Lesson 1: Economic Activity & Performance

Saturday, September 15, 2018 3:43 PM

Session 1.1 Indicators of Macroeconomic activity and performance

Macroeconomic theories and models

Capture the complex linkages (G-> Government spending effect on Y(output, real GDP), I(interest rates) , er(exchange rates)) and feedback effects (Y effect back on G) that determin
Ex: Increase in G leads to output increase, increase in revenues then more money to spend

- Total output of goods and services
- Expenditures on current output (Consumption, Investment, Government)
- Employment and Incomes
- Employment and incomes -> Interest and exchange rates
- Prices and inflation
- Macroeconomics performance- boom vs recession
- Monetary and fiscal policies- Bank of Canada and government

Macroeconomics Performance

A starting point:

Three key indicators of performance:

A) The rate of growth of real national income
B) The rate of inflation- deflation (change in prices)
C) The rate of unemployment- related to amount of jobs

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Definitions:

Real national income (GDP): quantity of all final goods and services produced in an economy within a period and time . GDP measured in $ in constant base year prices

1. Base year (chosen) prices (real) vs. Current prices (Nominal)
2. Only counting Final goods and services- excludes intermediate goods and services (cars not wheels)
3. Currently produced (year per quarter)- house resale NOT in GDP (nothing new produc in current year, included in 2006 GDP when it was created)
4. National income (Canadian workers/capital both at home and abroad) vs Gross domest product (within Canada, both foreign and domestic workers/capital) within physical borders of Canada

   Ex: Canadian produces in France, its included in canadian national product and whatever produced in france is included in france domestic product.

Inflation: persistent increase in the general price level

Unemployment rate: number of people that are 15+ years not working but actively seeking work

Measuring Macroeconomic Performance

Rate of growth of real GDP:

$$= \frac{\text{Real GDP}_{\text{year 2}} - \text{Real GDP}_{\text{year 1}}}{\text{Real GDP}_{\text{year 1}}} \times 100$$

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EX: In 2013, real GDP was 1.689 billion , in 2014, real GDP was 1734 billion

Rate of growth in 2014= 1734-1689/1689 x100=1634 2.6%

Economic Performance

The Price Level

- Weighted average price of a basket of goods and services- food, clothing, etc. Weighted percentage or share that each household spends on the items
- Consumer price index (cpi) - fixed basket, avg. HH.

The Inflation Rate

- Annual % change in the Price level : CPI (YEAR 2)- CPI (YEAR 1)/ CPI (YEAR 1) X 100.

Student Price Index (SPI)

EX: Weekly expenditure of a student, prices of the 5 things the student buys, prices from 2006 and 2011. What is happening on average to the price level -> 2006- Price of each good x how many were bought then expenditure of student for each different good-> add them up for tot yearly expenditure cost

2006 base year

Convert the cost of the basket into price index when you choose base year of 2006: cost of 20 basket/each cost of 2006 and 2011 year basket by the value of 80.50 x 100

(Cost of basket in 2011/Cost of basket in 2006) x 100 = 100 87.20/80.50x100=108.323

Inflation in Canada

Ex: in 2014, CPI at 125.2

In 2015, CPI at 126.8

Inflation rate for 2015=2015 CPI 2015-CPI 2014/CPI 2014 X100 = 1.3%

The Unemployment Rate:

Unemployment Rate: Labour force- employed/ labour force x 100

Ex: in 2014 labour force = 19.133 thousand, employed= 17.790 thousand

Unemployment rate in 2014=2014 19.133-17.790/19.133=18.2032 7.0%

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Unemployment rate in 2014–2014 19.133-17.790/ 19.133–18.2032 7.0 %

Macroeconomic Performance

Labour Force, Employment and Unemployment

- **Canada, February 2014 (000 persons):**

1. Non-Institutional pop 15+ yrs.	28,894
2. Labour force = E+U (not E, but seeking)	19,133
3. Employment = FT, PT, self	17,790
4. Unemployment [(2 – 3)] = LF-E	1,343
5. Participation rate [(2)/(1)]x100 = LF/Pop.	66.2%
6. Employment rate [(3)/(1)]x100 = E/Pop.	61.6%
7. Unemployment rate [(4)/(2)]x100=(LF-E)/LF	7.0%

1. **Do not count people who are in prison, reserves, hospital, nursing homes**
2. **Sum of employed and unemployed- > not employed but seeking for one**
   - If unemployed but not actively seeking for one, it is called A DISCOURAGED WORKER -> Not counted and not in labour force
3. **Employed: Full time, part time, self employed**
4. **Unemployed- LF-E**
5. **Labour force as a part of the population- 15 years and older (LF/POP)**
6. **E/POP**
7. **LF-E/LF**

Unemployment continued

- Optimism rise-> discouraged workers will be encouraged, rate will drop and they will join

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labour force, LF will rise-> Unemployment rate will rise

Unemployment:

1. Cyclical- Recession/boom/business cycles - cyclical rises during recession falls during booms
2. Frictional- people who are in between jobs, lost job but havent found new one
3. Structual- miss match of skills of people and those that are required

2+3=5 natural rate of unemployment (6% in Canada) -> FULL EMPLOYMENT LEVEL O OUTPUT

At FULL level of output, natural rate will never be 0. there is always frictional and structural.

Session 1.2 Recent Canadian economic Performance

Canadian Economic Performance

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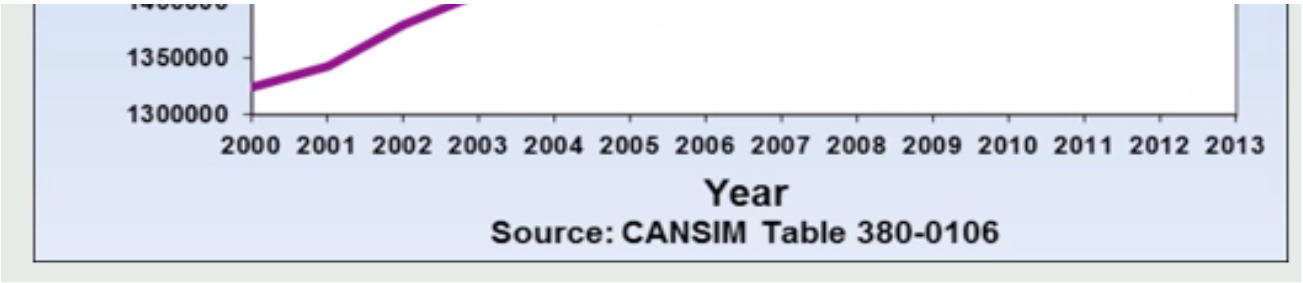


Real GDP in Canada 2000-2013

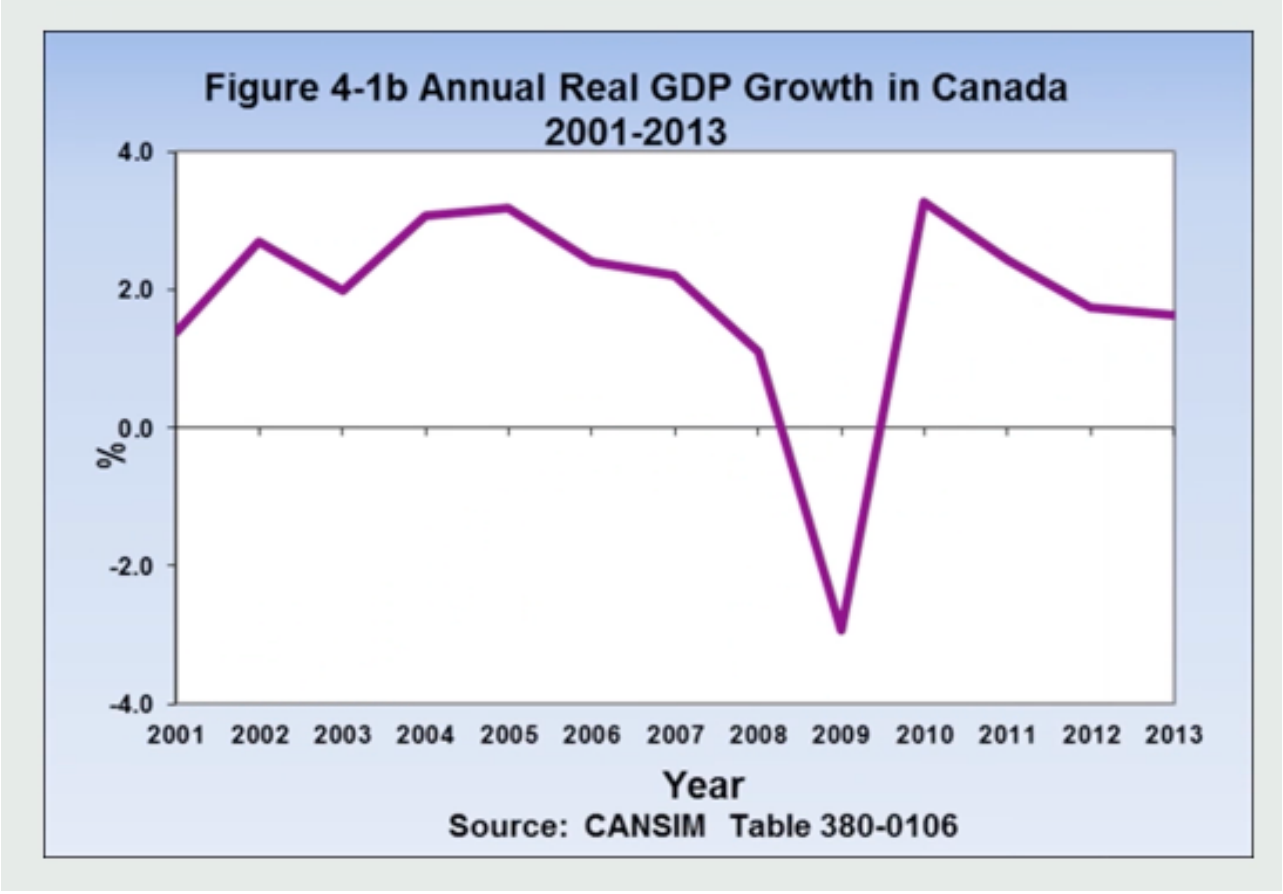
Rising until 2008-> great recession

Rising by 1.5-3% until 3% drop

After recession -> recovery

Why its caused, effects on standards of living

1ST INDICATOR



Annual Real GDP Growth

What happens to growth rate?

Until 2008 -> 2% real GDP growth in Canada

Great Recession drop of 3% (2008-2009)

Why did this happen?? How it affects standards of living and what we can do

2ND INDICATOR

Inflation rates in Canada

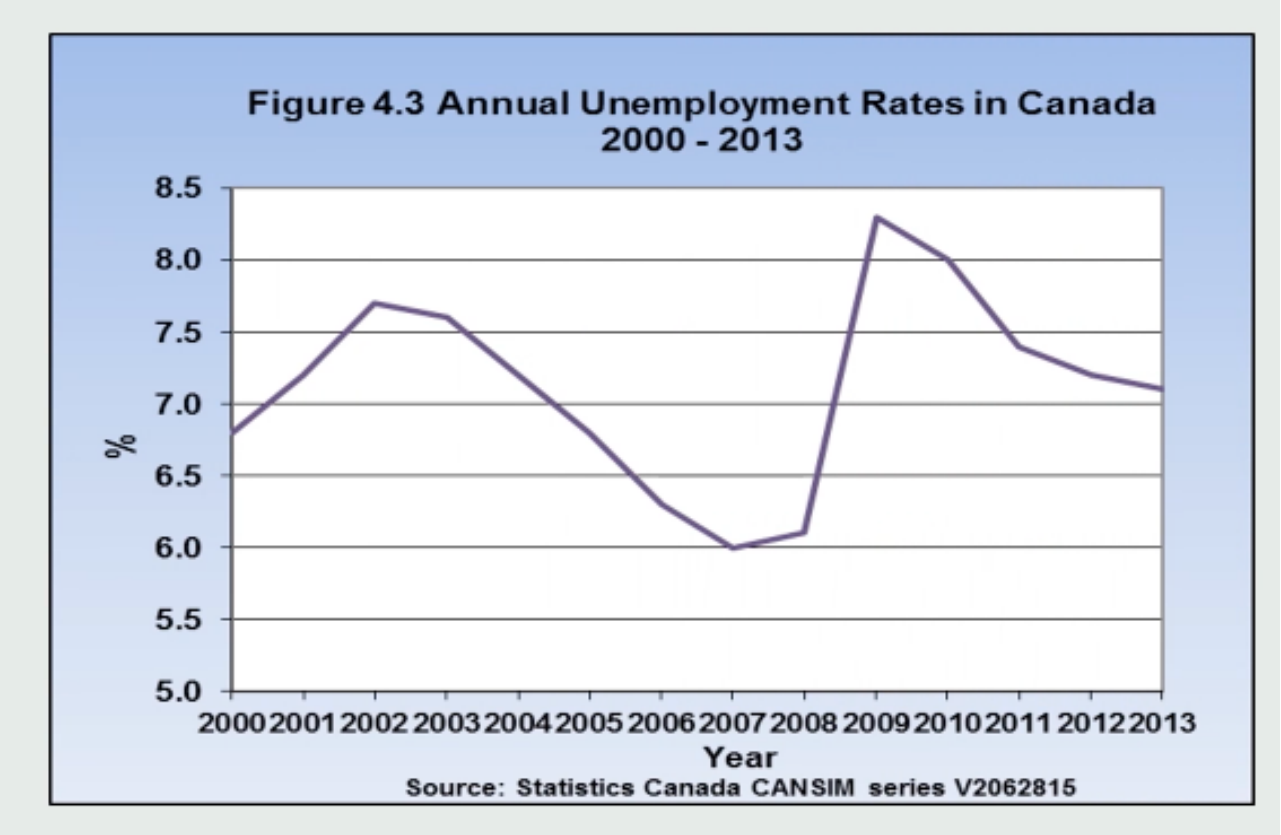
Recession-> Drop in inflation ->0% of prices not increasing

BoC to maintain inflation rates from 3-1%

Inflation drops during recessions

3RD INDICATOR

3RD INDICATOR



Annual unemployment rate
Decreasing until 2007- boom years
2008-2009- spike in unemployment rate
Recovery starts going down

Recession -> LOW INFLATION, HIGH UNEMPLOYMENT

Session 1.3 National accounts and Economic structure

National Income Accounts

National Accounts

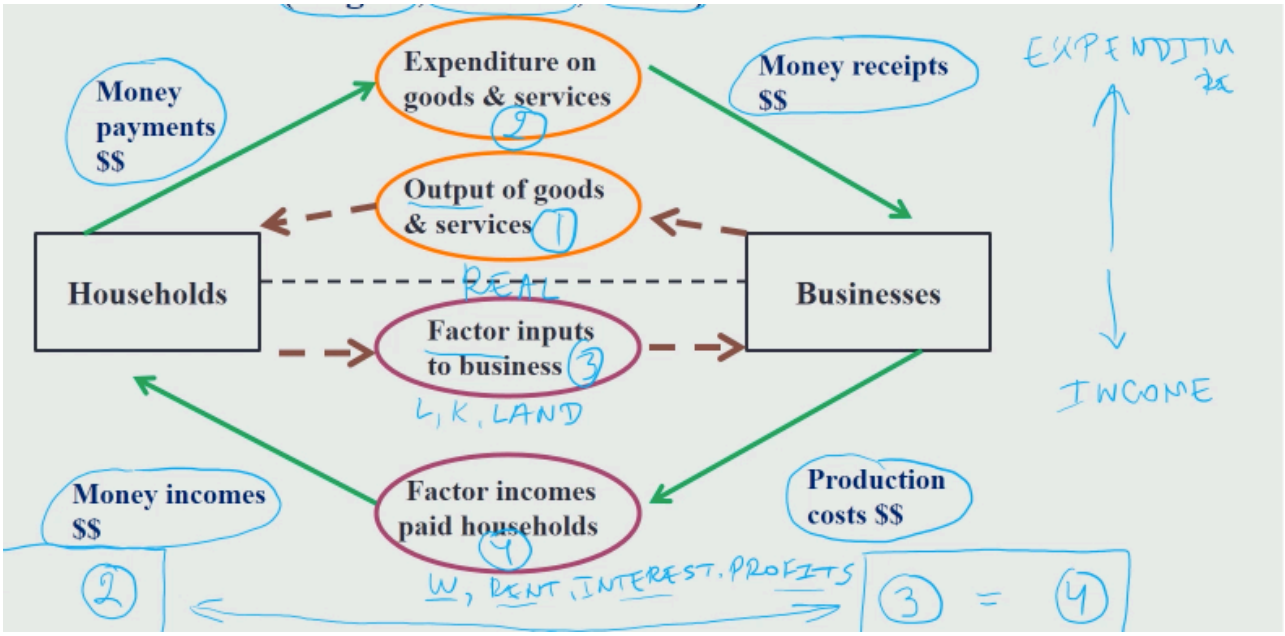
- **A framework for aggregate demand (AD) and supply (AS) models for economy**

National Accounts- spending, output, income:

THE CIRCULAR FLOW DIAGRAM: (no govt, no trade, no S/I)

INNER= REAL

OUTER= NOMINAL



1- **Market value of the output of goods and services**
2- **Market value of households**

   1=2, have to be the same

3- **Market value of factor inputs to business**
4- **Household incomes**

   3=4 household paid how much they supply to factor of production

1=2=3=4 -> Everything households spend money on, the businesses get, get paid as withe wages, rent interest payments, and used as output production

Session 1.4 Measuring GDP

Measuring GDP

Three measures of nominal GDP (based on circular flow)

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1. Output based GDP- sum of value added by all industries (supply side of economy)
2. Income based GDP- sum of payments to factor of production (supply side-> wages, ren
3. Expenditure based GDP- sum of expenditures on final goods and services(demand side)

   ALL measures- SAME result

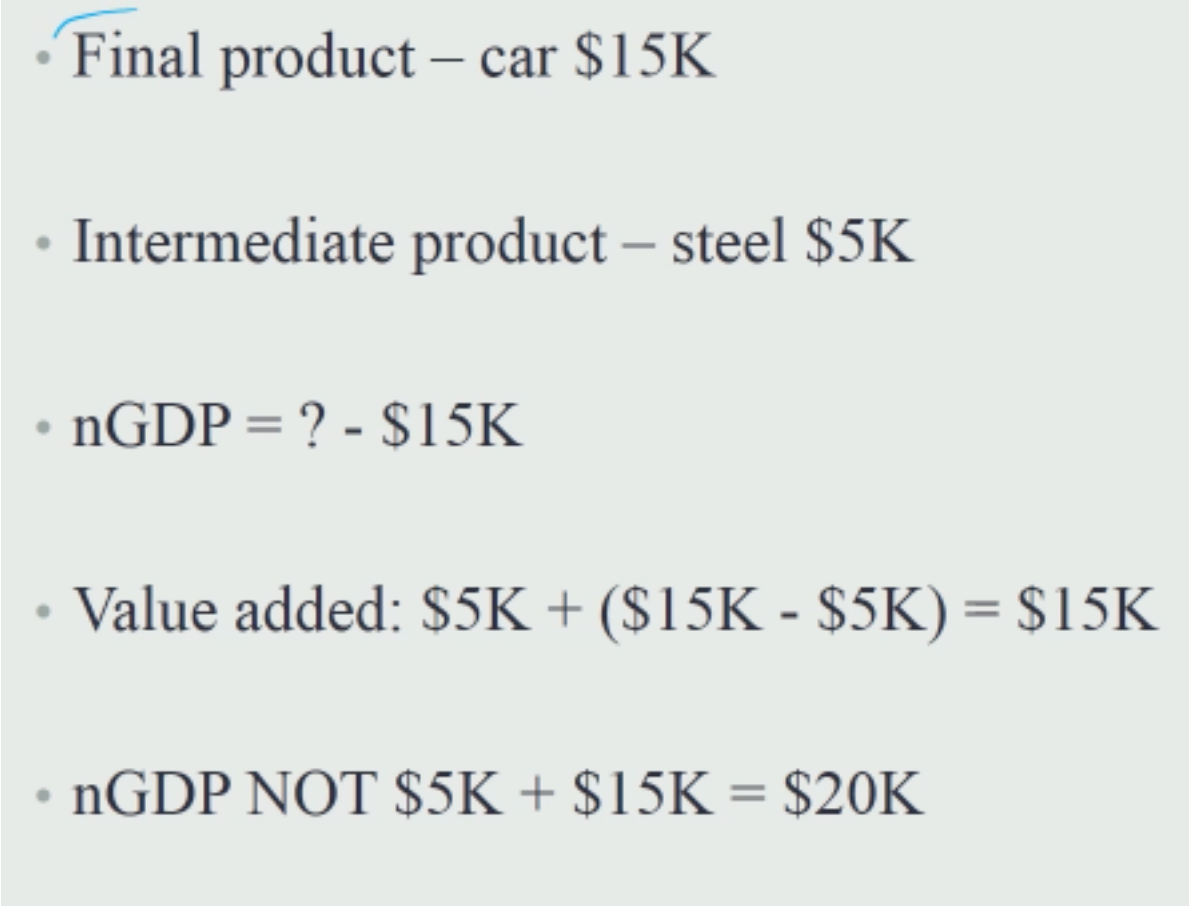
Output Based GDP

Output based GDP- the sum of all NET OUTPUTS by industries as measured by VALUE ADD

Value Added- market value of output minus the cost of inputs purchased from other businesses(intermediate goods: steel, cement- used in production of other goods rather than sold on their own)

Net outputs by industry describe the INDUSTRIAL STRUCTURE of the economy

Ex: Car



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Nominal GDP- $15k- you do not include the intermediate product

5k steel -> counted in steel industry and apart of car

Income Based GDP

Income based GDP= Domestic Income + CCA (depreciation cost of produtction)+ T_{IN}

Domestic Income: DI= W+BI

W= Employment compensation: the sum of all wages, salaries and benefits paid to labou

BI= business income: the sum of corporate surplus (profits) and net mixed income

CCA= Capital consumption allowance to cover the depreciation of capital stock

T_{IN}= Net indirect tax: sales + excise taxes-subsidies (GST,PST,LIQUOR,TOBACCO,GAS TAXES)

GDP at MARKET PRICE= W+BI+CCA+ T_{IN}

Expenditure Based GDP

Expenditure based GDP= C(consumption)+I(investment-private)+G(govt) +X(net exports, ex import)-IM

C: Consumption expenditure by HH (foods,clothes,cars, TV)

I: investment expenditure by business on buildings, machinery and inventories (not stocks and bonds)

G: government expenditure on current produced final goods and services (helath, education, r NOT transfers- OAS,EI- no new output) - nothing new being produced when it is a transfer payment, but new road or new bridge is something new

X: exports of goods and services

IM: imports of goods and services

GDP AT MARKET PRICE= C+I+G+X-IM

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Table 4.5 Canadian National Accounts 2013

($billions at current prices and %GDP)

Expenditure Measures			Income Measures		
At market price	**$**	**%**	**Income source**	**$**	**%**
C by households[1]	1,045.9	55.7	Employee compensation	956.8	50.9
I by business[2]	380.0	20.2	Net corporate surplus	239.5	12.7
G by government	485.6	25.8	Net mixed income	167.7	8.9
X exports	565.7	30.1	Capital consumption	325.0	17.3
IM imports	-597.6	-31.8	Net indirect taxes	190.3	10.1
Statistical discrepancy	-0.2	0.0	Statistical discrepancy	0.2	0.0
GDP at market price	**1,879.5**	100.0	**GDP at market price**	**1,879.5**	100.0

Notes: 1. includes expenditure by non-profit insitutions serving households

2. Includes investment in inventories

Source: Based on Statistics Canada Cansim Tables 380-0063 and 380-0064 and author's calculation

Income approach and expenditure approach must finish with the same GDP at market pri

Session 1.5 Nominal GDP, real GDP and the GDP deflator

Nominal GDP, Real GDP and the GDP Deflator

Nominal GDP= output and incomes of a given year measured with CURRENT MARKET PRIC goods and services

Real GDP= output and incomes of given year measured with BASE YEAR PRICES of goods an services

Changes in nominal GDP= changes in PRICES AND QUANTTITIES

Quantities reflect how many goods and services we have to consume- reflect the standards o

Real GDP= Nominal GDP is adjusted by GDP deflator- constant set of prices

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Changes in Real GDP= CHANGES IN QUANTITY

GDP deflator for year t:

$$PGDP_t = \frac{\text{Nominal GDP}_t}{\text{Real GDP}_t} \times 100$$

Measure of overall price level in economy

GDP Deflator: COVERS all goods and services included in GDP- deflates the dollar value of cu output to what it would have been in base year's prices

The CPI= is based on REPRESENTATIVE BASKETS of goods and services consumers buy (su all goods and services)

Table 4.6 Nominal and Real GDP

		2000	2014	% Change
Quantity	blue jeans	4,000	5,000	25
	solar panels	2,000	4,000	100
Price in $	blue jeans	25	50	100
	solar panels	100	80	-20
Current value	blue jeans	100,000	250,000	150
	solar panels	200,000	320,000	60
Nominal GDP		300,000	570,000	90
Value in 2000 $	blue jeans	100,000	125,000	25
	solar panels	200,000	400,000	100
Real GDP		300,000	525,000	75

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GDP deflator	100	108.6	8.6

Nominal GDP= 4000 bj x price + 2000 sp x price = Nominal GDP

Real GDP= take base year (2000) quantities produced in base year x prices = Real GDP

Real GDP 2014 = 2014(5000x25=125000)+(4000x100=400000)= 525,000

GDP deflator= Nominal gdp/ real gdp base year

GDP Deflator = [Total nominal economy output] ÷ [Total real economy output] × 100

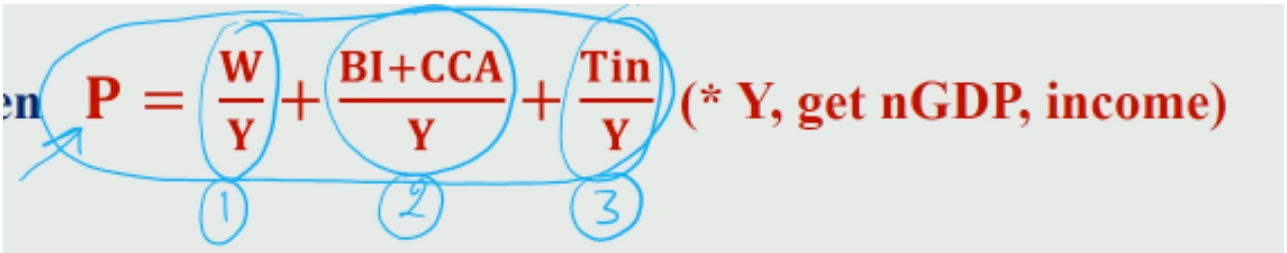
Increase in nominal GDP because of increase of inflation prices went up by 8.6%

The General Price (P)

General price level: determined by three factors:

1. **Labour cost per unit of output**
2. **Market and producer price setting that gives gross business income per unit of outp**
3. **Net indirect taxes per unit of output**

Price level depends on 1,2 and 3



Both sides divided by Y

Note: A change in any one of these three components changes the general price level and nom

GDP

Using the GDP Deflator

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$$\text{Real GDP} = \frac{}{\text{GDP deflator}} \times 100$$

Canadian nominal GDP in 2013: $1,879.5 billion
GDP deflator (2007 = 100): 110.9

$$\text{Real GDP in 2013} = \frac{\$1{,}879.5}{110.9} \times 100 = \$1{,}694.8$$

Table 4.7 Canadian Nominal and Real GDP 2001 - 2013

	2001	2005	2009	2013
Nominal GDP (bill$)	1,134.8	1,410.7	1,567.0	1,879.5
GDP deflator (2007 = 100)	84.6	94.3	101.6	110.9
Real GDP (bill 2007$)	1,341.5	1,496.0	1,542.3	1,694.8

Source: Statistics Canada: CANSIM Tables 380-0064 and 380-0066 and author's calculations.

From 2009 to 2013 Nominal GDP grew by about 20%

Over the same period the price level increased by 9.2%

Therefore real GDP grew by about 9.9%

Session 1.6 Per Capita real GDP, productivity and standards of living

Per Capita GDP

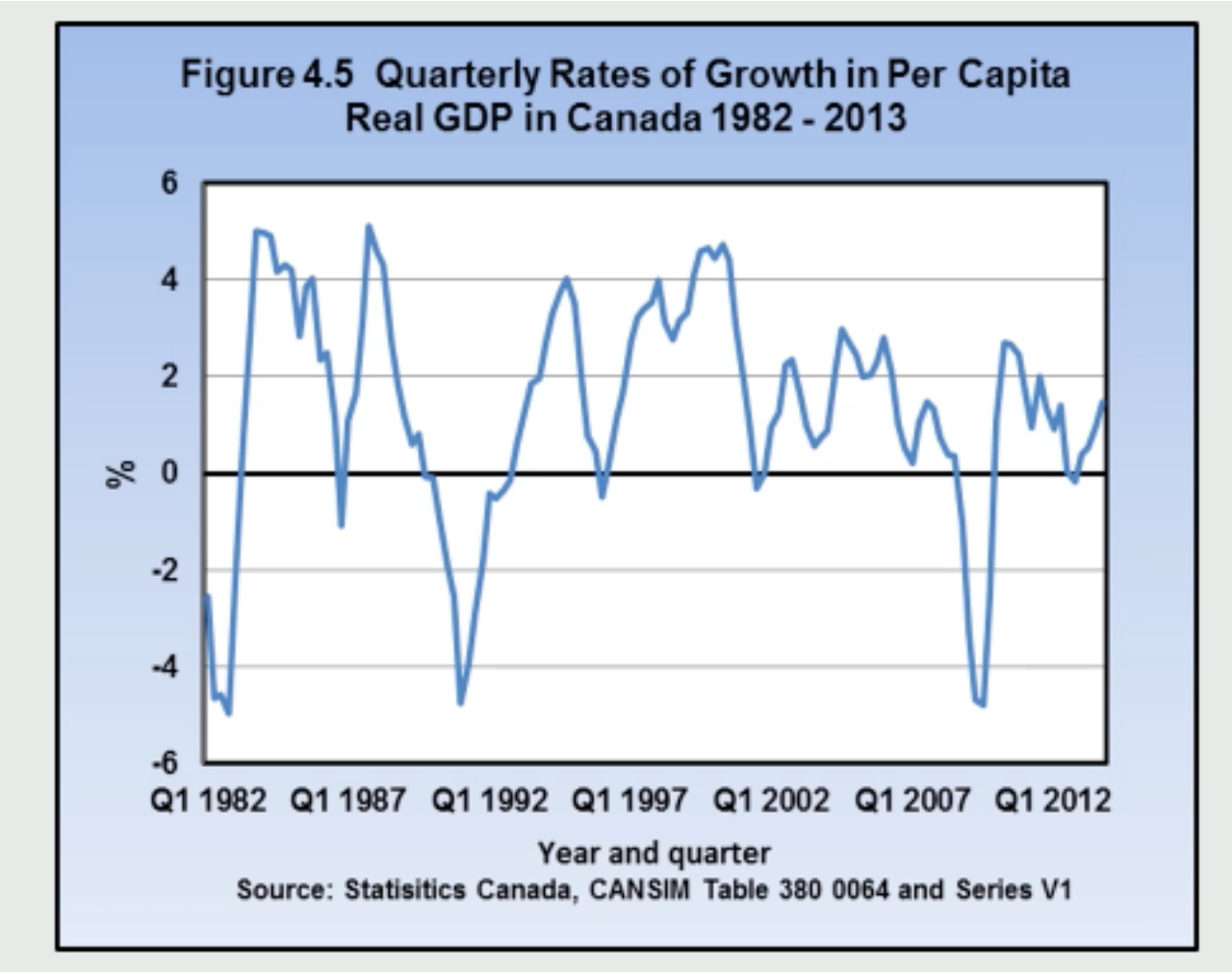
Per capita real GDP: an indicator of standard of living

$$\text{Per capita real GDP} = \frac{\text{Real GDP}}{}$$

Per capita real GDP = Real GDP / Population

How many goods and services produced per person, the higher the number the higher the sta of living

Quarterly Growth rates in Canada Per Capita Real GDP



The reductions in per capita real GDP during recessions motivate stabilization policy

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Limitations of GDP

Pollution and other externalities(noise levels, road congestion) caused by production and consumption - deduct from rGDP

Unreported income and output- illegal (drugs, arm sales)- add to rGDP

Non marketed goods and services- home cleaning, maintenance (add to rGDP) since theyre n reported

Composition of output affects standard of living (military production- WW2, vs healthcare)

Income distribution- Bill gates vs everyone else

Top Ten Countries by UN HDI 2011

Table 4.8 Top Ten Countries based on United Nations Human Development Index

Country Ranked by 2011 HDI	2000 Index	2005 Index	2011 Index	2011 Inequality Adj Index	Change in rank
Norway	0.893	0.938	0.943	0.89	0
Australia	0.906	0.918	0.929	0.856	0
Netherlands	0.882	0.89	0.91	0.846	-1
United States	0.897	0.902	0.91	0.771	-19
New Zealand	0.878	0.899	0.908	-	–
Canada	0.879	0.892	0.908	0.829	-7
Ireland	0.869	0.898	0.908	0.843	0
Germany	0.864	0.895	0.905	0.842	0
Sweden	0.894	0.896	0.904	0.851	5
Switzerland	–	–	0.903	–	–

Source: United Nations Human Development Report
http://hdr.undp.org/en/statistics/ihdi/

Human Development Index (HDI) provides a broader measure of a country's wellbeing and standard of living than per capita GDP.

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CHAPTER SUMMARY

- *Macroeconomics* studies the whole national economy as a system
- *Real GDP growth rates*, *inflation rates* & *unemployment rates* are *indicators* of macroeconomic performance
- *Business cycles* cause *fluctuations* in real GDP growth, in inflation, and in unemployment
- *Circular flow* shows macroeconomic linkages
- The *national accounts* provide a framework for the measurements of national output & income

- *Nominal GDP* measures the output of final goods & services at market prices in the economy
- *Real GDP* measures the country's output of *final* goods & services
- The *GDP deflator* is a measure of the price level relative to a base year
- *Real GDP* and *per capita real GDP* are crude measures of national and individual welfare