



# Looking-Ahead: A 10-Year Outlook for the Canadian Labour Market 2004-2013

## Final Report

by:  
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October 2004





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for the Canadian Labour Market,  
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# *Foreword*

The core mission of Strategic Policy and Planning (SPP) is to provide excellent evidence-based strategic policy advice to the Minister of Human Resources and Skills Development (HRSDC). To that end, the Policy Research and Coordination Directorate (PRCD) has prepared this report, which reviews recent developments in the Canadian labour market and highlights the results of a 10-year outlook produced annually by the Labour Market and Skills Forecasting and Analysis Unit. The report reflects the forward-looking capacities built into the Canadian Occupational Projection System (COPS), but cast so as to provide better policy context.

The report fills an important gap as no other publication currently provides a comprehensive picture of the labour market. Many public and private organizations in Canada produce reviews of economic conditions and develop short- and medium-term forecasts. However, very few of these organizations focus their reviews and forecasts on the labour market, and none undertake a detailed outlook by industry, skill and occupation.

More specifically, the present report attempts to answer the following questions:

- How many jobs are expected to be created over the next 10 years?
- In which industries and occupations will these jobs be created?
- What will be the impact of retirements on job openings?
- What kind of education will be required to fill these positions?
- Will the new supply be sufficient to cope with the new demand?
- Will there be occupations facing significant labour market pressures?





# *Executive Summary*

Overall employment is expected to grow at an annual average rate of 1.5% between 2004 and 2008. Although this represents a slowdown relative to the 2.2% annual pace recorded between 1999 and 2003, the Canadian economy is expected to create about 1.26 million new jobs over the next five years. As the labour force is expected to increase by 1.2%, the unemployment rate will decrease gradually from 7.6% in 2003 to 6.2% by 2008. Over the 2009-13 period, employment growth should match increases in the labour force (0.9%) and the unemployment rate is expected to decline marginally to reach 6.0% by 2013.

The sectors expected to register the strongest employment growth over the 2004-08 period include: health; social science, education and government service; and natural and applied sciences. This reflects factors such as increases in public spending on health care, made possible through improvements in the fiscal position of governments, and the continuing movement towards a knowledge-based economy. On the other hand, the weakest employment growth will be found in the primary sector. Slow job growth will occur in most of the occupations unique to the primary sector, except those related to the mining industry. The softwood lumber dispute with the United States and constraints resulting from the diminishing availability of various natural resources, coupled with productivity gains, will limit job prospects in agriculture, forestry, fishing and oil and gas extraction. Occupations in the trades, transportation and equipment operators group will also be negatively affected, reflecting a drop in residential construction after the record growth observed in recent years.

Over the next five years, almost two thirds (66.0%) of new non-student jobs will be in occupations usually requiring a post-secondary education or in management occupations. These occupational groupings represented about 58% of all non-student workers in 2003.

In addition to the 1.26 million new jobs created through economic growth, approximately 1.48 million positions will be freed up through retirement over the next five years. Two occupational groups will be most affected by retirement pressures – health; and social sciences, education and government service. Not only do both groups have a relatively old workforce, but people working in occupations related to social science, education and government service tend to retire earlier than those in other groups.

Overall, the number of new job seekers will not be sufficient to fill all the positions created by economic growth and retirements. The supply of new workers for health occupations will be relatively low, whereas in sales and service occupations, there will be a large supply of workers.

Based on the analysis of labour market indicators combined with anticipated changes in labour demand and supply over the next five years, the largest number of occupations expected to face labour market pressures is concentrated in the health sector. Shortages are expected to be particularly acute in such occupations as doctors, nurses, pharmacists, medical technologists and technicians and assisting occupations in support of health services. Other occupational groups expected to experience future pressures include management (e.g. managers in public administration and human resources managers), occupations in social science and government service (such as social workers and psychologists), some occupations in the sales and service sector (e.g. police officers and firefighters) and occupations in the trades (e.g. home builders and renovators).

# *Chapter 1: Recent Developments in the Canadian Labour Market*

The purpose of this chapter is twofold. First, the chapter highlights the main trends in the Canadian labour market over the 1987-2003 period. A review of recent developments in the labour market is essential when developing a medium-term outlook. As well, the extent to which the future will differ from the past matters for policy and program resource allocation. The first section reviews how aggregate labour market indicators, such as employment, labour force, unemployment rate and participation rate, have evolved over the period considered. The next two sections respectively highlight the industries and the occupations in which employment growth has been the strongest or the weakest.

The chapter then provides, in the fourth section, an assessment of current labour market conditions by occupation. The last section identifies occupations currently facing labour market pressures, using a methodology developed by the U.S. Bureau of Labor Statistics (BLS).

## **1.1 Aggregate labour market**

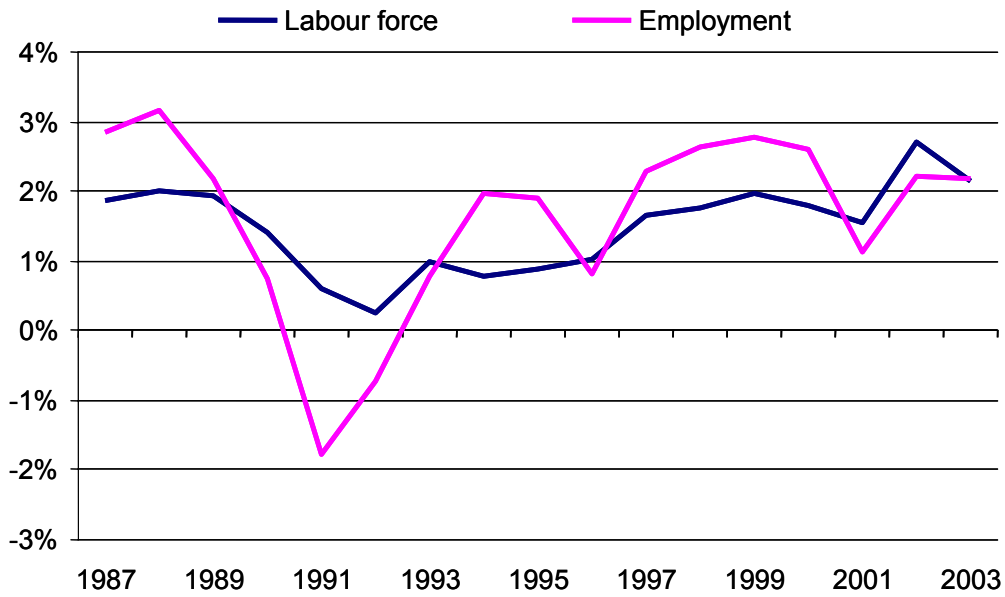
Over the 1987-2003 period,<sup>1</sup> total employment grew at an annual average of 1.55% while the labour force rose by 1.47%. As a consequence, the unemployment rate decreased from 8.8% in 1987 to 7.6% in 2003. The evolution of the Canadian labour market during those years can be divided into three sub-periods:

- The first sub-period, from the late 1980s to the early 1990s, was characterized by weak labour market conditions as a result of the economic downturn. This was a period when monetary policy was used deliberately to slow down the economy in an attempt to lower inflation to acceptable rates. These weak conditions led to a decline in employment growth, with absolute job losses being recorded in 1991. The unemployment rate rose substantially, reaching 11.4% in 1993.
- The second sub-period, from 1993 to the late 1990s, was marked by a slow recovery from the early 1990s downturn. Job creation was slow and the participation rate depressed. Job creation finally picked up and the unemployment rate declined to reach 6.8% in 2000.

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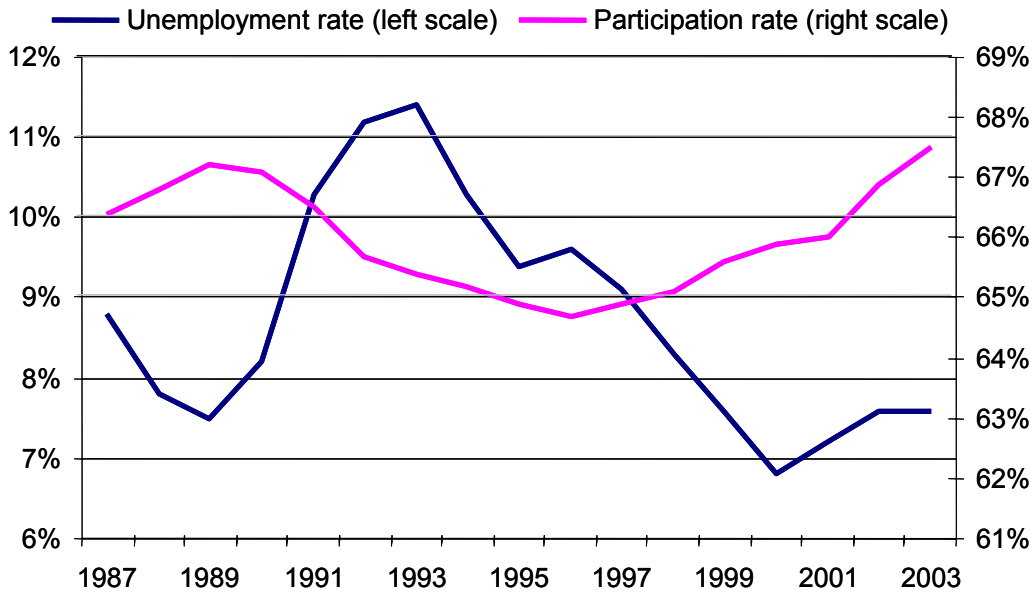
<sup>1</sup> The selection of the period under consideration (1987-2003) was based on the fact that occupational information is only available since 1987.

### Labour Force and Employment Growth, 1987-2003 (%)



Source: Statistics Canada, Labour Force Survey.

### Unemployment and Participation Rates, 1987-2003 (%)



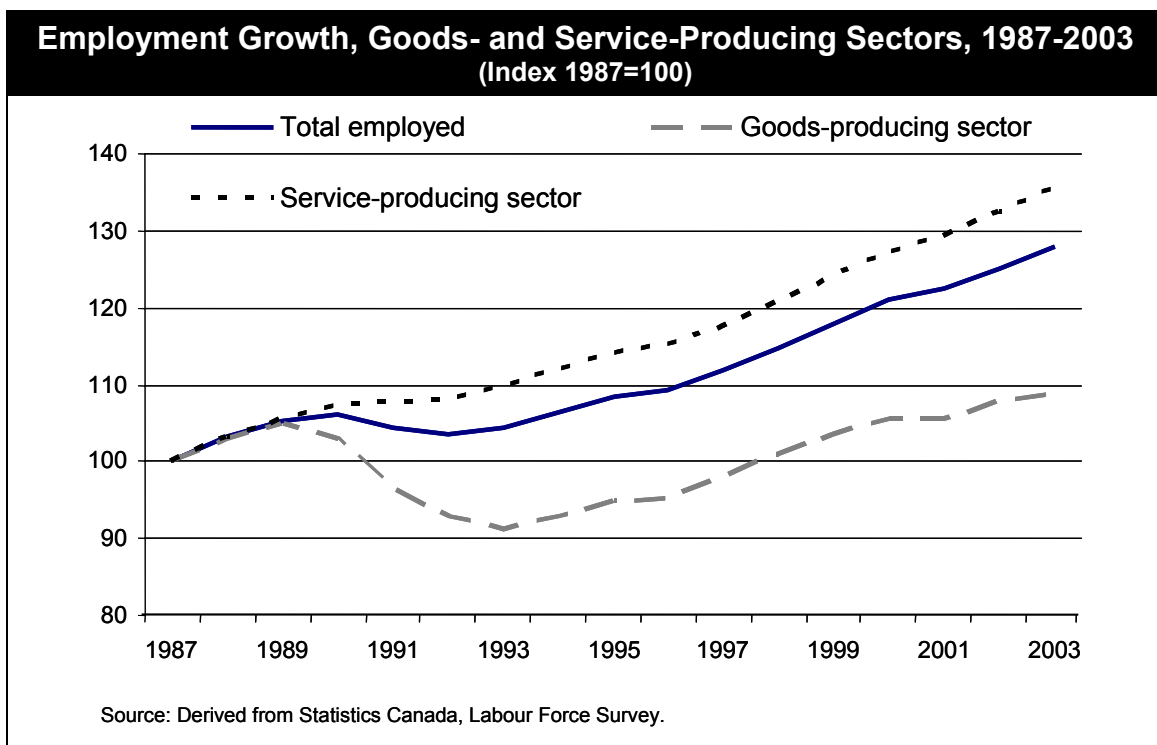
Source: Statistics Canada, Labour Force Survey.

- Finally, since the beginning of the present decade, the combination of a strong labour market and high participation rates has placed the demand and supply of labour in relative balance, limiting further reduction in the unemployment rate. In 2003, participation and employment rates reached record high levels at 67.5% and 62.4%, respectively.

## 1.2 Industrial employment

### ***Service-producing industries have recorded the strongest employment growth since 1987...***

Since 1987, total employment has grown at an annual average rate of 1.5%. Service-producing jobs have advanced at a rate slightly above average (1.9%), while employment in goods-producing industries has grown at a rate significantly below average (0.5%). That is not unusual: the service share of total employment has been gaining for decades, largely a reflection of faster gains in output per worker in the goods-producing sector.



Employment in the service-producing industries has increased steadily since 1987. Over the 1987-2003 period, job growth was strongest in management and administrative services as well as in professional, scientific and technical services, with rates of increase of 5.3% and 4.7%, respectively. These industries benefited from the expansion of information technologies such as computers and from the shift towards a knowledge-based economy. The information, culture and recreation sector—which includes wireless and satellite telecommunications services, broadcasting, Internet and cable—also

registered solid growth during this period (2.2%). In the mid-1990s, these services were just starting up and they swept the market with incredible speed. Since 2002, however, many of these services have begun to mature; others were hit hard when the technology bubble burst. As a result, employment declined slightly in 2002 and 2003.

Health care and social assistance, and accommodation and food services are the other industries that recorded above-average growth between 1987 and 2003, each with an annual average growth of 2.4%. These industries benefited respectively from the aging of the population and from an increase in real disposable income. In contrast, the employment level in public administration increased only marginally, by 0.4% per year on average.

<b>Employment by Industry, 1987-2003</b>				
	<b>Employment (000s)</b>		<b>Change</b>	<b>Share</b>
	<b>1987</b>	<b>2003</b>	<b>1988-2003 (AAGR*)</b>	<b>2003</b>
<b>All sectors</b>	<b>12,320.7</b>	<b>15,745.9</b>	<b>1.5%</b>	
<b>Goods-producing sector</b>	<b>3,660.0</b>	<b>3,986.1</b>	<b>0.5%</b>	<b>25.3%</b>
Agriculture	476.9	339.4	-2.1%	2.2%
Forestry, fishing, mining, oil and gas	293.2	289.7	-0.1%	1.8%
Construction	731.1	931.4	1.5%	5.9%
Utilities	118.9	131.5	0.6%	0.8%
Manufacturing	2,039.8	2,294.0	0.7%	14.6%
<b>Service-producing sector</b>	<b>8,660.7</b>	<b>11,759.9</b>	<b>1.9%</b>	<b>74.7%</b>
Trade	1,987.8	2,460.7	1.3%	15.6%
Transportation and warehousing	638.6	766.8	1.1%	4.9%
Finance, insurance, real estate and leasing	756.1	936.2	1.3%	5.9%
Professional, scientific and technical service	479.7	999.5	4.7%	6.3%
Management, administration and other support services	266.1	612.2	5.3%	3.9%
Educational services	788.4	1,050.3	1.8%	6.7%
Health care and social assistance	1,148.5	1,684.3	2.4%	10.7%
Information, culture and recreation	494.4	704.5	2.2%	4.5%
Accommodation and food services	700.9	1,022.3	2.4%	6.5%
Other services	630.8	707.9	0.7%	4.5%
Public administration	769.4	815.2	0.4%	5.2%

Source: Statistics Canada, Labour Force Survey.  
\* AAGR: annual average growth rate.

***...while employment growth in goods-producing industries was limited***

Since 1987, the majority of goods-producing industries have experienced low employment growth. These industries, which tend to be cyclical, were hard hit by the recession of the early 1990s. Manufacturing employment was particularly affected by this

recession as 343,000 jobs were lost between 1989 and 1993. However, employment grew strongly during the second half of the decade, reflecting a stronger domestic economy and a surge in exports to the United States. Weaknesses reappeared in manufacturing in 2001 and 2003, reflecting the impact of the U.S. economic slowdown and the stronger Canadian dollar on exports.

Agriculture bore the brunt of job losses among the goods-producing industries, with employment decreasing by an average of 2.1% annually since 1987. The agriculture sector was affected by several factors such as the economic slowdown, the move towards bigger and more industrialized farms, severe droughts in 2000 and 2001, and more recently the beef embargo imposed by the United States. Construction, under the impetus of the residential construction boom since 2001 and of the strong growth in energy non-residential construction during the second half of the 1990s, was the only goods-producing industry to record employment growth, albeit still only around the economy-wide average (1.5%) since 1987.

## 1.3 Occupational employment

Job creation in individual occupations is influenced by three main factors:

- How the industry employing people in a particular occupation is evolving. For example, job creation among doctors will be highly influenced by the outlook for the health sector.
- How the occupation is affected by structural factors. For example, employment among secretaries has been declining due to the advent of office automation (computers, electronic mail, voice messaging systems, etc.).
- The availability of qualified workers in a given occupation. For example, employment growth among doctors and nurses has been low because of the limited availability of qualified candidates.

To analyze labour market developments by occupation, two different occupational aggregations are used, based on the 1991 Standard Occupational Classification (1991 SOC): skill level and skill type. The skill level ranks occupations by level of education or training usually required for a given occupation, while the skill type ranks them by industrial sector.<sup>2</sup>

### 1.3.1 Occupational employment by skill level

In 2003, 8.8 million workers were employed in highly skilled occupations and 7.0 million in low-skilled jobs. Highly skilled occupations include occupations that usually require

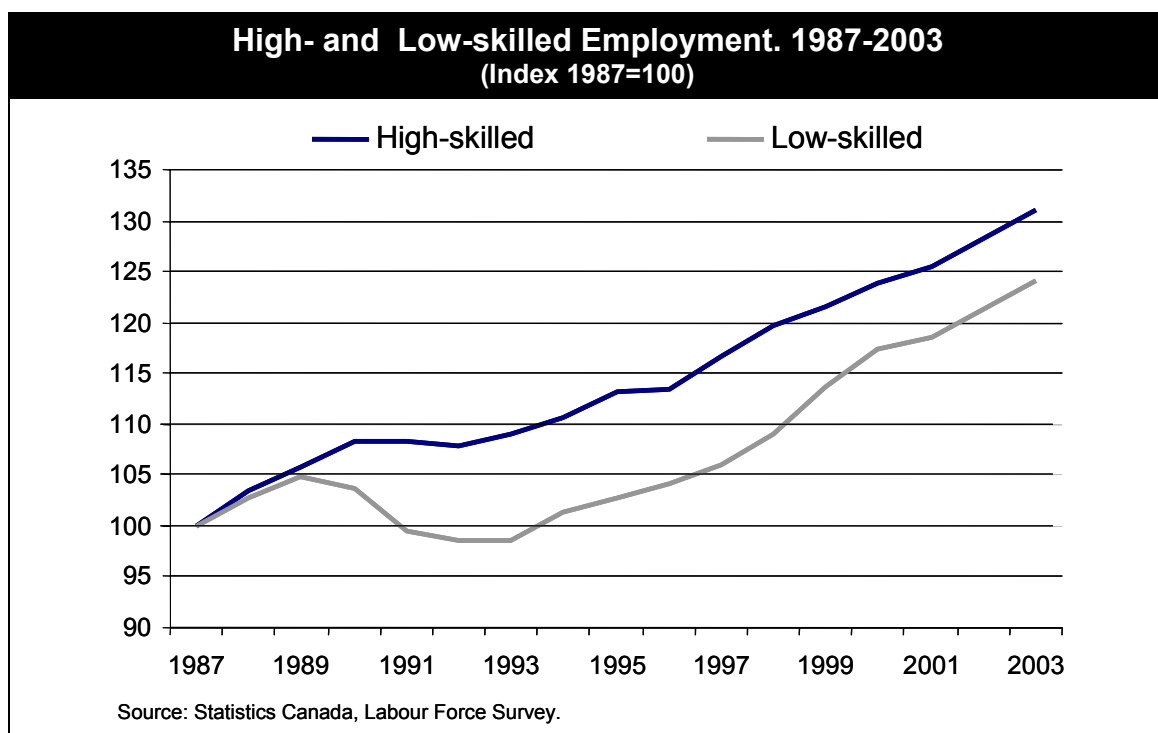
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<sup>2</sup> The occupations are coded in the Labour Force Survey (LFS) on the basis of the 1991 SOC. The occupational matrix is divided into skill level (rows) and skill type (columns). Annex 1 presents the occupational matrix of the 2001 National Occupational Classification (2001 NOC), which is slightly different from the 1991 SOC. The LFS is expected to start coding on the basis of the 2001 NOC in 2005.

university education (skill level A), college education or apprenticeship training (skill level B) and occupations in management, while lower-skilled jobs comprise occupations that usually require secondary schooling and/or occupation-specific training (skill level C) or only on-the-job training (skill level D).

**High-skilled workers have benefited from the shift towards a more knowledge-based economy**

The Canadian economy has undergone structural changes generated by rapid technological advancement and expanding trade liberalization. These two factors have intensified specialization in highly qualified work. Since 1987, highly skilled occupations have grown at an average annual rate of 1.7%, compared to an economy-wide average of 1.5%. Six out of 10 jobs created during that period were in highly skilled occupations.



Two categories – occupations usually requiring university education (3.0%) and management occupations (1.7%) – have registered strong employment growth since 1987. This is reflected in the employment share of occupations that usually require university education, which climbed from 13.0% in 1987 to 16.5% in 2003. More specifically, the major contributors to growth in highly skilled jobs have been professional occupations in natural and applied sciences (particularly computer and information systems professionals), in business and finance, and in social science, education and government services.

Occupations requiring college education or apprenticeship training have recorded the lowest employment growth among skill levels (1.1%).



### **Low-skilled occupations were more affected by the economic slowdown**

Since 1987, employment in low-skilled occupations increased at a much slower pace (1.4%) than in highly skilled occupations. Low-skilled occupations are generally more vulnerable to economic slowdowns as they tend to be more concentrated in cyclical industries such as trade, manufacturing and transportation. For example, during the early 1990s recession, over 300,000 low-skilled jobs were lost, whereas employment in high-skill occupations increased by more than 100,000. The manufacturing industry directly accounted for 60% of the decline in low-skill occupations and it took over four years to recover those losses.

Since 1998, with economic expansion well under way, employment growth in low-skill occupations has outpaced the growth of highly skilled occupations every year except 2001. Occupations in sales and services and in manufacturing have been the leaders of this growth.

<b>Employment by Occupation, 1987-2003</b>				
	<b>Employment (000s)</b>		<b>Change 1988-2003 (AAGR<sup>1</sup>)</b>	<b>Share 2003</b>
	<b>1987</b>	<b>2003</b>		
<b>Total</b>	<b>12,320.7</b>	<b>15,745.9</b>	<b>1.5%</b>	
<b>Skill type<sup>2</sup></b>				
Business, finance and administration	2,660.0	3,107.2	1.0%	19.7%
Natural and applied sciences	602.9	1,090.2	3.8%	6.9%
Health	667.3	965.2	2.3%	6.1%
Social science, education and government services	670.1	1,132.3	3.3%	7.2%
Art, culture, recreation and sport	298.6	472.1	2.9%	3.0%
Sales and service	3,494.1	4,657.0	1.8%	29.6%
Trades, transport and equipment operators	2,165.0	2,406.2	0.7%	15.3%
Primary industry	648.6	567.1	-0.8%	3.6%
Processing, manufacturing and utilities	1,113.8	1,348.7	1.2%	8.6%
<b>Skill level<sup>3</sup></b>				
Management	1,048.6	1,382.6	1.7%	8.8%
Occupations requiring:				
At least a university education	1,606.9	2,596.0	3.0%	16.5%
At least a college education or apprenticeship training	4,053.4	4,808.5	1.1%	30.5%
At least a high school diploma	4,140.8	5,097.1	1.3%	32.4%
Only on-the-job training	1,471.0	1,861.8	1.5%	11.8%
Source: Statistics Canada, Labour Force Survey.				
<sup>1</sup> AAGR: annual average growth rate.				
<sup>2</sup> Skill types are based on the Standard Occupational Classification (SOC) matrix in which occupations are grouped by industry (see Annex 1).				
<sup>3</sup> Skill levels are based on the SOC matrix, in which occupations are grouped according to the education and training normally required (see Annex 1).				

### **1.3.2 Occupational employment by skill type**

Since 1987, occupations in natural and applied sciences have recorded the strongest employment growth in the Canadian economy (at an average of 3.8% annually), largely reflecting the emergence and predominance of information and communication technologies (e.g. computers) and the move towards a knowledge-based economy. Above-average employment growth was also registered for occupations in the health sector, in social science, education and government service, and in the art, culture, recreation and sport sector. These groups generally require high skills. They benefited from the favourable economic and demographic situation.

On the other hand, employment in occupations unique to the primary sector has decreased by 0.8% annually, mostly affected by the difficulties in the agriculture sector. Other occupational groupings were affected by cyclical factors and recorded average or about-average growth. This was the case for occupations in sales and services, in the trades, transport and equipment operators group, in processing, manufacturing and utilities, and in business, finance and administration.

## **1.4 Current labour market conditions by occupation**

Data on job creation by occupation only provide a partial indication of labour market conditions by occupation. A complete assessment must include other labour market indicators not only to determine job openings but also to evaluate the competition for those job openings, the stability of employment and working conditions. This is done by looking at labour market indicators such as the change in employment, the level and change in earnings and the unemployment rate over the past four years. These indicators are combined for each occupation to derive an overall rating for current labour market conditions.

A “good” rating usually means that it is relatively easy to find steady employment and that labour market conditions are attractive or improving. This would be consistent with high employment growth, high and rising earnings and a low unemployment rate. Alternatively, a “limited” rating means that individuals who are entering or re-entering an occupation will have difficulty finding steady employment and that labour market conditions are not attractive or are deteriorating. “Fair” conditions are neither “good” nor “limited.”

The following table highlights current labour market conditions by occupation (skill level and skill type). Relative to the nine skill types, only the health group has “good” current labour market conditions. Over the past four years, health employment has increased faster than the average for all occupations, has had strong increase in earnings and has had a low unemployment rate. Two occupational groupings – natural and applied sciences; and social science, education and government service – are rated “fair” although several occupations within those groups have “good” labour market conditions. The current “fair” rating for natural and applied sciences occupations mostly reflects the difficulties experienced in occupations linked to computer and information technologies since 2000. Accordingly, the unemployment rate for this group has increased strongly over the past four years. In contrast, occupations in primary industry and in manufacturing and

processing are classified as “limited.” Many of these occupations have recorded low employment growth and are characterized by high unemployment rates. Sales and service occupations also have a “limited” rating, with low earnings and relatively high unemployment rates typically found in many of these occupations.

<b>Current Labour Market Conditions by Occupation, 2003</b>							
	<b>Non-student employment</b>		<b>Earnings</b>		<b>Unemployment rate</b>		
	<b>Level 2003 (000s)</b>	<b>Change 2000-03 (%)</b>	<b>Level 2003 (\$/hour)</b>	<b>Change 2000-03 (%)</b>	<b>Level 2003 (%)</b>	<b>Change 2000-03 (%p)</b>	<b>Current condition</b>
<b>Total</b>	<b>14,613.1</b>	<b>1.8</b>	<b>18.06</b>	<b>2.8</b>	<b>5.4</b>	<b>0.8</b>	<b>Fair</b>
<b>Skill type</b>							
Business, finance and administration	2,980.7	2.0	19.21	3.4	4.0	0.8	Fair
Natural and applied sciences	1,064.4	1.7	26.34	2.9	4.4	1.5	Fair
Health	934.6	2.2	22.46	3.5	1.4	0.2	Good
Social science, education and government service	1,073.2	4.5	25.34	4.9	3.1	0.4	Fair
Art, culture, recreation and sport	408.8	1.0	19.09	0.9	6.5	1.5	Fair
Sales and service	3,952.9	2.5	14.22	3.6	5.9	0.9	Limited
Trades, transport and equipment operators	2,351.2	1.8	19.03	2.3	6.9	0.6	Fair
Primary industry	527.2	0.4	16.08	3.6	9.7	0.4	Limited
Processing, manufacturing and utilities	1,319.7	0.8	17.37	2.6	7.2	1.1	Limited
<b>Skill level</b>							
Management	1,372.1	0.2	26.37	5.8	2.3	0.2	Good
Occupations requiring:							
At least a university education	2,513.6	2.2	26.30	3.5	3.0	0.8	Fair
At least a college education or apprenticeship training	4,612.1	2.4	18.65	2.2	4.5	0.7	Fair
At least a high school diploma	4,653.4	0.9	14.69	1.7	6.4	0.8	Fair
Only on-the-job training	1,461.5	4.0	11.59	4.9	10.0	1.2	Limited
Source: HRSDC-PRCD, Labour Market and Skills Forecasting and Analysis Unit, Reference Scenario 2004							

In terms of skill level, the majority of management occupations have “good” labour market conditions. These occupations consist of senior and middle manager positions, where salaries are usually high and unemployment rates are relatively low. Occupations requiring on-the-job training (less than secondary education) have “limited” current labour market conditions. This occupational group is characterized by low earnings and a

high and rising unemployment rate.<sup>3</sup> The three other occupational groups have “fair” labour market conditions.

## 1.5 Occupations with indications of current pressures

In addition to providing an assessment of current labour market conditions, the use of labour market indicators also makes it possible to identify all occupations currently under pressure – that is, occupations where the supply of labour cannot meet the demand. Based on the methodology developed by the U.S. Bureau of Labor Statistics (BLS),<sup>4</sup> an occupation is considered to be under pressure if its employment growth rate is at least 50 percent faster than the average, wage increases are least 30 percent faster than average and the unemployment rate is at least 30 percent below average. The following table, using data for the 2000-03 period, lists the three-digit occupations that meet all three thresholds. Note, however, that these occupations represented only 3.6% of total employment in 2003.

Skill type	Occupations	Employment 2003 (000s)
Business, finance and administration	Managers in communication (SOC 013)	18.8
Health	Nurse supervisors and registered nurses (SOC 315)	259.8
	Medical technologists and technicians (SOC 321)	83.1
Social science, education and government service	Managers in public administration (SOC 041)	33.5
	Psychologists, social workers, counsellors, clergy and probation officers (SOC 415)	126.6
Sales and service	Elemental medical and hospital assistants (SOC 663)	18.8
Trades, transport and equipment operators	Stationary engineers and power station and system operators (SOC 735)	31.9

Three of the seven occupations showing indications of current pressures are linked to the health sector: nurse supervisors and registered nurses, medical technologists and technicians, and elemental medical and hospital assistants. Two others are in the management categories.

<sup>3</sup> As outlined above, current labour market conditions by occupation are assessed using a combination of labour market indicators. For example, although occupations requiring on-the-job training recorded rapid increases in employment and earnings over the past four years, their high unemployment rate and low earnings contributed strongly to the current “limited” assessment.

<sup>4</sup> Carolyn M. Veneri, “Can occupational labor shortages be identified using available data?”, *Monthly Labor Review*, Vol. 122, March 1999.

The methodology used by the BLS tends to underestimate the number of occupations showing indications of current pressures. According to the BLS, “this somewhat arbitrary set of criteria was established to eliminate any occupation that could be considered a borderline case in terms of what the data might show if less stringent criteria were used.” For example, the BLS methodology would eliminate occupations where wages cannot increase because of institutional constraints – e.g. a fixed compensation structure within an organisation. In chapter 2 of this study, a new approach will be proposed to assess future labour market pressures by combining labour market data with anticipated changes in demand and supply.

The next table presents the results of a modified version of the BLS methodology to determine which occupations are currently facing downward pressures – that is, occupations where the supply of labour is greater than the demand. Occupations showing an employment growth rate at least 50% slower than the average, with wage increases at least 30% slower than average and unemployment rates at least 30% above average, are considered to be facing downward pressures. As the table shows, only four occupations are currently in this situation.

<b>Skill type</b>	<b>Occupations</b>	<b>Employment 2003 (000s)</b>
Business, finance and administration	Office equipment operators (SOC 142)	83.6
Art, culture, recreation and sport	Announcers and other performers (SOC 523)	10.4
Primary industries	Fishing vessel masters and skippers (SOC 826)	22.2
	Logging and forestry workers (SOC 842)	20.5



# *Chapter 2: Labour Market Outlook*

This chapter is intended to highlight changes that are projected to occur in the Canadian labour market over the next 10 years (2004-13), based on a forecast developed by the Labour Market and Skills Forecasting and Analysis Unit of the Policy Research and Coordination Directorate (PRCD) in the summer of 2004.<sup>5</sup> The sections of the chapter will discuss projected trends in:

- Aggregate labour market indicators such as employment, labour force and the unemployment rate;
- Labour demand (new job openings) as a result of increased economic activity (expansion demand) and retirements;
- Labour supply or new job seekers.

The fourth section of the chapter provides an assessment of potential pressures at an occupational level. Upward potential pressures will occur if the number of job openings is expected to exceed the number of new job seekers, while downward potential pressures will take place if the number of new job seekers is expected to exceed the number of new job openings. A list of occupations that are currently experiencing significant labour market pressures and for which expected changes in labour demand and supply will not be enough to offset the current imbalances is provided in the final section.

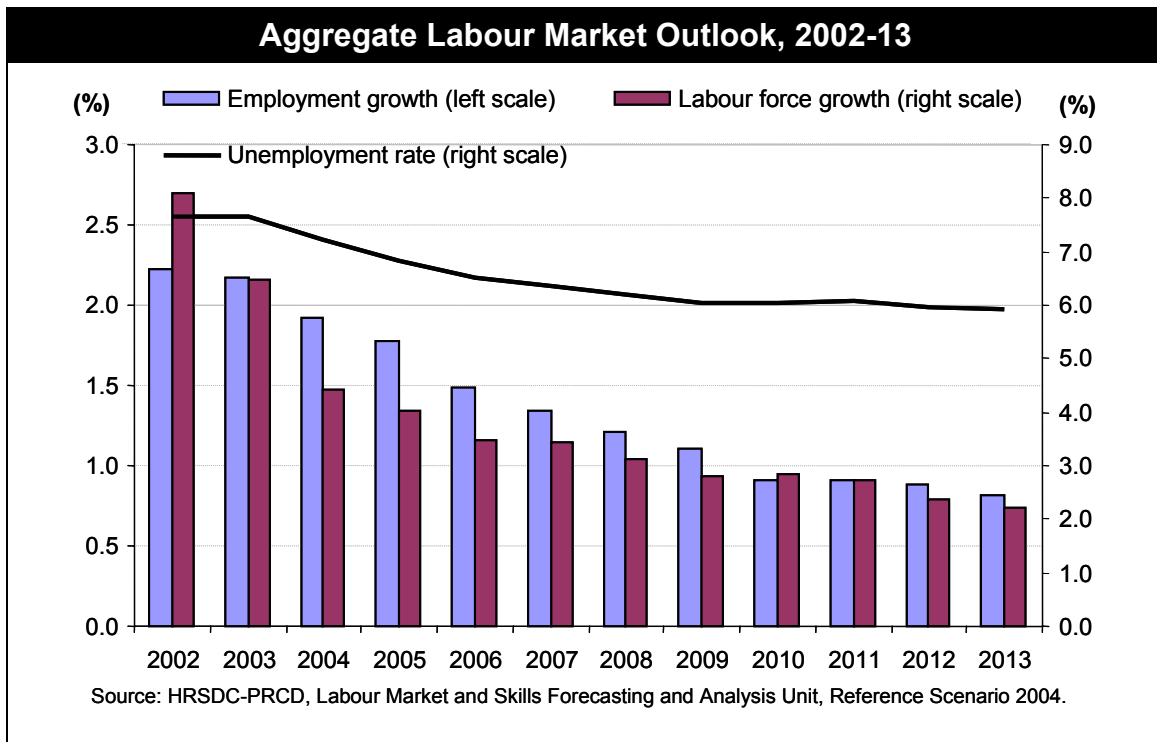
## **2.1 Aggregate labour market outlook**

Total employment is expected to grow at an annual average rate of 1.5% over the next five years (2004-08).<sup>6</sup> Despite this slowdown relative to the 1999-2003 period (when the rate of growth was 2.2%), the Canadian economy is expected to create about 1.26 million new jobs over the next five years. Given that the labour force is expected to increase by 1.2%, the unemployment rate should decrease gradually to reach 6.2% in 2008. Over the 2009-13 period, employment growth should match the increase in the labour force (0.9%) and the unemployment rate is expected to decline marginally to reach 6.0% by the end of the period.

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<sup>5</sup> Information on the macroeconomic and industrial assumptions used in the forecast can be obtained from the Labour Market and Skills Forecasting and Analysis Unit.

<sup>6</sup> Given the risks inherent in long-term forecasting, the detailed analysis by industry and occupation focuses on the first five years of the forecast period. For more information on the forecasting steps, refer to the diagram in Annex 2.



This employment projection is affected by the demographic outlook and by projected changes in economic activity and productivity.

- Over the next five years, Canada’s real Gross Domestic Product (GDP) is expected to advance at an average annual rate of 3.0%, before slowing to reach its estimated long-term potential growth rate of 2.7%. The major factor behind this deceleration is a slowdown in the overall population growth and hence in labour force growth. Moreover, the aging of the population will have an additional dampening effect on labour force growth as a result of retirements, with repercussions on potential output growth and on consumption patterns.
- With inflation having largely remained within Bank of Canada target bands (1% to 3%, with an average of 2%) for many years now, the Bank will set monetary conditions to allow demand growth in line with this slowing growth in potential.
- Growth in labour productivity (as measured by output per worker) is expected to average 1.4% over the next five years, topping the average rate of 1.1% experienced over the 1977-2003 period. The main factors that will drive this historically strong rate of labour productivity growth include the aging of the labour force (which will result in proportionately more experienced workers), the increasing proportion of highly educated workers and robust machinery and equipment investment growth.<sup>7</sup>

Annex 3 provides more information on the demographic and labour force outlook.

<sup>7</sup> Over the 2004-2008 period, investment in machinery and equipment is expected to grow at a rate of 8.4% – well above the 5.1% rate observed over the last two decades – as firms will need to keep up with technological advances in order to improve efficiency and remain competitive in the global knowledge-based economy.



## 2.2 Labour demand

When analyzing the labour market, it is important to examine two main sources of job openings:

- The first, referred to as **expansion demand**, is the result of new jobs being created as the result of an increase in economic activity. This is referred to as “required employment” – that is, the number of people needed to reach a certain level of production, given a specific level of productivity. It is not the number of people who will in fact be hired, which will be affected by, among other things, the number of people qualified for the job. As outlined above, expansion demand is expected to grow at an annual average rate of 1.5% over the next five years, creating 1.26 million jobs over the 2004-08 period. In the sections that follow, expansion demand is disaggregated by industry and by occupation (skill type and skill level).
- A second source of job openings comes from workers leaving their jobs, in particular from **retirements**. Over the next five years, approximately 1.48 million people are expected to retire – approximately 2.0% of the workforce each year. Retirements are disaggregated by occupation (skill type and skill level).

Although other reasons for leaving a job (death, discouragement, child bearing, child rearing, etc.) will not be discussed in the following analysis, they were considered when assessing future outlook.

### 2.2.1 *Expansion demand by industry*

Demographic and macroeconomic developments will lead to changes in Canada’s economic growth and industrial structure. First, slower population growth is expected to reduce output and employment growth for most industries, while changes in the age structure of the population will modify the industrial structure by favouring service-providing industries, particularly in the health sector. Certain other structural trends will also have an impact on Canada’s industrial mix, including the continuing movement towards a more knowledge-based economy and more limited access to certain natural resources.

Employment growth over the 2004-08 period is expected to be strongest in service-producing industries, with an expected annual average growth rate of 1.7% (1.06 million jobs over the period). New job creation will be less than average in the goods-producing sector, as the number of jobs is expected to increase annually by 1.0% (0.2 million jobs).

- In the service-producing industries, the strongest employment growth is expected in health, computer system design and professional services, thanks to increases in public spending in health care made possible through improvements in the fiscal position of governments, the continuing movement towards a knowledge-based economy and increased outsourcing by firms. On the other hand, some industries are expected to experience weak employment growth – the finance, insurance and real estate sector because of an anticipated decrease in residential construction and of increased automation, and the education sector because of the expected demographic slowdown.

- In the goods-producing sector, employment growth in the mining and manufacturing industries is projected to be similar to the economy-wide average (1.5%) over the 2004-08 period. All other industries (construction and utilities) are expected to experience below-average job growth, with the forestry and fishing industries recording ongoing employment declines. Within the manufacturing sector, the outlook is mixed: employment growth should be robust in computer and electronic products, other transportation equipment (e.g. aerospace products and parts) and metal products and machinery, but it is expected to be weak in motor vehicles and parts, pulp and paper, wood product manufacturing and printing.

Annex 4 provides a detailed GDP and employment outlook for 33 different industries.<sup>8</sup>

## **2.2.2 Expansion demand by occupation**

Expansion demand (new job creation) among occupations is influenced by two main factors: how the industry employing people in a particular occupation is expected to evolve, and how each occupation is affected by structural factors.

The occupational analysis reported below pertains to non-students only (92.8% of employment in 2003) because our focus is on the permanent labour market and excludes young people who are employed while studying and who tend to be concentrated in the sales and service sector. Out of the 1.26 million jobs expected to be created over the next five years, 1.17 million are non-student jobs.

### **Occupations with above-average growth in expansion demand**

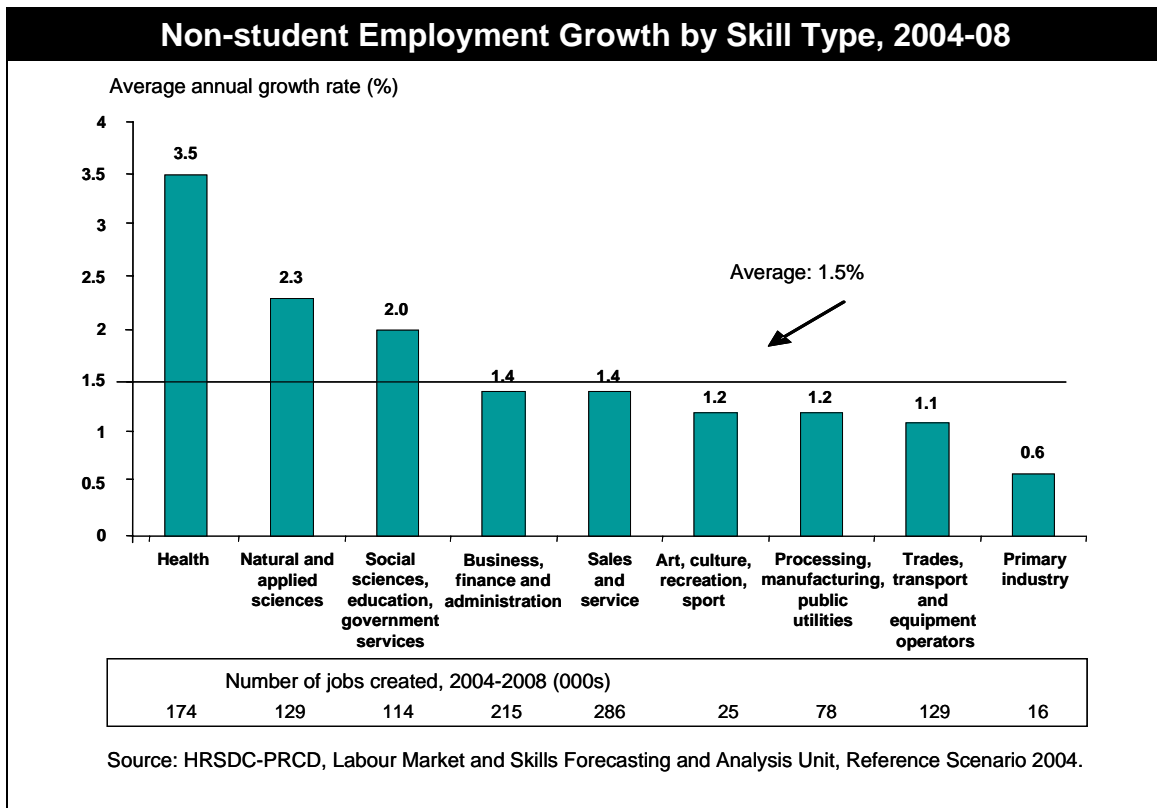
Employment growth in response to expansion demand is expected to be strongest for occupations in three groups: health; natural and applied sciences; and social science, education and government service.

The strong employment growth projected for **health** occupations (3.5% annually) stems from increased public spending on health combined with additional health care needs resulting from the aging of the population. All of the health occupations (at the three-digit level) are expected to register above-average employment growth, regardless of the level of education and training required.

Employment growth in the **natural and applied sciences** group (projected to be 2.3% annually) is supported by strong growth in the computer, consulting and other professional services industries. Computer system design is expected to post the third strongest employment growth among all industries. This will favour employment growth for mathematicians, systems analysts and computer programmers, as well as for technical occupations in electronics and electrical engineering. Both engineers and technical occupations in engineering will benefit from the continued move towards a knowledge-based economy.

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<sup>8</sup> These 33 industries are an amalgam of two-, three- and four-digit North American Industrial Classification System (NAICS) codes.



The increased demand for more qualified workers, the greater need for more professionals in the public sector and a better budgetary situation are expected to lead to an annual increase in employment of 2.0% in the **social science, education and government service** group. Several occupations will benefit, including university and college teachers, psychologists and social workers.

### ***Occupations with average growth in expansion demand***

Employment in **business, finance and administration** occupations is expected to increase by 1.4% over the 2004-08 period, close to the economy-wide average. Technology advances in the banking, financial and real estate services sector (e.g. banking machines and the Internet) will boost productivity and limit employment growth. Employment for secretaries, recorders and transcriptionists as well as for office equipment operators (e.g. data entry clerks) is expected to continue its decline.

Employment growth in the **sales and service** occupations (1.4%), while supported by rising personal disposable income, will be notably weakened by the impact of e-commerce and “big-box” stores. Employment growth is expected to be stronger for skilled sales and service occupations (e.g. sales and service supervisors) compared to intermediate (i.e. usually requiring a high school diploma) or elemental (i.e. requiring only on-the-job training) occupations. One key exception is elemental medical and hospital assistants, who should register above-average employment growth. Sales and service occupations, however, are expected to record the largest employment gains over the 2004-08 period, with about 286,000 new non-student jobs.

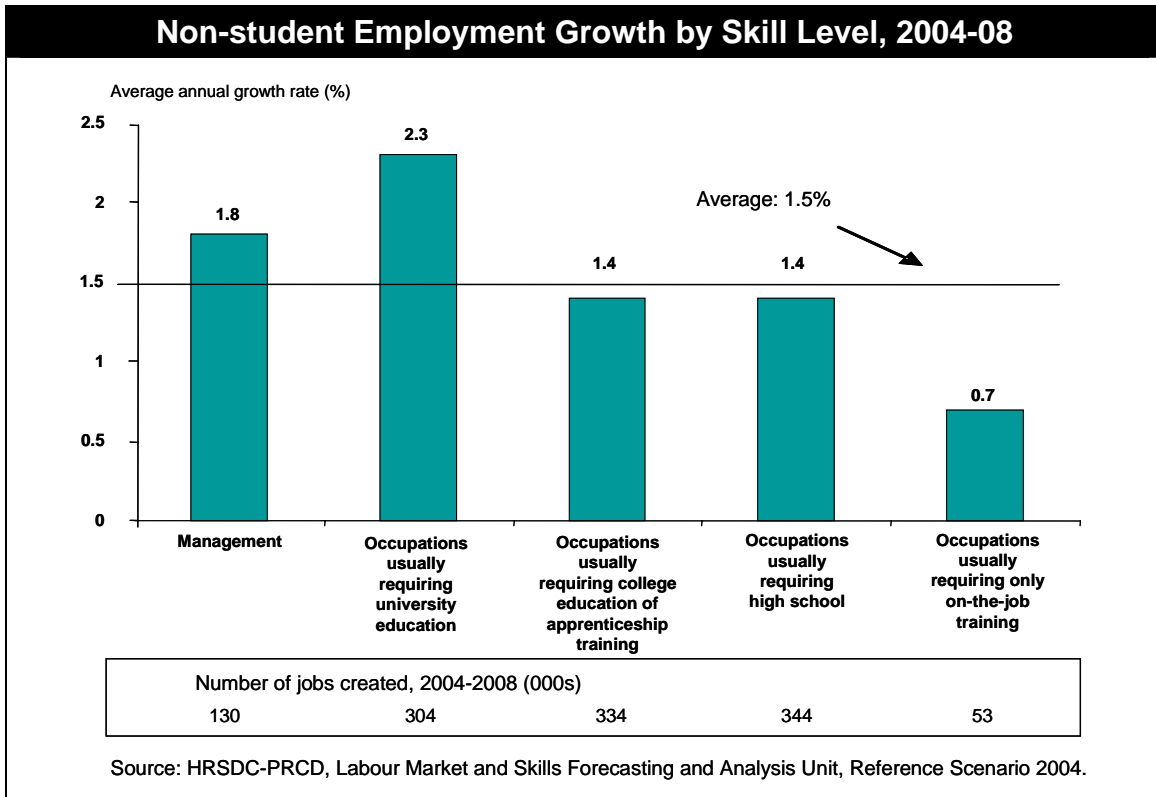
Employment growth in occupations in the **arts, culture, recreation and sports** group (1.2%) will be affected by the increased productivity generated by improved information technologies and further consolidation in the media sector. On the other hand, rising personal disposable income and the aging of the population should favour these occupations, as older people tend to consume more arts and cultural activities. Creative designers and craftpersons (and most particularly graphic designers and illustrating artists) are expected to perform well due to the popularity of video games and the growing number of websites.

New job creation in the **manufacturing, processing and utilities** sector is expected to be slightly below-average (1.2%). Some manufacturing industries, such as metal products and machinery and computer and electronic products, are expected to register above-average employment growth while employment growth in other industries, such as motor vehicle manufacturing, wood products, pulp and paper and printing, is expected to be weak.

### ***Occupations with below-average growth in expansion demand***

Occupations in the **trades, transportation and equipment operators** group will be affected by the outlooks for the construction and transportation industries, which are quite different. On the one hand, the expected growth of the U.S. economy should stimulate Canadian exports to that country and thus improve growth in the transportation and warehousing industry. On the other hand, the construction industry should post a lower-than-average employment growth, reflecting a drop in residential construction after the record growth observed in recent years. Although non-residential construction is expected to rise, that increase will only partly offset the weakness in residential construction, as non-residential construction is less labour-intensive. Overall, employment in this occupational group is expected to rise by 1.1% over the next five years.

The weakest employment growth, by skill type, is expected in the **primary sector**. Slow job growth will occur in most of the occupations unique to the primary sector, with the exception of those related to the mining industry. Employment in the primary sector is expected to experience below-average growth (0.6%) between 2004 and 2008. The softwood lumber dispute with the United States and constraints with regard to various natural resources (lower availability of resources or environmental constraints), coupled with productivity gains, will limit job prospects in agriculture, forestry, fishing and oil and gas extraction.



***Almost two thirds of new non-student jobs are expected to require a post-secondary education or to be in the management group***

Over the next five years, almost two thirds (66.0%) of new non-student jobs are expected to require a post-secondary education or to be in the management group.<sup>9</sup> In 2003, about 58% of all non-students workers were in jobs belonging to those two groups.

More specifically, the highest rate of employment growth is expected to be in occupations that require university training (annual average of 2.3%). Strong employment growth in high-skill occupations is explained in part by the continued shift to a knowledge-based economy and by increased public spending in the health care sector. Employment growth is projected to be lower in occupations usually requiring only on-the-job training (annual average of 0.7%).

Detailed projected data on employment growth by occupation is presented in Annex 5.

<sup>9</sup> It is assumed that most management positions require a high skill level.

### **2.2.3 Job openings due to retirements**

Job openings will also occur as a result of retirements from the workforce. The projected number of retirements within each occupation is primarily determined by the interaction of two variables: the distribution of the workforce by age and the average age of retirement.<sup>10</sup> Retirement pressures should be highest for occupations with an older workforce and/or where the retirement age is relatively low. In 2003, the average age of employed workers was 39 years old while the median retirement age was 61.

Over the next five years, approximately 1.48 million people are expected to retire – about 2.0% of the workforce each year. Some occupational groups will experience stronger retirement pressures than others.

#### **Occupations with the strongest retirement pressures**

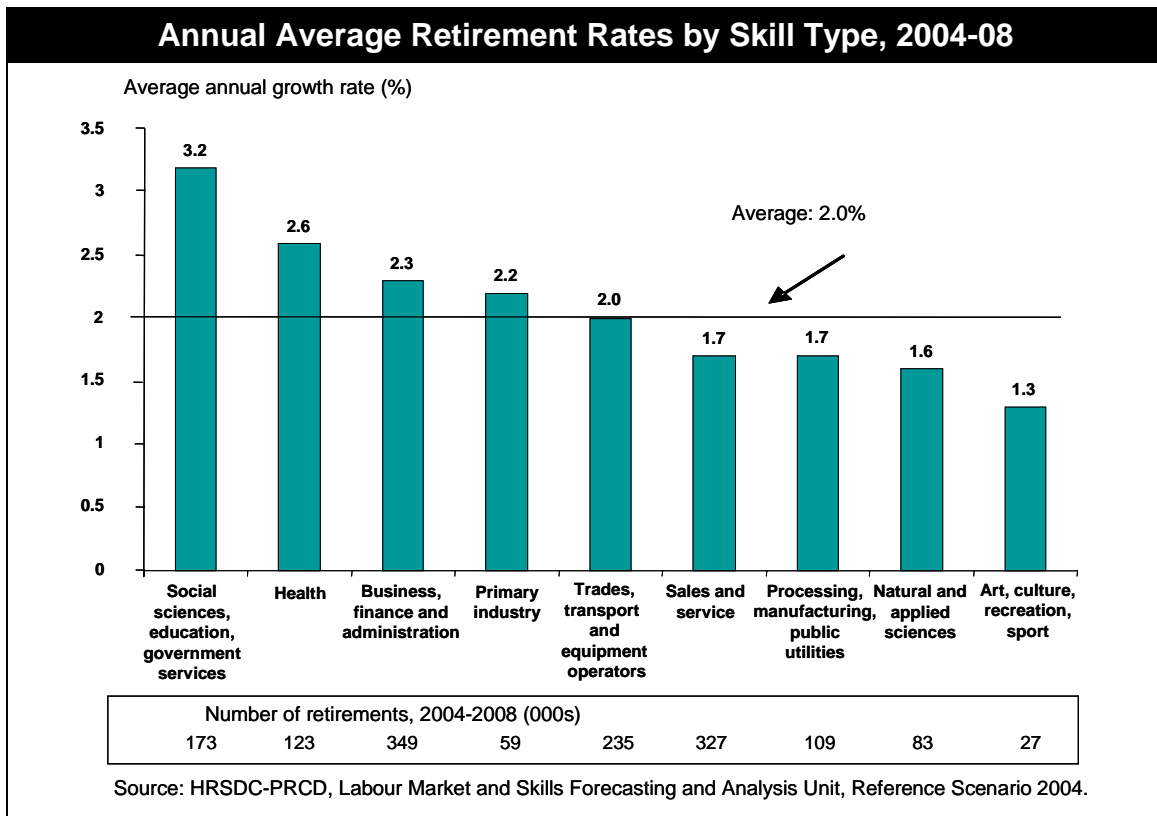
Two occupational groups are expected to be most affected by retirement pressures over the 2004-08 period. On average, 3.2% of workers in **social science, education and government service** are expected to retire each year because of the lower retirement age in this group (58 years) and of the older average age of its workforce (42 years). The key occupations pushing the retirement rate to above-average levels include elementary/secondary school teachers and educational counsellors, college and other vocational instructors, and university professors.

Approximately 2.6% of those employed in the **health** occupations are expected to retire annually, primarily because the workforce is older (42 years old). The key occupational groups driving this rate to above-average levels include managers in health, education social and community services, and nurse supervisors and registered nurses.

It is important to note that these two occupational groups are also expected to experience some of the fastest growth rates in expansion demand.

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<sup>10</sup> The projected number of annual retirements over 2004-08 is calculated by identifying the number of workers in each occupation within five years of their occupational-specific median retirement age. It is assumed that these workers will retire over the next five years as they approach the median retirement age. The annual average retirement rates are calculated as the ratios of projected number of annual retirements for each occupation to the 2003 occupational non-student employment levels.



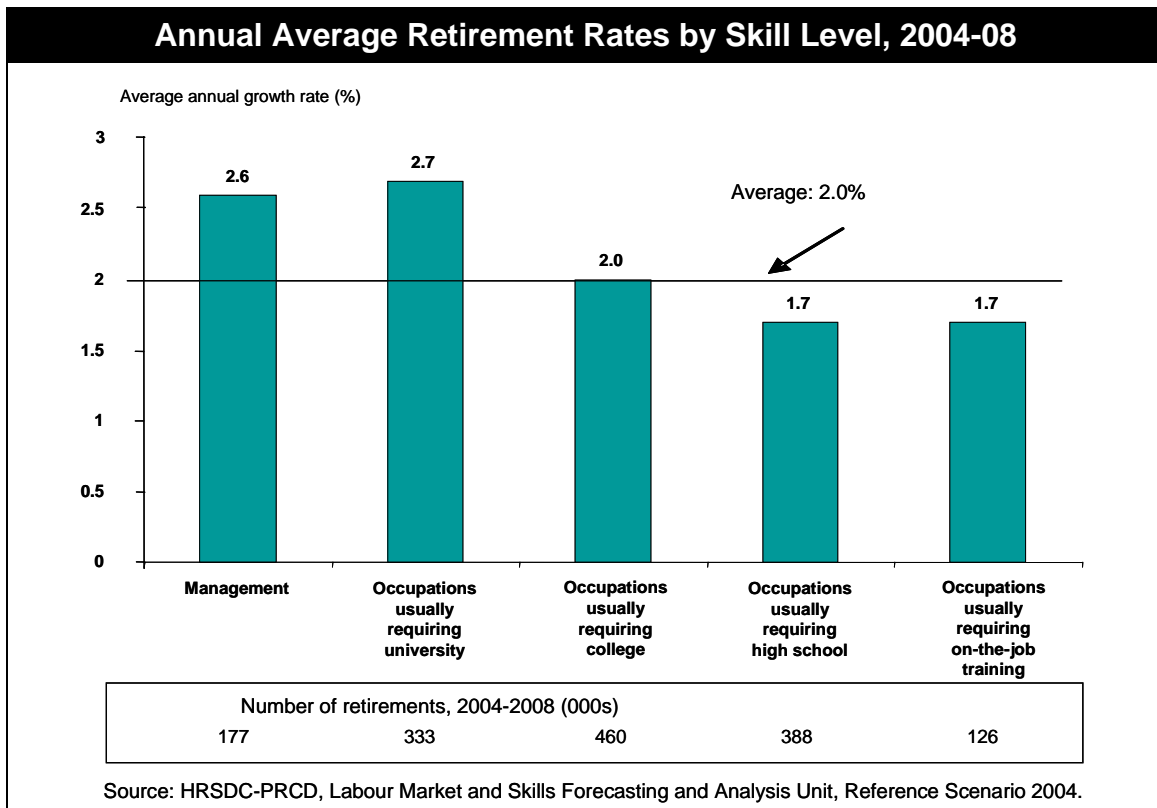
### ***Occupations with weak retirement pressures***

The **art, culture, recreation and sport** occupational grouping has the lowest projected retirement rate of all (1.3%). People in these occupations tend to retire later (at the age of 64, on average), while the average age of the workforce is 38 years old. Retirement rates are the highest for librarians, archivists, conservators and curators as well as for managers, but they are significantly lower for announcers and other performers, and for photographers and graphic arts technicians.

### ***Retirement pressures expected to be highest among higher-skill occupations***

In terms of skill level, retirement pressures are expected to be the greatest in occupations generally requiring university education (2.7%) and in management occupations (2.6%). The workforce in these two occupational groups is significantly older than the average – 41 and 44 years, respectively.

Conversely, retirement pressures are the weakest in occupations generally requiring less than a high school diploma and those generally requiring only on-the-job training. Both of these occupational groupings have a younger workforce. For example, the average age of the workforce in occupations generally requiring only on-the-job training is 35 years. Retirement pressures will be low for cashiers, occupations in food and beverage service, food counter attendants and kitchen helpers.



## 2.3 Labour supply

The number of potential new job seekers is estimated from the flows of students coming out of the formal education system every year (school leavers), of recent immigrants and of people re-entering the job market after a period of non-participation.

The number of new job seekers is then distributed among occupations. New entrants to the labour force from the formal educational system are distributed on an ex-ante basis where the transition is obvious (e.g. all nursing graduates are a potential new supply of nurses) or on an ex-post basis, using results from the National Graduate Surveys where the transition is not obvious (e.g. a MBA graduate). Recent immigrants entering the labour force are distributed among occupations on the basis of the 2001 Census, which contains information on the occupational distribution of immigrants who entered the Canadian labour market between 1996 and 2001. This distribution is used to avoid the confusion between an immigrant's "intended" occupation and his or her "actual" occupation. The occupational shares of new job seekers can be compared to the 2003 occupational share to give an indication of whether the new labour supply matches the current occupational structure.

### ***Occupations with a weak supply outlook***

Occupations in **business, finance and administration**, which accounted for 20% of non-student employment in 2003, are expected to attract 12% of new job seekers over the next five years. The influx is expected to be especially strong in the case of management

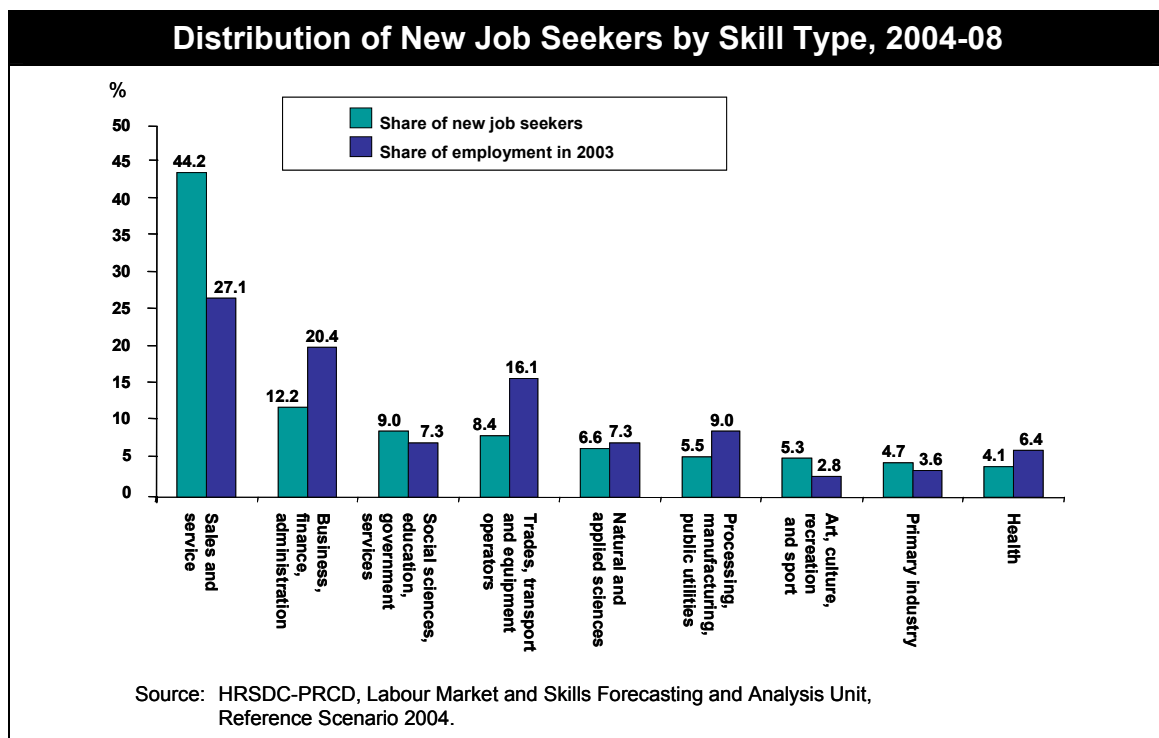


occupations. The **health** sector, representing 6% of non-student employment in 2003, is expected to attract 4% of new job seekers. Many occupations in the health sector are forecast to experience weak supply, especially managers and some professional occupations (optometrists, chiropractors).

Low levels of new supply are also anticipated in some occupations in **trades, transport and equipment operators** (e.g. contractors and supervisors in trades, and stationary engineers and power station and system operators) as well as in some occupations in **processing, manufacturing and utilities** (e.g. supervisors in processing, and central control and process operators in manufacturing).

### Occupations with strong supply prospects

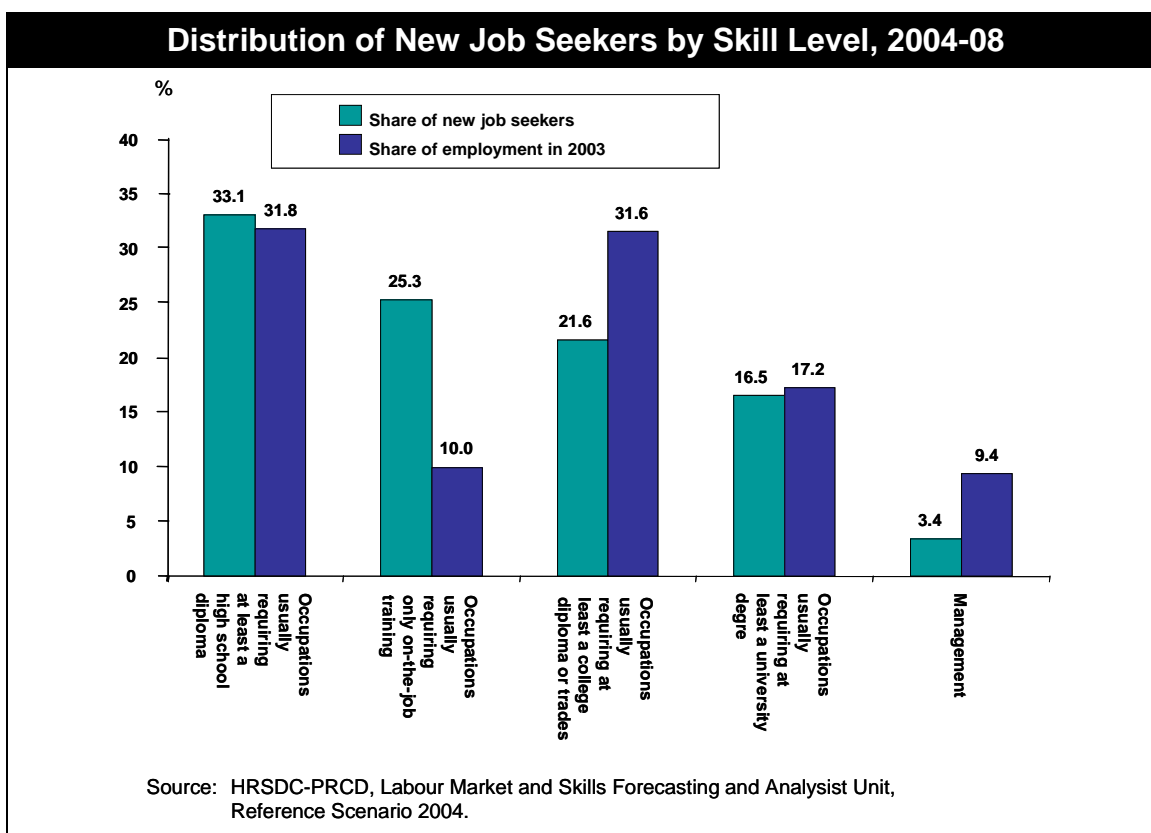
Over the next five years, more than 44% of new job seekers are expected to be looking for work in **sales and service** occupations. Given that sales and service accounted for 27% of all non-student jobs in 2003, the share of new job seekers will be high in this occupational grouping. The new supply will be especially strong in the lower-skill occupations, such as elemental sales and service occupations (e.g. cashiers, cleaners, food counter attendants). However, some other sales and service occupations (e.g. police officers and firefighters) are not expected to face a strong influx of job seekers.



There is also a significant scope for new job seekers with regard to occupations in **art, culture, recreation and sport**, especially announcers and other performers, and athletes, coaches, referees and recreation leaders.

## ***New supply expected to be strong in occupations usually requiring less than a post-secondary education***

Although occupations requiring post-secondary training accounted for 58% of 2003 non-student employment, only 42% of new entrants are expected to seek employment in these occupations. This result suggests generally tight labour markets for occupations in that group. This is expected to be the case in particular for occupations requiring at least a college diploma or apprenticeship training and for management occupations.



On the other hand, there should be a high proportion of people seeking jobs in occupations that do not require post-secondary education, especially occupations requiring only on-the-job training. More than 25% of new entrants are expected to seek employment in those occupations, surpassing the proportion of non-student employment in 2003 (10%).

## **2.4 Future labour market conditions by occupation**

The determination of future labour market conditions for various occupations is achieved through a two-step process:

- First, an assessment of potential pressures is undertaken for each occupation. This is done by comparing the number of job openings to the number of new job seekers. Upward pressures will occur if the number of job openings is expected to significantly

exceed the number of new job seekers. Alternatively, if the number of job seekers is expected to significantly exceed the number of job openings, there will be downward potential pressures.<sup>11</sup>

- Second, by confronting current labour market conditions with the assessment of potential pressures, it is possible to assess future labour market conditions by occupation and to identify which occupations will experience significant labour market pressures.

The following table illustrates current labour market conditions by occupation (skill level and skill type), anticipated changes in labour demand and supply over the next five years, indications of potential pressures, as well as the resulting future labour market conditions.

<b>Current and Future Labour Market Conditions by Occupation</b>								
	Non-student employment 2003 (000s)	Current labour market conditions	Expansion demand (1)	Retirements (2)	Labour demand (3)=(1)+(2)	Labour supply (4)	Potential pressures (3) vs (4)	Future labour market conditions
Total	14,613.1	Fair	A	A	A	A	–	Fair
<b>Skill type</b>								
Business, finance and administration	2,980.7	Fair	A	AA	A	A	–	Fair
Natural and applied sciences	1,064.4	Fair	AA	A	A	A	–	Fair
Health	934.6	Good	AA	AA	AA	A	Up	Good
Social science, education, government service and related	1,073.2	Fair	AA	AA	AA	AA	–	Fair
Art, culture, recreation and sport	408.8	Fair	A	A	BA	AA	Down	Fair*
Sales and service	3,952.9	Limited	A	A	A	AA	Down	Limited
Trade, transport and equipment operators	2,351.2	Fair	A	A	A	A	–	Fair
Primary industry	527.2	Limited	BA	A	A	AA	Down	Limited
Processing, manufacturing and utilities	1,319.7	Limited	A	A	A	A	–	Limited
<b>Skill level</b>								
Management	1,372.1	Good	A	AA	AA	BA	Up	Good
University degree	2,513.6	Fair	AA	AA	AA	A	Up	Fair*
College diploma or apprenticeship training	4,612.1	Fair	A	A	A	A	–	Fair
High school diploma	4,653.4	Fair	A	A	A	A	–	Fair
Only on-the-job training	1,461.5	Limited	BA	A	BA	BA	Down	Limited
AA = above average; A = average; BA = below average; – = no change; * = pressures insufficient to change future conditions.								
Source: HRSDC-PRCD, Labour Market and Skills Forecasting and Analysis Unit, Reference Scenario 2004.								

### ***Labour market conditions to remain good in health sector occupations...***

Potential pressures over the next five years are expected to be strongest in the health sector. This results from an above-average increase in expansion demand, an above-average number of people retiring, and an average increase in new supply. Current labour market conditions are already good for this occupational grouping, and they are expected to remain favourable in the future.

<sup>11</sup> Potential pressures by occupation are thus assessed using a quantitative estimate of new demand and supply. Growth in earnings is not used in this assessment, given the difficulty of forecasting this variable at a detailed occupational level.

Potential pressures are expected to be weak over the next five years for the following occupational groupings: sales and services; art, culture, recreation and sport; and the primary industry. This generally follows from below-average or average growth in expansion demand and in the number of people retiring, and from an above-average growth in new supply.

### ***...and in management occupations***

Increasing pressures in management occupations and in those generally requiring university education are projected over the next five years, but for the latter group, these pressures will be insufficient to establish good future conditions. Current conditions are limited for occupations requiring only on-the-job training, and the potential pressures are expected to be weak, which means that future conditions will remain limited.

However, that analysis does not mean that all occupations within these groups are expected to experience identical pressures. Annex 6 presents detailed results for all two-digit occupations (25 occupational groupings) and three-digit occupations (139 occupations). For example, professional occupations in business and finance (a two-digit occupational grouping) have fair future labour market conditions, but one of the two three-digit occupations within this group (human resources and business service professionals) has good future labour market conditions.

## **2.5 Occupations facing significant labour market pressures**

The methodology used by the U.S. Bureau of Labor Statistics to identify occupations experiencing significant current labour market pressures was outlined in Section 1.5. It was pointed out that this methodology tends to underestimate the number of such occupations. Here, we expand that method to facilitate the identification of occupations that are currently facing labour market pressures and are expected to continue to do so over the next five years. Several conditions must be met for an occupation to be classified as facing significant future labour market pressures:

- The occupation must currently have an unemployment rate at least 30% below average and must meet, at the minimum, one of the two other thresholds identified by the BLS – namely, an employment growth rate at least 50% faster than the average, or wage increase at least 30% faster than average.
- The occupation must be rated as facing “good” current and future labour market conditions.
- The occupation must have at least 10,000 workers to avoid spurious results generated by unreliable data.
- Increases in the demand for workers that occur as a result of expansion demand and retirements must significantly exceed additions to the supply of workers from immigration and from the formal education system.

The following table highlights some of the occupations currently facing pressures (at the three- and four-digit 1991 SOC level):

Skill type	Occupations	Non-student employment 2003 (000s)
Business, finance and administration	Human resources managers (SOC 0112) Banking, credit and other investment managers (SOC 0122) Specialists in human resources (SOC 1121) Loan officers (SOC 1232) Medical secretaries (SOC 1243)	30.1 57.1 53.0 40.5 51.0
Natural and applied sciences	Civil engineers (SOC 2131)	37.3
Health	Managers in health care (SOC 0311) Physicians, dentists and veterinarians (SOC 311) Optometrists, chiropractors and other health diagnosing and treating professionals (SOC 312) Pharmacists (SOC 3131) Physiotherapists (SOC 3142) Nurse supervisors and registered nurses (SOC 315) Medical laboratory technologists and pathologists' assistants (SOC 3211) Medical laboratory technicians (SOC 3212) Dental hygienists and dental therapists (SOC 3222) Ambulance attendants and other paramedical occupations (SOC 3234)	20.8 90.1 10.9 19.0 17.6 256.6 18.4 22.5 13.6 16.3
Social science, education and government service	Managers in public administration (SOC 041) Psychologists (SOC 4151) Social workers (SOC 4152)	33.3 14.9 46.0
Sales and service	Police officers and firefighters (SOC 626) Elemental medical and hospital assistants (SOC 663)	91.1 18.1
Trades, transport and equipment operators	Residential home builders and renovators (SOC 0712) Supervisors in printing and related occupations (SOC 7218) Aircraft mechanics and aircraft inspectors (SOC 7315) Power systems and power station operators (SOC 7352)	68.8 12.7 16.0 10.2
Processing, manufacturing and utilities	Manufacturing managers (SOC 0911) Supervisors in plastic and rubber products manufacturing (SOC 9214) Supervisors in other mechanical and metal products manufacturing (SOC 9226) Petroleum, gas and chemical process operators (SOC 9232)	85.5 14.4 32.3 13.4

As was previously determined, the largest number of occupations expected to be facing labour market pressures is concentrated in the health sector. Pressures are expected to be particularly acute for such occupations as doctors, nurses, pharmacists, medical technologists and technicians, and assisting occupations in support of health services. Growth in labour demand will follow from the aging of the population, increased government funding for health care and the high number of retirements. Supply growth is expected to be relatively weak. Immigration will be limited because of foreign credential recognition issues and of the strong global demand for health care workers. New supply from the education system will also be limited as result of the long training time (up to seven years for doctors) and of problems in the institutional capacity to handle new enrolments.

Other occupational groupings expected to experience future pressures include:

- management occupations (e.g. managers in public administration and human resources managers), largely as a result of above-average levels of retirements;
- occupations in social sciences and government service (especially psychologists and social workers), as a result of increased government funding and above-average levels of retirement;
- selected occupations in the sales and service sector (e.g. police officers and fire-fighters), largely as a result of increased demand for security and above-average levels of retirements; and
- several occupations in the trades (especially home builders and renovators, aircraft mechanics and inspectors, power systems and power station operators), as a result of average growth in new demand but below-average growth in new supply.

## *Chapter 3: Concluding Remarks*

Policy decisions are often based upon an uncertain view of how the future will unfold. The use of forecasting models represents a strategy to deal with such uncertainty. In the labour market area, forecasting models help to identify the most likely trends in the demand and supply of labour (i.e. skills) over the medium to long term. The models and the resulting projections also represent a useful tool for policy issue verification and policy analysis.

It is important to note that the purpose of this labour market outlook is not to predict employment levels with as small a margin of error as possible. It cannot do so for two reasons. First, all forecasts are conditional upon a set of demographic, macroeconomic, industrial and labour market assumptions, and these could turn out to be erroneous. At the same time, however, the information content of the broad trends on which the assumptions are based should be of value. Updating the forecast on an annual basis thus makes it possible to integrate recent developments that are pertinent to occupational projections. Second, the HRSDC occupational projections exercise is used to identify prospective gaps between labour demand and supply over the medium term. By definition, prospective gaps do not actually materialize in subsequent data: if supply falls short of prospective demand, employment figures show the former, not the latter. Thus the determination of future labour market conditions by occupation provides an *ex ante* view of the labour market. If the prospective gaps become known (through labour market information products for instance) and labour supply (e.g. educational choices) or demand (e.g. firm location decision) behaviour is affected by them, they will have an impact on future labour market conditions (*ex post*). For example, this report has highlighted significant labour market pressures and assigned a “good” current and future labour market conditions rating to several occupations. If, on the basis of this information, a large proportion of students choose a field of study associated with one of these occupations, then labour supply in that occupation will increase, leading to a lessening of pressures and possibly calling for a change in the future labour market condition rating.

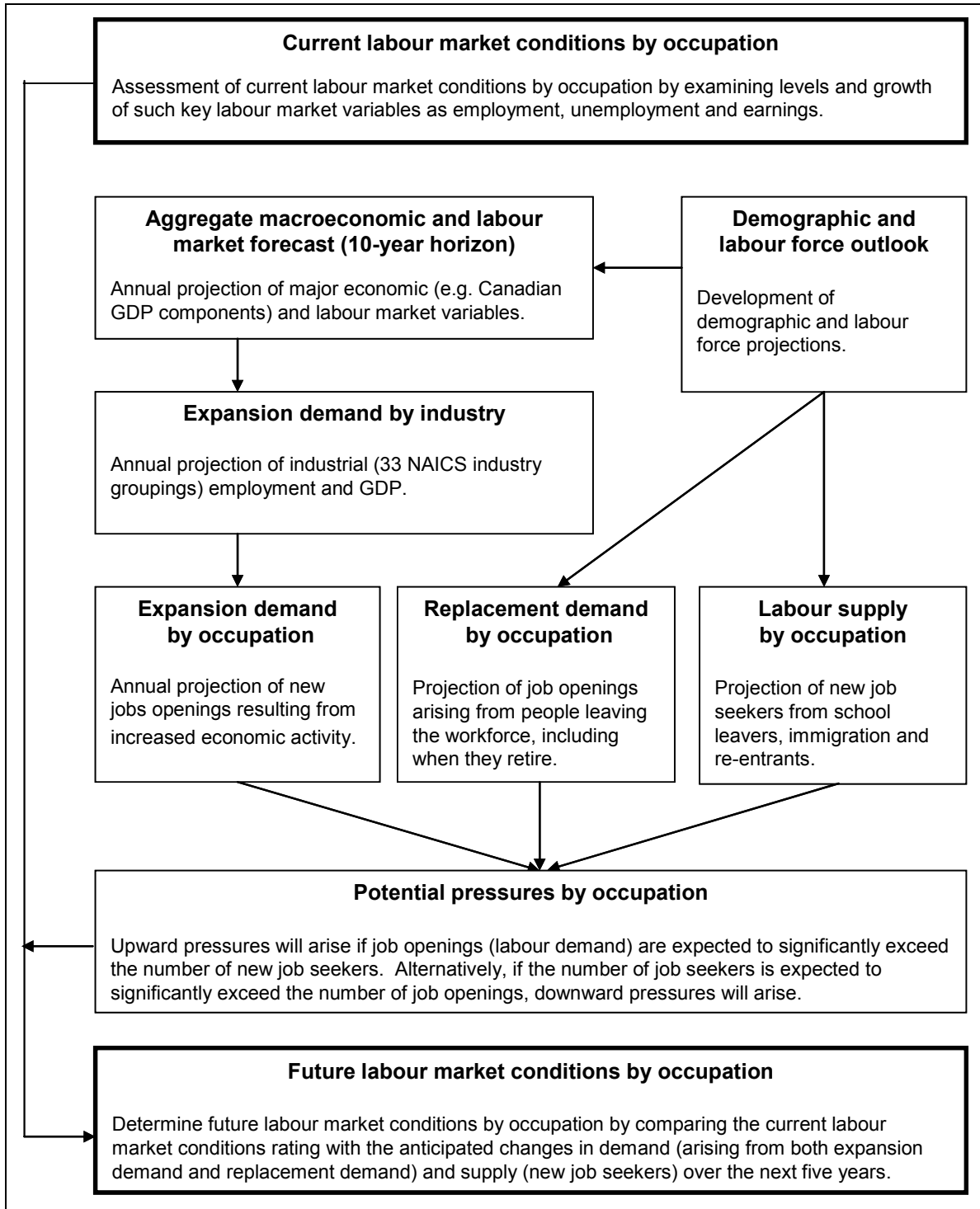








## *Annex 2: The Forecasting Process*





## *Annex 3:*

# *Demographic and Labour Force Outlook*

Over the forecast horizon (2004-13), changes in the size and structure of the population will impact the employment outlook in three major ways.

- First, the purchasing decisions that consumers make will help to determine where the jobs are in the economy. These spending choices are highly contingent upon the age structure of the population. As they change over the projection period, so will the industries and occupations employing the workers.
- Second, the changing age structure will lead to shifts in government spending patterns. For example, the aging of the population is expected to cause a shift in dollars spent from the education sector to the health sector, which provides more services to older citizens.
- Finally, the aging of the population will also affect the existing labour market through the aging of the labour force and through a resulting increase in the number of retirements.

### ***The Canadian population will continue to increase, but at a slower rate...***

The Canadian population should rise steadily from 31.6 million in 2003 to 33.2 million in 2009. This sluggish growth, which is projected to slow down from an average annual rate of 1.0% between 1999 and 2003 to 0.8% between 2004 and 2008, is largely caused by a decline in the natural increase of the population. Immigration will thus play an increasingly important role in Canada's demographic growth.

- With persistently low fertility rates, in addition to an increase in mortality, the natural increase of the population (births<sup>12</sup> minus deaths<sup>13</sup>) is declining. The natural increase is expected to decline from 103,900 individuals a year in 2003 to 66,000 in 2013, thus contributing to an increase of only 0.2% in the total population at the end of the period.
- Immigration has become a significant contributor to population growth in Canada. Over the past 10 years, the immigration rate has averaged 0.73% of the population each year. Net international immigration (immigration minus emigration) is expected to increase from 164,200 individuals a year in 2003 to 190,330 by 2013. While the contribution of immigration to population growth is projected to remain relatively stable over the 2004-13 period (0.6%), it is projected to account for nearly 75% of the population increase by 2013.<sup>14</sup>

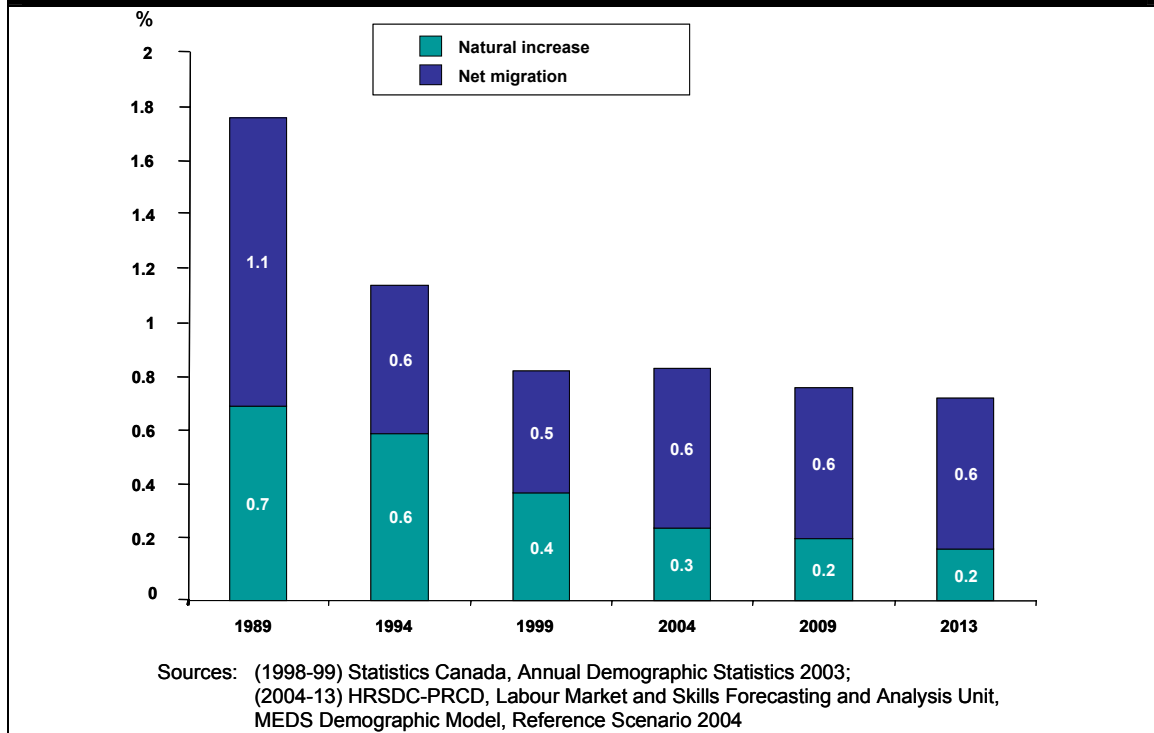
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<sup>12</sup> The number of births is based on three factors: (1) the fertility rate (set at 1.5 children per woman); (2) the average age of mothers at the birth of their first child (steady at 29.0 years); and (3) the population of women of childbearing age.

<sup>13</sup> In terms of mortality, higher living standards and medical advances are expected to continue increasing life expectancy, but at a slower rate. The life expectancy of women was 81.4 years in 1996 and is expected to rise to 84.8 years by 2046. The life expectancy of men was 75.5 years in 1996 and is expected to rise to 80.9 years by 2046.

<sup>14</sup> Based on constant immigration and emigration rates of 0.75% and 0.19%, respectively, throughout the projection period.

## Natural Increase and Immigration as Percentages of Total Population, 1989-2013

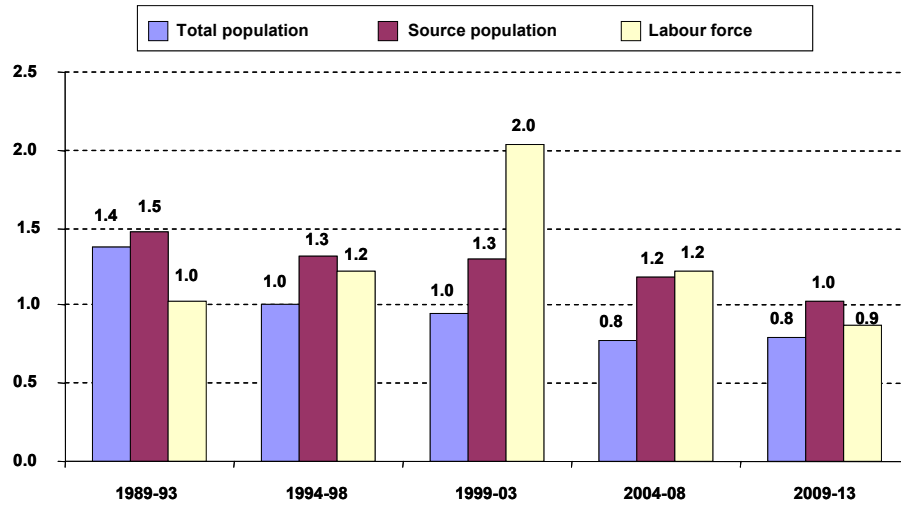


### ***...and this will have an impact on the source population and on the labour force***

The decline in the natural increase will have the direct effect of slowing down the growth of the labour force source population (individuals aged 15 years and over) over the next decade. That growth is expected to decrease from 1.3% over the 1999-2003 period to 1.2% over the 2004-08 period, and to 1% over the 2009-13 period.

Labour force growth is expected to decrease from 2.0% over the 1999-03 period to 1.2% over the 2004-08 period, and to level off at 0.9% over the 2009-13 period. The overall participation rate is projected to remain essentially unchanged over the next five years at 67.5% as the greater participation of older people is muted by the aging of the workforce. Over the longer term, the latter development is expected to cause a drop in the overall participation rate as older people tend to participate less than core-age people. The participation rate is projected to decline beyond 2009, reaching 67.1% by 2013.

## Population Growth, 1989-2013 (Average Annual Growth Rates)



Source: Statistics Canada; HRSDC-PRCD, Labour Market and Skills Forecasting and Analysis Unit, Reference Scenario 2004





# Annex 4: GDP, Employment and Productivity Growth by Industry, 1999-2013

	Average annual growth rates (%)											
	1999-03			2004-08			2009-13					
	GDP	Empl.	Prod.	GDP	Empl.	Prod.	GDP	Empl.	Prod.			
Goods-producing industries	3.6	2.2	1.4	3.0	1.5	1.5	2.7	0.9	1.8			
Agriculture	1.2	-4.5	6.1	1.6	0.5	1.1	2.0	0.3	1.6			
Other primary industries	0.7	-0.3	1.1	2.4	0.8	1.6	2.2	0.2	2.0			
Logging and forestry	1.4	-1.4	2.8	1.2	-0.3	1.6	0.7	-0.7	1.3			
Fishing, hunting and trapping	0.2	-1.3	1.6	0.5	-0.5	0.9	0.9	-0.1	1.0			
Mining (except oil and gas)	2.0	-5.5	8.0	4.1	2.4	1.6	1.8	-0.3	2.1			
Oil and gas extraction	-0.6	1.6	-2.2	2.1	0.4	1.6	2.7	0.9	1.7			
Support activities for mining and oil and gas extraction	4.3	5.8	-1.2	2.9	1.7	1.1	2.8	0.9	1.8			
Construction	4.3	4.7	-0.4	1.9	0.5	1.4	1.7	0.7	1.0			
Manufacturing	3.4	1.7	1.8	3.1	1.3	1.8	3.1	1.1	1.9			
Food products and beverages	1.6	2.7	-1.2	3.0	1.3	1.7	2.3	0.3	2.0			
Wood	5.7	4.6	1.0	0.9	-0.1	1.1	1.8	0.5	1.3			
Pulp and paper, paper products	2.1	-2.0	4.2	1.9	0.6	1.3	1.9	-0.3	2.2			
Printing and publishing	1.8	4.0	-2.0	1.8	-0.2	1.8	0.8	-0.6	1.5			
Manufactured and mineral products	3.4	-1.1	4.6	3.0	1.0	1.9	2.3	0.2	2.1			
Rubber, plastics and chemicals	6.2	2.6	3.5	2.2	1.0	1.2	2.3	1.1	1.2			
Metal fabrication and machinery	4.0	2.6	1.3	3.9	1.8	2.1	2.6	0.6	2.0			
Electrical and electronic products	2.4	2.0	0.5	7.1	2.9	3.9	8.7	5.4	3.1			
Motor vehicles, trailers and parts	3.2	4.5	-1.2	1.7	0.8	0.9	2.1	0.9	1.2			
Other transportation equipment	4.3	-2.0	6.4	6.0	2.7	3.2	3.9	1.6	2.3			
Other manufacturing	1.4	-1.0	2.4	3.3	1.8	1.5	3.1	1.4	1.7			
Utilities	-0.2	2.6	-2.7	2.9	0.4	2.5	2.7	0.1	2.6			

Services	Average annual growth rates (%)					
	4.4	2.4	2.4	1.7	1.8	0.9
Commercial services		2.4	2.0	1.4	1.8	0.9
Wholesale trade	5.9	4.4	1.4	1.7	1.9	0.4
Retail trade	4.5	2.2	2.3	1.4	1.8	0.5
Transportation and storage	2.2	1.4	0.9	2.1	0.7	1.7
Finance, insurance and real estate	4.5	1.8	2.6	0.5	2.5	0.1
Professional business services	2.3	2.6	-0.2	1.8	1.9	1.6
Computer system design services	13.8	6.9	6.5	2.8	2.4	2.9
Other professional services	6.1	1.7	4.3	2.4	1.3	2.5
Management, administrative and other support	6.3	5.0	1.3	1.5	1.7	0.9
Information, culture and recreation	6.6	2.7	3.8	1.1	1.7	0.5
Accommodation, food and recreation	1.8	2.1	-0.3	1.7	2.7	1.1
Other services	3.9	-0.1	4.0	0.8	2.2	0.5
Non-commercial services	2.3	3.0	-0.6	2.7	0.7	1.1
Educational services	1.4	2.4	-1.0	1.4	0.6	0.6
Health services	3.1	3.4	-0.3	3.4	0.9	1.5
Public administration	2.8	0.9	2.0	1.3	0.9	0.7

Source: HRSDC-PRCD, Labour Market and Skills Forecasting and Analysis Unit, Reference Scenario 2004

Several factors will have an impact on the employment outlook by industry; they include:

- the move towards a knowledge-based economy;
- the demographic outlook;
- the fiscal outlook of governments;
- supply constraints for some natural resources (e.g. allowable cuts in forestry, declining oil and gas reserves).

### ***The knowledge-based economy improves prospects for business services***

The **computer systems design and services** industry has matured and, as a result, the double-digit growth rates recorded in the second half of the 1990s have definitely come to an end. Nevertheless, this sector is expected to grow at an average annual rate of 5.3% over the 2004-08 period, given that computer technology has become such an integral part of the economy. Not surprisingly, the slowdown in activity in the computer systems sector has resulted in a much lower demand for labour. Employment is expected to increase at an average annual rate of 2.8% between 2004 and 2008 compared with a growth of 20.5% over the 1994-99 period. Employment growth is also expected to weaken due to the trend towards the off-shoring of computer services to India and China. However, despite slower growth, the computer systems industry is expected to lead all service-producing industries in terms of output growth (and to be second in employment growth).

**Professional business services** (a group that includes legal, accounting, architectural and engineering services) and **other professional services** (which include scientific, technical and advertising services) experienced strong growth during the second half of the 1990s, taking advantage of the growing trend among companies towards outsourcing non-essential processes in order to increase operational efficiency, and of the move towards the knowledge-based economy. In 2002 and 2003, however, these two groups had some difficulties as a result of lower corporate profits and a decrease in non-residential construction. Over the projection period, the demand for these services is expected to increase, benefiting from a recovery in corporate profits and non-residential investment. The estimated annual average GDP growth in these two sectors over the next five years is 3.8%. Despite significant productivity gains over the period, employment is projected to experience robust annual average growth in the order of 1.8% for professional business services and 2.4% for other professional services.

The **information, culture and recreation** sector (which includes wireless and satellite telecommunications services, broadcasting, Internet and cable) has slowed down considerably. In the mid-1990s, many of these services were just starting up and they swept the market with incredible speed. Since 2002, however, a number of services in this group have begun to mature, while others were hit hard when the technology bubble burst. As a consequence, employment declined in 2002 and 2003. As some of the sub-sectors mature and others recover, the rate of GDP growth in the industry (2.8%) is projected to be close to that of the overall economy (3.0%) over the 2004-08 period. However, many technological changes in the information, culture and recreation sector

will favour productivity gains over employment, which should limit job growth to 1.1% annually.

The robust growth in the **finance, insurance, real estate and leasing** sector in both 2002 and 2003 is attributable to the hot real estate market. Even though output is expected to grow near the average rate over the next five years, growth will be slower than over the last five years, as growth in real estate and mortgage lending is expected to slow down. On the other hand, increases in wealth and capital assets will benefit this sector. Job levels in the industry are expected to record a weak growth (0.5% a year) over the 2004-08 period, because technology – including automatic bank machines and house listings on the Internet – will reduce the need for labour.

### ***Demographics and the fiscal outlook will affect jobs in government and social services***

Throughout much of the 1990s, growth in the **health care and social assistance** sector was minimal as governments in Canada cut back significantly on health care spending in order to bring deficits under control. The emergence of surpluses in the late 1990s resulted in greater spending on health care, leading to a sharp increase in activity in this sector. As a consequence, the health care and social assistance sector has been a major driver of employment growth in the service-producing sector over the past two years. According to the Canadian Institute for Health Information, health care spending is estimated to have risen by 7% in 2002 and 7.1% in 2003. This increase helped propel employment in the sector by 4.2% in 2002 and 4.8% in 2003. Since the beginning of 2000, the number of jobs has gone up by 240,000 – an increase of almost 17%. In addition to the improved budgetary situation of the provinces and the federal government, the growth in health occupations can also be explained by greater pressure on the health system from an aging population that requires more and more care and from a growing shortage of health care workers (insufficient labour supply and increased retirements). This situation is projected to continue over the next few years. Thus growth at rates significantly higher than the national averages is anticipated for production (4.4%) and employment (3.4%) during the 2004-08 period. This solid projection reflects the commitment made by both levels of government to improve Canada's health care system. Beyond 2006, real growth should gradually decline but will remain above Canada-wide averages because of the funding required to meet the needs of a rapidly aging population. New technologies being introduced into the health care system will eventually enable care to be provided to Canadians with fewer employees.

After job losses in 2000 and anaemic growth in 2001, labour market conditions improved significantly in the **education** sector in 2002 and 2003, with healthy employment increases of 5.1% and 3.4%, respectively. The better financial situation of governments, the underfunding of the education sector in previous years and the arrival of Ontario's double cohort led to a significant increase in investment in the education system. Activity in education is generally tied to Canada's demographic profile and fiscal policy. As a result, real output in this sector is expected to gradually slow down over the forecast period as Canada's population ages. Specifically, as the "echo-boom" generation leaves the 0-24 cohort, the share of the population in that age group will decline significantly.

After expanding at growth rates above 2% in the 2004-05 period, growth is projected to average only 1.5% in the 2006-13 period. Employment in the education sector is expected to grow at 1.4% a year, which is slightly below the average for all industries over the 2004-08 period. The need for fewer teachers will result in slow growth in employment in the latter years of the forecast period.

The outlook for **public administration** is closely linked to the federal government's fiscal situation. In the 1990s, real output either declined or recorded minimal gains as the federal government grappled with huge deficits. Employment declined for seven consecutive years between 1994 and 2000. Once Canada's fiscal situation was brought under control, governments resumed hiring and real output rebounded. The number of employees in public administration increased by 4.7% in 2003, after growth of 1.6% in 2002 and 0.6% in 2001. It is mainly in the federal administration that new hiring took place during this period. In 2004-05, real output should expand at an annual pace of close to 3% per year. Real growth is expected to remain close to or above the 2% level for the remainder of the forecast period. It is assumed that Canada will run small surpluses and, as a result, there should not be a need for severe cutbacks in government services over the long term. Over the 2004-08 period, employment in public administration should increase at an annual average rate of 1.3%.

### ***Employment in consumer-based goods and services will follow the trend in the overall economy***

Over the past two years, the **trade** sector has recorded employment growth below the average for the economy. That slower growth can be explained by movement in opposite directions in the two sub-sectors – retail and wholesale – in 2002 and 2003. The strong employment growth in retail trade recorded in 2002, sustained by a buoyant economy, was partly offset by stagnant growth in wholesale, especially in sales of machinery and equipment, which were down because of a lack of business investment. The opposite happened in 2003: retail trade suffered from the effects of severe acute respiratory syndrome (SARS) and from a slowdown in economic growth, while wholesale trade was pushed along by a strong rebound in investment in machinery and equipment. Both sub-sectors are expected to record good performances over the next five years in terms of output, with average annual increases in GDP of 3.3% and 3.7%, respectively. This positive outlook is mainly the result of solid growth in real disposable income – which is projected to advance at an average annual rate of 2.8% over the forecast period – and of relatively strong growth in overall employment. As a result, households will have discretionary income to spend at both wholesale and retail outlets. However, productivity gains over the same period are projected to result in slower average annual growth in retail (1.4%) and wholesale (1.7%) employment. Some weakening will occur in the outer years of the forecast horizon (2009-13) as Internet shopping increases in popularity. Over the 2009-13 period, employment is expected to grow by 0.5% and 0.4%, respectively, for retail and wholesale trade. Over the long term, the aging of Canada's population will also have a negative effect on the trade sector, as older people will spend more on health care services at the expense of consumer goods.

Despite the strength of the Canadian economy and high automobile sales, the **transportation and warehousing** industry recorded a decline in employment in 2002, attributable mainly to the weakness of the U.S. economy and to the financial troubles faced by the airlines. The renewed confidence in airline travel in 2003 enabled employment to partly get over the problems caused by the attacks of September 11, 2001, although progress was stalled by weak exports of goods to the United States due to the appreciation of the Canadian currency and to the sluggishness of the U.S. economy in the first half of 2003. Over the next few years, the strong growth expected in the U.S. economy should stimulate Canadian exports to that country and thus improve growth in the transportation and warehousing industry. The demand for labour should remain high over the forecast period (2004 to 2008), with an annual average growth of 2.1%.

The performance of the **accommodation and food services** industry, which recorded relatively sound growth in 2002, was affected by various negative events in the Canadian economy in 2003, including SARS and the appreciation of the Canadian dollar. Employment did rise in 2003, however, although less rapidly than in 2002. The effects of SARS disappeared quickly, however, and tourism has taken off again in 2004. Canada remains an affordable tourist destination, despite the higher Canadian dollar. Rising real disposable income and the aging population are also expected to contribute to increased consumption of accommodation and food services. The GDP should grow at a faster pace than average (4.4% a year) from 2004 to 2008, but significantly higher productivity should keep employment growth at an average rate of about 1.7% a year.

### ***Manufacturing employment is expected to be strong, but job creation will be tempered in construction and utilities***

Over the past two years, the housing boom has been the driving force behind the employment gains observed in the **construction** industry. Investment in the residential sector soared in 2002, whereas the non-residential sector recorded a drop in investment. The net result for the industry was an increase in employment of 4.6% (39,000 additional jobs). Under the impetus of the residential sector, construction continued its strong expansion in 2003, adding 49,000 jobs (5.6%). Not only was there an increase in housing starts, but the renovation sector also picked up, spurred on by the strong resale market and by the aging of units built during the boom of the late 1980s. The housing boom also had a major spinoff effect on employment in the manufacture and retailing of furniture, the retailing of construction material, real estate and banking (mortgage market). Unlike in 2002, however, growth in the construction industry in 2003 was not limited to the residential sector, as growth in the non-residential sector resumed.

The strength in Canada's residential construction sector will continue in 2004. Beyond that, however, real output is projected to slow down significantly, reflecting much weaker activity in the housing market. In the short term, higher interest rates and a lack of pent-up demand will negatively affect housing activity. Over the long term, the aging of Canada's population is projected to constrain housing activity as the number of people in the age group likely to buy a first home drops. Residential renovation could, however, make up for some of the decline in housing starts. In addition, non-residential construction in the energy sector will also give a boost to the industry thanks to major

electricity and oil and gas projects. However, activity in non-residential construction outside the energy sector will restrain growth in real output, especially in the short term. In an environment characterized by poor profits and by consolidations undertaken in the wake of mergers and acquisitions, the demand for office space in key centres has been well below the supply in the last few years, despite the conservative level of building activity. As a result, vacancy rates have increased across Canada. Moreover, lower capacity utilization and significant increases in business inventories suggest that a good deal of excess supply has yet to be absorbed before a recovery can begin. Overall, employment in the construction industry is expected to grow by an annual average rate of 0.5% from 2004 to 2008.

Output in the **utilities** sector is linked to industrial production in Canada. When the economy slumped in 2001 and again in 2003, real output in the utilities sector declined. As we anticipate strong growth in industrial production over the forecast period, GDP growth in utilities is expected to be similar to the overall average. The increase will also be in response to higher energy demand in Canada and the United States and to the obsolescence of some existing facilities in the energy sector and in municipal services (water and sewer). The outlook for the utilities sector will also benefit from the decision by a number of Canadian provinces to deregulate their electricity markets and to export electricity to the United States. However, because this is a capital-intensive sector in which new technologies have a significant impact on productivity, the demand for new labour over the next five years is expected to be very low and employment should increase only by 0.4% a year.

The year 2002 was very good for **manufacturing industries**, with employment jumping by 2.3% (51,000 more jobs). In 2003, the appreciation of the Canadian dollar, the beef embargo and relatively slow growth in the United States early in the year prevented the manufacturing sector from sustaining that trend. In fact, employment shrank by 32,000 (-1.4%) in 2003. Several sub-sectors of the Canadian manufacturing industry suffered setbacks that year. First, the beef embargo led to a drop in production in the beverage and food products industry. Then, the decline in exports caused by the appreciation of the Canadian dollar and weak American demand early in the year hurt exporting industries such as metal and machinery products, automobiles and parts, and computers and electronic equipment. Over the forecast period, growth in manufacturing production and employment is projected to be similar to the economy-wide average, with GDP increasing by 3.1% and employment by 1.3% over the 2004-08 period. However, the situation will vary considerably from one industry to another. As far as employment is concerned, the annual average growth should be robust in the manufacture of computer and electronic products (2.9%), other transportation equipment (2.7%) and metal products and machinery (1.8%), but is expected to be relatively weak in auto parts (0.8%), pulp and paper (0.6%), wood product manufacturing (-0.1%) and printing (-0.2%). Employment in the food and beverage industry is projected to grow by 1.3% a year over the period.

- In the **computer and electronic products** sector, manufacturers are still trying to muddle through after the collapse in the world market of telecommunication equipment in 2001. In 2003, suppliers of telecommunication services continued to cut their capital budgets because of their persistent financial weakness and excess capacity. Since the

end of 2000, GDP in the computer equipment and electronic products sector has tumbled, losing more than half its value. The decline has started to slow down and is nowhere near the free fall seen in 2001 and 2002, when GDP dropped by 23.3% and 11.5%, respectively. Employment growth followed basically the same path as production but in a less dramatic way. After growing by nearly 50% in the second half of the 1990s, employment has dropped by almost 20% since 2000. However, the computer and electronic products sector seems to have pulled itself out of the collapse of demand for computer and telecommunication equipment. A stronger economy in the United States and Canada and an increase in corporate profits should push up capital expenditures beginning in 2004, preparing the way for renewed demand for telecommunication equipment, computers and other electronic products. The recovery of expenditures on hardware and software in the United States and Canada is also the result of equipment obsolescence following three years of underinvestment after 2000. Excess capacity in the telecommunications industry will continue to have a negative impact, even though it is diminishing and is expected to gradually disappear over the next few years. Continued growth in wireless services and the start of a migration towards IP-based telecommunications systems – the newest trend in the industry – should stimulate telecommunications equipment sales. As a result, although growth will not reach the heights of the 1990s, the computer and electronic products industry should show the strongest annual average increases in both GDP (7.1%) and employment (2.9%) over the next five years, compared with other sectors.

- The **fabricated metal and machinery products** sector has generally experienced strong growth over the past decade, reflecting the fact that fabricated metal is an integral component of industrial production. In 2003, however, real output in this sector declined by 2.5%, a result of weakness in U.S. manufacturing, where much of its output is destined. Employment in the sector reflected the evolution of output, remaining stable in 2002 and declining in 2003. Over the coming years, the fabricated metals and machinery products sector should experience solid growth, as investments in machinery and equipment increase thanks to strong U.S. economic growth and a better performance of corporate profits. This should stimulate the export of Canadian metal products and machinery and increase employment in this sector by 1.8%.
- The **other transportation equipment** group includes aerospace products and parts manufacturing, rail cars and engines, ship and boat building, and other minor categories. Aerospace products and parts manufacturing dominates, with roughly three quarters of the sector's value-added output being attributable to this category. Thus, over the past few years, the manufacture of other transportation equipment has been significantly affected by the events faced by the airline industry. In particular, orders for new aircrafts dwindled after the September 2001 attacks, leading to significant declines in output and employment in the aerospace manufacturing industry over the 2002 to 2004 period. The situation seems to be improving, however, and the order books of aerospace firms have begun to fill up again. A stronger U.S. economy, renewed confidence in airline travel and a more stable exchange rate should help to bolster the demand for Canadian aerospace production. In addition, the steady decline witnessed in ship and boat building since the 1990s has ended; although growth in shipbuilding will remain muted, at least it will no longer be a drag on the overall sector



in the future. Finally, changing demographics, increased road congestion and environmental concerns should help to sustain the demand for automated transit systems, including rail. Overall, a strong rebound is expected in other transportation equipment manufacturing in 2005 and 2006, boosting real GDP growth to an average of 6.0% over the 2004-08 period; the rate is expected to ease to a 3.9% trend between 2009 and 2013. Employment in this sector is expected to grow by 2.7% per year over the 2004-08 period.

- Although the end of the year was not positive for the **motor vehicle and parts** sector, 2002 was a very good year overall, as sales were stimulated by low interest rates and by additional rebates offered by some car producers. However, a drop in sales in the United States in the last quarter of 2002 led to an increase in inventory, which in turn caused slowdowns or stoppages on some assembly lines. Total sales of new vehicles in Canada and the United States continued to decline in 2003. This can be explained in part by the fact that the number of new vehicles purchased in North America had been far higher than “normal” for several years. The market is therefore saturated, and the effectiveness of dealers’ incentives is dwindling. The coming years are expected to be more difficult for the Canadian automobile industry, especially in terms of job growth. This gloomy outlook is mainly attributable to excess world capacity in the automobile sector and to a shrinking of the market share held by the Big Three (Ford, General Motors and Daimler-Chrysler are the major employers in the Canadian automobile sector). The increase in production for the years 2004 to 2008 is projected to be below the economy-wide average at 1.7% a year. Moreover, Canadian plants are making investments aimed at maintaining their competitiveness by increasing productivity. As a result, job growth in the industry is expected to be below the average at 0.8% a year. The long-term employment outlook is even less optimistic, in light of demographic changes, slower export growth to the United States caused by strong foreign competition (especially from Mexico, Brazil and China) and greater investment in labour-saving technologies.
- **Food and beverage production** has taken off over the last few years. In the 1997-2002 period, production grew at an annual rate of more than 3%. In 2003, however, production declined, affected by poor sales on foreign markets. Exports suffered from the appreciation of the Canadian dollar, weak economic activity in North America and the restrictions imposed by our main trading partners on the import of Canadian beef. The appreciation of the Canadian dollar also encouraged foreign competition on the domestic market. Inventories have increased as a result of the lower demand, especially among beverage producers. In 2004, the end of the impact of the BSE crisis will result in a rebound in real output. Over the forecast period, the sector is projected to record average growth as it successfully transforms itself into an internationally competitive force in the world economy. However, greater productivity will mean that job growth will not keep pace with the increase in production. Over the 2004-08 period, average annual growth in GDP is projected to be 3.0%, whereas employment is expected to grow by 1.3%.
- The **wood products** industry registered strong growth over the past five years, with average annual increases of 5.7% for GDP and 4.6% for employment. This dynamic

performance reflects the strength of residential construction and greater access to foreign markets. In addition, the financial losses due to the countervailing duties imposed by United States against Canadian softwood were partially compensated by an increase in the production of wood products. However, the outlook for the wood products industry calls for a deterioration of the situation. The U.S. duties, the anticipated slump in the housing starts in Canada and across the border, and the decline in the supply of lumber will have a negative impact on the industry in the short term. The aging of the population and the subsequent decline in the demand for housing will have a significant downward impact on the demand for wood products over the long term. The development of new products made of plastic and steel to replace wood products and fibreboard made with straw will also impact this sector. The number of jobs is expected to decrease marginally (at an annual rate of -0.1%) in the wood products industry over the 2004-08 period.

- The outlook in the **pulp and paper** and **printing** industries is similar to that of the woods products industry. The number of jobs is expected to increase slightly in the pulp and paper industry (at an annual rate of 0.6%) and to decrease in printing (-0.2%). Production should be up slightly over the next five years compared with the last five years, but there will be no significant need for additional labour. General weakness in demand and a drop in advertising will have a negative impact on pulp and paper and printing over the short term. The growing use of e-mail and CD-ROMs is expected to reduce the demand for paper and printing, and to restrict production and employment growth over the long term. Greater use of electronic media will also mean lower demand for magazines and newspapers.

### ***Employment growth should be slow in occupations unique to the primary sector, except in the mining industry***

Employment in the **agriculture** sector in Canada has suffered from a number of factors over the 2000-02 period: low prices for wheat on the world market, a severe drought in western Canada, the embargo on Canadian beef by a number of countries including the United States, and the increasing use of labour-saving technology. As a result, employment declined by about 20% over the period. The agriculture sector rebounded in 2003, with real output soaring by 21.1% and employment rising by 3.0%. In 2004-05, however, growth in real output is expected to average less than 1% per year. Not only does this declining growth reflect a natural slowdown from the surge experienced last year, but the cattle industry will continue to be affected by the fact that trade in live cattle and beef will not resume fully in the short term. After 2005, growth should rebound somewhat but it will remain below the rates achieved in most other sectors of the Canadian economy. While the cattle industry is expected to recover, the overall agriculture sector will continue to be negatively affected by the ongoing subsidy war between Europe and the United States, which has led to low prices for many grains. Employment in this sector is projected to increase at an average annual rate of only 0.5% over the 2004-08 period. Sluggish growth in output will restrain employment growth, as will the solid growth in productivity, a result of ongoing investment in labour-saving technology by farmers.

Real output in the **fishing** sector is expected to increase slightly over the forecast period. The fishing industry is reeling from a cut of more than 20% in the total allowable catch for crab. It is also grappling with the closure of the East Coast cod fishery and decreased lobster findings, both resulting from declining stocks. However, the crab fisheries are expected to recover somewhat in the short term. Over the long term, real output will continue to be adversely affected by supply constraints. Any increases in output will come from productivity increases as opposed to gains in labour activity. In fact, employment is expected to record absolute declines over the 2004-08 period (annual average of -0.5%), but at a lesser pace than those recorded in 1999-2003 (average annual decrease of 1.3%).

The countervailing duties imposed by the United States on Canadian softwood lumber in 2002 seriously undermined growth in the **forestry** sector. The negative effects of the dispute continued in 2003, but the strong growth in residential construction offset the losses associated with the softwood lumber conflict, leading to production and employment gains in 2003. Housing starts are expected to start dropping off gradually in 2004-05, bringing down the demand for lumber. Moreover, the financial constraints imposed on Canadian lumber companies by the United States will continue to hold back profits and jobs in the forestry sector. In addition to the expected drop in demand over the next few years, environmental issues and Native land claims will limit the availability of this resource. The outlook for the Canadian forest industry is therefore not especially bright, and the industry is expected to have one of the lowest GDP growth rates of all Canadian industries from 2004 to 2008; employment is expected to decline (annual average of -0.3%). In fact, all gains in output will occur as a result of productivity increases rather than increased labour activity.

The **mining** sector (excluding oil and gas) lost jobs over the last five years because of higher productivity and falling prices for certain raw materials, which in turn led to less exploration. Higher prices for raw materials over the next few years, along with renewed economic growth in the United States, will help mineral exploration and mining in Canada. The recent development of the diamond sector in the North will continue to help boost production and jobs in mining. The Canadian mining sector will also receive a lift from the Voisey's Bay nickel-copper-cobalt deposit. The construction of the open-pit mine and mill/concentrator processing plant at the site in Newfoundland and Labrador is now well under way, and the production of concentrate is expected to begin in 2006-07. Mining GDP is expected to grow by 4.1% annually over the 2004-08 period. However, greater competition from Australia and some South American countries will limit employment growth. Employment should grow on average by 2.4% over the next five years, which is higher than the projected national average.

Although the GDP of the **oil and gas** industry rose in 2002, increased productivity led to a reduction in employment. More specifically, declines in drilling and in the price of natural gas led to a drop in employment among suppliers of oil and gas services. However, oil and gas prices rose in 2003, boosting extraction and exploration activities. Real output in the oil and gas extraction industry is forecast to increase by close to 3% in 2004 and 1.6% in 2005. This growth is quite modest, given the soaring prices for both natural gas and oil. Natural gas producers in Alberta and British Columbia are taking advantage of sky-high commodity prices and are drilling record numbers of new wells. However, total oil production will continue to fall in the short term even as the price of crude oil remains at historically high levels. Most analysts blame thinning resources from the Western Canada Sedimentary Basin Oil (WCSB) for the fact that production has failed to benefit from the high prices. Lower production at both Hibernia and Terra Nova will also reduce real output. While Hibernia and Terra Nova received permission to raise daily production limits, neither project has managed to meet the new levels and the targets are unlikely to be reached without further drilling. When additional production comes on board in 2006, real output is expected to grow by 3.2%. Beyond 2006, however, real output will be weaker, reflecting the fact that reserves are diminishing in the WCSB. While ongoing increases in production at the tar sands will ensure that real growth will remain above 2.5% per year over the long term, there will not be a return to the 5%-to-8% growth performance recorded in the first half of the 1990s. As in the mining sector, technological change will ensure that most of the increase in output over the forecast period will come from gains in productivity rather than increases in employment. Employment growth is expected to average only 0.4% per year over the 2004-08 period.

# Annex 5: Employment Growth by Occupation, 1999-2013

<b>Total employment</b>						
	Employment		Employment share		Annual average growth	
	2003	2013	2003	2013	1999-2003	2004-08 2009-13
<b>Total</b>	15,745,952	17,800,870			2.2%	1.5% 0.9%
<b>Skill level</b>						
Management	1,382,553	1,600,926	8.8%	9.0%	0.2%	1.8% 1.1%
Occupations usually requiring:						
University education	2,595,966	3,120,615	16.5%	17.5%	2.7%	2.3% 1.4%
College education or apprenticeship training	4,808,503	5,392,422	30.5%	30.3%	1.8%	1.4% 0.9%
High school education	5,097,138	5,700,725	32.4%	32.0%	3.1%	1.4% 0.8%
Only on-the-job training	1,861,793	1,986,181	11.8%	11.2%	1.5%	0.9% 0.4%
<b>Skill type</b>						
Business, finance and administration	3,107,217	3,482,843	19.7%	19.6%	1.5%	1.4% 0.9%
Natural and applied sciences	1,090,153	1,349,948	6.9%	7.6%	3.8%	2.3% 2.0%
Health	965,207	1,248,359	6.1%	7.0%	3.4%	3.5% 1.7%
Social science, education and government service	1,132,274	1,318,624	7.2%	7.4%	3.5%	2.0% 1.0%
Art, culture, recreation and sport	472,085	519,889	3.0%	2.9%	3.3%	1.3% 0.7%
Sales and service	4,656,960	5,156,560	29.6%	29.0%	2.3%	1.4% 0.6%
Trades, transport and equipment operators	2,406,230	2,643,766	15.3%	14.9%	1.8%	1.1% 0.8%
Primary industry	567,127	594,886	3.6%	3.3%	-1.7%	0.6% 0.4%
Processing, manufacturing and utilities	1,348,699	1,485,996	8.6%	8.3%	2.2%	1.2% 0.8%
<b>Occupation (two-digit level)</b>						
01 All management occupations	1,382,553	1,600,926	8.8%	9.0%	0.2%	1.8% 1.1%
11 Professional occupations in business and finance	450,486	540,579	2.9%	3.0%	2.0%	2.2% 1.5%
12 Skilled administrative and business occupations	895,125	979,304	5.7%	5.5%	-0.8%	1.2% 0.6%
14 Clerical occupations	1,459,841	1,612,187	9.3%	9.1%	3.6%	1.2% 0.8%
21 Professional occupations in natural and applied sciences	592,385	741,622	3.8%	4.2%	2.8%	2.4% 2.1%
22 Technical occupations related to natural and applied sciences	440,099	536,657	2.8%	3.0%	6.0%	2.1% 1.9%

	Employment		Employment share		Annual average growth		
	2003	2013	2003	2013	1999-2003	2004-08	2009-13
31	432,646	562,886	2.7%	3.2%	2.3%	3.6%	1.7%
32	197,245	253,946	1.3%	1.4%	1.9%	3.1%	2.0%
34	249,893	326,146	1.6%	1.8%	8.0%	3.6%	1.8%
41	919,344	1,057,768	5.8%	5.9%	3.4%	1.8%	1.0%
42	179,464	220,126	1.1%	1.2%	2.7%	2.7%	1.5%
51	201,105	217,760	1.3%	1.2%	2.6%	1.2%	0.4%
52	256,113	284,204	1.6%	1.6%	4.5%	1.3%	0.8%
62	1,017,587	1,151,385	6.5%	6.5%	3.9%	1.7%	0.8%
64	1,562,156	1,725,104	9.9%	9.7%	2.7%	1.5%	0.5%
66	1,448,409	1,559,054	9.2%	8.8%	2.5%	1.1%	0.4%
72-73	1,300,824	1,409,620	8.3%	7.9%	1.2%	0.9%	0.7%
74	809,215	913,539	5.1%	5.1%	2.1%	1.4%	1.0%
76	136,081	134,739	0.9%	0.8%	1.6%	-0.2%	0.0%
82	348,416	363,250	2.2%	2.0%	-1.7%	0.5%	0.3%
84	138,160	144,217	0.9%	0.8%	-1.6%	0.5%	0.4%
86	72,740	78,719	0.5%	0.4%	-2.5%	1.2%	0.4%
92	173,629	193,930	1.1%	1.1%	5.0%	1.3%	0.9%
94-95	877,873	979,533	5.6%	5.5%	3.3%	1.3%	0.9%
96	204,563	213,669	1.3%	1.2%	-3.2%	0.5%	0.4%

Source: Statistics Canada, National Occupational Classification; Statistics Canada, Labour Force Survey; HRSDC-PRCD, Labour Market and Skills Forecasting and Analysis Unit, Reference 2004 Scenario.

## Non-student employment

	Non-student employment		Employment share		Annual average growth		
	2003	2013	2003	2013	1999-2003	2004-2008	2009-2013
	14,613,105	16,522,107			2.1%	1.5%	0.9%
<b>Total</b>							
<b>Skill level</b>							
Management	1,372,127	1,587,736	9.4%	9.6%	0.3%	1.8%	1.1%
Occupations usually requiring:							
University education	2,513,592	3,024,034	17.2%	18.3%	2.7%	2.3%	1.4%
College education or apprenticeship training	4,612,141	5,171,227	31.6%	31.3%	1.7%	1.4%	0.9%
High school education	4,653,395	5,209,401	31.8%	31.5%	3.1%	1.4%	0.8%
Only on-the-job training	1,461,561	1,539,117	10.0%	9.3%	1.0%	0.7%	0.3%
<b>Skill type</b>							
Business, finance and administration	2,980,741	3,342,208	20.4%	20.2%	1.5%	1.4%	0.9%
Natural and applied sciences	1,064,364	1,319,499	7.3%	8.0%	8.3%	2.3%	2.0%
Health	934,582	1,207,461	6.4%	7.3%	3.2%	3.5%	1.7%
Social science, education and government service	1,073,247	1,248,902	7.3%	7.6%	3.4%	2.0%	1.0%
Art, culture, recreation and sport	408,772	449,074	2.8%	2.7%	2.7%	1.2%	0.7%
Sales and service	3,952,881	4,376,107	27.1%	26.5%	2.0%	1.4%	0.6%
Trades, transport and equipment operators	2,351,198	2,583,500	16.1%	15.6%	1.9%	1.1%	0.8%
Primary industry	527,248	552,578	3.6%	3.3%	-1.5%	0.6%	0.3%
Processing, manufacturing and utilities	1,319,739	1,452,185	9.0%	8.8%	2.3%	1.2%	0.8%
<b>Occupation (two-digit level)</b>							
01 All management occupations	1,372,127	1,587,736	9.4%	9.6%	0.3%	1.8%	1.1%
11 Professional occupations in business and finance	446,427	535,351	3.1%	3.2%	2.0%	2.2%	1.5%
12 Skilled administrative and business occupations	881,417	964,498	6.0%	5.8%	-0.8%	1.2%	0.6%
14 Clerical occupations	1,352,236	1,492,936	9.3%	9.0%	3.7%	1.2%	0.8%
21 Professional occupations in natural and applied sciences	581,143	728,272	4.0%	4.4%	2.9%	2.5%	2.1%
22 Technical occupations related to natural and applied sciences	426,011	520,000	2.9%	3.1%	6.0%	2.1%	1.9%
31 Professional occupations in health	424,141	551,238	2.9%	3.3%	2.4%	3.6%	1.7%
32 Technical and skilled occupations in health	191,111	246,532	1.3%	1.5%	1.5%	3.2%	2.0%
34 Assisting occupations in support of health services	234,329	305,315	1.6%	1.8%	7.4%	3.6%	1.8%
41 Professional occupations in social science, education and government service	873,436	1,003,684	6.0%	6.1%	3.2%	1.8%	1.0%
42 Paraprofessional occupations in law, social service and education	166,469	204,755	1.1%	1.2%	2.3%	2.7%	1.4%
51 Professional occupations in art and culture	188,446	205,490	1.3%	1.2%	2.2%	1.3%	0.4%

	Non-student employment	Employment share		Annual average growth				
		2003	2013	1999-2003	2004-2008	2009-2013		
		2003	2013	2003	2013	2013		
52	Technical and skilled occupations in art, culture, recreation and sport	205,952	225,991	1.4%	1.4%	3.9%	1.0%	0.9%
62	Skilled sales and service occupations	943,146	1,068,701	6.5%	6.5%	3.6%	1.7%	0.8%
64	Intermediate sales and service occupations	1,304,165	1,444,429	8.9%	8.7%	2.5%	1.5%	0.5%
66	Elemental sales and service occupations	1,083,441	1,150,349	7.4%	7.0%	2.1%	0.9%	0.3%
72-73	Trades, skilled transport and equipment operators	1,282,301	1,390,685	8.8%	8.4%	1.2%	0.9%	0.7%
74	Intermediate occupations in transport and equipment operators, installation and maintenance	784,535	884,632	5.4%	5.4%	2.3%	1.4%	1.1%
76	Trades helpers, construction labourers and related occupations	125,020	123,297	0.9%	0.7%	1.6%	-0.3%	0.0%
82	Skilled occupations in primary industry	343,364	357,702	2.3%	2.2%	-1.4%	0.5%	0.3%
84	Intermediate occupations in primary industry	115,557	121,200	0.8%	0.7%	-1.5%	0.6%	0.4%
86	Primary industry labourers	60,517	64,977	0.4%	0.4%	-2.3%	1.0%	0.4%
92	Processing, manufacturing and utilities supervisors and skilled operators	172,372	192,364	1.2%	1.2%	5.0%	1.3%	0.9%
94-95	Processing and manufacturing machine operators and assemblers	862,574	960,889	5.9%	5.8%	3.4%	1.3%	0.9%
96	Labourers in processing, manufacturing and utilities	192,538	200,494	1.3%	1.2%	-3.3%	0.5%	0.4%

Source: Statistics Canada, National Occupational Classification; Statistics Canada, Labour Force Survey; HRSDC-PRCD, Labour Market and Skills Forecasting and Analysis Unit, Reference Scenario 2004.



## *Annex 6: Overall Labour Market Conditions by Occupation*

	Non-student employment 2003	Current conditions	Expansion demand (1)	Retirements (2)	Demand (3)=(1)+(2)	Supply (4)	Potential pressures (3) vs (4)	Future conditions
<b>Total</b>	1,4613.1	Fair	A	A	A	A	--	Fair
Senior managers, managers in business, finance and administration	300.7	Good	A	AA	AA	BA	Up	Good
Legislators and senior management	80.1	Good	AA	AA	AA	BA	Up	Good
Administrative services managers	112.4	Good	AA	AA	AA	BA	Up	Good
Managers in financial and business services	89.5	Good	A	AA	AA	A	Up	Good
Managers in communication	18.6	Good	AA	BA	A	BA	Up	Good
Managers in engineering, architecture, science and information systems	57.2	Fair	AA	AA	AA	BA	Up	Good
Managers in health, education, social and community services	85.0	Good	AA	AA	AA	BA	Up	Good
Managers in public administration	33.3	Good	AA	A	AA	A	Up	Good
Managers in art, culture, recreation and sport	14.4	Fair	AA	AA	AA	AA	--	Fair
Managers in sales and service	622.1	Fair	A	AA	A	A	--	Fair
Sales, marketing and advertising managers	102.2	Fair	AA	AA	AA	A	Up	Fair*
Managers in retail trade	320.4	Fair	BA	A	A	BA	Up	Fair*
Managers in food service and accommodation	173.8	Fair	AA	A	AA	A	Up	Fair*
Managers in protective service	6.3	Good	A	AA	AA	BA	Up	Good
Managers in other services	19.4	Fair	A	AA	AA	BA	Up	Fair*
Managers in trades, transport and equipment operation	159.3	Good	A	A	A	BA	Up	Good
Managers in construction and transportation	129.7	Good	A	A	A	BA	Up	Good
Facility operation and maintenance managers	29.6	Fair	A	A	A	BA	Up	Fair*
Managers in primary production	7.8	Good	A	A	AA	BA	Up	Good
Managers in manufacturing and utilities	92.3	Good	A	AA	A	BA	Up	Good
Professional occupations in business and finance	446.4	Fair	AA	AA	AA	A	Up	Fair*
Auditors, accountants and investment professionals	315.8	Fair	A	AA	AA	A	Up	Fair*
Human resources and business service professionals	130.6	Good	AA	AA	AA	A	Up	Good
Skilled administrative and business occupations	881.4	Fair	A	AA	A	A	--	Fair
Clerical supervisors	121.6	Fair	AA	AA	AA	BA	Up	Good
Administrative and regulatory occupations	289.7	Fair	AA	AA	AA	BA	Up	Fair*
Finance and insurance administrative occupations	214.6	Fair	A	A	A	A	--	Fair
Secretaries, recorders and transcriptionists	255.6	Limited	BA	AA	A	A	--	Limited
Clerical occupations	1,352.2	Fair	A	A	A	A	--	Fair
Clerical occupations, general office skills	231.8	Limited	A	A	A	AA	Down	Limited
Office equipment operators	75.9	Limited	BA	A	BA	A	Down	Limited
Finance and insurance clerks	344.5	Fair	A	A	A	A	--	Fair
Administrative support clerks	219.5	Fair	A	AA	AA	BA	Up	Fair*
Library, correspondence and related information clerks	139.5	Fair	A	A	A	A	--	Fair
Mail and message distribution occupations	88.0	Limited	A	AA	AA	AA	--	Limited
Recording, scheduling and distributing occupations	253.0	Fair	A	A	A	A	--	Fair
Prof. occupations in natural and applied sciences	581.1	Fair	AA	A	A	A	--	Fair
Physical science professionals	24.2	Fair	A	AA	A	AA	Down	Fair*
Life science professionals	24.9	Fair	A	BA	BA	AA	Down	Fair*
Civil, mechanical, electrical and chemical engineers	109.0	Fair	AA	A	AA	A	Up	Fair*
Other engineers	66.7	Fair	A	A	A	A	--	Fair
Architects, urban planners and land surveyors	31.1	Fair	AA	AA	AA	AA	--	Fair
Mathematicians, systems analysts and computer programmers	325.3	Fair	AA	BA	A	A	--	Fair

	Non-student employment 2003	Current conditions	Expansion demand (1)	Retirements (2)	Demand (3)=(1)+(2)	Supply (4)	Potential pressures (3) vs (4)	Future conditions
Technical occupations related to natural and applied sciences	426.0	Fair	AA	A	A	A	–	Fair
Physical sciences	33.7	Fair	A	A	A	AA	Down	Fair*
Life sciences	38.2	Limited	A	A	BA	AA	Down	Limited
Civil, mechanical and industrial engineering	47.3	Good	AA	A	AA	AA	–	Good
Electronics and electrical engineering	183.2	Fair	AA	BA	A	A	–	Fair
Architecture, drafting, surveying and mapping	56.1	Limited	A	A	A	AA	Down	Limited
Other technical inspectors and regulatory officers	37.5	Good	A	AA	AA	A	Up	Good
Transportation officers and controllers	30.1	Fair	BA	AA	A	BA	Up	Fair*
Professional occupations in health	424.1	Good	AA	AA	AA	A	Up	Good
Physicians, dentists and veterinarians	90.1	Good	AA	A	AA	A	Up	Good
Optometrists, chiropractors and health diagnosis and treating professionals	10.9	Good	AA	A	AA	BA	Up	Good
Pharmacists, dieticians and nutritionists	25.2	Good	AA	A	AA	A	Up	Good
Therapy and assessment professionals	41.4	Good	AA	BA	AA	AA	–	Good
Nurse supervisors and registered nurses	256.6	Good	AA	AA	AA	A	Up	Good
Technical and skilled occupations in health	191.1	Good	AA	A	AA	A	Up	Good
Medical technologists and technicians	79.9	Good	AA	A	A	A	–	Good
Technical occupations in dental health care	22.5	Good	AA	BA	AA	AA	–	Good
Other technical occupations in health care	88.7	Fair	AA	A	AA	A	Up	Good
Assisting occupations in support of health services	234.3	Fair	AA	A	AA	A	Up	Good
Professional occupations in social science, education, government service and related	873.4	Fair	A	AA	AA	AA	–	Fair
Judges, lawyers and Quebec notaries	75.1	Good	AA	BA	A	A	–	Good
University professors and assistants	78.3	Fair	AA	AA	AA	AA	–	Fair
College and other vocational instructors	91.5	Fair	AA	AA	AA	A	Up	Good
Secondary and elementary school teachers and counsellors	403.9	Fair	A	AA	AA	A	Up	Fair*
Psychologists, social workers, counsellors, clergy and probation officers	123.3	Good	AA	AA	AA	AA	–	Good
Policy and program officers, researchers and consultants	101.4	Fair	AA	AA	AA	AA	–	Fair
Paralegals, social service workers and occupations, n.e.c.	166.5	Fair	AA	BA	A	AA	Down	Fair*
Professional occupations in art and culture	188.4	Fair	A	A	A	AA	Down	Fair*
Librarians, archivists, conservators and curators	15.0	Fair	BA	AA	BA	AA	Down	Fair*
Writing, translating and public relations professionals	93.4	Fair	A	BA	BA	AA	Down	Fair*
Creative and performing artists	80.0	Fair	AA	A	A	AA	Down	Fair*
Technical and skilled occupations in art, culture, recreation and sport	206.0	Limited	A	BA	BA	AA	Down	Limited
Technical occupations in libraries, archives, museums and galleries	15.1	Limited	BA	A	A	AA	Down	Limited
Photographers, graphic arts technicians and technical occupations	39.8	Limited	BA	BA	BA	AA	Down	Limited
Announcers and other performers	9.2	Limited	BA	BA	BA	AA	Down	Limited
Creative designers and craftspersons	91.3	Fair	A	BA	A	A	–	Fair
Athletes, coaches, referees and related occupations	50.5	Limited	BA	BA	BA	AA	Down	Limited

	Non-student employment 2003	Current conditions	Expansion demand (1)	Retirements (2)	Demand (3)=(1)+(2)	Supply (4)	Potential pressures (3) vs (4)	Future conditions
Skilled sales and service occupations	943.1	Fair	A	A	A	A	–	Fair
Sales and service supervisors	238.5	Good	AA	BA	AA	BA	Up	Good
Technical sales specialists, wholesale trade	131.1	Fair	A	A	A	BA	Up	Fair*
Insurance and real estate sales occupations and buyers	152.9	Fair	BA	A	BA	BA	–	Fair
Chefs and cooks	172.2	Limited	A	BA	BA	AA	Down	Limited
Butchers and bakers	61.3	Limited	AA	BA	A	AA	Down	Limited
Police officers and firefighters	91.1	Good	A	AA	A	A	–	Good
Technical occupations in personal service	96.1	Fair	A	A	A	A	–	Fair
Intermediate sales and service occupations	1,304.2	Limited	A	A	A	AA	Down	Limited
Sales representatives, wholesale trade	219.7	Fair	A	BA	BA	BA	–	Fair
Retail salespersons and sales clerks	402.0	Limited	A	A	A	AA	Down	Limited
Occupations in travel and accommodation	66.1	Limited	AA	A	A	A	–	Limited
Tour and Recreational guides and amusement occupations	4.8	Limited	BA	AA	A	AA	Down	Limited
Occupations in food and beverage service	186.6	Limited	A	BA	A	AA	Down	Limited
Other occupations in protective service	37.3	Fair	A	A	A	A	–	Fair
Childcare and home support workers	339.5	Fair	A	A	A	AA	Down	Fair*
Other occupations in personal service	48.3	Fair	AA	BA	A	A	–	Fair
Elemental sales and service occupations	1,083.4	Limited	BA	A	BA	AA	Down	Limited
Cashiers	200.5	Limited	A	BA	BA	AA	Down	Limited
Other sales and related occupations	153.6	Limited	BA	A	BA	AA	Down	Limited
Elemental medical and hospital assistants	18.1	Good	AA	BA	AA	A	Up	Good
Food counter attendants and kitchen helpers	167.3	Limited	A	BA	BA	AA	Down	Limited
Security guards and related occupations	87.8	Fair	A	A	A	A	–	Fair
Cleaners	375.9	Limited	BA	AA	BA	AA	Down	Limited
Other occupations in travel, accommodation and recreation	30.7	Limited	AA	A	A	AA	Down	Limited
Other elemental service occupations	49.5	Limited	BA	AA	A	AA	Down	Limited
Construction trades	779.4	Fair	A	A	A	A	–	Fair
Contractors and supervisors, trades and related workers	187.1	Good	A	AA	A	BA	Up	Good
Supervisors, railway and motor transportation occupations	32.8	Fair	AA	AA	AA	BA	Up	Fair*
Machinists and related occupations	68.7	Fair	A	BA	A	A	–	Fair
Electrical trades and telecommunications occupations	128.3	Fair	BA	AA	AA	A	Up	Fair*
Plumbers, pipefitters and gas fitters	62.1	Fair	BA	A	BA	BA	–	Fair
Metal forming, shaping and erecting occupations	33.8	Limited	A	A	A	AA	Down	Limited
Carpenters and cabinetmakers	126.9	Fair	BA	A	BA	A	Down	Fair*
Masonry and plastering trades	59.1	Fair	BA	BA	BA	BA	–	Fair
Other construction trades	80.6	Limited	A	A	A	A	–	Limited
Skilled transport and equipment operators	502.9	Fair	BA	A	A	A	–	Fair
Machinery and transportation equipment mechanics	183.3	Fair	BA	AA	A	A	–	Fair
Motor vehicle mechanics	159.8	Fair	A	BA	A	A	–	Fair
Other mechanics	29.3	Limited	A	A	A	AA	Down	Limited
Upholsterers, tailors, shoe repairers, jewellers	28.5	Limited	BA	AA	AA	A	Up	Limited*
Stationary engineers and power station and systems operators	31.8	Good	BA	A	BA	BA	–	Good
Train crew operating occupations	11.7	Limited	BA	A	BA	BA	–	Limited
Crane operators, drillers and blasters	17.0	Fair	BA	AA	A	BA	Up	Fair*
Printing press operators, commercial divers and other trades	41.5	Fair	BA	A	BA	BA	–	Fair
Intermediate occupations in transport, equipment operation, installation and maintenance	784.5	Fair	A	A	A	A	–	Fair
Motor vehicle and transit drivers	454.1	Fair	A	A	A	BA	Up	Fair*
Heavy equipment operators	84.5	Fair	BA	A	BA	BA	–	Fair
Other transport equipment operators and related workers	21.2	Limited	A	BA	A	BA	Up	Limited*
Other installers, repairers and servicers	57.2	Limited	BA	A	BA	A	Down	Limited
Longshore workers and material handlers	167.4	Limited	A	A	A	AA	Down	Limited
Trades helpers, construction labourers and related occupations	125.0	Limited	BA	BA	BA	AA	Down	Limited
Trades helpers and labourers	98.0	Limited	BA	BA	BA	AA	Down	Limited
Public works and other labourers, n.e.c.	27.0	Limited	BA	A	BA	A	Down	Limited

	Non-student employment 2003	Current conditions	Expansion demand (1)	Retirements (2)	Demand (3)=(1)+(2)	Supply (4)	Potential pressures (3) vs (4)	Future conditions
Skilled occupations in primary industry	343.4	Limited	BA	AA	A	BA	Up	Fair
Supervisors, logging and forestry	7.6	Limited	BA	BA	BA	A	Down	Limited
Supervisors, mining, oil and gas	16.0	Good	A	BA	A	BA	Up	Good
Underground miners, oil and gas drillers	30.9	Good	A	BA	A	BA	Up	Good
Logging machinery operators	14.4	Limited	BA	A	BA	BA	–	Limited
Contractors, operators and supervisors in agriculture, horticulture and aquaculture	252.6	Limited	BA	AA	A	A	–	Limited
Fishing vessel masters and skippers, fishermen	22.0	Limited	BA	A	BA	BA	–	Limited
Intermediate occupations in primary industry	115.6	Limited	BA	BA	BA	AA	Down	Limited
Mine service workers and operators in oil and gas drilling	11.3	Fair	A	BA	BA	BA	–	Fair
Logging and forestry workers	19.8	Limited	BA	A	BA	A	Down	Limited
Agriculture and horticulture workers	80.1	Limited	BA	A	BA	AA	Down	Limited
Other fishing and trapping occupations	4.4	Limited	BA	BA	BA	A	Down	Limited
Primary production labourers	60.5	Limited	BA	A	BA	AA	Down	Limited
Processing, manufacturing and utilities supervisors and skilled operators	172.4	Good	A	AA	AA	BA	Up	Good
Supervisors, processing occupations	77.7	Good	BA	AA	AA	BA	Up	Good
Supervisors, assembly and fabrication	74.0	Fair	AA	AA	AA	BA	Up	Good
Central control and process operators in manufacturing and processing	20.7	Good	BA	A	A	BA	Up	Good
Processing and manufacturing machine operators and assemblers	618.4	Limited	A	BA	BA	A	Down	Limited
Machine operators in metal and mineral products processing	36.2	Fair	A	BA	BA	BA	–	Fair
Machine operators in chemical, plastic and rubber processing	69.7	Limited	A	BA	BA	A	Down	Limited
Machine operators in pulp and paper product and wood processing	68.9	Fair	BA	BA	BA	BA	–	Fair
Machine operators in textile processing	22.9	Limited	A	BA	BA	A	Down	Limited
Machine operators in fabric, fur and leather products manufacturing	64.1	Limited	BA	BA	BA	A	Down	Limited
Machine operators in food, beverage and tobacco processing	93.2	Limited	A	BA	BA	A	Down	Limited
Printing machine operators and related occupations	30.4	Limited	BA	BA	BA	A	Down	Limited
Mechanical, electrical and electronics assemblers	123.0	Limited	A	A	A	A	–	Limited
Other assembly and related occupations	110.0	Limited	AA	BA	A	A	–	Limited
Machining, metalworking, woodworking and related machine operators	244.2	Fair	A	BA	BA	A	Down	Fair*
Labourers in processing, manufacturing and utilities	192.5	Limited	BA	AA	A	AA	Down	Limited

n.e.c. = not elsewhere classified; AA = above average, A = average, BA = below average, – = no change; \* = pressures insufficient to change future conditions.  
Expansion demand: BA≤0.95, AA≥1.72; retirements: BA≤1.32, AA≥2.34; demand: BA≤2.81, AA≥4.34; supply: BA≤1.95, AA≥4.97.  
Source: HRSDC-PRCD, Labour Market and Skills Forecasting and Analysis Unit, Reference Scenario 2004.