

***Trends in Student Borrowing  
and Pathways: Evidences from the 1990,  
1995 and 2000 Classes***

**Final Report**

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# *Abstract*

This paper analysed trends in student's choices regarding borrowing and pathways towards post-secondary education (PSE). Statistics based on cross sectional data from the three newest cohorts of the *National Graduates Survey* (1990, 1995 and 2000) were used to determine whether students altered their borrowing behaviour and the choice of pathways through PSE during the context of increasing costs of PSE. The first part examined the incidence of borrowing, the level of borrowing, debt burden, repayment problems and payback rate of the three cohorts. The second part analysed pathways towards postsecondary education enrolment and graduation. Trends in the pathways chosen, their consequences on the time taken to complete a degree and the graduation age, and factors influencing pathways choices were the questions investigated.

Findings revealed a picture of heavier student debt burden. While the proportion of graduates who borrowed money did not change between 1990 and 2000, the average student debt size increased. As a result, the median-debt-to-earnings ratio increased significantly for both college and bachelor graduates (from 0.21 to 0.33 and from 0.28 to 0.44) over the ten year period. The proportion of student reporting problems in repaying loans also increased over the period, reaching 41% for college graduates and 31% for bachelor graduates in 2000. Following these trends, the proportion of debt repaid two years after graduation declined substantially between 1990 and 2000 (from 48% to 23% for college graduates and from 41% to 21% for bachelor graduates).

The analysis revealed that the proportion of students opting for non-traditional pathways through PSE (including delaying entry into PSE after high school completion, studying part-time, taking a break from the program of study) has largely remained unchanged between 1990 and 2000. The only major change observed was the increase in the proportion of college graduates studying part-time. This proportion doubled from 4% in 1990 to 8% in 2000. However, a part of this increase can be attributed to a rise in the proportion of college graduates with previous PSE credential who were more likely to engage in part-time program study. Small changes in pathways trends, taken together, have nevertheless impacted the completion time of a degree and the graduation age. A reduction in time to complete program of study was observed among the college and bachelor graduates. And, the median age at graduation increased for college graduates. It was found that financial reasons were not a major determinant of student's choices regarding their activities prior and during PSE. Personal factors (children and migration) were the most important factors influencing the choice of delaying PSE entry. The majority of students who chose to study part-time did so because they had a job and only few (6% of college graduates and 13% of bachelor graduates) reported a "lack of money" as a reason. Similarly, only 9% of college and 8% of bachelor graduated took a break during their program because of money problems. A large proportion reported doing so because of "other reasons" that could include traveling and a lack of fit with the program.

These observed trends in the choice of pathways and borrowing decisions have important policy implications. First, it highlights the need for research on the long term consequences of borrowing and adjusting loan limits. Borrowing and more particularly heavy debt burden can have an adverse impact on future personal decisions such as the timing for buying a home, starting a family, saving for retirement, participation in adult education, etc. Second, the picture of heavier debt burden also highlights the need for wise education investments. In order to maximise the return on their investment, students should be provided with information on the quality of PSE institutions that will allow them to choose a high quality school at a reasonable price. Finally, the trends in student pathways reiterate the role of student loans as a good financing tool as it limits or eliminates the need to opt for non-traditional pathways and it allows students to continue their PSE education uninterrupted.

# 1. Introduction

Between 1990 and 2000, one of the major changes that occurred in the education system in Canada is the increase in the costs of going to college and university. Costs for tuition, books and school supplies, and living and accommodation expenses, have been rising faster than the rate of inflation<sup>1</sup>. How young people have adapted to the changed financial environment? Enrolment in higher education remained extremely stable from 1990 to 2000. There was a small drop in university enrolment but this was due entirely to a drop in enrolment rates among older adults pursuing part-time university enrolment. Moreover, no relationship was found between provincial tuition rate and provincial participation rate<sup>2</sup>. However, many research showed that the increase in PSE cost coincided with higher student borrowing<sup>3</sup>. The increase in the cost of post-secondary education may also have impacted student's choices regarding pathways towards post-secondary education. In response to increases in costs, students may prefer to take non-traditional pathways. More students may choose to postpone their studies to work and save money to afford university or college later. A larger proportion of students may have to take time off during their PSE program to raise money to complete their education. More students may also choose to study part-time because they have to work while studying.

This paper analyses trends in student's choices regarding borrowing and pathways towards post-secondary education (PSE). Statistics based on cross sectional data from the three newest cohorts of the *National Graduates Survey* (1990, 1995 and 2000) are used to determine whether students changed their borrowing and pathways patterns during the context of increasing costs of PSE<sup>4</sup>.

Student's pathways and borrowing patterns of postsecondary graduates in Canada have been analysed in some research paper. The results of these analysis are summarized in section 2. In section 3, key statistics related to borrowing (incidence and mean level of borrowing, debt burden, repayment problems, and payback rates) are analysed in order to determine whether borrowing levels have increased and are causing hardship in the post-schooling payback period. Section 4 is devoted to the analysis of pathways towards PSE graduation. The following questions are investigated: Are there new trends in the pathways chosen by students towards PSE? Are there more students choosing non-traditional pathways (delaying entry, studying part-time, taking a break during the program)? What are the consequences of those pathways changes on the graduation age and the time taken to complete a degree? What are the factors influencing student's pathways choices? Are financial factors playing an important role? Lastly, section 5 presents concluding remarks and policy implications are discussed in the final section.

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<sup>1</sup> Statistics Canada (2004)

<sup>2</sup> See Junor and Usher (2004) for an analysis of enrolment and tuition and participation rate.

<sup>3</sup> Finnie (2002); Allen, Harris and Butlin (2003); Allen and Vaillancourt (2004)

<sup>4</sup> The analysis focused on college graduates (community college or CEGEP certificate or diploma) and on bachelor graduates (bachelor or first professional degree).



## 2. Literature Review

Finnie (2000) investigated borrowing and repayment patterns of the Classes of 1982, 1986, 1990 and 1995<sup>5</sup>. Borrowing generally grew across the four cohorts and for the last group, from 25% to just under 50% of all graduates held students loans, with mean values of around \$9,500 for college graduates and \$12,500 to \$14,000 at the various university levels. Debt burdens generally rose over time due to the increases in borrowing levels since earnings were relatively steady. The largest debt burden increase was observed for female bachelor's graduates who saw their median debt-to-earnings ratio growing from 0.17 in 1982 to 0.38 in 1995. Average payback rates by two years following graduation fell over time and averaged 40%-55% for the most recent group. There were considerable variations among payback rate, for example, 20% to 40% had repaid their debt completely but between 30% and 50% had repaid less than 25% of their debt two years after graduation. Repayment problems rose over time. For the 1995 cohort, repayment problems were reported by 21% to 33% of those who still owed money two years after graduation. These problem cases represent 10%-15% of all post-secondary graduates. Repayment problems were related to employment status and income levels in the predictable fashion. There were relatively small gender differences in borrowing, greater differences in debt-to-earnings ratios but small differences in payback rate and repayment problems. Differences in borrowing by field of study were also rather small, which suggest that borrowing has been largely supply-side determined (i.e. eligible individuals have mostly borrowed up to the permitted maximum).

Allen, Harris and Butlin (2003) presented a portrait of young bachelor and college graduates of the Class of 1986, 1990 and 1995 and offered some pathways and borrowing analysis<sup>6</sup>. Pathways before enrolling in PSE revealed that young graduates who had no previous PSE experience and moved straight from high school into university accounted for about half of all bachelor graduates, a proportion that has been stable through time. At the college level, the proportion was lower and on a downward trend, from 46% in 1986 and 39% in 1990, to 34% in 1995. Another notable shift observed was the time taken by graduates to complete their program. The proportion of college graduates completing in less than one year doubled (6% in 1990 to 11% in 1995). At the bachelor level, the proportion of full-time students who had completed their degree within three years decreased from 79% in 1990 to 74% in 1995 and the proportion taking four years or more rose from 21% to 26%. The analysis of student borrowing was limited to 1990 and 1995 graduates. Compared to the 1990 graduates, the Class of 1995 owed more in real terms at graduation than graduates in the Class of 1990 (60% for college graduates and 34% for bachelor graduates), but they had paid off almost as much of that loan five years after graduation (about 55% of their original loan).

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<sup>5</sup> Graduates with any of the following characteristics were dropped from the analysis: those who obtained an additional "major" diploma by the first interview, part-time workers who cited school as the reason for their partial involvement in the labour market, those not currently (as of the first interview) looking for work due to school, and those currently enrolled in a (major) diploma.

<sup>6</sup> The paper focused on graduates who were under age 25 at graduation and who had no previous PSE experience and moved straight from high school into PSE.

And, the 1995 graduates were more likely to report any difficulties in paying back their loan than the young graduates of the Class of 1990. Among the 1990 bachelor graduates, 13% reported difficulties five years after graduation while among the 1995 bachelors graduates, 16% reported difficulties five years after graduation. For the 1990 college graduates, this proportion was 11% and went up to 16% for the 1995 college graduates.

More recently, Allen and Vaillancourt (2004) provided a profile of the Class of 2000 including pathways and borrowing figures<sup>7</sup>. Pathways figures revealed that the majority of graduates had been out of school for some time prior to starting their programs or they had some PSE prior enrolling in their program. Only forty-four percent of bachelor graduates from the Class of 2000 had no previous post-secondary education (PSE) activity and started their program within 12 months of completing high school. This proportion was even lower for college graduates (36%). Student loans analysis showed that about one-half of college graduates and bachelor graduates left school owing money for their education, mostly in the form of government student loans. While the same proportion of graduates left school with student debt in 1995 and 2000, graduates in 2000 owed significantly more than their 1995 counterparts. Bachelor graduates owed, on average, 30% more than the Class of 1995 and 75% more than the Class of 1990. Average debts for college graduates were 21% higher than for the Class of 1995, and 76% higher than the Class of 1990.

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<sup>7</sup> Borrowing figures exclude graduates who pursued further education after their 2000 graduation.



## 3. Student Borrowing

With the substantial increase in tuition fees which have occurred in the 1990's concerns have been raised that borrowing levels have become too high and are causing hardship in the post-schooling payback period. Trend in student borrowing and financial hardship of the 1990, 1995 and 2000 Classes are examined in this section in order to determine whether the increase in post-secondary education (PSE) costs has coincided with higher incidence of borrowing and mean level of debt, heavier debt burden and more repayment problems.

### 3.1 Trends in the Incidence and Mean Level of Borrowing

*While about the same proportion of college and bachelor graduates borrowed money in 1990, 1995 and 2000, the average debt size increased significantly over time.*

In 2000, 47% of college graduates and 52% of bachelor graduates owed debt from a government student loan program. These proportions did not change much from a decade ago where 45% of college graduates and 51% of bachelor graduates had a government student loan. However, the mean level of debt increased significantly over time. The average debt of college graduates in 2000 was 8% higher than the Class of 1995 and 63% higher than the Class of 1990 while bachelor graduates in 2000 owed about 15% more than the Class of 1995 and 68% more than the Class of 1990 (Table 1).

While the increase in PSE costs is probably the main factor explaining the raise in the level of borrowing, many other factors could have played some role. For example, any changes in family arrangement (living with parents versus independent or married students) and in the distribution of graduates by field of study could have impacted the debt level as different living arrangements and field of study are related to different level of debt.

**Table 1**  
**Borrowing by Degree, Gender and Cohort**

		College/CEGEP			Bachelor		
		Male	Female	Total	Male	Female	Total
Incidence of borrowing from government student loans	1990	0.45	0.45	0.45	0.53	0.49	0.51
	1995	0.44	0.47	0.46	0.53	0.48	0.50
	2000	0.44	0.49	0.47	0.52	0.53	0.52
Average amount owed at graduation for government-sponsored student loans (\$2002)	1990	6,785	7,161	7,006	10,004	10,424	10,237
	1995	10,407	10,705	10,584	14,638	15,336	15,029
	2000	11,032	11,686	11,420	17,501	17,021	17,207
Average estimated gross annual earnings for the job held two years after graduation (\$2002)	1990	33,075	29,327	30,894	38,963	34,737	36,564
	1995	32,796	24,553	28,053	36,045	30,498	32,763
	2000	35,080	27,971	30,946	40,769	35,012	37,184
Median debt-to-earnings ratio <sup>1</sup>	1990	0.18	0.23	0.21	0.26	0.29	0.28
	1995	0.30	0.42	0.36	0.40	0.49	0.45
	2000	0.26	0.38	0.33	0.40	0.47	0.44
Difficulties in repaying government-sponsored student loan two years after graduation <sup>2</sup>	1990	0.27	0.25	0.26	0.22	0.26	0.24
	1995	0.33	0.37	0.35	0.27	0.40	0.34
	2000	0.40	0.41	0.41	0.30	0.31	0.31
Proportion of debt repaid two years after graduation <sup>3</sup>	1990	0.49	0.47	0.48	0.42	0.40	0.41
	1995	0.41	0.37	0.38	0.44	0.40	0.41
	2000	0.20	0.26	0.23	0.28	0.17	0.21
<p>1. Defined as the amount owed to student loans programs at graduation divided by annual earnings in the job held as the first interview (two years after graduation).</p> <p>2. Self-reported difficulties in repaying government student loans by respondents who have borrowed money through a government loan and started to pay.</p> <p>3. All respondents who had a government student loan for which they owed money at graduation.</p>							

### 3.2 Trends in Median-Debt-to-Earnings Ratio

*The median-debt-to-earnings ratio increased significantly between 1990 and 1995 and decreased somewhat in 2000.*

To analyse the burden of student borrowing we use the debt-to-earnings ratio which is defined as the amount owed to student loan programs as of graduation divided by annual earnings. The earning variable available in the National Graduate Survey (NGS) represents what the graduate would have earned on an annual basis if the job held at the time of the interview (two years after graduation) lasted the full year, regardless of the actual job status (i.e. the number of weeks worked).

As shown in Table 1, for college graduates, the debt-to-earnings ratio increased from 0.21 in 1990 to 0.36 in 1995 and then decreased somewhat to 0.33 in 2000. Debt burden also followed the same trend for bachelor graduates. The median debt-to-earnings ratio for bachelors increased from 0.28 in 1995 to 0.45 in 1995 and slightly decreased to 0.44 in 2000. The large increase in debt burden between 1990 and 1995 is due to the combination of a raise in borrowing levels and a decline in real earnings. In 2000,

the average amount owed at graduation continued to increase but the increase in real earnings contributed to the decline in debt burden.

### 3.3 Trends in Repayment

*Reflecting the increase in debt burden, the proportion of student reporting repayment problem increased over time and the proportion of debt repaid two years after graduation declined.*

Between 1990 and 1995, the proportion of students experiencing difficulties with the repayment of their loans went up from 26% to 35% for college graduates and from 24% to 34% from bachelor graduates (Table 1). In 2000, this proportion increased again to 41% for college graduates but decreased slightly to 31% for bachelor graduates. However, this decline was observed only for women as the proportion of men bachelors reporting repayment difficulties continued to increase.

In 1990 and 1995, students had paid about 40% of their government debt two years after graduation. In 2000, the proportion of debt repaid fell by half for both college graduates and bachelor graduates (Table 1). Note that this decline can not be attributed to an increase in the proportion of students who continued their studies after graduation and didn't start paying back their loan as the Class of 2000 was less likely to have completed further education than the Class of 1995 two years after graduation (see Table A1 in annex).

*The increase in PSE costs is only one of the multiple factors that could have affected student financial hardship.*

Many factors can affect earnings and therefore have an impact on debt burden and repayment capacity. For example, a part of the decline in real earnings of graduates between 1990 and 1995 could be due to the fact that more graduates pursued further education and did not make a full-time entry into the labour market. And similarly, the real earnings recovery between 1995 and 2000 could be explained by a lower proportion of students who pursued further education<sup>8</sup>. Cohort size, labour market condition at graduation and the distribution of graduates by field of study are also important factors affecting transition to the labour market and therefore earnings and the repayment capacity.

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<sup>8</sup> The 1990 and 1995 NGS Surveys do not identify students who pursued further education. These figures have to be estimated by looking at the proportion of students who received an additional degree (see Table A1 in annex). However, this approximation underestimate the proportion of students pursuing further education as some students may have enrolled in a program but had not finished it by the time of the first interview.



## ***4. Pathways towards PSE Enrolment and Graduation***

In order to have some insight about whether the increase in the cost of post-secondary education have impacted student's choices regarding pathways towards post-secondary education, trends in activities chosen prior entry into postsecondary program (entering directly after high school, delaying entry, previous PSE experience) and during the program (studying part-time/full-time, taking a break during the program) are investigated. Their consequences on the graduation age and the time taken to complete a degree are also discussed. Finally, factors influencing student's choices are analysed to determine whether these are desired or the results of financial or other constraints.

### **4.1 Trends in Pathways**

*The proportion of student with no previous postsecondary education who delayed their PSE entry after high school did not change significantly over time: in 2000 about 28% of college graduates and 8% of university graduates followed that path.*

The proportion of college graduates “with no previous PSE<sup>9</sup>” activity that delayed entry from high school was 28% in 2000 and 1995 compared to 27% in 1990. Among bachelor graduates, the proportion of delayers decreased slightly from 10% to 8% during the same period (Table 2).

*The proportion of college graduates with previous PSE increased over time while among bachelor graduates this proportion remained about the same.*

The proportion of college graduates with previous PSE increased from 31% in 1990 to 36% in 2000 (Table 2). This increase (5 percentage points) explains in large part the decline in the proportion of students who entered directly into college after high school (7 percentage points). The proportion of bachelor graduates with previous PSE remained around 45% over the period. Note that about three-quarters of the bachelor graduates who had previous college or CEGEP diploma graduated from universities in Quebec where the completion of CEGEP is generally required for entry into university.

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<sup>9</sup> The trajectories of graduates “with previous PSE” after high school cannot be identified with the NGS. It is not possible to know if these graduates had delayed their first entry into PSE.

**Table 2**  
**Educational Activity of Graduates Prior PSE**

	1990		1995		2000	
	Total number of graduates	Percentage of graduates	Total number of graduates	Percentage of graduates	Total number of graduates	Percentage of graduates
<b>College Graduates</b>	<b>56,484</b>	<b>100.0</b>	<b>82,026</b>	<b>100.0</b>	<b>101,356</b>	<b>100.0</b>
No previous PSE	39,273	69.5	54,137	66.0	65,131	64.3
entered directly from hs	24,333	43.1	30,899	37.7	36,742	36.3
delayed entry from hs	14,940	26.5	23,238	28.3	28,390	28.0
Previous PSE	17,211	30.5	27,889	34.0	36,225	35.7
Incomplete	9,049	16.0	12,952	15.8	15,041	14.8
Complete	8,128	14.4	14,756	18.0	20,920	20.6
Trade / Vocational	938	1.7	1,066	1.3	1,936	1.9
College	4,253	7.5	7,653	9.3	8,656	8.5
University	2,943	5.2	6,037	7.4	10,328	10.2
<b>Bachelor Graduates</b>	<b>92,735</b>	<b>100.0</b>	<b>115,673</b>	<b>100.0</b>	<b>119,901</b>	<b>100.0</b>
No previous PSE	50,828	54.8	62,452	54.0	66,485	55.5
entered directly from hs	41,425	44.7	52,874	45.7	57,073	47.6
delayed entry from hs	9,403	10.1	9,566	8.3	9,412	7.9
Previous PSE	41,907	45.2	53,221	46.0	53,416	44.6
Incomplete	7,215	7.8	11,359	9.8	11,235	9.4
Complete	34,637	37.4	41,573	35.9	41,857	34.9
Trade / Vocational	705	0.8	810	0.7	779	0.7
College	21,719	23.4	22,568	19.5	23,105	19.3
University	12,213	13.2	18,184	15.7	17,973	15.0
hs: high school						

*Studying part-time became a more popular choice among college graduates but a less common choice for bachelors.*

As shown in Table 3, between 1990 and 2000, the proportion of college students who studied part-time double (from 4% to 8%) and the proportion who studied full-time declined from 90% in 1990 to 87% in 2000. The proportion of college students who combined part-time and full-time did not change much. A part of the decline in the proportion of college full-time students can be due to the increase in the proportion of college students with previous PSE as these students are less likely to study full-time. In 2000, 90% of college graduates without previous PSE studied full-time compared with 82% for college graduates with previous PSE.

In contrast, both the proportion of bachelor graduates who studied part-time and who combined part-time and full-time declined in favour of an increase in the proportion of full-time students (from 76% to 81%).

*The proportion of student who took a break during their study declined for both college and bachelor graduates.*

Between 1990 and 2000, the proportion of students who took a leave during their studies decreases from 7% to 5% for college graduates and from 14% to 11% for bachelor graduates (Table 3).

<b>Table 3</b>			
<b>Educational Activity of Graduates During PSE</b>			
	<b>1990</b>	<b>1995</b>	<b>2000</b>
	<b>%</b>		
<b>College Graduates</b>			
Full-time study	90.1	89.2	87.1
Part-time study	3.9	5.8	8.0
Combination of part-time and full-time	6.1	5.1	4.9
Take a break that delayed completion	7.2	5.0	5.0
<b>Bachelor Graduates</b>			
Full-time study	75.7	80.5	81.3
Part-time study	7.5	6.3	5.4
Combination of part-time and full-time	16.8	13.2	13.3
Take a break that delayed completion	14.3	12.0	11.4

## **4.2 Consequences of Pathways Changes**

The time to complete a postsecondary program and the age at graduation reflect in part the pathways taken by students towards their graduation. Changes in the proportion of students who took a break during PSE and who studied part-time have an effect on the average time taken to complete a degree. Having previously completed a PSE degree can also shorten the completion time of the second degree if credits previously acquired are transferable. Apart these pathways, the distribution of students by normal length of program also influences the average time taken to complete a degree.<sup>10</sup> On the other hand, the graduation age, is affected by all pathways changes: delaying PSE, having previous PSE, taking a break during PSE and studying part-time. Table 4 presents a summary of trends in pathways to facilitate the analysis of their impact on the time taken to complete a degree and the graduation age.

<sup>10</sup> Information on the distribution of students by length of program is available in the 1990 and 1995 surveys only and is presented in Table A2 in the annex.

**Table 4**  
**Summary of the Trends in Pathways and their Consequences**

	1990	1995	2000	1990-2000	Effect on completion time	Effect on graduation age
	%	%	%	% points variation		
<b>College Graduates</b>						
Delayed PSE (no previous PSE)	26.5	28.3	28.0	1.6	–	↑
Had previous PSE	30.5	34.0	35.7	5.3	↓	↑
Took a break during study	7.2	5.0	5.0	-2.2	↓	↓
Studied part-time	3.9	5.8	8.0	4.1	↑	↑
<b>Bachelor Graduates</b>						
Delayed PSE (no previous PSE)	10.1	8.3	7.9	-2.2	–	↓
Had previous PSE	45.2	46.0	44.6	-0.7	–	↓
Took a break during study	14.3	12.0	11.4	-2.9	↓	↓
Study part-time	7.5	6.3	5.4	-2.1	↓	↓
↑ (↓) Means that the pathway has a positive (negative) effect on completion time or graduating age; – Means that the pathway has no effect on the completion time.						

*For college graduates, the decline in the proportion of students who took a break during their study combined with the increase in the proportion who were engaged in shorter program (see Annex), resulted in a decline in the time taken to complete a degree.<sup>11</sup>*

College graduates from the Class of 1990 completed their program on average in 38 months while the Class of 1995 took 35 months and the Class of 2000, 32 months (Table 5). More specifically, the proportion of college graduates who had completed their degree within two years doubled between 1990 and 2000 (from 14% to 29%) while the proportion taking more than two to three years decreased from 84% to 64% (Figure 1).

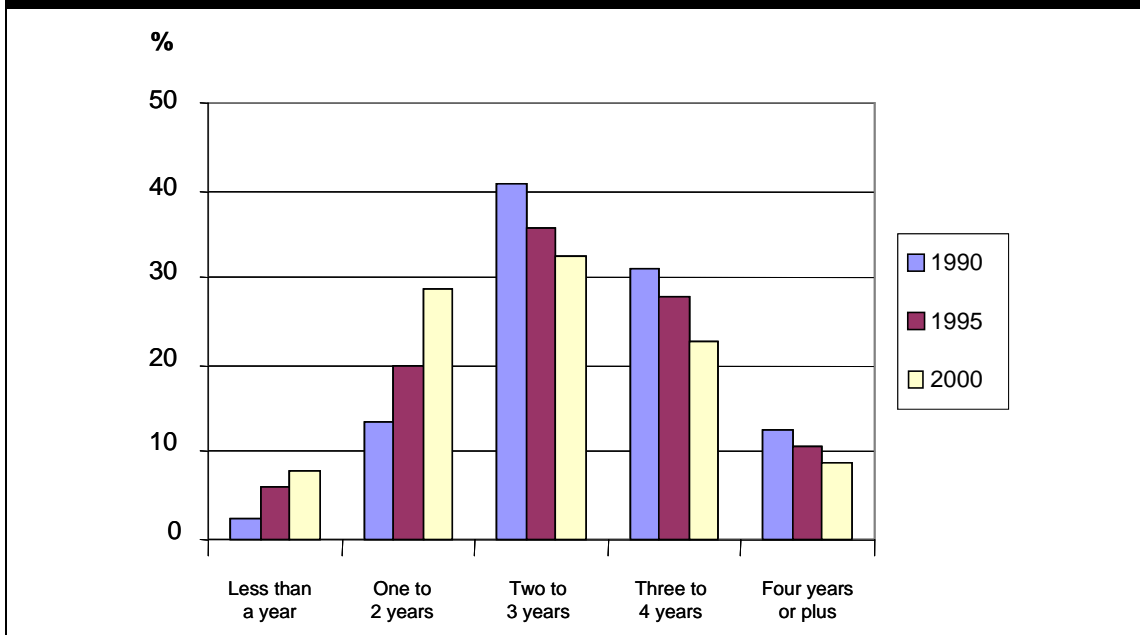
**Table 5**  
**Number of Months Taken to complete the Program**

	1990	1995	2000
<b>College Graduates</b>			
Full-time student	36	34	30
Part-time student	54	46	36
Combination of part-time and full-time	54	52	45
<b>Bachelor Graduates</b>			
Full-time student	51	52	51
Part-time student	96	100	94
Combination of part-time and full-time	80	71	73

<sup>11</sup> The increase in the proportion of student with previous PSE may also have affected negatively the completion time if student transferred credits. However, there is no data to confirm or infirm this.



**Figure 1**  
**Distribution of the Time Taken to Complete a College Degree**

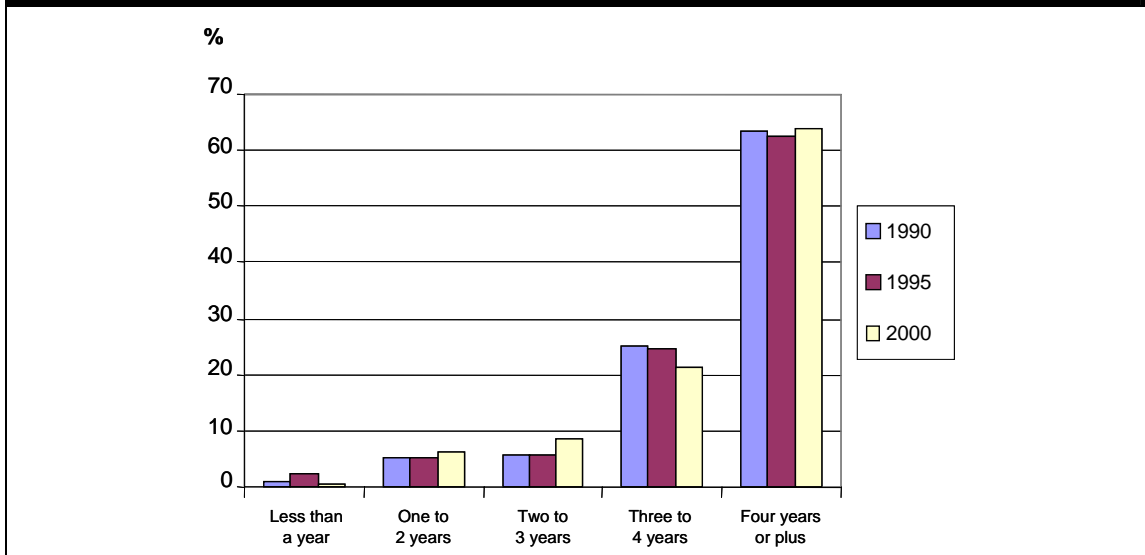


*The time taken by bachelor graduates to complete their degree also declined over time, reflecting the decrease in the proportion of student who studied part-time and who took a break during their studies.<sup>12</sup>*

Bachelor graduates from the Class of 1990 completed their program on average in 59 months while the Class of 1995 took 57 months and the Class of 2000 took 56 months (Table 5). The proportion taking three to four years decreased from 25% to 21% while the proportion taking less time (one to two years and two to three years) increased. About the same proportion of bachelor took four years or more to complete their program in 1990, 1995 and 2000 (Figure 2).

<sup>12</sup> And despite the fact that more bachelor graduates took longer programs (see Annex).

**Figure 2**  
**Distribution of the Time Taken to Complete a Bachelor Degree**



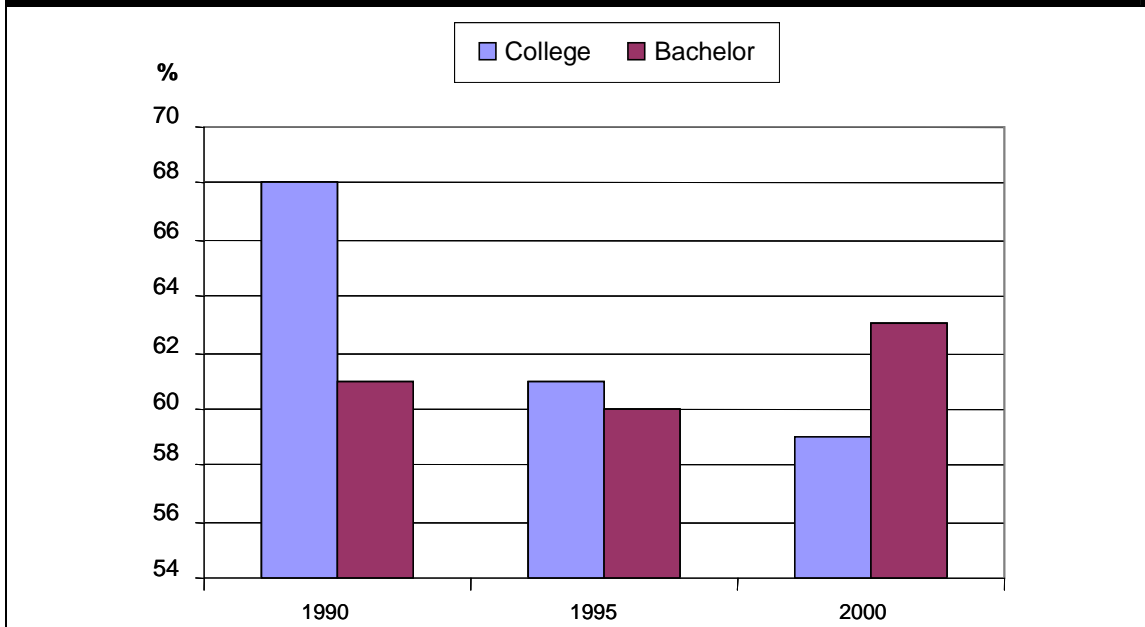
*Reflecting the trends in all pathways, the median age at graduation for college graduates has risen to 23 years old while the median age at graduation for bachelors remained between 23 and 24 years old.*

As a result of the increase in the proportion of college graduates who had previous PSE, who studied part-time and who delayed PSE entry (to a lesser extent), college graduates are now older. The median age at graduation for college graduates increased from 22 years old in 1990 to 23 years old in 2000. And, the proportion of graduates under the age of 25 at graduation went down from 68% to 59% (Figures 3, 4).

**Figure 3**  
**Median Age at Graduation**



**Figure 4**  
**Proportion of Students under Age 25 at Graduation**



The median age at graduation for bachelors stayed between 23-24 years old over the period. However, the proportion of graduates under the age of 25 at graduation increased slightly from 61% to 63% between 1990 and 2000, reflecting the decline in the proportion of student who delayed, took a break and studied part-time.

### 4.3 Factors Influencing Pathways Choices

*The probability of delaying PSE is strongly related to the presence of children and inter-provincial migration before enrolling in program.*

A logit analysis<sup>13</sup> of the Class of 2000 with no previous PSE (Table 6) reveals that college and university students who had dependant children were much more likely to postpone PSE compared to students without children. Men were 2.4 times more likely to postpone college and 3.5 times more likely to delay university if they had children. Women with dependant children were 3.6 times more likely to delay college and 4.6 times more likely to delay university. The impact of health status on the probability of delaying was found to be positive only for female college students and male university students. These students were 50% more likely to delay their studies if they had a health problem. Parental levels of education were not found to have a strong impact on the probability of delaying. Students with parents having a postsecondary degree were slightly less likely to delay their study compared to students who had less educated parents. This reveals some equity in the pathways towards PSE among graduates.

<sup>13</sup> A probability model was estimated to make up for the absence of question about reason why students delayed.

Some important variations in the probability of delaying post-secondary education were observed among the provinces. University graduates from Quebec were much more likely to delay their university entry. This is not surprising as the logit analysis was restricted to students without previous PSE (and therefore to students who did not have a CEGEP diploma) and these students can enter university in Quebec only under specific conditions, generally as mature students. On the other hand, college graduates from Quebec were 80% to 90% less likely to delay their college entry, which may suggest that the transition from high school to CEGEP is easier than the high school-college transition in other provinces. Female bachelor graduates in Newfoundland, Prince-Edward-Island and New Brunswick also had a very low probability of delaying their university entry compared to graduates from other provinces. Another outstanding result was observed for the Prairies: almost all groups of students in Manitoba, Saskatchewan and Alberta were more likely to delay PSE compared to Ontario students (the reference category) and other provinces.<sup>14</sup>

All graduates who studied in a different province than their province of residence while in high school were more likely to have delayed their PSE entry compared to their counterparts who stayed in the same province. The effect of migration was particularly strong for male college graduates: these were more than 4 times more likely to delay if they had moved from one province to another. Odds ratios of the academic performance variable suggests that students with low self-reported marks had a slightly lower probability of delaying compared to students who reported being in the top 10% of their graduating class. However, caution is required when interpreting this variable as an unusually large proportion of students reported being in the top 10% of the graduating class.

Funding sources also have some influence on the probability of delaying PSE study. Graduates who used government student loans, employment earnings and their personal saving as one of their two main sources of funding were more likely to delay PSE compared to those who had their parent's contributions as main source of funding (the reference category). Receiving scholarships, awards or other grants was found to have a negative impact on the probability of delaying for female college graduates and men university graduates only. Finally, and as expected, students for whom the main source of funding was their employer or government sources were much more likely to postpone PSE.<sup>15</sup>

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<sup>14</sup> With the exception of Quebec that had the highest probability of delaying university entry for the reason explained above.

<sup>15</sup> With the exception of men bachelors who had their employer as a main source of funding, but caution is required as this group represents less than 1% of the sample.

**Table 6**  
**Logit model of Delaying PSE, Class of 2000 with no previous PSE**

	College Graduates				Bachelor Graduates			
	Men		Women		Men		Women	
	%	Odds Ratio	%	Odds Ratio	%	Odds Ratio	%	Odds Ratio
<b>Childen</b>								
No	82.9	1.0	75.6	1.0	91.2	1.0	89.1	1.0
Yes	17.1	2.4	24.4	3.6	8.8	3.5	10.9	4.6
<b>Health</b>								
No limitations (work, school, home)	95.0	1.0	93.9	1.0	97.5	1.0	96.5	1.0
Limitations on work, school or home activities	5.0	0.7	6.2	1.5	2.5	1.5	3.5	1.1 *
<b>Parent's education</b>								
No PSE	47.9	1.0	51.4	1.0	34.9	1.0	37.7	1.0
PSE	52.1	0.9	48.6	0.8	65.1	0.8	62.3	0.8
<b>Province before enrolling in PSE</b>								
Ontario	47.2	1.0	49.7	1.0	40.3	1.0	41.4	1.0
Newfoundland and Labrador	1.9	1.6	1.5	1.1 *	1.5	0.9 *	2.0	0.4
Prince-Edward-Island	0.9	1.6	0.7	1.5	0.5	1.0 *	0.6	0.3
Nova Scotia	4.4	0.9	3.8	0.9 *	3.2	0.8	3.7	0.7
New Brunswick	3.3	1.2	2.2	1.4	2.5	0.9 *	2.3	0.5
Quebec	16.7	0.2	15.7	0.1	21.6	6.9	20.4	5.1
Manitoba	2.3	1.9	2.6	1.7	3.7	1.9	3.7	1.5
Saskatchewan	2.3	1.9	2.9	1.4	3.3	2.8	3.5	1.4
Alberta	5.3	2.3	5.4	1.9	8.6	2.9	8.5	1.9
British Columbia	14.5	1.6	14.1	1.3	12.7	2.0	11.8	1.5
<b>Interprovincial migration before enrolling in PSE</b>								
No	95.7	1.0	96.6	1.0	90.0	1.0	91.2	1.0
Yes	4.3	4.4	3.4	1.6	10.0	2.1	8.8	2.2
<b>Academic performance (self eval.)</b>								
In the top 10% of the graduating class	47.3	1.0	46.1	1.0	25.1	1.0	26.7	1.0
Below the top 10% but in the top 25%	33.2	0.8	31.8	0.7	42.3	0.7	40.1	1.1
Below the top 25% but in the top half	10.3	0.7	9.9	0.7	20.8	1.1 *	15.9	0.8
Below the top half	0.7	0.3	0.7	0.4	1.7	0.8 *	26.7	0.7 *
<b>Two main sources of funding</b>								
Parents, spouse, partner, other people	31.1	1.0	32.3	1.0	41.0	1.0	47.2	1.0
Government student loans	37.0	1.2	42.6	1.1	41.7	1.5	42.5	1.8
Bank/other institution loans	4.5	1.5	4.6	1.1 *	4.3	1.2 *	4.3	0.5
Credit card, line of credit	2.1	1.7	1.9	0.9 *	1.4	1.1 *	1.9	2.2
Employment earnings	60.1	1.5	50.9	1.3	66.5	1.2	59.9	1.0 *
Scholarships, awards, fellowship, prizes, grants	4.7	1.3	6.7	0.6	11.1	0.5	10.3	1.1 *
Government (EI, worker's compensation, other)	9.0	3.4	6.6	2.6	1.1	3.7	1.6	4.6
Employer	0.7	2.7	0.8	3.6	0.6	0.4	0.5	6.0
Personal saving	2.4	1.6	2.2	2.6	1.9	1.3 *	2.0	1.3
Other	3.1	3.0	3.4	2.4	1.9	0.9 *	1.6	1.3
Observations	3,871		4,439		2,316		3,239	
All coefficients are significant to 5% except coefficients with *								

*Few students choose not to study full-time because of a lack of money. The majority did so because they had a job.*

As shown in Table 7, more than half of college and bachelor graduates choose not to study full-time because they had a job. Other most cited reason were “other reasons” and family responsibilities including caring for children. These two reasons (other and all family reasons combined) were both given by 12% of college graduates and 15% of bachelor graduates. “Lack of money” was a reason given by 6% of college graduates and 13% of bachelor graduates in 2000. This percentage has decreased for college graduates and remained about the same for bachelor graduates over the period.

<b>Table 7</b>						
<b>Reasons to not Study Full-Time</b>						
	<b>College Graduates</b>			<b>Bachelor Graduates</b>		
	<b>1990</b>	<b>1995</b>	<b>2000</b>	<b>1990</b>	<b>1995</b>	<b>2000</b>
Had a full-time job	36.4	41.2	48.9	38.5	39.4	40.1
Had a part-time job	19.5	15.5	12.5	20.6	18.9	21.3
Lack of money	10.2	5.7	6.0	12.6	13.5	13.1
Caring for own children		7.6	6.3		7.7	9.1
Other family responsibilities	13.2	2.9	5.2	15.3	5.2	5.9
Health reasons	2.9	2.6	2.7	2.2	1.8	3.3
Program not offered full-time	7.6	12.3	13.8	1.7	1.8	2.6
Only needed one/a few credits/courses	11.7	9.3	7.2	7.4	6.2	4.3
Other reason	12.4	15.4	11.7	14.3	21.2	14.8

“Caring for own children” and “ Other family responsibilities” were reported together in the 1990 survey.

*Similarly, few students choose to take a leave of absence during PSE because of a lack of money. A large proportion did so because of “other reasons” that could include traveling and a lack of fit with the program.*

One out of third college and 41% of bachelor graduates in 2000 said that they took a break because of “other reasons” (Table 8). Having a full-time job prevented 23% of college graduates and 26% of bachelor graduates to study without interruption. Other family responsibilities and health problems were also common reasons, being cited by more than 10% of 2000 graduates. Only 9% of college graduates and 8% of bachelor graduates took a break because of a “lack of money” in 2000. This percentage was lower in the previous years for college graduates but higher for bachelor graduates.

The Post-Secondary Education Participation Survey (PEPS) gives more insights about reasons why students leave their program. According to this survey, about 16% of the 18-24 years old who started PSE in 2000 had left school eighteen months after having begun and half of these reported reasons suggesting a “lack of fit” with either their program or with PSE in general. “Lack of fit” reasons included: not having enough interest or motivation, not being sure what they want to do, wanting to change programs or that the program was not what the youth wanted.<sup>16</sup>

**Table 8**  
**Reasons to Take a Break During PSE**

	College Graduates			Bachelor Graduates		
	1990	1995	2000	1990	1995	2000
Had a full-time job	28.3	26.9	22.8	26.8	23.3	26.2
Had a part-time job	4.4	3.0	3.4	5.4	3.1	3.2
Lack of money	7.3	8.3	8.8	11.0	10.5	8.2
Caring for own children		7.4	9.9		8.8	8.1
Other family responsibilities	14.1	8.6	10.0	20.3	8.5	10.1
Health reasons	14.9	11.2	16.7	7.7	8.6	12.2
Program not offered full-time	0.8	1.6	1.9	0.8	0.1	0.6
Only needed one/a few credits/courses	11.5	4.2	1.4	20.0	0.9	1.3
Other reason	6.5	33.6	33.4	2.2	45.4	41.1
Take a break/travel	19.4	x	x	19.3	x	x

“Caring for own children” and “ Other family responsibilities” were reported together in the 1990 survey.  
x data not available in the survey.

<sup>16</sup> Barr-Telford, Cartwright, Prasil and Shimmons (2003)





## 5. Conclusion

Last decade has seen a sharp increase in tuition fees across Canadian post-secondary education (PSE) institutions accompanied with increases in non-educational costs associated with attending a college or university. In light of increasing costs students may respond by altering their borrowing behaviour as well their choice of pathways through PSE. This paper examined cross sectional data from the three newest cohorts of the *National Graduates Survey* (1990, 1995 and 2000) to determine whether these changes in behaviour have occurred and examine their implications.

***Higher PSE cost seems to have had an impact on student borrowing and repayment. Trend in the debt load carried after graduation and in repayment problems revealed a picture of heavier burden on students.***

Though the proportion of graduates who borrowed money remained unchanged, the average debt size increased between 1990 and 2000. As a result, the median-debt-to-earnings ratio increased significantly over the period for both college and bachelor graduates (from 0.21 to 0.33 and from 0.28 to 0.44). The proportion of students reporting repayment problems also increased during this time period, reaching 41% for college graduates and 31% for bachelor graduates in 2000. Following these trends, it was also observed that the proportion of debt repaid two years after graduation declined substantially between 1990 and 2000 (from 48% to 23% for college graduates and from 41% to 21% for bachelor graduates).

***There is no indication from the findings of this study that students are more likely to choose non traditional pathways in response to higher PSE costs, except maybe for college graduates.***

Data from three newest cohorts of the National Graduate Survey (NGS) revealed that the pathways towards post-secondary education did not change significantly between 1990 and 2000. The proportion of students who delayed their entry to college stayed about the same (27-28%) while the proportion of those delaying entry to university decreased slightly (from 10% to 8%). A slightly higher proportion of college graduates had reported previous PSE experience (5 % point increase) but the proportion of bachelor graduates with previous PSE experience did not change much (less than one percentage points decline). The proportion of students who took a leave during their PSE program decreased somewhat for both college graduates (from 7% to 5%) and bachelor graduates (from 14% to 11%). A decline was noted in the proportion of university bachelor graduates who studied part-time, from 8% in 1990 to 5% in 2000. During the same 10 years, the proportion of college graduates enrolled as part-time students doubled, from 4% to 8%. However, a part of this increase can be explained by an increase in the proportion of college students having previous PSE who are more likely to engage in part-time study.

***Moreover, analysis of factors/reasons explaining the choice of non-traditional pathways revealed that neither money nor funding were major determinants.***

Personal factors (children and migration) were the most important factors influencing the choice of delaying entry to PSE. Moreover, the majority of students who choose to study part-time did so because they had a job and only 6% of college graduates and 13% of bachelor graduates reported a “lack of money” as a reason. Similarly, only 9% of college and 8% of bachelor graduates took a break during their program because of money related problems. A large proportion reported doing so because of “other reasons” that could include traveling and a lack of fit with the program.

***Small changes in student pathways, taken together, had a positive effect on the completion time of degrees.***

The time taken to complete a college degree declined as a result of the decrease in the proportion of students who took a break from their studies and the proportion of students enrolled in a longer duration program. The graduation age of college student increased (from 22 to 23 years old) as a result of the increase in the proportion of college graduates who had previous PSE, who studied part-time and who delayed PSE entry.

The time taken by bachelor graduates to complete their degree also declined over the ten year period, reflecting the decrease in the proportion of student who studied part-time and who took a break during their studies. The median age at graduation for bachelors stayed between 23-24 years but the proportion of graduates under the age of 25 at graduation increased slightly reflecting the decline in the proportion of student who delayed, took a break and studied part-time.

These consequences could be seen as positive ones as moving to a post-secondary program at a young age and completing it within the expected time frame is believed by some to result in the greatest social, economic, and personal returns from post-secondary education.<sup>17</sup>

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<sup>17</sup> Hearn (1992); Henchy (1998)

## ***6. Policy Implications***

The emerging pictures of a stable trend in student pathways and heavier debt burden, as revealed by the findings of this study, have important policy implications:

First, it highlights the need for research on the long term consequences of borrowing. Borrowing and particularly heavy debt burden can influence future personal choices such as the timing for buying a home, starting a family and saving for retirement. Debt burden can also create large inequities after graduation amongst those who had to rely on repayable sources and those who had financial support from non-payable sources. This in turn could exacerbate future inequality in participation in adult education and learning in the future. It is important to keep these long-term consequences in mind when undertaking decisions to adjust the student loan limit.

It also highlights the need for wise education investments. As students are getting out of post-secondary education (PSE) with more debt, it is important to maximise the benefit of their education and minimise the risk of defaulting by investing wisely. To help select a high quality school at a reasonable price, prudent student would need information on the quality of PSE institutions.

Finally, it reveals that by large, student loans are good financing tools. The availability of loans to students limit or eliminate their need to opt for non-traditional pathways (delaying, studying part-time or taking a break) in order to finance their education in most of the cases. And, it is recognized that reducing the need for non-traditional pathways help speed up graduation, result in higher returns and therefore reduce financial hardship. Moreover, not working (or working a low number of hours) while in school free time up for study and integration into the campus life, which are equally essential for academic success and for reducing the likelihood of dropping out. Nevertheless, despite all these advantages of the traditional pathway, non-traditional pathways provide work experience for student that could potentially ease their transition after graduation to the labour market. This area remains a subject for further investigation.



<b>Table A1</b>		
<b>Proportion of Graduates Attaining Further Education by Two Years After Graduation</b>		
	<b>College Graduates</b>	<b>Bachelor Graduates</b>
1990	9	16
1995	12	20
2000	9	15

<b>Table A2</b>				
<b>Distribution of Students by Normal Length of the Program (if taken full-time)</b>				
	<b>College</b>		<b>Bachelor</b>	
	<b>1990</b>	<b>1995</b>	<b>1990</b>	<b>1995</b>
Three to five months	0.7	2.6	0.1	0.3
Six months – one year	10.2	17.8	4.9	4.8
13 months – two years	47.6	41.8	2.1	2.7
Three years	38.8	34.6	41.0	35.6
Four years	1.6	1.5	46.6	51.0
Five years	0.1	0.1	4.7	5.1
More than five years	0.0	0.4	0.2	0.3
No normal length	0.2	1.2	0.1	0.1



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