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**Project for the Regional
Advancement of Statistics
in the Caribbean**

**Projet régional pour
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CARIBBEAN NATIONAL ACCOUNT TRAINING PROGRAM

Project for the Advancement of Statistics in the Caribbean Region (PRASC)
National Accounts Training
Session 14 – Sequence of Accounts – Capital, Financial and Balance Sheet
Accounts

January 2018



National Accounts

Sequence of Accounts – Capital Account, Financial Flows, Other Flows and Balance Sheet Account

National Accounts - Overview



➤ Course Objective

- ✓ Provide national account compilers with an overview of the sequence of national accounts, their interlinkages and the key measures that ‘fall out’ of each account.

Outline of the lecture

- Accumulation accounts
 - Capital account
 - Financial account
 - Other changes in assets account
- Balance sheet accounts



**Financial
and
Wealth
Accounts**

Accumulation accounts



- The accumulation accounts deal with changes in assets (financial and non-financial), liabilities and net worth, due to both transactions and other flows.

- The accumulation accounts are divided into three accounts:
 - Capital account
 - Financial account
 - Other changes in assets account
 - Other changes in the volume of assets account
 - Revaluation account

Balance sheet



- The balance sheet measures the stock of assets and liabilities at a given point in time as well as the net worth of a sector – defined as the difference between a sector’s assets and their liabilities.
- The balance sheet is a single account in the System of National Accounts.
 - Balance sheets can be looked at from a point-in-time perspective – what is the stock of wealth?
 - Balance sheets can be looked at from a time series perspective – what is the change in wealth?



Capital account

Capital account



- The capital account defines the relationship of saving, investment, and net lending and borrowing between the various sectors of the economy.
- It shows whether a sector's saving is adequate to meet its investment needs or whether it needs to borrow from other sectors.

Constructing the capital account



- The majority of the items that are required to construct the capital account have already been articulated in the production account, generation of income account and goods and services account.
- The only new flow introduced in the capital account are capital transfers, used assets (produced in a prior period) and land.

Net saving



- Net saving (or saving) is the opening entry in the capital account
- Net saving represents the amount of a sector's income from current production available for investment, after accounting for final consumption.
- Net saving flows out of the use of disposable income account

Consumption of fixed capital



- Consumption of fixed capital represents the amount of income a sector has set aside in a given accounting period to ensure that it can replace the capital used up during production.
- In the business accounting world this is referred to as depreciation – in national accounting world the concept is similar but the method to calculate the consumption of fixed capital is different.

Capital transfers



- Capital transfers are unrequited transfers where either the party making the transfer realizes the funds involved by disposing of an asset (other than cash or inventories), relinquishing a financial claim (other than accounts receivable) or the party receiving the transfer is obliged to acquire an asset (other than cash) or both conditions are met.
- Examples include:
 - Exceptionally large donations by households or enterprises to NPIs to finance gross fixed capital formation: for example, gifts to universities to cover the costs of building new residential colleges, libraries, laboratories;
 - Debt forgiveness (e.g., government multilateral loans)
 - Exceptionally large insurance settlements in the wake of a disaster.

Gross saving and capital transfers

Source of funds



- Gross saving and net capital transfers represent the total sources of funds available to a sector for the acquisition of non-financial assets.

Non-financial capital acquisition

Use of funds



- Institutional units can acquire four types of assets during an accounting period:
 - Fixed capital formation
 - New assets
 - Used assets
 - Changes in inventories
 - Acquisitions less disposals of valuables
 - The CSNA does not capitalize valuables and therefore this category is not relevant for the CSNA.
 - Land

SNA accounting identity

Net lending or net borrowing



- Within the System of National Accounts the sum across all sectors of gross saving must equal non-financial capital acquisition. This is the $S=I$ identity.
- As a corollary, the sum of net lending/net borrowing across all sectors must equal zero. This means that for everyone lending funds there must be someone else borrowing the funds.
- The sum of net lending/net borrowing across the domestic sectors (households, NPISH, corporations, governments) represents the amount of funds the domestic economy needs to borrow from non-residents or the amount of funds they can lend to non-residents.

An example to illustrate



- Assume that a young couple decided to live in their parents' basement for a year in order to save money to purchase a home. During the year their disposable income is \$100,000 and their consumption of goods and services was only \$20,000.

An example to illustrate



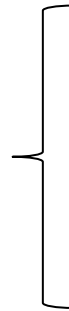
- Assume the couple found a new house with a purchase price of \$350,000 and are able to take immediate possession of the house. Assume that the government also decided to cancel all outstanding student loans as a means to help young couples move out of their parents' basements. At the time the government program was established, the young couple had \$20,000 in student loans outstanding.

An example to illustrate



Use of disposable income account	
Disposable income	\$100,000
Final consumption expenditure	\$20,000
Saving	\$80,000
Capital account	
Saving	\$80,000
Consumption of fixed capital	\$0
Capital transfers	\$20,000
Gross saving and capital transfers	\$100,000
Gross fixed capital formation (house)	\$350,000
Net lending / borrowing	-\$250,000

Sources of funds



Uses of funds





Financial and wealth accounts

An example to illustrate



- Assume that a young couple decided to live in their parents' basement for a year in order to save money to purchase a home. During the year their disposable income is \$100,000 and their consumption of goods and services was only \$20,000.
- Assume the couple found a new house with a purchase price of \$350,000 and are able to take immediate possession of the house. Assume that the government also decided to cancel all outstanding student loans as a means to help young couples move out of their parents' basements. At the time the government program was established, the young couple had \$20,000 in student loans outstanding.
- **The financial account shows how the young couple financed the purchase of their new house.**



Financial flow accounts

The financial flow accounts in the SNA



- The financial flow accounts are a set of sector accounts that follow the capital account in the sequence of national accounts.
- The link between the two sets of accounts is the concept of net lending/borrowing
- In other words, it provides the link between the real side (flows of income and expenditure) and the financial side of the economy (flows of funds)
- They provide a measure of net lending/net borrowing from the point of view of how it is financed

Link between the capital account and financial account

- The net lending/borrowing from the capital account is not carried down as the opening item in the financial flow accounts
- The financial account presents another view of the net lending and borrowing in the economy – how the borrowing and lending are financed

<i>Categories</i>	Q2 2013
Net lending or borrowing	-19,184
Net transactions in financial assets	6,797
Total currency and deposits	9,732
Debt securities	471
Loans	51
Equity and investment funds	13,527
Life insurance and pensions	7,534
Other accounts receivable	-24,518
Net transactions in financial liabilities	26,491
Loans	25,913
Consumer credit	4,739
Non-mortgage loans	2,931
Mortgages	18,243
Other accounts payable	578
Net financial investment	-19,694
Discrepancy	510

Capital account

Financial flow account

The financial flow accounts in the SNA



- The financial flow accounts show the financing of economic activity by describing financial transactions in all of the sectors of the economy.
- Financial transactions are purchases and/or sales of financial instruments by economic agents in the economy; these consist of acquisitions of financial assets (lending) and issuance of liabilities (borrowing)

Dimensions of the financial flow account

Financial instruments



- Funds are raised through, or invested in, a variety of financial instruments, which are reflected in the category detail of the accounts:
 - Currency and deposits
 - Loans: e.g., mortgages, consumer credit, bank and other loans
 - Debt securities: e.g., bonds, commercial paper
 - Equity: e.g., shares, mutual fund units
 - Life insurance and pensions
 - Trade receivables/payables
 - Other financial assets/liabilities

Dimensions of the financial flow accounts

Sector detail



- The financial flow accounts expand the coverage of institutional sectors, from the limited presentation in the institutional sector current and capital accounts (6), encompassing 30 unique sectors
- The most sector detail appears in the presentation of the financial sector (21 of the 30 sectors), a recognition of the central role of the financial sector in financial intermediation

Sector detail – condensed detail

Net financial assets	2011	2012	2013
Total all sectors	810029	668874	664696
National financial accounts	666575	496505	554663
Households	49395	46131	32008
Non-profit institutions serving households	3440	5512	6928
Corporations	579281	389893	467305
Non-financial corporations	156356	62402	87717
Financial corporations	422925	327491	379588
General governments	34459	54969	48422
Federal general government	8012	15883	5573
Other levels of general government	11774	12682	9430
Provincial and territorial general governments	9269	10632	9536
Local general governments	2505	2050	-106
Aboriginal general governments	0	0	0
Social security funds	14673	26404	33419
Statistical discrepancy	0	0	0
Non-residents	143454	172369	110033

Sector detail – importance of financial corporations

Net financial assets	2011	2012	2013
Financial corporations	422925	327491	379588
Total monetary authorities	11419	15243	18359
Total chartered banks and quasi-banks	179224	127900	113513
Chartered banks	154602	112263	91568
Quasi-banks	24622	15637	21945
Insurance and pension funds	72097	67694	67594
Life insurance business	26644	12284	24222
Segregated funds of life insurance companies	7669	5181	-3176
Trusteed pension plans	31452	43167	48214
Property and casualty insurance companies	6332	7062	-1666
Total other private financial institutions	153699	110831	185707
Mutual funds	81153	68841	93696
Money market funds	-3089	-6037	-2465
Other mutual funds	84242	74878	96161
Sales finance and consumer loan companies	-287	3660	-5061
Issuers of asset-backed securities	10255	7218	5482
Other private financial institutions	62578	31112	91590
Financial government business enterprises	6486	5823	-5585



Compiling financial accounts

Compiling the financial flow accounts- the basic 4-transaction rule

- The basis of the national accounting framework is the quadruple accounting rule
 - a single transaction between two counterparties gives rise to four entries – two entries for each counterparty
 - example – an individual purchases \$100 worth of mutual fund units



Directionality in the financial flow accounts

Transactions can be measured and presented:

- On a *gross* basis, where both directions of the flows are shown at the lowest level of detail (by category and by sector)
or
- On a *net* basis, where only one direction is shown, the other flow being offset within the net resulting flow – for example:
 - new bond issuance *less* retirement of outstanding bonds = net new bond issues
 - new mortgage borrowing *less* repayment of principal = net new mortgage borrowing
 - purchases of new shares *less* sales of existing shares = net new investments in shares

The financial flow accounts measure transactions on a net basis

Gross vs. net flows

- Assume that a household receives cash in the form of wages and salaries of \$3,000 in a given month. Assume that they also pay their hydro bill (\$300) and cable bill (\$200) in that same month.

Gross basis		
Cash inflows	\$3,000	
Cash outflows		\$500
Net basis		
Cash	\$2,500	

SNA financial instrument accounting identity (parallels S=I)

Transactions in financial assets

=

Transactions in liabilities

across all sectors

Net financial investment = 0

Category	Sectors	Q2 2013
Transactions in financial assets	Households	6,797
	Non-profit institutions serving households	732
	Non-financial corporations	22,230
	Financial corporations	63,595
	General governments	27,175
	Non-residents	7,554
	Total all sectors	128,183
Transactions in liabilities	Households	26,491
	Non-profit institutions serving households	541
	Non-financial corporations	17,708
	Financial corporations	51,236
	General governments	36,220
	Non-residents	-4,013
	Total all sectors	128,183

SNA accounting identity, for any particular instrument (e.g., mortgages)

Changes in financial assets

=

Changes in liabilities

for each category

Category	Sectors	Q2 2013
Mortgage assets	Households	51
	Non-financial corporations	-39
	Financial corporations	22,104
	General governments	87
	Total all sectors	22,203
Mortgage liabilities	Households	18,243
	Non-profit institutions serving households	55
	Non-financial corporations	3,845
	Financial corporations	60
	General governments	0
	Total all sectors	22,203

An example to illustrate



- Assume that a young couple decided to live in their parents' basement for a year in order to save money to purchase a home. During the year their disposable income is \$100,000 and their consumption of goods and services was only \$20,000.

An example to illustrate



- Assume the couple found a new house with a purchase price of \$350,000 and are able to take immediate possession of the house. Assume that the government also decided to cancel all outstanding student loans as a means to help young couples move out of their parents' basements. At the time the government program was established, the young couple had \$20,000 in student loans outstanding.

An example to illustrate



- Assume the young couple financed the purchase of their house by borrowing \$100,000 from their parents (who were more than happy to lend the funds), used \$50,000 from their savings account and borrowed \$120,000 from the local bank.

An example to illustrate

Capital account	
Net lending / borrowing	-\$250,000
Financial account – changes in financial assets	
Cash	-\$50,000
Financial account – changes in liabilities	
Student loan	-\$20,000
Mortgages	\$120,000
Other	\$100,000
Net financial investment	\$-250,000



Other changes in assets account

An example to illustrate



- Assume that a young couple decided to live in their parents' basement for a year in order to save money to purchase a home. During the year their disposable income (SNA based) is \$100,000 and their consumption of goods and services was only \$20,000.
- Assume the couple found a new house with a purchase price of \$350,000 and are able to take immediate possession of the house. Assume that the government also decided to cancel all outstanding student loans as a means to help young couples move out of their parents' basements. At the time the government program was established, the young couple had \$20,000 in student loans outstanding.
- Assume the young couple financed the purchase of their house by borrowing \$100,000 from their parents (who were more than happy to lend the funds), used \$50,000 their savings account and borrowed \$100,000 from the local bank.
- **The other change in asset account shows how the change in the value of financial and non-financial assets that are not due to transactions impact the young couples' wealth**

Other changes in assets account



- This set of accounts records changes in the values of assets and liabilities, between opening and closing balance sheets, that result from flows that are not financial transactions, therefore they are also referred to as ‘other flows’
- Fully closing the sequence of accounts from opening to closing balance sheets
- The other changes in assets account is currently under development in the Canadian National Accounts – it is there implicitly but not explicitly

Components of other changes in assets account



- **The other changes in assets account is comprised of two distinct accounts:**
 - **The *revaluation account***, which measures changes in the value of assets/liabilities resulting from price dynamics (holding gains/losses). These gains/losses reflect things like the strong or weak stock markets on equity and mutual fund holdings, or run-ups/downs in the value of residential real estate
 - **The *other changes in volume account***, which measures valuation changes resulting from quality and quantity adjustments rather than changes in prices. Its main functions are to allow for economic appearances and disappearances within the national accounts framework and to record one-off events that affect the value of assets/liabilities on balance sheets

Other change in assets account- an illustration

Asset/liability category	Balance sheet account	Capital account	Financial account	Opening stock + flows	Revaluation account	Other changes in volume account	Balance sheet account
	Opening stock	<i>(Invests in a machine)</i>	<i>(Pays down a \$20,000 loan using cash)</i>		<i>(Makes a \$20,000 unrealized capital gain on stock held)</i>	<i>(Writedown of a loan)</i>	Closing stock
Non-financial assets	100,000	10,000		110,000			110,000
Financial assets	100,000		(20,000)	80,000			50,000
Total assets	200,000	10,000	(20,000)	190,000			160,000
							-
Liabilities	50,000		(20,000)	30,000			30,000
Net worth	150,000			160,000			130,000

Other change in assets account- an illustration

Asset/liability category	Balance sheet account	Capital account	Financial account	<i>Opening stock + flows</i>	Revaluation account	Other changes in volume account	Balance sheet account
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Non-financial assets	100,000	10,000		110,000			110,000
Financial assets	100,000		(20,000)	80,000	20,000	(50,000)	50,000
Total assets	200,000	10,000	(20,000)	190,000	20,000	(50,000)	160,000
							-
Liabilities	50,000		(20,000)	30,000			30,000
Net worth	150,000			160,000			130,000

An example to illustrate



- Assume that a young couple decided to live in their parents' basement for a year in order to save money to purchase a home. During the year their disposable income (SNA based) is \$100,000 and their consumption of goods and services was only \$20,000.

An example to illustrate

- Assume the couple found a new house with a purchase price of \$350,000 and are able to take immediate possession of the house. Assume that the government also decided to cancel all outstanding student loans as a means to help young couples move out of their parents' basements. At the time the government program was established, the young couple had \$20,000 in student loans outstanding.

An example to illustrate



- Assume the young couple financed the purchase of their house by borrowing \$100,000 from their parents (who were more than happy to lend the funds), used \$50,000 their savings account and borrowed \$100,000 from the local bank.

An example to illustrate



- Assume that right after the couple purchased their house a similar house in the neighbourhood sold for \$400,000. Also assume that some RRSPs they had invested in a year ago increased in value from \$10,000 to \$12,000.

An example to illustrate



Assets	Capital account	Other changes in assets account
Gross fixed capital formation (house)	\$350,000	\$50,000
	Financial account	
Pensions		\$2,000



Balance sheet account

The national balance sheet account



- The national balance sheet account provides the National Accounts with a *stock* dimension
 - Whereas the current accounts and the accumulation accounts measure flows *during* a period,
 - the national balance sheet account measures the outstanding amount (level) of assets and liabilities at a *given point in time*.

Compiling the national balance sheet account

- The national balance sheet account shares the category and sector profile of all the financial and wealth accounts
- The main identities for the national balance sheet account:

Financial assets, by category

=

Liabilities, by category

Assets

less

Liabilities

=

Net worth

for each sector

An added dimension: valuation



- There are two broad ways to value assets and liabilities:
 - At cost (historical cost on liability side; acquisition cost on the asset side), providing an estimate of book values
 - At market prices for relevant assets, providing market values
- The System of National Accounts recommends that the balance sheet be valued at market value.

Valuation: at market price



- The primary advantage of market price valuation is a more accurate value for a given asset, the value that could be realized by liquidating it on a fully-functional market
- Another advantage of market price valuation is that it more accurately measures the wealth effect
- Institutional units make economic decisions based upon the current value of their wealth and not the historical or cost value
 - For example, an individual decides how much to put in their pension based on the current values of the assets in the fund and not the book or acquisition cost of the assets.

Key aggregates in the national balance sheet account framework

- **Sector net worth** = the value of all the assets owned by an institutional unit or sector, less the value of all its outstanding liabilities
- **National net worth** = \sum sector net worth estimates
- **National wealth** is the economy-wide \sum of non-financial assets
- **National net worth or net national wealth** = for the economy as a whole, the sum of non-financial assets and net claims on the rest of the world

An example to illustrate



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An example to illustrate



	Opening balance sheet	Capital account	Financial account	Other changes in assets account	Closing balance sheet
Non-financial assets					
House	0	350,000		50,000	\$400,000
Financial assets					
Cash	\$50,000		-\$50,000		\$0
Pensions	\$10,000			\$2,000	\$12,000
Liabilities					
Student loan	\$20,000	-\$20,000			\$0
Mortgage	\$0		\$120,000		\$120,000
Other	\$0		\$100,000		\$100,000
Net worth	\$40,000				\$192,000

The change in net worth (\$152,000) can be broken down into the change from current period saving (\$80,000), net capital transfers (\$20,000) and revaluations non-financial assets (\$50,000) and revaluations financial assets (\$2,000) = \$152,000.

National Accounts – Capital, Financial and Balance Sheet Accounts



➤ Key takeaways

- ✓ The capital account represents the link between the financial and wealth accounts and the current account.
- ✓ The financial and wealth accounts record transactions (financial flow account), other flows (other change in asset accounts) and stocks (balance sheet account).

National Accounts - Overview



➤ Activity

- ✓ What are the data sources you could use to construct financial and wealth accounts in our country.