

PRASC



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

**Projet régional pour
l'avancement de la statistique
dans les Caraïbes**



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CARIBBEAN NATIONAL ACCOUNT TRAINING PROGRAM

Project for the Advancement of Statistics in the Caribbean Region (PRASC)
National Accounts Training
Session 11 – GDP Expenditure (GDP-E)

January 2018



National Accounts

Gross Domestic Product - Expenditure Approach

National Accounts - Overview



➤ Course Objective

- ✓ Provide national account compilers with an overview of how to compile GDP using the expenditure approach to measuring GDP.

GDP - the expenditure approach



- GDP-E represents the spending on all final goods and services (goods and services that do not undergo further transformation) within a given accounting period.
- The expenditure approach to measuring GDP is probably the most recognized way of calculating GDP

$$\text{GDP} = \text{C} + \text{I} + \text{G} + \text{X} - \text{M}$$

Where:

C = Final consumption expenditure of households and NPISH

I = Gross Capital Formation

G = Final consumption expenditure of governments

X = Exports

M = Imports



Household final consumption expenditure (C)

GDP - the expenditure approach

C= household final consumption expenditure

- Household final consumption expenditure includes outlays of **resident** households on the goods and the services that they consume.
- The classification of household final consumption expenditure is based on the international classification of individual consumption by purpose (COICOP). “Purpose” and “function” are used interchangeably and refer to the socio-economic objectives that economic agents aim to achieve through various kinds of outlays such as food, clothing, housing, health and education.

Household final consumption expenditure and actual final consumption



- The GDP by expenditure account records household final consumption expenditure rather than household actual final consumption.
- Actual final consumption includes final consumption expenditure plus
 - The consumption of households financed by governments and NPISH (e.g., health care and education).

Table 380-0067¹**Household final consumption expenditure**

quarterly (dollars x 1,000,000)

[Data table](#)[Add/Remove data](#)[Manipulate](#)[Download](#)[Related information](#)[Help](#)The data below is a part of CANSIM table 380-0067. Use the [Add/Remove data](#) tab to customize your table.**Selected items** [\[Add/Remove data\]](#)**Geography**= Canada**Prices**= Current prices**Seasonal adjustment**= Seasonally adjusted at annual rates

Estimates	2013
	Q4
Food and non-alcoholic beverages [C11]	95,500
Alcoholic beverages and tobacco [C12]	34,948
Clothing and footwear [C13]	42,288
Housing, water, electricity, gas and other fuels [C14]	253,408
Furnishings, household equipment and other goods and services related to the dwelling and property [C15]	54,304
Health [C16]	44,352
Transport [C17]	156,864
Communications [C18]	24,952
Recreation and culture [C19]	86,572
Education [C21]	15,872
Food, beverage and accommodation services [C22]	71,212
Insurance and financial services [C23]	83,332
Miscellaneous goods and services [C24]	52,984
Net expenditure abroad [C25]	19,076
Household final consumption expenditure [C]	1,035,664

Household final consumption expenditure



Table 380-0067¹

Household final consumption expenditure
quarterly (dollars x 1,000,000)

[Data table](#) [Add/Remove data](#) [Manipulate](#) [Download](#) [Related information](#) [Help](#)

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Selected items [\[Add/Remove data\]](#)

Geography= Canada

Prices= Current prices

Seasonal adjustment= Seasonally adjusted at annual rates

Estimates	2013
	Q4
Household final consumption expenditure [C]	1,035,664
Goods [CG]	459,876
Durable goods [CD]	126,268
Semi-durable goods [CSD]	73,284
Non-durable goods [CND]	260,324
Services [CS]	575,788

Household final consumption expenditure

Coverage

- Purchases of goods and services
- Some special cases
 - Consumption of goods produced for own use
 - Imputed rentals of owner-occupied dwellings
 - Items covered by compensation in kind
 - Includes expenditures by residents when abroad



Government and NPISH final consumption expenditure (+G+NP)

GDP – the expenditure approach

NPISH and government final consumption expenditure

- In national accounting, goods and services are usually valued using the prices buyers pay for them. Most government/NPISH production, however, is not sold but is delivered without charge and consumed either individually by Canadians—education or health care, for instance—or collectively by all Canadians, like military defence or the administration of justice.
- The absence of market transactions and selling prices for most government/NPISH-produced goods and services creates difficulties for national accountants in estimating the value of this production.
- The method adopted as the international national accounting standard is to assume that the value of the goods and services produced by government/NPISH is equal to the cost of producing those goods and services.

General government final consumption expenditure



- Government final consumption expenditure does not include all spending by governments.
 - Payments such as employment insurance, old age security, child tax benefit, etc., are transfers to individuals or other sectors (such as other levels of government).
 - For example, the cost of administering the old age security program would be included in government final consumption expenditure but the actual funds paid to households are considered transfers and are articulated in the secondary distribution of income account.

General Government

Final consumption expenditure



- For example, assume the government spends \$100m on salaries and wages for its employees (of which \$10 we spent on research and development activities), pays \$10m on interest on the public debt, \$50m on the rental of buildings, \$10m on office supplies, transfers \$100 to seniors as part of the Old Age Security program, purchases a new building for \$10 million. What is the Final Consumption expenditure of the government?

General government – functional classification



- Government expenditures can also be viewed from a functional perspective – i.e., what is the end purpose of the expenditure.
 - Classification of Functions of Government (COFOG) - 10 headings
 - 01 General public services
 - 02 Defence
 - 03 Public order and safety
 - 04 Economic affairs
 - 05 Environmental protection
 - 06 Housing and community amenities
 - 07 Health
 - 08 Recreation, culture and religion
 - 09 Education
 - 10 Social protection

Non-profit institutions serving households

Final consumption expenditure

- Non-profit institutions serving households (NPISH) are the only non-market producer outside of government.
- NPISH provide goods and services (individual or collective) **to households** at prices that are not economically significant.
- Non-profit institutions serving households provide a variety of different services and goods to households. These include:
 - Educational and cultural goods and services
 - Welfare goods and services
 - Religious goods and services
 - Political goods and services
 - Health goods and services
 - Recreational goods and services

Non-profit institutions serving households

Final consumption expenditure

- Consider a food bank with the following financial information:
 - Cash donations received = \$1000
 - Cash equivalent of food donations received = \$10,000
 - Gas reimbursed to volunteers for food delivery = \$500
 - Paid staff = \$2000
 - Storage facility expense = \$1000
- What is the final consumption expenditure of the food bank?
\$3,500 ($\$2000 + \$1000 + \500).

Non-profit institutions serving households

Final consumption expenditure

- NPISH expenditures can also be classified according to purpose (COPNI)
 - 01 Housing
 - 02 Health
 - 03 Recreation and culture
 - 04 Education
 - 05 Social protection
 - 06 Religion
 - 07 Political parties, labour and professional organizations
 - 08 Environmental protection
 - 09 Services n.e.c.



Gross capital formation (+I)

GDP - the expenditure approach

Gross fixed capital formation



- Fixed capital covers tangible or intangible assets which are produced as outputs from production processes and which are themselves used repeatedly or continuously in other production processes for more than one year.
- Gross fixed capital formation is the total value of acquisitions, less disposals, of fixed assets during the reference period, plus the activity related to certain additions to the value of non-produced assets (such as the discovery of mineral deposits or major improvements to the quantity, quality or productivity of land) owing to the productive activity of institutional units.

GDP – the expenditure approach

Gross fixed capital formation: disposals



- Disposals occur when assets are sold or traded before their useful life is exhausted.
- If a unit disposes of more assets than it acquires in a period, it will have negative capital formation. It is possible, though not very common, for the figure of capital formation for a group of producing units also to be negative in such a case.
- When disposals occur within the same sector, net impact (assuming no transfer costs or margins) is zero (negative investment is recorded for the seller and positive investment is recorded for the purchaser).
- Second-hand assets may also become household consumption expenditure, for example, when a hire car company sells its cars to households for recreational purposes. In this case the transaction would be recorded as negative investment in the business sector and consumption in the household sector.

GDP – the expenditure approach

Gross fixed capital formation: scrap



- Even when an asset is no longer cost effective, it may have a residual value, for example, as scrap.
- In that case the supply is recorded as negative capital formation and the use as intermediate consumption of a producing unit processing the scrap.

GDP - the expenditure approach

Gross fixed capital formation: ownership transfer costs



- When a building is sold, for example, the seller records negative fixed capital formation and the purchaser records positive fixed capital formation. These items frequently do not offset one another exactly as there may be costs of ownership transfer associated with the exchange.
- Costs of ownership transfer incurred by the seller should be written off during the period the seller has owned the asset, so that by the time the item is sold, all the costs of ownership transfer on acquisition should have been written off.
- For the purchaser, costs of ownership transfer on acquisition of the asset are recorded as part of gross fixed capital formation and, in turn, are written off over the period the purchaser expects to use the asset. In this way costs of ownership transfer of both disposal and acquisition are treated as new fixed capital formation.

GDP – the expenditure approach

Calculating gross fixed capital formation



- For example, assume Firm A purchases a new bobcat for \$10,000 and sells its current 5 year old bobcat (expected service life of 10 years) to Firm B for \$5,000. Firm B builds a small tool shed to store the bobcat costing \$1000 and tunes up the bobcat for \$500. In addition, Firm A needs a bigger truck to haul the new bobcat so they sell their existing truck to one of their employees for \$10,000. What is the level of gross fixed capital formation?

GDP - the expenditure approach

Investment in inventories



- In the GDP by expenditure account, investment in inventories is estimated for the agricultural and non-agricultural business sector, non-profit institutions serving households and for the government sector.
- Inventory fluctuations essentially represent the gap between aggregate production and final demand in any given period.
- Inventories can play a crucial role in generating swings in economic activity despite the fact that changes in inventories are a relatively small component of GDP.
- The level of the “change in inventories” is not important—rather it is the change in the “change in inventories” that contributes or subtracts from the growth in GDP.

Investment in inventories



- Inventories pose many measurement challenges
 - Valuation
 - Entries into inventories valued at time of entry
 - Withdrawals valued at time of withdrawal
 - Ideally need product detail (and matching prices) to get this right
 - Different types of inventories
 - Finished goods, work-in-progress, materials and inputs
 - Location
 - Can be held in the resident economy or held abroad



Exports and imports (+X-M)

GDP - the expenditure approach

Exports and imports



- International trade can be defined as the value of the flows of goods and services between residents of an economy and non-residents over a given period.
- Exports of goods and services consist of the flow of goods and services from residents to non-residents
- Imports of goods and services consist of the flow of goods and services from non-residents to residents



Real, Nominal, Fisher, Lasp, Contributions to change

GDP by expenditure account

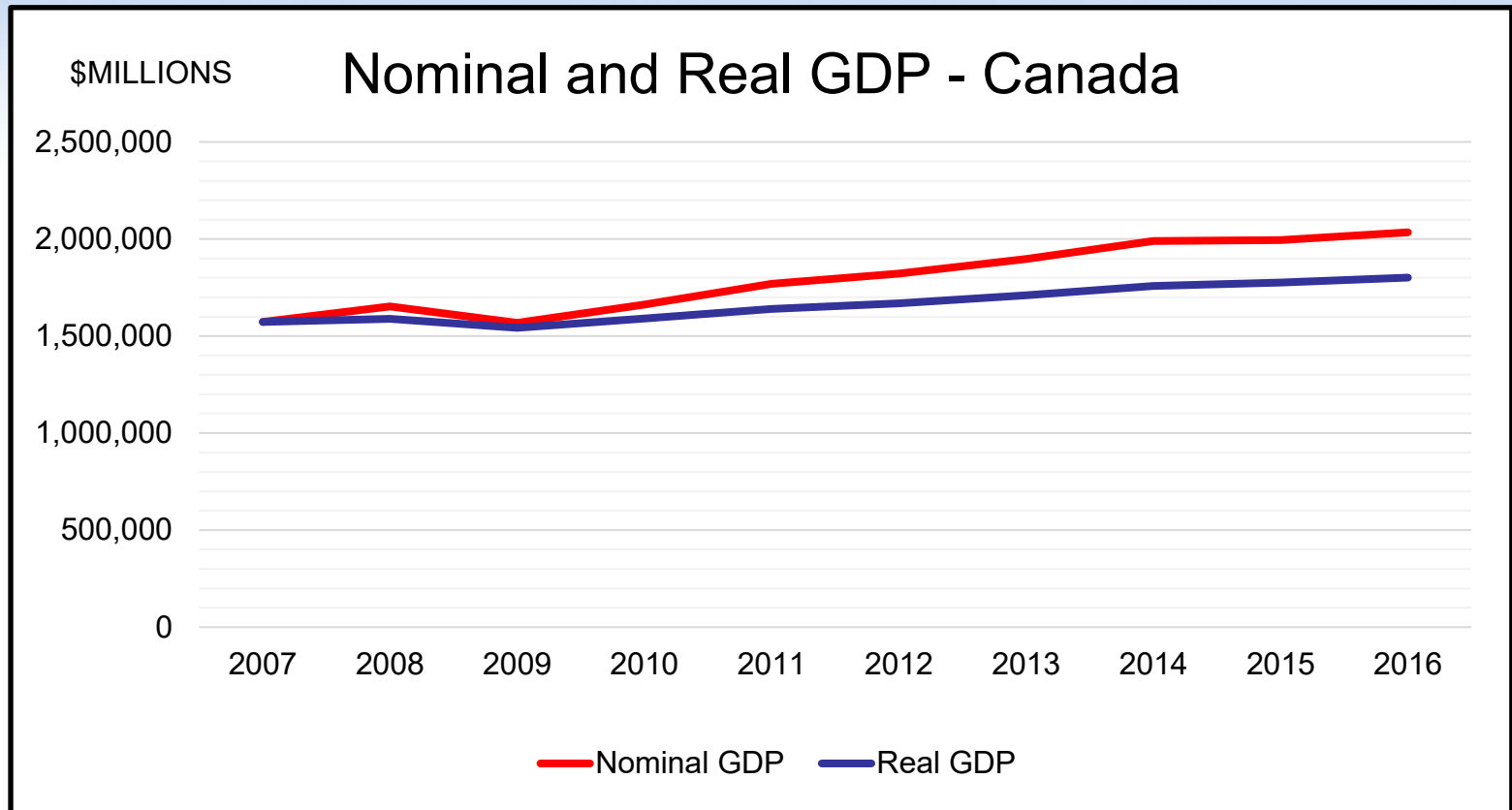


- GDP-E estimates are generally presented in a large amount of detail.
- Prices are generally readily available for most expenditure categories.

- Information is generally presented in
 - Aggregate nominal measures
 - Aggregate real measures
 - Contributions to change
 - Detailed expenditure categories

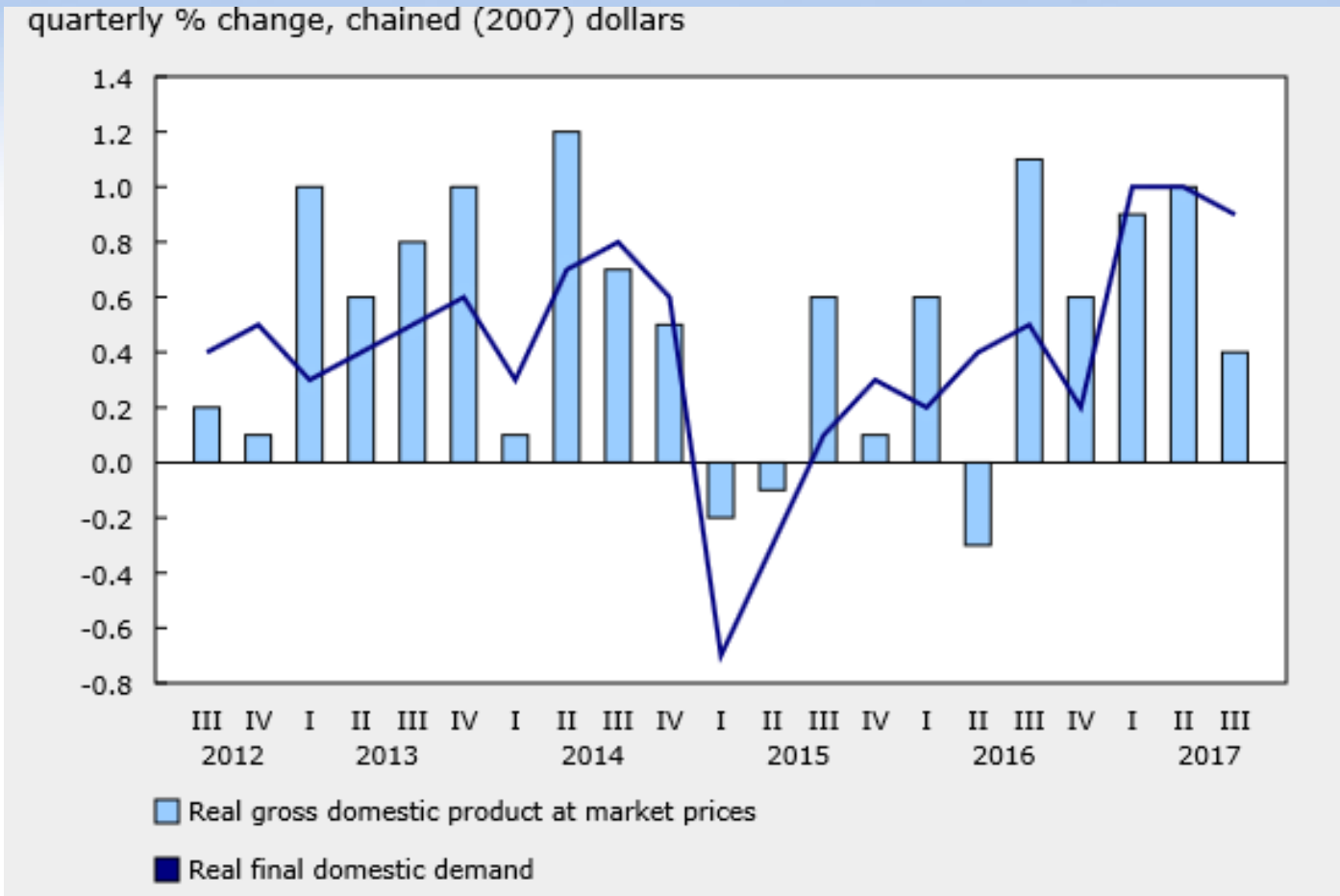
GDP - the expenditure approach

Nominal Vs. Real GDP



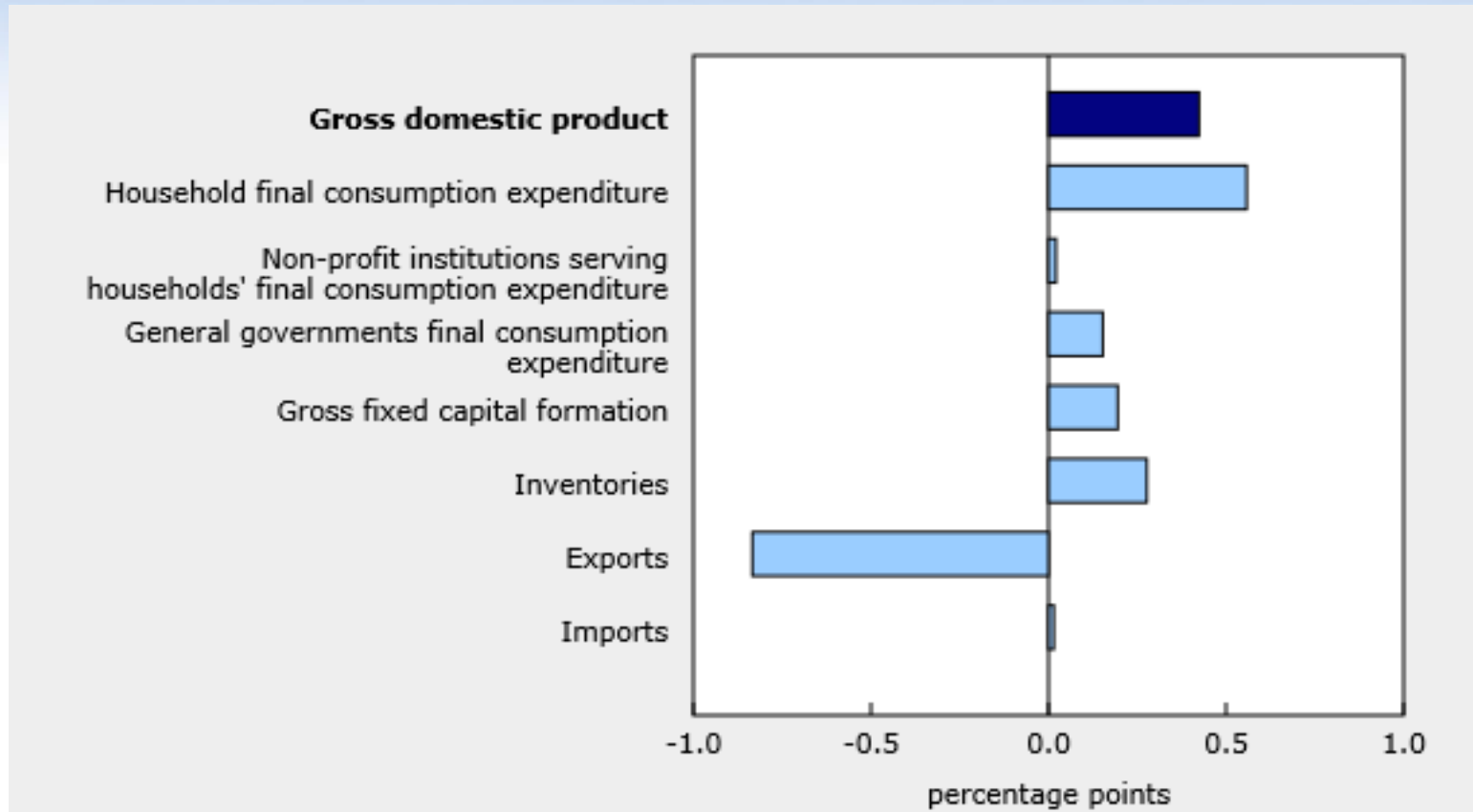
GDP - the expenditure approach

GDP vs. Domestic Demand



GDP - the expenditure approach

Contribution to Percentage Change



National Accounts – GDP-E



➤ Key takeaways

- ✓ GDP-E is probably the most recognized way of presenting estimates of GDP.
- ✓ GDP-E requires information on household spending, government spending, investment, and international trade.
- ✓ GDP-E estimates are generally presented in nominal and real dollars. The SNA recommends chained fisher aggregations.

National Accounts – GDP-E



➤ Activity

- ✓ What are the data sources available to construct estimates of GDP-E?