9.2 | Unemployment

LO2

Recall from Chapter 1 that another economic goal of Canada is full employment. Of all economic statistics, the unemployment rate is the one most often highlighted in the media, discussed by politicians, and noticed by Canadians. For most people, the prospect of involuntary unemployment provokes considerable anxiety. To see why, we must understand unemployment, how it is measured, and its implications for individuals and for the economy as a whole.

The Labour Force Survey

Statistics Canada keeps track of the Canadian workforce through a monthly survey of about 53 000 households. These households are a random sample of the **labour force population**, which includes all residents of Canada 15 years of age and over, except those living in the Northwest, Nunavut, and Yukon Territories, on First Nations reserves, and in institutions (for example, jails and psychiatric hospitals), and full-time members of the armed forces.[1] The **labour force** is made up of those people in the labour force population who either have jobs or are actively seeking employment. By its definition, the labour force leaves out such groups as pensioners who do not have jobs and are not looking for work. It also excludes those who have given up looking for a job, as well as full-time homemakers who, while they work, do not do so in the formal job market.

labour force population: the population, with specific exclusions, from which Statistics Canada takes a random sample for the labour force survey

labour force: all people who either have a job or are actively seeking employment

The **participation rate** is the percentage of the entire labour force population that makes up the labour force. For example, in 2010, Canada's labour force was 18.5251 million, and the labour force population was 27.6585 million, so the participation rate was 67 percent. In other words, of the defined labour force population, 67 percent is participating in the labour market:

participation rate: the percentage of the entire labour force population that makes up the labour force

$$\text{participation rate} = \frac{\text{labour force}}{\text{labour force population}} \times 100$$

$$67.0\% = \frac{18\,525\,100}{27\,658\,500} \times 100$$

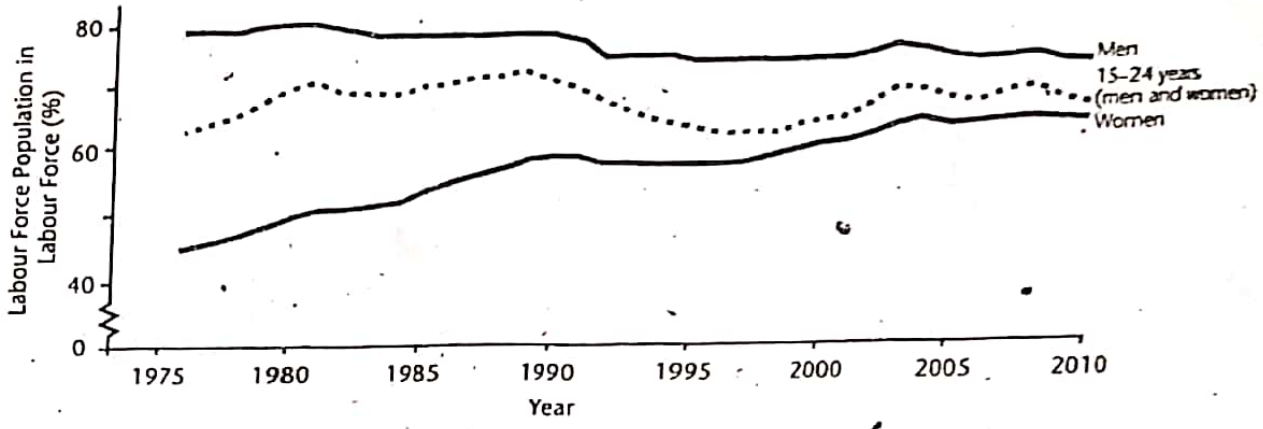
Statistics Canada also examines the participation rates of specific groups of people. Figure 9.6 shows recent trends in labour force participation for women and men overall, as well as for one age group. As shown, the participation rate for women increased steadily until a lull in the early 1990s, and has gradually continued rising since. In contrast, the participation rate for men has decreased. This decline is largely due to the growing popularity of early retirement. Overall, the participation of young people in the labour force is at a value similar to that in 1975, but it has fluctuated as young people respond to shifts in the business cycle by moving in and out of the labour force.

The Official Unemployment Rate

Once the labour force has been defined, its members can be divided into those who are employed and those who are unemployed. The official unemployment rate is the number of unemployed people in the labour force as a percentage of the entire labour force.

[1] For the rationale underlying these exemptions, see the explanation in the Statistics Canada publication *Guide to the Labour Force Survey* (Catalogue 71-543-GIE), available at the Statistics Canada website www.statcan.gc.ca.

FIGURE 9.6 Participation Rates



Since the 1970s, participation in the labour force by women has increased. In contrast, participation rates for men have fallen. Participation rates for young people have fluctuated more widely.

Sources: Statistics Canada "Participation Rates," adapted from the Statistics Canada Summary Table, http://www40.statcan.gc.ca/l01/cst01/labor05-eng.htm. Retrieved April 2, 2011.

For example, Canada's 2010 labour force of 18.5251 million people was composed of 17.041 million people who were employed and 1.4841 million who were not. Therefore, the unemployment rate was 8.0 percent:

$$\text{Unemployment rate} = \frac{\text{unemployment labour force}}{\text{labour force}} \times 100$$

$$8.0\% = \frac{1\ 484\ 100}{18\ 525\ 100} \times 100$$

Figure 9.7 summarizes the relationships among Canada's population, labour force, labour force population, and unemployed labour force. Further practice related to these relationships can be found in the simulation accompanying this chapter at the book's Online Learning Centre.

FIGURE 9.7 The Canadian Labour Force (2010)

$$\text{participation rate} = \frac{\text{labour force}}{\text{labour force population}} \times 100 = \frac{18\ 525\ 100}{27\ 658\ 500} \times 100 = 67.0\%$$

$$\text{Unemployment rate (\%)} = \frac{\text{unemployment in labour force}}{\text{labour force}} \times 100 = \frac{1\ 484\ 100}{18\ 525\ 100} \times 100 = 8.0\%$$

In 2010, Canada's total population was about 34 million. Of this number, 27 658 500 were considered part of the labour force population. The labour force constituted 67.0 percent of the labour force population, or 18.5251 million. Of the labour force, 92.0 percent, or 17.041 million, were employed. The remaining 1.4841 million in the labour force were unemployed, giving an unemployment rate of 8.0 percent.

Source: Statistics Canada "The Unemployment Rate," adapted from the Statistics Canada Summary Table, http://www40.statcan.gc.ca/english/Pgdb/econ10.htm. Retrieved April 2, 2011.

Drawbacks of the Official Unemployment Rate

Because of the way the official unemployment rate is calculated, it may either understate or overstate the true level of unemployment in the Canadian economy. Critics of this official rate point to the following factors: underemployment, discouraged workers, and dishonesty.

UNDEREMPLOYMENT

The official unemployment rate makes no distinction between part-time and full-time employment, nor does it reflect the appropriateness of the work. While some part-time workers prefer part-time work, others would want full-time work if it were available. Also, in hard times, some workers may have to work at jobs that do not fully utilize their skills and education. Thus, we have the problem of **underemployment**. It is sometimes argued that the official rate understates unemployment by ignoring underemployed workers.

underemployment: the problem of workers being underutilized, either as part-time workers or by working at jobs not appropriate to their skills or education

DISCOURAGED WORKERS

Unemployment statistics also do not take into account people who, after searching for a job without luck, give up looking. Because they are not actively seeking employment, these **discouraged workers** are not considered part of the labour force. Again, it is sometimes argued that this causes the official rate to understate unemployment.

discouraged workers: unemployed workers who have given up looking for work

The number of underemployed and discouraged workers rises during an economic downturn, since job prospects—especially for full-time work—are at their bleakest. During the recession of the early 1990s, for example, estimates suggested that underemployed and discouraged workers would have added up to 10 percent to the official unemployment rate. At other times, adding these groups to the official rate would result in a smaller increase—about 3 percent for underemployment and discouraged workers combined.

DISHONESTY

People responding to Statistics Canada's labour market survey may state that they are actively looking for work when, in fact, they are not. While the extent to which such dishonesty affects the unemployment rate is difficult to measure, it does make it possible for the official rate to overstate unemployment.

Types of Unemployment

When examining unemployment, we should distinguish among four types: frictional, structural, cyclical, and seasonal unemployment.

FRICTIONAL UNEMPLOYMENT

Workers who are temporarily between jobs or have begun looking for their first jobs are experiencing **frictional unemployment**. A dental assistant who has left one job voluntarily to look for another and a recent college graduate looking for career-related work are examples. Frictional unemployment is a permanent feature of labour markets and represents about 3 percent of the labour force at any given time.

frictional unemployment: unemployment due to being temporarily between jobs or looking for a first job

STRUCTURAL UNEMPLOYMENT

Another type of unemployment is closely connected to structural trends in the economy. **Structural unemployment** is due to a mismatch between people and jobs—unemployed workers cannot fill the sorts of jobs that are available. This type of unemployment occurs primarily because of gradual changes in the economy. Long-term adjustments in what items are produced (for example, the current shift from goods to services), how they are produced (largely due to technological change), and where they are produced cause such unemployment.

structural unemployment: unemployment due to a mismatch between people and jobs

Because of these changes, workers lose out; they are displaced. Consider a worker who loses her job in manufacturing because of automation. She might not yet have the skills for the expanding service sector. In the same way, an unemployed fisherman living in a remote village cannot easily take advantage of employment opportunities elsewhere. Because gaining new skills, moving to obtain work elsewhere, and developing new industries in a region all take time, structural unemployment can persist for long periods.

CYCLICAL UNEMPLOYMENT

cyclical unemployment: unemployment due to fluctuations in output and spending

Economies and businesses must cope with fluctuations in output and spending, causing unemployment to rise and fall. This type of unemployment is called **cyclical unemployment**. An auto worker, for example, may work overtime in periods of strong consumer demand for cars, but be laid off in leaner times.

SEASONAL UNEMPLOYMENT

seasonal unemployment: unemployment due to the seasonal nature of some occupations and industries

In some Canadian industries—agriculture, construction, and tourism, for example—work is seasonal, with lower employment in the winter months. As a result, some workers experience **seasonal unemployment**. Compared with many other countries, seasonal unemployment is particularly significant in Canada, given its climate and the importance of its primary resource industries. So that month-to-month comparisons can be made without the influence of seasonal unemployment, Statistics Canada calculates seasonal changes and adjusts the official unemployment rate accordingly.

Full Employment

full employment: the highest reasonable expectation of employment for the economy as a whole

natural unemployment rate: the unemployment rate that defines full employment

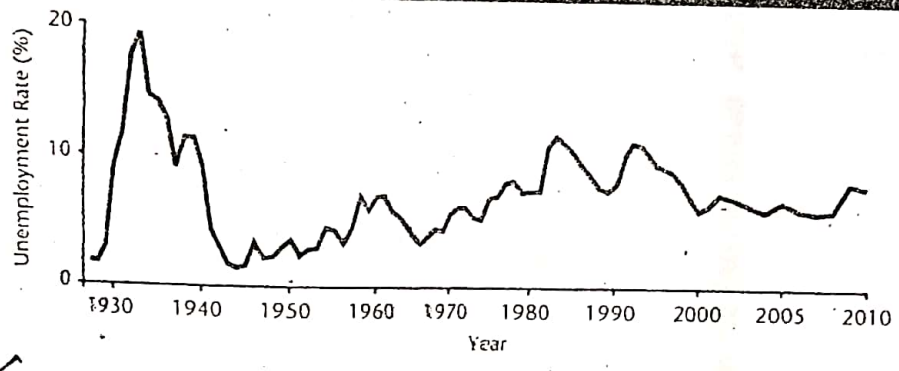
Defining **full employment** is a tricky task. In effect, full employment is the highest reasonable expectation of employment for the economy as a whole, and is defined in terms of a **natural unemployment rate**. This rate includes frictional unemployment but traditionally excludes cyclical unemployment. This rate also excludes seasonal unemployment, which is already omitted from the official unemployment rate using seasonal adjustment.

In the 1950s and 1960s, full employment in the Canadian economy was defined by the Economic Council of Canada as a natural unemployment rate of 3 percent. In other words, full employment was 100 percent labour force employment minus 3 percent frictional unemployment. As Figure 9.8 shows, the unemployment rate, which reached almost 20 percent during the Great Depression of the 1930s, decreased considerably over the following decades. However, full employment—as it was defined—was only occasionally achieved.

Since the 1970s, the unemployment rate has been well over 3 percent. In light of recent economic trends and thinking, many economists argue that in addition to frictional unemployment—which will always exist—the definition of full employment should also accommodate at least some structural unemployment. This, they say, is because structural unemployment *can* be reduced, but only very gradually. While definitions of full employment in the 2010s vary, most include a natural unemployment rate of between 6 and 7 percent. **Because of this, full employment does not mean what it would seem to—that everyone who wants a job has one. Indeed, a significant proportion of the labour force (6 to 7 percent) is unemployed.**

The gradual increase that took place over recent decades in both the actual and the natural unemployment rates has represented a worrisome trend. Several factors are often highlighted in explaining this trend.

FIGURE 9.8 The Unemployment Rate



After rising significantly in the 1930s, the unemployment rate fell to 2 to 4 percent for much of the 1940s and 1950s. Since the late 1950s, the rate has gradually risen. Much of this increase can be attributed to a rise in natural unemployment.

Sources: Statistics Canada "Unemployment Rates by Province, Gender, and Age (2007)," adapted from the Statistics Canada Summary Table, http://www40.statcan.gc.ca/l01/cst01/econ10-eng.htm. Retrieved April 2, 2011.

STRUCTURAL CHANGE

Recall that structural adjustments in an economy occur whenever there are changes regarding what products are produced, as well as in how and where they are produced. Over the past few decades, the pace of structural change in the Canadian economy has accelerated. The growth of the service sector and shrinking of the traditional manufacturing sector, the rise of the new economy, and the removal of many international trade barriers have each led to the displacement of workers and, therefore, pushed up long-term structural unemployment.

UNEMPLOYMENT INSURANCE

Most unemployed workers today have a significant advantage over those in previous generations. The financial cushion provided by unemployment insurance allows job seekers to devote more time and effort to searching for employment than in the past, which increases frictional unemployment. Reforms to unemployment insurance in the early 1970s also made it easier for those experiencing seasonal and structural unemployment to claim benefits. Thus, unemployment insurance can be a factor in increasing the unemployment rate. Overall, it is estimated that this factor has added between 0.5 percent and 2 percent to the unemployment rate since the 1970s. However, more recent changes to the unemployment insurance system (now called Employment Insurance) have made it more difficult to claim benefits, reducing this effect.

CHANGING PARTICIPATION RATES

Recall from Figure 9.6 that over the last few decades, young people have added to the labour force. Not only do they add to the supply of unskilled labour when they first enter the labour force, but as they acquire skills and work experience, they also suffer greater frictional unemployment than more experienced workers. As a result, the increased participation rates among young Canadians (which declined for a while in the 1990s) has swelled the ranks of the unemployed.

MINIMUM WAGES

Minimum wage levels set by the provinces have increased a great deal in the past few decades. For young people in particular—who are more likely than others to be affected by minimum wage laws—this has meant an increase in the number of people looking for work. For example, one Canadian study suggested that a 10 percent increase in the minimum wage reduces employment by 1 percent for male teenagers and 2.7 percent for female teenagers. As we saw in Chapter 3, minimum wages cause unemployment in the market for unskilled labour by creating a wage floor above equilibrium. The minimum wage, therefore, creates a surplus, with a greater number of workers wishing to work than there are available jobs at that wage.

THINKING ABOUT ECONOMICS

Are the Canadian and US unemployment rates directly comparable?

There are important differences in the way the unemployment rate is calculated in each country, which means that the Canadian rate would be lower if computed using US definitions. For example, a job-seeker who consults just one job ad a month would be classified as actively seeking employment (and hence officially unemployed) in Canada, but not in the US. Statistics Canada takes these measurement differences into account by occasionally publishing a Canadian unemployment rate calculated using US definitions. The resulting figure is anywhere up to a percentage point below the rate determined using the Canadian definitions.

QUESTION **Given these measurement differences, is the US natural unemployment rate likely to be above or below that in Canada?**

The Costs of Unemployment

High unemployment rates hurt both individuals and the Canadian economy as a whole. As Figure 8.9 shows, the rates vary from province to province and among groups of people. To jobless workers and their families, unemployment, especially for extended periods, can create stress and discouragement, disrupt family life, lower self-esteem, and cause financial hardship. In addition, the economy as a whole loses the output the unemployed workers could have produced.

potential output: the real output, or Gross Domestic Product, associated with full employment

One way to measure the cost of unemployment for the entire economy is by calculating the extent to which **potential output**, or the real output associated with full employment, exceeds actual output. According to Okun's Law—named after the American economist Arthur Okun—for every percentage point that the unemployment rate exceeds the natural unemployment rate, the gap between potential output and actual output is 2.5 percent.

In 2010, for example, real GDP in (constant) 2002 dollars was $1325.1 billion, while the unemployment rate was 8.0 percent, or 1.5 percent above an assumed natural unemployment rate of 6.5 percent. According to Okun's Law, real output could have been 3.75 percent (= 1.5 × 2.5) higher if unemployment equalled the natural rate. In other words, in 2002 dollars, 2010 real GDP could have been $49.7 billion (= $1325.1 billion × 0.0375) higher.

This method of measuring the costs of unemployment is difficult to apply, both because of disagreements over the natural unemployment rate and because it can be argued that there are costs of unemployment even if actual output equals or exceeds potential output. But it gives a good indication of the substantial cost of unemployment, not just to those workers who are directly affected, but also to the economy as a whole.

1. The table below gives data on Student A's monthly purchases during 2011 and 2012.

Student A's Monthly Purchases

	Prices		Quantities Consumed per month	
	(2011)	(2012)	(2011)	(2012)
Hotdogs	$1.50	$1.60	3	2
Cans of cola	.75	.70	16	18
Chocolate bars	1.00	1.00	7	7
Magazines	3.50	4.50	3	2
DVD rentals	3.00	2.75	2	3

   a. Calculate the value of Student A's 2011 shopping basket using 2011 prices. What are the item weights associated with this shopping basket?
   b. Calculate the value of Student A's 2011 shopping basket using 2012 prices. If 2011 is used as the base year, what is the 2012 value of Student A's price index? What is the 2011 value of this index? By what percentage has this index changed between 2011 and 2012?

2. The table shows output and prices during 2012 in an economy that produces only two goods—sweatshirts and bags of chips.

Finding the GDP Deflator

	Output in 2012	Prices in 2012	Prices in 2011
Sweatshirts	4	$22.00	$16.00
Bags of chips	50	1.80	1.50

   a. What is the total value of the economy's output in 2012 valued in 2012 prices?
   b. What is the total value of the economy's output in 2012 valued in 2011 prices?
   c. On the basis of your answers to parts a and b, calculate the value of the GDP deflator in 2012 if 2011 is treated as the reference year.
   d. In what ways does the calculation of the GDP deflator differ from the calculation of the consumer price index?

3. a. Copy and complete the table below.

Finding Real Gross Domestic Product

Year	Nominal GDP (current $ billion)	GDP Deflator	Real GDP (2002 $ billions)
1996	$_____	91.6	$913.4
1999	982.4	93.9	_____
2002	1152.9	_____	_____
2005	1373.8	110.1	_____
2008	1599.6	_____	1318.1

Sources: Statistics Canada "Finding Real Gross Domestic Product," adapted from the Statistics Canada CANSIM II database, http://cansim2.statcan.gc.ca, Table 380-0017, V3839799 and V3839800, and Table 380-0056, V3862688. Retrieved April 2, 2011.

   b. Explain why real GDP is less than nominal GDP in some years, and greater than nominal GDP in other years.

4. Outline how each of the following individuals is influenced by unexpected inflation:
   a. a lawyer whose costs and revenues both rise by the inflation rate
   b. the owner of a heavily indebted restaurant

c. a worker with a union contract that includes a COLA clause
d. an injured worker who lives on a partially indexed pension

5. For each of the following years, determine the real interest rate. Find the difference between this rate and the desired real interest rate, and explain how any difference affects borrowers and lenders.
   a. In year 1, the nominal interest rate is 9 percent, the inflation premium on loans is 3 percent, and actual rate of inflation is 4 percent.
   b. In year 2, the nominal interest rate is 10 percent, the inflation premium is 4 percent, and the actual rate of inflation is 2 percent.
   c. In year 3, the nominal interest rate is 8 percent, the inflation premium is 2 percent, and the actual rate of inflation is 2 percent.

6. The relationship between nominal and real interest rates continues to hold when there is deflation rather than inflation, except that the overall change in prices is now negative. For example, take the case where the desired real interest rate is 3 percent, the expected deflation rate is −2 percent, and the actual deflation rate is −3 percent. What is the nominal interest rate? the actual real interest rate? If the reduction in prices is greater than expected, do borrowers or lenders benefit? Explain.

7. The table below includes hypothetical labour force data.

Finding Participation and Unemployment Rates

	2011	2012
Total population 15 years and over	4.2 million	4.2 million
Those 15 years and over not in the labour force population	1.4 million	1.4 million
Part-time workers who wish to have full-time jobs	100 000	125 000
Part-time workers who do not wish to have full-time jobs	300 000	375 000
Discouraged workers	400 000	500 000
Workers with full-time jobs	1.2 million	1.3 million
Unemployed members of the labour force	150 000	160 000

   a. Calculate the labour force population, labour force, participation rate, and official unemployment rate in 2011. Then, calculate values for the same variables in 2012.
   b. Why has the official unemployment rate fallen in 2012, even though the number of unemployed members of the labour force has increased?
   c. Calculate, for both 2011 and 2012, what the unemployment rate would be if it included underemployed and discouraged workers. Explain the reasons behind the change between these two years.

8. Outline how the employment conditions of the following individuals can be explained using the concepts introduced in the chapter. In each case, state whether or not the individual is included in the official unemployment rate.
   a. a laid-off typesetter who so far has had no success finding a similar job, due to the replacement of typesetters by computers
   b. a former cod fisherman who gives up looking for work and goes on welfare
   c. a farm labourer who is unemployed during the winter months
   d. a graphic artist who loses her job during an economic downturn
   e. a part-time store clerk who looks for a full-time position in the same occupation
   f. a bricklayer receiving employment insurance who works for a renovation company that operates in the underground economy
   g. a recent business school graduate who searches for her first career-related position

9. Using Okun's Law, calculate the gap between potential output and actual output in the Canadian economy in 2004 and 2009. In your answers, assume a natural unemployment rate of 6.5 percent.
   a. In 2004, the unemployment rate was 7.2 percent and real GDP in 2002 dollars was $1210.7 billion.
   b. In 2009, the unemployment rate was 8.3 percent and real GDP in 2002 dollars was $1285.6 billion.

10. (Advanced Question)
   a. Using the table accompanying Question 1, calculate the value of Student A's 2012 shopping basket using 2012 prices, as well as the item weights associated with this basket. What would the value of this 2012 shopping basket have been in 2011? If 2012 is used as the base year, what is the 2011 value of Student A's price index? What is the 2012 value? By what percentage has this index changed between 2011 and 2012?
   b. Why do the percentage changes in Student A's price index differ depending on which year is chosen as the base year?

INTERNET [illegible]

1. Access Statistics Canada's website (at **http://www.statcan.gc.ca**).
   a. Use the links to "Students and Teachers" and "Summary Tables" to find the annual changes in Canada's consumer price index for the last four years for which data are available. Which component of the CPI has risen most quickly over this four-year period? Which component has fallen the most (or risen the least)?
   b. Use the links to "Students and Teachers" and "Summary Tables" to find (i) the unemployment rate, (ii) the participation rate, and (iii) the proportion of the labour force population that is employed (known as the employment-to-population ratio) for Canada during the last five years for which data are available. Explain how movements in these three variables have been related over the relevant four-year period.

2. Access Statistics Canada's student simulation worksheet (at **http://www.statcan.gc.ca/pub/62-560-x/2004001/4153405-eng.htm**).
   a. Presuming that you have a budget of $20 000 for a given school year, insert possible figures that add up to this amount in column 4 of the inflation simulator. Once you have done so, find any deficit or surplus in your total expenditures relative to your $20 000.
   b. Using the simulator, find the customized inflation rate on your planned expenditures if you continue with a similar pattern of purchases in the next school year.

3. Refer to the most recent issue of the OECD's Key Short-Term Indicators (at **http://www.oecd.org**).
   a. Find the latest monthly unemployment rates in the seven large industrial economies in the OECD (the United States, Japan, Germany, the United Kingdom, France, Italy, and Canada). Which of these countries has the highest unemployment rate? Which has the lowest? Where does Canada rank in this list?
   b. Find the latest annual CPI inflation rates in the same seven economies. Which of these countries has the highest inflation rate? the lowest? Where does Canada rank?

http://www.statcan.gc.ca

http://www.statcan.gc.ca/pub/62-560-x/2004001/4153405-eng.htm

http://www.oecd.org

http://www.bankofcanada.ca/english/inflation_calc.html

http://www.statcan.gc.ca/estat/licence-eng.htm

4. Employ the Bank of Canada's online Inflation Calculator (at **http://www.bankofcanada.ca/english/inflation_calc.html**) to calculate the overall changes in the CPI, and the average inflation rates between:
   a. 2000 and 2009
   b. 1990 and 1999
   c. 1980 and 1989

5. Access Statistics Canada's E-Stat site (at **http://www.statcan.gc.ca/estat/licence-eng.htm**).
   a. On the basis of the information in "Labour," generate a table showing the annual unemployment rates for men 15 years and over and women 15 years and over since 1976.
   b. Historically, the unemployment rate for women in Canada was higher than for men, but now the two rates are related in the opposite fashion. In which years did this switch take place? What arguments can you make to explain this switch?