

Change in occupation mix: All sectors 2006 - 2016

Vol. 7, No. 1, 2019

Highlights

- In non-metro census divisions from 2006 and 2016, there was a smaller increase in the share (or percent) of employment in occupations usually requiring a university degree (i.e., Skill Group “A”), compared to the change in Ontario as a whole.
- This indicates a slower-paced shift towards occupations requiring a post-secondary degree, compared to the change for Ontario as a whole.
- However, there was a higher-paced shift towards occupations requiring a college diploma or apprenticeship training (i.e., Skill Group “B”) in non-metro census divisions.
- Cautionary caveat: We are using a delineation of skills as delineated by Employment and Skills Development Canada that is based on the level of educational attainment usually required for a given occupation. However, non-metro workers know that heavy equipment mechanics (Skill Group “B”) are not less skilled than teachers (Skill Group “A”) – the required skills are simply different.

Why look at the mix of occupations?

The kinds of occupations and the skills needed to fill those occupations is always evolving. For centuries, machines have been substituted for manual labour. There is an ongoing shift to more skilled workers (or knowledge workers) to design and to manage work-flow processes using machines to perform the work of various occupations in each industry sector.

The objective of this Fact Sheet is to show the change in the mix of occupations (by skill group¹) on average across all sectors from 2006 to 2016². A summary of the data for each industry sector is in an appendix³.

Findings

Employment in Ontario increased by 12% from 2006

to 2016 (Table 1). The increase was smallest (1%) in non-metro⁴ census divisions (CDs) followed by an 8% increase in partially non-metro CDs and a 17% increase in metro CDs.

The skill group with the largest number employed is Skill Group “B” (i.e., occupations that usually require a college diploma or apprenticeship training). This group represented 31% of workers in Ontario as a whole (and 33% in non-metro CDs).

The second largest skill group is Skill Group “C” (i.e., occupations usually requiring a high school diploma or occupation-specific training). This group comprised 28% of workers across Ontario in 2016 (and 30% of workers in non-metro CDs).

Across all CDs in Ontario, employment increased in each skill group. The largest increase (33%) was in the relatively smaller Skill Group “A” (i.e., occupations usually requiring a university education). The increase was led by a 37% increase in metro CDs, followed by a 27% increase in partially non-metro CDs and a 15% increase in non-metro CDs.

Bucking this province-wide trend, there were absolute declines in the number employed in both Skill Groups “O” and “C” in both partially-non-metro and non-metro CDs. Skill Group “O” includes management occupations and self-employed individuals. The non-metro decline was largely in the retail sector (including self-employed shop owners) and in agriculture (including self-employed farmers)³.

From 2006 to 2016, the direction of change in the

¹ Occupations are classified to Skill Groups based on: **Employment and Skills Development Canada. National Occupational Classification Matrix 2011** (<http://noc.esdc.gc.ca/English/NOC/Matrix2011.aspx?ver=11>). **Group A** usually requires a university education; **Group B** usually requires a college education or apprenticeship training; **Group C** usually requires a secondary school or occupation-specific training; **Group D** usually requires on-the-job training; and **Group O** includes management occupations & self-employed individuals.

² From 1991 to 2001 in most industries, the share of employment in higher-skilled jobs increased (slightly) more in urban areas than in rural areas. See Erik Magnusson and Alessandro Alasia. (2004) “Occupational patterns within industry groups: A rural-urban comparison.” **Rural and Small Town Canada Analysis Bulletin** Vol. 5, No. 6 (Ottawa: Statistics Canada, Catalogue no. 21-006-XIE) (www.statcan.gc.ca/boslc/english/boslc?catno=21-006-X&CHROPG=1).

³ The details for each industry sector are included in an accompanying **Appendix: Tables and Charts showing the Level and Change of Employment by Skill Group for each Industry Sector, by Type of Census Division, Ontario, 2006 – 2016**.

⁴ Defined in “Rural Ontario’s Demography: Census Update 2016.” **Focus on Rural Ontario** (Guelph: Rural Ontario Institute, March) (<http://www.ruralontarioinstitute.ca/focus-on-rural-ontario.aspx>).

share (or percent) of employment in a given skill group was the same in each type of census division. Specifically, in each type of census division, the share of employment:

- decreased in Skill Group “O”;
- increased in Skill Group “A”;
- increased in Skill Group “B”;
- decreased in Skill Group “C”; and
- in each type of CD, there was no change in the share of employment Skill Group “D” (i.e., occupations that usually do not require high school graduation). This would include occupations such as sales clerks and food service workers.

A location quotient (LQ) calculates a relative intensity (Columns 6 and 7 in Table 1). As noted, Skill Group “A” represented 14% of total employment in non-metro CDs in 2016. When we take this 14% share and divide by the 21% share at the Ontario level (and multiply by 100), we generate an LQ (or relative intensity) of 69 (in Column 7) as a measure of the relative intensity of non-metro employment in Skill Group “A”, relative to 100 for Ontario as a whole. A figure less than 100 indicates that this group has a lower share (or is less intensive) compared to Ontario as a whole.

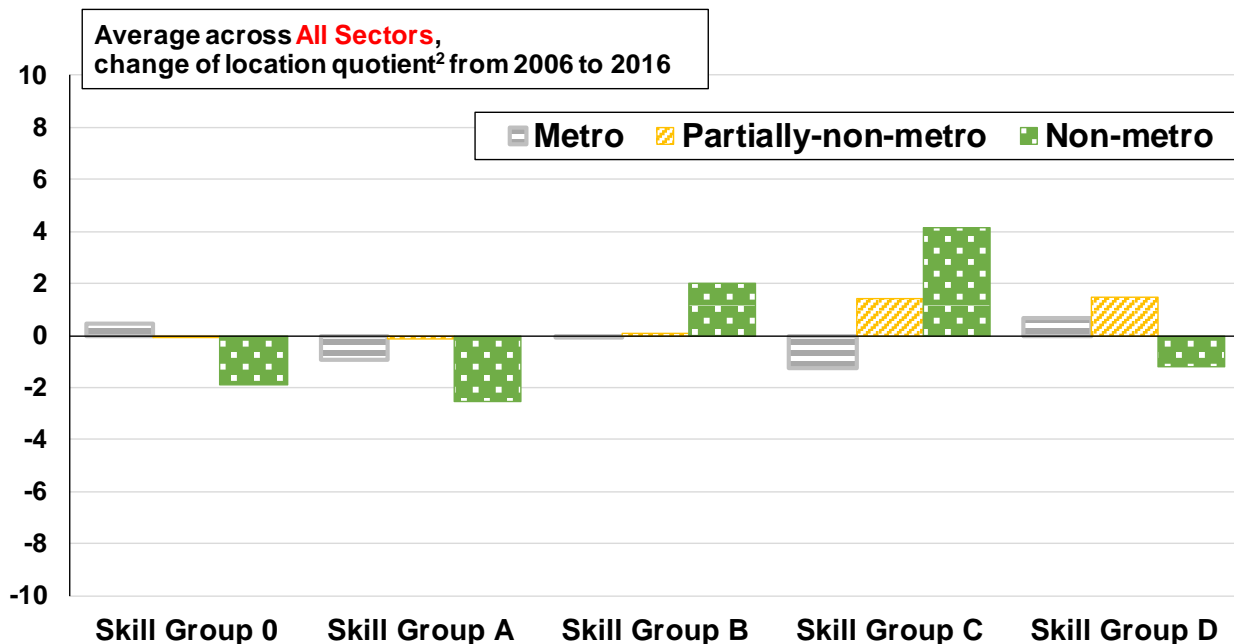
Since each type of census division showed the same direction of change in the percent distribution of their

workforce by skill group, then our measure of the change in skill structure is determined by the pace of structural change. Thus, if the share of employment in a skill group is increasing more slowly in a given type of CD, then our calculated change in the LQ will be negative. A positive change in the LQ indicates a faster change in the percent of employment in a given skill group.

From 2006 to 2016, the non-metro LQ for employment in Skill Group “A” declined by 3 points (Figure 1). This decline shows that non-metro employers have a slower pace of increasing employment in occupations requiring post-secondary degrees as compared to Ontario as a whole.

From 2006 to 2016, the positive change in Figure 1 for the non-metro LQ for Skill Group “B” and Skill Group “C” indicates a relative increase in the share of these occupations in non-metro CDs, compared to the change for Ontario as a whole.

Figure 1 On average, across All Sectors, the share of non-metro employment in Skill¹ Groups “B” & “C” increased relative to the Ontario average, 2006 to 2016



1. Occupations are classified to Skill Groups based on: Employment and Skills Development Canada. **National Occupational Classification Matrix 2011** (<http://noc.esdc.gc.ca/English/NOC/Matrix2011.aspx?ver=11>). Group A usually requires a university education; Group B usually requires a college education or apprenticeship training; Group C usually requires a secondary school or occupation-specific training; Group D usually requires on-the-job training; Group O includes management occupations

2. A location quotient is a measure, for each industry sector, of the relative intensity of employment in a skill group in, say, non-metro census divisions, compared to the employment in the skill group for Ontario as a whole. It is calculated as the percent of employment in a skill group in an industry sector for, say, non-metro census divisions, divided by the percent of employment in the skill group in the industry sector for Ontario as a whole (and then multiplied by 100).

Source: OMAFRA, EMSI ANALYST database. Chart by RayD.Bollman@sasktel.net

Summary

Employment changes in occupational groups represented in the non-metro and metro workforce show shifts in the qualifications that employers have been requiring between 2006 and 2016. Despite growth in the numbers employed in non-metro census divisions in occupations requiring a university degree, the relative intensity of employment in occupations requiring a degree declined in non-metro census divisions. This implies non-metro Ontario is lagging in the shift to an increasing proportion of occupations requiring a university degree, relative to Ontario as a whole.

However, among occupations requiring a college diploma or apprenticeship training, the share in non-metro census divisions increased faster than in metro or partially-non-metro census divisions.

Table 1. Level and change in skill¹ structure of employment, average across All Sectors, by type of census division in Ontario, 2006 and 2016

Skill group ¹	Number employed (,000)		Percent change, 2006 to 2016	Number employed as percent of total		Location quotient ²		
	2006	2016		2006	2016	2006	2016	Change ³
Metro census divisions⁴								
O	404	432	7	11	10	101	102	0
A	772	1,058	37	20	24	114	113	-1
B	1,111	1,336	20	29	30	97	96	0
C	1,176	1,219	4	31	27	98	97	-1
D	374	447	19	10	10	91	91	1
Total	3,836	4,492	17	100	100	100	100	0
Partially-non-metro census divisions⁴								
O	170	167	-2	10	9	94	94	0
A	257	327	27	15	17	84	84	0
B	546	607	11	31	32	104	104	0
C	564	553	-2	32	29	103	105	1
D	207	229	11	12	12	110	112	1
Total	1,744	1,883	8	100	100	100	100	0
Non-metro census divisions⁴								
O	101	91	-10	11	10	107	105	-2
A	114	131	15	13	14	71	69	-3
B	290	306	5	32	33	106	108	2
C	288	271	-6	32	30	101	105	4
D	118	119	1	13	13	120	119	-1
Total	912	918	1	100	100	100	100	0
All census divisions								
O	675	691	2	10	9	100	100	0
A	1,143	1,516	33	18	21	100	100	0
B	1,948	2,249	15	30	31	100	100	0
C	2,028	2,043	1	31	28	100	100	0
D	699	794	14	11	11	100	100	0
Total	6,492	7,293	12	100	100	100	100	0

1. Occupations are classified to Skill Groups based on: Employment and Skills Development Canada. **National Occupational Classification Matrix 2011** (<http://noc.esdc.gc.ca/English/NOC/Matrix2011.aspx?ver=11>). **Group A** usually requires a university education; **Group B** usually requires a college education or apprenticeship training; **Group C** usually requires a secondary school or occupation-specific training; **Group D** usually requires on-the-job training; **Group O** includes management occupations and self-employed individuals.

2. A location quotient is a measure of the relative intensity of employment in a skill group in, say, non-metro census divisions, compared to the employment in the skill group for Ontario as a whole. It is calculated as the percent of employment in a skill group in an industry sector for, say, non-metro census divisions, divided by the percent of employment in the skill group in the industry sector for Ontario as a whole (and then multiplied by 100).

3. The change in the location quotient indicates whether a given geographic group (e.g., non-metro census divisions) reported an increase or decrease in the percent of their employment in a given skill group, relative to Ontario as a whole.

4. The classification of census divisions is shown in Table 2 in "Rural Ontario's Demography: Census Update to 2016" **Focus on Rural Ontario** (March, 2017).

Source: OMAFRA, EMSI ANALYST database.