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Introduction

The handbook on labour market information was developed to make labour market information more understandable to the lay reader. The general public, career counsellors, training consultants, teachers and students will find this handbook useful in interpreting information from newspapers, magazines and government documents on the labour market.

This document does not provide current labour market statistics but instead gives the reader an understanding of the information. Examples included in this document are fictitious and should not be used for other analyses.

The emphasis is placed on labour market terms and definitions in Chapter I. Amongst the most important topics examined are Statistic Canada's Labour Force survey, labour force, employment, unemployment, unemployment rate, participation rate, employment-population ratio, employment insurance claimants and beneficiaries, industrial and occupational classification systems, seasonally adjusted and actual data, economic regions and employment insurance regions.

The second chapter discusses socio-economic indicators such as the importance of demographics, the difference between Gross National Product and the Gross Domestic Product and other factors that can have an impact on the labour market. The consumer price index, inflation, the Canadian dollar, interest rates and the impact of educational levels are included.

Forecasts are the focus of the third chapter. Answers are provided to a number of questions related to forecasts. What are the different methods used to do forecasts? Who produces forecasts? How do we interpret/ read a forecast?

Appendix I contains sources of information as well as contact people in New Brunswick you can call for Labour Market Information.

*The original document has been revised to reflect the changes in the Employment Insurance Program. The publication is also now available on the internet at the following address:
<http://www.gov.nb.ca/ael/lmab/handbook/english/index.htm>



Chapter I

Understanding the Labour Market Terms and Definitions

These are examples of the more frequently asked questions concerning the labour market information. The following chapter will answer these questions and many more.

What is Labour Market Information?

What is the Labour Force Survey?

Who is included in the Survey?

What does "labour force" mean?

Who is classified as "employed"?

How is employment defined in the "Labour Force Survey"?

Who is classified as "unemployed"?

How is the unemployment rate calculated?

What are the employment-population ratio and participation rate?

What is the difference between actual and seasonally adjusted data?

What is Labour Market Information?

Labour Market Information is material and data about the supply and demand for labour within a certain labour market. The ***labour market*** is defined as the informal mechanism where demand and supply of labour interact. A labour market could be a community, a city, a region of a province, a country or larger area. ***Labour Market Information*** covers economic, social, demographic, and labour force data. It should describe the characteristics of the supply of labour: the people who are workers or potential workers in the market. It should also provide information on job opportunities in the market and the needs of employers. Future needs of existing employers and of new employers who will enter the market must be considered. Often a wide range of information must be collected and analysed to describe, as fully as possible, important features of the labour market. ***Labour Market Information*** often gives historical, current and forecast information. Different users have different information needs.

What is the Labour Force Survey?

Most of the information about the labour market comes from the **Labour Force Survey**, a monthly snapshot of the labour market. Statistics Canada conducts this survey among 59,000 households from one end of the country to the other, with the exception of the Yukon and the Northwest Territories. These 59,000 households include about 106,000 persons. That number of households is occasionally reviewed and adjusted. The survey is done during the week that has the 15th day of the month; this is called the **reference week**. In New Brunswick some 3,400 households are surveyed. The results of the survey are normally released the first Friday of the following month.

The statistical objectives of the **Labour Force Survey** are to place each individual of the working age population into one of three mutually exclusive groups: **employed, unemployed** or **Not in the labour force**. The **Labour Force Survey** is the only official source of these data.

Who is included in the survey?

A household is chosen at random and remains part of the **survey** for six months. It is the address that is chosen, not the occupants. The first month of the **survey** an interviewer comes to the home after which the **survey** is done by telephone. A range of questions are asked about the labour market status of household members 15 years of age and older which in labour market terms refers to the *working age population*.

What does "labour force" mean?

The definition of the **labour force** according to Statistics Canada are those people of the working age population (15 years of age and over) who were employed or unemployed during the *reference week*. The **labour force** excludes people living on Indian Reserves, full-time members of the Armed Forces and institutional residents (for example, prison inmates and patients in hospitals or in nursing homes who have resided there for more than six months). Retired people, students, people not actively seeking work, and people not available for work for other reasons are also not considered part of the **labour force**, although they may be part of the working age population.

Who is classified as employed?

All people working are considered **employed**, if they work in return for wages, salary or for a benefit. People who work without pay contributing directly to the operation of a family farm or business operated by a relative who is a member of the same household are also considered to be **employed** by the Labour Force Survey (LFS). You are also considered to be **employed** if you have a job but are not working for the following reasons: 1) temporary illness or disability; 2) personal or family responsibilities; 3) bad weather; 4) labour dispute at your place of work; 5) vacation; and 6) other unspecified reasons. If someone is on strike, no matter how long the strike lasts, that person is still considered **employed**.

How is employment defined for the purposes of the survey?

Employment includes any activity carried out for pay or profit. It also includes family unpaid work when it is a direct contribution to the operation of a farm, business, or professional practice owned or operated by a related member of the household.

Full-time employment refers to people who usually work thirty or more hours per week, except in the case of people who work less than thirty hours per week but consider themselves to be employed full-time.

Part-time employment refers to people who usually work less than thirty hours each week. The **voluntary** part-time worker chooses to work fewer than thirty hours a week, either because he or she is a student, has personal or family responsibilities, or wants to spend their time in other pursuits. The reasons for voluntary part-time employment may not be known; some people may not need the income of a full-time job. The **involuntary** part-time worker prefers full-time work but can only find part-time employment.

Permanent employment means any job which does not have a specific termination date. Short-term jobs are classified as **temporary**. **Seasonal** jobs, like construction, fishing and farming, are still considered permanent and often require long hours during their active season. Typically, many jobs in the primary sector are seasonal.

Self-employment is becoming more and more prevalent with people providing services on a contract basis, producing goods, and selling someone else's product as examples. Self-employed people rely on their own initiative and skills to generate income. **Entrepreneurs** undertake the risks and uncertainties of starting their own businesses.

Who is classified as "unemployed"?

Unemployed people are those who during the reference week:

- 1) were without work and had actively looked for work in the past four weeks, and were available for work; or
- 2) had not been actively looking for work in the past four weeks, but had been on lay-off and were available for work; or
- 3) had not actively looked for work in the past four weeks, but had a new job to start in four weeks or less from the *reference week* and were available for work.

Among those considered available for work are people who are full-time students seeking part-time work. People are also considered to be available for work if they have stated there is no reason why they could not have started work during the *reference week* or that they could not have started work because of illness or disability, personal or family responsibilities, or because they already had a job. People are considered to be on lay-off if they expect to return to the job they held before being laid-off.

An Unemployed® person is essentially a person without a job who is actively looking for work.

A person who had no job and does not meet the criteria for an ***unemployed*** person is classified by Statistics Canada as ***Not in the labour force®***.

"Discouraged workers" are classified as ***Not in the labour force®***. Discouraged workers are those who are no longer looking for a job because they believe they will not find one.

How is the Unemployment rate calculated?

The ***unemployment rate*** is the percentage of the labour force which is unemployed. It is the number of unemployed as a percentage of the labour force.

$$\text{Unemployment Rate} = \frac{\text{Unemployed}}{\text{Labour Force}} \times 100$$

A drop in the ***unemployment rate*** could mean that there are fewer people looking for work or it could mean a drop in the labour force, or an increase in employment or a combination of these. It is important to look at what is happening to both employment and the labour force before drawing any conclusions about what a change in the ***unemployment rate*** may mean.

What is the difference between Employment insurance beneficiaries and Unemployed?

The number of people ***unemployed*** is usually based on Statistics Canada's Labour Force Survey.

The number of ***Employment Insurance Beneficiaries*** is obtained from administrative data counting the number of people who collect Employment Insurance Benefits. This information is obtained from the Department of Human Resources Development Canada. The number of ***Employment Insurance Beneficiaries*** is based on administrative criteria and program eligibility criteria and is not a good measure of actual unemployment. For example, an ***unemployed*** person may not be in receipt of Employment Insurance Benefits because they have not worked long enough to qualify. Someone on maternity leave, on the other hand, would not be looking for work therefore would not be considered ***Unemployed***, but could be drawing Employment Insurance.

Employment Insurance Beneficiaries

' may include persons on sick or maternity leave, or receiving retirement benefits.

' may include natives on reserves.

' excludes new entrants in the labour force, those without sufficient weeks of employment to qualify, those whose benefit periods have expired, or who are serving waiting or disqualification periods.

' may include some part-time workers and persons participating in work sharing programs.

Unemployed (Labour Force Survey)

' excludes these persons because they would be considered not in the labour force, i.e. not looking for work, by the Labour Force Survey.

' excludes natives on reserves

' includes these persons as long as they are looking for work.

' part-time workers and those on work-sharing would be considered employed.

What is the difference between *AEmployment Insurance Beneficiaries* and *AEmployment Insurance Claimants*?

Employment Insurance Beneficiaries are those who are in actual receipt of benefits. Employment Insurance Claimants are those who are not necessarily receiving benefits but have a claim open. Claimants can leave their file open while they work.

What is the *Aemployment-population ratio* and the *Aparticipation rate*?

Two alternative measures of labour force activity (in addition to the *unemployment rate*) are the ***labour force participation rate*** and the ***employment population ratio***. The ratio of the labour force to the working age population (age 15+) is referred to as the ***participation rate***.

$$\text{Participation Rate} = \frac{\text{Labour Force}}{\text{Working Age Population}} \times 100$$

A high ***participation rate*** means that a large proportion of the working age population is either employed or actively looking for work. A high ***participation rate*** can reflect optimism towards the availability of jobs.

The ***employment population ratio*** is the ratio of employed to the *working age population*.

$$\text{Employment Population Ratio} = \frac{\text{Employed}}{\text{Working Age Population}} \times 100$$

This is the percentage of the *working age population* which is *employed*. A high ***employment/population ratio*** can mean that an economy is creating jobs and employing a large percentage of its ***working age population***.

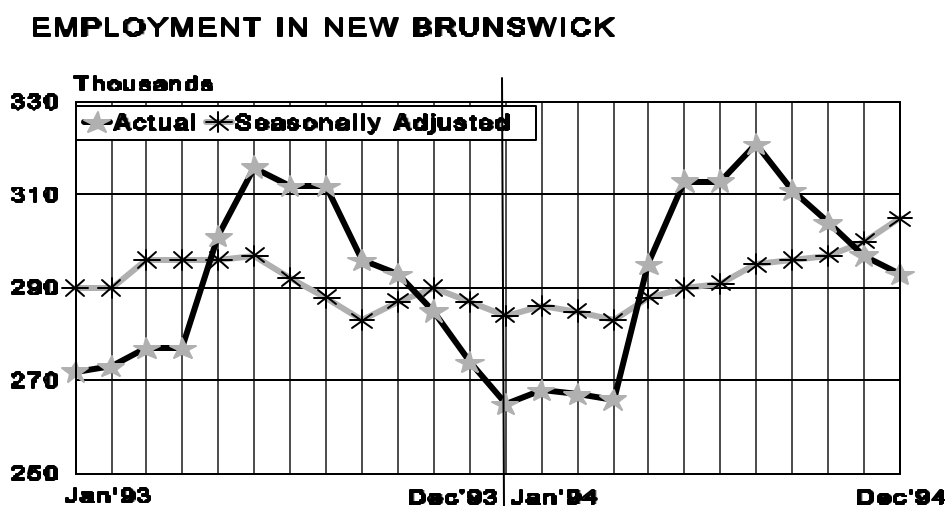
Which of these three measure (i.e. *unemployment rate*, *participation rate* or *employment-*

population ratio) are used for analysing labour market activity will depend on the purpose of the analysis. The *employment-population ratio* and the *participation rate* focus on the fraction of the working-age population which is employed, and in the labour force respectively, while the *unemployment rate* measures the part of the labour force which is unemployed.

What is the difference between Actual and Seasonally adjusted data?

Seasonally adjusted data represents data that have been modified to account for seasonal fluctuations. One of the reasons for seasonal adjustments is that it allows us to compare data from one month to another. Labour force statistics are based on data collected monthly. Therefore annual events such as crop cycles, climate, holidays, vacation periods and students looking for summer employment can make them vary abnormally.

Actual data are simply data captured during the survey and that have not been adjusted for seasonal variations.



The graph titled **AEmployment In New Brunswick** shows **why** actual and seasonally adjusted data are used and **when** they should be used. The line for actual employment varies considerably from one month to another. This would suggest that employment was much higher for example

in August of 1993 than in March of 1993. However, a look at the seasonally adjusted employment levels shows the opposite.

Comparisons cannot be made between actual and seasonally adjusted data. Seasonally adjusted data smooths seasonal fluctuations, while actual data does not.

The next two tables contain labour force information using the main labour market indicators from the Labour Force Survey. One should first look at all variables and dates included in tables. The sum of all numbers sometimes do not match totals because numbers are rounded to the nearest thousand.

SEASONALLY ADJUSTED DATA

(Labour Force Survey)

Main Labour Market Indicators for New Brunswick

Labour Market Indicators	Feb 95 (1)	Jan 95 (2)	Variance (1 - 2)	Feb 94 (3)	Variance (1 - 3)
Pop 15 Years + ('000)	597	596	1	592	5
Labour Force ('000)	357	359	- 2	344	13
Employment ('000)	311	312	- 1	299	12
Unemployment ('000)	46	47	- 1	45	1
Unemployment Rate	12.9%	13.1%	- 0.2	13.1%	- 0.2
Participation Rate	59.8%	60.2%	- 0.4	58.1%	1.7
Employment/Population Ratio	52.1%	52.3%	- 0.2	50.5%	1.6

The table titled **Seasonally Adjusted Data: Main Labour Market Indicators for N.B.** shows that in February 1995, the seasonally adjusted labour force fell by 2,000 compared to the previous month. In the meantime, population 15 years and over went up by 1,000. Consequently, the participation rate declined by 0.4 percentage points. Both employed and unemployed fell by 1,000. The unemployment rate decreased by 0.2 percentage points compared to January 1995. Meanwhile, the employment/population ratio declined by 0.2 percentage points.

Conclusion: New Brunswick's overall labour market situation was negative in February compared to the previous month. However, the overall situation was better compared to the same period in 1994.

The table titled **Actual Data: Main Labour Market Indicators for New Brunswick** will show how actual data allows comparison in the labour market with other variables that are *not seasonally adjusted*. Employment data by industry and full-time and part-time and labour force statistics by economic region are not available as seasonally adjusted. It is important to note that actual data should be used for year over year comparisons of the same month.

ACTUAL DATA
(Labour Force Survey)

Main Labour Market Indicators for New Brunswick

Labour Market Indicators	Feb 95 (1)	Feb 94 (2)	Variance (1 - 2)
Pop 15 Years + ('000)	597	592	5
Labour Force ('000)	336	325	11
Employment ('000)	291	281	10
Unemployment ('000)	44	43	1
Unemployment Rate	13.2%	13.4%	- 0.2
Participation Rate	56.3%	54.9%	1.4
Employment/Population Ratio	48.8%	47.5%	1.3

The table shows statistics for February 1995 and 1994. The labour force rose by 11,000 exceeding the 5,000 increase in the population 15 years and over thus making the participation rate rise by 1.4 percentage points. The number of people employed went up by 10,000 and the number of unemployed went up by 1,000. Because the increase in the number of unemployed was much lower than in the labour force, the unemployment rate went down by 0.2 percentage points. The employment population ratio increased by 1.3 percentage points.

Conclusion: The information in this table showed that New Brunswick's labour market had a relatively good performance year over year.

How are occupations classified?

Career counsellors and other users need to understand classification systems and how to use them. The difficulty with the occupational systems is that there are more than one and they come from two different agencies within the federal government i.e. Statistics Canada (SOC) and Human Resources Development Canada (NOC). When people are working with occupational systems they have to know what system they are using and they should not compare numbers from one system to another.

÷ Standard Occupational Classification (SOC-81) creates 23 major groups of occupations which are subdivided into 83 minor groups and those are further divided into 503 unit groups.

Statistics Canada uses SOC to code surveys and census information and the Labour Force Survey. Statistics Canada is updating this coding system and will be moving to SOC-91 in the future. Labour Force Survey will be coded to SOC-91. (SOC-91 and NOC are very similar).

÷ Canadian Classification and Dictionary of Occupations (CCDO) was introduced by Employment and Immigration Canada to code Unemployment Insurance Beneficiaries and other administrative data. It includes 23 major groups divided into 81 minor groups, 499 unit groups and 7,750 detailed seven-digit codes. The CCDO will be found only in historical data.

÷ The National Occupational Classification (NOC) system replaced the CCDO in April 1993. Occupations are classified in 26 major groups, 139 minor groups and 522 unit groups. The NOC system was developed by Human Resource Development Canada.

÷ SOC and CCDO describe occupations in terms of job duties and industry category. The NOC describes occupations on the basis of skill levels and skill types. Historical data uses CCDO. Conversion tables allow some comparison between CCDO and NOC.

How are industries classified for analysis?

The Standard Industrial Classification (SIC) is Statistics Canada's framework for collecting, compiling and disseminating economic statistics relating to business. It describes the industrial structure of the economy and is designed to represent the actual organization of production and the structure of the economy in an analytically meaningful way. Industries are divided into 18 divisions, 76 major groups and 360 subgroups. It is used in the production of industrial statistics, labour statistics and the Census. The revision of the 1980 SIC is being carried out in cooperation with the United States and Mexico with an agreement among the three countries to produce a North American Industry Classification. This work is scheduled to be completed by the end of 1996.

What is the difference between goods and service industries?

Industries are often referred to as **goods** (producing a product) or **service** (providing a service) industries. Industries are classified according to Standard Industrial Classification as follows:

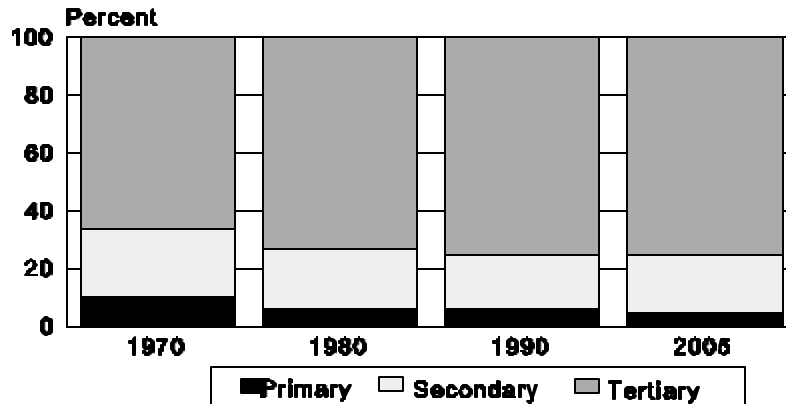
- a) **Goods**-producing industries include: agriculture, fishing, forestry, mining, construction, and manufacturing.
- b) **Service**-producing industries include: trade, transportation, communications and other public utilities, finance, insurance and real estate, community, personal and business services (includes health care, education, police services, etc.) and public administration.

What do the terms primary, secondary and tertiary mean?

Analysts often refer to industries as being in the **primary sector**, **secondary sector** or **tertiary sector**.

- a) The **primary** sector includes agriculture, fishing, forestry and mining. The last three industries are sometimes referred to as the "other primary industries". The primary industries are associated with resource extraction and agriculture.
- b) The **secondary** sector includes construction and the manufacturing industries. The majority of the manufacturing activity in New Brunswick is the transformation of primary resources; examples, fish plants, pulp and paper mills, smelters. Manufacturing is closely linked to the primary sector.
- c) The **tertiary** sector covers the service-producing industries.

SHARE OF EMPLOYMENT BY SECTOR 1970-2005



Sources: Statistics Canada & Human Resources Development Canada

The graph titled **A Share of Employment By Sector** provides an example of the evolution of employment by sector between 1970 and 1990 with a forecast for 2005. In this case, it is the percentage of employment by sector and not the number of jobs that each bar represents.

In 1970, 10% of all the jobs in New Brunswick were in the primary sector, about 23% were in the secondary sector and 66% were in the tertiary sector. Since then primary has seen its share of employment decrease steadily and is expected to continue in this manner in the future.

The share of employment for secondary industries has declined a little but has been hovering around 20% in the last twenty years and this trend should continue at least until the middle of the next decade.

The tertiary sector, which already accounted for the majority of all jobs in 1970, has been the big winner since then. Its share of employment has increased to almost 75% and should remain about the same in the future.

How is growth in employment determined?

When analysing growth in employment either by industry or occupations, it is important to understand that growth can be due to different factors and again there are frequently used terms that need to be clearly understood. **Growth in employment** can be attributable to **new jobs** created, some of the job opportunities can be due to **attrition**, which is when someone retires, changes job or dies. Consequently, total **jobs opportunities** is the sum of **new jobs** and **attrition**.

Example:

Civil Engineers	
# jobs in 1994	903
# jobs in 1998	868
New Jobs	-35
Attrition	66
Job Opportunities	31

This example gives projections on employment for civil engineers from 1994 to 1998. Therefore in this scenario, even though there would not be any new jobs@those leaving the profession would create Apotential opportunities@.

How does supply and demand influence the labour market?

The labour market is an informal mechanism where demand for and supply of labour interact. **Demand** for labour arises mainly from employers= need for workers to produce goods and services. The **supply** of labour includes all those who are either working or looking for work, that is all those who are *participating in the labour force*. The labour market *participation rate* and the **supply** of labour are influenced by demographics such as the number of working age people. The conditions of the economy in general and in the labour market in particular the likelihood of finding work, education levels and a host of other variables influence the participation rate and supply of labour.

Demand for labour on the other hand is determined by demand for employers= products (sometimes called consumer demand), export demand, and government policies among other factors. In addition, these demands are strongly interrelated. For example, an increase in the demand for construction workers because of a major construction project such as a large bridge, will result in an increase in demand for workers in other sectors such as those that supply bridge building materials, transportation and hospitality and retail sectors. This increase in demand for workers in other sectors is sometimes referred to as induced changes, and/or spin offs.

The labour market may simultaneously experience both **shortages** and **surpluses**. Typically this occurs because of skill mismatches, immobility of the labour force and incomplete information of both workers and employers.

Why is the frequency of data important in analysis?

We need to make sure when comparing data that it is based on the same **frequency** (time frame).

What is the difference between the economic regions and the employment insurance regions?

It is very important when comparing data to compare the same area and to know how areas are defined. In the labour market for New Brunswick, there are **five** (5) economic regions as defined by Statistics Canada and **two** (2) Employment Insurance regions as defined by Human Resources Development Canada. Obviously, those regions have different boundaries, the data collected from each are not used for the same purposes. Users should not compare unemployment rates estimated for the Economic Regions to the Employment Insurance regions. All labour market indicators are available for the five economic regions while only the unemployment rate is calculated for the two Employment Insurance economic regions.

The five **Economic Regions** are:

1. Region 310 (Northeast) - Gloucester, Northumberland and Restigouche counties.
2. Region 320 (Southeast) - Westmorland, Kent and Albert counties.
3. Region 330 (Southwest) - Charlotte, Saint John and Kings counties.
4. Region 340 (Central) - York, Sunbury and Queens counties.
5. Region 350 (Northwest) - Madawaska, Victoria and Carleton counties.

The two **Employment Insurance Regions** are:

1. Fredericton/Moncton/Saint John Region
2. Restigouche/Charlotte Region

When are mean, median and mode used in analysis?

There are three common types of summary measures sometimes referred to as **measures of central tendency**. The most common is the **mean** or **average**, which is the sum of all the results included in the sample divided by the number of observations. One variation of this term is a **moving average**, for example a **three month moving average**. A **three month moving average** includes three consecutive months ending with the most recent month. It can be calculated by dividing the total of the three months by three, for example, the average unemployment rate for July would be an average of the months of May, June and July. The rate for August would average June, July and August. Another widely used summary measure is the **median**, which is defined as the middle value of all the numbers in the sample. In other words, the **median** is the value that divides the set of data in half, 50% of the observations being above (or equal to) it and 50% being below (or equal to) it. The third common summary measure is the **mode** which is defined as the most frequently observed value of the measurements in the sample. An important thing to note about measures of central tendency are that in some circumstances one type of summary measure may be more appropriate than another. The **median** or **mode** is sometimes preferred over the **mean** when the latter can be influenced strongly by extreme observations.

Example: Suppose there are 19 families living in a small community, 8 of which earn \$35,000 per year, 10 of which earn \$45,000 per year, and 1 of which earns \$2,000,000 per year. The average income of the 19 families equals \$143,684. However, both the median and mode is \$45,000 per year. In this case, the median and mode is much less affected by the one extreme point (the millionaire), which raised the mean considerably.

How does the margin of error influence data analysis?

Most surveys are based on a sample of the population. Consequently, estimates have to be made based on that sample. Depending on the size of the sample, the margin of error will fluctuate. Precision improves as sample size increases. However, gains in precision are not directly proportional to increases in sample size. For example, having a sample size of 50 might result in a margin of error of 14% but by doubling the sample size to 100 the margin of error would only go down to 10%.

Although it is not obvious in the reporting of unemployment rates and employment from the Labour Force Survey, there is a margin of error associated with these figures and sometimes it can be very large. Users should be aware that for small areas this is a particular concern. A table at the back of the Labour Force Survey publication indicates reliability and variation. Sometimes data is not published when the numbers are low because the margin of error would be too high. In New Brunswick, when the Labour Force Survey states that the number of people employed is 300,000 it really means that there is a 68% chance that employment is between 292,550 and 307,500 or a 95% chance that it is between 285,000 and 315,000. As the level of certainty of an estimate rises, the range increases.

Example:	Employed	%Chance	Actual Range of Employment
	300,000	68 %	[292,550 - 307,500]
	300,000	95%	[285,000 - 315,000]

Availability and Limitations of Data?

Questions are often asked about the availability of labour market data for small areas on a month-to-month basis from the Labour Force survey. Unfortunately, the data is limited. Data are not available for individual counties. As stated earlier in this document, data are available on a three-month moving average basis for economic regions, each of which contains three counties. But these data are not seasonally adjusted and do not allow month-to-month comparisons. Meanwhile, data are available for the larger centres in the province but to a different degree. According to Statistics Canada, New Brunswick has one metropolitan area, i.e. Saint John. Data for Saint John are available on a three-month moving average basis in actual and seasonally adjusted terms. Unadjusted three-month moving averages are provided for the cities of Moncton, Fredericton, Bathurst, Miramichi and Edmundston. However, the data for these areas are less precise and less complete. For example, the number of unemployed people and the unemployment rate are not always available.

What information is available in the Census?

The Census of Canada provides a wide variety of information about individuals and covers a wide variety of characteristics such as demographics, ethno-cultural, language, mobility, schooling, income and labour force. The Census is one of the few data sources which provides labour market information for counties, cities and parishes. The Census is conducted by Statistics Canada every five years. The 1996 Census has been conducted but data is not yet available. Users of labour market information have to consider the sources of the data before making comparisons. For example, comparing Statistics Canada's Census with a survey like the Labour Force Survey can be misleading. The Census includes the total population but the survey is based on a sample of the population. Also, each is conducted at different times; the Census is

usually conducted in June and the Labour Force Survey is on a monthly basis. Finally, the questions asked are not necessarily the same and do not relate to the same time frames.



Chapter II

Socio-Economic Indicators

What is the difference between the Gross National Product (GNP) and the Gross Domestic Produce (GDP)?

Gross National Product includes all economic activity (i.e. the monetary value of all goods and services produced) of Canadian residents wherever in the world they happen to perform their activity. This indicator is only estimated for countries (not for subdivisions of countries). The ***Gross National Product*** can be expressed both including inflation (nominal GNP) and excluding inflation (real GNP).

Example: If the ***Gross National Product*** was growing by 10 % but the inflation rate was 8 %, the real growth would be 2 %. Most of the growth was due to increases in prices and only 2 % of growth in real production. On the other hand, if the GNP grew by 5 % and the inflation rate was still 8 %, the economy contracted by 3%. Data on GNP is available in constant or current dollars. To compare GNP over a number of years it is better to use constant dollars because it accounts for inflation. Using the dollar value of the current year is known as *current dollar+. *Constant dollars* should be used for multi-year comparisons.

Since ***Gross National Product*** includes products and services produced by Canadians outside Canada, it is not necessarily a good measure of the Canadian economy.

The ***Gross Domestic Product*** is all economic activity (i.e. the monetary value of all goods and services produced) taking place in the geographical domain of any country or province. This indicator is available for Canada and the provinces. The same rationale is used to compare the growth rates i.e. in real terms and using constant dollars.

The ***Gross Domestic Product*** of New Brunswick is the value of all goods and services produced in the province. There are two ways of measuring the value of a good or a service at factor cost or at market prices. ***Gross Domestic Product*** at factor cost is based on the cost of all the factors of production used, including the profits made. Gross Domestic Product at market prices is based on the prices paid by the final user (the consumer).

The ***Gross Domestic Product*** is usually used to determine the growth rate of the economy. Two consecutive quarters of negative growth of the GDP means that the economy is in a **recession**. The number of jobs created is not used to determine whether or not an economy is in a recession. The economy can grow without necessarily having more jobs. However, in general, when GDP rises or the economy improves, employers are more likely to consider new hiring and vice versa. A lag exists between the time an economic recovery starts and the time employment starts to benefit from this recovery.

What does ACPI measure?

The most common way of measuring inflation is by using the Consumer Price Index (CPI) produced monthly by Statistics Canada. This index represents the price of a basket of goods and services, and occasionally this basket is updated to reflect current buying patterns. The main categories included in this basket are the following: food, shelter, household operations and furnishings, clothing and footwear, transportation, health and personal care, recreation, education and reading, alcoholic beverages and tobacco products. The index has been revised beginning with the January 1995 release of the Consumer Price Index (CPI).

Variation in the ***Consumer Price Index*** from year to year is the ***inflation rate***.

Is inflation associated with unemployment?

Inflation leads to an eroding of purchasing power. For this reason, it is often viewed very negatively. Union contracts try to protect workers from unforeseen increases in inflation by including a cost of living clause in Collective Agreements. When the economy nears full employment, consumer demand tends to drive up inflation. High levels of inflation sometimes lead government to try to lower it even at the cost of increasing unemployment.

In general, periods of high unemployment are associated with low levels of ***inflation***.

How is the value of the Canadian Dollar determined?

The value of the Canadian dollar is always fluctuating. Like any other good, it is influenced by the law of supply and demand. Many factors may effect the dollar for example the economic situation, the deficit, interest rates, political stability, and speculation on the foreign exchange markets, just to name

a few. In general, the Canadian dollar is compared to the U.S. dollar mainly because the United States is Canada's most important trading partner.

Canada and New Brunswick are major exporting economies. The value of the dollar has a significant impact on the competitiveness of exporters. When the Canadian dollar is strong compared to its U.S. counterpart, exports from Canada and New Brunswick tend to fall because businesses lose a part of their competitive edge. The cost of all Canadian goods goes up. In contrast, when the value of the Canadian dollar is low; exports rise since Canadian goods appear relatively inexpensive to our trading partners. This leads to more demand for labour and employment rises. Because Canada and New Brunswick rely heavily on exports for their economic growth, if businesses do not export, there will be a negative impact on levels of production and employment.

How do interest rates affect other sectors of the economy?

Interest rates are highly interrelated to other factors in the Canadian economy. In general, when interest rates are low, businesses and consumers respond positively; businesses by increasing investments and consumers by spending more, both of which result usually in increasing employment.

On the other hand, people outside Canada who have invested in our country, tend to look elsewhere for better rates of return and this sometimes leads to a fall in the value of the Canadian dollar, which again can be beneficial to Canadian businesses, but causes concern about the stability of the currency.

High interest rates attract foreign investors to Canada and give people on fixed incomes better rates of return and these people may spend more as a result of their high incomes. More investment in Canada means that businesses may increase employment. Sudden increases in interest rates lead to a decline in purchases of large ticket items like houses, cars and appliances. This results in a decline in employment in the construction sector and the manufacturing sectors.

What are the different terms for income?

Income relates to revenues from any sources such as salaries, investments, and transfer payments like Unemployment Insurance. Earnings are revenues from work. The term **income** also refers to **employment income**. Central tendency measures such as mean (or average) and median are used to analyse the income for specific groups.

Comparisons are made for occupations by gender and by age groups but it is imperative to compare the same conditions. Income can be calculated for a job that is part-time, full-time or part-year. Comparing incomes for people doing the same job but working part-time or full-time would cause major problems in analysis.

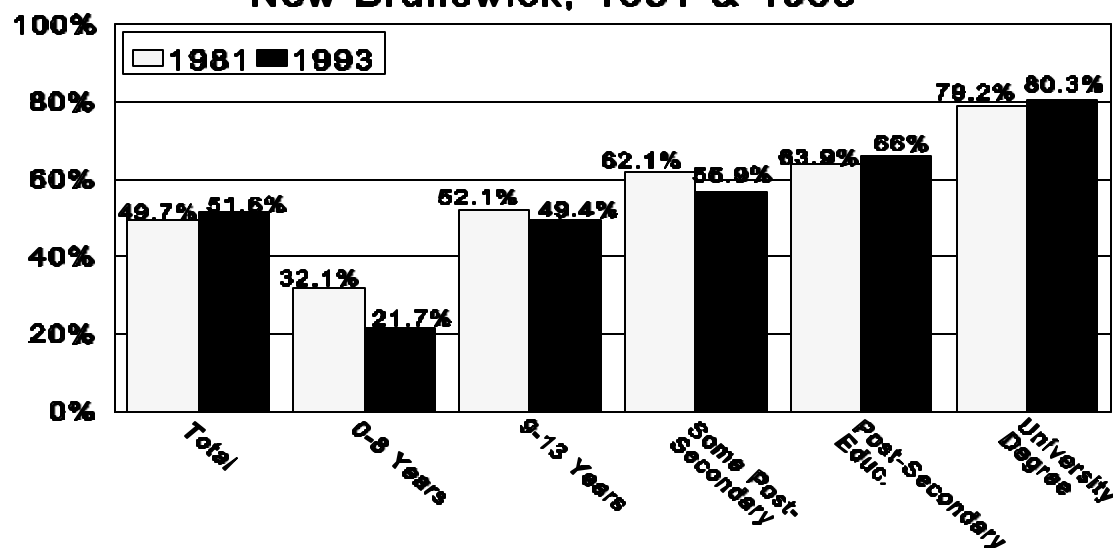
How does the level of education of the population affect the labour market?

The *level of education* of the population is one variable that employers, governments and other people interested in the labour market are looking at more closely. It is imperative to understand what the levels of education are and to compare similar levels of education. The categories are standardized for the whole country and that is the reason why one will notice in the Labour Force survey there is a "Grade 13" listed for New Brunswick.

The graph titled *Employment/Population Ratio by Level of Schooling* is a good example of how information on levels of education is often used. A look at one particular year provides a snapshot of a situation. It is usually better to examine the trend over time.

Example: This graph provides two snapshots (1981 and 1993) which will help describe the change that occurred to the employment/population ratio between these two years. An analyst can look at the situation in 1981 and see that a higher percentage of people with more education had a job than those with less education. In 1993, the same conclusion can be reached although the gap has increased between the lower ends and the higher ends of the scale. Why is this so? A smaller percentage of those at the three lower levels of education had a job while a higher percentage of those with post-secondary education and with a university degree had a job.

**Employment/Population Ratio by Level of Schooling
New Brunswick, 1981 & 1993**



Source: Statistics Canada, catalogues # 71-220 & 71-529

How does the changing demographics affect the labour market?

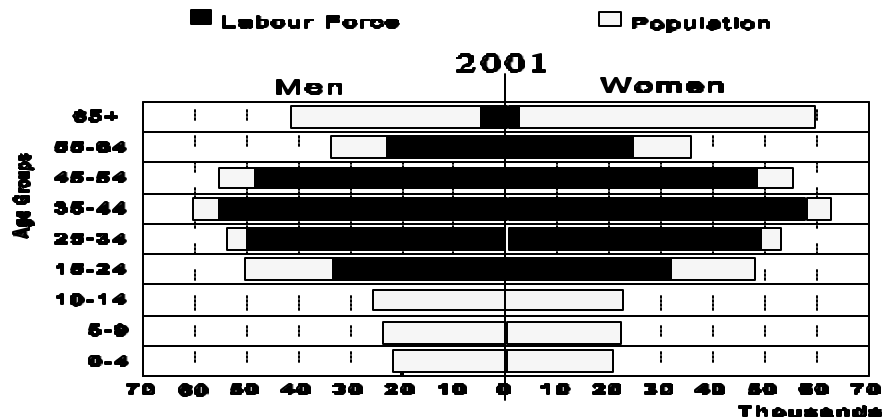
The changing demographic characteristics of a population is an aspect of the labour market that is very important. Since the beginning of the century and particularly after the Second World War, demographic trends have become very important. The birth rate, fertility rate, distribution by age group and life expectancy are some of the most important variables in demographics related to the labour market. The **birth rate** is usually expressed as the number of births per 1,000 of population. **Fertility rate** refers to the number of babies born to women between 15 and 49 years old expressed as the number of births per 1,000 of population. **Life expectancy** is the number of years people are expected to live. It differs from one country to another. For example, life expectancy in Canada and in industrialized countries is generally much higher than in Third World countries. The **distribution by age group** helps users know in what age groups different segments of the population are concentrated. That can be done for the total population or for any labour force variable such as the number of people employed. In most cases, five year age groups are used. However, sometimes those groups are aggregated into larger age groups. For example, in the labour market, employment figures are often presented for 15 to 24 years old, 25 years old and over, working age population, and so on. Analysts must be careful to always compare the same age groups as well as the same size of age groups. The changes in demographics in New Brunswick and in Canada have been widely discussed. The baby-boom generation has had significant impact on the demographic picture. This large group of people includes everyone born between 1946 and 1965.

Demographic variables can be presented in many ways. One of these ways is by the use of *age pyramids*. The following shows the evolution of the New Brunswick population and labour force between 1961 and 1991 as well as a projection for 2001. *Age pyramids* contain a lot of information.

Example: One should notice that there are two variables used in the pyramids provided here. One variable is the total population and the other variable is the labour force. The reader must also understand how age pyramids are used. A line divides the pyramids by the two sexes. On the left hand side is the number of men and on the right hand side is the number of women. The horizontal axis indicates those numbers in thousands. The vertical axis gives the different age groups. Each bar represents the number of men and women in each age group. These pyramids show that the number of young people between the ages of 0 and 14 has declined in 1991 compared to 1961. This is mainly due to the decline in the birth rate. In 1961, this age group was bigger due to the baby boom. Those baby boomers were the adult population in 1991. **Life expectancy** being higher in the 1990s than it was earlier in the second half of the century, the pyramids indicate an aging of the population that is becoming even more important in 2001 with more baby boomers reaching 50 years old and with still low fertility rates.

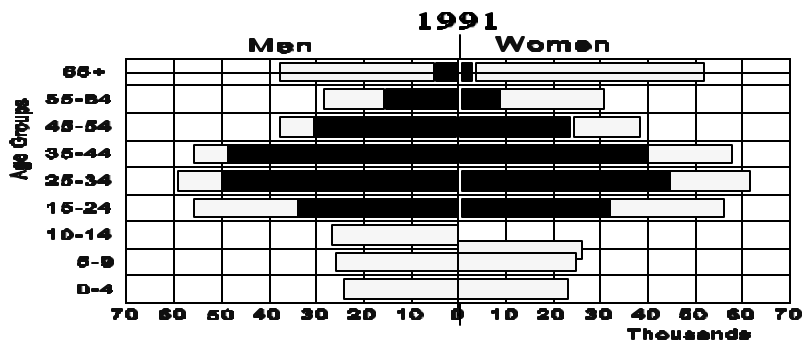
These changes in demographic composition will have impacts on the labour market. Among them, baby boomers will remain in the traditional working age population (15 to 64) for several years. If we assume that people normally retire at age 65, the first baby boomers born in 1946 will reach

NB Population and Labour Force By Age and Gender



retirement in 2011. Opportunities until then for promotion will be reduced, a situation exemplified by cutbacks in middle and upper management in the private sector. Furthermore, in 1991 there were fewer young people entering the labour market than in 1961. Educational requirements were higher in 1991 and the number of people ages 25 to 44 remains high and they occupy a large number of available jobs. This may diminish job opportunities for new labour market entrants.

With regard to the labour force, major changes occurred during the period examined. In 1961, a large proportion of men were in the labour force but this was not the case for women. In 1991, the number of men in the labour force was still relatively high but women's share had risen dramatically although a gap will exist between the two sexes. Forecasts for the year 2001 suggest that this gap may be further reduced as women's participation rates continue to rise.



Chapter III



Forecasts

How are the Labour Market and Economic Forecasts related?

Forecasts are fragile by nature. Forecasters make assumptions and a single change in the underlying assumptions can send a whole forecast in a wrong direction. For example, a forecaster looking at the economic climate in Japan could not predict an earthquake. This natural disaster caused many changes in the economy. Also, if one assumption does not materialize, the effects can have mitigating effects or cause the forecast to go in the opposite direction. For example, if a forecast is based on a number of assumptions that proved to be wrong, then the forecast will also be incorrect.

Economists and other professional forecasters use a number of techniques to make projections for the economy and the labour market. The most common methods are described below. A combination of these methods are usually used to come up with forecasts.

Regressions and Econometric Models

Economists and statisticians rely on equations and regressions using the relevant variables to help them forecast the economic and labour market future. The availability and reliability of data are important underlying factors of forecasts. Data are obtained from official sources, from surveys, censuses, etc. Regressions and models are recognized as the most scientific approaches to forecasts although they should not be considered the only ones. The reliability of a model is strongly related to the expertise of those doing the modelling and massaging its results.

Consultations

Forecasters can count on associations, employers, workers, unions and other stakeholders to help them gather more in-depth information on an industry or an occupation. Individuals close to the action may have information that can complement data obtained from surveys and census data.

Crystal Ball

By crystal ball, we mean using the forecasters knowledge of the overall situation. The regressions and econometric models might be more scientific and consultations are still very useful but the forecaster's knowledge from reading newspapers, journals, magazines, books or publications can be invaluable.

Who prepares forecasts?

Many governments departments, banks and private companies prepare forecasts. In New Brunswick, the sources used the most often for the economy and the labour market are:

The Canadian Occupational Projection System - COPS provides forecasts for economic growth, industries, and especially occupations. This is a main source of information to prepare documents on occupations and also lists of occupations in shortages and surplus.

OCCUPATIONS	Employment		Employment		1993-2000	
	1993	Share (%)	2000	Share (%)	Growth	Share (%)
Sales Mgmt Occs	7,955	2.7	10,470	3.3	2,515	9.6
Child Care Workers	5,103	1.7	7,060	2.2	1,957	7.4
Cashiers + Tellers	8,984	3.0	10,717	3.3	1,733	6.6
Chefs + Cooks	5,109	1.7	6,309	2.0	1,200	4.6
Bookkeepers	9,517	3.2	10,532	3.3	1,015	3.9
Receptionists	2,688	0.9	3,594	1.1	906	3.4
Systems Analysts	2,122	0.7	2,920	0.9	798	3.0
Edp Equip Operators	2,685	0.9	3,324	1.0	639	2.4
General Managers	2,471	0.8	3,103	1.0	632	2.4
Nursing Attendants	2,656	0.9	3,154	1.0	498	1.9
Carpenters	3,986	1.4	4,452	1.4	466	1.8
Psychologists	681	0.2	1,107	0.3	426	1.6
Food+Bev Serv.Occs.	4,081	1.4	4,476	1.4	395	1.5
Nursing Assistants	1,816	0.6	2,194	0.7	378	1.4
Occs Welf Comm Serv	1,790	0.6	2,160	0.7	370	1.4
University Teachers	1,680	0.6	2,024	0.6	344	1.3
Financial Officers	4,261	1.4	4,603	1.4	342	1.3
Social Workers	1,398	0.5	1,685	0.5	287	1.1
Baking	1,250	0.4	1,527	0.5	277	1.1
Secretaries + Steno	8,356	2.8	8,619	2.7	263	1.0
Superv-Bookkeeping	971	0.3	1,233	0.4	262	1.0
Total	79,560	27.0	95,263	29.7	15,703	59.7
Total of All Occs.	294,600	100.0	320,900	100.0	26,300	100.0

Source: Canadian Occupational Projection System (COPS), 1994 Forecast.

This table provides a forecast of occupations contributing most to employment growth between 1993 and 2000 for New Brunswick. About 20 occupations are listed in this table using the SOC system. In 1993, a total of 79,560 jobs were recorded for those occupations out of a total of 294,600 jobs for all occupations in the province. Those 20 occupations accounted for 27% of all occupations. In 2000, the number of jobs in those 20 occupations is forecasted to be 95,263

compared with a total of 320,900 jobs. The growth of this selected list of occupations is then 15,703 out of a total of 26,300 jobs. This means that 59.7% of all the growth in employment is expected to be in these occupations.

The *New Brunswick Statistics Agency* prepares economic and industrial forecasts. Agency address appears in ASources of Information@.

The *New Brunswick Economic Forecasting Model* is a forecasting model acquired by the the Department of Advanced Education and Labour in April, 1995. The model is designed to simulate the functioning of the New Brunswick economy and to forecast future values of production and employment by industry. There are 31 industries present in the model and the model can forecast economic and labour market variables for up to ten years in the future. The primary use of the model will be to produce a yearly employment by industry forecast. A Working Group comprised of interested stakeholders will oversee this forecast as well as ensure adequate input to the forecast. The model can also be used to conduct simulations as a means of analysing the economic and employment impact of various policies and programs. For example, possible reductions of Unemployment Insurance monies coming to New Brunswick can be analysed by the model by simulating different scenarios and observing the impact on the overall New Brunswick economy and labour market. This economic forecasting model will facilitate human resource planning in New Brunswick by providing greater ability- ability and allowing for more provincial input to the model and data. Planned future uses of the model include producing an occupational forecast by using the yearly employment by industry forecast. The model will also serve to provide better input into the COPS forecasting process.

Private Organizations: Most of the important chartered banks in the country have an economics department that is responsible for preparing economic and labour market forecasts. The Atlantic Provinces Economic Council (APEC) is a private forecaster that prepares general economic and industrial overviews and forecasts for the Atlantic provinces. There are also other private companies that prepare forecasts at the national and provincial levels.

Organization for Economic Co-operation and Development: This international organization provides overviews and forecasts of the economic situation for countries around the world. With a more global economy, it is important to have knowledge of what type of economic situation prevails in other countries.



Appendix I

Main Sources of Information

Human Resource Development Canada (New Brunswick Region)

Address: 615 Prospect Street West
P.O. Box 2600, Fredericton, N.B., E3B 5V6
Telephone: (506) 452-3725
FAX: (506) 452-3114

Publications:

Econoflash
New Brunswick Review
New Brunswick Labour Market Annual Averages
Job Futures
Projections and Average Employment Income by Occupation for New Brunswick
New Brunswick Economic and Labour Market Outlook
New Brunswick Occupations Shortage and Surplus (jointly with New Brunswick Department of Advanced Education and Labour)
Labour Market Bulletin
Youth Stats

Canada Employment Centres: Labour Market Information Analysts

Moncton	(506) 851-6724	Saint John	(506) 636-4017
	(506) 851-3983	FAX	(506) 636-3808
	FAX (506) 851-7181		
		St. Stephen	(506) 465-2008
		FAX	(506) 465-2047
Fredericton	(506) 452-3632	Campbellton	(506) 789-4528
	FAX (506) 452-3303	FAX	(506) 789-4547
		Bathurst	(506) 548-7410
		FAX	(506) 548-7186
Edmundston	(506) 739-0217	Newcastle	(506) 627-2026
	FAX (506) 739-0235	FAX	(506) 627-2049

Main Sources of Information (continued)

Province of New Brunswick

New Brunswick Statistic Agency

Address: P.O. Box 6000
Fredericton, N.B.
E3B 5H1
Telephone: (506) 452-2381
FAX: (506) 453-7970

Publication:

The New Brunswick Economy

Department of Advanced Education and Labour

Labour Market Analysis Branch

Address: 470 York Street, Rm 201
P.O. Box 6000
Fredericton, N.B.
E3B 5H1
Telephone: (506) 457-4859
FAX: (506) 453-3806
<http://www.gov.nb.ca/ael/lmab/english/index.htm>

Publications:

Survey of the New Brunswick Community College Graduates
Nursing Graduate Follow-Up Survey
NBCC Three-Year Graduate Follow-Up Survey
University Graduate Follow-Up Survey
Directory of Labour Organizations in New Brunswick
Collective Bargaining in New Brunswick
Occupational Profiles
Occupational and Sectoral Trends in New Brunswick
Snapshot
1995 Public Perception Survey
Sectoral Review
1996 Employer Survey
NB Journeyperson Follow-Up Survey



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Bibliography

David A. Wilton, David M. Prescott, Addison-Wesley Publishers, **Macro-Economics, Theory and Policy in Canada**, 1982.

Alberta Advanced Education and Career **Development, Understanding the Labour Market: a handbook for practitioners**, 1993.

Employment and Immigration Canada, **National Occupational Classification**, Catalogue # MP53-25/1-1993E

Employment Immigration Canada, **New Brunswick Review**, Spring 1991.

Employment Immigration Canada, **Into the 21st Century, Trends & Perspectives**, Fall 1992.

Human Resource Development Canada, **Projections and Average Employment Income by Occupation for New Brunswick**, April 1994.

Michael Parkin, **Modern Macro Economics**, Prentice-Hall Canada Inc., 1982

Morley Gunderson & W.Craig Riddell, **Labour Market Economics**, Second Edition McGraw-Hill Ryerson Limited, 1988.

Statistics Canada, **Standard Occupational Classification**

Statistics Canada, **Unemployment Insurance Statistics**, Catalogue # 73-001, Monthly

Statistics Canada, **Standard Industrial Classification**, Catalogue # 12-501E

Statistics Canada, **Labour Force Survey, Monthly**, Catalogue # 71-001.