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- Employment patterns of postsecondary students
- Recognition of newcomers' foreign credentials and work experience

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.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0^s	value rounded to 0 (zero) where a meaningful distinction exists between true zero and the value rounded
p	preliminary
r	revised
x	suppressed to meet the confidentiality requirements of the *Statistics Act*
E	use with caution
F	too unreliable to be published

Highlights

In this issue

Employment patterns of postsecondary students

- Since the late 1990s, almost 50% of full-time CEGEP, community college and university students age 15 to 24 were employed during the school year, up from 25% in the late 1970s.
- The employment rate for students and average hours of work declined during the recent economic downturn, although the employment rate recovered somewhat during the winter 2010 school term.
- In 2009/2010, female students were more likely than male students to combine school and work (50% versus 40%), but they worked fewer average hours per week (15.3 versus 16.7).
- The summer employment rate for postsecondary students age 20 to 24 fell from 70% to 63% between 2008 and 2009, while unemployment increased and hours decreased, with some recovery in 2010.
- Employed students earned roughly $6,300 during the 2009/2010 school year and $6,700 during the summer of 2009.

Recognition of newcomers' foreign credentials and work experience

- Among immigrants who had foreign academic credentials, just over one-quarter (28%) had received recognition for these credentials within 4 years after landing. Foreign work experience was more likely to be recognized as 39% of immigrants with foreign experience had it recognized within 4 years.
- Newcomers were most likely to have their work experience recognized within their first 6 months of settlement. The rate of foreign experience recognition dropped in each subsequent period: from 6 to 24 months after landing and from 24 months to 4 years after landing. The likelihood of credentials recognition was similar 6 months and 2 years after landing before falling by one-half after four years of settlement.
- Recognition rates for newcomers who landed as skilled-worker principal applicants (selected for their labour market attributes) were higher than for any other immigrant group. These newcomers were also most likely to have their credentials and work experience recognized (39% and 56% respectively) after controlling for the effect of other individual characteristics.
- Four years after landing, newcomers with university degrees had a 43% likelihood of having their work experience recognized and a 29% likelihood of having their education credentials recognized.
- Newcomers who had completed their highest level of education or worked in the United States or the United Kingdom prior to landing were most likely to have their credentials and work experience recognized after controlling for the effect of other characteristics.
- Having a pre-arranged job at landing was the strongest correlate of work experience recognition: the predicted percentage of newcomers with pre-arranged employment who had their work experience recognized was 87%, compared to 42% for those without such an arrangement and 56% for those who were selected as skilled-worker principal applicants.
- The predicted percentage of newcomers with a pre-arranged job who had their credentials recognized was also significantly higher (40%) than for those who did not have pre-arranged employment (29%).

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Employment patterns of postsecondary students

Katherine Marshall

Most postsecondary students depend on earnings from a job to cover some of the cost of their education. However, whether young workers are at school or not, youth employment can be particularly affected by economic downturns. Between October 2008 and October 2009, employment declined by about 10% among those age 15 to 24, representing 225,000 jobs and more than one-half of the total job loss during this time (LaRochelle-Côté and Gilmore 2009). With lower levels of seniority, job permanency and job protection, young workers are often the first to be laid-off. Finding a job is also more difficult as many have little or no previous work experience, even if credentials are strong.

While postsecondary students report that personal savings is the most common source of income to fund their education (79%), income from employment is ranked second (63%) (Ouellette 2006). More than one-half of students report that either savings (27%) or earnings (26%) provide the largest amount of money towards the total cost of their school year. As youth unemployment rises during economic downturns, these important sources of student income decline, which can lead to increased borrowing. "Based on previous recessions, an increase of each 1% in the rate of youth unemployment appears to lead to an increase of just over 6% in the number of student loan borrowers" (Usher and Dunn 2009). Higher student borrowing rates and debt have been linked to lower savings, investments and asset levels well after graduation (Luong 2010).

Tuition fees have risen at a faster rate than inflation since the early 1990s (Ouellette 2006). Some researchers expect the economic downturn to present a number of challenges for postsecondary institutions: decreasing revenues; increasing costs; increasing enrolment in colleges and postgraduate studies; and increasing student aid costs (Usher and Dunn 2009). According to this scenario, students would be facing increased costs and competition for certain programs as their employment prospects fade.

Recently, more high school and postsecondary students have been working during the school year and spending more time at their jobs than in the past (Usalcas and Bowlby 2006). These findings highlight the question of whether in-school employment is a positive, negative or benign activity. Many studies have attempted to assess the impact working has on academic performance, the amount of time taken to complete studies, student retention and personal stress levels (for recent examples see DeSimone 2008, Motte and Schwartz 2009, Riggert et al. 2006, and Vickers et al. 2003). Most deduce that long hours can interfere with student outcomes, but the findings are less conclusive with regard to low and moderate levels of labour market involvement. Analyzing the school/employment relationship is complicated because of unobservable variables such as personal motivation, time management and organizational skills, and self-confidence.

This study uses the Labour Force Survey (LFS) to examine long-term school-year employment trends among youth age 15 to 24 enrolled full time in community college, CEGEP or university, with particular focus on the recent downturn and nascent recovery (see *Data source and definitions*). This is followed by a descriptive profile of the students who had a job in the 2009/2010 school year, including their average hours of work, average earnings and job characteristics. Information is also provided on long-term employment trends during the summer months (see *A summer job*).

Katherine Marshall is with the Labour Statistics Division. She can be reached at 613-951-6890 or at perspectives@statcan.gc.ca.

Data source and definitions

The **Labour Force Survey (LFS)** is a monthly household survey that collects information on labour market activity from all persons 15 years and over. Respondents are also asked whether they are currently attending school, whether it is on a part-time or full-time basis, and which type of school they attend. In order to examine the employment behaviour of students during the academic year, eight months of data from September through April are used.

The LFS adds special student-related questions during the summer months (May through August) in order to identify youth who were full-time students in March of the current year and who plan to return to school full time in the fall. These questions are only asked of respondents age 15 to 24 and the type of school is not collected. Since this study focuses on postsecondary students, information on summer employment trends includes only those age 20 to 24.

The **target population** includes all individuals age 15 to 24 who reported attending community college, CEGEP, or university during the school year (September through April).

Students **living at home** include all those currently at home as well as those who are away at school temporarily. Students are coded as living in the household if they spend at least 30 days of the year at home. Students who do not return home for at least 30 days are included in the dwelling they occupy during the survey reference week and are labelled living away from home.

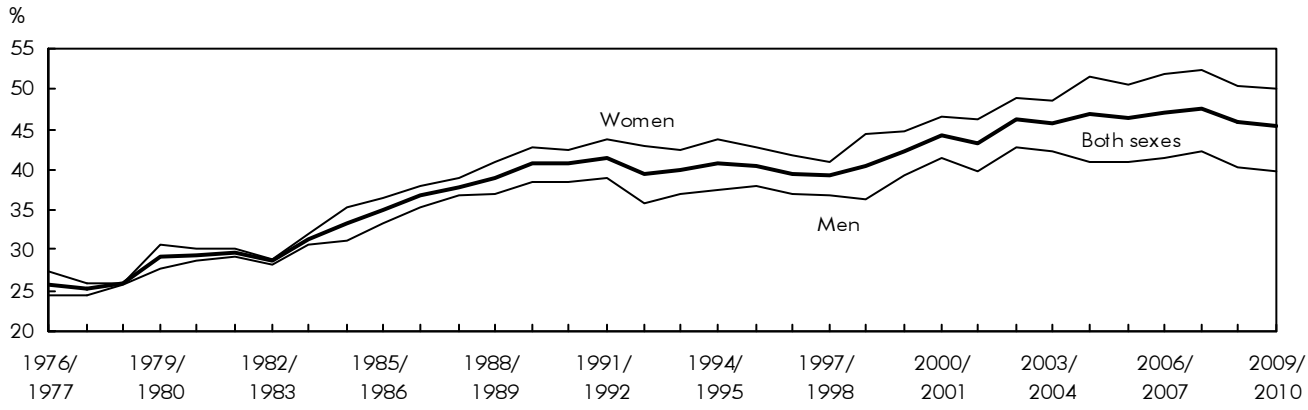
Information on **earnings** is collected from all employees for their main job and refers to pay before taxes and other deductions, and includes tips. Almost all employed students work at a paid job (98% in 2009/2010).

Average usual **hours** worked refers to the normal hours an employee spends at his or her job per week and does not include any overtime. However, prior to 1997, employees were to include overtime hours in their estimates if they were typical to their schedules.

More students and more of them employed

In 1976/1977, 12% of all youth age 15 to 24 (532,000) were attending some form of postsecondary education on a full-time basis—a proportion that has steadily increased over the decades. In the 2009/2010 school year, 27% (1,193,000) of all youth were full-time postsecondary students attending community college, CEGEP or university. The increased participation in postsecondary education is tied to the rise in the knowledge-based economy and the demand for higher-skilled jobs. Another well-known trend is the increasing participation rate of young women in higher educa-

Chart A Employment rate of full-time postsecondary students peaked in 2007/2008



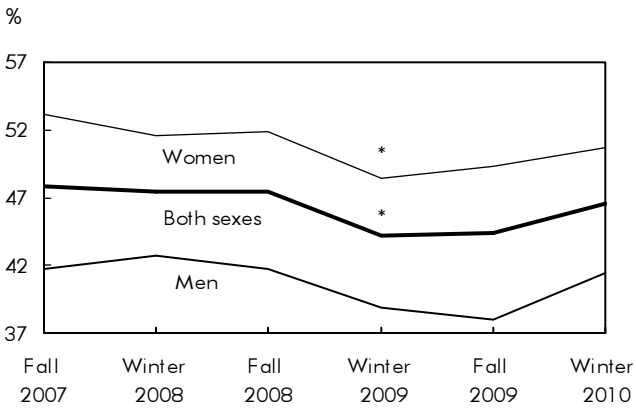
Source: Statistics Canada, Labour Force Survey.

tion vis-à-vis men. In 1976/1977, women represented 46% of all youth attending postsecondary school and, by 2009/2010, they represented 56% of all such students (Table 1). The proportion of full-time postsecondary students attending university has increased slightly, up from 57% in 1976/1977 to 61% in 2009/2010. Women in particular have gravitated towards attending university.

Not only has the postsecondary school attendance rate increased among youth, but so too has the proportion who combine school and paid work. Over the past 35 years, the employment rate among full-time postsecondary students increased from approximately one in four to just under one in two (Chart A). On the other hand, the summer employment rate for this population has remained stable (see *A summer* job). Since the early 1990s, a noticeable difference in employment activity has emerged between men and women, with female students participating at a higher rate than male students. The employment rate difference has continued to widen over the past decade reaching a double-digit difference for the first time in 2004/2005, with 52% of full-time female students having a paid job during the school year compared with 41% of full-time male students. The gender employment trend is also evident among younger and older students (Table 6) and has also been noted in previous research using time use data (Marshall 2007).

There was a significant drop in the employment rate for all students between 2007/2008 and 2009/2010—down by 2.6 percentage points for male students and 2.4 points for female students. However, on a term-by-term basis it is obvious that the economic downturn, which started in late 2008, had a large initial impact on the employment opportunities of postsecondary students, but since

Chart B Employment rate of full-time postsecondary students up 2 percentage points in the winter 2010 term



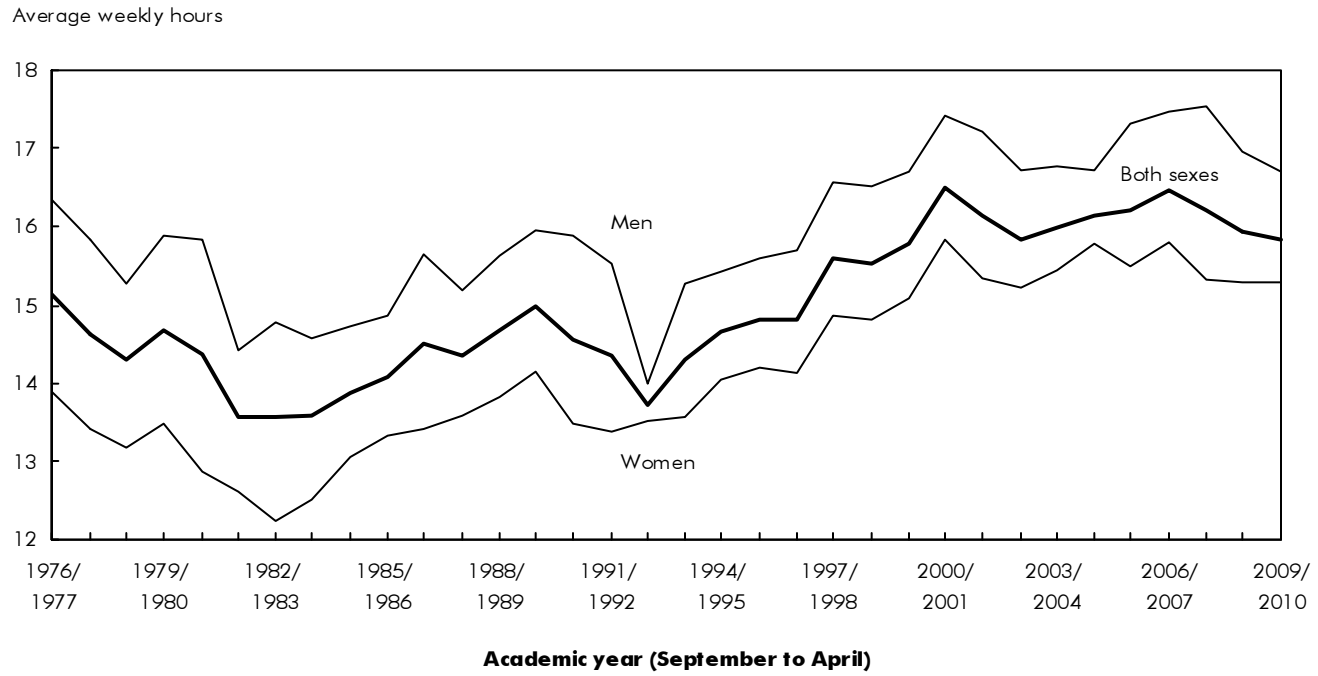
* significantly different with previous term at the 0.05 level
Source: Statistics Canada, Labour Force Survey.

Table 1 Full-time postsecondary students aged 15 to 24 by academic year (September to April)

	1976/1977	1986/1987	1996/1997	2006/2007	2007/2008	2008/2009	2009/2010
				'000			
Total	**532**	**713**	**906**	**1,116**	**1,140**	**1,126**	**1,193**
				%			
Both sexes	100	100	100	100	100	100	100
Men	54	50	48	45	46	44	44
Women	46	50	52	55	54	56	56
College or CEGEP	43	46	45	37	38	39	39
University	57	54	55	63	62	61	61
Men - College/CEGEP	23	23	22	17	19	18	17
Men - University	31	27	25	28	27	25	27
Women - College/CEGEP	20	24	23	20	20	21	21
Women - University	26	26	30	35	35	36	35

Source: Statistics Canada, Labour Force Survey.

Chart C Weekly employment hours of full-time postsecondary students



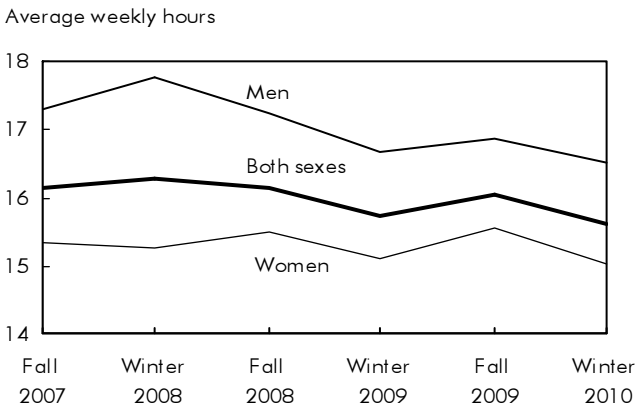
Source: Statistics Canada, Labour Force Survey.

then there have been signs of improvement (Chart B). Although the employment rate among full-time postsecondary students had fallen by 3.3 percentage points between the fall 2008 (September to December) and winter 2009 (January to April) terms, overall there have been gains in each of the following terms, particularly during winter 2010.

Employment hours have increased over time

The average employment hours of postsecondary students with jobs increased steadily until the late 1990s and have since hovered around 16 hours per week (Chart C and Table 7). Although average hours have increased, 9 in 10 students still work part time during the school year. The trend and business cycle fluctuation in student work hours have been similar for both sexes, however, men have consistently worked on average 1.5 to 2.5 more hours per week than women.

Chart D Weekly employment hours of full-time postsecondary students down slightly since recession



Source: Statistics Canada, Labour Force Survey.

The average time spent at a job has trended downward since the recent economic downturn, and increased marginally in the fall of 2009 before dropping further in the winter of 2010. The average work hours for all students with jobs for the winter 2010 term was 15.6, the lowest it has been for about a decade (Chart D).

School-year earnings near $6,000 throughout downturn

With average weekly employment hours dropping slightly, but not significantly, over the recent recession and hourly wages increasing from $10.75 in 2007/2008 to $11.80 in 2009/2010, average weekly earnings approached $200 in 2009/2010 (Table 2). Assuming students keep their part-time jobs for the duration of the school year (from September to April or roughly 34 weeks), average income from earnings for 2009/2010 would have been about $6,300. Students who managed to keep or find a job during the economic downturn therefore held their ground in terms of earned income. However, the 2.5% increase in the unemployment rate suggests that, had the rate remained the same as before the downturn, an additional 30,000 students (2.5% of the 2009/2010 student population) would have been employed. Research has shown that declining student employment rates in 1982 and 1990 were followed by large increases in the number of Canada Student Loan Program clients (Usher and Dunn 2009).

The importance of student earnings in financing education was also evident in the 2002 Post-Secondary Education Participation Survey. It found that the median cost of the 2001/2002 school year for postsecondary students age 18 to 24 was $10,900, and for students with employment earnings, $3,000 were used from this source (Ouellette 2006).

Table 2 School-year employment, hours and earnings of full-time postsecondary students

							Earnings during school[2]	
	Total	Employment rate	Unemployment rate	Average weekly hours	Average hourly earnings[1]	Average weekly earnings	Employed students	All students
	'000	%	%	hours	$	$	$	$
Total students								
2007/2008	1,140	47.7	6.5	16.2	10.75	175	5,920	2,825
2008/2009	1,126	45.9	8.0	15.9	11.50	185	6,230	2,860
2009/2010	1,193	45.4*	9.0*	15.8	11.80*	185*	6,345*	2,885
Men								
2007/2008	521	42.2	8.0	17.5	11.00	195	6,570	2,770
2008/2009	493	40.3	10.3	17.0	11.80	200	6,800	2,740
2009/2010	526	39.6	11.2*	16.7*	12.15*	205	6,895	2,730
Women								
2007/2008	619	52.4	5.4	15.3	10.55	160	5,490	2,875
2008/2009	633	50.2	6.6	15.3	11.30	175	5,890	2,955
2009/2010	667	50.0	7.5*	15.3	11.55*	175*	6,015*	3,010
Aged 15 to 19								
2007/2008	417	45.8	8.1	15.0	9.10	135	4,640	2,130
2008/2009	423	44.7	10.2	14.3	9.80	140	4,770	2,130
2009/2010	439	43.5	11.9*	14.3*	10.25*	145*	5,000*	2,175
Aged 20 to 24								
2007/2008	722	48.8	5.6	16.8	11.65	195	6,670	3,255
2008/2009	703	46.6	6.7	16.9	12.50	210	7,170	3,345
2009/2010	754	46.6	7.3*	16.6	12.65*	210*	7,145*	3,330

* significantly different from the 2007/2008 school year at the 0.05 level
1. All earnings figures are in 2009 constant dollars.
2. Based on 34 weeks (September through April).
Source: Statistics Canada, Labour Force Survey.

Table 3 Employment and hours worked among full-time postsecondary students

	All students	Employment rate	Of those employed: Average weekly hours	Of those employed: More than 20 hours per week
	'000	%	hours	%
School year				
2009/2010	1,193	45	15.8	18
Men (ref.)	526	40	16.7	22
Women	667	50*	15.3*	16*
Aged 15 to 19 (ref.)	439	43	14.3	13
Aged 20 to 24	754	47*	16.6*	21*
Immigrant (ref.)	223	32	16.1	19
Canadian born	970	49*	15.8	18
Immigrant men (ref.)	111	29	17.3	23
Immigrant women	112	35	15.2*	16
Canadian born men	415	43*	16.6	22
Canadian born women	555	53*	15.3*	16*
Lives in CMA (ref.)	972	47	15.7	18
Non-CMA	221	39*	16.5*	20
Usual residence				
Living at home (ref.)	831	46	15.3	16
Not at home	361	44	17.1*	23*
College (ref.)	460	49	16.0	18
University	733	43*	15.7	18

* significantly different from the reference group (ref.) at the 0.05 level
Source: Statistics Canada, Labour Force Survey, 2009/2010.

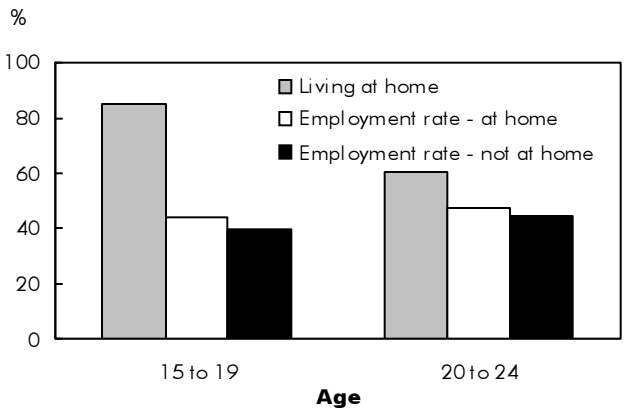
Characteristics of employed students

What are the personal and job characteristics of students who work? Findings have already shown that older students and women are more likely to be employed during the school year. Immigrant students are much less likely to work while going to school (32%) compared with their Canadian-born counterparts (49%) (Table 3). Although the gender difference in the employment rate holds within the two groups, for example, immigrant women have a higher employment rate than immigrant men (35% versus 29%), both rates are still less than that of Canadian-born female (53%) and male students (43%). Going to school in a large urban centre, which offers more job opportunities, also increases the chances of being employed (47%) compared to students living in smaller centres (39%). Living at home does not appear to increase student employment rates. 'Living

Since employed male students worked about two extra hours per week, and earned more per hour than their female counterparts ($12.15 per hour in 2009/2010 versus $11.55), their weekly and school-year earnings were higher. Estimated school-year earnings were approximately $6,900 for men and $6,000 for women.

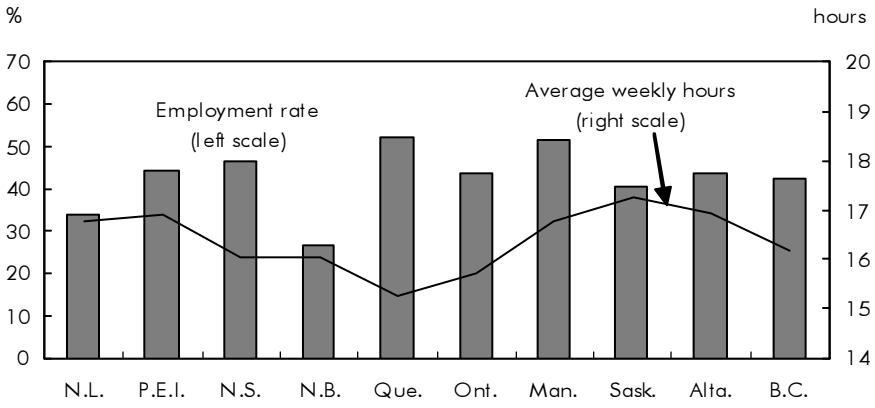
Compared with students age 15 to 19, those age 20 to 24 were more likely to work while going to school, work longer hours and have higher wages. The potential school-year earnings by age group range widely from approximately $5,000 for younger students to over $7,000 for older students. The financial consequences for unemployed older students are therefore much greater than those for younger students. Furthermore, older students are also less likely to depend on their parents for financial assistance.

Chart E Younger students[1] tend to live at home, but place of residence not strongly linked to employment rate



1. Full-time postsecondary in 2009/2010 school year.
Source: Statistics Canada, Labour Force Survey, 2009/2010.

Chart F School year[1] employment rate highest in Manitoba and Quebec



1. Full-time postsecondary in 2009/2010 school year.
Source: Statistics Canada, Labour Force Survey, 2009/2010.

at home' refers to students who spend at least 30 days of the year living with at least one parent, therefore students who live in a school residence and return home for the summer fall into this category.[1] Although the proportion of students living at home varies considerably by age, with 85% of those age 15 to 19 doing so, compared with 61% of 20- to 24-year-olds, there is no significant difference in the employment rate by age and place of residence (Chart E). Finally, a higher proportion of college students (49%) than university students (43%) have a job while attending school.

There was less than a two-hour variation in the average weekly hours worked among all student characteristics considered. Although immigrant men had the lowest employment rate, those with a job had the highest average work week—17.3 hours. In terms of longer hours, less than one in five employed students (18%) worked more than 20 hours per week. Working at least 20 hours per week has been shown to be an important threshold, with some studies indicating that long hours can interfere with postsecondary performance and student retention.

Finally, provincial employment rates and average hours worked are consistent with historical trends (Usalcas and Bowlby 2006). During the 2009/2010 school year, both Manitoba and Quebec had school-year employment rates above 50% and New Brunswick (27%) and Newfoundland and Labrador (34%) had the lowest average rates (Chart F). Average weekly hours ranged from a high of 17.3 in Saskatchewan to a low of 15.2 in Quebec.

At your service

Of the 542,000 postsecondary students who were employed during the 2009/2010 school year, almost all (96%) had a job in the service sector, compared with 78% of the total non-postsecondary-student employed population (Table 4).

Table 4 Industrial distribution of employed students[1] and non-students aged 15 and over

	Total employed		Non-students		Students[1]	
	'000	%	'000	%	'000	%
All industries	**16,802**	**100**	**16,260**	**100**	**542**	**100**
Goods	3,660	22	3,640	22	20	4
Services	13,143	78	12,621	78	522	96
Retail trade	2,035	12	1,842	11	194	36
Food and beverage stores	509	3	458	3	51	9
Clothing stores	222	1	178	1	44	8
Other retail	1,304	8	1,206	7	98	18
Education services	1,270	8	1,217	7	53	10
Health care and social assistance	1,982	12	1,947	12	35	6
Arts, entertainment and recreation	376	2	343	2	33	6
Accomodation and food services	1,042	6	935	6	108	20
Restaurants and eateries	851	5	751	5	100	18
Other	191	1	184	1	8	1
Other services	6,436	38	6,336	39	100	18

1. Full-time postsecondary aged 15 to 24.
Source: Statistics Canada, Labour Force Survey, September 2009 to April 2010.

A summer job

Many students start to think about where to apply for a summer job well before the second term of school is finished. The four months are a narrow but good opportunity for many to gain useful work experience, and, more importantly, to earn money to put towards their continuing education. Competition can be stiff as tens of thousands of students descend on the job market all at the same time.

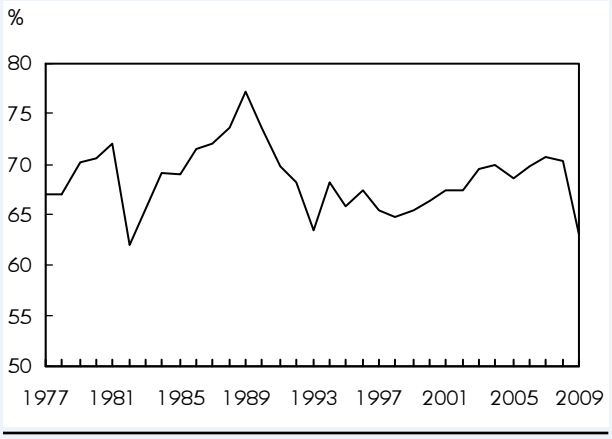
Beginning in 1997, the federal government created the Youth Employment Strategy (YES) to help youth find employment and gain workplace experience. One part of YES includes the Summer Work Experience program, which is aimed specifically at secondary and postsecondary students returning to full-time studies in the fall. The program offers wage subsidies to employers to encourage student hiring and support the operation of summer employment offices (see HRSDC 2010 for more information).

The LFS tracks summer employment trends of students by asking all respondents age 15 to 24 two additional student-related questions during all interviews that take place between May and August (see *Data source and* definitions). The first question asks whether the respondent had been a full-time student in March of that year, and if "yes," whether he or she expects to return to school full time in the fall. The data in this section refer to all those who responded positively to both questions. Furthermore, since the type of school in March is unknown (high school or postsecondary) the sample is limited to those age 20 to 24—ensuring that the majority of respondents are college or university students (the target population of this study).

While the employment rate during the school year has increased steadily over the past several decades for all age groups, the summer employment rate for full-time postsecondary students age 20 to 24 has consistently averaged around 70% (Chart G). Similar to the overall employment rate, the employment rate for students during the summer moves in tandem with the increases and decreases of the business cycle. The decline between the summers of 2008 and 2009, down from 70% to 63%, was the second largest year-to-year drop since 1981 and 1982, when it fell from 72% to 62%.

As seen earlier, students age 20 to 24 who worked during the school year earned, on average, roughly $7,000 in 2009/2010. Hourly earnings are roughly the same during both the school year and the summer, but the proportion working full time more than quadruples (up from 12% during the 2009/2010 school year to 57% during the summer of 2009[2]). Therefore, due to increased weekly hours, the same cohort earned roughly the same amount ($6,700) during the summer of 2009 (Table 5). Although summer earnings do not cover the total expenses of another year of schooling, they can help offset some of the costs. The savings rate is also probably quite high for the students who return home for the summer, avoiding the cost of room and board.

Chart G Student summer employment rate[1] fell by over 7 percentage points during the most recent recession



1. Full-time postsecondary students aged 20 to 24 returning in the fall.
Source: Statistics Canada, Labour Force Survey.

Despite the drop in average weekly hours between the summers of 2008 and 2009 (from 30.0 to 28.8), total summer earnings were similar in both years because of the slight increase in hourly wages (from $12.40 to $12.85). Although those with a job fared about the same in both years, it is important to keep in mind that there were roughly 40,000 fewer students employed during the summer of 2009.

The summer employment rate for students fell between 2008 and 2009 in most provinces, but in both years the Atlantic provinces had higher-than-average levels (except for Newfoundland and Labrador), as did Saskatchewan and Manitoba. Employed students in these provinces had higher-than-average weekly hours as well, and with the western provinces boasting the highest hourly earnings, students in Alberta and Saskatchewan were able to earn roughly $9,000 in the summer of 2009.

Note: While this article was in production, the final 2010 data for summer student employment (May through August) were released. Key findings show the employment and unemployment rates for postsecondary students age 20 to 24 to be 66.4% and 8.3%, respectively. Average weekly hours worked were 27.7 and average hourly earnings were $12.80. Finally, the full-time employment rate for students during the summer of 2010 was 51.8%.

A summer job (concluded)

Table 5 Summer employment among returning full-time postsecondary students aged 20 to 24, by province

	Total	Employment rate	Unemployment rate	Average weekly hours	Average hourly earnings[1]	Average weekly earnings	Earnings during summer[2]	
							Employed students	All students
	'000	%	%	hours	$	$	$	$
Canada								
2008	**647**	**70.3**	**9.0**	**30.0**	**12.40**	**370**	**6,690**	**4,705**
2009	**658**	**63.0**	**13.6**	**28.8**	**12.85**	**370**	**6,670**	**4,205**
Newfoundland and Labrador								
2008	10	59.6	12.8	32.9	11.45	375	6,770	4,035
2009	9	58.3	12.4	31.2	11.55	360	6,475	3,775
Prince Edward Island								
2008	2	85.0	2.8	34.8	10.80	375	6,755	5,745
2009	2	72.1	14.7	33.8	10.85	365	6,590	4,750
Nova Scotia								
2008	17	80.9	4.4	32.7	10.25	335	6,020	4,865
2009	14	69.9	13.4	32.3	11.25	365	6,545	4,575
New Brunswick								
2008	12	78.1	6.6	32.9	10.95	360	6,485	5,060
2009	12	74.8	13.7	34.2	11.60	395	7,125	5,330
Quebec								
2008	159	71.0	8.4	28.9	12.30	355	6,380	4,535
2009	149	65.9	12.1	28.1	12.50	350	6,325	4,165
Ontario								
2008	285	68.4	11.5	29.4	11.50	340	6,080	4,160
2009	303	59.1	17.5	27.6	12.40	345	6,170	3,645
Manitoba								
2008	19	83.9	3.5	31.8	12.55	400	7,190	6,035
2009	16	75.8	8.5	30.8	12.10	375	6,710	5,090
Saskatchewan								
2008	14	79.4	3.6	34.5	13.20	455	8,195	6,500
2009	13	73.7	4.2	33.3	14.90	495	8,935	6,585
Alberta								
2008	52	81.2	4.0	32.7	16.05	525	9,470	7,690
2009	59	65.7	8.1	32.2	15.45	495	8,945	5,875
British Columbia								
2008	79	60.9	8.3	29.1	13.90	405	7,280	4,435
2009	81	63.4	8.7	28.8	13.70	395	7,095	4,495

1. All earnings figures are in 2009 constant dollars.
2. Based on 18 weeks (May through August).
Source: Statistics Canada, Labour Force Survey.

Retail trade, in particular, accounted for over one-third of all student employment: 32% for male students and 38% for female students (data not shown). Food and beverage (e.g., grocery stores) and clothing stores account for one-half of the retail trade jobs. The remaining retail employment includes such categories as general merchandise stores, health and personal care stores (e.g., pharmacies and drug stores) and sporting goods, hobby, book and music stores. Retail employment is conducive for students since it often offers part-time hours, evening or weekend shifts, and minimal required experience. From September 2009 to April 2010 there were 2.0 million jobs in retail overall. With some 200,000 students working in this field, their employment represents 10% of all jobs in the retail trade industry.

Restaurants and other eateries also offer many student job opportunities, with 18% working in this industry, compared to 5% of other workers. Students also had a higher-than-average representation in the education services and arts, entertainment and recreation industries, where many work as research assistants and instructors in recreation and sport, respectively.

Conclusion

Although most students have consistently worked during the summer months, employment patterns during the school year have changed substantially. Since the late 1990s, almost one in two full-time postsecondary students have been employed during the academic school year, up from one in four in the late 1970s. At the same time, hours at work rose and then levelled off, averaging around 16 per week over the past decade.

In the 2009/2010 school year, not only were there proportionally more women age 15 to 24 attending postsecondary school than men (56% versus 44%), but they were also more likely to be employed (50% versus 40%). However, on average, employed male students worked longer weekly hours than their female counterparts—16.7 compared with 15.3. Older students and Canadian-born students were also significantly more likely to work while attending school. Almost all employed students worked in the service sector (96%), with 36% in the retail trade and 18% in food services.

Students have not been immune to the recent economic downturn as they experienced a drop in their employment rate and average hours worked. The full-time postsecondary student employment rate fell by over 3 percentage points between the fall 2008 term and the winter 2009 term. Although the rate increased to 46.5% during the winter 2010 term, the rate is still lower than the fall 2007 term rate of 47.9%.

Many students rely on employment earnings to help fund their education (Ouellette 2006). The estimated school-year earnings of those with a job were about $6,000 before and during the economic downturn (2007/2008 to 2009/2010). Even though students with a job managed to hold their ground in terms of earnings, there were an estimated 30,000 fewer students with jobs over the period.

The summer of 2009 was the worst labour market for postsecondary students age 20 to 24 since the recession years of 1982 and 1993. Between the summers of 2008 and 2009, the employment rate dropped from 70.3% to 63.0%, the unemployment rate increased from 9.0% to 13.6%, and the percentage with a full-time job dropped from 60.7% to 56.6%. It is particularly difficult for students to be jobless during the summer due to the potential earnings loss. Students who were employed during the summer of 2009 earned $6,700 on average.

The recent declines in the school-year and summer student employment rates due to the economic downturn, and subsequent increase in the unemployment rate, suggests more students would have been working at a paid job if they could have found one. However, most college and university programs last for several years, and with signs that student employment is starting to recover, students wanting work may soon have a better chance of being employed again.

Table 6 Employment rate of full-time postsecondary students aged 15 to 24

	Aged 15 to 24			Aged 15 to 19			Aged 20 to 24		
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
					%				
Academic year									
1976/1977	26	24	27	25	25	25	26	24	30
1977/1978	25	24	26	24	26	23	26	23	29
1978/1979	26	26	26	25	25	25	27	26	27
1979/1980	29	28	31	29	27	29	30	28	32
1980/1981	29	29	30	30	30	30	29	28	31
1981/1982	30	29	30	29	29	29	30	29	31
1982/1983	29	28	29	27	28	27	30	29	31
1983/1984	31	31	32	31	31	30	32	30	34
1984/1985	33	31	35	31	30	33	34	32	38
1985/1986	35	33	37	34	32	36	36	34	37
1986/1987	37	35	38	36	36	36	37	35	39
1987/1988	38	37	39	37	38	37	38	36	41
1988/1989	39	37	41	38	36	40	39	37	42
1989/1990	41	39	43	39	38	41	42	39	45
1990/1991	41	39	43	40	39	41	41	38	44
1991/1992	41	39	44	41	39	42	42	39	45
1992/1993	40	36	43	37	36	38	41	35	47
1993/1994	40	37	42	37	33	39	42	39	45
1994/1995	41	38	44	37	33	40	43	40	46
1995/1996	40	38	43	38	36	40	42	39	44
1996/1997	39	37	42	35	34	37	42	39	45
1997/1998	39	37	41	35	35	35	41	38	44
1998/1999	41	36	44	37	32	41	43	38	46
1999/2000	42	39	45	40	36	43	43	41	46
2000/2001	44	41	47	41	39	42	46	43	49
2001/2002	43	40	46	42	39	45	44	40	47
2002/2003	46	43	49	45	43	47	46	42	50
2003/2004	46	42	49	43	40	46	47	43	50
2004/2005	47	41	52	45	39	50	48	42	52
2005/2006	46	41	52	44	40	48	47	41	52
2006/2007	47	42	52	45	40	49	49	42	54
2007/2008	48	42	52	46	40	51	49	44	53
2008/2009	46	40	50	45	38	49	47	41	51
2009/2010	45	40	50	43	37	48	47	41	51

Source: Statistics Canada, Labour Force Survey.

Table 7 Average weekly hours of full-time postsecondary students aged 15 to 24

	Aged 15 to 24			Aged 15 to 19			Aged 20 to 24		
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
	Average weekly hours								
Academic year									
1976/1977	15.2	16.3	13.9	13.9	14.8	13.0	16.3	17.5	14.8
1977/1978	14.6	15.8	13.4	13.6	14.1	13.1	15.5	17.3	13.7
1978/1979	14.3	15.3	13.2	13.3	14.2	12.5	15.2	16.1	14.0
1979/1980	14.7	15.9	13.5	13.2	13.6	12.9	16.0	17.6	14.1
1980/1981	14.4	15.8	12.9	13.3	14.7	12.0	15.5	16.8	13.9
1981/1982	13.6	14.4	12.6	12.5	13.3	11.8	14.5	15.3	13.5
1982/1983	13.6	14.8	12.2	12.1	13.1	11.3	14.7	16.1	13.1
1983/1984	13.6	14.6	12.5	12.6	13.4	12.0	14.4	15.5	13.0
1984/1985	13.9	14.7	13.1	12.4	12.9	11.9	14.9	15.8	13.9
1985/1986	14.1	14.9	13.3	12.9	13.3	12.7	14.9	15.8	13.9
1986/1987	14.5	15.6	13.4	13.5	13.8	13.3	15.2	16.7	13.5
1987/1988	14.4	15.2	13.6	13.6	14.2	13.0	14.9	15.9	14.0
1988/1989	14.7	15.6	13.8	13.3	14.1	12.7	15.7	16.6	14.8
1989/1990	15.0	16.0	14.2	13.7	14.6	13.1	15.9	16.8	15.0
1990/1991	14.6	15.9	13.5	13.6	15.0	12.6	15.2	16.4	14.1
1991/1992	14.4	15.5	13.4	13.0	13.9	12.3	15.3	16.6	14.1
1992/1993	13.7	14.0	13.5	12.8	12.6	12.9	14.3	14.8	13.9
1993/1994	14.3	15.3	13.6	13.2	13.6	12.9	15.0	16.0	14.0
1994/1995	14.7	15.4	14.0	13.5	14.0	13.1	15.3	16.1	14.6
1995/1996	14.8	15.6	14.2	13.3	13.9	12.9	15.7	16.4	15.0
1996/1997	14.8	15.7	14.1	13.6	14.5	12.9	15.4	16.3	14.7
1997/1998	15.6	16.6	14.9	13.4	13.9	13.0	16.6	17.8	15.8
1998/1999	15.5	16.5	14.8	14.3	15.2	13.7	16.1	17.1	15.3
1999/2000	15.8	16.7	15.1	14.4	15.3	13.8	16.5	17.4	15.8
2000/2001	16.5	17.4	15.8	15.1	15.7	14.7	17.2	18.2	16.4
2001/2002	16.1	17.2	15.4	14.5	15.0	14.2	17.0	18.4	16.0
2002/2003	15.8	16.7	15.2	14.7	15.4	14.2	16.5	17.5	15.8
2003/2004	16.0	16.8	15.4	14.5	15.1	14.1	16.8	17.7	16.2
2004/2005	16.1	16.7	15.8	14.8	15.1	14.6	16.9	17.5	16.4
2005/2006	16.2	17.3	15.5	14.6	15.2	14.3	17.0	18.4	16.2
2006/2007	16.5	17.5	15.8	15.1	15.6	14.8	17.2	18.5	16.4
2007/2008	16.2	17.5	15.3	15.0	15.7	14.6	16.8	18.5	15.7
2008/2009	15.9	17.0	15.3	14.3	14.8	14.1	16.9	18.1	16.0
2009/2010	15.8	16.7	15.3	14.3	14.9	14.0	16.6	17.6	16.0

Source: Statistics Canada, Labour Force Survey.

Notes

1. Due mainly to methodological differences, the Labour Force Survey tends to estimate a smaller proportion of young adults living at home compared to the census.
2. The full-time employment rate for students during the summer dropped from 63% in 2007 to 61% in 2008, and to 57% in 2009.

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Recognition of newcomers' foreign credentials and work experience

René Houle and Lahouaria Yssaad

Education and work experience are among the valuable assets new immigrants bring to Canada. Almost one in five newcomers are skilled-worker principal applicants selected for their labour market attributes. While the majority of immigrants are not directly selected through the points system, many also possess skills that are potentially valuable to Canadian society and its economy (see *Selection of immigrants).*

In 2008, close to 45% of newcomers held a university degree, more than double the proportion 14 years earlier.[1] Among those who were admitted as principal applicants in the skilled workers category, 72% held a university degree, as did 41% of newcomers in the 'spouse and dependents, skilled worker' category, and 33% of family class immigrants. Fourteen years earlier, the corresponding figures were 39%, 21%, and 12% respectively (Citizenship and Immigration Canada 2004 and 2009).

Yet newcomers face barriers that may impede the recognition of their credentials and work experience, with consequences for their labour market performance and broader integration within Canadian society. Potential factors include the content of foreign education being deemed less relevant to the needs of the Canadian labour market than the country where the education was completed, linguistic ability in English or French, and the entry procedures in some trades and professions. Unfamiliarity with foreign degrees among employers may also play a role (Mata 1999). Others have suggested that the decentralized accreditation system seems to be a hurdle, with numerous trade and professional bodies being involved, and provinces having their own standards for evaluating degrees and setting certification norms for trades and professions (McDade 1988).

Selection of immigrants

Skilled-worker principal applicants are selected through a points system based on their labour market attributes. Higher marks are assigned to characteristics deemed to be most likely to increase success in the Canadian economy. The points system has been modified since it came into effect in 1967 (Green and Green 1999), but some basic elements have remained part of the screening grid. Selection criteria for skilled workers comprise education level, language ability in English or French, employment experience, age, arranged employment in Canada prior to landing, and some form of adaptability or suitability (Justice Canada 2001 and 1999, and Tolley 2003). The LSIC includes immigrants age 15 and over who landed from abroad between October 1, 2000, and September 30, 2001. Skilled-worker immigrants in this cohort were admitted according to the *Immigration Regulations, 1978* and their subsequent updates—these immigrants did not land under the current *Immigration and Refugee Protection Act* (IRPA), which came into effect in 2002.

Newcomers experience a higher rate of unemployment than established immigrants and native Canadians. Their earnings lag behind those of other groups. Finding employment is frequently challenging. Education-to-job mismatch is particularly prevalent among recent immigrants with university education. In 2008, two-thirds of such newcomers were working in occupations that usually required at most a college education or apprenticeship, compared to 55% of established immigrants and 40% of native Canadians (Gilmore 2009).[2] Also, a recent analysis of 2006 Census data shows that just under one-quarter (24%) of employed foreign-educated, university-level immigrants were working in a regulated occupation that matched their field of study, compared to 62% of their Canadian-born counterparts. And among immigrants whose occupation did not match their field of study,

René Houle is with the Social and Aboriginal Statistics Division. He can be reached at 613-951-3732. Lahouaria Yssaad is with the Labour Statistics Division. She can be reached at 613-951-0627 or both at perspectives@statcan.gc.ca.

77% worked in jobs that do not usually require a degree, compared to 57% of 'unmatched' Canadian-born graduates (Zietsma 2010).[3]

Non-recognition of foreign credentials and work experience by employers and regulatory professional and trade bodies can lead to an underutilization of the 'human capital' of many immigrants who were selected for their skills, work experience and other sociodemographic characteristics (Boyd and Schellenberg 2007, Boyd and Thomas 2001 and 2002, and Wayland 2006[4]).

This study uses the 2000 to 2005 Longitudinal Survey of Immigrants to Canada (LSIC) to shed light on the issue of foreign credentials and work experience recognition from the perspective of immigrants, as the survey data are based on immigrants' responses to interview questions. The period covered by the survey precedes the labour market downturn that began in the fall of 2008. Although recent immigrants were disproportionately affected by the downturn, this study focuses on hypotheses relating to the recognition of credentials that should not be sensitive to the business cycle. This information may be of particular interest to those developing proposals for the federal, provincial and territorial Foreign Credentials Recognition investment program announced in November 2009.

The LSIC was unique in scope and depth. Following a cohort of new immigrants during their first four years of settlement in Canada, the survey captured both the pre-immigration and post-immigration trajectories of these immigrants by providing information on their occupation prior to landing, intended occupation, credentials received prior to landing and plans for credentials assessment, as well as their actual occupation in Canada, the education obtained or training taken after landing, and their labour-market outcomes such as earnings, participation, employment and unemployment (Kustec et al. 2007).

The same cohort of newcomers (a total of 7,716) was interviewed three times over four years: six months after landing, then two years and four years thereafter. Each time, these newcomers were asked about various aspects of their settlement in the country, including their employment situation and whether their credentials and work experience were accepted in Canada.

This study looks at one specific aspect of newcomers' settlement: recognition of their foreign credentials and work experience. (see *Data source and definitions*).

The assessment of credential recognition and work experience encompasses a number of questions. How does the recognition rate of foreign credentials compare with that of foreign work experience? Are female immigrants more likely than their male counterparts to encounter difficulties obtaining recognition for their degrees and work experience? Does the likelihood of foreign credential recognition vary depending on whether the immigrant is part of a visible minority? How do newcomers with pre-arranged employment or previous knowledge of Canadian society fare in getting their credentials and experience recognized? Does the likelihood of recognition differ depending on the location of study or work (the country where the degree was earned or work experience acquired)? Finally, how do immigrants selected specifically for their skills and education (skilled immigrants) fare compared to other immigrants?

Foreign credentials and work experience

In 2000/2001, over three-quarters of newcomers included in this study were admitted in the skilled immigrants category (as principal applicants or spouses and dependents), and less than 20% in the family class. A small number arrived as refugees or provincial nominees, business immigrants, or as permanent residents in other categories (see *Data source and definitions*). Almost 80% reported being part of a visible minority. Six months after landing in Canada—in the first of three waves of the survey—more than one-half were living in Ontario, the biggest immigrant-receiving province (Table 1).

A significant number of newcomers (over 60%) reported good or very good knowledge of one of the two official languages. Knowledge of English or French is considered a crucial aspect of an individual's job search and the process of professional, trade or academic accreditation (McDade 1988 and Mata 1999). Language ability has also been shown to improve labour-market outcomes among educated immigrants (Adamuti-Trache and Sweet 2005).

Within four years after landing in Canada, 28% of newcomers with foreign credentials had received recognition for these credentials, while 39% of those who had previously worked abroad had their foreign work experience recognized. The two groups (newcomers with credentials and newcomers with work experience) are not mutually exclusive—some of those who

Data source and definitions

The Longitudinal Survey of Immigrants to Canada (LSIC), conducted jointly by Statistics Canada and Citizenship and Immigration Canada (CIC), was based on a representative sample of all immigrants who arrived between October 1, 2000, and September 30, 2001, were age 15 or over at landing, and had applied through a Canadian mission abroad. The sampling frame was an administrative database maintained by CIC. The LSIC was designed to examine the first four years of settlement, a time when newcomers establish economic, social and cultural ties to Canadian society. Topics covered in the survey include language proficiency, housing, education, recognition of foreign credentials and foreign work experience, employment, health, values and attitudes, the development and use of social networks, income, and perceptions of settlement in Canada.

For the purposes of this study, the target population was newcomers age 18 to 59 at landing. They were interviewed at three different times: six months, two years and four years after landing in Canada. In each of the three survey waves, respondents were asked about their foreign credentials and work experience. The survey included questions on the country where they attained their highest education level and the country of their last permanent residence prior to landing. Data from these two questions help shed light on whether assessment and recognition of foreign credentials vary by source country of education and work experience.

Foreign credentials refer to the highest education level (above a high school diploma) attained outside Canada. The LSIC questions cover a range of issues relating to the assessment and recognition of foreign credentials in Canada, such as whether the respondent's credentials had been assessed and the kind of organization that accepted them (an employer, a work-related organization, an educational institution). Foreign credentials could be **fully accepted** (i.e., the employer/institution recognizes a credential as being legitimate within determined standards), **partially accepted** (i.e., the employer/institution partially recognizes a credential as being legitimate within determined standards), or **not accepted** (credential not recognized as being legitimate within determined standards). In some cases, respondents said they were finding out about the process for credential recognition. When respondents were asked about the assessment of their credentials, questions referred specifically to whether they checked to see if their credentials would be accepted as equal to those received in Canada. Other specific questions pertain to the highest degree earned, the main field of study, and the country where the degree was earned. **Foreign credentials are recognized** once they have been fully accepted and deemed to be equivalent to credentials earned in Canada. For the purposes of this study, only credentials that were fully accepted were considered a 'positive' outcome in the analysis. Partially accepted credentials were treated as 'not accepted.'

Foreign work experience refers to the newcomers' **last job prior to landing**. Respondents were asked whether their foreign work experience was accepted and by what kind of organization (an employer, a professional or work-related organization, or an educational institution).

Recent immigrants are usually defined as those who landed during the five-year period preceding Census Day. In the context of the LSIC, recent immigrants (also referred to as **newcomers** for brevity) are those who were 'followed' during their first four years in Canada, since the survey period in the LSIC is four years.

Newcomers to Canada fall into one of five categories:

- **Principal applicants in the skilled worker category** are permanent residents identified as principal applicants on the application for a permanent resident visa for themselves and, if applicable, accompanying spouse and/or dependents when they applied to immigrate to Canada. For individuals, families or households applying to immigrate to Canada in the skilled worker category, only the principal applicant is assessed on the basis of selection criteria in place at the time of the application.
- **Spouse and dependents in the skilled worker category** are accompanying family members of the principal applicant.
- **Family class immigrants** are permanent residents sponsored by a Canadian citizen or a permanent resident living in Canada. They include spouses and partners, children, parents and grandparents, and other relatives.
- **Refugees** are newcomers who landed in Canada as refugees.
- **Other immigrants** include provincial or territorial nominees who are selected by a province or territory for specific skills that will contribute to the local economy to meet specific labour market needs, business immigrants who are permanent residents selected on the basis of their ability to establish themselves economically in Canada through entrepreneurial activity, self-employment or direct investment, as well as other groups. For further information, visit Citizenship and Immigration Canada at http://www.cic.gc.ca/english/index.asp.

had credentials also had work experience, and vice versa (see *Foreign credentials and work experience: Note on the sample*).

Recognition of foreign work experience is more prevalent than recognition of foreign credentials (Chart A). One possible reason could be that work experience is mostly assessed by employers, while credentials are assessed by work-related organizations and educational institutions as well as employers. According to the LSIC, 83% of new immigrants with their work experience recognized, received this recognition from an employer. One-half of newcomers who had their credentials recognized obtained this recognition through an educational institution, 30% from an employer, and

Table 1 Overview of newcomers' characteristics: Respondents with foreign credentials and work experience

	Distribution at first wave (six months after landing)		Accepted after four years in Canada	
	Credentials	Work experience	Credentials	Work experience
	%			
Total	**100**	**100**	**28**	**39**
Men	52	55	33	51
Women	48	45	22	23
Age at landing				
18 to 24	9	8	24	31
25 to 34	51	50	32	43
35 to 44	30	30	26	38
45 to 59	9	12	19	29
Visible minority status				
No	21	23	29	50
Yes	79	77	27	35
Province or region of residence				
Atlantic	1	1	49	59
Quebec	16	16	29	34
Ontario	56	56	30	40
Prairies	2	3	33	34
Alberta	9	9	23	45
British Columbia and the territories	16	16	19	36
Immigrant category				
Skilled worker, principal applicant	48	46	38	51
Skilled worker, spouse and dependents	28	25	19	31
Family class	16	18	19	31
Refugee	3	5	11	14
Provincial nominees, business immigrants, other	6	6	14	22
Lived in Canada at least one year before landing				
No	93	93	26	37
Yes	7	7	49	59
Job arranged prior to landing				
No	93	93	26	36
Yes	7	7	51	76
Self-assessed spoken language knowledge				
Very well	37	35	35	47
Well	28	27	30	41
Fairly well	18	18	17	25
Poorly, not at all	16	21	19	32

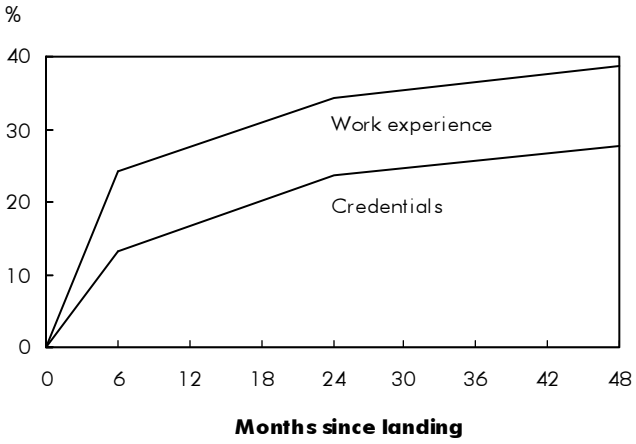
Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

20% from a work-related organization. The rate of recognition of foreign credentials and work experience was highest in the first six months of settlement. Indeed, among all new immigrants whose credentials were accepted after four years in Canada, nearly one-half (47%) received this recognition within six months after landing. The corresponding figure for foreign work experience was 62% (Charts A and B).

Not all immigrants need to have their credentials recognized by an employer in order to get a job. For example, in the first wave of the survey (six months after landing), 11% of respondents indicated that they did not get their credentials assessed because they knew they 'would be accepted' or thought that they met Canadian standards and there was no need to have them assessed. Also, in the third wave of the survey (four years after landing), 10% of respondents said they did not seek an assessment of their credentials because they knew they would be 'accepted.'[5] On the other hand, a similar proportion (14% in the first wave and 13% in the third wave) indicated that they did not get their credentials assessed because they knew they would not be accepted or recognized by employers (see *Reasons for not getting foreign credentials assessed*).

There appears to be a significant gap between men and women. Fully one-third of men had their credentials recognized within four years after landing, compared with

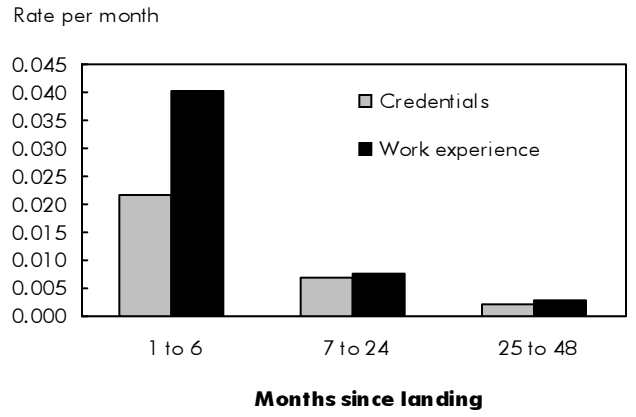
Chart A Foreign work experience more likely to be recognized than credentials



Note: Recognition rates are cumulative percentages.
Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

only 22% of women. Men were also more successful in having their work experience recognized—51% compared with 23% of women.

Chart B Hazard rate of recognition of foreign credentials and work experience



Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

Foreign credentials and work experience: Note on the sample

A total of 7,716 newcomers were interviewed in three stages (or waves) over four years. The first interview took place six months after landing, the second and third, two years and four years after landing respectively. Among these respondents, one group of 4,826 newcomers reported foreign credentials,[9] and an overlapping group of 5,615 reported foreign work experience. Newcomers' last occupation prior to landing was used as a proxy for their work experience.

1. Total sample (third wave)	7,716	100.0
2. Credentials only (no work experience)	508	6.6
3. Work experience only	1,297	16.8
4. Both credentials and work experience	4,318	56.0
5. Neither credentials nor work experience	1,593	20.6
6. Sub-total with credentials (2 + 4)	4,826	62.5
7. Sub-total with work experience (3 + 4)	5,615	72.8

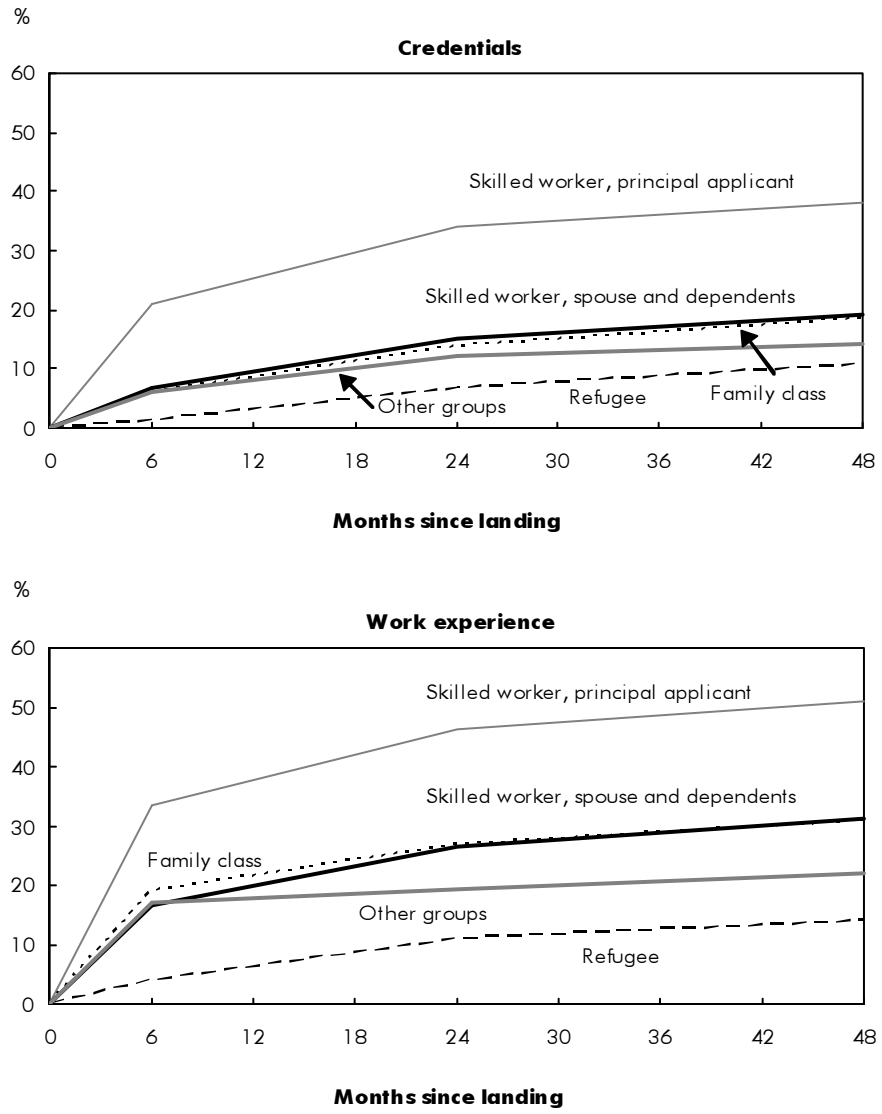
Skilled workers most likely to have foreign credentials and experience recognized

Principal applicants in the skilled workers category make up a distinct group due to the process involved in their selection. These new immigrants are selected based on their labour market attributes, including education, knowledge of official languages and work experience. The recognition rates for principal applicants in the skilled workers category (38% for credentials and 51% for work experience) were higher than for any other group, including spouses and dependents in the skilled workers category. The recognition rates were particularly low for refugees—less than 15% (Chart C).

Vast majority of newcomers highly educated

Almost nine out of ten newcomers with credentials above a high school diploma had a university degree at the time of landing in Canada. Among these, 82% held degrees in fields of study ranging from engineering to agriculture, biology, physics, mathematics and

Chart C Cumulative percentage of new immigrants with foreign credentials and work experience fully accepted by immigrant category



Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

health sciences, as well as the humanities and social sciences. Two-thirds held professional jobs before immigrating to Canada; in management and business administration, natural sciences, health and education. A small number (12%) had blue-collar jobs prior to landing. This occupational distribution reflects the emphasis on high-level skills in the selection and recruitment of immigrants.

Consistent with recent immigration trends, over one-third of newcomers with foreign credentials (35%) earned their highest education degree in China and India. The highest proportion with foreign work experience (30%) were also from those two countries. On the other hand, smaller proportions of newcomers had studied in the United States, the United Kingdom, France and South Korea. Those who had studied or worked in the U.S. or the U.K. were more likely to get recognition for their credentials and work experience (Table 2).

A small proportion of newcomers (7%) had arranged employment prior to landing, and a similar proportion had previous Canadian experience (they had lived in Canada for at least one year). After four years of residence in Canada, newcomers who had a job arranged prior to landing had the highest rate of recognition for their work experience (76%) and credentials (51%). Also, a majority of newcomers with previous Canadian experience received recognition for their credentials (59%) and work experience (49%) (Table 1).

Modelling credential and experience recognition

Logistic regression models were run in order to determine whether, and to what extent, evidence from the descriptive analysis holds when controlling for the effect of individual characteristics on the probability of recognition of foreign credentials and work experience. Because the LSIC was conducted in three waves, the statistical model used in this analysis estimates the probability that credentials or work experience have been recognized at each survey occasion, conditional upon not previously being

Table 2 Education and work experience of newcomers with foreign credentials and work experience

	Six months after landing		Accepted after four years in Canada	
	Credentials	Work experience	Credentials	Work experience
		%		
Education level at landing				
Below high school	...	5	...	28
High school	...	11	...	26
Postsecondary, trade	...	19	...	35
Bachelor, MS, MD, Ph.D.	...	66	...	43
Level and field of highest education				
Some university or college, or below, any field	11	...	16	...
University				
Education, humanities and social science	25	...	25	...
Commerce, management, business administration	24	...	30	...
Engineering	20	...	33	...
Health	4	...	31	...
Agriculture, biology, physics, mathematics	10	...	36	...
No specialization	7	...	20	...
Last occupation prior to landing				
Managers and business administrators	...	16	...	34
Professional and technical in natural sciences	...	28	...	49
Professional and technical in health	...	6	...	43
Teachers and professors	...	10	...	32
Professional and technical in other sectors (law, social, arts, etc.)	...	6	...	37
Clerical, sales and other service occupations	...	21	...	32
Blue collar	...	12	...	36
Not stated, not coded	...	1	...	44
Country of highest education or last permanent residence				
United States	3	4	51	62
United Kingdom	3	2	43	64
France	3	2	24	65
South Korea	4	4	10	14
India	14	11	27	35
China	21	19	28	28
Philippines	9	7	17	48
Pakistan	5	4	34	33
Romania	4	4	34	53
Russia	2	1	26	42
All other countries	32	41	28	40

Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

recognized. Thus the probability at the first time point includes all respondents in the sample, and the probabilities at the later time points exclude those whose credentials or work experience have previously been recognized. In other words, the model estimates the conditional probability of foreign credentials and work experience being recognized at each time point (see *Multivariate analysis*).

These predicted probabilities refer to estimated percentages of respondents whose foreign credentials and foreign experience would be accepted after six months, between six months and two years, or between two years and four years of Canadian residence.

This analysis confirms most of the observations from the descriptive analysis. For example, at each of the three periods, the predicted probability of recognition was consistently higher for work experience than for credentials. In the work experience model, the probability of recognition is highest (65%) in the first six months of settlement and falls thereafter, to 45% in the second wave and 24% in the third wave. However, the predicted probability of foreign credential recognition is stable in the first and second waves, and then falls in the third wave. Six months after landing, newcomers had a 35% predicted probability of having their credentials recognized. Among those who did not receive recognition after six months the probability was 37% two years after landing, similar to the first period, then fell to 17% in the third period (data not shown).

Multivariate analysis

Logistic regression was used to estimate the probability of an outcome (e.g., obtaining foreign credential or work experience recognition) while accounting for the effects of other variables. These explanatory variables or covariates included age, sex, education, immigrant category (skilled workers, refugees, etc.), visible minority status, province of residence, knowledge of official languages, pre-arranged job at landing, previous Canadian experience, source country of foreign credentials and work experience, field of highest education, and last job prior to landing.

Because this study examines the probability p of an outcome at three discrete points in time—which correspond to the three waves of the survey—a discrete-time proportional hazard model was used. The discrete-time method for event–history analysis is based on the fact that "the history of an individual or group can always be characterized as a sequence of events" (Allison 1984).

The original survey data for each respondent were put into as many lines as the number of waves between newcomers' landing in Canada and the time of the survey, each line representing one period. For the dependent variable defined as recognition of credentials or work experience, the code 0 was used when the individual was at 'risk' of having credentials or work experience recognized, and 1 when the immigrant experienced the outcome, i.e., recognition for the first time since landing. The respondent ceases to be 'at risk' upon recognition of his/her credentials or work experience.

Process time t is the number of months in Canada since landing, and takes three values: 1 to 6 months, 7 to 24 months, and 25 to 48 months. Logistic regression is then used for statistical analysis. The intensity logistic (or logit) function takes the following general form:

$$Logit\ p_i(t) = y(t) + \sum_l \alpha_l \chi_{il} + \sum_m \beta_m w_{im}(t)$$

The intensity of recognition of credentials or work experience depends on

- a time baseline $y(t)$, which is piecewise constant, where t is the duration in months since landing in Canada;
- some fixed covariates $\sum_l \alpha_l \chi_{il}$, including a constant term;
- some time-varying covariates $\sum_m \beta_m w_{im}(t)$.

Coefficients from these models were converted into predicted probabilities for ease of interpretation. Predicted probabilities were calculated for each value of all covariates at each of the three time points and then the three results were summed in order to get the predicted probabilities after four years in Canada. All statistics were weighted to reflect population totals and models were run using bootstrap weights to correct variance estimates for survey design—a technique called design-based variance estimation.

Throughout the four-year survey, a number of newcomers did not have their credentials assessed (see *Reasons for not getting foreign credentials assessed*) or reported having received partial recognition (see *New immigrants with partially accepted foreign credentials and work experience*). This may partly explain the low predicted probability of credential recognition four years after landing for the remaining immigrants in the cohort.

Also, the reason why the recognition probability is higher for foreign work experience than for credentials may lie in different factors, including the fact that—at least for employers in certain industries—work experience is a more tangible asset than credentials. Credentials can be hard to assess, or deemed outdated or unrelated to labour market needs, whereas work experience can be considered 'concrete' or tangible.

Recognition rate lower for women, older immigrants

A smaller proportion of women had their work experience recognized by an employer, a work-related organization or an educational institution (48% versus 56% for men). Age is also a strong correlate—the older the immigrant, the lower the likelihood of having their credentials or work experience recognized. Younger newcomers (age 25 to 34) were more likely to have their credentials and experience recognized (32% and 48% respectively) than their counterparts age 35 to 44 (28% and 43% respectively). The probabilities are even lower for older immigrants age 45 to 59—21% and 35% respectively (Table 3).

Newcomers who were part of a visible minority also had a lower probability of having their work experience recognized compared to their non-visible minority counterparts (42% versus 52%). In contrast, the two groups had similar chances of having their credentials recognized—31% and 28% respectively. Visible minority status has been shown to affect immigrants' prospects in the labour market (Oreopoulos 2009).

Multivariate analysis also confirms the findings for principal applicants in the skilled workers category. These newcomers have the highest predicted probability of receiving recognition for their credentials (39%) and work experience (56%) among all classes of immigrants. Refugees had the lowest predicted probability of recognition. In fact, throughout their first four years in Canada, immigrants selected as skilled workers were the most successful in obtaining recognition for their credentials and work experience.

Table 3 Recognition of foreign credentials and work experience by selected sociodemographic characteristics

	Credentials model			Work experience model		
	Coefficients	Odds ratio	Predicted probability of recognition (%)	Coefficients	Odds ratio	Predicted probability of recognition (%)
Sex						
Men (ref.)	0.000	1.00	36	0.000	1.00	56
Women	-0.166	0.85	32	-0.225**	0.80	48
Age at landing						
18 to 24	0.241	1.27	39	0.053	1.05	50
25 to 34 (ref.)	0.000	1.00	32	0.000	1.00	48
35 to 44	-0.176***	0.84	28	-0.148***	0.86	43
45 to 59	-0.490**	0.61	21	-0.431*	0.65	35
Visible minority status						
No (ref.)	0.000	1.00	28	0.000	1.00	52
Yes	0.122	1.13	31	-0.291**	0.75	42
Immigrant category						
Skilled immigrant. principal applicant (ref.)	0.000	1.00	39	0.000	1.00	56
Skilled immigrant, spouse and dependents	-0.599*	0.55	23	-0.473*	0.62	39
Family class	-0.792*	0.45	20	-0.539*	0.58	37
Refugee	-1.295*	0.27	12	-1.478*	0.23	17
Provincial nominees, business immigrants. other	-0.870*	0.42	18	-1.076*	0.34	24

* significantly different from the reference group (ref.) at the 0.001 level; ** at the 0.01 level; *** at the 0.05 level
Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

Credential recognition increases with education

The higher the level of education, the greater the probability of credential recognition in Canada (31% for newcomers with a university degree compared with 20% for their counterparts with some university/college education or below). However, education level doesn't seem to play a role in work experience recognition—newcomers with university degrees were no more likely than those with an education below the high school level[6] to have their work experience recognized—46% and 45% respectively (data not shown).

Also, the credential-recognition model shows little variation by field of study except for degrees with no specialization, for which the rate of recognition is lower (Table 4). This model indicates that foreign-trained immigrants in engineering and health had recognition probabilities that are slightly higher than recognition probabilities for immigrants trained in education, humanities and social sciences, and in commerce,

Table 4 Recognition of foreign credentials by field of study

	Coefficients	Odds ratio	Predicted probability of recognition (%)
Level and field of highest education			
Some university or college, or below, any field	-0.541*	0.58	20
University			
Engineering (ref.)	0.000	1.00	33
Education, humanities and social science	-0.121	0.89	29
Commerce, management, business administration	-0.047	0.95	31
Health	0.176	1.19	38
Agriculture, biology, physics, mathematics	-0.055	0.95	31
No specialization	-0.270	0.76	26

* significantly different from the reference group (ref.) at the 0.001 level
Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

management and business administration. This differs from other studies which found that regulated occupations such as physicians and engineers are especially difficult to enter due to re-accreditation or certification requirements (McDade 1988, and Boyd and Schellenberg 2007).

Country of highest education or last residence related to recognition

Newcomers who attained their highest level of education or had their last permanent residence in the United States or the United Kingdom prior to landing in Canada had the highest probability of receiving recognition for their credentials (57% and 54% respectively) and work experience (78% and 76% respectively). Results for France were mixed: while credentials earned in this country had a 21% probability of being recognized—the third lowest after the Philippines and South Korea—French work experience was just as likely to be recognized as American or British work experience. South Korea, another developed OECD country, also fares poorly, both in terms of credentials and work experience assessment (Table 5).

Data from the 2006 Census also show that immigrants who earned their highest degree in South Korea had one of the lowest match rates between occupation and field of study—only 12% of these immigrants worked in a regulated occupation that matched their field of study, similar to immigrants who earned their highest degree in Haiti, Cuba and El Salvador (Zietsma 2010).

For newcomers who had completed their highest education level in China and India (over one-third), the probability of credential recognition was similar, but recognition was higher for work experience acquired in India.

The effect of country or region of origin on labour market outcomes such as earnings or job–education mismatch has been well documented. Immigrant professionals from the United States, the United Kingdom and Western Europe are far more successful in the Canadian labour market than their counterparts from other regions of the world (Reitz 2001, Boyd and Thomas 2002, and Adamuti-Trache and Sweet 2005).[7]

Another series of models was run using ten sub-continental regions instead of ten specific countries, with the United States treated as a single region, and Australia and New Zealand grouped with the United Kingdom. The other regions were Western Europe, Eastern Europe, Latin America and the Caribbean, Sub-Saharan Africa, West Asia, South Asia, East Asia, and Southeast Asia and the Pacific.

Table 5 Recognition of foreign credentials and work experience by country of highest education or last permanent residence

	Credentials model			Work experience model		
	Coefficients	Odds ratio	Predicted probability of recognition (%)	Coefficients	Odds ratio	Predicted probability of recognition (%)
United States (ref.)	0.000	1.00	57	0.000	1.00	78
United Kingdom	-0.087	0.92	54	-0.042	0.96	76
France	-1.209*	0.30	21	-0.088	0.92	74
South Korea	-1.732*	0.18	13	-1.948*	0.14	17
India	-0.867*	0.42	28	-0.859*	0.42	42
China	-0.802*	0.45	30	-1.219*	0.30	32
Philippines	-1.389*	0.25	18	-0.472***	0.62	57
Pakistan	-0.639**	0.53	35	-1.022*	0.36	37
Romania	-0.646**	0.52	34	-0.661**	0.52	49
Russia	-0.664***	0.51	34	-1.020*	0.36	37
All other countries	-0.752*	0.47	31	-0.705*	0.49	48

* significantly different from the reference group (ref.) at the 0.001 level; ** at 0.01; *** at 0.05
Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

The results of these models (data not shown) indicate that English-speaking regions (the United States as well as the United Kingdom–Australia–New Zealand group) had a higher rate of foreign credential and work experience recognition. All other regions, including Western Europe, fell significantly lower. Only France differed from the rest of Western Europe in terms of work experience recognition. Because of the small sample size, it was not possible to investigate whether this French 'specificity' applied to other European countries like the Netherlands or Ireland, or Nordic countries.

The fact that Western Europe ranked low compared to the United States and the United Kingdom suggests that the quality of education may not be the only factor involved in the assessment of foreign credentials and work experience in Canada. Language of study is a crucial factor since university-educated immigrants with the highest match rates between field of study and occupation studied in English-speaking countries (Zietsma 2010).

Pre-arranged jobs and previous Canadian experience have major effects

Not surprisingly, having a pre-arranged job at landing is the strongest correlate of work experience recognition: 87% compared to 42% for those without a prior employment arrangement and 56% for those selected as skilled workers. The predicted probability of credential recognition for newcomers with a pre-arranged job was also significantly higher (40%) than for those who did not have a pre-arranged job (29%). Similarly, compared to newcomers who did not have previous Canadian experience, those who did have such experience had a higher probability of credential and work experience recognition (Table 6).

Newcomers with pre-arranged employment or previous Canadian experience are more likely to be aware of the labour market conditions and the potential challenges of obtaining credential or work experience recognition. Having a pre-arranged job or having previously worked in Canada implies a working knowledge of English or French, which in turn can

Table 6 Pre-arranged employment or previous Canadian experience and recognition of foreign credentials or work experience

	Credentials model			Work experience model		
	Coefficients	Odds ratio	Predicted probability of recognition (%)	Coefficients	Odds ratio	Predicted probability of recognition (%)
Lived in Canada at least one year before landing						
No (ref.)	0.000	1.00	29	0.000	1.00	44
Yes	0.488**	1.63	43	0.199	1.22	51
Job arranged prior to landing						
No (ref.)	0.000	1.00	29	0.000	1.00	42
Yes	0.378**	1.46	40	1.045*	2.84	87
Self-assessed spoken language knowledge						
Very well (ref.)	0.000	1.00	35	0.000	1.00	50
Well	-0.087	0.92	32	-0.100	0.91	46
Fairly well	-0.588*	0.56	21	-0.517*	0.60	34
Poorly, not at all	-0.483*	0.62	23	-0.256**	0.77	41

* significantly different from the reference group (ref.) at the 0.001 level; ** at 0.01
Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

Table 7 Recognition of foreign experience by last occupation prior to landing

	Coefficients	Odds ratio	Predicted probability of recognition (%)
Professional and technical in natural sciences (ref.)	0.000	1.00	50
Managers and business administrators	-0.356*	0.70	38
Professional and technical in health	-0.061	0.94	48
Teachers and professors	-0.349**	0.71	39
Professional and technical in other sectors (law, social, arts, etc.)	-0.273***	0.76	41
Clerical, sales and other service occupations	-0.227***	0.80	42
Blue collar	-0.070	0.93	48
Not stated, not coded	0.009	1.01	51

* significantly different from the reference group (ref.) at the 0.001 level; ** at 0.01; *** at 0.05
Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

improve communication with Canadian employers and other organizations. Newcomers who reported having poor or no knowledge of either official language did not fare as well as their counterparts who reported knowing either English or French (or both) very well.

Last job prior to landing

To ensure adequate sample size, previously held jobs were grouped in broad occupational groups. New immigrants who, prior to landing in Canada, had worked in the natural and applied sciences field (which includes engineers), as well as their counterparts who had worked in the health field, had the highest predicted probability of achieving work experience recognition after four years of residence in Canada (50% and 48% respectively). These two occupational groups are similar in that they are both regulated by a certification or licensing body. Interestingly, newcomers who held blue collar jobs (many in trades occupations that are not regulated) prior to landing had a similar probability to that of their counterparts in health occupations in terms of work experience recognition (48%) compared to 38% for newcomers in business occupations and 39% among teachers and professors (Table 7).

Credential recognition lower in Alberta and British Columbia than in Ontario

New immigrants living in Alberta and British Colombia and the territories[8] had a lower probability (24% and 23% respectively) of credential recognition than their counterparts in Ontario (32%). Newcomers residing in the Atlantic region appear to have had the best odds of credential recognition (59%). Although their numbers were small, immigrants living in Newfoundland and Labrador in 2006, for example, were

Table 8 Recognition of foreign credentials and work experience by province or region of residence

	Credentials model			Work experience model		
	Coefficients	Odds ratio	Predicted probability of recognition (%)	Coefficients	Odds ratio	Predicted probability of recognition (%)
Ontario (ref.)	0.000	1.00	32	0.000	1.00	47
Atlantic	0.757***	2.13	59	0.139	1.15	52
Quebec	-0.166	0.85	28	-0.496*	0.61	32
Prairies	0.479	1.61	48	-0.242	0.79	39
Alberta	-0.334**	0.72	24	0.184	1.20	54
British Columbia and the territories	-0.410*	0.66	23	0.057	1.06	49

* significantly different from the reference group (ref.) at the 0.001 level; ** at 0.01; *** at 0.05
Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

New immigrants with partially accepted foreign credentials and work experience

For increased accuracy of the analysis, a conservative approach was adopted by considering only the group of new immigrants whose foreign credentials and work experience were fully accepted. Those who received partial acceptance were treated as 'not accepted.' However, given the increased difficulties they are likely to face in the labour market, it would be worthwhile to look at some of their characteristics (Table 9).

After four years of settlement in Canada, 12% of new immigrants with foreign credentials and 18% of those with previous work experience had obtained partial recognition, compared with 28% of their counterparts whose credentials had been fully accepted and 39% whose work experience had been fully accepted. Not surprisingly, data on partial acceptance of credentials and work experience reveal certain patterns that are consistent with both the descriptive and multivariate results for the groups with full recognition. For example, partial recognition of foreign work experience tended to be higher for female immigrants and people who were part of a visible minority group. Also, refugees and Filipinos were the most likely to receive partial recognition for their credentials, compared to newcomers selected as skilled workers—who fared the best in this respect. Immigrants who earned their highest degree or whose last permanent residence was in the United States or the United Kingdom were the least likely to receive partial recognition for their credentials and work experience since the credentials and work experience for the majority of them had been fully accepted.

Table 9 Newcomers with partially accepted foreign credentials or work experience after four years in Canada

	Foreign credentials accepted			Foreign experience accepted		
	Total, fully or partially	Fully	Partially	Total, fully or partially	Fully	Partially
	%					
Total	**40**	**28**	**12**	**56**	**39**	**18**
Men	47	33	14	64	51	13
Women	32	22	9	48	23	25
Age at landing						
18 to 24	42	24	18	45	31	13
25 to 34	44	32	12	61	43	18
35 to 44	38	26	11	56	38	18
45 to 59	30	19	11	45	29	16
Visible minority status						
No	42	29	13	61	50	11
Yes	39	27	12	55	35	20
Immigrant category						
Skilled immigrant, principal applicant	51	38	13	72	51	21
Skilled immigrant, spouse and dependents	31	19	11	49	31	18
Family class	32	19	13	44	31	14
Refugee	21	11	11	23	14	9
Provincial nominees, business immigrants, other	23	14	9	29	22	7
Country of highest education or last permanent residence						
Unites States	54	51	3	69	62	7
United Kingdom	49	43	6	70	64	6
France	37	24	13	76	65	11
South Korea	17	10	7	21	14	7
India	43	27	16	63	35	27
China	33	28	5	54	28	25
Philippines	42	17	25	66	48	18
Pakistan	48	34	13	54	33	21
Romania	45	34	12	68	53	15
Russia	46	26	19	58	42	16
All other countries	42	28	13	54	40	14

Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

the most likely (60%) to be working in occupations that matched their field of study, only three percentage points behind the Canadian-born in the province (Zietsma 2010).

With respect to foreign work experience, newcomers living in Ontario had the highest probability of experience recognition within four years after landing (47%), while their counterparts residing in Quebec had the lowest (32%). Results for the other provinces were not statistically different from Ontario (Table 8).

Reasons for not getting foreign credentials assessed

After four years of residence in Canada, about 40% of immigrants who arrived between October 1, 2000, and September 30, 2001, had not yet had their credentials assessed. The main reason for not having credentials assessed was that respondents saw no need for doing so or planned to work in an occupation different from their field of study—23% provided this reason after four years in Canada, compared to 5% six months after landing. This suggests that many new immigrants who did not have their credentials assessed had changed their plans regarding both the assessment of their credentials and the type of job to take during their first four years in Canada. Similar proportions of newcomers said they didn't have their credentials assessed for completely opposite reasons: 10% said they knew their credentials would be accepted, while 12% said they knew their credentials would not be accepted (Table 10).

Table 10 Reasons for not having foreign credentials assessed after six months or four years in Canada

	Six months after landing	Four years after landing
	%	
Total	**100.0**	**100.0**
No need/want to work in another field	4.9	23.0
Haven't had time/too busy	24.1	16.1
I know my credentials would not be accepted (friend told me, common knowledge, etc.)	9.0	11.7
Not a main priority (e.g., need to learn or improve language skills first)	3.3	10.2
I know my credentials would be accepted	6.4	9,8
Don't know where/how to get my credentials assessed/process too complicated	15.0	7.3
Cannot afford to have them assessed	3.0	3.7
Planning to return to school	5.5	3.6
Assessments would not be recognized by employers	4.7	1.6
Other reasons	24.1	13.0

Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2000 to 2005.

Summary

This study looked at the cohort of new immigrants who landed between October 2000 and September 2001, examining their outcomes in terms of foreign credential and work experience recognition at three time points over a four-year period—six months, two years and four years after landing.

Among newcomers who landed in Canada from late 2000 to late 2001, just over one-quarter obtained recognition for their education credentials and two out of five received recognition for their work experience within four years after landing. About one-half of newcomers whose credentials or work experience were accepted by an employer, a professional association or an educational institution received recognition within their first six months of residence. A number of these individuals had pre-arranged employment or had resolved the issue of credential and work experience equivalencies prior to landing.

The study found that immigrants who landed as principal applicants in the 'skilled worker category'—individuals specifically selected for their skills and education—had the highest predicted probability of having their credentials and work experience recognized (39% and 56% respectively) after four years of residence in Canada, compared to other newcomers such as family class immigrants and refugees.

Women and older immigrants were less likely to have their work experience or credentials recognized within four years after landing compared to men and younger immigrants.

Another factor related to the likelihood of foreign credential recognition was the source country of the highest level of education and work experience. Newcomers who attained their highest education level or had worked at their last job in the United States or the United Kingdom prior to landing in Canada were significantly more likely to receive recognition for their

credentials and work experience. Results were mixed for France: while credentials earned in this country had a low probability of being recognized—in fact, the third lowest after the Philippines and South Korea—French work experience was just as likely to be recognized as American or British work experience.

Recent immigrants who had completed their highest level of education in China and India had similar probabilities of credential recognition, albeit lower, to the United States and the United Kingdom. However, Indian work experience was more likely to be recognized than Chinese experience.

Notes

1. In 1994, about 21% of newcomers held a university degree (Citizenship and Immigration Canada 2004, p. 47).
2. This is a report on employment quality for immigrant and Canadian-born workers. It is based on 2008 data from the Labour Force Survey (LFS). These data come from five questions designed to monitor immigrants' employment patterns and trends. Added to the LFS in January 2006, these questions pertain to the country of birth, landed immigrant status, the year and month that status was obtained, and the country where the degree reflecting the highest level education was earned.
3. Using data from the 2006 Census of Population, this study looks at university degree holders among immigrant and Canadian-born workers in regulated occupations. It sheds light on immigrants with foreign credentials and how they fare with respect to job–education mismatch compared to workers born or educated in Canada
4. Wayland conducted the study for Ontario. Similar concerns were voiced during the Bouchard-Taylor Commission hearings in Quebec (Bouchard and Taylor 2008).
5. No similar questions were asked about work experience.
6. Newcomers with an education below the high school level made up 5% of all new immigrants in 2000/2001.
7. There are exceptions, however. For instance, while Western-trained engineers are more successful in matching their education with their actual occupation, among foreign-born physicians, those born in Africa and South Asia have better chances of working as doctors than other groups, including those born in the United States, Western Europe and Oceania (Boyd and Schellenberg 2007). Place of training is assumed to be the same as place of birth, which may not be always the case.
8. Because there are few immigrants in the territories, they were grouped with British Columbia. Including or excluding these immigrants would not change the results for British Columbia. However, their exclusion would create gaps in some respondents' life history (represented by their answers to the three waves). These gaps are due to the fact that the residence variable is not static: As newcomers in the LSIC sample are followed throughout the survey period, they are asked about their residence during each wave.
9. About 300 respondents with foreign credentials were excluded from the analysis, mainly because it was not possible to match the level of their highest degree reported in the credentials module of the survey with their highest level of education reported in the education section of the main questionnaire. A few other respondents were also excluded because they reported having completed their highest level of education in Canada. There were no exclusions of respondents with foreign work experience. In the third wave of the survey, the credentials sub-sample represents 63% of the LSIC sample, and the work experience sub-sample, 73%.

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