Macroeconomics

Economic Indicators

Reading and using global data sources | CPI | GDP per Capita | Unemployment

Economic Indicators

Reading and using global data sources | Types of indicators | Approaches | CPI | GDP | GDP per Capita | Unemployment

What is this topic about?
Why is it important?

Assess this headline; is it good or bad?

House sales rise 7% in March

It's the second straight month of improving sales; the year-over-year decline was the smallest in six months

Different statistics measure different things. Each comes with its own biases, and limitations. Some have little meaning unless they are compared with other statistics. To be able to measure and read economic activity and gage performance, one must be able to read (*and read into*) these statistics.

GNP [GDP] ...counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for those who break them. It counts the destruction of our redwoods. yet the gross national product does not allow for the health of our children, the quality of their education, or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages... it measures everything, in short, except that which makes life worthwhile.

~ Robert Kennedy

Economic Indicators

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What is the difference between the following indicators?

- Leading
- Coincident
- Lagging

Leading	Coincident	Lagging
Stock Market	Non-farm payrolls	Gross Domestic Product (GDP)
Manufacturing - new orders	Industrial production	Unemployment
Weekly jobless claims	Personal income	Consumer Price Index (CPI)
Building permits		Interest rates (prime rate)
Inventory levels		
Retail sales		
Housing market		
New business startups		

Economic Indicators

We will focus on these indicators:

CPI
GDP
Unemployment

Why these ones?

These are the statistics that measure the **biggest items**. Naturally, they are the ones everybody watches most closely, especially governments and banks that are trying to direct the course of the economy.

These are also the indicators that measure those items in our economy that have the **broadest effect**. In other words, they measure things that affect the greatest number of Canadians: old and young, rich and poor.

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Approaches

Percentages and proportionality

Common period

Common values

Partial or full period

Real versus nominal values

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CPI
Consumer Price Index

What is inflation?
Why does it matter?

You retire at 55 and live for over 30 years. Inflation averages 3% a year over this time. If your pension at 55 is $50,000 how much will you need to be just as well off in 30 years as you are right now?

Economic Indicators

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CPI
Consumer Price Index

The gradual increase in prices over time.

Caused by excess money supply, and high spending/growth, and high consumer confidence

What is inflation?
Why does it matter?

Exercise:

1.Chart the rate of inflation between Canada and another country for the last ten years. What do you notice?

Economic Indicators

CPI

The Consumer Price Index is a measure of inflation for consumers (not industrial products).

It's a weighted basket of goods. Statistics Canada comes up with an average total price, then compares it with the same stuff a year later. The percentage change is the rate of inflation, or CPI.

Example:

2007

Item	Item Cost	Weight in Basket	Total

2008

Item	Item Cost	Weight in Basket	Total

Answer:
CPI weights

Exercise:

2. Make a pie-chart of Canada's CPI weights. Calculate what would happen to the rate of inflation if gas prices doubled. Assume the current basket value is $100 in total.

Economic Indicators

CPI

Why is inflation (measured by the CPI) important?

Inflation erodes purchasing power, as well as consumer and investor confidence.

Naturally, central banks and governments are very concerned about keeping it in control. They monitor the CPI very closely. Monetary policy (and Fiscal policy) is used to control inflation.

The CPI itself is important, because governments and pensions funds etc. will link payments and budget figures to the CPI. (e.g. basic tax credit exemption)

What is Indexing?

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Actual prices	$79	$81	$84	$86	$89	$92	$94	$97	$100
Indexed to 2004	0.89	0.92	0.94	0.97	1.00	1.03	1.06	1.09	1.13

Exercise:

3. Online find an example of a chart using indexing. What does it show? What do you think indexing is based on your example?

Economic Indicators

CPI

Inflation and Exponential Growth

$$FV = PV\,(1 + i)^y \qquad PV = \frac{FV}{(1 + i)^y}$$

	2010	2011	2012	2013	2014
Exponential coefficient					

Exercise:

4. You retire at 55 and live for over 30 years. Inflation averages 3% a year over this time. If your pension at 55 is $50,000 how much will you need to be just as well off in 30 years as you are right now?

5. If your pension isn't indexed to inflation, how much is $50,000 30 years from now, chained to today's dollars?

Macroeconomic Statistics

CPI

Limitations of CPI

Knowing what you do about CPI, list some possible limitations?

Answers:

Economic Indicators

Reading and using global data sources | Types of indicators | Approaches | CPI | GDP | GDP per Capita | Unemployment

GDP

Gross Domestic Product

What is GDP?
What does it measure?
Why does it matter how it's measured?
How many ways are there?
It's important to know that inflation influences GDP? How and why?

Economic Indicators

Reading and using global data sources | Types of indicators | Approaches | CPI | GDP | GDP per Capita | Unemployment

GDP

Gross Domestic Product

$$GDP = C + G + I + X - M$$

6. Use Statistics Canada to download a spreadsheet file of Canadian GDP data for the most recent year. Make a bar chart or pie graph.

Exercise: 

Macroeconomic Statistics

GDP

The Law of One Price

Exchange Rate Conversion

Purchasing Power Parity

Macroeconomic Statistics

GDP

Chain Deflator

	2003	2004	2005	2006	2007
GDP at market prices	1,213,175	1,290,906	1,372,626	1,450,490	1,535,646
Chain Deflator/Price Index	1.0328	1.0658	1.1016	1.1289	1.1637
Real GDP at market prices	1,174,592	1,211,239	1,246,064	1,284,819	1,319,680

Where does this chain deflator come from?
What is a price index?
If Real GDP is in 2002 dollars, what was the rate of inflation from 2002 to 2003?

$$\text{Real GDP} = \frac{\$1{,}535{,}646}{1.1637}$$

Exercise:

7. With an understanding of inflation, calculate the change in the level of GDP from 2005 to 2007 using (i) nominal dollars, and (ii) 2005 dollars.

8. What is (i) the nominal growth rate (as a %), and (ii) the real growth rate?

Macroeconomic Statistics

GDP

GDP Limitations

- It's an absolute number - comparisons difficult
- Population change - rapid change
- Non-market production isn't measured (e.g. housework, home renovations)
- Underground economy
- Leisure time
- Environmental or societal degradation
- Distribution of GDP
- Measures output, not necessarily development, wealth, prosperity, or quality of life (unless they have a dollar value).

PPP Method

Exercise:

9. Read the case and answers questions 1-3 on page 201 of your textbook. Explain: "the ideal economic hero is a chain-smoking terminal cancer patient going through an expensive divorce whose car is totalled in a 20-car pile up."

Economic Indicators

GDP per Capita

GDP per Capita

Gross Domestic Product per Person

Which one do you think we should use? How do you know which one was used?

Mathematically, this is simple: $\text{GDP per Capita} = \dfrac{\text{GDP}}{\text{Population}}$

This resolves one of the limitations of GDP. Which one?

It's used to measure a country's standard of living. It's better than just GDP because it takes population size into account.

However, the problem of averages plagues this statistic. Observe this: what is the mean, median, and mode of this data set?

50, 100

Economic Indicators

GDP per Capita

Wealth Disparity

Can you rely on a country's GDP per Capita to measure standard of living?

GDP/Capita is an average. It does not give a true picture. There are many explanation for disparities in wealth within a country that we will discuss later.

You need to be aware of the differences when using the statistic.

GAPMINDER

TED Ideas worth spreading

Economic Indicators

GDP per Capita

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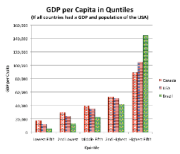
Exercise:

10. Find the GDP/Capita for each quintile in Canada, the US. and Brazil

Country	Lowest Fifth	2nd Lowest	Middle Fifth	2nd Highest	Highest Fifth	Highest 10%
Brazil (96)*	2.5	5.5	10.0	18.3	63.8	47.6
Canada (94)	7.5	12.9	17.2	23.0	39.3	23.8
United States (97)	5.2	10.5	15.6	22.4	46.4	30.5

Actual GDP per Capita by quintile (2007)



Hypothetical GDP per Capita by quintile,
if we all were as big and populous as the USA (2007)

Economic Indicators

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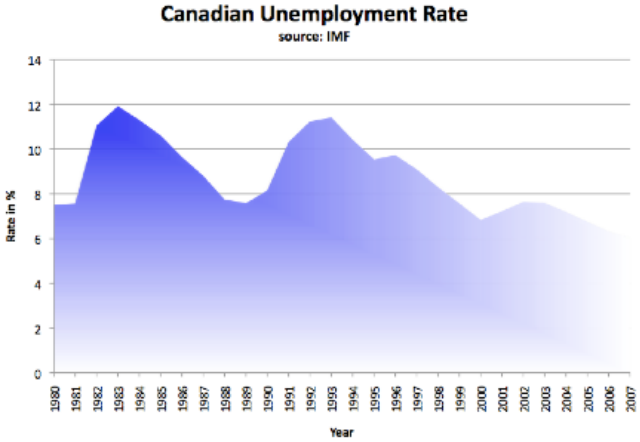
Unemployment

Why does it matter how it's measured?
Is it the same in every country?



What important information does this graph provide to economists?

What do the missing years since the graph was made look like?

Exercise:

11. Add CPI and GDP to this graph. What does it look like?

Macroeconomic Statistics

Unemployment

3. Unemployment Rate

The percentage of those not working out of all those who wish to work, and are legally eligible and physically eligible.

It does not include military personnel, inmates, full-time students, retired workers, and homemakers.

$$\text{Unemployment Rate} = \frac{\text{Number Unemployed}}{\text{Labour Force}}$$

The Participation Rate

This is different. This is a measure of what percentage of the physically and mentally able are actually working.

$$\text{Participation Rate} = \frac{\text{Labour Force}}{\text{Total Employable Population}}$$

Macroeconomic Statistics

Unemployment

3. Unemployment Rate

Macroeconomic Statistics

Unemployment

The Data

Labour force characteristics

	2007
Population 15 years and over	26,553.40
Labour force	17,945.80
Employed	16,866.80
Full time	12,855.20
Part time	4,005.30
Unemployed	1,079.40
Not in the labour force	8,607.60
Actual hours worked	862,182.60
Employment to population ratio	63.5
Participation rate	67.6
Unemployment rate	6

$$\text{Unemployment Rate} = \frac{\text{Number Unemployed}}{\text{Labour Force}}$$

The Labour Force

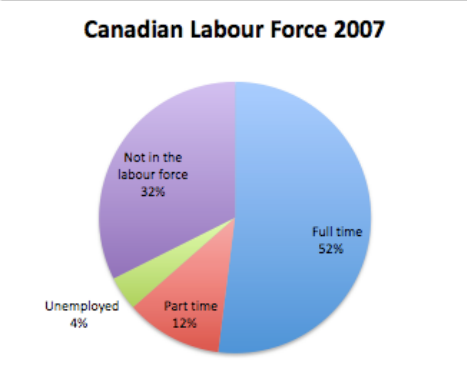
The Participation Rate

$$\text{Participation Rate} = \frac{\text{Labour Force}}{\text{Total Employable Population}}$$

Macroeconomic Statistics

Unemployment

Types of Unemployment



Structural

Technological

Replacement

Frictional (3%)

Cyclical

Seasonal

Exercise: 12. Questions #1 & #2 page 315

Macroeconomic Statistics

Unemployment

The true cost of unemployment

Human and societal costs

Economic costs: The GDP gap.

What is full employment?

Not 100%.

In a world without cyclical unemployment, full employment (natural rate of employment) is everyone except the seasonal and frictional unemployed. Why?

Macroeconomic Statistics

Unemployment

Limitations to the Umemployment Rate

There are several criticisms with this statistic. Can you think of what they could be?

Door #2

Door #3

$$\text{Unemployment Rate} = \frac{\text{Number Unemployed}}{\text{Labour Force}}$$

Door #1

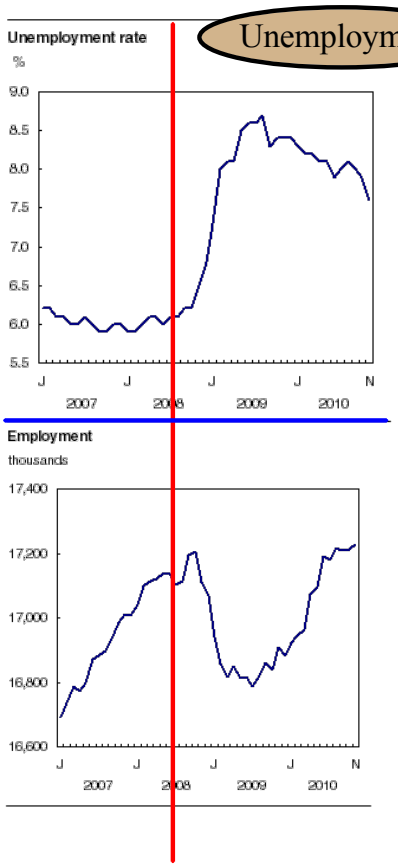
delicious: Unemployment

Macroeconomic Statistics

Unemployment

Limitations to the Umemployment Rate

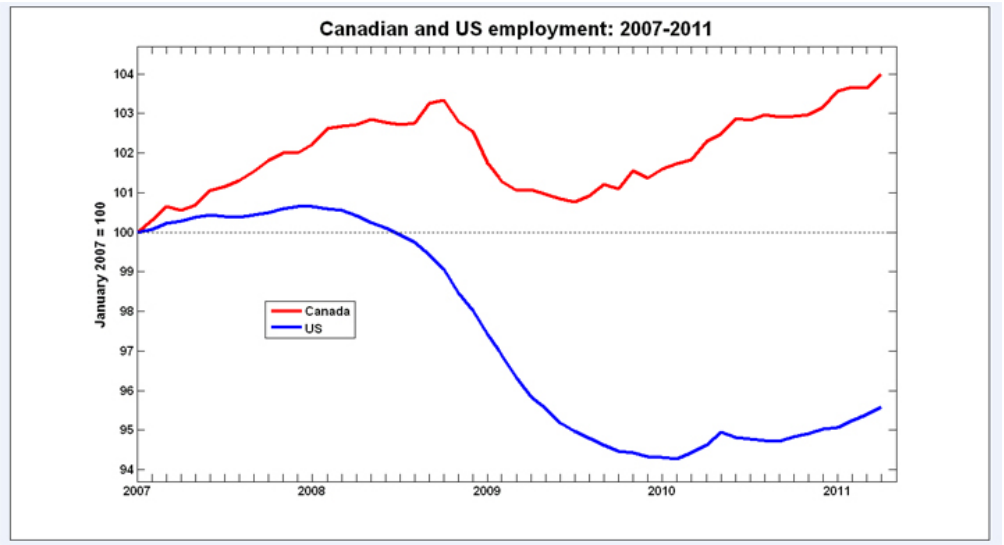
Compare and explain



Macroeconomic Statistics

Example of indexing and unemployment

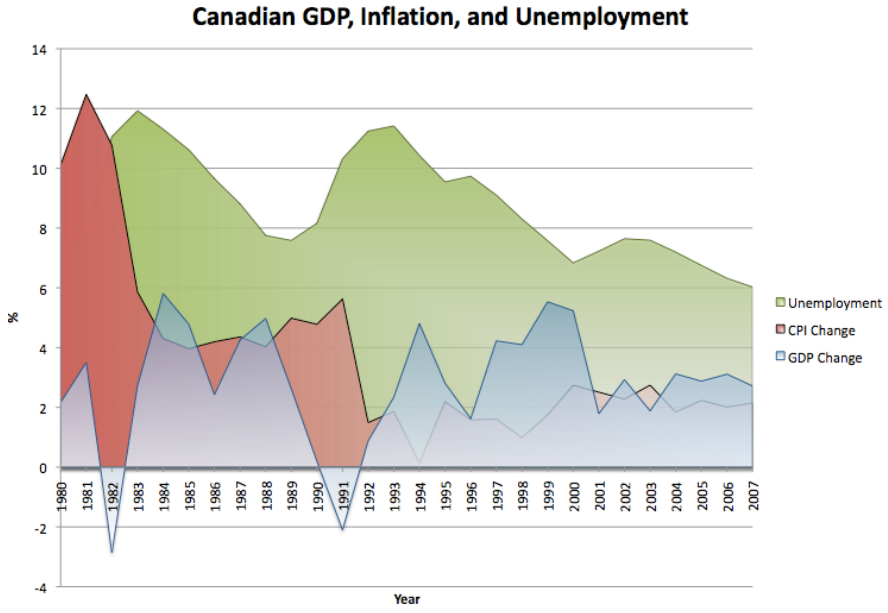
Compare and explain



Macroeconomic Statistics

Example of indexing and unemployment

Compare and explain differences



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Summarize what you feel the average Canadian does not know about economics when it comes to political promises, election campaigns, and government finances.

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Tags: Fiscal Policy
Taxes

Economic Indicators

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Bookmark the sources of data I have tagged on my delicious site for your own use.

Find the relative percentage Canada spends on the formation of new machinery and equipment over the years versus China. What do you think this really measures or explains?

Whose government debt is more of an issue over the last ten years? Canada's, America's, Britain's, or Japan's?

Answers

Unemployment rates rises despite big job gain: StatsCan

Published on Friday October 05, 2012
Madhavi Acharya-Tom Yew
Business Reporter

Answers:

52,100 jobs with a labour force of 18,699,000 in 2012 is would have an effect of +0.28% on the unemployment rate.

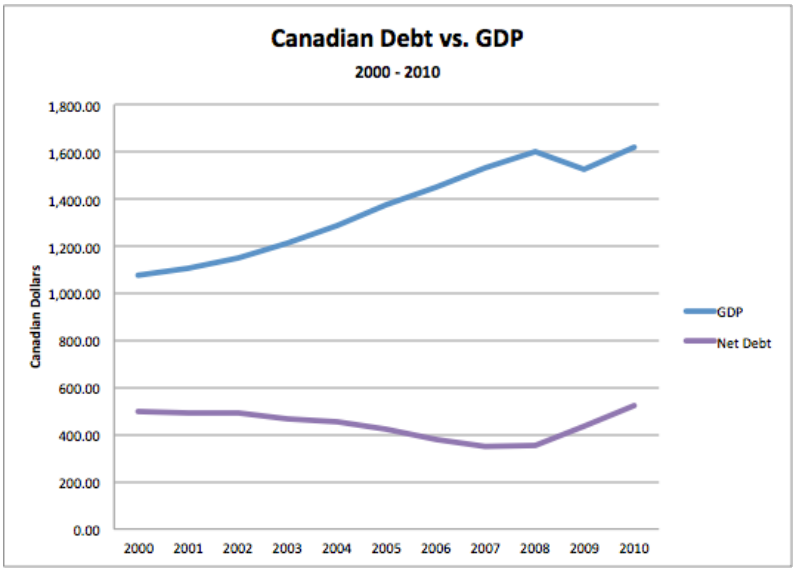
Full time positions usually:
- pay better,
- have more benefits,
- are of higher quality,
- happen only when needed, and therefore,
- indicate more business confidence and economic activity

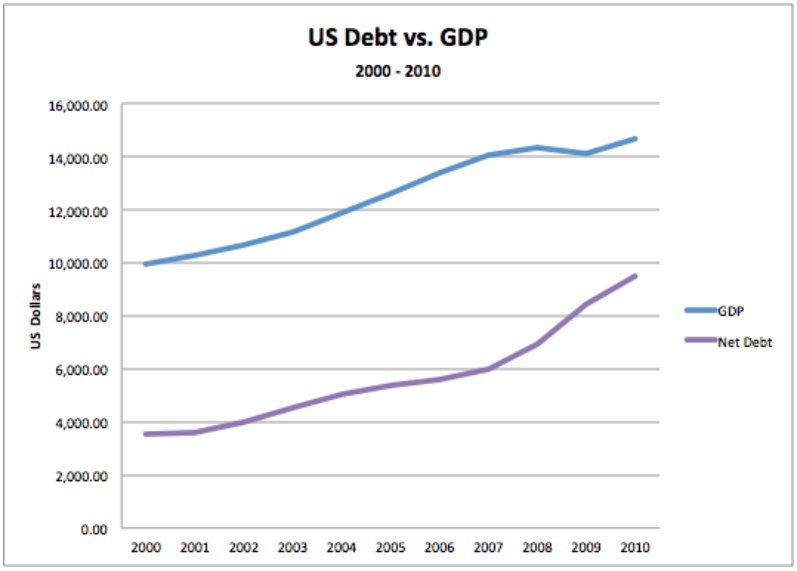
Since the indicator is [unemployed/labour force], as more jobs were offered, more went looking for work. More jobs lowered the numerator, but people looking for work again raised up both the numerator and the denominator, negating the effects of more jobs.

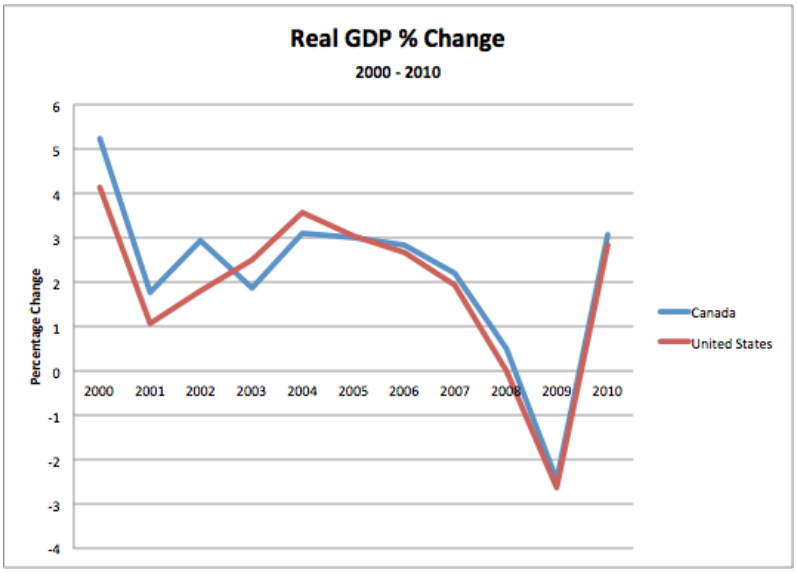
Sovereign debt means a nation's government debt.

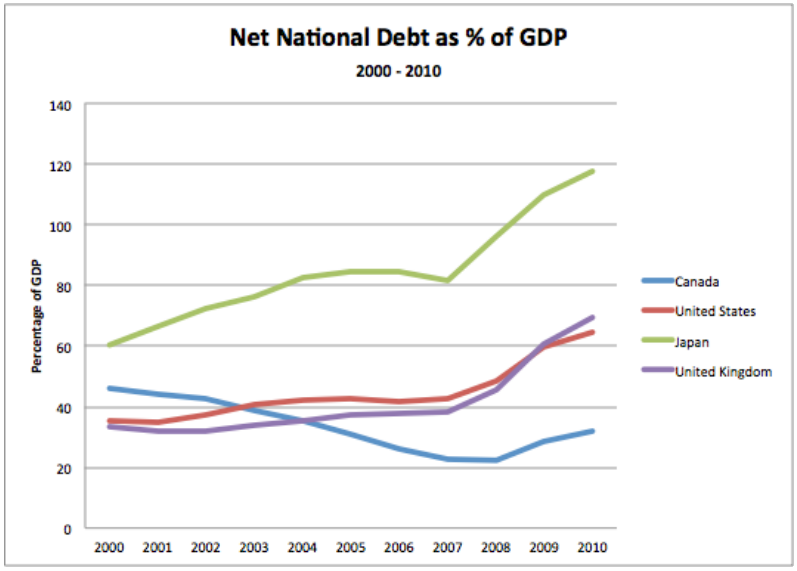
Self-employment can indicate an entrepreneurial workforce, but can also indicate a weak business sector that isn't hiring.

The problem is this is an absolute number, but Canada's provinces are equal in size. To be sure of how good this is, you have to compare it to what it should be if it was equitable. Based on population patterns (2006), Ontario's population of 12,160,282 is 38.4% of Canada's 31,612,897 people. So, 38.4% of 52,100 jobs is about 20,000 jobs for Ontario, so 31,600 was well above it's fair share.


Canadian Debt vs. GDP
2000 - 2010
Canadian Dollars
1,800.00
1,600.00
1,400.00
1,200.00
1,000.00
800.00
600.00
400.00
200.00
0.00
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
GDP
Net Debt


US Debt vs. GDP
2000 - 2010
US Dollars
16,000.00
14,000.00
12,000.00
10,000.00
8,000.00
6,000.00
4,000.00
2,000.00
0.00
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
GDP
Net Debt


Real GDP % Change
2000 - 2010
Percentage Change
6
5
4
3
2
1
0
-1
-2
-3
-4
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Canada
United States


Net National Debt as % of GDP
2000 - 2010
Percentage of GDP
140
120
100
80
60
40
20
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Canada
United States
Japan
United Kingdom

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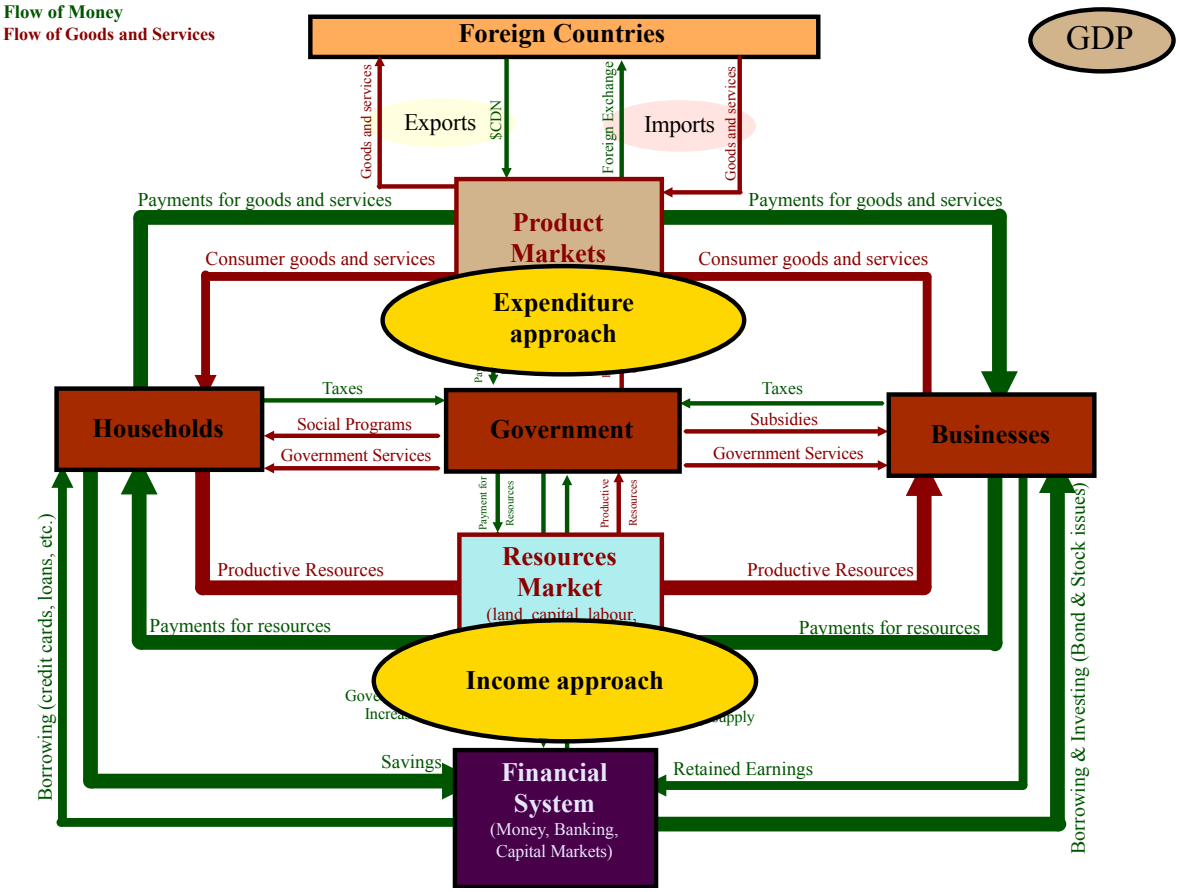

J. Boulton