Beyond the 49th Parallel II

The Affordability of University Education

Alex Usher & Kim Steele

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Educational Policy Institute

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Beyond the 49th Parallel II:

The Affordability of Public University Education

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Executive Summary

This report looks at the affordability of public 4-year post-secondary education in 50 US States and 10 Canadian provinces. It includes examinations of education and living costs, as well as the impacts of various types of public subsidies for students (grants, loans and tax expenditures), all in the context of state / provincial median household income. Jurisdictions are ranked on six separate measures of "affordability", an established methodology is then used to convert these into a single composite affordability score.

Public 4-year post-secondary education was found to be more affordable in the United States on five of the six affordability measures in the report; on the sixth, the two countries were tied. In general, in the United States, poorer states tend to be more affordable both because tuition is usually low compared to other states and because federal student aid acts as an equalizing force. In Canada, poorer provinces tend to be less affordable both because tuition is higher than in other provinces and because the tendency of wealthier provinces to spend more heavily on student aid counteracts the equalizing effects of federal student aid programs.

With respect to affordability in Canada and the United States, the report comes to three important general conclusions:

- There are many possible definitions of affordability; not surprisingly, states and provinces relative level of affordability changes depending on which definition is used.
- Though there are significant differences between average levels of affordability between the countries, the differences *between* the two countries is much smaller than the differences *within* the two countries. As a result, generalizations based on national averages conceal at least as much as the reveal about conditions in any given state or province.
- Though the affordability of education is an important issue, it is important not to confuse affordability with accessibility. The former refers to the ability to pay for education; the latter refers specifically to the ability of people from all backgrounds to obtain the education they desire. There is significant evidence, for instance, that

despite 4-year post-secondary being less affordable in Canada than in the United States, Canadian youth from low-income families appear to be significantly more likely to attend 4-year institutions than their counterparts south of the border.

The five most affordable jurisdictions in the United States were, in order, New Hampshire, Oklahoma, Louisiana, Mississippi and Georgia. The five least affordable jurisdictions were South Carolina, Vermont, Ohio, Rhode Island and lastly Pennsylvania (50th out of 50). In Canada, the most affordable jurisdictions was Quebec, followed by Alberta and Ontario; the least affordable jurisdictions were Prince Edward Island, New Brunswick and, by some considerable distance, Nova Scotia, which was also the least affordable jurisdiction overall.

Please see the next page for the full composite rankings.

The full composite rankings are as follows:

State/Province	Overall Rank	US Rank	Canada Rank	State/Province	Overall Rank	US Rank	Canada Rank
New Hampshire	1	1	-	**California**	31	30	-
Oklahoma	2	2	-	**Tennessee**	32	31	-
Louisiana	3	3	-	**New Mexico**	33	32	-
Mississippi	4	4	-	**Maryland**	34	33	-
Georgia	5	5	-	**Alberta**	35	-	2
North Dakota	6	6	-	**Massachusetts**	36	34	-
Kentucky	7	7	-	**Washington**	37	35	-
Idaho	8	8	-	**West Virginia**	38	36	-
Utah	9	9	-	**Connecticut**	39	37	-
Wisconsin	10	10	-	**Ontario**	40	-	3
Alaska	11	11	-	**Oregon**	41	38	-
Colorado	12	12	-	**British Columbia**	42	-	4
Nebraska	13	13	-	**Newfoundland**	43	-	5
Minnesota	14	14	-	**Indiana**	44	39	-
Kansas	15	15	-	**Manitoba**	45	-	6
Delaware	16	16	-	**Montana**	46	40	-
South Dakota	17	17	-	**New York**	47	41	-
Arkansas	18	18	-	**Michigan**	48	42	-
Virginia	19	19	-	**Illinois**	49	43	-
Wyoming	20	20	-	**Maine**	50	44	-
Arizona	21	21	-	**Saskatchewan**	51	-	7
Florida	22	22	-	**Prince Edward Island**	52		8
Texas	23	23	-	**New Jersey**	53	45	-
Alabama	24	24	-	**South Carolina**	54	46	-
Hawaii	25	25	-	**Vermont**	55	47	-
Nevada	26	26	-	**Ohio**	56	48	-
Iowa	27	27	-	**New Brunswick**	57	-	9
North Carolina	28	28	-	**Rhode Island**	58	49	-
Missouri	29	29	-	**Pennsylvania**	59	50	-
Quebec	30	-	1	**Nova Scotia**	60	-	10

Introduction

The affordability of higher education has been discussed in many contexts, by many stakeholders. What is often missing from these discussions is a rigorous and systemic approach to measuring affordability. In 2004 and again in 2005 the Educational Policy Institute attempted to bring such an approach to the discussion, and, with this paper, we continue to build upon the strengths and merits of our model.

This paper marks the second analysis of affordability of post-secondary education in North America conducted by the Educational Policy Institute. The paper draws upon the methodologies, concepts, and findings of the first North American analysis conducted by EPI (Swail, 2004) as well as the *Global Higher Education Report 2005 (*Cervenan & Usher, 2005). The analysis you have before you has been compiled for the 2002-03 academic year.

Like the publications mentioned above, this report provides scholars, policy-makers, and stakeholders with comparable cross-jurisdictional data on affordability. This report does not, however, provide data on accessibility, as comparable and reliable data for the year in question (2002-03) is not yet available from all jurisdictions. Where possible, this report provides jurisdictional comparisons between the 2000-01 data presented by Swail (2004), although direct comparisons of the data sets is limited due to the utilization of different data sources and the application of a revised methodology.

Part I: Methodology

The methodology used in this analysis is adapted from Cervenan & Usher (2005). In their analysis, Cervenan & Usher noted that in order to examine and rank provinces and states in terms of the affordability of their higher education systems, researchers must possess the following:

- An acceptable range of indicators that are indicative of "affordability";
- Given an acceptable range of indicators, weightings for each indicator to permit an overall assessment of "affordability"; and
- For each acceptable indicator, data that is sufficiently comparable across jurisdictions to permit "fair" cross-border comparisons.

An in-depth discussion of data sources can be found in Appendix A of this report. The methodology section will herein examine the first two points, indicators and weightings.

Affordability Indicators and Weightings

Indicators

In discussing the development of their indicators, Cervenan & Usher (2005:5) noted that when making inter-jurisdictional comparisons of educational affordability, researchers generally can take one of two courses: they can compare either "raw" costs (the actual cost to the student, converted into a common currency), or the costs expressed as a percentage of some form of income (student income, household income, or some proxy thereof). The working assumption for this paper, like their paper, is that "comparisons are more meaningful if cost data is expressed as a function of ability to pay (ATP) …put simply, expressing 'affordability' solely in terms of costs appears nonsensical given inter-jurisdictional differences in income; the only meaningful way to approach the concept is to include both costs and resources."

Cervenan & Usher go on to highlight four possible types of indicators that can be used to measure affordability. These are as follows:

- *Costs as a Fraction of Ability to Pay* – This is a simple calculation of costs - tuition (including all mandatory fees), education costs (tuition plus books and materials), living expenses (room and board) and total costs (education costs plus living expenses)- expressed as a function of an ATP measure.
- *Support/ATP* – This takes into account the various forms of government support provided to students. One way of measuring affordability through an examination of support is to measure Grants, Loans and Tax Expenditures per student, all of which can all be expressed as a fraction of ATP.
- *Support/Costs* – Another way to look at affordability is to measure government support as a fraction of the costs students face (e.g. Grants as a % of Total Costs).
- *Cost minus support/ATP* – A final way to measure affordability is to calculate various forms of "net" costs (i.e. costs minus subsidies) or "out-of-pocket" costs (costs minus all government assistance) as a fraction of ATP.

Table 1 provides an overview of possible affordability indicators, as presented by Cervenan & Usher.

Table 1 - Possible Affordability Indicators

Cost/ATP	Support/ATP	Support/Cost	Cost minus support/ATP
Tuition as a % of ATP	Grants per student as a % of ATP	Grants per student as a % of tuition	Net Tuition as a % of ATP (tuition minus grants/tax credits)
Education Costs as a % of ATP	Loans per student as a % of ATP	Grants per students as a % of education costs	Out-of-pocket Tuition as a % of ATP (tuition minus loans and grants/tax credits)
Living Expenses as a % of ATP	Tax credits per student as a % of ATP	Grants per student as a % of total costs	Net Education Costs as a % of ATP
Total Costs as a % of ATP		Loans per student as a % of tuition	Out-of-pocket Education costs as a % of ATP
		Loans per students as a % of education costs	Net total costs as a % of ATP
		Loans per student as a % of total costs	Out-of-Pocket total costs as a % of ATP
		Tax expenditures per student as a % of tuition	
		Tax expenditures per students as a % of education costs	
		Tax expenditures per student as a % of total costs	

EPI's previous analyses eliminated direct measures of support (i.e. the measures in the second and third columns of Table 1) as possible indicators of affordability on the grounds that while it is important to capture such data, on their own these measures are not indicative of affordability. Moreover, the most important aspects of the information these measures contain are fully contained in the "cost minus support" indicators (i.e. column four of Table 1). The indicators that Cervenan & Usher ultimately settled for are detailed below.

1) **Education Costs as a % of ATP.** The basic unit of analysis for measuring "affordability" of higher education is the cost of education. This cost is not simply "tuition"; it also includes any additional mandatory ancillary fees and the cost of books and study materials.

2) **Total Costs as a % of ATP.** Educational costs are not the only costs students face; they also pay a number of other expenses related to day-to-day living (which for the purposes of this report covers only the estimated costs of rent and food). Thus, "total costs" (education costs plus living expenses) are at least as important a measure of affordability as education costs. These costs are somewhat problematic in that individuals may choose to reduce their living costs by continuing to live with their families during their period of studies. However, students may choose to live with their parents for a number of reasons – out of financial necessity, financial convenience (living at home frees up income for consumption), or for reasons rooted deeply in culture and tradition. In calculating total costs the decision was made to portray the costs of study for students living away from home. This was done with the full knowledge that many students may, for a variety of reasons, make lifestyle choices that result in them facing much lower costs than those portrayed in this study.

3) **Net Costs as a % of ATP**. In all of the jurisdictions represented here, total costs are subsidized by grants. According to human capital theory (Becker 1964), since grants reduce the cost of attendance, a dollar of grants should have the same effect on

human capital investment decisions as a dollar in tuition reduction. It is standard practice in most North American discussions of affordability (among many others, see St. John 2002, Berkner and Chavez 1997, Swail 2004) to measure not simply the "sticker" cost of education, but the also the "real" cost after subsidies such as grants have been taken into account. This study, like the ones before it, adheres to this practice and reports the net costs of education as well.

For the purposes of this study, the term "grants" refers to government-sponsored non-repayable assistance that is given directly to students. Generally speaking, the grants covered in our analysis take two forms: the more traditional "upfront" grants that are given to students during their studies (for example, the Pell Grant in the United States, and the Millennium Scholarship Bursary in Canada) and remission, a student loan forgiveness mechanism used, for the most part, in Canada. This study does not, however, include an analysis of government-sponsored educational savings grants programs such as the Canada Education Savings Grant because these programs are relatively immature and, therefore, the greater majority of students in the system during the year in question (2002-03) did not benefit from such programs. Future analyses may consider including government-sponsored savings programs as their take-up rates increase.

4) **Net Cost after Tax Expenditure as a % of ATP.** All of the jurisdictions examined in this study also provide subsidies through the tax system. This is done through direct measures (relatively speaking) like tax credits and exemptions, as well as through indirect measures like family allowance payments. Although tax expenditures do not play as large a role in student financial assistance in the United States as they do in Canada, it seemed to us reasonable that if net costs were to be taken into account, then net costs including tax expenditures would need to be taken into account as well – if for no other reason than that we would be excluding sources of government expenditures which in Canada make up approximately 40% of student assistance funding. Some might think that no distinction should be made between the two types of assistance since both forms of assistance are non-repayable; however, there is some scepticism in the student aid community that tax instruments have the same

effectiveness as grants because tax credits are not always given directly to the student (see Usher 2004; Finnie, Usher and Vossensteyn 2004); for this reason, and for reasons of clarity – namely, to demonstrate the impact that these student assistance mechanisms have on affordability within each jurisdiction in and of themselves – the decision was made to express grants and tax expenditures separately.

5) **Out-of-Pocket Costs as a % of ATP.** Net costs are an important element of human capital theory because net costs affect investment decisions. However, student loan programs – which are used in all of the jurisdictions included in this study – are established on the premise that in addition to dilemmas relating to net cost, students are also affected by "liquidity constraints". That is to say, a student might not be bothered by the net cost of a program in terms of the cost-benefit ratio she will derive from it, but that does not mean she can necessarily amass the necessary funds to study and live (see Finnie 2004 or Usher and Junor 2004 for a more detailed exploration of this). While loans do not offset the cost of an education, they do alleviate short-term liquidity problems associated with obtaining an education. "Out-of-pocket" costs - sometimes called "Net Price 2" in certain American affordability studies - are equal to total average costs minus total average loans and grants per student.

6) **Out-of-pocket Costs after Tax Expenditures as a % of ATP.** As with net costs, out-of-pocket costs exclude an important source of assistance provided by governments; namely, tax expenditures. As with our fourth indicator, we include this in order to be able to better examine where and how these expenditures impact affordability.

Defining "Ability to Pay"

For the purpose of this paper, median household pre-tax income (MHI) is used as the standard denominator to derive affordability. "Family income," which excludes unattached individuals, would have been the preferred measure here; however, it is unavailable at the state level. It could be argued that post-tax income would be a fairer way of comparing affordability, because it more accurately reflects disposable income. Generally speaking this is true, but in the case of Canada-US comparisons, we feel that there are compelling reasons not to use this measure. The main reason for this is health care, which Canadians largely pay for through the tax system and which Americans pay for largely through private insurance This slightly biases post-tax affordability comparisons in favour of US jurisdictions because they appear to have extra "disposable" income which in fact simply ends up in the health system via an alternative route. In order to eliminate this bias, we have chosen to stick with comparisons based on pre-tax income.

Median household income values in the 60 jurisdictions included in this study are presented below in Table 2, in both CDN$ and US$ 2003 Purchasing Power Parity (PPP), with Canadian and US averages provided separately. In order to keep costs and ability to pay consistent, all data is converted using OECD Purchasing Power Parity (PPP) data. The PPP compares the purchasing power of one nation's currency to that of other nations and is considered more accurate, in terms of measuring "affordability" than conversions done based on currency exchange rates. For 2003, the OECD has determined PPP between Canada and the US as being $1.24 Cdn = $1 US. As a result, in this report we multiplied US dollar amounts by 1.24 to determine the Canadian dollars and divided Canadian dollar amounts by the same amount to derive the corresponding US amount.

Table 2 – Median Household Income 2003 PPP

Rank - All	Rank - Country	Province/State	MHI-$CDN	MHI-$US	Rank - All	Rank - Country	Province/State	MHI-$CDN	MHI-$US
1	1	New Jersey	$ 68,474	$ 55,221	31	30	Arizona	$ 52,157	$ 42,062
2	2	Maryland	$ 68,464	$ 55,213	32	31	Iowa	$ 52,061	$ 41,985
3	3	New Hampshire	$ 68,406	$ 55,166	33	32	Wyoming	$ 51,461	$ 41,501
4	4	Alaska	$ 68,377	$ 55,143	34	33	Texas	$ 50,758	$ 40,934
5	5	Connecticut	$ 68,205	$ 55,004	35	34	Idaho	$ 49,885	$ 40,230
6	6	Minnesota	$ 67,555	$ 54,480	36	35	South Dakota	$ 49,388	$ 39,829
7	7	Virginia	$ 65,208	$ 52,587	37	2	Alberta	$ 48,900	$ 39,435
8	8	Massachusetts	$ 64,584	$ 52,084	38	36	South Carolina	$ 48,101	$ 38,791
9	9	Delaware	$ 62,559	$ 50,451	39	37	Florida	$ 47,829	$ 38,572
10	10	Colorado	$ 62,278	$ 50,224	40	38	North Dakota	$ 47,383	$ 38,212
11	11	Hawaii	$ 61,800	$ 49,839	41	39	Kentucky	$ 47,320	$ 38,161
12	12	Utah	$ 60,937	$ 49,143	42	40	North Carolina	$ 47,239	$ 38,096
13	13	California	$ 60,734	$ 48,979	43	41	Maine	$ 46,648	$ 37,619
14	14	Wisconsin	$ 58,010	$ 46,782	44	42	Tennessee	$ 46,536	$ 37,529
15	15	Nevada	$ 57,186	$ 46,118	45	43	Alabama	$ 46,400	$ 37,419
16	16	Washington	$ 56,990	$ 45,960	46	44	Oklahoma	$ 45,549	$ 36,733
17	17	Illinois	$ 56,553	$ 45,607	47	45	New Mexico	$ 43,729	$ 35,265
18	18	Rhode Island	$ 56,054	$ 45,205	48	3	Manitoba	$ 42,900	$ 34,597
19	19	Michigan	$ 56,018	$ 45,176	49	4	British Columbia	$ 42,800	$ 34,516
20	20	Nebraska	$ 55,003	$ 44,357	50	46	Montana	$ 42,625	$ 34,375
21	21	Pennsylvania	$ 54,398	$ 43,869	51	47	Louisiana	$ 42,541	$ 34,307
22	22	Kansas	$ 54,091	$ 43,622	52	5	Saskatchewan	$ 41,700	$ 33,629
23	23	Georgia	$ 53,983	$ 43,535	53	48	Arkansas	$ 41,241	$ 33,259
24	24	Ohio	$ 53,983	$ 43,535	54	6	Quebec	$ 40,800	$ 32,903
25	25	Missouri	$ 53,930	$ 43,492	55	7	Nova Scotia	$ 39,900	$ 32,177
26	26	Vermont	$ 53,583	$ 43,212	56	8	New Brunswick	$ 39,700	$ 32,016
27	27	New York	$ 53,518	$ 43,160	57	49	Mississippi	$ 39,540	$ 31,887
28	28	Oregon	$ 52,612	$ 42,429	58	9	Prince Edward Island	$ 39,400	$ 31,774
29	1	Ontario	$ 52,300	$ 42,177	59	50	West Virginia	$ 38,700	$ 31,210
30	29	Indiana	$ 52,234	$ 42,124	60	10	Newfoundland	$ 37,700	$ 30,403

Jurisdiction	MHI-$CDN	MHI-$US
Canada	$ 45,500	$ 36,694
United States	$ 53,973	$ 43,527

Table 3 ranks states and provinces from highest MHI to lowest. On average, the US median household income is 16% higher than that of Canada. Collectively, the North-Eastern states have the highest income earners of all jurisdictions, while some of the Southern states and the Atlantic provinces have the lowest. Ontario, Canada's most affluent province and the only Canadian jurisdiction in the top half of the income scale,

is ranked 29th. Alberta ranks not too far behind Ontario, placing 37th among the 62 jurisdictions. These two provinces are the only two provinces that rank above the Canadian MHI average of $45,500 CDN ($36,694 US); all other Canadian provinces fall below this average.

The wealth of the jurisdictions represented here has changed somewhat from that measured in the first iteration of *The Affordability of University Education* in 2001. In that analysis, six provinces had lower median household incomes than the lowest-income US state, West Virginia. Between the years of 2001 and 2003, Canada's higher rates of economic growth permitted the provinces of Quebec, Nova Scotia, New Brunswick, and Prince Edward Island to surpass West Virginia and Mississippi, albeit marginally. Quebec perhaps made the largest strides in terms of increases in MHI, surpassing Nova Scotia in addition to Mississippi and West Virginia. Newfoundland remains the poorest jurisdiction in the analysis.

Weighting the Indicators

The six indicators developed by Usher & Cervenan and used here are different combinations of five separate inputs:

- Education costs (including tuition, books, and other education-related materials)
- Living costs (for these purposes, room and board)
- Grants
- Loans
- Tax Expenditures

In developing their indicators, Usher & Cervenan noted that:

- *Education costs are the most important of the five inputs.* They are the most obvious "price" of education, and should be the foundation of all of our indicators.
- *Living costs are nearly as important as education costs*, for the very simple reason that students need to have their living expenses covered.

- *Grants are nearly as important as education and living costs.* Again, following human capital theory, a dollar in grants should completely offset a dollar of tuition fees and so it stands to reason that they should be given nearly comparable treatment. However, because people seem to attach greater importance to costs than to subsidies (perhaps due to a form of Richard Thaler's "mental accounting"; see Thaler, 1991), we have given them somewhat less weight than costs.
- *Loans are important, but less so than grants.* As per Finnie (2004), there are two types of barriers to education – one related to "cost-benefits" and the other related to liquidity. Grants contribute to solving both problems, while loans contribute only to solving the latter. As a result, we have accorded loans half the weight we have accorded to grants.
- *Tax Expenditures are the least important of all.* Even though tax expenditures are simply a convoluted form of grant, there appears to be significant scepticism among experts as to their efficacy in promoting access to education (which is, in theory, why governments choose to make education affordable).

On the basis of these findings, they assigned the six rankings weightings as follows:

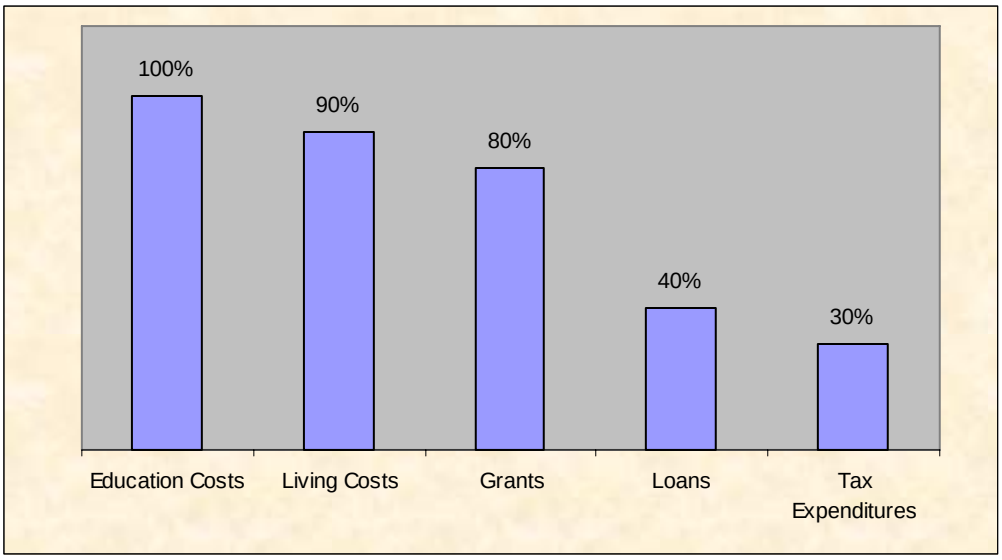
Table 3 –Affordability Indicator Weightings

INDICATOR	WEIGHTING
AFFORDABILITY:	**100%**
Educational Costs as a % of Median Household Income (MHI)/capita	10%
Total Cost as a % of MHI/capita	10%
Net Cost as a % of MHI/capita	25%
Net Cost After Tax Expenditures as a % of MHI/capita	15%
Out-of-Pocket Costs as a % of MHI/capita	25%
Out-of-Pocket Costs After Tax Expenditures as a % of MHI/capita	15%

Figure 1 shows the extent to which each of the five input factors affect the overall ranking. Educational Costs are a part of the final calculation in all six of the indicators, thus contributing to 100% of the eventual ranking. Living Costs, which are a part of

total costs, are part of the calculation in five of the six indicators, thus contributing to 90% of the final ranking. Grants, involved in four of the calculations, are close behind at 80%. Loans affect only two of the indicators, and affect 40% of the final rank; tax expenditures, which also affect two indicators, affect only 30% of the final score.

Figure 1 – Contribution of Affordability Inputs to Affordability Rankings



Part II: Analysis

This section examines the data in each of the provinces and states on the basis of five cost "inputs" - education costs, living costs, grants, loans and tax expenditures - and the five additional cost "indicators" derived from these inputs (a sixth indicator – education costs – is identical with an input). For each of the cost indicators, data is reported in both $CDN and $US. The reader should keep in mind, however, that the rankings are based not on costs but on affordability; that is, costs contextualized of the ability of individuals and families to pay them (in this case, measured via median household income in a particular state). Therefore, at the end of each of the six indicators sections there is also a table ranking the 60 jurisdictions costs as a percentage of median household income.

Education Costs - 10 % of Total Score

The basic unit of analysis for measuring "affordability" of higher education is the cost of education at 4-year public colleges and universities. This cost includes tuition, any additional mandatory ancillary fees, and the cost of books and study materials. Data on tuition comes from the National Centre for Education Statistics in the United States, and Statistics Canada. Data on cost of books comes from the International Comparative Higher Education Finance and Accessibility Project (ICHEFAP) in the US and in Canada, from a survey conducted by the Canada Millennium Scholarship Foundation and included in *The Price of Knowledge* 2004. In both cases, the survey averages for books are national and have been applied evenly across all jurisdictions in Canada and the US. Table 4 details the education costs across jurisdictions.

Table 4 shows that:

- The cost of education in Quebec is by far the lowest among the jurisdictions.
- The differences in educational costs lay not so much between countries as much as within countries. One need only compare Quebec (1) and Ontario (40) and Nevada (3) and Oregon (38) – geographical neighbours – to realize this.
- In terms of averages, the difference in educational costs between the US and Canada is relatively small – just $936 CDN / $755 US.
- That said, geography does seem to make a difference although more so in the US than in Canada. States in New England, the mid-Atlantic and the Great Lakes regions generally have relatively high educational costs, while states in the South and the Southwest generally have lower educational costs. In Canada, regions do not have consistent patterns with respect to education costs.

Table 4 – Education Costs $2003 PPP

Rank - All	Rank - Country	Province/State	EC-$CDN	EC-$US	Rank - All	Rank - Country	Province/State	EC-$CDN	EC-$US
1	1	Quebec	$3,156	$2,545	31	24	Nebraska	$5,409	$4,362
2	2	Newfoundland	$3,815	$3,077	32	8	Saskatchewan	$5,506	$4,440
3	1	Nevada	$4,066	$3,279	33	25	Arkansas	$5,535	$4,464
4	2	Arizona	$4,138	$3,337	34	26	Mississippi	$5,538	$4,466
5	3	Florida	$4,147	$3,344	35	27	Montana	$5,797	$4,675
6	4	Oklahoma	$4,169	$3,362	36	28	Wisconsin	$5,847	$4,715
7	5	Utah	$4,201	$3,388	37	29	South Dakota	$5,854	$4,721
8	3	Manitoba	$4,330	$3,492	38	30	Oregon	$5,925	$4,778
9	6	California	$4,380	$3,532	39	31	Virginia	$5,998	$4,837
10	4	British Columbia	$4,404	$3,552	40	9	Ontario	$6,032	$4,864
11	7	Louisiana	$4,502	$3,631	41	32	Iowa	$6,064	$4,890
12	8	West Virginia	$4,525	$3,649	42	33	New York	$6,163	$4,970
13	9	Georgia	$4,582	$3,695	43	34	Washington	$6,247	$5,038
14	10	Wyoming	$4,646	$3,747	44	10	Nova Scotia	$6,327	$5,102
15	11	New Mexico	$4,670	$3,766	45	35	Missouri	$6,636	$5,352
16	12	Idaho	$4,691	$3,783	46	36	Indiana	$6,659	$5,370
17	13	North Carolina	$4,770	$3,847	47	37	Maine	$6,664	$5,374
18	14	Colorado	$4,776	$3,852	48	38	Massachusetts	$7,098	$5,724
19	15	Hawaii	$4,815	$3,883	49	39	Minnesota	$7,175	$5,786
20	16	Alaska	$4,851	$3,912	50	40	Rhode Island	$7,219	$5,822
21	17	Kansas	$4,866	$3,924	51	41	Connecticut	$7,306	$5,892
22	5	Prince Edward Island	$5,018	$4,046	52	42	Illinois	$7,342	$5,921
23	18	Texas	$5,044	$4,068	53	43	Maryland	$7,633	$6,156
24	19	North Dakota	$5,147	$4,151	54	44	Delaware	$7,674	$6,189
25	6	New Brunswick	$5,152	$4,155	55	45	Michigan	$7,743	$6,244
26	20	Kentucky	$5,152	$4,155	56	46	Ohio	$8,244	$6,648
27	21	Alabama	$5,284	$4,261	57	47	South Carolina	$8,749	$7,056
28	22	New Hampshire	$5,300	$4,274	58	48	New Jersey	$9,249	$7,459
29	7	Alberta	$5,358	$4,321	59	49	Pennsylvania	$9,699	$7,822
30	23	Tennessee	$5,380	$4,339	60	50	Vermont	$ 10,545	$8,504

Jurisdiction	EC-$CDN	EC-$US
CANADA	$ 5,027	$ 4,054
UNITED STATES	$ 5,963	$ 4,809

While examining educational costs allows for some interesting comparisons, such comparisons do not actually examine the impact these costs within the context of a family's ability to pay. This we now do in creating our first affordability indicator, which shows educational costs as a portion of median household income (EC/MHI). Table 5 provides the rankings for EC/MHI for all 60 jurisdictions.

Table 5 – Education Cost Affordability Rankings

Rank		Province / State	EC / MHI	Rank		Province / State	EC / MHI
All	Country			All	Country		
1	1	Utah	6.90%	31	26	Washington	11.00%
2	2	Alaska	7.10%	32	27	Massachusetts	11.00%
3	3	Nevada	7.10%	33	28	Maryland	11.10%
4	4	California	7.20%	34	29	Oregon	11.30%
5	5	Colorado	7.70%	35	30	Alabama	11.40%
6	1	Quebec	7.70%	36	31	New York	11.50%
7	6	New Hampshire	7.70%	37	6	Ontario	11.50%
8	7	Hawaii	7.80%	38	32	Tennessee	11.60%
9	8	Arizona	7.90%	39	33	Iowa	11.60%
10	9	Georgia	8.50%	40	34	West Virginia	11.70%
11	10	Florida	8.70%	41	35	South Dakota	11.90%
12	11	Kansas	9.00%	42	36	Delaware	12.30%
13	12	Wyoming	9.00%	43	37	Missouri	12.30%
14	13	Oklahoma	9.20%	44	7	Prince Edward Island	12.70%
15	14	Virginia	9.20%	45	38	Indiana	12.70%
16	15	Idaho	9.40%	46	39	Rhode Island	12.90%
17	16	Nebraska	9.80%	47	8	New Brunswick	13.00%
18	17	Texas	9.90%	48	40	Illinois	13.00%
19	18	Wisconsin	10.10%	49	9	Saskatchewan	13.20%
20	2	Manitoba	10.10%	50	41	Arkansas	13.40%
21	19	North Carolina	10.10%	51	42	New Jersey	13.50%
22	3	Newfoundland	10.10%	52	43	Montana	13.60%
23	4	British Columbia	10.30%	53	44	Michigan	13.80%
24	20	Louisiana	10.60%	54	45	Mississippi	14.00%
25	21	Minnesota	10.60%	55	46	Maine	14.30%
26	22	New Mexico	10.70%	56	47	Ohio	15.30%
27	23	Connecticut	10.70%	57	10	Nova Scotia	15.90%
28	24	North Dakota	10.90%	58	48	Pennsylvania	17.80%
29	25	Kentucky	10.90%	59	49	South Carolina	18.20%
30	5	Alberta	11.00%	60	50	Vermont	19.70%

Jurisdiction	EC/MHI
Canada	11.0%
United States	11.0%

Further examination of Table 5 follows.

An analysis of table 5 reveals the following:

- The rank order of jurisdictions between table 5 (educational costs) and table 6 (EC / MHI) changes significantly. Those jurisdictions that have low educational costs but are also lower-income jurisdictions generally appear to be more expensive on the affordability scale than on the cost scale. Quebec and Newfoundland are cases in point here: both of these provinces look "affordable" in terms of "sticker price;" that is, the cost of education in terms of dollars and cents. However, when the sticker price within these jurisdictions, is measured against household income, they lose their footing somewhat, with Quebec falling from 1st place to 6th, Newfoundland from 2nd to 22nd.

- Alternatively, those jurisdictions that higher-income and have lower-to-mid priced educational costs - such as Utah (1), Alaska (2), Nevada (3), California (4) and Florida (11) - do relatively well on this indicator. Those jurisdictions that are higher-income and higher cost jurisdictions, such as Alberta (30), Ontario (37), New Jersey (51), Maine (55), and Vermont (60), slip somewhat in terms of affordability. Jurisdictions that are lower-income and mid-to-higher-cost – New Brunswick (47), Saskatchewan (49), Mississippi (54), Nova Scotia (57), and South Carolina (59), find themselves at the bottom of the list. Vermont, being relatively middle-of-the-road in terms of income but having the highest educational costs amongst all of the jurisdictions - $8,504 US ($10,545 CDN) compared to the and the all-jurisdiction average of $4,737 US ($5,787 CDN), finds itself in last place.

- The difference in EC / MHI between the Canadian and the United States average in terms of educational costs is a fraction of a percentage point – 11.0487% and 11.0483% respectively. This again draws attention to the fact that there a fewer differences between the two countries than there are within them.

- The top five jurisdictions are all from the western United States– Utah, Alaska, Nevada, California and Colorado. Generally speaking, there is a regional pattern to the US results. Western states do best on this measure; Southern states also do well as a whole. The difference between the two is largely one of household income – both regions have similar tuition policies, but the western states' higher household

incomes put them top of this table. States from the North East and those around the Great Lakes do poorly on this measure.

- Regional distinctions within Canada are also very apparent, with Maritime provinces doing much worse on this measure of affordability than the Western provinces. This is largely due to low household incomes in the region, though where Nova Scotia is concerned, high tuition also plays a significant role. Saskatchewan is perhaps an exception to this rule, as its combination of relatively high tuition and relatively low income places it towards the bottom of the affordability scale.

Living Costs

An examination of education costs by no means provides a complete picture of the costs that students incur; we must also consider the cost-of-living expenses in calculating the total cost of education. These costs include the costs of rent and food in an academic year, as well as miscellaneous expenses (for the purpose of this analysis, the calculation of cost-of-living expenses assumes that a student lives away from home).

In Canada, these costs have been established using data on food and rent for students living away from home from the 2001-2002 *Student Income and Expenditure Survey*. In the United States, data on living costs are taken from the National Center for Education Statistics survey of on-campus lodging costs. Table 6 details cost-of-living expenses across jurisdictions.

Please see Table 6 on the next page.

Table 6 –Cost of Living $2003 PPP

Rank - All	Rank - Country	Province/State	LC-$CDN	LC-$US	Rank - All	Rank - Country	Province/State	LC-$CDN	LC-$US
1	1	North Dakota	$4,604	$3,713	31	24	North Carolina	$6,226	$5,021
2	2	South Dakota	$4,683	$3,777	32	25	Georgia	$6,294	$5,076
3	3	Louisiana	$4,742	$3,824	33	26	Texas	$6,308	$5,087
4	4	Arkansas	$4,855	$3,915	34	8	Alberta	$6,408	$5,168
5	5	Oklahoma	$4,863	$3,922	35	9	Manitoba	$6,408	$5,168
6	6	Wisconsin	$5,077	$4,094	36	10	Saskatchewan	$6,408	$5,168
7	7	Kentucky	$5,178	$4,176	37	27	Virginia	$6,464	$5,213
8	8	Mississippi	$5,194	$4,189	38	28	Massachusetts	$6,660	$5,371
9	9	Kansas	$5,316	$4,287	39	29	Maine	$6,764	$5,455
10	10	Idaho	$5,336	$4,303	40	30	Michigan	$6,834	$5,511
11	11	Alabama	$5,467	$4,409	41	31	Pennsylvania	$6,876	$5,545
12	12	Tennessee	$5,507	$4,441	42	32	New Hampshire	$6,969	$5,620
13	13	Nebraska	$5,584	$4,503	43	33	Illinois	$6,977	$5,627
14	14	Missouri	$5,657	$4,562	44	34	Colorado	$7,006	$5,650
15	15	South Carolina	$5,672	$4,574	45	35	Arizona	$7,110	$5,734
16	16	Minnesota	$5,685	$4,585	46	36	Indiana	$7,168	$5,781
17	17	Wyoming	$5,721	$4,614	47	37	Florida	$7,198	$5,805
18	18	New Mexico	$5,889	$4,749	48	38	Delaware	$7,222	$5,824
19	19	Iowa	$5,931	$4,783	49	39	Vermont	$7,415	$5,980
20	1	Ontario	$6,000	$4,839	50	40	Ohio	$7,486	$6,037
21	2	Quebec	$6,000	$4,839	51	41	Nevada	$7,605	$6,133
22	20	Montana	$6,004	$4,842	52	42	Alaska	$7,678	$6,192
23	3	New Brunswick	$6,024	$4,858	53	43	Washington	$7,687	$6,199
24	4	Newfoundland	$6,024	$4,858	54	44	Oregon	$7,689	$6,201
25	5	Nova Scotia	$6,024	$4,858	55	45	Connecticut	$7,795	$6,286
26	6	Prince Edward Island	$6,024	$4,858	56	46	Maryland	$7,951	$6,412
27	21	Hawaii	$6,121	$4,936	57	47	New York	$8,229	$6,636
28	7	British Columbia	$6,128	$4,942	58	48	New Jersey	$8,401	$6,775
29	22	West Virginia	$6,175	$4,980	59	49	Rhode Island	$8,558	$6,902
30	23	Utah	$6,207	$5,006	60	50	California	$9,412	$7,590

Jurisdiction	LC-$CDN	LC-$US
CANADA	$ 6,112	$ 4,929
UNITED STATES	$ 6,762	$ 5,453

Total Costs [TC] - 10 % of Total Score

Just as direct educational costs are one way to measure "affordability", so too are total costs – that is, the combined costs of education and living expenses. These are shown below in table 7.

Table 7 – Total Costs of Education $2003 PPP

Rank - All	Rank - Country	Province/State	TC-$CDN	TC-$US	Rank - All	Rank - Country	Province/State	TC-$CDN	TC-$US
1	1	Oklahoma	$9,032	$7,284	31	7	Alberta	$ 11,766	$9,489
2	1	Quebec	$9,156	$7,384	32	25	Colorado	$ 11,782	$9,502
3	2	Louisiana	$9,244	$7,455	33	26	Montana	$ 11,801	$9,517
4	3	North Dakota	$9,751	$7,864	34	8	Saskatchewan	$ 11,914	$9,608
5	2	Newfoundland	$9,839	$7,935	35	27	Iowa	$ 11,995	$9,673
6	4	Idaho	$ 10,027	$8,086	36	9	Ontario	$ 12,032	$9,703
7	5	Kansas	$ 10,182	$8,211	37	28	New Hampshire	$ 12,269	$9,894
8	6	Kentucky	$ 10,330	$8,331	38	29	Missouri	$ 12,293	$9,914
9	7	Wyoming	$ 10,368	$8,361	39	10	Nova Scotia	$ 12,351	$9,960
10	8	Arkansas	$ 10,390	$8,379	40	30	Virginia	$ 12,462	$ 10,050
11	9	Utah	$ 10,409	$8,394	41	31	Alaska	$ 12,529	$ 10,104
12	3	British Columbia	$ 10,532	$8,494	42	32	Minnesota	$ 12,860	$ 10,371
13	10	South Dakota	$ 10,538	$8,498	43	33	Maine	$ 13,428	$ 10,829
14	11	New Mexico	$ 10,559	$8,515	44	34	Oregon	$ 13,614	$ 10,979
15	12	West Virginia	$ 10,700	$8,629	45	35	Massachusetts	$ 13,758	$ 11,095
16	13	Mississippi	$ 10,732	$8,655	46	36	California	$ 13,791	$ 11,122
17	4	Manitoba	$ 10,738	$8,659	47	37	Indiana	$ 13,827	$ 11,151
18	14	Alabama	$ 10,751	$8,670	48	38	Washington	$ 13,934	$ 11,237
19	15	Georgia	$ 10,876	$8,771	49	39	Illinois	$ 14,320	$ 11,548
20	16	Tennessee	$ 10,887	$8,780	50	40	New York	$ 14,391	$ 11,606
21	17	Wisconsin	$ 10,923	$8,809	51	41	South Carolina	$ 14,421	$ 11,630
22	18	Hawaii	$ 10,936	$8,819	52	42	Michigan	$ 14,576	$ 11,755
23	19	Nebraska	$ 10,993	$8,865	53	43	Delaware	$ 14,896	$ 12,013
24	20	North Carolina	$ 10,996	$8,868	54	44	Connecticut	$ 15,101	$ 12,178
25	5	Prince Edward Island	$ 11,042	$8,904	55	45	Maryland	$ 15,584	$ 12,568
26	6	New Brunswick	$ 11,176	$9,013	56	46	Ohio	$ 15,729	$ 12,685
27	21	Arizona	$ 11,248	$9,071	57	47	Rhode Island	$ 15,778	$ 12,724
28	22	Florida	$ 11,345	$9,149	58	48	Pennsylvania	$ 16,575	$ 13,367
29	23	Texas	$ 11,352	$9,155	59	49	New Jersey	$ 17,650	$ 14,234
30	24	Nevada	$ 11,671	$9,412	60	50	Vermont	$ 17,960	$ 14,484

Jurisdiction	EC-$CDN	EC-$US
CANADA	$ 11,139	$ 8,983
UNITED STATES	$ 12,725	$ 10,262

Once again, we see that Quebec, along with a clutch of states from the South and West appear, on the whole, to have the lowest total costs among the jurisdictions. States from the North and East make up the bulk of the more costly jurisdictions: Rhode Island (57), Pennsylvania (58), New Jersey (59) and Vermont (60) come out as being the most expensive jurisdictions in which to attend a 4-year college or university.

As with educational costs, it is important to discuss total costs in the context of ability to pay. Total costs as proportion of median household income (TC/MHI) is our second affordability indicator, and is shown in Table 8.

Table 8 – Total Cost Rankings

Rank - All	Rank - Country	Province/State	TC/MHI	Rank - All	Rank - Country	Province/State	TC/MHI
1	1	Utah	17.10%	31	29	North Carolina	23.30%
2	2	Hawaii	17.70%	32	30	Tennessee	23.40%
3	3	New Hampshire	17.90%	33	31	Florida	23.70%
4	4	Alaska	18.30%	34	32	Delaware	23.80%
5	5	Kansas	18.80%	35	3	Alberta	24.10%
6	6	Wisconsin	18.80%	36	33	New Mexico	24.10%
7	7	Colorado	18.90%	37	34	Washington	24.40%
8	8	Minnesota	19.00%	38	4	British Columbia	24.60%
9	9	Virginia	19.10%	39	5	Manitoba	25.00%
10	10	Oklahoma	19.80%	40	35	Arkansas	25.20%
11	11	Nebraska	20.00%	41	36	Illinois	25.30%
12	12	Idaho	20.10%	42	37	New Jersey	25.80%
13	13	Wyoming	20.10%	43	38	Oregon	25.90%
14	14	Georgia	20.10%	44	39	Michigan	26.00%
15	15	Nevada	20.40%	45	6	Newfoundland	26.10%
16	16	North Dakota	20.60%	46	40	Indiana	26.50%
17	17	Massachusetts	21.30%	47	41	New York	26.90%
18	18	South Dakota	21.30%	48	42	Mississippi	27.10%
19	19	Arizona	21.60%	49	43	West Virginia	27.60%
20	20	Louisiana	21.70%	50	44	Montana	27.70%
21	21	Kentucky	21.80%	51	7	Prince Edward Island	28.00%
22	22	Connecticut	22.10%	52	45	Rhode Island	28.10%
23	23	Texas	22.40%	53	8	New Brunswick	28.20%
24	1	Quebec	22.40%	54	9	Saskatchewan	28.60%
25	24	California	22.70%	55	46	Maine	28.80%
26	25	Maryland	22.80%	56	47	Ohio	29.10%
27	26	Missouri	22.80%	57	48	South Carolina	30.00%
28	2	Ontario	23.00%	58	49	Pennsylvania	30.50%
29	27	Iowa	23.00%	59	10	Nova Scotia	31.00%
30	28	Alabama	23.20%	60	50	Vermont	33.50%

Jurisdiction	TC/MHI
CANADA	24.5%
UNITED STATES	23.6%

In terms of affordability of education among the jurisdictions, the following conclusions can be made:

- When seen in the context of Median Household Income, total costs are slightly lower in the US than in Canada.
- At the jurisdictional level, this division between Canada and the US is shown most vividly by glancing at the ten most expensive jurisdictions, four of which are Canadian. In the assessment of educational costs to median household income, only one Canadian province – Nova Scotia – ranked among the bottom 10.
- The trend of regionalism - so evident in table 5 – nearly disappears entirely here. This is because room and board costs, unlike tuition costs, do not appear to have any significant regional pattern.

This analysis paints a dire picture for families in some jurisdictions: the total costs of education compromise approximately a quarter of median household income in just over half of the jurisdictions represented. However, the total cost/MHI indicator is simply a measure of cost and does not take into account any subsidies that students and families might receive. For this we must examine the net costs of education, which is discussed in the next section.

Grants

In order to further compare affordability across jurisdictions, one must consider not only the costs associated with post-secondary education, but the subsidies provided to individuals as well. The first of these subsidies we turn to are grants.

Grants are the predominant subsidy used by governments in our analysis. Like educational-related tax initiatives – another subsidy that will be examined later – grants are provided to students in all of the jurisdictions in question. Grants can take many forms. For the purposes of this analysis, grants include need-based non-repayable assistance given to students over and above or in place of student loans, as well as remission, a practice through which a portion of student loan debt is forgiven when students or graduates reach certain milestones (such as completion of the first year and / or last year of studies) as well as income-sensitive loan remission. Both federal and state / provincial grants are included in our calculations, as are institutional awards.

Just as there are different types of grants, there are also different ways to look at grants. In analyzing grants, one can conduct a comparison between the total amount governments spend on grants to the total amount spent on loans; one could also draw comparisons between the average grants awarded to students within given jurisdictions. For the purpose of this study, we have chosen to examine grants on a per student basis; that is to say, total grants defined by total FTE students.

Table 9 – Grants per Student $2003 PPP

Rank - All	Rank - Country	Province/State	GpS-$CDN	GpS-$US	Rank - All	Rank - Country	Province/State	GpS-$CDN	GpS-$US
1	1	Delaware	$5,634	$4,544	31	30	Nebraska	$2,167	$1,748
2	2	Vermont	$5,110	$4,121	32	31	Arizona	$2,139	$1,725
3	3	South Carolina	$3,427	$2,764	33	32	Oklahoma	$2,094	$1,689
4	4	Kentucky	$3,367	$2,715	34	33	Illinois	$2,048	$1,652
5	5	Georgia	$3,320	$2,678	35	34	North Carolina	$2,041	$1,646
6	6	Mississippi	$3,131	$2,525	36	35	Alabama	$2,013	$1,623
7	7	New Hampshire	$2,983	$2,406	37	36	Massachussets	$1,970	$1,589
8	8	Arkansas	$2,956	$2,384	38	37	Oregon	$1,945	$1,569
9	9	New York	$2,948	$2,377	39	38	Tennessee	$1,934	$1,560
10	10	Florida	$2,850	$2,298	40	39	North Dakota	$1,899	$1,532
11	11	Pennsylvania	$2,848	$2,297	41	40	Virginia	$1,864	$1,503
12	12	Maine	$2,835	$2,286	42	41	Connecticut	$1,857	$1,498
13	13	Ohio	$2,796	$2,255	43	42	Colorado	$1,738	$1,401
14	14	Louisiana	$2,763	$2,228	44	43	Utah	$1,698	$1,369
15	15	Maryland	$2,645	$2,133	45	2	Saskatchewan	$1,682	$1,357
16	16	California	$2,623	$2,115	46	44	South Dakota	$1,667	$1,344
17	17	Indiana	$2,614	$2,108	47	3	Quebec	$1,653	$1,333
18	18	Washington	$2,600	$2,097	48	45	Montana	$1,624	$1,310
19	19	Missouri	$2,594	$2,092	49	4	Ontario	$1,579	$1,273
20	20	West Virginia	$2,542	$2,050	50	46	Wyoming	$1,522	$1,228
21	21	Idaho	$2,482	$2,001	51	5	British Columbia	$1,493	$1,204
22	22	Michigan	$2,464	$1,987	52	47	Nevada	$1,311	$1,057
23	23	Wisconsin	$2,448	$1,974	53	6	Newfoundland	$1,241	$1,001
24	24	New Jersey	$2,440	$1,968	54	48	Kansas	$1,180	$952
25	25	Texas	$2,390	$1,928	55	49	Alaska	$1,169	$943
26	26	Iowa	$2,327	$1,876	56	7	Prince Edward Island	$1,131	$912
27	27	New Mexico	$2,277	$1,837	57	8	New Brunswick	$963	$776
28	28	Minnesota	$2,249	$1,814	58	9	Manitoba	$934	$753
29	1	Alberta	$2,192	$1,768	59	10	Nova Scotia	$932	$752
30	29	Rhode Island	$2,182	$1,760	60	50	Hawaii	$545	$440

Jurisdiction	GpS-$CDN	GpS-$US
CANADA	$ 1,567	$ 1,264
UNITED STATES	$ 2,475	$ 1,996

The dollar value of grants per student is similar in most jurisdictions, with students in most American states receiving somewhere between $1,400 and $2,800 (US). There are a few outliers at the top of the scale – notably Delaware and Vermont, where grants average over $4,000 per student – and at the bottom, where Hawaii provides just $440 (US) in grants per student.

In terms of grants per student, and based on dollar figures alone, the Eastern states appear to offer more generous subsidies to their students. However, it should be kept in mind that some of these states, such as Delaware (1), New Hampshire (7) and, in particular, Vermont (2), are high-cost states, so while the per student grant assistance appears to be rather generous, grant dollars may not stretch as far as they do in lower-cost states that have lower levels of assistance.

It is important to point out here that some of the states with the most generous subsidies are those that are, for the most part, low-cost, lower-income states. These states – South Carolina (3), Kentucky (4), Georgia (5), Mississippi (6), Arkansas (8), and not far behind, Louisiana (14), and West Virginia (20) – can likely attribute their position here to the US Pell Grant system, a system that provides need-based assistance to low-income students. Although Pell Grants have dwindled in terms of purchasing power in recent years as a result of large tuition increases, the Pell Grant program is still the largest grant program in the US. It is perhaps not surprising, then, that the largest grant program in the US, aimed at low-income students, should provide greater subsidies on a per student basis in lower-income states.

In contrast, however, the states where students receive the highest average grants are not reliant on the federal system for their largesse. In richer states, such as Vermont, New Hampshire and Delaware, institutional grants represent four or even five times as large a source of aid as do Pell grants. This is quite a contrast to the less-affluent states mentioned above, where institutional aid is rarely anywhere near rivalling Pell grants as a source of aid.

What may be surprising here to some is Canada's showing. Although often viewed as a so-called "welfare state," the subsidies that Canadian jurisdictions provide to their students in the form of grants appear to be rather measly next to their US counterparts: on average, the US provides 58% more in the form of grants on a per student basis than does Canada. Indeed, the best showing of a province is Alberta at 29th; Quebec, in

second place in Canada, is 46th overall, and the other Canadian provinces round out the bottom from 56th place on.

While the discussion of grants per student is an important one, it in itself, much like the discussion of educational costs, provides more insight into government expenditures than into the role that grants play in making post-secondary education more affordable. The discussion of grants per student, however, is important in providing context for our next indicator - net costs.

Net Costs [NC] - 25 % of Total Score

The term "net cost" refers to the total average cost of education minus the average grant available. It is generally considered a more accurate measure of affordability than education costs or total costs because it incorporates government subsidies into the cost calculation.

Table 10 – Net Costs $2003 PPP

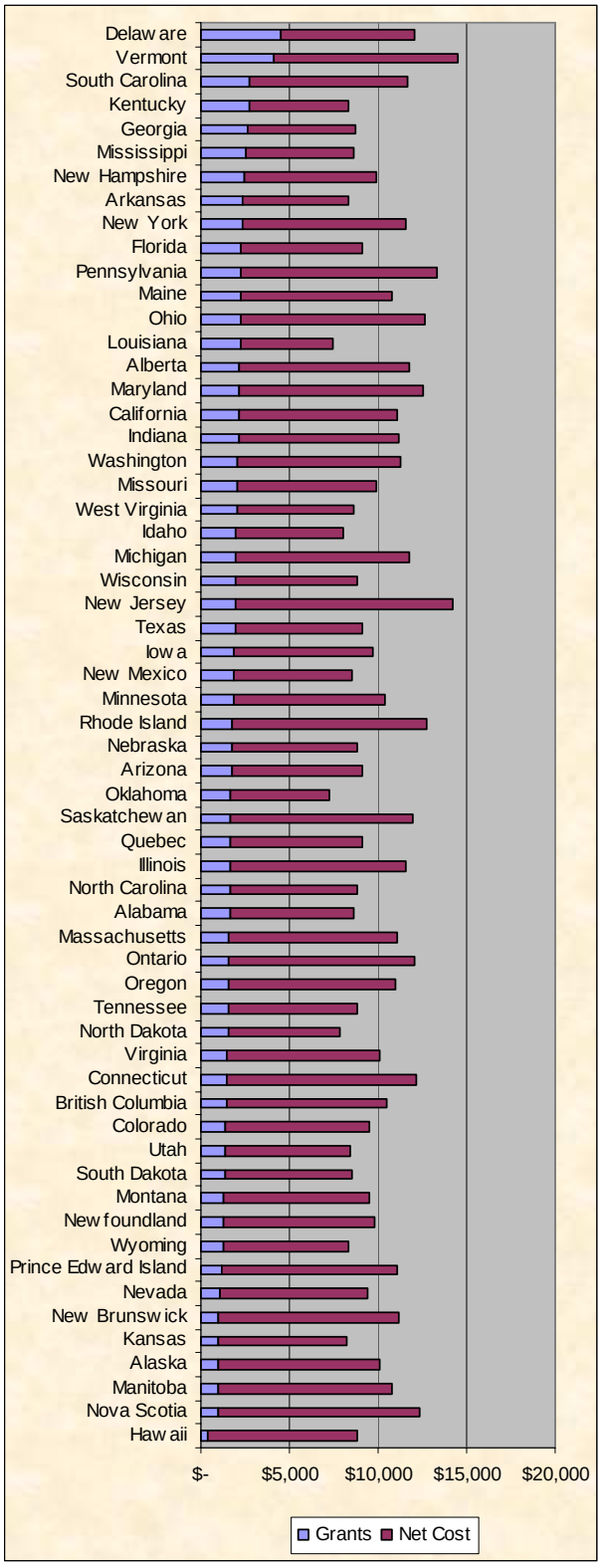
Rank - All	Rank - Country	Province/State	NC-$CDN	NC-$US	Rank - All	Rank - Country	Province/State	NC-$CDN	NC-$US
1	1	Louisiana	$6,481	$5,227	31	5	Manitoba	$9,804	$7,906
2	2	Oklahoma	$6,938	$5,595	32	6	Prince Edward Island	$9,910	$7,992
3	3	Kentucky	$6,963	$5,616	33	27	Colorado	$ 10,045	$8,101
4	4	Arkansas	$7,434	$5,995	34	28	Montana	$ 10,177	$8,207
5	1	Quebec	$7,504	$6,051	35	7	New Brunswick	$ 10,213	$8,236
6	5	Idaho	$7,545	$6,085	36	8	Saskatchewan	$ 10,232	$8,251
7	6	Georgia	$7,556	$6,093	37	29	Nevada	$ 10,360	$8,355
8	7	Mississippi	$7,601	$6,130	38	30	Hawaii	$ 10,390	$8,379
9	8	North Dakota	$7,852	$6,332	39	9	Ontario	$ 10,453	$8,430
10	9	West Virginia	$8,158	$6,579	40	31	Maine	$ 10,593	$8,543
11	10	New Mexico	$8,281	$6,678	41	32	Virginia	$ 10,598	$8,547
12	11	Wisconsin	$8,475	$6,835	42	33	Minnesota	$ 10,611	$8,557
13	12	Florida	$8,495	$6,851	43	34	South Carolina	$ 10,994	$8,866
14	2	Newfoundland	$8,598	$6,934	44	35	California	$ 11,168	$9,007
15	13	Utah	$8,711	$7,025	45	36	Indiana	$ 11,213	$9,043
16	14	Alabama	$8,738	$7,047	46	37	Washington	$ 11,334	$9,140
17	15	Nebraska	$8,826	$7,117	47	38	Alaska	$ 11,360	$9,161
18	16	Wyoming	$8,845	$7,133	48	10	Nova Scotia	$ 11,419	$9,209
19	17	South Dakota	$8,871	$7,154	49	39	New York	$ 11,443	$9,229
20	18	Tennessee	$8,953	$7,220	50	40	Oregon	$ 11,669	$9,410
21	19	North Carolina	$8,955	$7,222	51	41	Massachusetts	$ 11,788	$9,506
22	20	Texas	$8,962	$7,227	52	42	Michigan	$ 12,112	$9,768
23	21	Kansas	$9,002	$7,259	53	43	Illinois	$ 12,271	$9,896
24	3	British Columbia	$9,039	$7,290	54	44	Vermont	$ 12,850	$ 10,363
25	22	Arizona	$9,109	$7,346	55	45	Ohio	$ 12,933	$ 10,430
26	23	Delaware	$9,262	$7,469	56	46	Maryland	$ 12,939	$ 10,435
27	24	New Hampshire	$9,286	$7,488	57	47	Connecticut	$ 13,244	$ 10,680
28	4	Alberta	$9,574	$7,721	58	48	Rhode Island	$ 13,596	$ 10,964
29	25	Iowa	$9,668	$7,797	59	49	Pennsylvania	$ 13,727	$ 11,070
30	26	Missouri	$9,699	$7,822	60	50	New Jersey	$ 15,210	$ 12,266

Jurisdiction	NC-$CDN	NC-$US
Canada	$ 9,572	$7,720
United States	$10,250	$8,266

On the whole the Southern US states are the leaders in terms of providing low cost education, both before and after educational subsidies are applied. For the most part southern states have low costs and high levels of grants (though the latter come primarily from federal, not local sources). Compared to high-cost, high-subsidy states, such as Delaware (26) and Vermont (54), it appears that student subsidy dollars in the Southern states have a greater impact on overall cost. On average, grant subsidies cover (29%) of total costs in the four Southern states represented in the top 10 (Louisiana (1), Arkansas (4), Georgia (7), and Mississippi (8). In Delaware - the jurisdiction with the highest level of grants per student – grant subsidies cover 38% of total costs, while in Vermont – the jurisdiction with the second highest level of grants per student but also the highest level of total costs – grant subsidies cover 28%. This further demonstrates that the notion of affordability is complex, driven not just by the level of process and/or subsidies, but rather a meaningful *mix* of costs and subsidies. The devil, as they say, really is in the details here; what may be meaningful in one jurisdiction may not have the same impact in another.

Figure 2 following demonstrates this point in a more graphic fashion, by showing the role that grants play in reducing total costs in each of the fifty states and ten provinces.

Figure 2 –Grants vs. Total Costs ($ CDN)



When considering the role that grants play in reducing total costs, it is – as always - important to consider the impact in terms of affordability. Table 11 presents the data and rankings of Net Costs as a percentage of median household income (NC/MHI).

Table 11 – Net Cost Rankings

Rank - All	Rank - Country	Province/State	NC/MHI	Rank - All	Rank - Country	Province/State	NC/MHI
1	1	New Hampshire	13.6%	31	30	Maryland	18.9%
2	2	Georgia	14.0%	32	31	New Mexico	18.9%
3	3	Utah	14.3%	33	32	North Carolina	19.0%
4	4	Wisconsin	14.6%	34	2	Alberta	19.0%
5	5	Kentucky	14.7%	35	33	Mississippi	19.2%
6	6	Delaware	14.8%	36	34	Tennessee	19.2%
7	7	Idaho	15.1%	37	35	Connecticut	19.4%
8	8	Oklahoma	15.2%	38	3	Ontario	19.4%
9	9	Louisiana	15.2%	39	36	Washington	19.9%
10	10	Minnesota	15.7%	40	4	British Columbia	21.0%
11	11	Nebraska	16.0%	41	37	West Virginia	21.1%
12	12	Colorado	16.1%	42	38	New York	21.4%
13	13	Virginia	16.3%	43	39	Indiana	21.5%
14	14	North Dakota	16.6%	44	40	Michigan	21.6%
15	15	Alaska	16.6%	45	5	Manitoba	21.7%
16	16	Kansas	16.6%	46	41	Illinois	21.7%
17	17	Hawaii	16.8%	47	42	Oregon	22.2%
18	18	Wyoming	17.2%	48	43	New Jersey	22.2%
19	19	Arizona	17.5%	49	6	Newfoundland	22.4%
20	20	Texas	17.7%	50	7	Saskatchewan	22.5%
21	21	Florida	17.8%	51	44	Maine	22.7%
22	22	South Dakota	18.0%	52	45	South Carolina	22.9%
23	23	Missouri	18.0%	53	8	Prince Edward Island	23.2%
24	24	Arkansas	18.0%	54	46	Montana	23.9%
25	25	Nevada	18.1%	55	47	Ohio	24.0%
26	26	Massachusetts	18.3%	56	48	Vermont	24.0%
27	1	Quebec	18.4%	57	49	Rhode Island	24.3%
28	27	California	18.4%	58	9	New Brunswick	25.1%
29	28	Iowa	18.6%	59	50	Pennsylvania	25.2%
30	29	Alabama	18.8%	60	10	Nova Scotia	28.1%

Jurisdiction	NC/MHI
CANADA	20.6%
UNITED STATES	19.0%

An examination of Table 11 provides the following:

- While Southern states still fare well in the areas of cost, grants, and overall affordability, it is New Hampshire appears to be most affordable than all of them. In part, this is because of its moderate tuition and generous institutional aid; more importantly, though, is the fact that it has very high per-capita income. In pure dollar terms, New Hampshire is considerably more expensive than, say, Newfoundland. However, because of the vast gap in average incomes, New Hampshire's net costs as a percentage of MHI are roughly 40% lower than Newfoundland's.
- Canadian provinces fare somewhat better than they did on the total cost to median household income indicator, particularly Quebec (27), Alberta (34), Ontario (36), and British Columbia (40). Interestingly, these four provinces do not fit into a single policy model. Quebec is a low-income province pursuing low-tuition/low-aid strategies. British Columbia was – at the time this data was collected – a middle-income province pursuing a low-tuition/middling-aid strategy. Alberta and Ontario are high income provinces pursuing what for Canada is a high tuition/high-aid strategy. Yet in the end, all four provinces ended up with remarkably similar levels of affordability on this indicator.

Tax Expenditures

In addition to grants, North American governments provide non-repayable assistance through tax expenditures and tax-based benefits. This practice - in place since the early sixties in Canada and the mid-nineties in the US – results in the distribution of subsidies to families in the form of reductions in taxes owed rather than to students directly, as with the practice of grant provisions.

Unfortunately, neither the Canadian nor the American governments publish adequate statistics on the distribution of their education tax credits. In Canada, it is possible to determine the amount of education tax credit delivered to students in each province, but it is not possible to tell how much of this actually goes to university students. The US Government simply refuses to publish data on tax credits on a state by state basis. Our data below, which includes both federal and provincial/state tax expenditures in each jurisdiction, is therefore based on estimates, which are described more fully in the appendix to this document. Specific figures in this section are therefore likely somewhat less reliable than those that appear in other sections, though there is no doubt that they tell the correct story in terms of placing individual jurisdictions relative to one another.

Canadian jurisdictions spend far more on education-related tax-based incentives than do the US states. On average, Canadian jurisdictions provide $1,497 CDN ($1,207 US) in education-related tax expenditures per student, a whopping 162% more than the US average of $572 CDN ($462 US). This may seem surprising in that both countries' tax credits are ostensibly for the same thing – tuition. There are two reasons for the difference. The first has to do with the fact that tuition tax credits in Canada apply not only to federal taxes, but to the rather substantial provincial taxes as well. Moreover, in Canada tuition accounts for only a little over half of the credit, as the credit is not based simply on tuition but also on months of study.

Generally speaking, the value of tax credits rises in conjunction with tuition and tax rates. For example, the jurisdiction with the highest per-student value of tax credits, Saskatchewan, is a high-tax jurisdiction with reasonably high tuition fees.

Table 12 details the distribution of these tax expenditures and ranks each jurisdiction from highest to lowest.

Table 12 – Tax Expenditures - $2003 PPP

Rank - All	Rank - Country	Province/State	TE-$CDN	TE-$US	Rank - All	Rank - Country	Province/State	TE-$CDN	TE-$US
1	1	Nova Scotia	$2,284	$1,842	31	21	Wyoming	$592	$478
2	2	Saskatchewan	$2,182	$1,759	32	22	Ohio	$589	$475
3	3	Alberta	$2,148	$1,732	33	23	Oregon	$587	$474
4	4	New Brunswick	$1,986	$1,602	34	24	Delaware	$587	$473
5	5	Ontario	$1,931	$1,558	35	25	North Dakota	$582	$469
6	6	Manitoba	$1,895	$1,528	36	26	Kansas	$578	$466
7	7	Quebec	$1,784	$1,439	37	27	Oklahoma	$571	$461
8	8	Prince Edward Island	$1,522	$1,227	38	28	California	$568	$458
9	9	Newfoundland	$1,258	$1,014	39	29	Texas	$560	$451
10	10	British Columbia	$1,159	$934	40	30	Tennessee	$552	$445
11	1	Alaska	$762	$615	41	31	West Virginia	$551	$444
12	2	New Hampshire	$720	$581	42	32	North Carolina	$548	$442
13	3	Hawaii	$709	$572	43	33	Utah	$547	$441
14	4	Connecticut	$704	$568	44	34	Montana	$539	$435
15	5	Massachusetts	$668	$539	45	35	New Mexico	$535	$432
16	6	Maryland	$657	$530	46	36	Washington	$535	$431
17	7	Pennsylvania	$657	$530	47	37	Indiana	$518	$418
18	8	Illinois	$646	$521	48	38	Rhode Island	$517	$417
19	9	Colorado	$633	$511	49	39	South Carolina	$500	$403
20	10	Nevada	$628	$506	50	40	Georgia	$499	$402
21	11	Maine	$613	$495	51	41	Kentucky	$496	$400
22	12	New Jersey	$612	$494	52	42	Arizona	$493	$398
23	13	New York	$611	$493	53	43	Vermont	$490	$395
24	14	Missouri	$608	$490	54	44	Alabama	$488	$394
25	15	Michigan	$602	$485	55	45	Idaho	$481	$388
26	16	Florida	$601	$484	56	46	Iowa	$476	$384
27	17	Nebraska	$599	$483	57	47	Louisiana	$468	$377
28	18	Virginia	$595	$480	58	48	Mississippi	$426	$344
29	19	Wisconsin	$594	$479	59	49	Arkansas	$412	$333
30	20	Minnesota	$593	$478	60	50	South Dakota	$362	$292

Jurisdiction	TEpS-$CDN	TEpS - $US
CANADA	$1,845	$ 1,488
UNITED STATES	$572	$ 462

Net Costs after Tax Expenditures [NCATE] - 15 % of Total Score

"Net Costs after Tax Expenditures" refers to the total average cost of education minus all non-repayable assistance from governments, either in the form of grants or tax expenditures. Though some do not consider tax expenditures to have the same effect as grants in terms of impacting access to education (in part because benefits do not always flow directly to the student and in part because tax benefits are disproportionately used by higher-income individuals who would likely attend post-secondary education regardless of the subsidy), for the purposes of this analysis the two forms of assistance should be considered equivalent in reducing total costs.

Table 13 provides an overview of how net costs (total costs reduced by grant subsidies) are further reduced by tax expenditures within the jurisdictions.

The large amount of dollars Canadian governments spend on tax expenditures appears to make an impact here, as the net costs of Canadian jurisdictions look increasingly "affordable" in relation to their American counterparts after all subsidies are considered: when considering net costs before tax expenditures (or the impact of just grants on total costs), 6 out of 10 Canadian provinces placed in the bottom 30; when considering all subsidies, 8 out of 10 provinces find themselves in the *top* 30. Saskatchewan, in particular, benefits from this measurement, jumping as it does from 36th position in the net cost listings (table 11) to 11th position here.

Among American jurisdictions, the effect is much less dramatic. The inclusion of tax credits in the equation does not significantly alter the relative positions of states *vis-à-vis* other states in the ordinal ranking of jurisdictions.

That said, what really matters are not net costs in and of themselves, but costs contextualized by a measure of ability to pay. As demonstrated by Table 14, which shows Net Cost After tax Expenditures as a percentage of Median Household Income, Canadian tax expenditures have a noticeable impact on improving the affordability of post-secondary education.

Table 13 is on the next page, and is immediately followed by Table 14.

Table 13 – Net Costs after Tax Expenditures

Rank - All	Rank - Country	Province/State	NCATE-$CDN	NCATE-$US	Rank - All	Rank - Country	Province/State	NCATE-$CDN	NCATE-$US
1	1	Quebec	$5,712	$4,607	31	21	New Hampshire	$8,566	$6,908
2	2	Louisiana	$6,013	$4,850	32	22	Arizona	$8,616	$6,948
3	3	Oklahoma	$6,367	$5,135	33	23	Delaware	$8,675	$6,996
4	4	Kentucky	$6,467	$5,216	34	24	Nova Scotia	$8,922	$7,195
5	5	Arkansas	$7,022	$5,663	35	25	Missouri	$9,092	$7,332
6	6	Georgia	$7,057	$5,691	36	26	Iowa	$9,191	$7,412
7	7	Idaho	$7,064	$5,697	37	27	Colorado	$9,412	$7,590
8	8	Alberta	$7,129	$5,750	38	28	Montana	$9,638	$7,773
9	9	Mississippi	$7,175	$5,786	39	29	Hawaii	$9,681	$7,807
10	10	Newfoundland	$7,189	$5,798	40	30	Nevada	$9,732	$7,849
11	1	Saskatchewan	$7,191	$5,799	41	31	Maine	$9,979	$8,048
12	2	North Dakota	$7,270	$5,863	42	32	Virginia	$ 10,003	$8,067
13	3	Manitoba	$7,406	$5,972	43	33	Minnesota	$ 10,017	$8,079
14	4	West Virginia	$7,607	$6,135	44	34	South Carolina	$ 10,495	$8,463
15	5	Prince Edward Island	$7,633	$6,156	45	35	Alaska	$ 10,597	$8,546
16	6	New Mexico	$7,746	$6,247	46	36	California	$ 10,601	$8,549
17	7	British Columbia	$7,836	$6,319	47	37	Indiana	$ 10,695	$8,625
18	8	Wisconsin	$7,881	$6,356	48	38	Washington	$ 10,799	$8,709
19	9	Florida	$7,895	$6,367	49	39	New York	$ 10,832	$8,736
20	10	New Brunswick	$7,959	$6,419	50	40	Oregon	$ 11,081	$8,937
21	11	Utah	$8,164	$6,583	51	41	Massachusetts	$ 11,120	$8,967
22	12	Nebraska	$8,226	$6,634	52	42	Michigan	$ 11,510	$9,283
23	13	Ontario	$8,241	$6,646	53	43	Illinois	$ 11,625	$9,375
24	14	Alabama	$8,250	$6,653	54	44	Maryland	$ 12,282	$9,905
25	15	Wyoming	$8,253	$6,655	55	45	Ohio	$ 12,344	$9,955
26	16	Tennessee	$8,401	$6,775	56	46	Vermont	$ 12,360	$9,968
27	17	Texas	$8,402	$6,776	57	47	Connecticut	$ 12,540	$ 10,113
28	18	North Carolina	$8,407	$6,780	58	48	Pennsylvania	$ 13,070	$ 10,540
29	19	Kansas	$8,423	$6,793	59	49	Rhode Island	$ 13,079	$ 10,548
30	20	South Dakota	$8,509	$6,862	60	50	New Jersey	$ 14,598	$ 11,773

Jurisdiction	NCATE-$CDN	NCATE-$US
CANADA	$7,510	$ 6,057
UNITED STATES	$9,677	$ 7,804

Table 14 – Net Cost after Tax Expenditures Rankings

Rank - All	Rank - Country	Province/State	NCATE/MHI	Rank - All	Rank - Country	Province/State	NCATE/MHI
1	1	New Hampshire	12.5%	31	5	Manitoba	17.3%
2	2	Georgia	13.1%	32	27	California	17.5%
3	3	Utah	13.4%	33	28	Iowa	17.7%
4	4	Wisconsin	13.6%	34	29	New Mexico	17.7%
5	5	Kentucky	13.7%	35	30	Alabama	17.8%
6	6	Delaware	13.9%	36	31	North Carolina	17.8%
7	7	Oklahoma	14.0%	37	32	Maryland	17.9%
8	1	Quebec	14.0%	38	33	Tennessee	18.1%
9	8	Louisiana	14.1%	39	34	Mississippi	18.1%
10	9	Idaho	14.2%	40	6	British Columbia	18.3%
11	2	Alberta	14.6%	41	35	Connecticut	18.4%
12	10	Minnesota	14.8%	42	36	Washington	18.9%
13	11	Nebraska	15.0%	43	7	Newfoundland	19.1%
14	12	Colorado	15.1%	44	8	Prince Edward Island	19.4%
15	13	Virginia	15.3%	45	37	West Virginia	19.7%
16	14	North Dakota	15.3%	46	9	New Brunswick	20.0%
17	15	Alaska	15.5%	47	38	New York	20.2%
18	16	Kansas	15.6%	48	39	Indiana	20.5%
19	17	Hawaii	15.7%	49	40	Michigan	20.5%
20	3	Ontario	15.8%	50	41	Illinois	20.6%
21	18	Wyoming	16.0%	51	42	Oregon	21.1%
22	19	Florida	16.5%	52	43	New Jersey	21.3%
23	20	Arizona	16.5%	53	44	Maine	21.4%
24	21	Texas	16.6%	54	45	South Carolina	21.8%
25	22	Missouri	16.9%	55	10	Nova Scotia	22.4%
26	23	Nevada	17.0%	56	46	Montana	22.6%
27	24	Arkansas	17.0%	57	47	Ohio	22.9%
28	25	Massachusetts	17.2%	58	48	Vermont	23.1%
29	26	South Dakota	17.2%	59	49	Rhode Island	23.3%
30	4	Saskatchewan	17.2%	60	50	Pennsylvania	24.0%

Jurisdiction	NCATE/MHI
CANADA	16.5%
UNITED STATES	17.9%

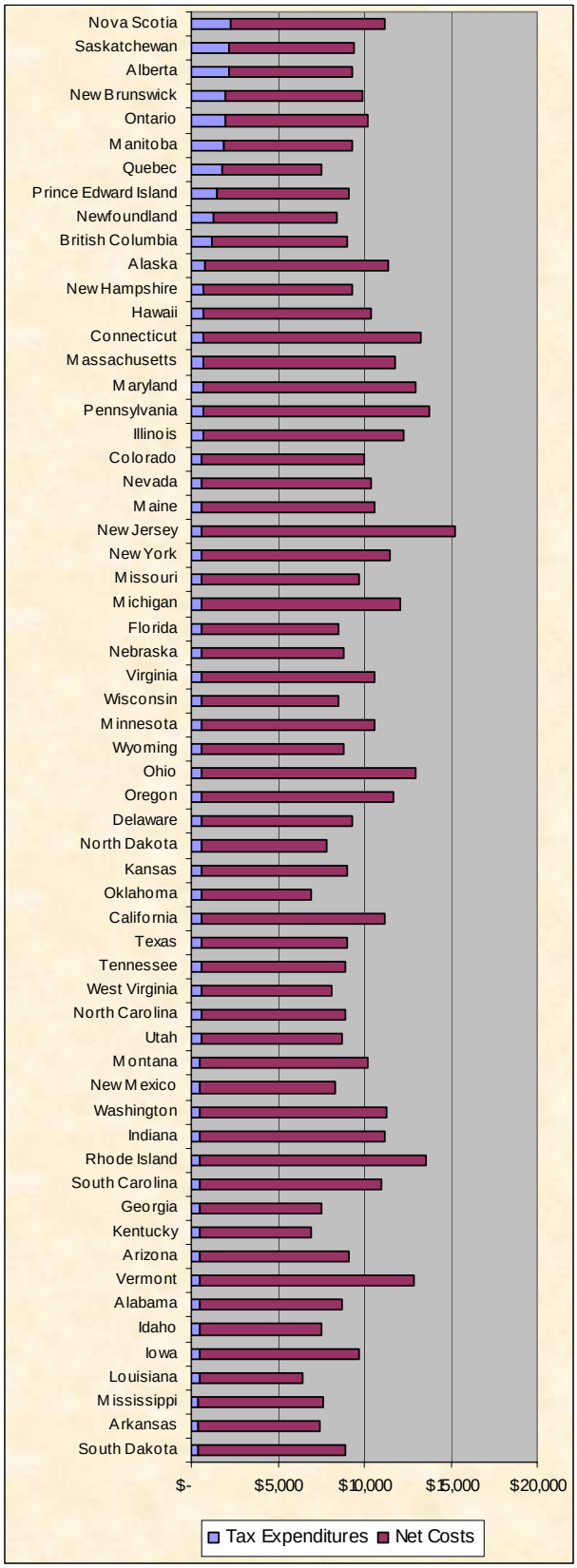
In looking at the net costs after tax expenditures as a percentage of median household income indicator (NCATE/MHI), we see that, on average, Canada compares more favourably to the US than it does when net costs are calculated using grants only: the Canada to US score on NC/MHI was 21.0 to 19.0, as opposed to the NCATE/MHI score of 17.3 to 17.9 respectively. Despite this, because of many generous federal and institutional grant programs in the United States, nine out of the top ten most affordable

jurisdictions are American.

As noted earlier, adding tax credits does little to alter the rank order of the most affordable American states. All of the top six jurisdictions (New Hampshire, Georgia, Utah, Wisconsin, Kentucky and Delaware) retain the ordinal positions at the top of the table. Similarly, at the bottom of the table, Pennsylvania, Rhode Island, Vermont, Ohio and Montana continue to occupy the same five spots as the least affordable jurisdictions.

In the Canadian provinces, the introduction of tax expenditures into the equation makes a substantial difference. For example, Ontario makes its first appearance in the top half of the table, moving from 39th place in the NC/MHI analysis to 20th in the NCATE/MHI analysis. Alberta now appears as one of the most affordable jurisdictions in our survey, in 11th position. But the effect is not entirely uniform; just as tax credits play a larger policy role in Canada than they do in the US, the variance in the importance of tax credits as an instrument varies more between provinces than it does between states. Figure 3 makes this point in a more visual manner by illustrating the role that tax credits play in reducing the net costs of education in each of the 50 states and ten provinces.

Figure 3 – The Role of Tax Expenditures in Reducing Net Costs ($CDN)



Loans

A key consideration in examining the affordability of post-secondary education is the amount of student loans available to students. Loans, unlike grants and tax expenditures, don't reduce the *real* costs of education, as the money must eventually be paid back. But they do reduce the *immediate* costs of education, by providing students with the funds necessary to pay fees and keep body and soul together in the short term. As such they have a major role to play in keeping education affordable.

Table 15 ranks the jurisdictions from the highest loans per student to the lowest.

Table 15 – Loans per Student $2003 PPP

Rank - All	Rank - Country	Province/State	LpS-$CDN	LpS-$US	Rank - All	Rank - Country	Province/State	LpS-$CDN	LpS-$US
1	1	Vermont	$6,834	$5,511	31	31	Nebraska	$4,273	$3,446
2	2	Oregon	$6,253	$5,043	32	32	West Virginia	$4,249	$3,426
3	3	Mississippi	$5,940	$4,790	33	33	Louisiana	$4,225	$3,407
4	4	South Dakota	$5,632	$4,542	34	34	Virginia	$4,186	$3,375
5	5	Ohio	$5,603	$4,518	35	35	Wyoming	$4,170	$3,363
6	6	Montana	$5,560	$4,484	36	36	Idaho	$4,138	$3,337
7	7	Alaska	$5,457	$4,401	37	37	Georgia	$3,936	$3,174
8	8	New Hampshire	$5,385	$4,343	38	38	Rhode Island	$3,934	$3,173
9	9	Maryland	$5,360	$4,322	39	39	Delaware	$3,910	$3,153
10	10	Washington	$5,298	$4,272	40	40	Illinois	$3,820	$3,081
11	11	Pennsylvania	$5,212	$4,204	41	41	Kentucky	$3,793	$3,059
12	12	Alabama	$5,203	$4,196	42	42	New Mexico	$3,767	$3,038
13	13	North Dakota	$5,129	$4,136	43	43	New York	$3,709	$2,991
14	14	South Carolina	$5,122	$4,130	44	1	Prince Edward Island	$3,697	$2,982
15	15	Iowa	$5,096	$4,110	45	44	Connecticut	$3,646	$2,940
16	16	Minnesota	$4,928	$3,974	46	45	California	$3,618	$2,918
17	17	Arkansas	$4,781	$3,856	47	46	Wisconsin	$3,617	$2,917
18	18	New Jersey	$4,700	$3,790	48	2	Newfoundland	$3,508	$2,829
19	19	Tennessee	$4,694	$3,785	49	47	Nevada	$3,323	$2,680
20	20	North Carolina	$4,678	$3,772	50	3	New Brunswick	$2,889	$2,330
21	21	Michigan	$4,666	$3,763	51	48	Massachusetts	$2,886	$2,328
22	22	Maine	$4,644	$3,745	52	4	British Columbia	$2,793	$2,253
23	23	Oklahoma	$4,620	$3,726	53	5	Saskatchewan	$2,692	$2,171
24	24	Texas	$4,579	$3,693	54	49	Hawaii	$2,355	$1,899
25	25	Missouri	$4,515	$3,642	55	50	Utah	$2,238	$1,805
26	26	Florida	$4,470	$3,605	56	6	Alberta	$2,098	$1,692
27	27	Arizona	$4,392	$3,542	57	7	Nova Scotia	$2,001	$1,614
28	28	Kansas	$4,374	$3,528	58	8	Ontario	$1,657	$1,336
29	29	Indiana	$4,349	$3,507	59	9	Manitoba	$1,211	$977
30	30	Colorado	$4,286	$3,456	60	10	Quebec	$1,011	$816

Jurisdiction	LpS-$CDN	LpS - $US
CANADA	$ 1,779	$ 1,435
UNITED STATES	$ 4,420	$ 3,564

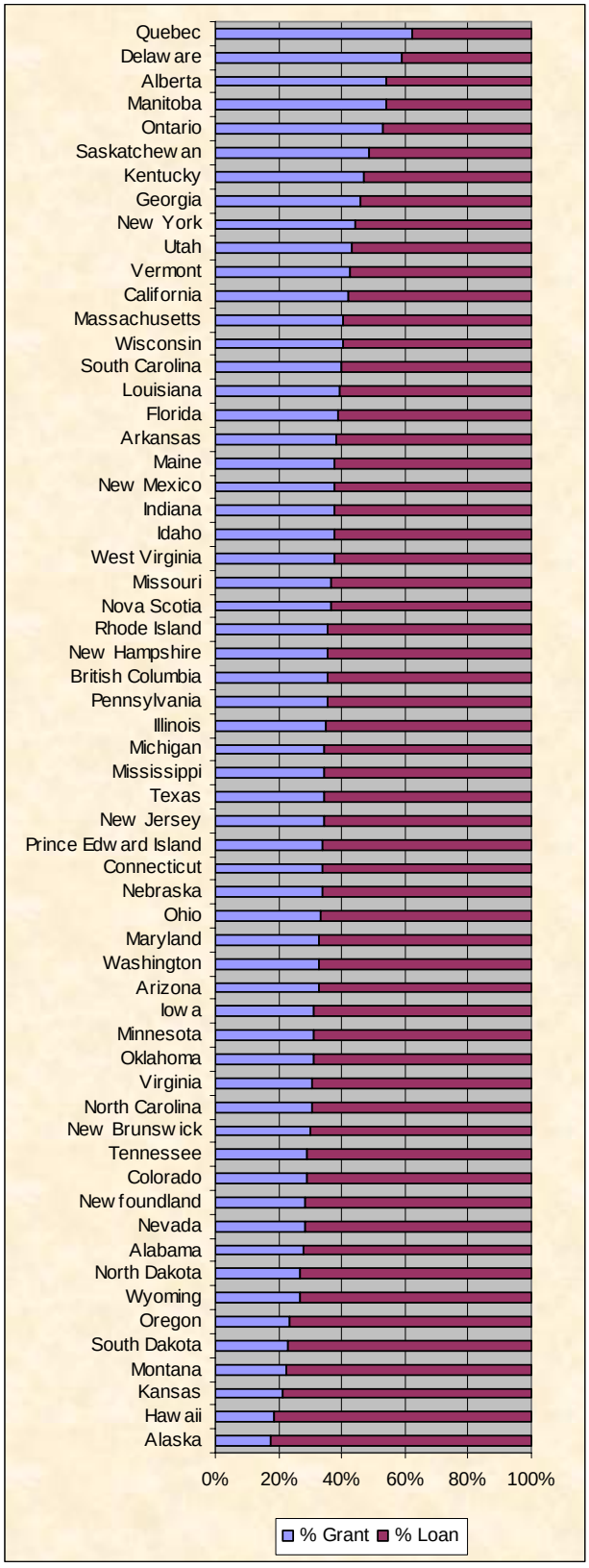
Loan availability varies widely between jurisdictions in our survey. Average loans per student are six times greater in Vermont than they are in its northern neighbour, Quebec. Loans are generally more easily available in the United States than they are in Canada, with loans per student being over 150% times greater in the US than in Canada. But even here there are substantial differences within each country. Average loans per student in Utah are only a third of what it is in Vermont; similarly, average loans in Quebec are less than 30% of what they are in Prince Edward Island. In other words, there are substantial levels of variation both within *and* between countries when it comes to student loan borrowing.

There does not seem to be a particular pattern at work in terms of determining which states have the highest levels of borrowing. Some, like Vermont, presumably have high levels of borrowing because of high in-state tuition. Others, like Mississippi, have relatively low tuition but appear to have higher borrowing because of low household incomes. The opacity of the situation arises because student loans (subsidized ones, anyway) are based primarily on need rather than income. As a result, loans may vary directly with tuition or inversely with average household income or both.

Among Canadian provinces, the picture is somewhat different. Quebec, a low-income, low-tuition province with a lot of grants has very low average loans – the lowest, in fact, of any jurisdiction in our study. But the third lowest in the study is Ontario, which comparatively speaking has a very high tuition rate (the explanation for this has to do with the province's student aid rules at the time, which were designed with cost-control in mind to be very restrictive). This underlies an important point when comparing the two countries: in the United States, where loan assistance is nearly exclusively the domain of the federal government, a single set of national rules are playing out at the state level. In Canada, on the other hand, where provincial governments are also major players with respect to student aid, much of the local variation can be ascribed to local policy initiatives.

In order to better understand the role that non-repayable and repayable assistance plays in the "total package" that students receive in each of the jurisdictions, we have provided Figure 4, which compares the grant-to-loan mix in each province and state.

Figure 4 – The Loan/Grant Mix



The story that Figure 4 tells is an interesting one. In terms of the total amount of government assistance students receive, it appears that students in Canadian provinces receive a greater share of their assistance, on average, from non-repayable sources. Despite appearances, though, this is not evidence of greater Canadian generosity. In fact, what it actually shows is that Canadian provinces are equally stingy with both loans and grants when compared to their American counterparts. Quebec, for example, may seem generous because nearly 60% of all need-bases student assistance is received on the form of grants. But compared to Delaware (another jurisdiction where nearly 60% of the need-based aid comes in the form of grants), Quebec is exceedingly miserly, with students there receiving only about $2200 US each on average, compared to Delaware's average of $7700 US per student.

Out-of-Pocket Costs [OOPC] - 25 % of Total Score

Out-of-pocket costs are the costs that are not covered by loans and grants – that is, net costs minus loans. Some might argue that these are the most telling in our analysis, as these are the costs that students must find resources for in the short term without the aid of government assistance or without waiting for tax reductions in the longer term. Out-of-pocket costs are those costs for which students turn to scholarships, bursaries, employment earnings, and private loans – including bank loans – to cover. These are the costs that subject students to liquidity constraints: if students do not have access to other sources of funding beyond government funding, or do not have access to *enough* funding from these sources, out-of-pocket costs in some cases may go uncovered. As Finnie (2004) noted, liquidity constraints are, perhaps, more of a financial barrier to education as cost/benefit constraints; therefore, it is important to measure the extent to which governments are easing these constraints.

Table 15 ranks out-of-pocket costs from lowest to highest among the jurisdictions and follows this discussion.

In terms of out-of-pocket costs, the relatively easy availability of student loans in the United States makes a significant difference to their out-of-pocket costs; while Canadian students must find, on average, $6,460 US ($8,011 CDN) to fund a year if university, American students must pay only $4,702 US ($5,830 CDN). The latter figure is by no means to be dismissed as insignificant, but the difference between the two figures should be considered as significant given that in terms of tuition and total costs the two countries were nearly identical.

As by now should be apparent, there are substantial differences between US states, with jurisdictions in the south and west (e.g. Mississippi, Louisiana, Oklahoma, Arkansas and North Dakota) having the lowest costs and state in the northeast (Massachusetts, Connecticut and Rhode Island) having the highest costs. In fact, running down the list of states from most expensive to least expensive is remarkably like running down a list of "red" and "blue" states from the last two US federal elections, with the former being inexpensive and the latter being more expensive.

Table 15 – Out Of Pocket Costs [OOPC] $2003 PPP

Rank - All	Rank - Country	Province/State	OOPC-$CDN	OOPC-$US	Rank - All	Rank - Country	Province/State	OOPC-$CDN	OOPC-$CDN
1	1	Mississippi	$1,661	$1,339	31	30	South Carolina	$5,872	$4,736
2	2	Louisiana	$2,256	$1,820	32	31	Alaska	$5,903	$4,760
3	3	Oklahoma	$2,318	$1,869	33	32	Maine	$5,949	$4,797
4	4	Arkansas	$2,653	$2,140	34	33	Vermont	$6,017	$4,852
5	5	North Dakota	$2,723	$2,196	35	34	Washington	$6,037	$4,868
6	6	Kentucky	$3,170	$2,557	36	2	Prince Edward Island	$6,213	$5,010
7	7	South Dakota	$3,238	$2,611	37	3	British Columbia	$6,246	$5,037
8	8	Idaho	$3,407	$2,747	38	35	Virginia	$6,413	$5,172
9	9	Alabama	$3,535	$2,851	39	36	Utah	$6,473	$5,220
10	10	Georgia	$3,619	$2,919	40	4	Quebec	$6,492	$5,236
11	11	New Hampshire	$3,901	$3,146	41	37	Indiana	$6,864	$5,535
12	12	West Virginia	$3,909	$3,152	42	38	Nevada	$7,037	$5,675
13	13	Florida	$4,025	$3,246	43	5	New Brunswick	$7,324	$5,907
14	14	Tennessee	$4,259	$3,435	44	39	Ohio	$7,330	$5,912
15	15	North Carolina	$4,278	$3,450	45	40	Michigan	$7,446	$6,005
16	16	Texas	$4,383	$3,534	46	6	Alberta	$7,476	$6,029
17	17	New Mexico	$4,514	$3,640	47	7	Saskatchewan	$7,540	$6,080
18	18	Nebraska	$4,552	$3,671	48	41	California	$7,550	$6,089
19	19	Iowa	$4,572	$3,687	49	42	Maryland	$7,580	$6,113
20	20	Montana	$4,616	$3,723	50	43	New York	$7,735	$6,238
21	21	Kansas	$4,627	$3,732	51	44	Hawaii	$8,035	$6,480
22	22	Wyoming	$4,675	$3,770	52	45	Illinois	$8,451	$6,816
23	23	Arizona	$4,717	$3,804	53	46	Pennsylvania	$8,514	$6,866
24	24	Wisconsin	$4,859	$3,918	54	8	Manitoba	$8,593	$6,930
25	1	Newfoundland	$5,090	$4,105	55	9	Ontario	$8,796	$7,093
26	25	Missouri	$5,184	$4,181	56	47	Massachusetts	$8,902	$7,179
27	26	Delaware	$5,352	$4,316	57	10	Nova Scotia	$9,417	$7,595
28	27	Oregon	$5,415	$4,367	58	48	Connecticut	$9,598	$7,740
29	28	Minnesota	$5,683	$4,583	59	49	Rhode Island	$9,661	$7,791
30	29	Colorado	$5,759	$4,644	60	50	New Jersey	$ 10,510	$8,476

Jurisdiction	OOPC-$CDN	OOPC - $US
CANADA	$7,793	$6,285
UNITED STATES	$5,830	$4,702

Within Canada the results are somewhat surprising. Quebec, which had consistently ranked as the "least costly" of all provinces in all of our previous rankings, now falls to fourth, behind Newfoundland, PEI and British Columbia. This is because Quebec, despite being a low-tuition province, is also a very low-aid province as well. Still, with the exception of Newfoundland, average costs in all Canadian provinces exceed the 60-jurisdiction median of $5,800 Canadian ($4,700 US).

As noted earlier, an analysis of out-of-pocket costs as a percentage of median household income provides us with perhaps the most telling assessment of affordability because it directly measures the relative size of the short-term cash constraint facing individuals wishing to attend post-secondary education. That said, it is important to note that while this measure is indeed a measure of affordability, it is somewhat flawed in that it cannot distinguish between those jurisdictions where students are unable to access more government loan funds and those where students are unwilling to do so.

Table 16 on the next page provides an overview of this affordability indicator (OOPC / MHI).

Table 16 – Out Of Pocket Costs Rankings

Rank - All	Rank - Country	Province/State	OOPC/MHI	Rank - All	Rank - Country	Province/State	OOPC/MHI
1	1	Mississippi	4.2%	31	31	Washington	10.6%
2	2	Oklahoma	5.1%	32	32	Utah	10.6%
3	3	Louisiana	5.3%	33	33	Montana	10.8%
4	4	New Hampshire	5.7%	34	34	Maryland	11.1%
5	5	North Dakota	5.7%	35	35	Vermont	11.2%
6	6	Arkansas	6.4%	36	36	South Carolina	12.2%
7	7	South Dakota	6.6%	37	37	Nevada	12.3%
8	8	Kentucky	6.7%	38	38	California	12.4%
9	9	Georgia	6.7%	39	39	Maine	12.8%
10	10	Idaho	6.8%	40	40	Hawaii	13.0%
11	11	Alabama	7.6%	41	41	Indiana	13.1%
12	12	Nebraska	8.3%	42	42	Michigan	13.3%
13	13	Wisconsin	8.4%	43	1	Newfoundland	13.5%
14	14	Minnesota	8.4%	44	43	Ohio	13.6%
15	15	Florida	8.4%	45	44	Massachusetts	13.8%
16	16	Kansas	8.6%	46	45	Connecticut	14.1%
17	17	Delaware	8.6%	47	46	New York	14.5%
18	18	Alaska	8.6%	48	2	British Columbia	14.6%
19	19	Texas	8.6%	49	47	Illinois	14.9%
20	20	Iowa	8.8%	50	3	Alberta	15.3%
21	21	Arizona	9.0%	51	48	New Jersey	15.3%
22	22	North Carolina	9.1%	52	46	Pennsylvania	15.7%
23	23	Wyoming	9.1%	53	4	Prince Edward Island	15.8%
24	24	Tennessee	9.2%	54	5	Quebec	15.9%
25	25	Colorado	9.2%	55	6	Ontario	16.8%
26	26	Missouri	9.6%	56	50	Rhode Island	17.2%
27	27	Virginia	9.8%	57	7	Saskatchewan	18.1%
28	28	West Virginia	10.1%	58	8	New Brunswick	18.4%
29	29	Oregon	10.3%	59	9	Manitoba	20.0%
30	30	New Mexico	10.3%	60	10	Nova Scotia	23.6%

Jurisdiction	OOPC/MHI
CANADA	17.1%
UNITED STATES	10.8%

Once household income is taken into account, the affordability gap between Canadian and American states widens. Out-of pocket costs as a percentage of household incomes are over 60% higher in Canada than they are in the United States. At the extremes, the difference is much, much greater. The ratio of out-of-pocket costs to MHI in Nova Scotia, for instance, is nearly six times higher in Nova Scotia than in Mississippi.

Still, the considerable gap between countries should not blind us to the major differences within each country. In the United States, the most affordable states continue to be a clutch of low-tuition southern states such as Mississippi, Louisiana, and Arkansas, along with – incongruously – New Hampshire, which does well not because of low tuition but because of high per capita incomes. This shows that there is more than one path to affordability and that states at different levels of economic development may wish to take different policy actions to ensure affordability.

Most southern states (South Carolina is the exception) keep their OOP / MHI ratios in the 4-10% range, as do a majority of western and mid-western states. Outside these geographic areas, however, costs rise rapidly; California, New York, Michigan, Ohio and Pennsylvania, for instance, all have ratios substantially above the national average, and Rhode Island, where OOPC / MHI is over 17%, is nearly four times as expensive as Mississippi.

Among Canadian provinces, none of whom finish higher than a disappointing 43rd, Newfoundland is the leader despite its low median incomes because of low tuition and generous student aid. Quebec, which also had low tuition, fares much worse, coming in 5th among Canadian provinces and 54th overall, due largely to its relatively ungenerous program of student aid (especially with respect to loans). That said, there is much less diversity of OOPC / MHI results among Canadian provinces than among US states. Newfoundland, BC, Alberta, PEI, Quebec and Ontario all have relatively similar cost structures, with OOPC / MHI ranging from just 13.5 to 16.8%. There is then a gap between these provinces and the next two most expensive (Saskatchewan and New Brunswick at just over 18%), another gap again to Manitoba at just over 20% and a considerable gap again between Manitoba and the continent's most expensive jurisdiction, Nova Scotia (23.6%)

Out-of-Pocket Costs, After Tax Expenditures [OOPCATE] - 15 % of Total Score

This measure of affordability includes all relevant forms of cost (educational and living) and all possible forms of aid (grants, loans and tax expenditures). It arguably the most complete measure of affordability because it includes absolutely all forms of aid, though it remains somewhat controversial because of the way it includes "indirect" student supports such as tax expenditures. However, because Canadian governments provide almost 40% of student financial assistance through tax-based initiatives, it is important to include these subsidies in the analysis. Table 17 provides an overview of the out-of-pocket costs after tax expenditures within the jurisdictions.

Table 17 shows very little that is different from table 15, except for the fact that Canadian jurisdictions all move up a few notches because of their already-noted heavy dependence on tax expenditures as a form of student aid. Within the US, very few of the ordinal rankings change; in Canada, more of them do so. More generally, by including tax credits into the equation, Canadian costs once again fall almost into line with costs in the United States – the gap between the two national averages is now only a little over 10%, while on the simple out-of-pocket cost measure in table 15, it was over 33%.

Table 17 follows.

Table 17 – Out Of Pocket Costs after Tax Expenditures $2003 PPP

Rank - All	Rank - Country	Province/State	OOPCATE-$CDN	OOPCATE-$US	Rank - All	Rank - Country	Province/State	OOPCATE-$CDN	OOPCATE-$US
1	1	Mississippi	$1,235	$996	31	4	British Columbia	$5,087	$4,103
2	2	Oklahoma	$1,747	$1,408	32	28	Minnesota	$5,089	$4,104
3	3	Louisiana	$1,788	$1,442	33	29	Colorado	$5,126	$4,134
4	4	North Dakota	$2,141	$1,727	34	30	Alaska	$5,140	$4,146
5	5	Arkansas	$2,241	$1,807	35	5	Alberta	$5,328	$4,297
6	6	Kentucky	$2,674	$2,157	36	31	Maine	$5,335	$4,303
7	7	South Dakota	$2,876	$2,320	37	6	New Brunswick	$5,338	$4,305
8	8	Idaho	$2,926	$2,359	38	7	Saskatchewan	$5,358	$4,321
9	9	Alabama	$3,047	$2,457	39	32	South Carolina	$5,373	$4,333
10	10	Georgia	$3,121	$2,517	40	33	Washington	$5,502	$4,437
11	11	New Hampshire	$3,181	$2,565	41	34	Vermont	$5,526	$4,457
12	12	West Virginia	$3,358	$2,708	42	35	Virginia	$5,817	$4,691
13	13	Florida	$3,425	$2,762	43	36	Utah	$5,926	$4,779
14	14	Tennessee	$3,708	$2,990	44	37	Indiana	$6,346	$5,118
15	15	North Carolina	$3,730	$3,008	45	38	Nevada	$6,410	$5,169
16	16	Texas	$3,823	$3,083	46	8	Manitoba	$6,698	$5,401
17	1	Newfoundland	$3,832	$3,091	47	39	Ohio	$6,742	$5,437
18	17	Nebraska	$3,953	$3,188	48	40	Michigan	$6,845	$5,520
19	18	New Mexico	$3,979	$3,209	49	9	Ontario	$6,864	$5,536
20	19	Kansas	$4,049	$3,265	50	41	Maryland	$6,922	$5,582
21	20	Montana	$4,077	$3,288	51	42	California	$6,982	$5,631
22	21	Wyoming	$4,083	$3,293	52	43	New York	$7,124	$5,745
23	22	Iowa	$4,095	$3,303	53	10	Nova Scotia	$7,133	$5,752
24	23	Arizona	$4,224	$3,406	54	44	Hawaii	$7,326	$5,908
25	24	Wisconsin	$4,264	$3,439	55	45	Illinois	$7,805	$6,295
26	25	Missouri	$4,576	$3,691	56	46	Pennsylvania	$7,857	$6,336
27	2	Prince Edward Island	$4,691	$3,783	57	47	Massachusetts	$8,233	$6,640
28	3	Quebec	$4,708	$3,797	58	48	Connecticut	$8,894	$7,172
29	26	Delaware	$4,765	$3,843	59	49	Rhode Island	$9,145	$7,375
30	27	Oregon	$4,828	$3,893	60	50	New Jersey	$9,898	$7,982

Jurisdiction	OOPATE-$CDN	OOPATE - $US
CANADA	$ 5,949	$ 4,797
UNITED STATES	$ 5,258	$ 4,240

As ever, however, what truly matters is not the raw cost, but the raw cost as a percentage of median household income. These results are shown below in Table 18 following.

Table 18 – OOPCATE Affordability Rankings

Rank - All	Rank - Country	Province/State	OOPCATE/MHI	Rank - All	Rank - Country	Province/State	OOPCATE/MHI
1	1	Mississippi	3.1%	31	31	Montana	9.6%
2	2	Oklahoma	3.8%	32	32	Washington	9.7%
3	3	Louisiana	4.2%	33	33	Utah	9.7%
4	4	North Dakota	4.5%	34	34	Maryland	10.1%
5	5	New Hampshire	4.6%	35	1	Newfoundland	10.2%
6	6	Arkansas	5.4%	36	35	Vermont	10.3%
7	7	Kentucky	5.7%	37	2	Alberta	10.9%
8	8	Georgia	5.8%	38	36	South Carolina	11.2%
9	9	South Dakota	5.8%	39	37	Nevada	11.2%
10	10	Idaho	5.9%	40	38	Maine	11.4%
11	11	Alabama	6.6%	41	39	California	11.5%
12	12	Florida	7.2%	42	3	Quebec	11.5%
13	13	Nebraska	7.2%	43	40	Hawaii	11.9%
14	14	Wisconsin	7.4%	44	4	British Columbia	11.9%
15	15	Kansas	7.5%	45	5	Prince Edward Island	11.9%
16	16	Alaska	7.5%	46	41	Indiana	12.1%
17	17	Texas	7.5%	47	42	Michigan	12.2%
18	18	Minnesota	7.5%	48	43	Ohio	12.5%
19	19	Delaware	7.6%	49	44	Massachusetts	12.7%
20	20	Iowa	7.9%	50	5	Saskatchewan	12.8%
21	21	North Carolina	7.9%	51	45	Connecticut	13.0%
22	22	Wyoming	7.9%	52	6	Ontario	13.1%
23	23	Tennessee	8.0%	53	46	New York	13.3%
24	24	Arizona	8.1%	54	7	New Brunswick	13.4%
25	25	Colorado	8.2%	55	47	Illinois	13.8%
26	26	Missouri	8.5%	56	48	Pennsylvania	14.4%
27	27	West Virginia	8.7%	57	49	New Jersey	14.5%
28	28	Virginia	8.9%	58	8	Manitoba	15.6%
29	29	New Mexico	9.1%	59	50	Rhode Island	16.3%
30	30	Oregon	9.2%	60	10	Nova Scotia	17.9%

Jurisdiction	OOPCATE/MHI
CANADA	13.1%
UNITED STATES	9.7%

When all subsidies and loans are measured against costs and household income, a now-familiar pattern emerges:

- The variation of OOPCATE/MHI within the two countries continues to be greater than between the two countries.
- That said, on average, OOPCATE/MHI are roughly one-third higher in Canada than the United States. This is not simply because costs are higher in Canada, as we saw

in table 17. Rather, the difference in per capita incomes is a substantial factor behind this outcome.

- The gap between the most and least affordable jurisdictions in the US (Mississippi and Rhode Island, respectively) is enormous, with Rhode Island's OOPCATE/MHI being over five times that of Mississippi. In Canada, the gap between first and last is not as great, with the most expensive (Nova Scotia) being only 80% more expensive than the least expensive (Newfoundland). The gap between Nova Scotia and Mississippi – the book ends of the continent, as it were, is substantial, with Nova Scotia being 577% higher than Mississippi.

- Within the United States, the pattern continues to be one where southern and western states, who pursue low-tuition, low-aid strategies but receive substantial amounts of need-based aid through federal programs, are the cheapest, while states in the northeast are the most expensive. The major exception to this rule is New Hampshire, whose combination of moderate tuition, high per capita income and high institutional aid makes it extremely affordable.

- At the very high end of the affordability scale, the actual OOPCATE facing students in states like Mississippi are so low that they begin to rival Scandinavian states. In a previous study (Usher and Cervenan 2005), which for technical reasons used GDP/capita instead of MHI as a denominator, the only countries where OOPCATE came under 5% was Sweden. As it turns out, five US states come under 5% using the OOPCATE measure, suggesting that after all subsidies are taken into account, post-secondary education in some states is as affordable as it is in some "free-tuition" jurisdictions.

- Individual Canadian jurisdictions fare poorly in comparison with their US counterparts. Even the best performing Canadian jurisdiction, Newfoundland, only comes 35th in a continent-wide comparison. To put it another way, no single Canadian province lies above the American national median. Even Quebec, which on pure cost is the least expensive jurisdiction on the continent, only ranks 42nd when all factors related to accessibility are taken into consideration.

- Within Canada, there is no clear-cut pattern to the rankings, either geographically or by policy choice. Take the top two jurisdictions for affordability, Newfoundland and Alberta. One is an eastern, low-income, low-tuition, high aid province, while the other is a western high-income, high tuition and high aid. The only observation that can be made here is that generally speaking, wealthier provinces come out better in the rankings (which, intriguingly, is the inverse of what happens in the United States). Even here, though, provinces with high levels of borrowing (Newfoundland) or high levels of grants (Quebec) can buck this trend, suggesting that provinces seem to have greater policy scope for influencing affordability than do US states.

Generally speaking, in the US, those states that have higher costs also have higher subsidies and loans; those states that are lower-income generally have lower-costs and higher subsidies and loans. In Canada, however, this general rule does not seem to apply. Figure 5 shows the impact of the combination of different student aid instruments in reducing the total costs students incur, ranked from the lowest OOPCATE to the highest; figure 6 simply shows the percentage of net cost that is covered by some form of student assistance.

Figure 5 – Loans, Grants and Tax Expenditures vs. Total Costs ($CDN)

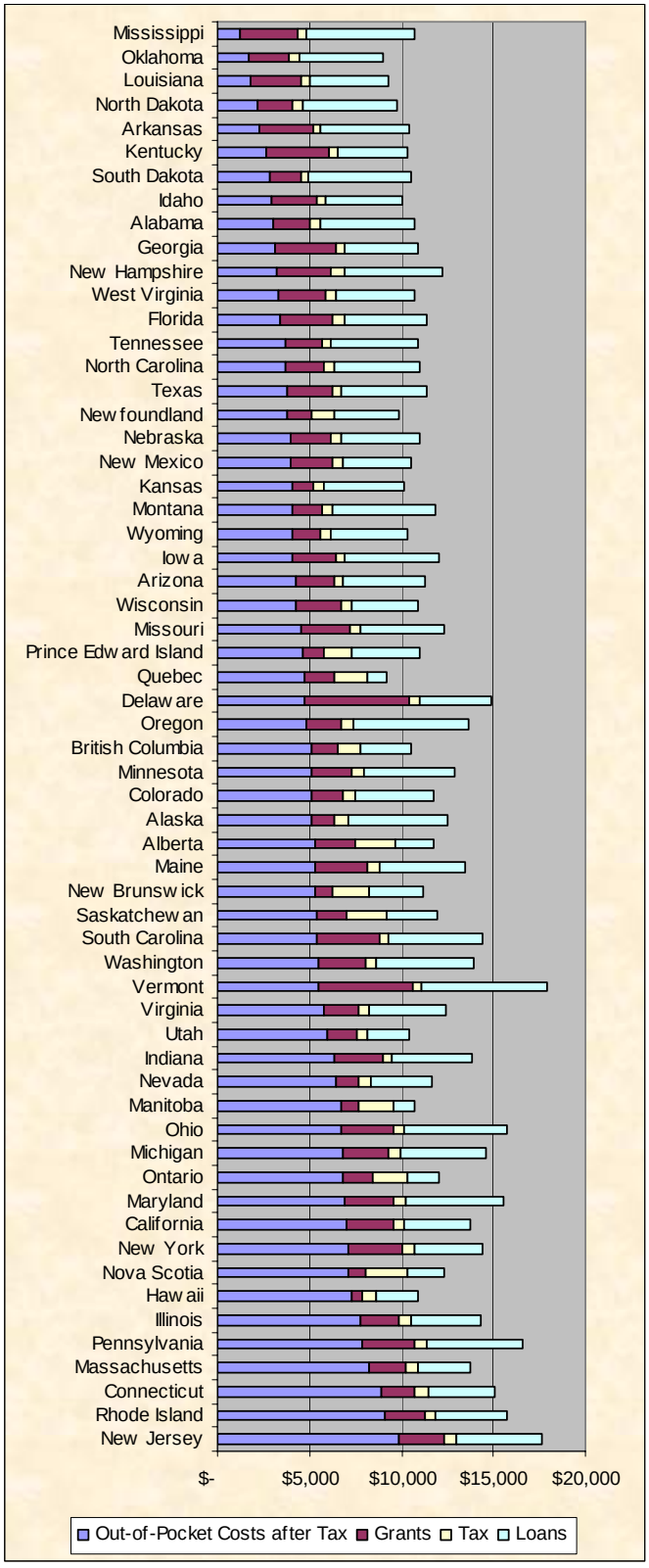
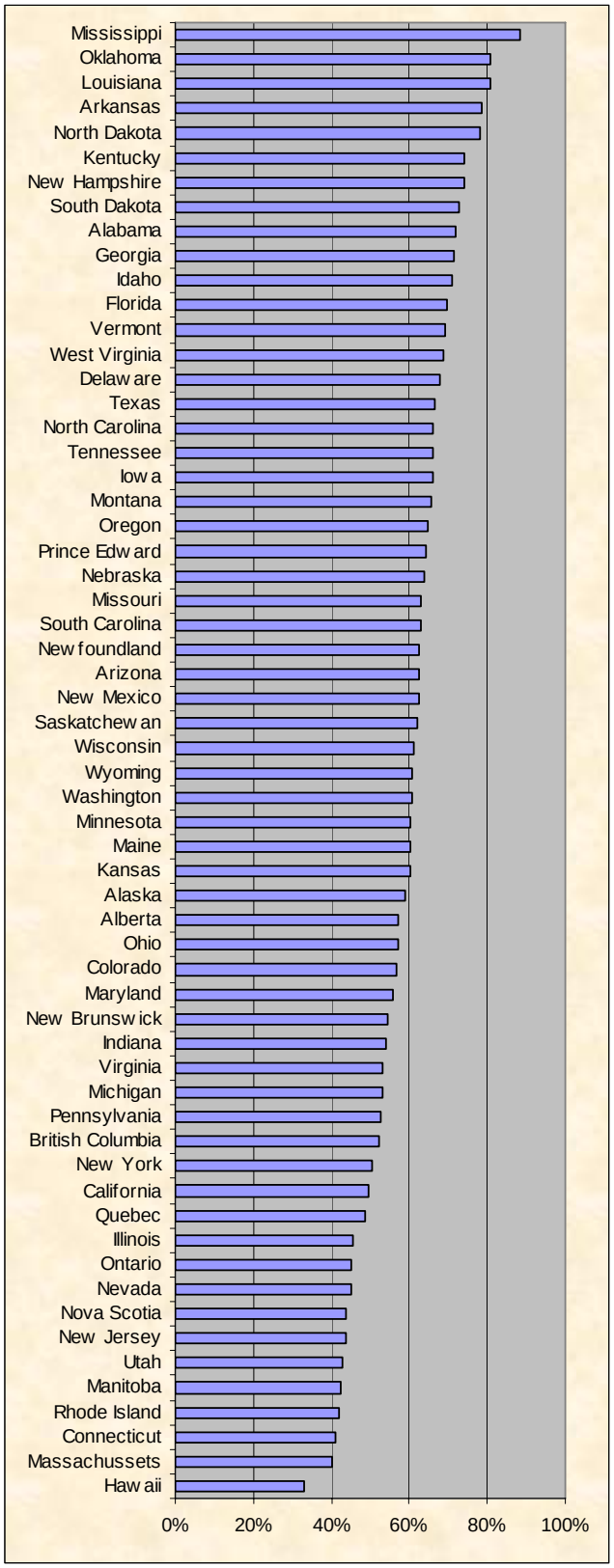


Figure 6 – Total Aid per Student as a Percentage of Total Costs per Student



Figures 5 and 6, when viewed together, contain a few surprises. Virtually all jurisdictions offset the net cost of education by at least 50%; the few exceptions being Hawaii, Manitoba, Massachusetts, Ontario, Quebec, California, Utah, Nova Scotia, Illinois, Connecticut, Rhode Island and New Jersey. At the other end of the scale, it turns out that students at public 4-year colleges in Oklahoma and Louisiana have over 80% of their net costs covered by some form of student assistance. In Mississippi, this figure rises to a staggering 89%, which, again, puts it in the company of countries like Sweden and Finland in terms of overall generosity. These results are not mainly due to any state-level policy decisions. Primarily, they are an expression of federal policy rules, which channels Pell grants and Stafford loans to those individuals in the greatest need and hence indirectly acts as a form of equalization payment between rich and poor states.

For the most part, as table 5 shows, it is loans that are the primary vehicle for reducing net costs. The only jurisdictions in which grants outweigh loans are Vermont, Delaware, Alberta and Quebec. If, however, tax expenditures were taken to be a form of grant (which arguably they are since it is a form of non-repayable assistance, albeit not one which students can convert into hard cash), then Kentucky, Saskatchewan, Utah, New Brunswick, Manitoba, Ontario and Nova Scotia would also join these ranks.

Four jurisdictions, all of them Canadian, have tax credits as their largest source of aid: Nova Scotia, Quebec, Manitoba and Ontario. Of these, Manitoba is proportionately has the highest reliance on tax credits, with over 45% of all aid coming from this source.

A Final Look at Affordability: Composite Rankings

This analysis has demonstrated that there are different ways to approach the notion of affordability and that each approach provides different results. This final section attempts to aggregate our observations to date, using a previously-tested methodology for inter-jurisdictional comparisons of affordability.

In order to complete the ranking system, we take the data from each of the six key affordability indicators. In each case, the value for the "best" result was found and given a "score" of 100. All other results were given scores in relation to the "best" score, with other values scored as the inverse of the fraction of the best score. This process is best described through a fictitious example, as shown in the table below:

Table 19 – Example of scoring

	Cost	*Scoring*	*Score*
Country A	$1000	100	100
Country B	$2000	100*($1000/$2000)	50
Country C	$3000	100* ($1000/$3000)	33

For each individual indicator, the rankings are simply a rank ordering of the scores. However, for the composite rankings of affordability, each score needed to be weighted according to the weighting scheme shown in Part I of this report. These weightings, again, were 10% for Education Costs as a percentage of MHI, 10% for Total Costs as a percentage of MHI, 25% for Net Costs as a percentage of MHI, 15% for Net Costs After Tax Expenditures as a percentage of MHI; 25% for Out-of-Pocket Costs as a percentage of MHI; and 15% for Out-of-Pocket Costs After Tax Expenditures as a percentage of MHI.

Table 20 shows the aggregate affordability rankings of all 50 states and 10 provinces, using the weightings described above.

Table 20 - Overall Affordability Rankings

Rank - All	Rank - Country	Province/State	EC	TC	NC	NCATE	OOP	OOPCATE	Total
1	1	**New Hampshire**	8.91	9.53	25.00	15.00	18.41	10.00	86.85
2	2	**Oklahoma**	7.54	8.62	22.32	13.41	20.63	12.13	84.66
3	3	**Louisiana**	6.52	7.87	22.32	13.26	19.80	11.06	80.83
4	4	**Mississippi**	4.93	6.30	17.69	10.33	25.00	15.00	79.25
5	5	**Georgia**	8.13	8.49	24.29	14.34	15.66	8.04	78.96
6	6	**North Dakota**	6.35	8.31	20.52	12.22	18.27	10.29	75.96
7	7	**Kentucky**	6.34	7.83	23.11	13.72	15.67	8.23	74.89
8	8	**Idaho**	7.34	8.51	22.48	13.24	15.38	7.93	74.87
9	9	**Utah**	10.00	10.00	23.78	14.00	9.88	4.78	72.45
10	10	**Wisconsin**	6.85	9.08	23.27	13.80	12.54	6.33	71.86
11	11	**Alaska**	9.73	9.33	20.47	12.10	12.16	6.19	69.97
12	12	**Colorado**	9.00	9.04	21.08	12.41	11.35	5.65	68.53
13	13	**Nebraska**	7.02	8.56	21.19	12.54	12.69	6.47	68.45
14	14	**Minnesota**	6.50	8.98	21.65	12.64	12.48	6.17	68.43
15	15	**Kansas**	7.67	9.08	20.43	12.04	12.27	6.21	67.71
16	16	**Delaware**	5.62	7.18	22.96	13.52	12.27	6.10	67.67
17	17	**South Dakota**	5.82	8.01	18.93	10.88	16.01	7.98	67.65
18	18	**Arkansas**	5.14	6.79	18.86	11.01	16.32	8.56	66.68
19	19	**Virginia**	7.50	8.95	20.92	12.22	10.68	5.21	65.48
20	20	**Wyoming**	7.64	8.49	19.78	11.69	11.56	5.86	65.02
21	21	**Arizona**	8.70	7.93	19.47	11.35	11.61	5.74	64.80
22	22	**Florida**	7.96	7.21	19.14	11.36	12.48	6.49	64.64
23	23	**Texas**	6.94	7.65	19.26	11.33	12.16	6.17	63.51
24	24	**Alabama**	6.06	7.38	18.05	10.55	13.78	7.08	62.90
25	25	**Hawaii**	8.86	9.66	20.22	11.97	8.08	3.92	62.71
26	26	**Nevada**	9.70	8.38	18.77	11.02	8.53	4.15	60.55
27	27	**Iowa**	5.92	7.42	18.31	10.62	11.96	5.91	60.14
28	28	**North Carolina**	6.83	7.35	17.93	10.54	11.59	5.89	60.13
29	29	**Missouri**	5.61	7.50	18.90	11.12	10.92	5.48	59.54
30	1	**Quebec**	8.92	7.62	18.50	13.39	6.60	4.03	59.06
31	30	**California**	9.57	7.53	18.49	10.74	8.45	4.04	58.82
32	31	**Tennessee**	5.97	7.31	17.67	10.39	11.47	5.84	58.64
33	32	**New Mexico**	6.46	7.08	17.95	10.59	10.17	5.11	57.36
34	33	**Maryland**	6.19	7.51	17.99	10.45	9.48	4.60	56.23
35	2	**Alberta**	6.30	7.11	17.92	12.86	6.87	4.27	55.32
36	34	**Massachusetts**	6.28	8.03	18.63	10.89	7.62	3.65	55.09
37	35	**Washington**	6.29	6.99	17.10	9.89	9.91	4.82	55.01
38	36	**West Virginia**	5.90	6.18	16.13	9.54	10.40	5.36	53.51
39	37	**Connecticut**	6.44	7.72	17.51	10.20	7.46	3.57	52.90
40	3	**Ontario**	5.98	7.43	17.48	11.90	6.24	3.54	52.58
41	38	**Oregon**	6.13	6.61	15.33	8.90	10.20	5.07	52.24
42	4	**British Columbia**	6.71	6.95	16.18	10.24	7.20	3.91	51.18
43	5	**Newfoundland**	6.82	6.55	15.18	9.83	7.78	4.57	50.73
44	39	**Indiana**	5.41	6.46	15.84	9.16	7.99	3.83	48.69
45	6	**Manitoba**	6.84	6.83	15.68	10.86	5.24	2.98	48.43
46	40	**Montana**	5.07	6.18	14.24	8.29	9.69	4.86	48.34
47	41	**New York**	5.99	6.36	15.90	9.26	7.27	3.49	48.27
48	42	**Michigan**	4.99	6.57	15.73	9.13	7.90	3.81	48.12
49	43	**Illinois**	5.31	6.75	15.67	9.12	7.03	3.37	47.25
50	44	**Maine**	4.83	5.94	14.97	8.76	8.23	4.07	46.81
51	7	**Saskatchewan**	5.23	5.99	15.13	10.87	5.81	3.62	46.64
52	8	**Prince Edward Island**	5.42	6.10	14.63	9.68	6.66	3.91	46.39
53	45	**New Jersey**	5.11	6.63	15.31	8.79	6.84	3.22	45.90
54	46	**South Carolina**	3.79	5.70	14.88	8.59	8.60	4.16	45.73
55	47	**Vermont**	3.51	5.10	14.18	8.13	9.35	4.51	44.77
56	48	**Ohio**	4.52	5.87	14.19	8.20	7.73	3.72	44.23
57	9	**New Brunswick**	5.32	6.07	13.57	9.35	5.69	3.46	43.47
58	49	**Rhode Island**	5.36	6.08	14.02	8.04	6.09	2.85	42.43
59	50	**Pennsylvania**	3.87	5.61	13.47	7.80	6.71	3.22	40.69
60	10	**Nova Scotia**	4.35	5.52	12.11	8.39	4.45	2.60	37.42

New Hampshire, a state which does well on all six affordability measures and tops the table on three of them, comes first in this overall ranking, receiving nearly 87 points out of a possible 100. Oklahoma, which does well on all six measures but never quite tops the table, comes a very close second at 84.66. Louisiana, Mississippi and Georgia come third, fourth and fifth, respectively, all with scores near 80. North Dakota, Kentucky and Idaho all have near-identical scores around 75. Utah, which was by some distance the cheapest state when measures solely in terms of education and total costs, fell to ninth overall primarily because of the scarcity of loans (it should be noted though, that our method of ranking cannot distinguish between the availability of loans and the take-up of loans – a jurisdiction where students simply chose extra work or extra savings in stead of borrowing will be penalized in our rankings. This may seem unfair, but from a methodological standpoint it is a difficult problem to solve).

Among Canadian jurisdictions, the highest ranked is Quebec, at 30th position with 59 points (roughly equal to Missouri and California). Quebec's high score comes primarily from its low education and total costs; in fact its scores in terms of the two types of out-of-pocket costs is among the lowest of any jurisdiction in this survey. Alberta is next at 35th position overall (55 points). Ontario is next with 52.58 points, followed by British Columbia at 51.18 and Newfoundland at 50.73.

American jurisdictions at the bottom end tend to be states with relatively high tuitions and median or above-median household incomes, including New Jersey, Vermont, Ohio, Rhode Island and the least affordable state of all, Pennsylvania. The high tuitions give them low scores on the EC and TC measures, but their higher-than-average incomes mean that there is relatively less federal aid flowing to students in these jurisdictions than there are in places like Mississippi.

Canadian jurisdictions at the low end of the scale tend to be those who are both poor, and who have not chosen to make significant investments in their own student aid systems. Thus, the two lowest-ranked provinces are New Brunswick (9th in Canada, 57th overall) and Nova Scotia (last in Canada, last overall), both of which have very low median household incomes, and neither of which manages to provide as much as $1,000 (Canadian) in grants per student (a record matched only by Manitoba and Hawaii, whose strengths in other areas nonetheless pick them up to higher positions in the rankings).

Overall, the composite ranking shows the danger in relying too heavily in any single indicator of affordability. Mississippi, for instance, looks very bad if judged solely on educational costs, where it comes 46th out of 50 states (51st overall). However, once various types of grants, tax assistance and loans are thrown into the mix, Mississippi comes top of the table. Similarly, Quebec, which comes first among Canadian provinces on education costs and total costs, drops to fifth when more complex measures of affordability are used.

Concluding Remarks

There can be few enduring conclusions from this sort of exercise: provinces, states and federal governments are constantly making policy decisions that will change the rankings from year-to year. One acknowledged weakness of the present exercise is the age of the data (2002-3), which is largely explained by the continuing inability of the Canadian government to put out timely and quality statistics on post-secondary education. We know, for instance that policy changes in British Columbia and Colorado (to name but two jurisdictions that have had major increases in tuition since 2002-3), mean that their rankings in this exercise are substantially higher than they would be if more recent data were to be used. Conversely, major increases in student aid spending in Ontario mean that it will likely fare better in future editions of these rankings. More generally, as incomes in Canada and the United States converge somewhat (due to the persistent effects of the post-2001 economic slowdown in the US), the gap between the two countries may decline somewhat.

That said, it seems in order to point out three very obvious conclusions.

First, affordability comparisons on a single measurement can never capture the complexity of the affordability equation. Given the various possible definitions of affordability, as well as the different costs and subsidies, it seems preferable to always try to use multiple measures of affordability.

Second, generalizations about "national" conditions, while potentially useful, may also hide some very important facts at the sub-national level. Within both Canada and the United States, there are a wide variety of situations facing students and their families. Students in Rhode Island and Pennsylvania, are in almost every way facing a much, much less affordable system of public four-year colleges than are their counterparts in places like Utah, New Hampshire, Georgia and Mississippi. The geographic aspect of the affordability challenge in the United States has been commented upon in publications such as Measuring Up; however, their letter-grade approach actually tends to underplay the scale of the differences in affordability.

Third, there are very clearly different policy dynamics at work in the two countries. In both countries, it is the sub-national jurisdictions that take the lead on policy related to tuition. However, in the United States, most states have chosen not to leave the lion's

share of work on student aid to the federal government. The result is that need-based student aid acts as a significant leveller, going in much greater proportions to poor states than to rich ones. Combined with the decisions of most low-income states to keep tuition low, this means that generally speaking, poor states have much more affordable education systems than rich ones.

In Canada, none of this is true. Tuition policy has very little to do with per-capita income (poor provinces may either have very low or very high tuition). Substantial provincial participation in the field of student aid means that richer provinces are able to lavish aid on their own citizens (especially in Alberta). Thus, despite substantial amounts of federal government aid, student aid as a whole does less in terms of equalization in Canada than it does in the United States.

A final, cautionary note should be sounded. This work is about affordability, not about accessibility. While microdata evidence from sources such as Heller (1997) and St. John (1995) certainly show a relationship between cost and attendance, at a jurisdictional level, Usher (2004), as well as Usher & Cervenan (2005), have shown fairly conclusively that this relationship does not hold. At the most basic level, this can be shown by the fact that Nova Scotia, the least affordable jurisdiction in the survey, has the highest university participation rate in Canada, and (though the calculation methods are different) among the highest in North America. More subtly, a recent Statistics Canada publication by Marc Frenette (2005), showed conclusively that while access to 4-year colleges was higher overall in the United States than in Canada (39% to 33%)[1] , the reverse was true among students from the lowest income quartile (15% in the US and 24% in Canada). Thus, it would appear that Canada is more successful than the United States at attracting poor students to university, despite being, as this study shows, substantially less affordable.

None of this is to say that affordability should be ignored as an issue; clearly, governments should care about – or at least monitor – the fraction of household incomes required to support a student in post-secondary education. It is simply to say that affordability and accessibility are linked in complex ways that are not yet fully understood, and that to link affordability directly to accessibility is quite simply a mistake, and a lazy one at that.

[1] Frenette (2005) uses NLSY 97 data and compared it to SLID II panel in Canada. Figures refer effectively to the enrolment rates of 19-21 year-olds (there are some small differences in calculation which are unavoidable due to the structure of the two surveys – for details, see Frenette, 2005)

APPENDIX A - DATA SOURCES

Number of Students

Canada – Canadian enrolment data is for 2002-03 and is taken from Junor and Usher (2004). Changes in reported institutional enrolment levels up to 2002/03 have been indexed and then applied to the latest available enrolment data (at the time of writing) from Statistics Canada. As per Statistics Canada practice, the full-time equivalent enrolment (FTE) is calculated as FTE = FT + (PT/3.5).

United States - The number of FTE students is for 2002-03, taken from the National Center for Education Statistics Education Digest, Table 201, available at: http://nces.ed.gov/programs/digest/d01/dt201.asp

Median Household Income

Canada – Median Household Income is from CANSIM Table 202-0411.

United States – Median Household Income is taken from DeNavas, Walt and Mills (2004), table 7.

Tuition and Education Costs

Canada – Data on Tuition and Fees are from Statistics Canada's Annual Survey of Tuition for 2002-03 and represents costs for all undergraduates. A flat fee of $585 per student has been added for books. This figure represents 65% of the average cost of two terms of required textbooks in arts and sciences according to the survey of book costs contained in Junor and Usher (2004). The reason for the 65% is that it is assumed that students do not buy all books at the listed bookstore price, relying instead to some extent on book sharing, used books, etc.

United States. Data on Tuition and Fees are from NCES for 2002-03. A flat fee of $750 for books was added in all states, as per the country cost-estimate for the United States provided by the International Centre for Higher Education Finance and Affordability Project (available at: http://www.gse.buffalo.edu/org/inthigheredfinance/region_namerica_US.html) .

Cost of Living

In both countries, cost of living assumes that a student lives away from home. This was done in order to capture full cost-of-living expenses. An alternative approach would have been to determine the percentage of students living at home and away from home in each jurisdiction and multiply out the implicit cost-of-living expenses from this.

The two countries differ in their standard ways of measuring living costs. In the United States, the standard way of doing this is by annually measuring the cost of on-campus room and board. In Canada, where on-campus residences are less plentiful and a greater proportion of students live in off-campus accommodations, it is done through periodic surveys of students. This creates a small comparability problem because the last published Canadian cost survey in 2002-03. As a result, we have taken data from a common 2001-02 base.

Canada - Cost of Living has been derived from the results of the 2001-2002 Student Income-Expenditure Survey, and includes only the costs of those students living away from home. Expenditures for housing, and food have been combined to form a single cost-of-living figure. Data from the Income-Expenditure Survey is accurate only at regional level. As a result, the reported Cost-of-living is the same for all provinces with the Atlantic region (New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland) and within the Prairie region (Manitoba, Saskatchewan and Alberta).

United States - Cost of Living data has been taken from the 2002 NCES Digest of Education Statistics, Table 313 and show the combined cost of on-campus room and board in each state.

Grants and Loan Remission

"Grants" is the term given to all non-repayable assistance to students paid during the school year, and includes grants from national, sub-national (provinces or states) and institutional sources. "Average Grants" refers to the average grant given to each student who receives a grant. "Grants per Student" refers to the average grant given to *all* students, including those not receiving grants.

Canada - All Canadian data is for the 2002-03 academic year. Canadian data on grants comes from several sources, most notably Junor and Usher (2004), which contains data

for all government grant and remission programs, based on data directly provided directly to the authors by governments themselves. Unfortunately, the Junor and Usher source covers grants and remission for all students, not just university students. Grants to university students in each province were determined by multiplying the total amount of grants by the percentage of Canada Millennium Scholarship Foundation bursaries that were awarded to universities in each jurisdiction (the assumption being that the Foundation bursaries were distributed in roughly the same fashion as provincial grants). Data on institutional grants comes from Statistics Canada's *Financial Statistics of Canadian Universities*, which is prepared annually in conjunction with the Canadian Association of University Business Officers (CAUBO). "Grants per student" was derived by dividing the total amount of government grants and remission plus the total amount of institutional aid by the jurisdictions' FTE total (see page 69, above).

United States – The US data on grants comes from several sources. Data on federal grants to students comes from two working files prepared for EPI by the Department of Education, one for Pell Grants and one for Work-study. Both are for the 2002-03 school year. Data on state grant aid comes from the 2004 NASSGAP survey, available at http://www.nassgap.org/researchsurveys/default.htm, and also covers the 2002-03 school year. Data on institutional grant aid comes from the US Department of Education's IPEDS database and covers the 2000-01 school year (the most recent year available). Grants per student are derived by dividing total grants by the FTE number (see page 69, above).

Tax Expenditures

Tax Expenditures are not, technically, expenditures at all. The term "tax expenditures" refers to tax income foregone by governments due to any element of the tax code that provides preferential treatment for certain types of income or activity. Tax credits for education typically take the form of deductions or credits for tuition fees, or exemptions of certain forms of education-related income (such as scholarships).

Unfortunately, given the lack of rigour with which data on tax expenditures are reported in the two countries, the data presented herein are neither entirely comparable for the two countries nor entirely free of artistry in their presentation. In particular, we believe that the data for Canadian provinces probably overstates the effects of tax

expenditures because it assumes a 100% take up of available tax credits. As a result, data and rankings that use the tax credit information are probably less reliable than other data in this report.

Canada - While it is possible to determine total tax expenditures by province through an examination of CRA annual tax tables, it is not possible to separate out the fraction that goes to students in 4-year institutions. As a result, we have had to impute tax expenditures per student based on what a student at a 4-year institution would receive if he or she claimed all of the available credits. As noted above, this likely inflates Canadian tax expenditures somewhat. Note that because of the structure of the Canadian tax system, some of these credits may not be used in the calendar year in which they are given out, but may be saved and used in future years.

United States – The Government of the United States does not publish tax expenditure data on a state-by-state data, nor does it break out the receipt of tax expenditures by institution type. State-level data for four-year public institutions was derived as follows: the national figure for tax expenditures in 2002-3 was obtained from College Board (2004). State-by-state total tax expenditures were derived by multiplying the national figure by the estimated state shares of total expenditures, which was developed by Conklin (1997). Each state result was then multiplied by the percentage of FTE students in that state that attended 4-year publics. Tax Expenditure per student was derived by dividing total tax expenditures by FTE students (see page 69, above).

Loans

"Loans" is the term given to all repayable assistance to students paid during the school year, and includes loans from national and sub-national (provinces or states) sources.

Canadian data on loans comes from *The Price of Knowledge (2004)* by A. Usher and S. Junor and is valid for the 2002-03 academic year. All provincial governments provided data directly to the Canada Millennium Scholarship Foundation for this report. Unfortunately, the Junor and Usher source covers loans to all students, not just university students. Loans to university students in each province were determined by multiplying the total loans in each province by 51.93%, which is the proportion of all Canada Student Loans given to university students. This will result in a more or less correct figure at the national level, but will be less accurate at the provincial level. Loans

per student are derived by dividing total grants by the FTE number (see page 69, above) Loans per student are derived by dividing total grants by the FTE number (see page 69, above).

US data on loans comes from several sources. Data on federal loans to students comes from two working files prepared for EPI by the Department of Education, one for Stafford Loans (both subsidized and unsubsidized) and one for campus-based assistance, including Perkins Loans. Both are updated to the 2002-03 school year.

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