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User Guide: Canadian System of Macroeconomic Accounts

Chapter 6 Financial and wealth accounts

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Chapter 6 Financial and wealth accounts

What this chapter seeks to do

The purpose of this chapter is to explain the financial flow accounts, the other changes in assets accounts and the national balance sheet accounts in terms of their internal structure, their relationship to the rest of the Canadian system of macroeconomic accounts and how these accounts are used to interpret economic developments. These accounts record transactions and other changes related to the accumulation of assets and provide the stock dimension of the national accounts.

This chapter links to *SNA 2008* chapters 10, 11, 12 and 13.

6.1 Introduction

6.1.1 Financial flow accounts

6.1.1.1 Basic concepts and structure

The **financial flow accounts**[1] are both the financial counterpart of and an extension to the income and expenditure accounts that are discussed in chapter 5. They display net transactions in financial assets and liabilities by instrument (deposits, bank loans, bonds, etcetera—the financial instrument categories are discussed in section 6.5) for each of the institutional sectors of the economy, with added emphasis on the transactions of financial institutions. The objective is to record financial activity in the economy. The financial transactions that underlie economic activity in the various institutional sectors are shown, including the associated financial intermediation activity, which is to say the flow of funds through financial institutions. The accounts also allow for the analysis of financial activity by instrument or market segment.

Canada is one of the few countries that produce a full set of financial flow accounts combining the capital account with the financial account of *SNA 2008*. As discussed in earlier chapters, the overall structure includes a set of integrated sector accounts recording income flows, transfers, expenditures, saving, investment, borrowing/lending, non-financial assets and financial asset/liability positions. The financial flow accounts are a key component of the sequence of sector account transactions.

6.1.1.2 The fundamentals of financial transactions

An increase in the financial assets of one institutional unit is always offset by a decrease in the assets or an increase in the liabilities of another. The transactions recorded in the financial flow accounts may reflect the financing of current or capital expenditures—current consumption, new capital formation, transactions in existing non-financial assets—or they can be purely financial transactions. For example, they can be portfolio adjustments (exchanging one financial instrument for another) or financial investments (for example, borrowing funds to contribute to a Registered Retirement Savings Plan). The financial transactions recorded in these accounts do not precisely reveal what combinations of these factors are associated with each recorded financial flow, though some links are straightforward[2]

Financial transactions, by instrument, are recorded on a net basis. For example, transactions related to government borrowing in the form of bonds are shown as new issues less retirements. In this sense, the 'net' transaction is new funds raised in the bond market. Similarly, a pension fund might choose to sell equities of the petroleum industry and purchase equities of the banking industry. The difference in the value of the two financial transactions is net investment or divestment in corporate equities for that pension fund.

Text box 6.1
An example of net transactions

Suppose a household receives $10,000 in cash for labour services and pays $8,000 in cash to purchase goods and services over the course of an accounting period, depositing the remaining $2,000 in a bank account. The gross flows 'in' are $10,000 and the gross flows 'out' are $8,000. The net flow—which is recorded in the financial flow accounts—is $2,000.

The financial flow accounts are explained in detail in section 6.2 below.

6.1.2 Other changes in assets accounts

While the financial flow accounts record changes in financial assets and liabilities between opening and closing balance sheets that are associated with transactions during the accounting period, the value of assets and liabilities held by an institutional unit can also change for other reasons. These other types of changes, referred to as **other flows**, are recorded in the **other changes in assets account**.

There are two main components to this account. One is the **other changes in the volume of assets account**. This account includes changes in non-financial and financial assets and liabilities relating to the economic appearance and disappearance of assets, the effects of external events such as wars or catastrophes on the value of assets and changes in the classification and structure of assets. The other main component is the **revaluation account**, showing holding gains or losses accruing to the owners of non-financial and financial assets and liabilities during the accounting period as a result of changes in market price valuations.

The other changes in assets accounts are explained in greater detail in section 6.3 below. These accounts are a recent addition to Canada's system of macroeconomic accounts and they are available in table 36-10-0448-01.

6.1.3 National balance sheet accounts

6.1.3.1 Basic concepts and structure

The **national balance sheet accounts** provide a statistical picture of the major stocks in the economy, both 'real'[3] and financial. As such, they provide a stock dimension to the sequence of national accounts. The components of the balance sheet accounts are directly related to the financial flow accounts since the changes in a balance sheet's elements during a period of time are partly determined by the corresponding capital and financial transactions in that period of time. They are also related to the other changes in assets accounts.

The stocks include a variety of types of non-financial and financial assets, liabilities and the corresponding estimates of net worth by institutional sector of the economy. The accounts display the financial position of the sectors of the economy, the ownership of non-financial and financial assets and the related debt associated with those assets. In addition, they underline the important role the financial system plays in holding financial assets and facilitating the incurrence of liabilities associated with the accumulated savings of the institutional sectors.

The sector balance sheets of households, non-profit institutions serving households, corporations and governments can be aggregated to the **national balance sheet**—the balance sheet for the nation. This aggregate can be consolidated by subtracting national liabilities from national financial assets, which yields Canada's net investment position with non-residents. The **consolidated national balance sheet** is a statement of **national wealth** in the form of economy-wide non-financial assets. It is also a statement of **national net worth**, which is defined as economy-wide non-financial assets plus Canada's international asset-liability balance. The impact of Canada's net investment position with non-residents on **national net** worth depends on whether it is a net asset position or a net foreign debt position. National net worth can also be derived as the sum of the net worth of each of the Canadian institutional sectors.

6.1.3.2 The fundamentals of asset positions

Balance sheet statistics dovetail with the concept of net financial transactions for asset-liability instruments (for example, total new borrowing less repayment in any given period) and non-financial asset acquisitions less depreciation. The statistics present the outstanding amount of non-financial and financial assets and liabilities at the end of any given accounting period.

In principle, non-financial and financial assets and liabilities should be valued at current market prices. To accomplish this, certain assets such as loans are shown net of any impairment (that is, allowance for doubtful accounts). This adjusts the asset value for credit risk, aiming at its estimated realizable value. Financial assets denominated in foreign currency are also converted to a current domestic currency value using prevailing exchange rates. Some other financial assets, such as tradable securities, are adjusted for market price variations to bring them to current market value. Lastly, current value estimates of non-financial assets are constructed using a variety of methods aimed at approximating their current market values.

The balance sheet accounts are explained in section 6.4 below.

6.1.4 Outline of this chapter

The government sector components of the Financial and wealth accounts are similar to certain constituents of the government finance statistics, discussed in chapter 9, and the non-resident sector financial flow accounts and balance sheet accounts mirror the financial accounts of the balance of international payments and international investment position, discussed in chapter 8. The financial flows for the remaining sectors—households, non-profit institutions serving households, non-financial corporations and financial corporations—are discussed only in this chapter.

The remainder of this chapter is organized in five more sections. Section 6.2 describes the financial flow accounts, including the financial intermediation system. In section 6.3, the other changes in assets accounts are fully explained. The national balance sheet accounts are reviewed in section 6.4. The topic of section 6.5 is the financial instrument categories that are used in both the financial flow accounts and the national balance sheet accounts—more specifically, what types of instruments each category includes. Finally, section 6.6 provides an illustration of the ways in which the Financial and wealth accounts can be used to analyze current financial developments and trends in Canada's economy.

6.2 Financial flow accounts

6.2.1 What are the financial flow accounts?

The income and expenditure accounts, discussed in chapter 5, could equally well be called the 'real' accounts. They record such flows as the payment of wages by an employer to one of her employees or the purchase of consumer products by a household from a retailer. They also combine the saving estimates with non-financial capital acquisitions on the capital account (for example, the building of a new factory). The **financial flow accounts** incorporate the **capital account** and provide the financial counterparts to these non-financial flows.

For the payment of wages, the immediate financial counterpart might be an increase in the bank deposit assets of a household and a corresponding decrease in the deposit assets of a corporation. In the case of the purchase of consumer products, the counterpart might be a decrease in the currency assets of the household and a corresponding increase in the currency assets of the retailer. With respect to the construction of a new factory, a corporation might issue shares to finance its construction, resulting in an increase in corporate equity as well as an increase in the holdings of corporate stocks by domestic or non-resident institutional investors who acquire these securities.

But the financial flow accounts are really much more than this. Many of the financial transactions they record have no direct counterpart in the non-financial accounts. In the example of the payment of wages just mentioned, once the household receives the funds in its bank account it might choose to use some of the money to purchase a Government of Canada bond. As a result, there would be a financial flow out of the household's bank account and another flow into its securities account. Accompanying these financial asset flows would be corresponding liability flows. The bank would see a corresponding decrease in its deposit liabilities and the government would experience an increase in its bond liabilities. When the government deposited the funds it gained by selling the bond, it would see an increase in its deposit assets and its bank would see a corresponding increase in its deposit liabilities. This

process of financial intermediation can get very complicated as assets get traded for other types of assets or get liquidated in order to reduce some type of liabilities, and new liabilities get created in order to generate funds that ultimately raise bank deposits or some other type of assets and so on. The financial flows provide a comprehensive account of the workings of the **financial intermediation system** across the institutional sectors, according to the various categories of financial instrument (see section 6.5) and through time.

It is also important to recognize what the financial flows do **not** record.

- Changes in corporate net worth due to retained earnings are not included directly in the financial flows. Rather, retained earnings are part of saving in the non-financial flows. However, they will affect the financial flows indirectly as corporations use those earnings to purchase financial assets or reduce liabilities.
- Brokerage charges and similar margins as well as the income arising from them are excluded from the valuation of financial flows as well, since they belong in the production accounts, although again since these charges have an effect on saving in the brokerage industry they also may influence indirectly their transactions in financial assets and liabilities.
- Likewise the financial flow accounts do not register changes in the value of existing non-financial and financial assets or liabilities that are not involved in transactions, but nevertheless observe changes in their market prices. This is true as well for price changes associated with foreign currency fluctuations. These changes are recorded in the other changes in assets account.
- Nor do the financial flows record changes in the value of non-financial and financial assets or liabilities for a particular sector as a result of reclassifications of institutional units from one sector to another. These changes are recorded in the other changes in assets account.
- Destruction of non-financial assets due to catastrophes, weather events and wars also do not get reflected in the flows, nor do new discoveries of natural resources. These changes are recorded in the other changes in assets account.
- The writing off of corporate or government financial assets likewise is not considered to be financial flows. These changes are recorded in the other changes in assets account.

In short, the financial flows are all about changes in net holdings of financial assets and liabilities by the institutional sectors as a result of transactions in financial instruments.

6.2.2 The financial intermediation system

As mentioned briefly in chapter 3, the financial intermediation sector has the following sub-sectors in Canada's macroeconomic accounts:

Code	Subsector
S12	Total financial sector
S121	Monetary authorities
S122	Chartered banks and quasi-banks
S1221	Chartered banks
S1222	Quasi-banks
S123	Insurance and pension funds
S1231	Insurance business
S1232	Segretated funds of life insurance companies
S1233	Trusted pension plans
S1234	Property and casualty insurance companies.
S124	Total other private financial institutions
S1241	Mutual funds
S12411	Money market funds
S12412	Other mutual funds
S1242	Sales finance and consumer loan companies
S1243	Issuers of asset-backed securities
S1244	Other private financial institutions
S125	Financial government business enterprises

The classification is used in both the financial flow accounts and the national balance sheet accounts. In this classification:

- **The monetary authorities** include the Bank of Canada and the Exchange Fund Account, the latter representing the largest component of Canada's official international reserves.
- **Chartered banks** are financial institutions that are federally licensed, under the terms of the Bank Act, to accept deposits and lend out the funds so obtained. They are regulated by the Office of the Superintendent of Financial Institutions.
- **Quasi-banks** are credit unions and Caisses Populaires, which are similar to banks but operate as non-profit institutions for the benefit of their members and are mostly regulated by provincial governments, plus trust and loan companies.
- **Insurance business** refers to direct individual and group life and health (accident and sickness) insurance companies, plus life and health reinsurance carriers.
- **Segregated funds of life insurance companies** are investment vehicles offered by insurance companies that are similar to mutual funds in some respects, but which typically offer a degree of protection against investment losses plus a death benefit.
- **Property and casualty insurance companies** provide direct property insurance, automobile insurance, liability insurance, a small amount of accident and sickness insurance and reinsurance in these same four categories.

- **Trusteed pension plans** are pension schemes that are managed by independent trustees who collect contributions from employees and employers, invest the proceeds and pay pension benefits according to the terms of the plans.
- **Money market** funds are widely-held pools of capital that are invested in short-term securities such as Treasury bills and commercial paper.[4]
- **Other mutual funds** are widely-held pools of funds that are invested in stocks, bonds or other financial instruments.
- **Sales finance and consumer loan companies** consist of credit-card-issuing companies, sales finance companies[5] and consumer lending companies.
- **Issuers of asset-backed securities** are trusts that pool together various types of assets, sell securities related to the pool and pay out the income that flows from these assets to holders of the securities. The assets in the pool are said to be securitized and the securities are said to be collateralized.
- **Other private financial institutions** include investment banks, securities dealers, securities brokerage firms, commodity contracts dealers and brokers, mortgage and other loan brokers, financial transactions processing and clearing house operators, securities and commodities exchanges, closed-end funds, portfolio managers, investment advisors, insurance agencies and brokers, claims adjusters, as well as holding companies, head offices of business enterprises and other miscellaneous intermediation and financial investment companies.
- **Financial government business enterprises** include direct, public automobile insurance agencies plus all government business enterprises identified with financial activities such as Export Development Canada, the Canada Mortgage and Housing Corporation, the Alberta Treasury Branches and any other organizations similar to these.

The details of this classification of financial units are unique to Canada and reflect the country's distinctive institutional structure.[6] A large portion of the funds moving through the Canadian economy at any time are routed through the financial institutions.[7] As a result, the financial asset and liability flows for the financial corporations sector tend to be very large. However, the **net** lending/borrowing of the sector is often rather small compared to that of the households, non-financial corporations, governments and non-resident sectors.

Any single financial intermediation transaction is associated with four entries in the financial flows matrix and this is sometimes referred to as the four-transaction rule. A transaction often involves two sectors, and within each there are both source and use of funds entries. For example, consider the sale of new equity by a non-financial corporation to a household for $1000. The first entry records the purchase by the investor, the households sector—an increase in equity assets. The second records the offsetting sale by the non-financial corporations' sector—an increase in equity liabilities. The third shows the source of funds for the investing sector's purchase, such as a bank account, and a corresponding reduction in financial assets there. The final entry records the non-financial corporation's use of the funds raised by the sale, such as an increase in its bank deposit assets. Figure 6.1 shows these transactions in a T-account format.

Figure 6.1
Illustration of the four-sector rule using T-accounts

Dollars

Non-financial corporation		Household	
Assets	Liabilities	Assets	Liabilities
1,000	1,000	1,000 -1,000	

6.2.3 A sectoral perspective on the financial flows

The financial flow accounts can also be viewed from an institutional sector perspective. As seen in chapter 5, the balancing item in each sector's use of income account is net saving, which is carried down into the **capital account**. This net saving, plus the allowance for consumption of fixed capital and any net capital transfers, can be used by the sector to accumulate non-financial assets. If the sector does not use all of these funds in this way, it lends any remaining funds to other sectors and this amount is referred to as net lending. If the sector accumulates more non-financial assets than the sum of its gross saving plus capital transfers, then the difference is borrowed from other sectors and is called net borrowing. This net lending or net borrowing is carried forward to the sector's financial account in the **financial flow accounts**, a key purpose of which is to explain how the sector's net lending or borrowing is realized through net transactions in financial assets and liabilities.

In effect, the **financial flow accounts** yield two independent estimates of net lending or borrowing for each sector. One originates from the 'real' accounts and represents the difference between income and expenditure (both current and capital), while the other comes from the financial accounts and is the difference between net financial asset acquisition and net liability incurrence. This identity—that net lending/borrowing as calculated in the 'real' accounts must equal net financial investment as calculated in the financial accounts—is a potent tool for assessing the overall consistency of the estimates for the full sequence of accounts of each sector. For each institutional sector, the net lending/borrowing estimate from the 'real' accounts is reconciled to net financial investment from the financial flow accounts. The difference between these two items is recorded as a statistical discrepancy.

Another key identity in the financial flow accounts is that net lending and borrowing for the system as a whole must be zero, since the system is defined to include the rest of the world as well as the domestic economy. Expressed a bit differently, the system as a whole is a closed one, so a sector cannot borrow funds unless another sector is willing to lend funds, and likewise a sector cannot lend funds unless another sector is willing to borrow funds. The net borrowing of all the borrowing sectors together must be exactly offset by the net lending of the other sectors. This means, for example, that if the households, NPISH, corporations and government sectors were all net borrowing sectors overall, then the non-resident sector would necessarily be a net lending sector overall. Similarly, in the capital accounts saving equals investment across all sectors (including the non-resident sector).

For the financial account, this identity holds true not just for the total of all financial assets/liabilities, but also for each financial instrument individually. This is because every dollar of financial assets is, by definition, mirrored by a corresponding dollar of liabilities. Thus, for example, if in a particular period the households sector was a net borrower with respect to the 'mortgages' financial instrument category, the other sectors collectively would of necessity be a net lender with respect to mortgages.[8] In other words, the total change in financial assets for any financial instrument category must equal the total change in liabilities for that same category.[9] The identity is helpful to national accountants since it provides an automatic check of consistency for the borrowing and lending statistics in each financial instrument category. Moreover, when no useful source data are available for the lending or borrowing of a particular sector with respect to a particular financial instrument, the identity can be used to calculate the missing information residually (assuming reasonably good statistics are available for the lending and borrowing of the other sectors).[10]

To summarize, there are two sets of identities constraining the financial flow matrix. They are as follows:

1. Net lending or borrowing, determined in the income and expenditure accounts, must be equal to net transactions in financial assets, minus net transactions in financial liabilities, plus the discrepancy. This identity must hold true for each sector individually. A large discrepancy signals an important statistical incoherence.
2. Total net transactions in financial assets (national plus non-resident) must equal total net transactions in financial liabilities. This identity must hold for each financial instrument category individually.

A central point is that most transactions recorded in the current and capital accounts have counterpart transactions in the financial account. Just as each sector's net lending or borrowing during an accounting period can be calculated by tallying all of its sources of income and deducting all of its expenditures, as explained in chapter 5, so can that net lending or borrowing be calculated by adding up all of the financial asset transactions and deducting all the financial liability transactions by that sector during the period. In principle, the two ways of calculating net borrowing

or lending must yield the same answer, although in practice they are likely to be different because of imperfections in the source data underlying the macroeconomic statistical system.

6.2.4 The full financial flows dataset: an example

The financial flows dataset can be thought of as a matrix with three dimensions. The first is institutional sectors, of which the Canadian system of macroeconomic accounts has 36 (counting both sectors and sub-sectors);[11] the second is financial instrument categories, of which the CSMA includes 83 (counting both categories and sub-categories); and the third is time, which is measured in quarters from the first quarter of 1990 to date.[12]

The 36 sectors displayed in the matrix are discussed in chapter 3. While the non-financial sectors are the centre of attention in chapter 5, the financial sector and its sub-sectors come into greater focus in this chapter. The instrument categories are discussed in detail in section 6.5.

Table 6.1 provides a grouped view of the financial flow matrix, in which the sectors and instrument categories have each been combined into a smaller number of aggregates and the statistics are shown for calendar year 2009 as an example.[13]

Table 6.1
Financial flows matrix, summary presentation, 2009

	Sector							
	Total, all sectors	National financial accounts	Households and non-profit institutions serving households	Non-financial corporations	Financial corporations	Governments	Statistical discrepency	Non-residents
	millions of dollars							
Net saving	75,062	21,378	42,184	15,369	-2,760	-33,415	0	53,684
Consumption of fixed capital at replacement cost	268,289	268,289	47,339	154,894	16,861	49,195	0	0
Net capital transfers	0	-816	820	3,189	-77	-4,748	0	816
Discrepancy, income side	853	853	0	0	0	0	853	0
Equals: gross saving and capital transfers	344,204	289,704	90,343	173,452	14,024	11,032	853	54,500
Less: Non-financial capital acquisition	344,204	344,204	125,466	137,760	9,810	72,021	-853	0
New capital	350,517	350,517	114,064	155,230	9,146	72,077	0	0
Existing capital	0	0	11,731	-10,135	-1,593	-3	0	0
Inventories	-5,460	-5,460	-329	-7,335	2,257	-53	0	0
Discrepancy, expenditure side	-853	-853	0	0	0	0	-853	0
Net lending or borrowing	0	-54,500	-35,123	35,692	4,214	-60,989	1,706	54,500
Net financial investment	0	-55,057	-34,878	35,582	5,297	-61,058	0	55,057
Net transactions in financial assets	515,160	377,469	70,946	33,426	193,542	79,555	0	137,691
Official international reserves	11,617	11,617	0	0	11,617	0	0	0
Total currency and deposits	95,784	106,071	68,430	17,979	37,092	-17,430	0	-10,287
Debt securities	125,926	40,007	-17,663	-29,513	83,595	3,588	0	85,919
Loans	211,242	187,529	-1,834	5,140	111,931	72,292	0	23,713
Equity and investment funds	290,427	244,966	121,805	36,815	65,216	21,130	0	45,461
Life insurance and pensions	39,069	39,069	39,069	0	0	0	0	0
Other accounts receivable	-258,905	-251,790	-138,861	3,005	-115,909	-25	0	-7,115
Net transactions in financial liabilities	515,160	432,526	105,824	-2,156	188,245	140,613	0	82,634
Official international reserves	11,617	0	0	0	0	0	0	11,617
Total currency and deposits	95,784	83,790	0	0	78,799	109	0	11,994
Debt securities	125,926	114,289	0	21,671	-49,909	142,527	0	11,637
Loans	211,242	187,247	102,724	-7,657	88,299	3,881	0	23,995
Equity and investment funds	290,427	263,832	0	77,185	186,647	0	0	26,595
Life insurance and pensions	39,069	39,069	0	0	33,487	5,582	0	0
Other accounts payable	-258,905	-255,701	3,100	-93,355	-153,960	-11,486	0	-3,204
Discrepancy	0	557	-245	110	-1,083	69	1,706	-557
Net financial investment (Financial flow acounts)	..	..	..	..	..	..	..	55,056
Plus: net reinvested earnings on direct investment	..	..	..	..	..	..	..	-7,494
Balance of international payments, financial account, net lending or net borrowing	..	..	..	..	..	..	..	47,562

.. not available for a specific reference period

Source: Statistics Canada, table 36-10-0578-01.

The first row in Table 6.1 shows **net saving** by sector as calculated in the income and expenditure accounts (see chapter 5). As can been seen, the households and NPISH sector, the non-financial corporations sector and the non-resident sector were the saving sectors in 2009 while the government sector was the main dissaving sector. To net saving is added **consumption of fixed capital at replacement cost, net capital transfers** to/from the sector,[14] and the income-side all-sector statistical discrepancy from the income and expenditure accounts. This yields **gross saving and capital transfers**. This represents the total amount of money that is received by sectors but not spent on current consumption, which is therefore available either for current investment or for lending to other sectors.

Non-financial capital acquisition, or 'investment' is comprised of **new capital** formation, purchases and sales of **existing capital** between sectors,[15] inventory change and the expenditure-side all-sector statistical discrepancy from the income and expenditure accounts.

Net lending or borrowing for each sector, as calculated in the income and expenditure accounts (as explained in chapter 5) is the difference between gross saving and capital transfers on the one hand and non-financial capital acquisition on the other. In the particular year shown in Table 6.1, the households plus NPISH sector and government sector were net borrowers, while the non-financial and financial corporations and non-residents sectors were net lending sectors. The net borrowing of the national economy (excluding the non-resident sector) was $54,500 million and this was necessarily equal to the net lending of the non-resident sector. This means capital was flowing into Canada that year.

The second estimate of net lending or borrowing for each sector is calculated in the financial flow accounts by subtracting net transactions in financial liabilities from net transactions in financial assets. It is called net financial investment. As noted earlier, this second estimate should be equal, in principle, to the corresponding net lending or borrowing estimate that is calculated in the income and expenditure accounts. In practice, the two calculations are not equal due to variations in accounting and reporting practices of institutions in different sectors, non-reporting of transactions and other limitations of the statistical system. The discrepancy between the two is added to the financial flow estimate to bring the two accounts into balance. In this particular period, the absolute value of the discrepancy is largest for the financial corporations sector.

Net transactions in financial assets for each of the sectors is broken down by financial instrument category. The word 'net' is quite important in this context. Typically each sector acquires and disposes of financial assets during any particular period. The gross acquisitions and gross disposals can be very large, but they are not recorded in the financial flow accounts. Only the difference between the two, called net transactions in financial assets, is reported. However, even net transactions were quite large in this particular year, totalling $377,469 million for the nation and $137,691 million for non-residents.[16]

All institutional sectors had positive net transactions in financial assets in 2009. The households and NPISH sector had positive net asset acquisitions in the currency and deposits, equity and investment funds and life insurance and pensions categories.[17] Non-financial corporations had positive net asset acquisitions in the currency and deposits, loans, equity and investment funds and other accounts receivable instrument categories. Financial corporations had positive net acquisitions as well, in all categories except other accounts receivable. Governments had positive net transactions in financial assets in debt securities, loans and equity and investment funds. Finally, the non-resident sector had positive net transactions in debt securities, loans, and equity and investment funds.

Only one national sector ever records net financial asset transactions in official monetary reserves; the financial corporations sector (more specifically, the monetary authorities sub-sector within that sector). Similarly, only the households sector records financial asset transactions in the life insurance and pensions category.

Net transactions in financial liabilities were positive for each of the sectors except non-financial corporations in 2009, as can be seen in Table 6.1. For the official international reserves category, all changes in liabilities are by definition seen in the non-residents sector. Thus the change in official international reserves liabilities for the non-resident sector equals the corresponding change in financial assets in the financial corporations sector. In the currency and deposits category, the households plus NPISH sector and the non-financial corporations sector cannot offer currency or deposit liabilities, so their net liabilities transactions must necessarily be zero. As well, these two sectors do not issue life insurance and pension liabilities. In addition, since the households plus NPISH sector does not itself issue debt securities or equity and investment funds liabilities, the change in net liabilities for these two categories is also zero for this sector.

The other accounts receivable instrument category includes short-term credit extended to purchasers by wholesalers and retailers, plus a sub-category called other receivables. The estimates for net financial asset and liabilities acquisition in this latter category also include derivatives, repurchase agreements, accrued interest and credits relating to wages and salaries, taxes and rents.

The last three lines in Table 6.1 reconcile non-resident sector net financial investment from the financial flow accounts—which is the financial account estimate of net lending or borrowing, before adding the discrepancy—to the non-resident sector financial account net lending or borrowing estimate that is recorded in the balance of international payments. The two measures of net lending or borrowing are different conceptually due to differing treatments of reinvested earnings on direct investment. Canadians can invest directly in foreign enterprises and when they do so, they typically leave earnings from those investments abroad. Similarly, non-residents can invest directly in Canadian enterprises and typically also leave some of their earnings from those investments in Canada. There are no observed net transactions in financial assets or liabilities in such cases, but the balance of international payments treats those reinvested earnings as if they were repatriated as dividends and then simultaneously flowed back as new financial asset acquisitions. The "imputed" **net reinvested earnings on direct investment** are shown in the second-to-last line of Table 6.1 and when they are added to net financial investment as measured in the financial flow accounts, the result is net lending or borrowing by non-residents as measured in the balance of payments financial account.

6.3 Other changes in assets accounts

As mentioned earlier, the **other changes in assets accounts** record changes in non-financial and financial assets and liabilities other than those directly associated with transactions. When combined with the transactions-based capital account and financial flows account, these accounts provide a comprehensive explanation for differences between the opening and closing balance sheets. There are two sub-accounts: the **other changes in the volume of assets account** and the **revaluation account**.

6.3.1 Other changes in the volume of assets accounts

In the financial flows accounts, a financial asset appears when an institutional unit accepts a new liability in exchange for some benefit such as a cash loan. The asset subsequently disappears when the institutional unit extinguishes the liability by means of a payment. A non-financial asset such as a building might also appear on the balance sheet as the result of a direct purchase by an institutional unit. These flows are transactions. But assets and liabilities can also be created and extinguished by other means and these ways are itemized in the **other changes in the volume of assets account**. This account, as described in chapter 12 of *SNA 2008*, has three component parts.

The account's first part includes entries relating to the appearance and disappearance of assets other than by transactions.

- For example, structures created and fully depreciated in the past might now, after a delay of many years, be recognized as buildings of historical significance and added to the balance sheet as national monuments.
- Items such as works of art, antiques and precious stones might have been purchased as consumption goods in the past and might now, with the passage of time, be recognized on the balance sheet as precious 'stores of value'.
- Sub-soil minerals might be newly discovered or, though discovered previously, might be newly seen as economic or uneconomic as a result of improvements in technology or changes in prices.
- Wilderness land considered previously to be essentially valueless might suddenly become valuable as the result of new roads and bridges having been constructed in the general area.
- The quality of land and water resources might be degraded as a result of economic activity, thereby losing some value.
- An institutional unit might choose to write down the value of some asset as a result of, for example, bankruptcy of the liability holder, without there being any mutual agreement between the parties.

These are all examples of the appearance or disappearance of assets by means other than transactions.[18]

The account's second part includes the effect of major external events on the value of non-financial and financial assets and liabilities. Catastrophic losses might occur, for example, as the result of forest fires, earthquakes, tsunamis, hurricanes, floods or ice storms. The destruction of assets as a result of acts of war, terrorism, riots or major accidents such as large-scale explosions, fires, toxic spills or nuclear meltdowns would also be included in the account. Note that the effects of geological and climatic disruptions or accidents of a smaller, more normal scale, such as those that are often covered by property insurance arrangements, are not included under this heading.

Finally, the non-financial and financial assets and liabilities of an institutional unit might change as a result of reclassifications of institutional units, or of various types of assets and liabilities. For example, a household might move from one country to another, taking its non-financial and financial possessions with it. Or in some circumstances when the government nationalizes a private business enterprise, or privatizes a government business enterprise, the change might involve a reclassification from the corporate to the government sector or vice versa.[19] Reclassification can also be required if a residential building was converted for commercial use or vice versa. Again, since there are no transactions involved in these kinds of changes they are recorded in the other changes in assets account.

6.3.2 Revaluation accounts

The revaluation accounts record changes in the value of non-financial and financial assets and liabilities, between the opening and closing balance sheets, that are the result of changes in the market prices of those assets and liabilities, as distinct from changes that are attributable to transactions or other changes in the volume of assets. Such changes are referred to as **holding gains or losses**. *SNA 2008* distinguishes three related concepts—**nominal**, **neutral** and **real** holding gains and losses—and defines them as follows:[20]

- The **nominal holding gain** on a non-financial asset is the value of the benefit accruing to the owner of that asset as a result of a change in its price over a period of time. The nominal holding gain on a financial asset is the increase in value of the asset, other than by transactions in the assets (including the accrual of interest over a period of time) and other changes in the volume of assets. The nominal holding gain on a liability is the decrease in value of the liability, other than by transactions or by other volume changes. Nominal holding 'gains' can, of course, be negative or positive.
- A **neutral holding gain (loss)** over a period is the increase (decrease) in the value of an asset that would be required, in the absence of transactions and other changes in the volume of assets, to maintain command over the same amount of goods and services as at the beginning of the period, that is to allow for general inflation or deflation.
- A **real holding gain (loss)** is the amount by which the value of an asset increases (decreases) over the neutral holding gain for the period, in the absence of transactions and other changes in the volume of assets. It is equal to the nominal holding gain minus the neutral holding gain.

Neutral holding gains and losses are calculated with reference to some comprehensive index of the prices of goods and services, such as the national accounts price index for final expenditures. For example, if a household owned a house and its value rose by 2 per cent in a year, representing a nominal holding gain of that amount, this would be an entirely neutral holding gain if the general inflation rate that year was also 2 per cent. If inflation were not 2 per cent but rather 0.5 per cent, then the neutral holding gain would be 0.5 per cent and the real holding gain would be 1.5 per cent.

Nominal holding gains or losses are sometimes referred to as **capital gains or losses**. They can be **realized**, as when an institutional unit sells a non-financial or financial asset or extinguishes a liability at a price that is different from the price at the beginning of the accounting period, or they can be **unrealized**, as when an institutional unit holding a non-financial or financial asset or liability throughout the accounting period finds the price of that asset or liability is different at the end of the period from what it was at the beginning.

Holding gains and losses on financial assets and liabilities totalled over all sectors should add to zero, since every gain is matched by a corresponding loss somewhere else. For example, if bond holders make capital gains following a decline in interest rates, bond issuers will make a corresponding holding loss. As another example, if the domestic sectors all make holding gains on assets denominated in foreign currencies as a result of a depreciation of the Canadian dollar relative to other world currencies, the non-resident sector makes a corresponding holding loss.

The balancing item in the revaluation account is **changes in net worth due to nominal holding gains or losses**, which in turn is the sum of the positive or negative nominal holding gains on all of the non-financial and financial assets and liabilities of an institutional unit. During periods when relative prices are changing substantially, real holding gains and losses may imply substantial redistributions of real net worth among institutional units, sectors and countries. They can be an important economic variable helping to explain trends in consumption and capital formation.

Text box 6.2
An example of holding gains from *SNA 2008* (p. 250)

Suppose a corporation owns 100 units of a stock (inventories or shares, for instance) at the beginning of the period and these are worth $20 each or $2,000 in total. At some point in the period, when the price per unit has risen to $22, another 15 units are bought; a cost of $330. At the end of the period, when the price has risen to $25, some 15 units are sold for a value of $375. The value of the stock in the closing balance sheet represents 100 units valued at $25 each or $2,500. The increase in the balance sheet of $500 represents unrealized holding gain on the stock of 100. The value of the transactions represents a decrease in the balance sheet since the value of the stock added to the balance sheet ($330) is less than the value of stock sold ($375). The difference, -$45, is a reduction in net worth brought about by realizing some holding gains. The total nominal holding gain is thus $545 which satisfies the identity that the opening stock ($2,000) plus the transactions (-$45) plus the nominal holding gains ($545) plus the other changes in the volume of assets ($0) equals the value in the closing balance sheet ($2,500).

Currency, deposits and loans are not subject to nominal holding gains or losses. However, during periods of positive inflation neutral holding gains on these financial instruments are positive and real holding gains are negative. Bonds, equities and other types of financial assets and liabilities experience nominal holding gains and losses when their market prices fluctuate. Holding gains affect not only financial assets and liabilities, but also non-financial assets such as capital goods and inventories, as well as valuables.

6.3.3 Other changes in assets account statistics

For financial assets and liabilities, Statistics Canada releases an aggregate other changes in assets account, combining the other changes in the volume of assets account and the revaluation account in a single table.

The estimates in this table are calculated by taking the difference between the end-of-period financial balance sheet and the start-of-period balance sheet and then deducting from this the financial flows during the period. In other words, the table is residually determined, attributing any financial balance sheet changes that are not accounted for by financial flows to other flows. On Statistics Canada's work agenda for the future is the task of developing cell-by-cell estimates for each of the two component accounts—the other changes in the volume of assets account and the revaluation account—that are built up from more detailed sub-components.

The other changes in assets account for financial assets and liabilities is shown for the year 2009 in Table 6.2. It reports total other changes in financial assets and liabilities of $1.1 trillion, a very large amount. An even larger but negative change was recorded the previous year. Most of this is attributable to equity and investment fund shares and one can presume that stock market price changes (affecting the revaluation account), following the sharp drop in equity prices in 2008, are the principal explanatory factor. Households plus NPISH is the sector showing the largest net gain in 2009, followed by the non-resident sector, while non-financial corporations recorded the greatest net loss.

Table 6.2
Other changes in assets account, 2009

	Sector						
	Total	National	Households and non-profit institutions serving households	Non-financial corporations	Financial corporations	Governments	Non-residents
	millions of dollars						
Asset and liability component							
Total financial assets	1,070,055	919,754	342,952	166,846	405,755	4,201	150,301
Official international reserves	-7,923	-7,923	0	0	-7,923	0	0
Total currency and deposits	-31,197	-21,924	-3,501	-9,036	-9,376	-11	-9,273
Debt securities	71,595	103,424	10,757	5,688	85,615	1,364	-31,829
Loans	-68,711	-45,946	0	-1,180	-40,939	-3,827	-22,765
Equity and investment fund shares	1,006,839	794,977	177,679	154,047	449,402	13,849	211,862
Life insurance and pensions	13,394	13,394	13,394	0	0	0	0
Other accounts receivable	86,058	83,752	144,623	17,327	-71,024	-7,174	2,306
Total financial liabilities	1,070,055	938,591	-4,239	514,728	421,056	7,046	131,464
Official international reserves	-7,923	0	0	0	0	0	-7,923
Total currency and deposits	-31,197	-24,140	0	0	-24,140	0	-7,057
Debt securities	71,595	85,087	0	1,966	78,035	5,086	-13,492
Loans	-68,711	-41,812	-3,689	-15,623	-22,580	80	-26,899
Equity and investment fund shares	1,006,839	823,103	0	503,585	319,518	0	183,736
Life insurance and pensions	13,394	13,394	0	0	12,809	585	0
Other accounts payable	86,058	82,959	-550	24,800	57,414	1,295	3,099

Source: Statistics Canada, table 36-10-0448-01.

The other changes in assets account for Canadian non-financial assets has not yet been developed. The task of doing so is on Statistics Canada's future agenda. For produced non-financial assets, existing price statistics are expected to be helpful in the development of the revaluation account while demolitions and materials disposal statistics plus media reports will be of value in calculating estimates of other changes in the volume of assets. Work will also be necessary to develop these accounts for non-produced non-financial assets.

6.4 National balance sheet accounts

6.4.1 What is a balance sheet?

When an investor studies a business as a potential investment target, one of the key sources of information he or she turns to is the corporate balance sheet. This accounting statement shows the value of all the things the company owns—its non-financial and financial assets—on one side of the ledger and all the means by which it has acquired funds to pay for those things—its liabilities and shareholders' equity—on the other side. Its non-financial and financial assets can include a wide variety of items including buildings, machinery, land, inventories, intangible assets, cash, bank deposits and so on. The other side of the ledger lists the methods of financing these assets. These include borrowing via loans, corporate bonds and other means, growing the value of existing shareholders' equity or issuing new equity. In corporate balance sheets, non-financial and financial assets must always equal liabilities plus shareholders' equity and equity is the balancing item. If, for example, the value of a non-financial or financial asset drops with no corresponding decrease in liabilities, then there must be a decrease in the value of shareholders' equity. If assets are less than liabilities then shareholders' equity is negative and the business is insolvent.

By studying the various elements of the corporate balance sheet—the types of non-financial and financial assets the company owns and their relative size, the magnitude of its liabilities in relation to its shareholders' equity, the extent to which its financial assets or liabilities are short-term or longer-term in their maturity and so on—much can be learned about the financial health of any business.

The corporate balance sheet has its counterpart in the government sector. Governments are required to report on their non-financial and financial assets and liabilities in audited public accounting statements. Their non-financial and financial assets and liabilities are well defined and reported. But unlike corporations, governments have no

stated shareholders' equity as such. Often government liabilities exceed government assets (non-financial plus financial) and the difference is referred to as the **accumulated deficit**. The balance sheet identity for governments, then, is that total assets must be equal to liabilities plus the accumulated deficit. The accumulated deficit can also be considered the **net worth** of the government. Unlike other kinds of institutional units, governments can have a persistent negative net worth because governments have the power to tax and, in the case of the Government of Canada, the power to issue new currency.[21,22]

Households also have well defined balance sheets, though they are not required to issue reports as listed corporations and governments must do. Their non-financial and financial assets include housing, bank deposits, pension financial assets, mutual fund shares and so on while their liabilities include mortgages, bank loans, credit card debt and other kinds of debt obligations. The excess of their non-financial and financial assets over their liabilities is their net worth. Like corporations, they can become bankrupt when liabilities exceed assets. If a household wishes to borrow a large sum of money for a major purchase such as a house or a car, its lender will undoubtedly want to take a look at the significant elements of its balance sheet.

In the national accounts, a balance sheet is also drawn up for the non-resident sector, showing liabilities originating in the Canadian economy and held by non-residents as financial assets, plus foreign liabilities held as financial assets by Canadian residents.[23] The mirror image of this balance sheet for non-residents, which is the balance sheet for the aggregate of all Canadian resident sectors vis-à-vis non-residents, is referred to as the **international investment position** and is discussed in chapter 8. From Canada's point of view, the external sector's net worth is Canada's balance of international investment. Over most of the period for which statistics are available, Canada has been a net debtor nation, such that the positive net worth of the non-resident sector has been a net international indebtedness position (also referred to as net foreign debt or as a net liability to the rest of the world) for Canada.

In effect, each sector has its own accounting practices. In the corporate world, businesses keep track of their non-financial and financial assets and liabilities using Generally Accepted Accounting Principles (GAAP) under the general guidance of the Accounting Standards Board.[24] Government accounting standards are set by the Public Sector Accounting Board, although individual governments frequently diverge from those standards. Households, on the other hand, do not have well defined accounting standards. The national balance sheet accounts provide a standard treatment for all of the sectors, including the non-resident sector, thereby allowing their interrelationships to be much more effectively understood.

The **national balance sheet accounts** comprise the individual balance sheets of the various institutional units in the economy—households, NPISH units, non-financial and financial corporations, governments and non-residents. The difference between assets (both non-financial and financial) and liabilities, referred to as **net worth**, is the balancing item for the national balance sheet accounts.

The **national wealth** of Canada is the sum of the non-financial assets of each of the domestic institutional sectors. Canada's balance of international investment is added (if net foreign financial assets are positive) or deducted (if net foreign financial assets are negative) from national wealth in the calculation of **national net worth** (which is also equal to the sum of domestic sectors' net worth).

Like most other national accounts statistics, statistics in the main balance sheet table are expressed at **market value**. To the extent possible, relevant non-financial and financial assets and liabilities (notably marketable securities and non-financial assets) are estimated at current market values, whereas audited financial statements of many institutional units (the fundamental source data) are expressed at **book value**.[25] Because, for some financial instruments and some institutional sectors, book value estimates are relevant, Statistics Canada also publishes such valuations for selected elements.

At the end of 2009, total financial assets on the Canadian national balance sheet were $18.0 trillion when measured at market prices.

6.4.2 Temporal changes in balance sheet items

The various items in the national balance sheet accounts are **stocks** rather than flows.[26] They are measured at the end of the period, whether that period be a quarter or a year. The change in a balance sheet item at the end of one period, compared with the beginning of that period (or equivalently, compared with the end of the previous period) is determined by three general factors:

1. Flows of saving and investment and financial flows in assets and liabilities during the intervening period may change asset and liability stocks. These flows are reflected in transactions.
2. Changes in the volume of assets or liabilities due to extraordinary, one-off, catastrophic events such as earthquakes, floods and property destruction due to wars; the finding of previously undiscovered subsoil mineral resources;[27] or changes in classification[28] may imply increases or decreases in the non-financial and financial assets or liabilities of a particular sector without there being any associated transaction flows. These 'other flows' are not reflected in transactions.
3. Changes in non-financial and financial asset prices may cause the market value of certain assets and liabilities to rise or fall, even if those assets and liabilities were not exchanged in a transaction. The impact of such nominal valuation changes is referred to as **holding gains or losses** and they too are reflected on the market value balance sheet. One important example where such changes sometimes have a large effect is the value of securities or other financial assets denominated in foreign currencies, which are converted to Canadian dollars using the end-of-period exchange rate. Exchange rate fluctuations can often lead to large changes in the value of a security. Another example is the value of listed equities, which is re-estimated each period based on the latest stock market price quotations.

A thorough explanation of these factors is discussed in chapter 5 and in section 6.2 and section 6.3 of this chapter.

6.4.3 Non-financial assets on the balance sheet

The asset side of the national balance sheet consists of both non-financial and financial assets. In the national accounts, non-financial assets can only be directly held by resident sectors.[29] The non-resident sector, however, can directly hold financial assets, which are claims on non-financial assets.

Non-financial assets are classified in two categories, **produced** and **non-produced assets**. Produced assets come into existence as outputs from production processes that are within the production boundary of the SNA, whereas non-produced assets originate in other ways. The major categories of non-financial assets in Canada's national balance sheet are as follows.

Produced non-financial assets:

- Residential structures
- Non-residential structures
- Machinery and equipment
- Intellectual property products
- Consumer durable goods
- Inventories
- Weapons systems

Non-produced non-financial assets:

- Land
- Radio spectrum
- Timber
- Subsoil energy resource stocks
- Subsoil mineral resource stocks

As can be seen above, in Canada there are seven sub-categories of produced assets and five of non-produced assets. All of the produced asset sub-categories, with one exception, are considered capital items. Indeed, total produced non-financial assets grow or change from period to period as a result of gross capital formation, after allowing for capital consumption and other flows.[30] The exception is consumer durable goods which are not considered to be a form of capital. While they are included in Canada's total for produced non-financial assets, they are outside the *SNA 2008* asset boundary, which treats consumer durable goods as non-capital items. This exception allows for a broader and in some ways more complete definition of Canada's total non-financial assets, national wealth and national net worth, which is consistent with the distributional estimates of household assets and debt. It also makes Canada's national wealth estimates more comparable to those of the United States, since that country also capitalizes consumer durable goods in its flow of funds accounts.[31] Changes in the stock of consumer durable goods are recorded in the other changes in assets account.

Some tangible produced assets are not currently included in Canada's national balance sheet. These include historical monuments and valuables, such as precious metals and stones, antiques and other collectors' items, and entertainment, literary and artistic originals. They are excluded from Canada's national balance sheet because available source data are inadequate. The value of these assets would likely be relatively small in comparison to other countries with longer histories and more significant collections of art and artifacts. Nevertheless, the omission of these assets constitutes a gap on which it is hoped to make progress in the future.

As noted in chapter 3, intangible produced assets—known as intellectual property products—are also present in Canada's national balance sheet accounts. Included is knowledge resulting from research and development and from mineral exploration, and computer software. Human capital is excluded as recommended by *SNA 2008*.[32]

The value of produced assets as reported in corporate and government accounting statements can differ from those that are reported in the national balance sheet for several reasons. First, enterprises and governments often value capital items at historical cost rather than current market prices as in the national balance sheet. Second, the value of fixed capital in business accounts is influenced by tax considerations affecting depreciation allowances, which is not the case for the national balance sheet estimates which aim to measure true capital consumption. Third, while some intangible non-produced assets such as patents and trademarks are reported on corporate balance sheets, corporations do not typically capitalize research and development and mineral exploration expenses as is done in the national balance sheet.

The balance sheet also includes non-produced non-financial assets. According to *SNA 2008* the category can include, in addition to the value of land, the radio spectrum, mineral and energy resources, non-cultivated biological resources, water resources and other natural resources as well as the associated leases derived from these natural assets. Some of these non-produced non-financial asset types are not yet recognized on Canada's national balance sheet due to measurement difficulties.

Land (residential, commercial and agricultural) is by far the largest non-produced, non-financial asset in the balance sheet accounts, at $1.9 trillion in 2009. Estimates of some of the other asset types in this category have been developed as part of the environmental satellite accounts. These include timber and subsoil resource stocks. The latter are comprised of energy resources, referring to crude oil, natural gas, crude bitumen and coal and mineral resources, including gold, iron, copper, nickel, lead, zinc, molybdenum, uranium, diamonds and potash.

The land component includes only privately-owned property. Publicly-owned land is vast, but difficult to value, and is thus excluded.[33] Renewable stocks of fish, game and wildlife are largely publicly-owned and are also excluded.

Excluded non-produced intangible assets include patents, trade-marks, copyrights and goodwill. Assets of this kind are essentially legal constructs and they are not explicitly included in Canada's national balance sheet accounts.

Rather they are reflected in the value of produced assets as part of capitalized research and development which is the basis for the value of such things as copyrights, patents and goodwill.

6.4.4 Relationship of economic and business accounting

The national balance sheet accounts are the most closely related to business accounting of any branch of the Canadian macroeconomic accounts. The basic identity from business accounting that the value of non-financial and financial assets equals the value of liabilities plus owners' equity or net worth holds true for the firm, the sectors of the economy and the nation. However, the similarities between business and economic accounting are more apparent in individual sector balance sheets than at the total level where financial asset and liability claims are equal and offsetting. The major departures from business accounting occur in the areas of valuation and in specific inclusions and exclusions of items.

Non-financial and financial assets are resources available to the firm, through ownership or the right to use, to be utilized in the production of goods and services or to be sold or consumed. They consist of holdings of financial assets including amounts prepaid for such items as rent, interest and insurance that will be consumed in a future period of account. They also include non-financial items such as property, plant and equipment, inventories and in business accounting, intangible assets such as patents, trade-marks, franchises and goodwill. In business accounting, fixed assets are often valued at historical or acquisition cost and are shown net of depreciation, also based on historical cost. In the national accounts the preferred valuation is current market value, although in practice variants similar in concept, such as written down replacement cost, are sometimes used.

In business accounting, liabilities and net worth are the claims of creditors against the firm including trade accounts payable, taxes and interest payable, and loans and bonds outstanding, plus the owners' equity in the firm which is normally comprised of two major elements, contributed capital by the owners and retained earnings. The single most important adjustment in converting this side of the balance sheet to the economic accounting framework concerns the allocation of share capital. In business accounts the original price of stock at the time of issue is considered part of net worth (along with retained earnings and reserves), whereas in the economic accounts it is recorded as a liability under the 'shares' category in the corporate sectors and is revalued at market prices, since these equities are held as financial assets by investors. Retained earnings disappear in the economic accounts as they are embedded implicitly in the market value of equity.

The Canadian system provides estimates of net worth on three different conceptual bases for the corporate sectors. Although only one calculation is used to derive net worth on a consistent basis for each sector throughout the national balance sheet, two additional concepts are adopted for analytical use for each of the corporate sectors in the individual sector presentations.

The net worth concept used for the corporate sector in the national balance sheet accounts is derived by deducting liabilities from total assets. Owners' equity is treated as a liability. In business accounts this would result in a net worth of zero or close to zero. In the economic accounts, however, because fixed assets and some financial assets and liabilities have been revalued at market prices, the technique results in a net worth which reflects the difference between the current market[34] and historical cost. The effect of treating corporate owners' equity as a liability is that it properly allocates most of the net worth to the sector holding the shares (as the ultimate owners) while leaving the net effect of non-financial and financial asset and liability revaluations as the net worth of the corporate sector. This measure of net worth has limited analytical significance but fits within the balancing constraints of the national balance sheet table, which ensures that national net worth is allocated to the appropriate institutional sectors (ultimate owners) according to their corporate equity holdings.[35]

Two other estimates of net worth for the corporate sectors are provided for analytical purposes as supplementary items. One, which does not treat the market value of share capital as a liability but rather as part of corporate sector net worth, provides a net worth figure considerably higher and corresponds to a 'liquidation' value of the sector. This is called **'net worth: current value'** in the national balance sheet table. The remaining measure relates more closely to the estimate produced by standard business accounting, providing a net worth figure equal to the owners' equity with shares valued at book value plus retained earnings. It is called **'net worth: equity'** in the national balance sheet table.

Goodwill is an example of a particularly nebulous intangible item that appears on many business balance sheets. Goodwill normally results from one company's acquisition of another and represents the amount by which the purchase price exceeds the current market value of the acquired non-financial and financial assets and liabilities (or the book value, when the purchased company is private). It is attributable to the value of intangible factors like customer loyalty, good employer/employee relationships and exceptional ability of management (beyond the recognized value these factors may already have in the company's market price). Even though it does appear in the audited financial statements of some companies, goodwill is not directly included in Canada's national balance sheet, but it may be reflected indirectly, in part, in the value of corporate produced assets, since research and development expenditures are capitalized.

6.4.5 National balance sheet accounts dataset: an example

As for the financial flows, the national balance sheet dataset can be thought of as a table with three dimensions. The first dimension is institutional sectors, of which the CSMA includes 36; the second is non-financial asset categories,[36] of which there are 12, and financial instrument categories, of which there are 83; and the third is time, which is measured in quarters from the first quarter of 1990 to date.[37]

As a practical example of Canada's national balance sheet, Table 6.3 presents the estimates at the end of calendar year 2009. These statistics are market values, measured in millions of dollars.

The columns of the table show the institutional sectors: Households and non-profit institutions serving households, non-financial corporations, financial corporations, general governments and non-residents. They also show the total balance sheet, the national balance sheet and the consolidated balance sheet.

Total assets consist of both non-financial assets and financial assets, broken out in detail in the table. The components of liabilities are also shown. Net worth, the difference between total assets and liabilities, is at the bottom of the table.

Table 6.3
National balance sheet accounts, detailed presentation, 2009

	Sector							
	Total, all sectors	National balance sheet	Households and non-profit institutions serving households	Non-financial corporations	Financial corporations	General governments	Non-residents	Consolidated balance sheet
	millions of dollars							
Total assets	25,028,713	22,741,012	7,811,786	4,847,445	8,349,885	1,731,896	2,287,701	7,071,982
Non-financial assets	7,071,982	7,071,982	3,777,790	2,471,883	72,405	749,904	0	7,071,982
Produced non-financial assets	4,126,010	4,126,010	2,098,247	1,526,798	66,255	434,710	0	4,126,010
Residential structures	1,687,296	1,687,296	1,516,929	150,119	253	19,995	0	1,687,296
Non-residential structures	1,192,859	1,192,859	53,924	783,207	17,710	338,018	0	1,192,859
Machinery and equipment	338,956	338,956	28,395	253,742	31,550	25,269	0	338,956
Intellectual property products	193,164	193,164	3,235	135,749	9,879	44,301	0	193,164
Consumer durables	476,914	476,914	476,914	0	0	0	0	476,914
Inventories	230,107	230,107	18,850	203,981	6,863	413	0	230,107
Weapons systems	6,714	6,714	0	0	0	6,714	0	6,714
Non-produced non-financial assets	2,945,972	2,945,972	1,679,543	945,085	6,150	315,194	0	2,945,972
Land	2,242,258	2,242,258	1,679,543	431,304	6,150	125,261	0	2,242,258
Natural resources	703,714	703,714	0	513,781	0	189,933	0	703,714
Other non-produced non-financial assets	0	0	0	0	0	0	0	0
Net financial assets	0	-221,638	2,541,670	-2,235,672	229,102	-756,738	221,638	0
Total financial assets	17,956,731	15,669,030	4,033,996	2,375,562	8,277,480	981,992	2,287,701	0
Official international reserves	57,130	57,130	0	0	57,130	0	0	0
Gold	125	125	0	0	125	0	0	0
Foreign currency deposits and securities	44,775	44,775	0	0	44,775	0	0	0
Of which: deposits	667	667	0	0	667	0	0	0
Of which: securities	44,108	44,108	0	0	44,108	0	0	0
Reserve position in the International Monetary Fund	2,548	2,548	0	0	2,548	0	0	0
Special drawing rights	9,682	9,682	0	0	9,682	0	0	0

Table 6.3
National balance sheet accounts, detailed presentation, 2009

	Sector							
	Total, all sectors	National balance sheet	Households and non-profit institutions serving households	Non-financial corporations	Financial corporations	General governments	Non-residents	Consolidated balance sheet
	millions of dollars							
Total currency and deposits	1,622,756	1,555,986	971,367	317,408	205,799	61,412	66,770	0
Canadian currency and deposits	1,419,308	1,395,372	945,451	254,326	134,339	61,256	23,936	0
Foreign currency and deposits	203,448	160,614	25,916	63,082	71,460	156	42,834	0
Debt securities	2,712,101	2,148,603	119,210	79,333	1,708,275	241,785	563,498	0
Canadian short-term paper	402,553	369,630	5,949	37,178	258,536	67,967	32,923	0
Government of Canada short-term paper	186,029	167,163	3,104	5,791	148,467	9,801	18,866	0
Other short-term paper	216,524	202,467	2,845	31,387	110,069	58,166	14,057	0
Foreign investments: short-term paper	9,253	9,253	463	569	7,290	931	0	0
Canadian bonds and debentures	2,162,155	1,631,580	107,997	39,751	1,320,478	163,354	530,575	0
Of which: savings bonds	21,105	21,105	21,105	0	0	0	0	0
Government of Canada bonds	403,291	335,416	28,342	3,501	266,791	36,782	67,875	0
Provincial and territorial government bonds	461,641	342,780	17,445	914	261,374	63,047	118,861	0
Local government bonds	50,146	45,468	17,476	3	14,447	13,542	4,678	0
Other Canadian bonds and debentures	1,247,077	907,916	44,734	35,333	777,866	49,983	339,161	0
Foreign investments: bonds	138,140	138,140	4,801	1,835	121,971	9,533	0	0
Loans	3,615,187	3,171,336	5,485	210,664	2,764,535	190,652	443,851	0
Consumer credit	480,304	480,304	0	1,321	461,682	17,301	0	0
Non-mortgage loans	575,799	519,650	0	19,859	460,237	39,554	56,149	0
Mortgages	1,091,492	1,091,008	5,485	9,670	1,070,754	5,099	484	0
Corporate claims: loans and advances	1,340,192	952,974	0	178,411	771,236	3,327	387,218	0
Government claims: loans and advances	127,400	127,400	0	1,403	626	125,371	0	0
Equity and investment fund shares	6,468,026	5,329,495	1,351,231	912,133	2,759,160	306,971	1,138,531	0
Listed shares	1,691,625	1,320,709	317,466	90,387	863,133	49,723	370,916	0
Unlisted shares	3,279,179	2,511,564	383,490	814,127	1,286,591	27,356	767,615	0
Of which: corporate claims: equity	0	0	0	494,029	845,002	15,145	767,615	0
Mutual fund shares (units)	852,184	852,184	607,904	1,301	235,891	7,088	0	0
Government claims: equity	142,537	142,537	0	0	0	142,537	0	0
Foreign investments: equity	502,501	502,501	42,371	6,318	373,545	80,267	0	0
Life insurance and pensions	1,483,412	1,483,412	1,483,412	0	0	0	0	0
Other accounts receivable	1,998,119	1,923,068	103,291	856,024	782,581	181,172	75,051	0
Claims of pension funds on pension managers	136,773	136,773	0	0	136,773	0	0	0
Trade receivables	377,150	342,364	0	318,745	14,983	8,636	34,786	0
Other receivables	1,484,196	1,443,931	103,291	537,279	630,825	172,536	40,265	0
Liabilities and net worth	25,028,713	22,741,012	7,811,786	4,847,445	8,349,885	1,731,896	2,287,701	7,071,982
Total financial liabilities	17,956,731	15,890,668	1,492,326	4,611,234	8,048,378	1,738,730	2,066,063	221,638
Official international reserves	57,130	0	0	0	0	0	57,130	0
Gold	125	0	0	0	0	0	125	0
Foreign currency deposits and securities	44,775	0	0	0	0	0	44,775	0
Of which: deposits	667	0	0	0	0	0	667	0
Of which: securities	44,108	0	0	0	0	0	44,108	0
Reserve position in the International Monetary Fund	2,548	0	0	0	0	0	2,548	0
Special drawing rights	9,682	0	0	0	0	0	9,682	0
Total currency and deposits	1,622,756	1,527,205	0	0	1,522,015	5,190	95,551	0
Canadian currency and deposits	1,419,308	1,419,308	0	0	1,414,118	5,190	0	0
Foreign currency and deposits	203,448	107,897	0	0	107,897	0	95,551	0
Debt securities	2,712,101	2,564,708	0	429,100	985,367	1,150,241	147,393	0
Canadian short-term paper	402,553	402,553	0	61,788	109,053	231,712	0	0
Government of Canada short-term paper	186,029	186,029	0	0	0	186,029	0	0
Other short-term paper	216,524	216,524	0	61,788	109,053	45,683	0	0
Foreign investments: short-term paper	9,253	0	0	0	0	0	9,253	0
Canadian bonds and debentures	2,162,155	2,162,155	0	367,312	876,314	918,529	0	0
Of which: savings bonds	21,105	21,105	0	0	0	21,105	0	0
Government of Canada bonds	403,291	403,291	0	0	0	403,291	0	0
Provincial and territorial government bonds	461,641	461,641	0	0	0	461,641	0	0
Local government bonds	50,146	50,146	0	0	0	50,146	0	0

Table 6.3
National balance sheet accounts, detailed presentation, 2009

	Sector							
	Total, all sectors	National balance sheet	Households and non-profit institutions serving households	Non-financial corporations	Financial corporations	General governments	Non-residents	Consolidated balance sheet
	millions of dollars							
Other Canadian bonds and debentures	1,247,077	1,247,077	0	367,312	876,314	3,451	0	0
Foreign investments: bonds	138,140	0	0	0	0	0	138,140	0
Loans	3,615,187	3,234,156	1,449,763	1,032,855	704,680	46,858	381,031	0
Consumer credit	480,304	480,304	480,304	0	0	0	0	0
Non-mortgage loans	575,799	505,987	81,546	298,094	86,534	39,813	69,812	0
Mortgages	1,091,492	1,091,492	887,913	192,853	5,745	4,981	0	0
Corporate claims: loans and advances	1,340,192	1,028,973	0	508,737	520,236	0	311,219	0
Government claims: loans and advances	127,400	127,400	0	33,171	92,165	2,064	0	0
Equity and investment fund shares	6,468,026	5,191,462	0	2,451,921	2,739,541	0	1,276,564	0
Listed shares	1,691,625	1,691,625	0	1,090,521	601,104	0	0	0
Unlisted shares	3,279,179	2,505,116	0	1,309,028	1,196,088	0	774,063	0
Mutual fund shares (units)	852,184	852,184	0	0	852,184	0	0	0
Government claims: equity	142,537	142,537	0	52,372	90,165	0	0	0
Foreign investments: equity	502,501	0	0	0	0	0	502,501	0
Life insurance and pensions	1,483,412	1,483,412	0	0	1,262,178	221,234	0	0
Other accounts payable	1,998,119	1,889,725	42,563	697,358	834,597	315,207	108,394	0
Claims of pension funds on pension managers	136,773	136,773	0	48,056	963	87,754	0	0
Trade payables	377,150	351,096	19,476	315,034	5,342	11,244	26,054	0
Other payables	1,484,196	1,401,856	23,087	334,268	828,292	216,209	82,340	0
Net worth	7,071,982	6,850,344	6,319,460	236,211	301,507	-6,834	221,638	6,850,344
Net worth: current value	0	0	0	2,688,132	3,007,287	0	0	0
Net worth: equity	0	0	0	2,451,921	2,705,780	0	0	0

Source: Statistics Canada, table 36-10-0580-01.

The zeros in the financial assets categories of the balance sheet table have explanations similar to those provided above for the financial flows matrix. National accounts concepts and definitions prevent the non-resident sector from holding non-financial assets (if a non-resident institutional unit holds non-financial assets in Canada and there is no foreign-controlled domestic institutional unit associated with those assets, then an artificial domestic institutional unit is created for this purpose and a non-resident financial claim is shown). Only the monetary authorities, which are part of the financial corporations sector can have official international reserve assets and liabilities, so the other sectors have zeros for this financial category. Likewise, the households and NPISH sector and non-resident sector do not issue consumer credit loans so the corresponding financial assets of these sectors are zero. Similarly the households and NPISH sector does not make non-mortgage loans to the other sectors, or issue corporate or government loans, advances or equity. The corporate, government and non-resident sectors do not hold life insurance or pension assets, so those entries in the balance sheet are also zero.

There are also several easily explained zeros in the liabilities categories. Only non-resident units can hold official international reserve liabilities. Currency and deposit liabilities are only held by financial corporations and the federal government. The households and NPISH sector does not issue debt securities, but it is the only sector that does incur consumer credit liabilities. Both the households and NPISH sector and the government sector do not issue equity and investment fund shares. The households and NPISH sector, the non-financial corporations sector and the non-residents sector do not issue life insurance or pension liabilities.

Net worth is the 'bottom line' of the balance sheet. It shows how each sector stands in terms of the excess of its non-financial and financial assets over its liabilities. At the end of 2009, the households and non-profit institutions serving households sector had a net worth of $6.3 trillion and this huge amount accounted for almost all of national net worth. The government sector had a net worth of -$7 billion, including government net debt which is in effect the cumulative deficit of all Canadian governments since Confederation. The total corporate sector (non-financial and financial together) had a net worth of $538 billion and the non-resident sector net worth was $222

billion (this was Canada's net indebtedness to non-residents in 2009). National net worth, defined as (i) total net worth less the net worth of non-residents or (ii) the sum of domestic sectors net worth, was $6,850 billion.

The net worth of corporations is small relative to that of the households and NPISH sector. There are several factors explaining this. One is the fact that, in the national balance sheet accounts, corporate equity is recorded as an asset of other sectors and a liability of the corporate sector. This differs from audited corporate accounting statements, where equity is shown as the balancing item in the identity "Assets = Liabilities + shareholders' equity". If this were the only major factor, one might expect corporate net worth to be near zero in the national balance sheets. However, there is another important factor which is the fact that the national balance sheets largely record non-financial and financial assets and liabilities at market values, whereas audited corporate financial statements record some assets and liabilities at book value. This factor can lead to positive or negative net worth for the corporate sector, but to the extent that the market-book difference is positive and greater for assets than for liabilities, positive net worth can be the result. Overall, corporate sector net worth fluctuates due to differences in non-financial and financial asset and liability valuations, missing assets and other measurement issues.

The last two lines of Table 6.3 show the two alternative measures of corporate sector net worth that are discussed in section 6.4.4.

The reader can easily verify that the same constraints hold in the national balance sheet as in the financial flows: namely, that total financial assets for any instrument category must equal total liabilities for that same category, and that net financial assets (financial assets less liabilities) summed over all sectors must be zero.

6.5 Financial instrument categories

As explained above, the financial flow accounts and the national balance sheet accounts record changes in, and levels of financial assets and liabilities held by the institutional sectors. The two sets of accounts use the same classification of financial asset and liability categories, as is briefly discussed in section 6.4.3. This section explains these financial instrument categories in more detail.

6.5.1 Official international reserves

The **term reserve assets** refers to those external financial assets that are readily available to, and controlled by Canada's monetary authorities for meeting balance of payments financing needs, intervention in exchange markets to influence the currency exchange rate and other related purposes such as maintaining confidence in the currency and the economy. Reserve assets are, by definition, denominated in foreign currency.

Official international reserves are defined as the sum of official holdings of foreign exchange and gold, loans to or from the International Monetary Fund (IMF) on general account, Special Drawing Rights (SDRs) and Canada's reserve position in the IMF. The Exchange Fund Account (EFA) is the main repository of Canada's official international reserves.[38]

Official holdings of gold and foreign exchange comprise gold, U.S. dollars, euros and other foreign-convertible-currency-denominated deposits and securities held as financial assets by the monetary authorities. The corresponding liability is in the non-resident sector. Gold is a tangible asset and not a financial claim, but in the balance of international payments and financial flow accounts it is treated as a financial claim on the non-resident sector. Both flows and levels for this category are valued in Canadian dollars in the financial flow accounts. The financial flows measure the monthly change in the quantity of gold or foreign-currency-denominated claims, converted into Canadian dollars at the average noon rate for the month; these monthly flows are summed to calculate the quarterly flows. Valuation changes resulting from fluctuations in foreign exchange rates are excluded from the financial flows and appear in the revaluation accounts.

The IMF general account covers loans by Canada to the IMF under, for example, the General Arrangements to Borrow (GAB) or the New Arrangements to Borrow (NAB). Loans are recorded as financial assets of the Exchange Fund Account (EFA). In addition, Canada's net balance with the IMF exclusive of these loans is recorded as a financial asset of the monetary authorities. This latter balance with the IMF is equal to Canada's IMF quota less IMF holdings of Canadian dollars. If this balance is positive it is Canada's reserve position and is equal to the amount of foreign exchange Canada is entitled to draw from the IMF for balance of payments purposes. Outstanding Canadian

dollar loans by the IMF add to the reserve position. A negative balance represents Canada's use of IMF credit. The corresponding liability is that of the non-resident sector.

Canada's SDRs balance reflects the allocation of new, and the movement of existing SDRs between Canada and the non-resident sector. SDRs are reserve assets that have been created by the IMF for the purpose of augmenting total world reserves. They are allocated to participating member nations in proportion to their IMF quotas. An IMF participant is obliged to accept them as payment between countries. New allocations of SDRs have been made to IMF members on numerous occasions. SDRs are valued in terms of a weighted average of four major currencies: the euro, the yen, the pound sterling and the U.S. dollar. The Canadian dollar value of SDRs fluctuates with foreign exchange rates, but these price fluctuations are excluded from the financial flow statistics and are included in the revaluation accounts.

Text box 6.3
International Monetary Fund

The IMF is an organization of 188 countries, headquartered in Washington, D.C. It began operations on March 1, 1947. Its self-described mandate is "... to foster global monetary cooperation, secure financial stability, facilitate international trade, promote high employment and sustainable economic growth, and reduce poverty around the world."

Among its many functions, the IMF provides liquidity to countries experiencing balance of payments difficulties and offers economic policy advice. It is, in some ways, the central bank for the national central banks of the member countries. The organization also monitors the economic health of member countries and issues forecasts of world economic developments. It provides technical assistance and training to help countries improve their economic management.

6.5.2 Currency and deposits

The **currency and deposits** financial instrument category includes Canadian paper currency and coin in circulation, deposits denominated in Canadian and foreign currency at deposit-taking institutions in Canada and at the Bank of Canada, and foreign currency deposits held abroad. Deposit-taking institutions are licensed to accept deposits in Canada and include chartered banks, credit unions and Caisses Populaires and trust and loan corporations.

In principle, deposits are recorded net of 'items in transit' (cheques outstanding). These items constitute an important example of the **'float'** that results from timing differences in the recording of transactions on the books of the payer and the recipient. A cheque written on the payer's account may be credited to the recipient's account but not yet cleared and debited to the payer's account. This inconsistency is corrected when such cheques outstanding are deducted.

Canadian currency and deposits cover all types of Canadian-dollar-denominated deposits booked at chartered banks in Canada, including demand, savings and term deposits plus inter-bank deposits. Demand deposits consist of financial asset balances that are transferable by means of cheques, drafts or direct debit/credit. Savings and term deposits, in contrast, are non-transferable. Also covered are Canadian-dollar-denominated deposits at the Bank of Canada (which are largely statutory reserves of the chartered banks), Canadian dollar currency outstanding, which is a liability of the Bank of Canada, plus coin in circulation, which is a liability of the Government of Canada.[39]

Deposits in other institutions are also included in this category, notably deposits of all types held at near-banks and public financial institutions. Provincial near-banks comprise credit unions, Caisses Populaires and trust and loan companies. Included are shares in credit unions and Caisses Populaires plus the retained earnings of these institutions. Since these institutions are treated as associations of individuals rather than as corporate businesses, their retained earnings constitute a liability to members (depositors). There is one provincial financial institution that accepts deposits from the public: Alberta Treasury Branches.[40]

This category also includes foreign currency and deposits which means holdings of foreign currency and foreign-currency-denominated deposit assets of all sectors (including non-residents) with chartered banks in Canada, foreign branches, agencies and subsidiaries of Canadian chartered banks, foreign banks and other foreign deposit

institutions. Credit unions and trust and loan companies also have small amounts of foreign currency and deposits. This category excludes foreign currency items held as official international reserves.

6.5.3 Debt securities

Debt securities are financial instruments that can be bought and sold between parties after they have been initially issued and that have specified terms of issue such as the amount borrowed, the interest rate payable (if any) and the maturity or renewal date. They include government, corporate and non-resident sector short-term paper, federal, provincial, territorial and municipal government bonds, corporate bonds, foreign bonds and collateralized securities.

6.5.3.1 Canadian and foreign short-term paper

In the **short-term paper** sub-category are Government of Canada Treasury bills,[41] which can be described as negotiable bearer promissory notes with an original term to maturity of less than one year that are issued at a discount without coupons by the Government of Canada. These notes are sold at weekly auctions. Original maturities are usually 13, 26 or 52 weeks. Holdings are generally valued at amortized value, which means the difference between purchase price and maturity value is amortized, usually on a straight line basis, on the books of the financial asset holder. The liability on the books of the Government of Canada is recorded at par value less amortized discount.

The other short-term paper sub-category consists of marketable, short-term notes (original term to maturity of one year or less). These are issued by a variety of financial and non-financial corporations, usually at a discount, bearing no coupons and are often called commercial paper. Major issuers are sales finance and consumer loan companies. Bankers' acceptances are also included as a form of short-term paper.[42] They are considered the liability of the original issuer, not the guarantor bank. Provincial and municipal Treasury bills are included. Asset-backed securities[43] are also classified in this sub-category.

Foreign investments in short-term paper include holdings of U.S. Treasury bills and other U.S. short-term paper plus short-term paper instruments from elsewhere in the world.

6.5.3.2 Bonds and debentures

Government of Canada **bonds**[44] are marketable direct and guaranteed bonds with an original term to maturity of more than one year issued by the Government of Canada, whether in Canadian or foreign currency, plus Canada Savings Bonds, real return bonds, special non-marketable bonds issued to Canada Pension Plan, as well as bonds issued by a federal government business enterprise carrying an explicit guarantee. Canada Savings Bonds are not marketable and can be cashed at any time at the bearer's option. They can only be held by the households sector. Bonds guaranteed by the Government of Canada are included in this category and are usually recorded as the liability of federal non-financial government enterprises.

Provincial government bonds consist of direct and guaranteed marketable bonds in Canadian or foreign currency issued with an original term to maturity of more than one year by provincial governments. The category also includes provincial savings bond issues and special issues to the Canada Pension Plan that are not marketable. Provincial guaranteed bonds (for example, Hydro-Québec bonds) are recorded as the liability of the relevant enterprise.

Municipal government bonds are direct and guaranteed marketable bonds in Canadian or foreign currency, issued with an original term to maturity of more than one year by municipal governments and municipal government business enterprises. Bonds guaranteed by municipal governments but issued by local non-financial government enterprises, are recorded as a liability of those enterprises.

Other Canadian bonds consist largely of bonds and debentures issued by Canadian corporations. By definition, they are issued with an original term to maturity of more than one year and may be denominated in Canadian or foreign currency. Mortgage bonds are included but not mortgages (which are generally characterized by blended payments of principal and interest and are not considered to be bonds). In addition to bonds issued by private non-financial and financial corporations, this category covers bonds issued by non-profit organizations (for example, churches, universities, non-profit co-operatives), bonds issued by government business enterprises and bonds issued by hospitals.

This category also includes Canadian holdings of bonds and debentures issued by foreign governments and corporations.

6.5.4 Loans

Loans are distinguished from other credit market instruments such as bonds or short-term paper by their characteristic of non-marketability. Usually the financial asset cannot be sold nor the liability assumed by any but the original party. Non-marketable notes are classified as loans. No distinction is made between short-term and long-term loans.

This category includes consumer credit, bank and other loans, mortgages, corporate claims[45] representing loans and advances to affiliated[46] enterprises and government claims representing loans and advances to government business enterprises.

Consumer credit, in general terms, consists of credit extended to persons for the purchase of consumer goods and services, although it is often impossible to determine the actual use of a loan and therefore this definition is imprecise. This category includes foreign currency and Canadian dollar personal loans by chartered banks (which excludes business and mortgage loans, loans for renovations of personal property, loans for mobile homes and loans to purchase or carry securities), similar loans by near-banks, policy loans advanced by life insurance companies and loans to persons by sales finance and consumer loan companies. Loans by the sales finance subsidiaries of department stores and automobile companies are also included in this category.

Non-mortgage loans include loans, overdrafts, instalment loans and securities repurchase agreements booked in Canada by Canadian chartered banks. Financing by means of financial leases may also be classified as loans, depending on the terms of the lease.[47] Canadian chartered banks comprise domestically-owned and non-resident-owned banks that have charters (licences) to operate in Canada under the terms of the Bank Act. Loans may be in Canadian or foreign currency, but values are expressed in Canadian dollars for purposes of the financial accounts. Loans to domestic sectors by foreign banks (that is, banks having no Canadian charter and operating outside Canada) or by foreign branches, agencies and subsidiaries of Canadian chartered banks, are also included in the loans category. Some personal loans are classified as consumer credit.

The mortgages category includes mortgage loans and agreements of sale secured by real property (mostly residential buildings). First, second and third mortgages are included. Home improvement loans are not considered to be mortgages, being instead classified as bank or other loans. Mortgage bonds are also excluded, being classified instead as bonds. Mortgages are characterized by blended repayments, usually monthly, of mortgage principal and interest. Bonds, while they may be secured by real property, usually require semi-annual payment of interest (the coupon) and repayment of principal at maturity. No distinction is made between mortgages privately placed and issues sold in the market.

Loans and advances to corporate affiliates are classified as corporate claims within the loans category. Loans and advances to government affiliates have the same treatment.

6.5.5 Equity and investment funds

The **equity and investment funds** instrument category includes claims on the residual value of a corporation after the claims of all creditors have been met. In the Financial and wealth accounts, equity is treated as a liability of the issuing institutional unit. Equities comprise common and preferred shares (stocks), which represent a stake in the ownership of the company. In addition, the following are also considered to be equities: depository receipts,[48] most units of mutual funds,[49] income trusts,[50] and warrants.[51] Equities can be part of portfolio investment or direct investment in the balance of payments and the international investment position (see chapter 8), depending upon the relationship of the issuer and the holder. The equity and investment funds category includes both listed and unlisted shares as well as corporate and government equity claims and foreign equity investments.

All of the stock, whether issued to associated or non-associated enterprises or to households, is recorded on the liability side. Stock issued by a government business enterprise to the parent government is classified as a liability owed to the parent government. On the asset side, investments in the stock of associated enterprises are reported under corporate and government equity claims. The financial flow accounts record new issues, redemptions and sales and purchases of outstanding shares at market value. The balance sheet accounts include accumulated retained earnings implicitly as part of equity outstanding. The financial flows do not record retained earnings.

On the asset side, corporate claims include investment in shares, marketable debt securities and loans and advances to associated corporations (parent, subsidiary or affiliates such as joint ventures or sister corporations with the same parent). On the liability side, shares issued to associated corporations are not reported separately from total share capital.

Claims of or on associated government enterprises include investment in shares issued by government business enterprises plus investments in marketable securities, loans and advances issued by the parent government or government business enterprise. Share capital issued to the parent government or associated government business enterprise is separately reported, in contrast to the situation that exists for corporate claims.

Contributed surplus[52] is included in the balance sheet as a component of claims of associated government enterprises.

Claims between parent governments and government business enterprises are classified to government equity claims. Claims between one government enterprise and another government enterprise are also classified to this category. Claims between a government business enterprise and an associated private corporation are classified as corporate claims.

Foreign investments include common and preferred shares and other similar instruments. These investments may be denominated in Canadian or foreign currency. Liabilities of non-resident corporations in these marketable forms, plus loans and advances, when held as financial assets by associated domestic corporations, are classified as corporate claims.

6.5.6 Life insurance and pensions

The *SNA 2008* (p. 232) notes that "insurance, pension and standardized guarantee schemes all function as a form of redistribution of income or wealth mediated by financial institutions. The redistribution may be between individual institutional units in the same period or for the same institutional unit over different periods or a combination of the two. Units participating in the schemes contribute to them and may receive benefits (or have claims settled) in the same or later periods. While they hold the funds, insurance corporations invest them on behalf of the participants."

The life insurance and pensions asset/liability category in Canada's Financial and wealth accounts pertains to the liability of life insurance companies and pension funds to policyholders and beneficiaries. Included are the liabilities of life insurance companies, fraternal benefit societies, segregated funds of life insurance companies, accident and sickness insurance companies and the liability of trusteed pension plans to pension plan members. The corresponding financial asset is held entirely by the households sector. In the Canadian System of National Accounts, life insurance companies are treated as associations of individuals and the net financial assets accumulated by life insurance companies are considered to be the property of the policyholders on whose behalf benefits will eventually be paid. Life insurance companies and fraternal benefit societies also have other liabilities such as bank loans and mortgages. Trusteed pension funds are also treated as associations of individuals and all of their accumulated non-financial and financial assets are considered to be owned by the persons who are or will be the pension beneficiaries.

The financial flows record only the acquisition and disposition of financial assets and liabilities by the sector and not the operational flows of funds into and out of the sector. In other words, the flows recorded in this category are net of employer and employee pension contributions plus life insurance premiums and annuity considerations plus health and other insurance premiums paid to accident and sickness branches of life insurance companies plus the interest and other investment income of these sub-sectors less their operating costs and benefits and claims paid.

6.5.7 Other accounts receivable or payable

Other accounts receivable or payable consist of trade credits (receivables and payables) and other receivables/payables. The former generally includes short-term credit advanced or received in the ordinary course of business by suppliers or buyers of goods and services. These credits are outstanding from the time the goods or services are provided until payment is received. Trade credit does not constitute a marketable instrument like short-term paper and it is not negotiated like a bank loan. Receivables and payables between affiliated corporations (for example, a parent and a subsidiary) are included in this category. The financial flow accounts are not presented on a fully consolidated basis for most sectors and as a result, a considerable share of the trade credit statistics are flows

within a sector or even within an enterprise or group of companies. Such intra-sectoral flows are most important in the non-financial corporations sector.

There is a 'float'[53] problem in the trade credit statistics, the size of which is unknown. This float arises from differences between the time when trade credit is recorded as a financial asset by the supplier and the time the buyer receives the goods or the bill and records the liability. Similarly there can be a discrepancy between the time a trade credit liability is removed from the books of the payer and the time when payment is received and the financial asset is removed from the supplier's books. There is no explicit estimate of float assets and liabilities in the financial flow accounts due to measurement difficulties.

This category also includes repurchase agreements and other financial derivative instruments such as option and forward contracts.

6.6 Financial analysis

Most of the statistics in the national accounts pertain to the non-financial or 'real' economy, but as seen in this chapter the Financial and wealth accounts provide a comprehensive perspective on the financial side of the economy as well.

Financial statistics—especially quarterly financial statistics—can often appear 'noisy' because seemingly small variations in relative rates of return on different financial instruments can cause large portfolio shifts. Changes in the slope of the yield curve can cause movements into or out of short-term instruments and out of or into long-term ones. Interest rates and bond yields for Canadian financial instruments may rise or fall relative to comparable rates abroad, causing international financial flows. For these reasons and others, the financial flows tend to exhibit greater volatility than most of the non-financial flows.[54] Accordingly, it can sometimes be difficult to discern the underlying interactions between the 'real' and financial economies, especially at the quarterly frequency.

Nevertheless, the Financial and wealth accounts can be used to gain analytical insight on economic trends.

6.6.1 Borrowing and debt indicators

The financial flow and national balance sheet accounts can be used to provide a comprehensive picture of flows of borrowing and stocks of indebtedness across the different sectors and to reveal how that picture is changing through time. Borrowing is an important indicator of demand pressure in the economy, while trends in and the extent of indebtedness may help signal whether economic storm clouds lie ahead.

The financial market summary table extracts borrowing statistics from the financial flows matrix to reveal borrowing trends by sector and by financial instrument category, in a time series context. By focussing on the more market-sensitive instruments and omitting intermediary activities like deposit taking and transactions such as the extension of trade credit and claims on associated enterprises, it provides an approximation of final borrowing through organized markets for securities and negotiated loans. Funds raised by non-financial domestic sectors constitute by far the greater part of this domestic credit market activity. As an example, Table 6.4 displays the financial market summary table for the period leading up to and including the international financial crisis of 2008 and the recession of 2009.

The last line of the table shows total funds raised, which peaked in 2007 before declining by half in 2008 and 2009, the years of the financial crisis and recession. The table shows how households, non-financial corporations and non-residents accounted for this decrease. While the private sector was cutting back on its borrowing in view of the economic downturn, governments went into fiscal stimulus mode and increased their borrowing. This dampened the overall decline in borrowing considerably.

The table shows that short-term borrowing rose sharply in 2008, as institutional units sought to increase their liquidity during the crisis, and declined only modestly in 2009. Bond borrowing remained comparatively low until 2009, when it rose sharply as market confidence strengthened and the extremely low interest rate environment permitted corporations and governments to raise new funds while paying minimal coupon rates. Consumer credit increased by about a quarter between 2007 and 2009 while net new non-mortgage borrowing disappeared. Mortgage borrowing fell sharply as the housing market weakened. Funds raised through listed equity shares virtually disappeared in the crisis year of 2008 before returning to a more normal level in 2009.

Table 6.4
Financial market summary table, 2006 to 2009

	2006	2007	2008	2009
	millions of dollars			
Financial flows borrowing category				
Households	108,185	131,261	115,149	102,132
Consumer credit	33,874	37,452	36,362	43,519
Non-mortgage loans	9,604	7,270	5,349	819
Mortgages	64,707	86,539	73,438	57,794
Non-profit institutions serving households	2,536	308	-1,215	592
Non-mortgage loans	2,221	249	-1,409	305
Mortgages	315	59	194	287
Non-financial private corporations	87,759	121,017	34,657	9,355
Short-term paper	14,838	4,814	1,806	-14,319
Bonds	11,765	15,342	13,201	34,206
Non-mortgage loans	38,527	61,167	22,610	-38,262
Mortgages	10,403	21,221	1,036	11,708
Listed shares	12,226	18,473	-3,996	16,022
Non-financial government enterprises	101	-1,965	-1,976	1,648
Short-term paper	-602	-165	-482	-354
Bonds	2,143	2,666	506	2,138
Non-mortgage loans	-1,478	-4,511	-1,684	-137
Mortgages	38	45	-316	1
Listed shares	0	..	0	0
Federal general government	-10,104	-18,682	73,253	89,056
Short-term paper	-3,687	-8,586	66,330	3,428
Bonds	-6,389	-10,214	3,662	85,620
Non-mortgage loans	-28	118	3,261	8
Other levels of government	18,509	22,201	21,531	57,745
Short-term paper	1,395	7,099	12,902	9,141
Bonds	17,316	13,605	12,797	44,213
Non-mortgage loans	-63	1,687	-4,550	3,264
Mortgages	-139	-190	382	1,127
Total funds raised by domestic non-financial sectors	206,986	254,140	241,399	260,528
Short-term paper	11,944	3,162	80,556	-2,104
Bonds	24,835	21,399	30,166	166,177
Consumer credit	33,874	37,452	36,362	43,519
Non-mortgage loans	48,783	65,980	23,577	-34,003
Mortgages	75,324	107,674	74,734	70,917
Listed shares	12,226	18,473	-3,996	16,022
Non-residents	96,591	74,516	-8,683	22,696
Short-term paper	8,367	-8,720	-6,277	4,066
Bonds	42,439	50,361	-37,190	7,571
Non-mortgage loans	5,408	11,553	9,401	11,791
Foreign investments: equity	40,377	21,322	25,383	-732
Total borrowing excluding domestic financial institutions	303,577	328,656	232,716	283,224
Domestic financial institutions	121,382	143,016	136,910	-45,505
Short-term paper	28,445	16,228	-23,325	-49,760
Bonds	76,593	108,614	130,916	-149
Non-mortgage loans	11,333	16,998	11,866	-6,130
Mortgages	1,867	-1,323	120	-1,060
Listed shares	3,144	2,499	17,333	11,594
Total funds raised	424,959	471,672	369,626	237,719

.. not available for a specific reference period

Source: Statistics Canada, table 36-10-0579-01.

Non-residents raised, in Canada, less than a third as much in 2009 as they did in 2007, with the decrease being especially evident in bond and equity sales.

Domestic financial institutions cut their borrowing very substantially, on a net basis, between 2007 and 2009. They liquidated short-term paper and non-mortgage loans in 2009 and instead raised more funds through listed shares. Bond borrowing ceased on a net basis despite low interest rates and financial institutions also sought to raise additional equity to strengthen balance sheets, taking advantage of the sharp decline in equity prices that had occurred in 2008 and early 2009.

Financial developments during this four-year period can also be explored using the credit market summary table, which parallels the financial market summary table in its general structure and shows total debt outstanding, at book value, by institutional sector and by financial instrument category.

Table 6.5 shows statistics from the credit market summary table for the period 2006 to 2009. The debt statistics shown tell a story similar to the one told by the changes in borrowing recorded in Table 6.4. However, as noted, the balance sheet stocks can change for reasons other than variations in borrowing and sometimes additional insights can be gained by looking at the balance sheet. For example, although the non-resident sector did substantial borrowing in 2009 ($22,696 million, see Table 6.4), the sector's debt outstanding increased just $465 million (from $865,880 in 2008 to $866,345 in 2009), mainly due to a reduction of bond indebtedness. In addition, although total debt outstanding continued growing in 2009, its growth rate fell from 8.7 per cent in 2008 to 6.2 per cent in 2009.

Table 6.5
Credit market summary table at book value, 2006 to 2009

	2006	2007	2008	2009
	millions of dollars			
Balance sheet liability category				
Households	4,208,637	4,700,885	5,201,558	5,573,352
Consumer credit	1,417,328	1,562,686	1,711,373	1,850,727
Non-mortgage loans	232,583	265,747	288,654	294,381
Mortgages	2,558,726	2,872,452	3,201,531	3,428,244
Non-profit institutions serving households	46,375	55,215	45,004	48,278
Non-mortgage loans	34,791	43,011	32,226	34,493
Mortgages	11,584	12,204	12,778	13,785
Non-financial private corporations	2,776,087	3,133,496	3,412,985	3,474,323
Short-term paper	249,005	284,716	306,933	270,228
Bonds	932,145	997,011	1,081,730	1,193,054
Non-mortgage loans	978,724	1,153,929	1,310,198	1,251,562
Mortgages	616,213	697,840	714,124	759,479
Non-financial government enterprises	257,502	245,101	203,269	206,054
Short-term paper	13,665	10,970	10,012	8,642
Bonds	206,289	205,211	184,369	191,202
Non-mortgage loans	36,274	27,484	8,316	5,956
Mortgages	1,274	1,436	572	254
Federal general government	1,633,718	1,576,634	1,673,911	2,150,675
Short-term paper	509,492	487,661	568,843	784,854
Bonds	1,124,079	1,088,181	1,093,728	1,347,669
Non-mortgage loans	147	792	11,340	18,152
Other levels of general government	1,717,194	1,781,246	1,876,855	2,073,690
Short-term paper	69,034	76,946	104,701	149,932
Bonds	1,489,109	1,541,656	1,623,347	1,761,150
Non-mortgage loans	144,194	148,501	136,504	143,173
Mortgages	14,857	14,143	12,303	19,435
Total debt outstanding of domestic non-financial sectors	10,639,513	11,492,577	12,413,582	13,526,372
Short-term paper	841,196	860,293	990,489	1,213,656
Bonds	3,751,622	3,832,059	3,983,174	4,493,075
Consumer credit	1,417,328	1,562,686	1,711,373	1,850,727
Non-mortgage loans	1,426,713	1,639,464	1,787,238	1,747,717
Mortgages	3,202,654	3,598,075	3,941,308	4,221,197
Non-residents	650,273	838,145	865,880	866,345
Short-term paper	73,821	72,421	42,149	40,450
Bonds	426,461	593,613	589,439	558,169
Non-mortgage loans	149,991	172,111	234,292	267,726
Total debt outstanding excluding domestic financial institutions	11,289,786	12,330,722	13,279,462	14,392,717
Domestic financial institutions	3,172,134	3,805,842	4,253,845	4,232,512
Short-term paper	603,640	733,487	671,804	471,650
Bonds	2,279,990	2,734,335	3,207,421	3,387,993
Non-mortgage loans	257,446	312,234	347,138	347,970
Mortgages	31,058	25,786	27,482	24,899
Total debt outstanding	14,461,920	16,136,564	17,533,307	18,625,229

Source: Statistics Canada, table 38-10-0234-01.

6.6.2 Financial ratio indicators

When combined with statistics from the non-financial accounts by means of ratios, the financial accounts provide perspective on the relative indebtedness and liquidity of the institutional sectors. A number of these ratios can be calculated, some pertaining to the household sector, some to the corporate sector and some to the government sector. Table 6.6 shows the financial ratio indicators that are available from Statistics Canada.

6.6.2.1 Financial ratio indicators

Household debt can be defined as the sum of household sector liabilities in the form of loans, which is to say consumer credit, mortgages and non-mortgage loans, plus trade payables. The household sector does not hold any liabilities by means of other financial instruments such as bonds, deposits or equities. The ratio of household debt to gross domestic product can be compared with itself through time and also with similar ratios for the corporate and government sectors, and with the household-debt-to-GDP ratio in other countries.

Another interesting indicator, the overall household-debt-to-disposable-income ratio, is calculated as household debt, as defined for the previous ratio, divided by household disposable income as defined in chapter 5. Tracking the value of this ratio through time shows the changing burden of household debt relative to the capacity of households to repay that debt out of income.

An alternative is the household-credit-market-debt-to-disposable-income ratio, which is similar to the previous ratio but the numerator excludes debt in the form of trade payables. Trade payables are typically quite small relative to other household sector liabilities and they are short term in nature. Many analysts prefer this ratio to the previous one as an indicator of household debt burden.

Another alternative is the household-consumer-credit-and-mortgage-liabilities-to-disposable-income ratio. This ratio further restricts the scope of household debt by excluding not just trade payables, but also non-mortgage loans. Like trade receivables, non-mortgage loans are typically a relatively small share of total household debt and these loans are often taken out to finance undertakings other than the purchase of consumer goods and services, such as unincorporated business activities.

As explained earlier in this chapter, household net worth represents the excess of household non-financial and financial assets over household liabilities. The ratio of net worth to disposable income is an indicator of the wealth effect on potential consumer expenditure. To the extent that household net worth is growing more rapidly than disposable income, households may be inclined to increase discretionary consumer spending.

The household-debt-to-total-assets ratio compares total household debt, as defined for purposes of the first and second ratios, to total financial and non-financial assets of the household sector. This is an indicator of household financial risk. When liabilities are small relative to total non-financial and financial assets, households have the option of reducing them by liquidating assets, so the associated risk may be regarded as less than would be the case if liabilities were large relative to assets.

The household-debt-to-net-worth ratio can be interpreted as a leverage indicator. Net worth provides potential collateral for borrowing, so the higher this ratio is the less capacity will the household sector have for additional borrowing.

The household-credit-market-debt-to-net-worth ratio is similar to the household-debt-to-net-worth ratio, the difference being that the numerator excludes trade payables. Another alternative is the household-consumer-credit-and-mortgage-debt-to-net-worth ratio. This ratio is similar to the previous one except that non-mortgage loans are excluded from the numerator. This ratio aims at consumer debt (including mortgages) as distinct from broader definitions of debt.

The household-financial-assets-to-non-financial-assets ratio provides insight on the structure of household sector assets, particularly with respect to their liquidity (since financial assets tend to be more liquid than non-financial ones). Greater liquidity may imply an increased inclination by households to spend on goods and services.

The household-real-estate-equity-to-real-estate-assets ratio is the value of household real estate equity (the value of residential and non-residential real estate plus land owned by households less the mortgage liabilities of households) divided by the value of residential and non-residential real estate and land owned by households. Real

estate accounts for a large share of household sector assets and when the equity share in those assets is relatively large, households are better situated in the event of an economic downturn.

Another useful household real estate ratio is the household-real-estate-to-disposable-income ratio. It is an indicator of the affordability of housing. In this connection, the debt service ratio from the income and expenditure accounts, defined as household mortgage and non-mortgage interest paid as a proportion of disposable income, is also useful.

The first and second panels of Table 6.6 show all of the ratios just mentioned over the period between 2006 and 2009. Debt is measured at year end while income is the flow for the year as a whole. The debt-to-income and debt-to-assets ratios generally show a rising trend over the entire period. Net worth as a percentage of disposable income peaks in 2007 and then declines. Total assets rose although financial assets decreased relative to net worth. Owners' equity declined steadily relative to the value of real estate assets.

Table 6.6
National balance sheet financial ratio indicators, 2006 to 2009

	2006	2007	2008	2009
	percent			
Financial flows component				
Households				
Debt to gross domestic product	72.7	77.3	81.1	88.5
Debt to disposable income	134.8	142.2	149.2	154.8
Credit market debt to disposable income	133.0	140.4	147.1	152.7
Consumer credit and mortgage liabilities to disposable income	125.6	132.4	139.0	144.6
Net worth as a percentage of disposable income	685.7	709.2	683.5	660.8
Debt to total assets	16.4	16.7	18.0	19.0
Debt to net worth	19.7	20.1	21.9	23.4
Credit market debt to net worth	19.4	19.8	21.6	23.1
Consumer credit and mortgage liabilities to net worth	18.3	18.7	20.4	21.9
Total assets to net worth	119.7	120.1	121.9	123.4
Financial assets to net worth	63.4	63.5	62.7	62.9
Financial assets to non-financial assets	112.8	112.2	105.9	104.0
Owner's equity as a percentage of real estate	75.0	74.8	73.8	72.6
Real estate as a percentage of disposable income	323.8	340.7	346.4	342.9
Households and non-profit institutions serving households				
Debt to gross domestic product	74.6	79.2	83.1	90.7
Debt to disposable income	134.8	141.9	148.7	154.3
Credit market debt to disposable income	130.9	138.3	144.4	149.9
Private non-financial corporations				
Total debt to equity	162.1	168.4	190.1	201.4
Credit market debt to equity (book value)	60.9	66.1	67.9	68.4
General government				
Gross debt (book value) to gross domestic product	94.8	92.1	90.0	101.6
Federal general government gross debt (book value) to gross domestic product	41.6	38.9	39.0	47.5
Other levels of general government gross debt (book value) to gross domestic product	53.0	53.1	50.5	53.9
Net debt (book value) to gross domestic product	44.2	39.7	37.1	41.1
Federal general government net debt (book value) to gross domestic product	33.3	30.9	28.8	30.9
Other levels of general government net debt (book value) to gross domestic product	19.3	18.1	17.6	20.1

Source: Statistics Canada, tables 38-10-0235-01, 38-10-0236-01 and 38-10-0237-01.

6.6.2.2 Corporate sector financial indicators

The private-non-financial-corporations-debt-to-equity ratio at market values is a measure of financial leverage in the business sector. When the ratio is rising, corporations are financing an increasing proportion of their activities through debt as distinguished from retained earnings and the issuance of new shares. This makes the sector more vulnerable to rising interest rates. This ratio may fluctuate substantially when stock prices are volatile. It rose sharply in 2008 and 2009.

The private-non-financial-corporations-credit-market-debt-to-equity ratio at book value is defined somewhat more narrowly than the previous ratio, as debt for this ratio is limited to loans, bonds and short-term paper, and is

expressed at book value for debt and equity. This ratio rose moderately in 2008 and 2009 after a sharper increase in 2007.

6.6.2.3 Government sector financial indicators

One of the most useful classes of government sector financial ratios is the set that shows alternative measures of debt expressed in relation to the size of the economy (that is, gross domestic product). Examined in a time series context, these ratios provide a useful means for comparing government debt in different epochs. When studied in a cross-section, these ratios reveal how the indebtedness of the different levels of government—federal, provincial and territorial, local and aboriginal—compares.[55] Inter-temporal and inter-governmental comparisons of these kinds can be useful in assessing the ease with which governments can manage current debt levels and potentially take on additional debt if the need should arise.

The numerator of these government-debt-to-GDP ratios can be either gross or net debt. When a government borrows funds, through a bond issue for example, and deposits the proceeds in its bank account, gross debt rises by the amount borrowed. However, net debt remains unchanged, at least initially, since financial assets (deposits) have risen by the same amount as financial liabilities. The gross debt ratios show the degree of influence of governments in debt markets, while the net debt ratios are a better indicator of the burden of government debt. Net debt can be thought of as a government's cumulative budgetary deficit or surplus since it came into existence.

The 2006-2008 ratios for both the federal government and other levels of government show generally declining relative debt. In 2009 the relative debt measures increase substantially reflecting the weak economy combined with stimulative budgetary policies.

Notes for chapter 6

1. In some countries these accounts are referred to as the **flow of funds accounts**. *SNA 2008* refers to them simply as the **financial accounts**, as does the United States. These differences typically refer to the kind of detail in the accounts. The term **financial accounts** often refers to financial transactions only; **financial flow accounts** refer to combined capital and financial accounts; and **flow of funds accounts** are understood to be financial flow accounts with considerable sub-instrument (to-whom-from-whom) details.

2. For example, consumer credit borrowing is associated with consumer expenditure and mortgage borrowing with housing expenditure.

3. The adjective **'real'** has two quite different meanings in economics, depending on the context. In the present context it refers to the non-financial aspects of the economy (income, consumption, investment and so on) as distinct from the financial ones (borrowing, lending, financial assets and liabilities). In the other context, 'real' refers to time series that have been deflated to remove the effects of price change as distinct from time series that are measured in nominal terms.

4. Commercial paper is an unsecured, short-term debt instrument issued by a corporation, typically for the financing of accounts receivable, inventories and meeting short-term liabilities. Maturities on commercial paper rarely extend beyond 270 days.

5. A sales finance company buys, at a discount, the installment sales contracts of retail merchants.

6. The classification is broadly consistent with the standard recommended by *SNA 2008*. See Annex 1, pp. 546-548. It is fully consistent with the North American Industry Classification System, 2012 edition, 'sector' 52 called 'Finance and insurance' and sector 55, 'Management of companies and enterprises'.

7. The amount of lending/borrowing that occurs directly between primary lenders and borrowers (for example, directly between households and governments, or between non-financial corporations and non-residents) without financial intermediation is comparatively small.

8. Some of the other sectors might be net mortgage borrowers as well, but taken as a group the other sectors would necessarily be a net mortgage lender with lending equal to the household sector's mortgage borrowing.

9. In some countries, the financial accounts incorporate an explicit instrument discrepancy in order to bring instrument financial assets and liabilities into balance. In Canada, there is no explicit discrepancy. Rather, when the accounts are being estimated adjustments are made to one or more instruments in order to ensure balance.

10. In this respect, the financial flow accounts estimation methodology is analogous to the product balancing approach that takes place in constructing the supply and use accounts, discussed in chapter 4. In both, the statistical estimates for several series are constrained by an identity, which helps in assessing the accuracy and consistency of the source data and in producing the final estimates.

11. The statistical discrepancy, calculated in the income and expenditure accounts as the difference between income-based and expenditure-based GDP, cannot be allocated to any particular sector, so it is defined as a sector in itself. The statistical discrepancy is reported separately from the other sectors in the financial flows the same way as it is in the income and expenditure accounts. This should not be confused with the financial flows discrepancy, which is the difference between net lending in the income and expenditure accounts and financial account net lending in the sectors of financial flow accounts. Nevertheless, the two measures are closely related, in that a reduction of the GDP discrepancy has the effect of lowering selected sectors' discrepancies.

12. The financial flows dataset is available free on the Statistics Canada Internet site in table 36-10-0578-01. Financial flow statistics are available as well for the period 1961-2011 on a basis consistent with the SNA 1993 standard, in tables 36-10-0010-01, 36-10-0015-01, 36-10-0017-01, 36-10-0036-01, 36-10-0037-01, 36-10-0040-01, 36-10-0041-01, 36-10-0119-01, 36-10-0120-01, 36-10-0216-01, 36-10-0227-01, 36-10-0228-01, 36-10-0354-01, 36-10-0421-01, 36-10-0422-01, 36-10-0429-01, 36-10-0436-01, 36-10-0437-01, 36-10-0439-01, 36-10-0457-01, 36-10-0483-01, and 36-10-0492-01 to 36-10-0507-01. When Statistics Canada converted to the *SNA 2008* standard, the financial flows were revised back to 1990.

13. This is extracted from table 36-10-0578-01.

14. Observe that net capital transfers between sectors must sum to zero over all sectors.

15. Observe that purchases and sales of existing capital between sectors must sum to zero over all sectors.

16. By way of comparison, gross domestic product was $1,542 billion in 2009.

17. In the Financial and wealth accounts, as elsewhere in the national accounts, reserves held against life insurance policies and pension plans are treated as wealth belonging to the households sector.

18. For additional examples, see *SNA 2008*, chapter 12.

19. See *SNA 2008*, chapter 21, p. 428.

20. *SNA 2008*, chapter 12, p. 248.

21. This is not to imply it is a sustainable scenario for a government to have any conceivable level of net debt. The higher a government's net debt is in relation to its revenue, and the higher the interest rates it must pay on that debt, the larger will be the share of debt servicing charges in its expenditure budget and the less budgetary room it will have to pay for other government programs. Moreover, there are obvious social and economic limits on a government's ability to tax and issue new currency. For an example of the accounting for government balance sheets, see the Government of Canada, *Public Accounts of Canada 2014*, Volume 1, Summary Report and Consolidated Financial Statements.

22. Individual member countries of the European Union, unlike Canada, do not have unfettered power to issue their common currency, the Euro. Similarly, Canadian provinces and municipalities cannot issue Canadian currency.

23. The non-resident balance sheet is, of course, a very partial balance sheet for non-residents because it excludes all assets and liabilities for which there is no Canadian counterparty.

24. In 2006 it was decided that Canadian accounting principles should converge with those of the International Accounting Standards Board, which is responsible for a set of principles referred to as the International Financial Accounting Standards.

25. This is changing, however, with the adoption of International Financial Reporting Standards. Corporations have been reporting their financial statements at 'fair value', which resembles market value, since around 2006. Nevertheless, a **book value** is an asset or liability valuation based on the value recorded in the financial records (or 'books') of the institutional unit when the transaction associated with the asset's or liability's acquisition took place. When an asset is recorded at book value it is sometimes said to be measured at **historical cost**.

26. The distinction between stocks and flows is discussed in chapter 3.

27. Strictly speaking, the reference here is to the **economic appearance or disappearance** of such resources. The existence of the minerals might have been known previously, but they may have had no economic value because of technological limitations or low mineral prices.

28. For example, if a government-owned enterprise is privatized (sold to the private sector), the assets and liabilities of that enterprise might be reclassified from the non-financial government business enterprise sector to the non-financial private corporations sector. Changes in classification are generated by the statistical process, based on specific rules for classification.

29. According to *SNA 2008* (p. 63), "Owners of land, buildings and immovable structures in the economic territory of a country, or units holding long leases on either, are deemed always to have a centre of economic interest in that country, even if they do not engage in other economic activities or transactions in the country. All land and buildings are therefore owned by residents;" and "Extraction of subsoil resources can only be undertaken by resident institutional units. An enterprise that will undertake extraction is deemed to become resident when the requisite licenses or leases are issued, if not before." Non-residents can, of course, hold resident non-financial assets indirectly by holding the corresponding equity.

30. The creation of produced non-financial assets via gross capital formation is discussed in chapter 5.

31. See Board of Governors of the Federal Reserve System, *Financial Accounts of the United States: Flow of Funds, Balance Sheets, and Integrated Macroeconomic Accounts*, first quarter 2014, June 5, 2014, p. v.

32. Estimates of the human capital stock are available outside of the national accounts framework, however. The following study estimates market-based human capital investment and stock for Canada over the period 1970 to 2007: Wulong Gu and Ambrose Wong, "Estimates of Human Capital in Canada: The Lifetime Income Approach", Statistics Canada, Economic Analysis Research Paper Series, cat. no. 11F0027M, no. 062, June 2010.

33. This includes land located in government parks and other locations under government responsibility where produced assets are non-existent. Land surrounding public buildings and engineering structures such as roadways and bridges is included in the balance sheets.

34. Non-financial assets are usually valued at estimated replacement cost due to the thinness of markets for such assets. Financial assets and liabilities, which typically have more active markets, are mostly revalued using observed current market prices.

35. Corporate net worth as recorded in the national balance sheet accounts is sometimes referred to as residual net worth. In an economic sense it bears a resemblance to Tobin's q, which is the ratio of the market's valuation of a company to its asset replacement value. When corporate net worth is positive/negative, the market might be seen as undervaluing/overvaluing the sector. However, caution is required when applying this interpretation since corporate net worth is also affected by measurement problems.

36. These have no counterpart in the financial flows. The balance sheet includes both non-financial and financial stocks.

37. The national balance sheet dataset is available free on the Statistics Canada Internet site in table 36-10-0580-01. Balance sheet statistics are available as well for the period 1961-2011 on a basis consistent with the SNA 1993 standard, in tables 36-10-0508-01 through 36-10-0575-01 inclusive. When Statistics Canada converted to the *SNA 2008* standard, the balance sheets were revised back to 1990.

38. The EFA, which is held in the name of Canada's Minister of Finance, is the largest component of Canada's official international reserves. It is an actively managed portfolio that is made up primarily of liquid foreign currency securities, SDRs, and a small holding of gold. The Government of Canada's Budget 2014 document (Annex 1) stated that "Liquid foreign exchange reserves are maintained at a level at or above 3 per cent of nominal GDP."

39. Coins are treated as liabilities at full face value and there is no netting of the cost of producing coins or currency. Commemorative coins not in circulation are excluded.

40. Formerly the Government of Ontario owned the Province of Ontario Savings Office. However, the assets of this institution were sold to Desjardins Credit Union and the Savings Office ceased to exist as of April 1, 2003.

41. **Bills** are securities that give the holders the unconditional rights to receive stated fixed sums on a specified dates. Bills are issued and usually traded in organized markets at discounts to face value that depend on the rate of interest and the time to maturity.

42. **Bankers acceptances** involve the acceptance by a financial intermediary, for a fee, of a draft or bill of exchange and the unconditional promise to pay a specific amount at a specified date. Much international trade is financed by bankers acceptances. See *SNA 2008*, p. 228.

43. **Asset-backed securities** are backed by a discrete pool of self-liquidating financial assets. This type of securitization is a financing technique in which financial assets, in many cases themselves less liquid, are pooled and converted into instruments that may be offered and sold in the capital markets. In a basic securitization structure, an entity, often a financial institution and commonly known as a 'sponsor', originates or otherwise acquires a pool of financial assets, such as loans, leases, credit card receivables, or other receivables. It then sells the financial assets to a specially created investment vehicle that issues securities; 'backed' or supported by those financial assets.

44. **Bonds, debentures and notes** are securities that give the holders the unconditional right to fixed payments or contractually determined variable payments on specified dates. The earning of interest is not dependent on earnings of the debtors. Bonds are contrasted with Treasury bills, which have a shorter term to maturity and are sold at a discount to par value with no explicit interest payments.

45. **Claims** are a financial instrument comprising corporate claims and government claims. Corporate claims are loans, advances and issues of debt between associated corporations; on the asset side, they also include

investments in shares between associated corporations. Government claims are claims between governments, between related government business enterprises or between a parent government and its enterprises, in the form of shares, debt securities, loans or advances.

46. An **affiliated** entity is a business entity which is owned between 10% and 100% by another business entity. Depending on the level of ownership, affiliates are defined as associates or subsidiaries or branches.

47. "When goods are acquired under a **financial lease**, a change of economic ownership of the goods from the lessor to the lessee is deemed to take place. The change of economic ownership may be distinguished by the fact that all the risks and rewards of ownership are transferred from the legal owner of the good, the lessor, to the user of the good, the lessee. The lessee contracts to make payments that enable the lessor, over the period of the contract, to recover all, or virtually all, of his costs including interest. This de facto change in ownership is recorded by assuming a loan that is made by the lessor to the lessee, the lessee uses this loan to acquire the asset and the payments by the lessee to the lessor represent not rentals on the asset but payments of interest, possibly a service charge and repayments of principal on the imputed loan. Interest is recorded as property income payable or receivable and debt repayment is recorded in the financial account as reducing the value of the asset (loan) of the lessor and the liability of the lessee." See *SNA 2008*, p. 230.

48. A **depository receipt** is a means by which a foreign company's securities are traded in the domestic market. Typically they are issued by domestic banks. Depository receipts trade on a domestic stock exchange, although a bank or other institution in the foreign country holds the shares that they represent.

49. A **mutual fund** is a diversified portfolio of securities invested in on behalf of a group of investors and professionally managed. Individual investors own a percentage of the value of the fund represented by the number of units they purchased and thus share in any gains or losses of the fund. Depending on the objectives of a fund, its assets can include equity, debt, or other financial instruments. Mutual funds include exchange traded funds.

50. An **income trust** is an investment trust that holds assets that are income producing. The income is passed on to the unit holders. Some of the most popular income trusts are real estate investment trusts and natural resource trusts. The main attraction of income trusts is their ability to generate cash flows for investors.

51. A **warrant** is a form of option that is treated in the financial account in the same way as other options. Warrants are tradable instruments giving the holder the right to buy, under specified terms for a specified period of time, from the issuer of the warrant (usually a corporation) a certain number of shares or bonds. There are also currency warrants based on the amount of one currency required to buy another and cross-currency warrants tied to third currencies. They can be traded apart from the underlying securities to which they are linked and therefore have a market value. The issuer of the warrant incurs a liability, which is the counterpart of the asset held by the purchaser.

52. **Contributed surplus** is an amount of money a company earns from non-operational sources, that is, from sources other than profits. It is recorded on the balance sheet. Often this pertains to the gain a company would have if, after issuing new shares at a stated par value, it managed to sell some of those shares at a higher value.

53. **Float** refers to double-counting that arises temporarily in the banking system when cheques are in the process of being cleared. When a person deposits a cheque in his account it appears in the account even though it has not yet been deducted from the account of the person who wrote the cheque. The double-counting disappears within days when the cheque is deducted from the other account.

54. The financial flows are not seasonally adjusted. Statistical tests indicate a lack of significant seasonality in most of the financial time series.

55. The balance sheet accounts are only available at the national level, so inter-governmental comparisons based on these accounts must be for the aggregates of all provincial and territorial governments, all local governments and all aboriginal governments. However, more detailed debt comparisons are possible for the provincial and territorial governments individually using debt statistics from the government finance statistics combined with the provincial and territorial estimates of GDP. See chapter 9.