

Answers to Assignment One:

(1a)

Year	CAN Nominal GDP	CAN Real GDP	U.S. Real GDP
1985	\$ 485,714	\$ 664,059	\$ 5,957
1995	\$ 810,426	\$ 833,456	\$ 7,974
2005	\$ 1,371,425	\$ 1,157,705	\$ 10,999

Note: Canadian data in \$Millions CAD; US data in \$Bill USD.

(1b)

	Period	CAN Nominal GDP	CAN Real GDP	U.S. Real GDP
Growth	1985-95	66.9%	25.5%	33.9%
	1995-05	69.2%	38.9%	37.9%

The American economy grew faster in the first period; the Canadian economy grew faster over the last period.

(1c) Inflation was higher in the 1985-1995 period. (See Figure 2.2 in the text).

(1d) Canadian real GDP grew by 3.3% a year, on average, during the last period. We obtain this answer by solving equation (1) for the average annual growth rate:

$$g = \left(\frac{x_{t+n}}{x_t} \right)^{\frac{1}{n}} - 1 = \left(\frac{Y_{2005}}{Y_{1995}} \right)^{\frac{1}{10}} - 1 = .03341.$$

(1e) Nominal and Real GDP are always equal in the base year (in other words the GDP deflator is one, by definition, in the base year). In our data the base year is 1997 and so this is where the two series cross. This wouldn't be obvious from your graph if you didn't collect the entire time series (the data for every year in between). However, the CANSIM data label tells us that the Canadian real GDP data are calculated using (chained) 1997 dollars.

(1f) In the usual case with inflation, nominal GDP is higher than real GDP after the base year (the GDP deflator is > 1). Therefore, in the case of deflation the opposite would be true. So, the real series would be higher than the nominal, after the base year with a GDP deflator of less than 1.

(2a) False. The first part of the statement is true: the classical approach does feature rapid price/wage adjustments. However, the last statement doesn't follow from the first. If prices are quick to adjust, then government is better off leaving the economy alone. Keynesians are more likely to favor government intervention because the slow adjustment of prices allows the economy to remain out-of-equilibrium for prolonged periods of time. See the text Section 1.3 for a discussion.

(2b) These countries may have many citizens living abroad. I did a quick informal search and came up with a few examples: Egypt, Turkey, Mexico, Switzerland. For instance, Lesotho is a tiny country surrounded by South Africa. In 1999, its GNP exceeded GDP by about 32%, because many of its residents work in South Africa.

Ireland is a country where its GDP greatly exceed its GNP. This is because many multinationals (owned by non-Irish) are headquartered in Ireland. As a result, their production counts in Irish GDP, but profits sent back to the home countries are not included in Irish GNP.

Note: this isn't a 'serious research' question, but try to use more legitimate sources.

(2c) Using the 2002 base year, $cpi_{1975} = \frac{100}{331.1} * 100 = 32.1$

(3a)

$$i = (340 - 200)/200 = .7$$

$$\pi = (230 - 150)/150 = .53$$

$$r = i - \pi = .17$$

$$\pi^e = (180 - 150)/150 = .2$$

$$r^e = i - \pi^e = .5$$

(3b)

i) Product approach: \$30 = value added = \$50 product minus \$20 value of product produced in the previous year.

Expenditure approach: \$50 consumption spending plus inventory investment of (-\$20).

Income approach: \$30 paid to the factors of production at Widgets Incorporated (wages of employees, interest, taxes, profits) \$10 profit, \$15 wages and \$5 taxes.

ii) Product approach = \$50:

John McCrae value added = \$10, Sopwith Airplane company = \$20,
Robert Borden Company value added = \$20

The \$10 worth of parts are intermediate goods and should not be included. The "Avro 504" was not produced in 1917 and should not be included.

Expenditure Approach = \$50:

\$90 for the "Sopwith Pup" purchased by Wilfrid "Wop" May plus inventory investment of (-\$40).

(4a)

$$A_{1870} = 17.54, A_{1940} = 22.87$$

$$= (A_{1940} - A_{1870})/A_{1870} \times 100 = 30.38 \%$$

(4b)

$$MPN_{1870} = (.6)(17.53)(224^{.4})(8^{-.4}) = 39.9$$

$$MPN_{1940} = (.6)(22.87)(800^{.4})(20^{-.4}) = 60$$

$$(60 - 39.9)/39.9 \times 100 = 50.38 \%$$