortgage, credit card and other interest paid on loans to households, again mainly from banks, other corporations and governments.

Table 5.3
Current and capital accounts, households, 2009

Components of the current and capital accounts	2009
	millions of dollars
Compensation of employees	810,556
Paid to residents by resident entities	809,195
Paid to residents by non-resident entities	1,361
Plus: net mixed income	140,702
Non-farm	61,254
Farm	3,084
Rental income of households	76,364
Plus: net property income	96,547
Property income received	152,106
Less: property income paid	55,559
Equals: primary household income	1,047,805
Primary household income	1,047,805
Plus: current transfers received	218,275
From non-profit institutions serving households	3,668
From corporations	58,697
From general governments	153,753
Employment insurance benefits	18,822
Social security benefits	47,877
Other benefits	87,054
From non-residents	2,157
Less: current transfers paid	385,266
To non-profit institutions serving households	13,291
To corporations	96,754
To general governments	270,642
Personal income tax	184,925
Other current transfers	85,717
Of which: contributions to social insurance plans	75,390
To non-residents	4,579
Equals: household disposable income	880,814
Household disposable income	880,814
Less: household final consumption expenditure	878,202
Plus: change in pension entitlements	38,057
Equals: household net saving	40,669
Household saving rate (percent)	4.6
Household net saving	40,669
Plus: consumption of fixed capital at replacement cost	46,479
Plus: net capital transfers received	-961
From non-profit institutions serving households	-1,281
From corporations	0
From general governments	324
From non-residents	-4
Equals: gross saving and capital transfers	86,187
Less: non-financial capital acquisitions	123,226
Fixed capital	123,571
New assets	111,840
Existing assets	11,731
Inventories	-345
Equals: net lending or net borrowing	-37,039

Source: Statistics Canada, table 36-10-0112-01.

The payment of wages and salaries by an employer to an employee is a type of transaction that is partly **rerouted** in the SNA. In the real world there are typically two transactions involved, one of which is the payment of wages and salaries directly by the employer to the employee and the other of which is the payment by the employer to the government of personal income taxes accruing on those wages and salaries. The second of these two transactions is the legally mandated withholding tax that is payable by the employer. In the SNA, however, the second of these two transactions is rerouted through the household sector, which means it is treated as if the employer paid the entire amount—the wages and salaries and the tax payment—to the employee and the latter, in turn, paid the taxes to the government. This rerouting provides a more economically useful depiction of the transactions involved since it ultimately the employee, not the employer, who is responsible for paying the accrued income tax.

The financial asset reserves held by life insurance companies and pension funds also give rise to rerouted transactions. These reserves are regarded as the property of the insurance policy holders and the pension asset holders. In the national accounts, property income earned on these reserve assets is deemed to be paid out to households and then paid back as insurance premium or pension contribution supplements, although in actuality the property income is retained by the insurance companies and pension fund administrators. As a result, the saving of households includes the amount of the rerouted property income while the saving of insurance enterprises and pension funds does not.

The secondary distribution of income account shows how primary household income is transformed into household disposable income. Current transfers received by households are added, $218 billion in 2009, while current transfers paid are subtracted, $385 billion. A relatively small amount of transfers are received from NPISH units and non-residents with the vast majority of transfers coming from general governments. The latter include Employment Insurance benefits, Old Age Security benefits, welfare benefits and a range of other federal, provincial and local government transfers to households. Current transfers paid to other sectors include most importantly $185 billion of personal income taxes, as well as $75 billion of contributions to social insurance plans and a variety of other current transfer payments to governments, NPISH units and non-residents.

The use of disposable income account shows household final expenditure of $878 billion being deducted from household disposable income of $881 billion, plus an adjustment for pension entitlements of $38 billion, yielding the balancing item, household net saving, of $41 billion and a saving rate of 4.6%. The saving rate is simply net saving expressed as a percentage of disposable income.

Finally, in the capital account the household net saving 'resource' is augmented by $46 billion of consumption of fixed capital (at replacement cost) and net capital transfers of -$1 billion implying total 'resources' of $86 billion. 'Uses' consist of non-financial capital acquisitions of $123 billion, most of which is residential construction investment, home renovations and transfer costs associated with sales of existing real estate assets, implying net borrowing by the sector in the amount of $37 billion.

5.3.2 Non-profit institutions serving households sector

The accounts for the NPISH sector, for the example year 2009, are shown in Table 5.4. As is the case for the households sector and the other sectors still to come, the table displays the allocation of primary income account, the secondary distribution of income account, the use of disposable income account and the capital account.

Table 5.4
Current and capital accounts, non-profit institutions serving households, 2009

Components of the current and capital accounts	2009
	millions of dollars
Net property income	1,092
Property income received	2,468
Less: property income paid	1,376
Equals: primary NPISH income	1,092
Primary NPISH income	1,092
Plus: current transfers received	32,775
From households	13,291
From corporations	1,993
From general governments	17,163
From non-residents	328
Less: current transfers paid	9,384
To households	3,668
To corporations	0
To general governments	3,359
To non-residents	2,357
Equals: NPISH disposable income	24,483
NPISH disposable income	24,483
Less: net NPISH final consumption expenditures	22,968
Equals: NPISH net saving	1,515
NPISH net saving	1,515
Plus: consumption of fixed capital at replacement cost	860
Plus: net capital transfers received	1,781
From households	1,281
From corporations	0
From general governments	500
From non-residents	0
Equals: gross saving and capital transfers	4,156
Less: non-financial capital acquisitions	2,240
Fixed capital	2,224
New capital	2,224
Existing capital	0
Inventories	16
Equals: net lending or net borrowing	1,916

Source: Statistics Canada, table 36-10-0115-01.

In 2009 primary NPISH income consisted entirely of net property income allocations, since NPISH units did not receive income in the other forms of primary income (compensation of employees, gross operating surplus, gross mixed income and revenue from taxes less subsidies on production and imports).

In the year shown in the table, the disposable income of the NPISH sector greatly exceeded its primary income because it received positive net current transfers from both the household sector (for example, contributions to political parties) and the government sector (for example, government grants to charitable institutions). The corporate sector also provided smaller net transfers to the sector. The non-resident sector, in contrast, received net transfers from the sector rather than contributing to it on a net basis. This reflects the fact that some NPISH units are specifically focussed on providing assistance to non-residents who are in need abroad (for example, the International Red Cross and Doctors Without Borders Canada).

NPISH net saving was positive in 2009 as the sector's final consumption expenditures were less than its disposable income by 6%. (Recall that the sector's final consumption expenditures are made on behalf of the household sector and contribute to the actual consumption of the latter.) Net saving in the NPISH sector has often fluctuated between positive and negative values over time.

The sector's estimated gross saving was positive at $2,375 million, because its consumption of fixed capital at replacement cost was $860 million and its net saving was $1,515 million. It also received positive net capital transfers from the household sector in the amount of $1,281 million (for example, these transfers might include donations to building funds for new churches or recreational facilities) and $500 million from the government sector, so gross saving and capital transfers in total were $4,156 million.

Non-financial capital acquisitions by the NPISH sector were $2,240 million in 2009, consisting of $2,224 million in new capital investment expenditures plus $16 million of investment in inventories. This amount was less than gross saving and capital transfers, so the sector engaged in net lending of $1,916 million.

5.3.3 Non-financial corporations sector

The capital and current accounts for the non-financial corporations sector have the same basic structure as those just examined for the household and NPISH sectors, but the salient elements in the accounts are quite different. In particular, net operating surplus is present as a component of primary income (for the non-corporate sectors it is not) while compensation of employees is, of course, absent, property income flows are much larger and current transfers in both directions are, with the exception of corporate income tax payments, far less significant. The statistics for 2009 are displayed in Table 5.5.

Table 5.5
Current and capital accounts, non-financial corporations, 2009

Components of the current and capital accounts	2009
	millions of dollars
Net operating surplus	155,702
Plus: net property income	-101,344
Property income received	44,557
Interest received from residents	14,533
Interest received from non-residents	2,243
Dividends received from residents	19,647
Dividends received from non-residents	8,134
Other receipts	0
Less: property income paid	145,901
Interest paid to residents	30,830
Interest paid to non-residents	19,620
Dividends paid to residents	53,733
Dividends paid to non-residents	23,639
Remitted profits of government business enterprises to government	3,133
Other payments	14,946
Equals: primary income	54,358
Primary income	54,358
Plus: current transfers received	892
From households	0
From non-profit institutions serving households	0
From financial corporations to non-financial corporations	0
From non-residents	892
Less: current transfers paid	39,881
To households	0
To non-profit institutions serving households	1,235
To financial corporations from non-financial corporations	0
To general governments	38,235
Of which: taxes on income (corporate income tax)	38,235
To non-residents	411
Equals: disposable income	15,369
Disposable income	15,369
Equals: net saving	15,369
Net saving	15,369
Plus: consumption of fixed capital at replacement cost	154,894
Plus: net capital transfers received	3,189
From households	0
From non-profit institutions serving households	0
By non-financial corporations from financial corporations	0
From general governments	3,664
From non-residents	-475
Equals: gross saving and capital transfers	173,452
Less: capital acquisitions	137,760
Fixed capital	145,095
New capital	155,230
Existing capital	-10,135
Inventories	-7,335
Equals: net lending or net borrowing	35,692

Source: Statistics Canada, table 36-10-0116-01.

The largest element determining primary income of the non-financial corporations sector is the net operating surplus. To this, property income received is added and property income paid is subtracted. Corporations generally pay a lot more property income to the other sectors than they receive from those sectors. Interest and dividends are received from resident sectors as well as, to a lesser extent, non-residents. Payments of property income by non-financial corporations take a wide variety of forms including bank and bond interest, dividends, remitted profits of government business enterprises to governments and some others. In 2009, the balance of primary incomes of the sector, comprised of $156 billion net operating surplus and -$101 net property income received, was $54 billion.

In the secondary distribution of income account, current transfers received from other sectors are typically relatively modest (just $892 million in 2009) while most current transfers paid to other sectors are accounted for by taxes paid to governments. The only other current transfers paid out consist of charitable contributions to NPISH units of $1,235 and current transfers to non-residents of $411 million. The sector's disposable income was $15 billion in 2009 as compared to its primary income of $54 billion, with most of the difference accounted for by taxes paid to governments.

In the capital account, consumption of fixed capital was large at $155 billion in 2009, compared to other sectors. This reflects the fact that most of Canada's capital stock is held by non-financial corporations. Net capital transfers received by the sector were $3,189 million. Since the sector incurs no final consumption expenditure, gross saving and capital transfers were $173 billion for the sector.

In the capital account in 2009, new fixed capital acquisitions were $155 billion, net acquisitions of existing fixed capital were -$10 billion (this means non-financial corporations sold $10 billion of existing capital assets to other sectors, on a net basis) and inventory investment was -$7 billion. Adding these up yields total capital acquisitions of $138 billion which, when subtracted from gross saving plus capital transfers, gives net lending for the sector of $36 billion.

5.3.4 Financial corporations sector

For the financial corporations sector, the main component of primary income is net operating surplus (see Table 5.6). Net property income is typically small, being the difference between estimates for property income received and paid that are both quite large, reflecting the financial intermediation role of this sector. The comparatively large size of these property income flows reflects the nature of the business that financial corporations are in—borrowing funds at relatively low rates of interest and relending those funds for a higher rate of return.

Table 5.6
Current and capital accounts, financial corporations, 2009

Components of the current and capital accounts	2009
	millions of dollars
Net operating surplus	17,878
Plus: net property income	-4,466
Property income received	184,433
Interest received from residents	109,036
Interest received from non-residents	6,642
Dividends received from residents	62,668
Dividends received from non-residents	6,087
Other receipts	0
Less: property income paid	188,899
Interest paid to residents	98,587
Interest paid to non-residents	10,482
Dividends paid to residents	73,574
Dividends paid to non-residents	3,247
Remitted profits of government business enterprises to government	3,009
Other payments	0
Equals: primary income	13,412
Primary income	13,412
Plus: current transfers received	97,010
From households	96,754
From non-profit institutions serving households	0
From financial corporations to non-financial corporations	0
From non-residents	256
Less: current transfers paid	75,125
To households	58,697
To non-profit institutions serving households	758
To non-financial corporations from non-financial corporations	0
To general governments	15,084
Of which: taxes on income (corporate income tax)	15,084
To non-residents	586
Equals: disposable income	35,297
Disposable income	35,297
Less: change in pension entitlements	38,057
Equals: net saving	-2,760
Net saving	-2,760
Plus: consumption of fixed capital at replacement cost	16,861
Plus: net capital transfers received	-77
From households	0
From non-profit institutions serving households	0
By non-financial corporations from financial corporations	0
From general governments	-77
From non-residents	0
Equals: gross saving and capital transfers	14,024
Less: capital acquisitions	9,810
Fixed capital	7,553
New capital	9,146
Existing capital	-1,593
Inventories	2,257
Equals: net lending or net borrowing	4,214

Source: Statistics Canada, table 36-10-0116-01.

All told, net operating surplus was $18 billion, primary income was $13 billion and disposable income was $35 billion. Consumption of fixed capital was an estimated $17 billion and net capital transfers received were negative and very small. New fixed capital acquisitions were $9 billion and existing capital was divested in the amount of $2 billion. Accordingly, in 2009 the sector was a net lender of $4 billion to other sectors.

5.3.5 Government sector

The government sector is quite unlike other sectors. As seen in Table 5.7, its primary income comes mainly from taxes on production, products and imports (net of subsidies). These totalled $172 billion in 2009. Net property income for the sector was negative (-$17 billion) reflecting substantial amounts of interest on public debt paid by some Canadian governments.

Table 5.7
Current and capital accounts, general governments, 2009

Components of the current and capital accounts	2009
	millions of dollars
Taxes on production, products and imports (net of subsidies)	171,868
Taxes on products and imports	112,629
Less: subsidies on products and imports	10,413
Taxes on production	75,340
Less: subsidies on production	5,688
Plus: net property income	-17,368
Property income received	40,553
Less: property income paid (including interest on debt)	57,921
Equals: primary general governments income	154,500
Primary general governments income	154,500
Plus: current transfers received	332,739
From households	270,642
Personal income tax	184,925
Other current transfers from households	85,717
Of which: contributions to social insurance plans	75,390
From non-profit institutions serving households	3,359
From corporations	53,319
From non-residents	5,419
Withholding taxes	4,998
Other current transfers from non-residents	421
Less: current transfers paid	175,517
To households	153,753
To non-profit institutions serving households	17,163
To non-residents	4,601
Equals: general governments disposable income	311,722
General governments disposable income	311,722
Less: net general governments final consumption expenditure	345,137
Equals: net general governments saving	-33,415
Net general governments saving	-33,415
Plus: consumption of fixed capital	49,195
Plus: net capital transfers received	-4,748
From households	-324
From non-profit institutions serving households	-500
From corporations	-3,587
From non-residents	-337
Equals: general governments gross saving and capital transfers	11,032
Less: general governments non-financial capital acquisitions	72,021
Fixed capital	72,074
New capital	72,077
Existing capital	-3
Inventories	-53
Equals: net lending or net borrowing	-60,989

Source: Statistics Canada, table 36-10-0118-01.

Current transfers received by governments were $333 billion in 2009, reflecting mostly personal and corporate income taxes and contributions to social insurance plans. These transfers are a positive contributor to government sector disposable income and an equal but negative contributor to household and corporate sector disposable incomes. Current transfers paid by governments in 2009 included $154 billion to households (Old Age Security, Guaranteed Income Supplement, welfare, etcetera), $17 billion to NPISHs and $5 billion to non-residents (mainly official development assistance). In 2009, disposable income of governments was $312 billion, about double the level of primary income. It should be noted there are also a number of large inter-governmental transfers for health, education, welfare, equalization and other purposes, but these cancel out when, as here, the focus is on the total government sector.

In the use of disposable income account, government sector net final consumption expenditures, for both individual and collective consumption, are quite large. In 2009 they were $345 billion, so net government sector saving was -$33 billion. Consumption of fixed capital by governments was $49 billion, so gross saving was an estimated $16 billion. Net capital transfers received by governments were -$5 billion, so gross saving and net capital transfers together were $11 billion. Since new capital acquisitions by governments were $72 billion in 2009, the sector had net borrowing from other sectors of $61 billion that year. A major factor explaining this outcome was that 2009, the example year, was a recessionary period and some large Canadian governments adopted stimulative fiscal policies that involved infrastructure and public works projects.

5.3.6 Non-resident sector

The primary income of the non-resident sector, shown in Table 5.8, is made up of three components. Keep in mind that the non-resident sector is defined from the perspective of the non-resident, implying that imports are a ‘resource’ and exports are a ‘use’.

The first is the external balance of trade in goods and services as viewed from the perspective of non-residents (imports minus exports), which was a surplus of $23 billion in 2009. This shows the net revenue received by non-residents resulting from Canadian imports of products from other countries less Canadian sales in the form of exports to other countries.

The second component, net property income, is the property income (interest and dividends) received by non-residents from Canadian resident institutional units less the property income paid by non-residents to Canadians. In 2009, property income received by non-residents from Canadians was $65 billion while property income paid by non-residents to Canadians was $39 billion. The positive net property income of non-residents in 2009 reflects, in part, the fact that Canada’s liabilities to the rest of the world exceeded its assets abroad in that year. As shown in the international investment position (discussed in chapter 8) and in the national balance sheet accounts (discussed in chapter 6), the non-resident sector had assets of $2,214 billion in Canada at the end of 2009 while Canadians had assets abroad of just $2,010 billion.

The third and smallest component of non-resident sector primary income is net compensation of employees. In 2009, non-residents working but not residing in Canada were paid $3 billion while Canadians working but not residing abroad received compensation of $1 billion.

Table 5.8
Current and capital accounts, non-residents, 2009

Components of the current and capital accounts	2009
	millions of dollars
External balance of goods and services	23,146
Sales of goods (imports)	373,985
Sales of services (imports)	94,853
Less: purchases of goods (exports)	367,211
Less: purchases of services (exports)	78,481
Plus: net property income	25,539
Property income received	64,902
Interest from corporations	30,102
Interest from non-financial corporations	19,620
Interest from financial corporations	10,482
Interest from other sectors	7,914
Dividends from Canadians	26,886
Dividends from non-financial corporations	23,639
Dividends from financial corporations	3,247
Less: property income paid	39,363
Interest paid to corporations	8,885
Interest paid to non-financial corporations	2,243
Interest paid to financial corporations	6,642
Interest paid to other sectors	4,795
Dividends paid to Canadians	25,683
Dividends to non-financial corporations	8,134
Dividends to financial corporations	6,087
Dividends paid to other sectors	11,462
Plus: net compensation of employees	1,517
Compensation of employees, non-residents working in Canada	2,878
Less: compensation of employees, Canadians working abroad	1,361
Equals: primary non-resident income	50,202
Primary non-resident income	50,202
Plus: current transfers received	12,534
Less: current transfers paid	9,052
Equals: non-residents disposable income	53,684
Non-resident disposable income	53,684
Equals: non-resident net saving	53,684
Plus: net reinvested earnings on direct investment	-7,494
Equals: balance of payments surplus (-) or deficit (+) on current account	46,190
Non-resident net saving	53,684
Plus: net capital transfers received	816
From households	4
From non-profit institutions serving households	0
From corporations	475
From general governments	337
Equals: gross saving and capital transfers	54,500
Less: non-resident fixed capital acquisition	0
Equals: net lending	54,500

Source: Statistics Canada, table 36-10-0121-01.

The disposable income of the non-resident sector is equal to the sector's primary income plus the current transfers it receives from Canada net of the current transfers it pays to Canadians. These transfer flows between the five resident sectors and the non-resident sector were discussed in the previous sections. To recap, non-residents receive personal remittances from Canadian households, pensions from Canadian pension funds and foreign assistance transfers from the NPISH and government sectors. Non-residents also send personal remittances and pensions to Canadian households.

In the case of the non-resident sector, net saving is the same as disposable income since, according to *SNA 2008* concepts, the non-resident sector does not make final consumption expenditures. Disposable income and net saving were both $54 billion in 2009.

Consumption of fixed capital is always zero in the non-resident sector since, consistent with SNA 2008 concepts, non-residents cannot hold non-financial assets in Canada. Capital transfers between the non-resident sector and the five resident sectors are typically quite small, as discussed in the previous sections. Accordingly, gross saving and capital transfers of non-residents were $55 billion in 2009 and this was also the sector's net lending.

5.3.7 Total economy

Table 5.9 provides a summary of the key totals shown for the six sectors in Table 5.3 through Table 5.8. Several observations are worth noting.

The first is that total primary income over the six sectors is equal to total disposable income. This reflects the fact that the current transfers accounting for the difference between primary and disposable income net out to zero (for every dollar received as a transfer in one sector there is a matching dollar paid as a transfer by another sector). The sectors that gained from transfers in 2009, on net basis, were the NPISH, financial corporations, general government and non-resident sectors, while the other two sectors had disposable incomes that were lower than their primary incomes.

Table 5.9
Current and capital accounts summary, all sectors, 2009

Sector or aggregate	Primary income	Disposable income	Gross saving and capital transfers	Non-financial capital acquisitions	Net lending (+) or borrowing (–)
	millions of dollars				
Households	1,047,805	880,814	86,187	123,226	-37,039
Non-profit institutions serving households	1,092	24,483	4,156	2,240	1,916
Non-financial corporations	54,358	15,369	173,452	137,760	35,692
Financial corporations	13,412	35,297	14,024	9,810	4,214
General governments	154,500	311,722	11,032	72,021	-60,989
Non-residents	50,202	53,684	54,500	0	54,500
Statistical discrepancy	...	...	1,706	...	1,706
Total	1,321,369	1,321,369	345,057	345,057	0
Gross national income	1,271,167	...	...	...	...
Gross national disposable income	...	1,267,685	...	...	...
Gross national saving	...	...	290,557	...	...
Gross national investment	...	...	...	345,057	...

... not applicable

Source: Statistics Canada.

Another fact emerging in Table 5.9 is that total gross saving and capital transfers is equal to non-financial capital acquisitions. However, this equality only holds when the total statistical discrepancy is included as a source of saving. This discrepancy, the total difference between income-based GDP and expenditure-based GDP, represents a source of gross saving that was measured but could not be allocated by sector.

This can be seen by returning to equation (5.6) and rearranging terms as follows:

(5.7)

Gross fixed capital formation + investment in inventories = Compensation of employees + taxes less subsidies on production, products and imports + gross operating surplus + gross mixed income + (imports – exports) – final consumption expenditure + 2×statistical discrepancy

The left-hand side of the equation shows non-financial capital acquisitions and the right-hand side includes the gross saving of the households, NPISHs, governments, corporations and non-residents sectors, with current and capital transfers and property income allocations consolidated out.

Table 5.9 also shows that total net lending or borrowing over all sectors, including the statistical discrepancy, is zero. This reflects the fact that all lending must necessarily be matched by an equal amount of borrowing.

The last four lines of Table 5.9 show the national gross totals, aggregated over the five resident sectors. Gross national income is the sum of primary incomes of those sectors. Gross national disposable income was somewhat smaller than gross national income in 2009 and is the sum of the disposable incomes of the resident sectors. Gross national saving is the sum of gross saving by each of the resident sectors. Finally, gross national investment exceeds gross national saving in 2009 and is also the total over the five resident sectors. The difference between investment and saving is the amount that Canada borrowed from non-residents or in other words the net lending of the non-resident sector.

5.4 Provincial and territorial income and expenditure accounts

Canada's income and expenditure accounts are not just available for the nation as a whole. They are also released on an annual basis for each of the provinces and territories individually. In fact, the national estimates are broken down into 14 regional sub-components: ten for the provinces, three for the territories and one for 'outside Canada', which consists of Canada's embassies and military bases (or 'territorial enclaves') abroad.[20]

The provincial and territorial estimates are released about 11 months after the reference year. They are revised in subsequent years to incorporate additional source data and to ensure they are consistent with the national estimates, which are first released about 60 days after the end of the reference year and are themselves revised in subsequent periods. The preliminary provincial and territorial estimates have a longer release lag than the preliminary national estimates because, in part, whereas the latter are based on monthly and quarterly survey and administrative data, the former rely to a greater extent on annual survey and administrative data that have a longer release lag.

The income- and expenditure-based GDP at market prices tables for the provinces and territories are similar to Table 5.1 and Table 5.2 for Canada. The only difference is the addition of inter-provincial-and-territorial exports and imports to the second table (accompanying international exports and imports). The balancing items in these tables, gross operating surplus and gross mixed income, can be calculated using establishment statistics, as was discussed in chapter 4.

While the income- and expenditure-based GDP tables are estimated for the provinces and territories, it is not possible to estimate the full sequence of accounts for them. The reason is the conceptual and practical difficulties that are posed by the existence of multi-provincial corporations, NPISHs and governments. While the vast majority of corporations, NPISHs and governments have a one-province-only residency status, there are some very large and important ones that do not. In the case of corporations, one thinks, for example, of the big chartered banks and insurance companies, major retailers and transportation companies that operate nation-wide.[21] For NPISHs, consider some national charitable organizations. In the case of governments the prominent case is, of course, the Government of Canada.

A producing institutional unit (for example, a corporation) can have many establishments, some resident in one province or territory and some in others. Production and the generation of primary incomes can be associated with establishments but other transaction types, such as property income allocations and transfers, cannot.

A corporation, NPISH or government will have a head office as well, located in one of the provinces or territories, but it would be unreasonable to assign the entire institutional unit's property income, current transfers, financial flows and assets and liabilities solely to the province or territory where the head office is located. Yet any other allocation of property incomes, current transfers, financial flows and assets and liabilities to provinces and territories would be arbitrary.[22]

So the problem is that the existence of multi-provincial institutional units makes it difficult to assign provinces or territories of origin and destination with respect to the allocation of property incomes, the distribution of current transfers or for that matter transactions in financial assets and liabilities. One cannot, in the absence of arbitrary regional assignments, calculate provincial and territorial breakdowns for the balance of primary income, disposable income, saving, net borrowing/lending or net worth for corporations, NPISHs and the Government of Canada. Quite simply, some institutional units are national in scope and have no well-defined regional residence.[23]

Households are an exception to the point just made. For this type of institutional unit the province or territory of residence is always well defined. This means it is possible to estimate the provincial and territorial sequence of accounts for the household sector even though it is not so for the counterpart sectors that households transact with. The current account for the household sector is available in table 36-10-0224-01.

Statistics Canada also releases provincial and territorial breakdowns for the Government of Canada, despite the issues mentioned above. These are based on arbitrary allocations for the federal government components and for this reason should be considered illustrative rather than definitive or unique. For example, interest paid on the federal public debt is allocated to provinces and territories on a per capita basis, although alternative allocations are also reasonable such as per household or per dollar of provincial/territorial GDP.

5.5 Final expenditure accounts at constant prices

The discussion of the income and expenditure accounts so far has focused on the estimates **at current prices**. In the case of the expenditure-based GDP accounts, these estimates change, between one period and another, because the associated prices and underlying volumes are both likely to change. For example, if household expenditure on men's shirts increased 5% between 2008 and 2009, some of that change would be due to higher or lower prices for shirts and the rest of the change would be attributable to households purchasing more or fewer shirts. To provide valuable analytical understanding, all of the expenditure-based GDP estimates at current prices are decomposed into separate price and volume components. This applies to the provincial and territorial estimates as well as the national ones.

The decomposition of expenditure-based GDP into price and volume components is based on the fact that most of the final expenditure components, which were discussed in Section 5.2.2, are comprised of products that are bought and sold on competitive markets at observable prices. For most expenditure product classes it is possible to construct a price index time series indicating the average change through time in the prices of products within that class. For example, the Consumer Price Index does precisely that for various classes of consumer products. The estimates at current prices for a particular expenditure time series (for example, expenditure by households on men's shirts) can then be divided by the corresponding price index time series—a process known as **deflation**—to derive the resultant volume, or 'real', time series. Finally, the price indexes and the resulting volume indexes for the full range of expenditure classes making up expenditure-based GDP can be aggregated, yielding a price-volume decomposition for GDP and its major components.

In Canada, the aggregation of the various price and volume indexes comprising expenditure-based GDP is done using the well-known chain Fisher index number formula, as is recommended by *SNA 2008*.[24] This aggregation process is explained in chapter 7 of the current volume. Alternative price and volume estimates using the Laspeyres fixed-basket formula are also made available, both at the national level and for each province and territory.

No such decomposition is provided for most of the income-based GDP estimates, however, because these estimates cannot easily be interpreted as the product of distinct and measurable price and volume components. This is perhaps most obvious for gross operating surplus and gross mixed income, which are balancing items. But it is also true for compensation of employees and taxes less subsidies on production, products and imports, the other two major components of income-based GDP. One might argue that compensation of employees is, in fact, the product of the price and volume of 'labour' employed, and so should also be decomposed similarly. However, labour services are far from homogeneous and the 'prices' that employers pay for these services are generally complex and

multi-faceted so no such decomposition is presently attempted.[25] In the case of property income receipts and payments or current and capital transfers as recorded in the sequence of accounts there is no underlying 'product' of any kind with which to associate prices and volumes. Accordingly the estimates for gross and net national income, national disposable income and gross national saving also are not decomposed into price and volume components.

However, a few other measures of 'real' income are available in Canada's system of macroeconomic accounts: **real gross domestic income (GDI), real gross national income (GNI), and real personal disposable income (PDI)**.[26] The first of these gauges the purchasing power of the total incomes generated by domestic production. This purchasing power can change, from one period to the next, when the **terms of trade** change—that is, when export prices rise or fall relative to import prices. *SNA 2008* defines **the trading gain or loss from changes in the terms of trade** as the difference between real GDI and real GDP.[27] Real gross national income differs from real GDI by adding real primary incomes receivable from abroad net of real primary incomes payable abroad. Finally, real personal disposable income is equal to household sector disposable income deflated by the price index for final household consumption expenditure.

5.6 The income and expenditure accounts compared to the supply and use tables

The income and expenditure accounts are similar and closely related to the supply and use tables that are described in chapter 4. Both focus on the key aggregate gross domestic product and its main components as depicted in the fundamental national accounts identity. The two sets of accounts are fully integrated with each other, both in terms of the concepts they employ and the statistical estimates they embody. Each of the two sets of accounts has its own uses.

One big advantage of the income and expenditure accounts as compared with the supply and use tables is that they are quite timely, being released on a quarterly basis within 60 days of the reference quarter. In comparison, the supply and use tables are released annually within about 35 months of the reference year. One offset to this timeliness advantage, however, is that in order to achieve greater timeliness the initial estimates of the income and expenditure accounts are less accurate and must be revised in subsequent periods as more source data become available. The other main offset is that the income and expenditure accounts are considerably less detailed than the supply and use tables.

Another key aspect of the income and expenditure accounts is that they are centred on institutional units—households, NPISHs, corporations, governments and non-residents. They articulate the flows of primary income and expenditure, property income, transfers, saving and investment among these sectors and they illuminate the types of economic behaviour exhibited by the different institutional sectors. The supply and use tables, in contrast, are based primarily on establishments rather than institutional units and focus on production relationships by industry.

Both sets of accounts include price-volume decompositions for the various expenditure series they contain and both have adopted the chain Fisher formula for purposes of aggregating the price and volume indexes.

5.7 How the income and expenditure accounts are used

Because of their comparative timeliness and comprehensive scope, as well as their focus on the economic behaviour of the institutional sectors, the income and expenditure accounts are central to most macroeconomic analyses done in Canada.

The time series database the accounts provide is used by the finance ministries of the federal, provincial and territorial governments to monitor and analyze economic developments, to formulate fiscal policies and to develop regular forecasts of future economic trends. The various types of tax and expenditure programs those governments are responsible for can be linked, through statistical regression modelling and other techniques, to the main economic factors that drive them, many of which are captured in the accounts. For example, the revenues governments receive from the personal income tax and the harmonized sales tax are closely associated with household primary incomes and household final consumption expenditures on goods and services as measured in the accounts. Business cycles, which governments typically aim to moderate through variations in taxation and expenditure policies, are evident in and can be analyzed using national accounts estimates of business investment spending, inventory accumulation and household durable goods expenditures. Indeed, the origin of national accounts in the 1940s

is closely associated with the aggregate-demand-oriented model of business cycles attributed to John Maynard Keynes.[28]

The Bank of Canada also uses the income and expenditure accounts as a framework for analyzing the impact of monetary policy on the macro economy. The price-volume decomposition of aggregate demand that is provided by the accounts is especially valuable in this regard since the Bank closely follows growth of nominal and real GDP as well as the aggregate measure of inflation provided by the accounts and the breakdown of that measure in terms of the different components of aggregate demand.

The accounts provide an ideal framework for global economic analysis by the major international institutions: the European Commission (EC), the International Monetary Fund (IMF), the Organization for Economic Co-operation and Development (OECD), the United Nations (UN) and the World Bank (WB). By providing a common standard for the compilation of economic statistics, SNA 2008 makes it possible for these institutions to collect and assemble national accounts estimates from all of their member countries and aggregate them in various ways. The EC, for example, compiles estimates of GDP and its components for the 28 member states of the European Union. It uses these statistics for a range of budgeting purposes. The OECD combines the national accounts estimates of its 34 member countries to estimate GDP for the non-contiguous region comprised by its members. Its database of national accounts statistics for member countries is invaluable for the types of analysis the organization conducts. The IMF, UN and WB use the national accounts to compile regular estimates of global GDP. In addition, these five international institutions use their member countries' national accounts statistics as the basis for a wide range of analytical studies, forecasts and member country assessments.

The income and expenditure accounts are also used in connection with a number of international and national payment formulas. International institutions generally tie the annual contributions made by their members, in part, to the level of their GDPs. In Canada, some federal-provincial transfer formulas—notably the Equalization program and the Territorial Formula Financing program—are based partly on the income and expenditure components of GDP. As mentioned in chapter 4, the harmonized sales tax revenue allocation formula relies on national accounts estimates including statistics from the income and expenditure accounts.

In Canada, private and public sector economists use the income and expenditure accounts for economic modelling and related analyses. The estimates are valuable, for example, in studies of economic policy proposals (for example, the impact of alternative tax reduction ideas), significant events (for example, the impact of holding the Olympic Games in Canada) and 'shocks' of various kinds (for example, the impact of a sudden large decrease in the international price of crude petroleum or of a weather-related natural disaster). In this regard, the accounts have been found especially useful by some analysts because of their origin in and close relationship to standard business and government accounting frameworks. Their consistent structure also makes them useful for inter-provincial comparisons.

Finally it should also be recognized that, like the supply and use tables, the income and expenditure accounts provide valuable checks within Statistics Canada on the quality and coherence of the survey- and administrative-data-based statistics the agency is responsible for. In the course of compiling the national income and expenditure estimates every quarter and the provincial and territorial income and expenditure accounts every year, Statistics Canada analysts frequently encounter apparent inconsistencies or contradictions within the source data the accounts are based upon. They follow up on these indications and attempt to resolve them, thereby leading to improvements not just in the national accounts estimates themselves, but also in the underlying survey and administrative source data.

Notes for chapter 5

1. Estimates for the Canadian GDP by income and by expenditure categories consistent with *SNA 2008* are available from 1981 onward. Although the accounts started in 1926, a number of historical revisions in which different concepts were adopted created a first break in the series in 1947 and then in 1961 and most recently in 1981. Users can still access some of the earlier estimates but have to use them with caution as they were not calculated using the same methods and concepts as those from 1981 to date. Chapter 2 provides information about the historical revisions.

2. Estimates for each quarter are revised when those for subsequent quarters of the same year are published. Annual revisions are generally made back three to four years and released with the first quarter estimates. From time to time Statistics Canada will revise the GDP by income and by expenditure accounts more than four years, in order to incorporate conceptual or methodological changes. These types of changes are announced well in advance of their release. Statistical revisions incorporate the most recent information such as quarterly and annual survey results, taxation statistics, public accounts, censuses and the annual benchmarking results from the supply and use accounts.

3. For example, in the United States the expenditure-based estimate of GDP is assumed to be accurate and the statistical discrepancy is allocated entirely to income-based GDP.

4. Compensation of employees does not include incomes of self-employed individuals such as consultants, lawyers and dentists, farmers and working owners of unincorporated businesses. The income of these individuals is included in gross operating surplus if the individuals are incorporated or in gross mixed income if they are unincorporated.

5. Quarterly estimates of compensation of employees are available by province and territory from 1981 to date in table 36-10-0114-01. Monthly compensation of employees' estimates by industry are available in table 36-10-0205-01 from 1997 to date.

6. Locally engaged residents of other countries who work on military bases or in embassies are not included in Canada's compensation of employees.

7. The *SNA 2008* concept 'consumption of fixed capital' refers to normal patterns of depreciation. In audited corporate financial accounts, in contrast, consumption of fixed capital may be recognized either more or less rapidly for tax or other reasons.

8. The output of the government and NPISH sectors is largely non-market output and as such is imputed at cost. The imputation includes an allowance for the consumption of fixed capital, but by *SNA 2008* convention includes no allowance for a return to compensate for risking capital in the production process.

9. As they are defined in the SNA, the corporation and non-resident sectors (unlike the NPISH and government sectors) never make expenditures in direct support of consumption by households. All consumption by corporations is intermediate consumption.

10. In principle, household final consumption expenditure also includes the imputed value of consumption-related barter transactions and goods (not services) that are both produced and consumed by a household. These are considerably more difficult to measure than monetary, market-based consumption-related transactions and they are considered negligible in Canada.

11. See table 36-10-0124-01. On COICOP (Classification of Individual Consumption According to Purpose), see chapter 3.

12. Some categories of final consumption expenditure also yield a stream of benefits that extends beyond a year, but these are treated as consumption rather than production benefits and for this reason are not considered gross fixed capital formation. Examples are purchases of new automobiles, furniture and major appliances. New housing expenditures are considered to be a special case, since the normal period of time over which they yield consumption benefits is lengthy (typically 50 years or more). They are treated differently from expenditures on other consumer durable goods. Consistent with SNA 2008, Canada's system of macroeconomic accounts considers them to be a form of gross fixed capital formation rather than a type of final consumption expenditure.

13. *SNA 2008* does not define a 'business sector' in this way.

14. When a non-resident unit does make an investment expenditure in Canada, a Canadian-resident unit is deemed to be created to make the resulting investment and the non-resident unit is deemed to hold the shares in the Canadian-resident investing unit.

15. Detailed breakdowns for gross fixed capital formation are available in table 36-10-0108-01.

16. This poses little practical problem when the investment expenditure is measured at cost, since the land element of the cost can simply be ignored. However, excluding land from the value of new residential structures is more challenging since the valuation is typically based on market prices that include the value of the land. In this case, estimates of the implicit value of the associated land are made and these are deducted from the market price.

17. See table 36-10-0109-01.

18. See table 12-10-0134-01.

19. The imports statistics are also in table 12-10-0134-01, along with the exports.

20. The provincial and territorial income-based GDP table is available in table 36-10-0221-01 and the expenditure-based GDP table is in 36-10-0222-01.

21. A similar situation exists in the national accounts with respect to multi-national corporations. However, Canada's corporate tax laws require that corporations operating in Canada have well-defined income statements and balance sheets for the parts of their operations that are within Canada's borders, even if those corporations have closely connected operations abroad. There is no comparable requirement for multi-provincial corporations.

22. For example, one might allocate a corporation's assets and property income according to where its employees or its non-financial assets are located. Or it might be based on where its sales revenues originate.

23. SNA 2008 suggests these difficulties could be dealt with by creating an extra 'region' in the accounts to hold the transactions of the central government and possibly some large corporations: "Consequently, a reasonable solution is to introduce a kind of national 'quasi-region', not allocated as such between the regions and being treated as an extra region. This national 'quasi-region' may include the head offices of enterprises that have establishments located in, and assigned to, the regions." (*SNA 2008*, p. 400). This approach is not followed in Canada.

24. See *SNA 2008*, chapter 15.

25. Nor does *SNA 2008* recommend such a decomposition.

26. See table 36-10-0105-01.

27. *SNA 2008*, p. 316.

28. Keynes book, *The General Theory of Employment, Interest and Money*, was published in 1936. It argued that in the 'short run'—viewed as a variable period of time, usually just a few years—output is more strongly influenced by aggregate demand than by aggregate supply capacity. The book argued that during recessions—periods when output declines and economic pessimism sets in—governments should intervene to support aggregate demand. See chapter 2 for information about the history of the national accounts.