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**OECD's BETTER LIFE INDEX FOR CANADA AND
THE PROVINCES:
CHALLENGES AND RESULTS**

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Abstract

Over the past decade the OECD has advocated that the well-being of a society should involve more than an indicator involving real GDP. In May 2011, that organization produced its **Better Life Index** (www.betterlifeindex.org) for many countries. This action was carried out as a means of measuring social progress in order to both engage citizens and to motivate governments to focus on what sort of society its citizens wish for. The composite BLI index produced for individual countries is based on 11 dimensions, which reflect what people consider matters most in their lives. Since that May in 2011, the BLI has been updated and some new indicators have been produced. This year is no exception.

While the OECD's indicator relates to nations, it has been recognized that meaningful citizen engagement can also occur at the provincial/state level and also the community/neighbourhood level where governments and non-government organizations also exist. In our session, we present the OECD's BLI indicators for the 10 provinces over the period from 2000-2013. During the production of these indicators we briefly outline some of the challenges we faced as well as the idiosyncrasies we discovered. As for the provincial results that we will present, they are somewhat surprising and do not seem to necessarily follow a provinces economic fortunes.

Acknowledgements

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1. Background and Project Objectives

In 2011, as a part of its **Better Life Initiative** and in conjunction with its 50th Anniversary, the OECD launched its **Better Life Index** (<http://www.oecdbetterlifeindex.org/>). The index has been updated each year with the most recent launch of the index in May 2014. The index uses 11 dimensions and a total of 24 indicators to measure well-being in 36 countries (the 34 OECD member countries plus Russia and Brazil). The dimensions can be grouped into two broad categories: Material Living Conditions and Quality of Life. Housing, income and jobs are the three dimensions included under Material Living Conditions, while community, education, environment, civic engagement, health, life satisfaction, safety and work-life balance are the eight dimensions included under Quality of Life. Each dimension consists of one or more indicators, which are normalized and aggregated in a standard way to produce an overall composite index of well-being.

There are two unique features of this index. First, the OECD lets the user set the weight for each dimension. Even though the weight of each of the 11 dimensions is pre-set to one and the initial “ranking” of the countries is determined by this weighting scheme, the OECD does not take this to be an official ranking. In a composite index that is defined by a linear aggregation rule, the weights act as coefficients that “embody the relative importance attached to each component” (Foster, McGillivray and Seth, 2013). However, determining what those weights should be for a multidimensional index is a very difficult problem that can be approached using many different techniques (Decancq and Lugo, 2013). Since none of the techniques for assigning weights in a composite index can be designated the “right one”, by making the selection of weights a participatory endeavour, the OECD avoids the contentious issue of having to decide on how important each dimension is for well-being.

Second, the index is accompanied by an innovative visual display that acts as an interactive “dashboard” that highlights the underlying conceptual and mechanical framework of the index. In the central graphic used to visualize the index, each country is represented by a flower with 11 petals. The height of each country’s flower represents its overall index score, while the length of a petal of the flower represents a score in one of the dimensions and the width of a petal represents the weight assigned to that dimension. “Mousing over” a flower causes a tooltip to pop up that displays the country’s score in each of the 11 dimensions. With the interactive online tool provided, users can build their own index by moving a slider to set the weight of each dimension to an integer value between 0 and 5. Once the weights are set, the heights of the flowers and the length and width of the petals automatically adjust to rank the countries according to the user defined weights. The intent is that these “interactive data visualizations” will engage the user, and the immediate graphical feedback that the user receives as they manipulate of the controls will help the user “assimilate the underlying content” (Cukier, 2011). Once the user is satisfied with the weights, the index can be submitted to an online database and compared with other indices submitted from users around the world.

Inspired by this, we set out to accomplish two main objectives. First of all, we wanted to reconstruct the **Better Life Index** by including data for the 10 Canadian provinces so that we could compare not just Canada, but each of the provinces, to the OECD member countries. A similar process was carried out by Hazell, Gee and Sharpe (2012) for the **Human Development Index**. Following the same methodology as the Human Development Index and by including data for the Canadian provinces and territories, the

authors were able to replicate the index so that they could internationally rank the 10 provinces and territories according to their HDI score.

The second objective was to produce our own stand-alone version of the **Better Life Index** that included just Canada and the Provinces. We would keep the conceptual framework of the OECD Better Life Index, using the same dimensions and most of the same indicators. However, we would allow ourselves a bit more flexibility in the selection of indicator data sources. For this stand-alone index, we also wanted to make sure that we could produce a nice time series for trend analysis: our initial goal was to have a set of indicators and a composite index covering the years from 2000 to the present. Once this time series for the composite index was in place, we would display it using a motion chart. Motion charts have become a popular means of displaying complex data time series. Made famous by Hans Rosling in a series of TED talks (Rosling 2006,2007), the motion chart from Gapminder software is the perfect tool “to unveil the beauty of statistical time series by converting boring numbers into enjoyable, animated and interactive graphics” (<http://www.gapminder.org/about-gapminder/our-mission/>). It is a perfect fit for a composite index with many indicators. For example, the Canadian Council on Learning has a motion chart on its CLI Economic Motion Charts website (<http://www.ccli-ica.ca/en/explore/motion-charts-cities.aspx>) that enables users to explore its Composite Learning Index and economic indicators over time.

2. The Better Life Index

Before we expanded the Better Life Index by including the Canadian provinces, we first downloaded the raw data for the 2013 version of the index from the OECD website (<http://stats.oecd.org/Index.aspx?DataSetCode=BLI>) and reconstructed the index using the OECD’s methodology. The downloaded dataset has links to all the OECD’s “metadata” outlining the precise definition and data source used for each indicator. It should be noted that although the OECD’s Better Life Index website only displays the most current version of the index, it does have links to the raw data used to construct the 2011, 2012, 2013 and 2014 versions of the index.

A complete breakdown of the dimensions and indicators is presented in the table below.

Table 1: Dimensions and Indicators for the OECD Better Life Index

Dimension	Indicator
Housing	Dwellings without basic facilities
	Housing expenditure
	Rooms per person
Income	Household net adjusted disposable income
	Household net financial wealth
Jobs	Employment rate
	Job security
	Long-term unemployment rate
	Personal earnings

Community	Quality of support network
Education	Educational attainment
	Student skills
	Years in education
Environment	Air pollution
	Water quality
Civic engagement	Consultation on rule-making
	Voter turnout
Health	Life expectancy
	Self-reported health
Life Satisfaction	Life satisfaction
Safety	Assault rate
	Homicide rate
Work-Life Balance	Employees working very long hours
	Time devoted to leisure and personal care

Since the indicators have different scales (such as dollars, percentages and years), they are normalized to a value between 0 and 1. A positive indicator (such as life expectancy) is normalized by using the formula:

$$\frac{\text{value to convert} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

A negative indicator (such as homicide rate) is normalized using:

$$1 - \frac{\text{value to convert} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

Thus a country's score for an indicator depends on the maximum and minimum value of that indicator. As noted by Kasperian and Rolland (2012), one of the drawbacks of this normalization process is that "a country can have a bad score on an indicator not because its performance is intrinsically bad, but because one or several other countries have better performances in the considered domain." This is particularly relevant for an index containing just Canada and the 10 provinces. If we consider the dwelling without basic facilities indicator, for example, we see that even though all of the provinces perform very well for this indicator, one of them will be given a score of 0 and another will be given a score of 1.

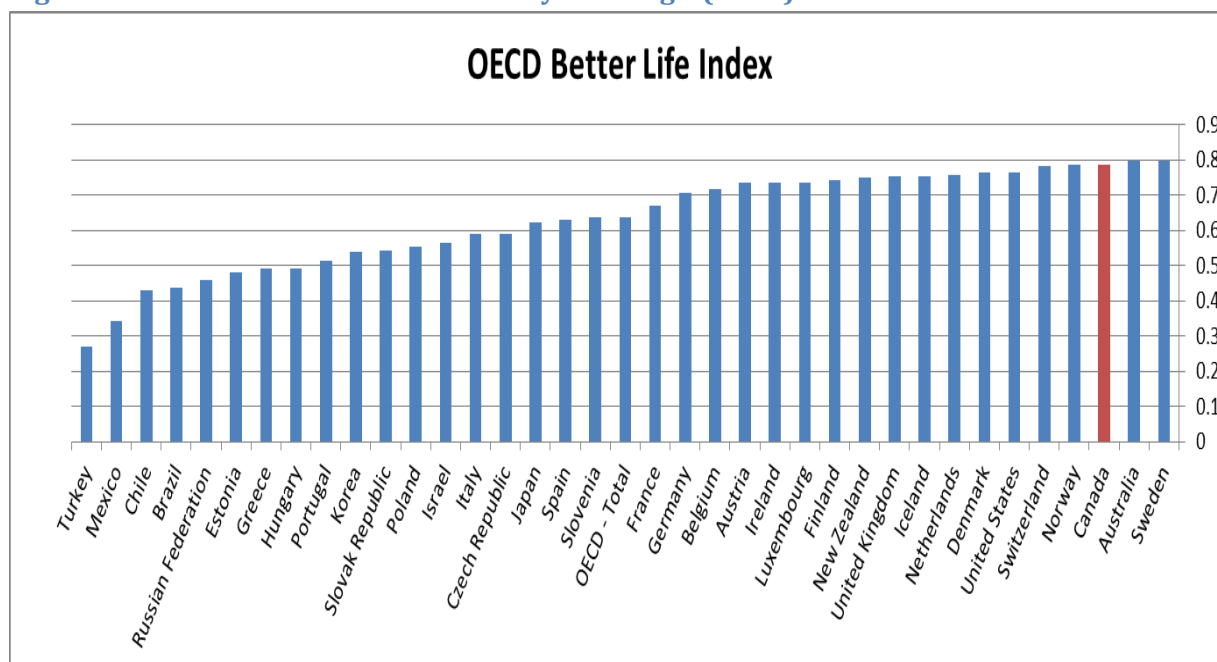
The aggregate score for each dimension is simply the mean of the indicators within that dimension. For example, the education dimension is measured by three indicators: educational attainment, student skills and years in education. The education dimension score is then given by the average of those three indicators:

$$\frac{\text{educational attainment} + \text{student skills} + \text{years in education}}{3}$$

Finally, the overall aggregate score for each country is the weighted mean of the all 11 dimensions (with all weights initially set to one, the overall index score for each country is simply the mean of the 11 dimensions).

Our reconstructed **Better Life Index** produced the following rankings of countries.

Figure 1: OECD Better Life Index Country Rankings (2013)



We should note that these rankings are slightly different from those found on the OECD website which has Australia first and Sweden second. We are working with the downloaded data that the OECD provides; however, there may be some discrepancies (as a result of rounding for instance) between our calculations from the data and what is published on the site. As an example, we note that for the Community dimension, which consists of a single Quality of Support Network indicator, Australia, Austria, Canada, Denmark and the Netherlands each have the same raw data score of 94. However, the OECD gives Australia a score of 8.3 on this domain while Austria, Canada, Denmark and the Netherlands are given a score of 8.4. There may be similar discrepancies for other domains as well.

Of course these rankings can be changed quite easily by adjusting the dimension weights. Since the weights can be any integer value from 0 to 5, there are a total of $6^{11} = 362,797,056$ possible sets of weights. With this many combinations of weights, is any ranking of the countries possible? Or is there is certain “robustness” to the rankings that can be determined by exploring the parameter space of the weights? In their analysis of the original 2011 **Better Life Index** (which has different data and a slightly different set of indicators than the 2013 version), Kasperian and Rolland (2012) systematically tested all sets of integer weights from 0 to 5 and showed that only a few countries had a high probability of being ranked number one. Their calculations showed that only 16 of the 34 countries could have been ranked

number one and that only Canada (52%), Australia (34%) and, to a lesser extent, Sweden (8.9%) had a high probability of being number one in the 2011 **Better Life Index**.

To see what might happen with the 2013 **Better Life Index**, we took a random sample of 100,000 vectors of weights and, for each country, we calculated the number of times it was ranked number one. We also calculated the average ranking, the highest ranking and lowest ranking that each country had with the same set of randomly chosen weights. The results are shown below.

Table 2: Randomized Sampling of Weights

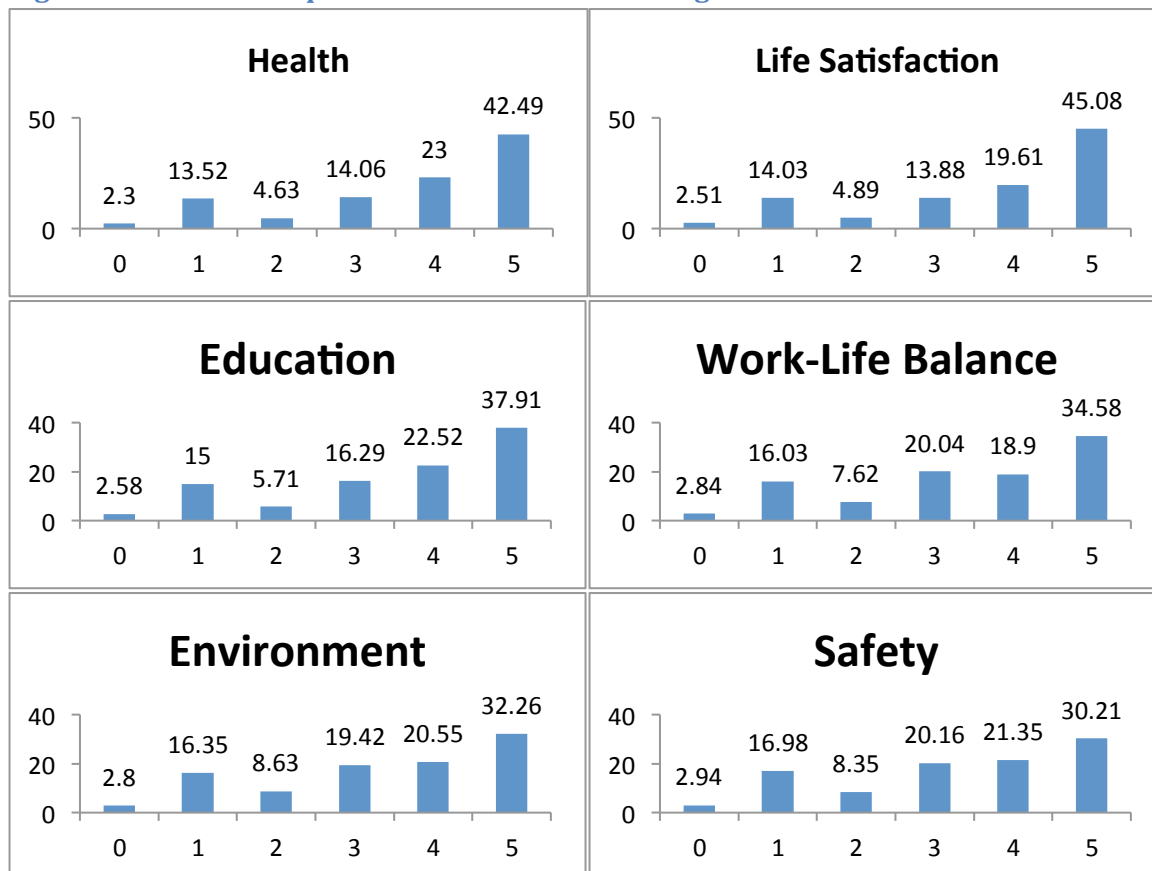
Country	Number of Times Ranked First	Average Ranking	Highest Ranking	Lowest Ranking	Standard Deviation
Australia	26931	3.61234	1	17	2.651579
Sweden	26045	3.27022	1	18	2.320904
Switzerland	21913	5.24371	1	22	3.858581
Norway	10363	4.19778	1	17	2.201938
United States	9342	7.72557	1	23	4.876837
Canada	3545	3.93878	1	15	1.6133
Iceland	1197	9.36778	1	22	3.925029
Denmark	249	7.73718	1	20	2.982267
Netherlands	148	8.7288	1	20	3.055687
Finland	85	11.31943	1	20	3.441632
United Kingdom	75	9.66557	1	20	2.996511
Ireland	63	12.57738	1	20	3.117209
Luxembourg	43	12.23699	1	28	3.740859
Japan	1	20.72906	1	34	2.241326
Belgium	0	14.75569	2	25	2.329926
New Zealand	0	10.09719	2	19	2.967634
Austria	0	12.96941	4	20	2.024133
Germany	0	15.83873	4	23	1.823528
Spain	0	20.30187	5	31	1.595716
Slovenia	0	19.67486	6	24	1.07947
Korea	0	26.4197	7	35	2.845001
France	0	18.27436	11	27	0.795759
Poland	0	25.31488	12	33	1.795473
Israel	0	24.96398	14	34	2.920881
Italy	0	22.81888	15	30	1.637487
Hungary	0	29.72877	16	36	2.201902
Czech Republic	0	22.60521	17	28	1.190095
Greece	0	29.96965	19	35	2.173158
Portugal	0	27.91897	19	35	2.047371
Mexico	0	34.79817	20	36	1.358659
Slovak Republic	0	26.06029	20	33	1.45834

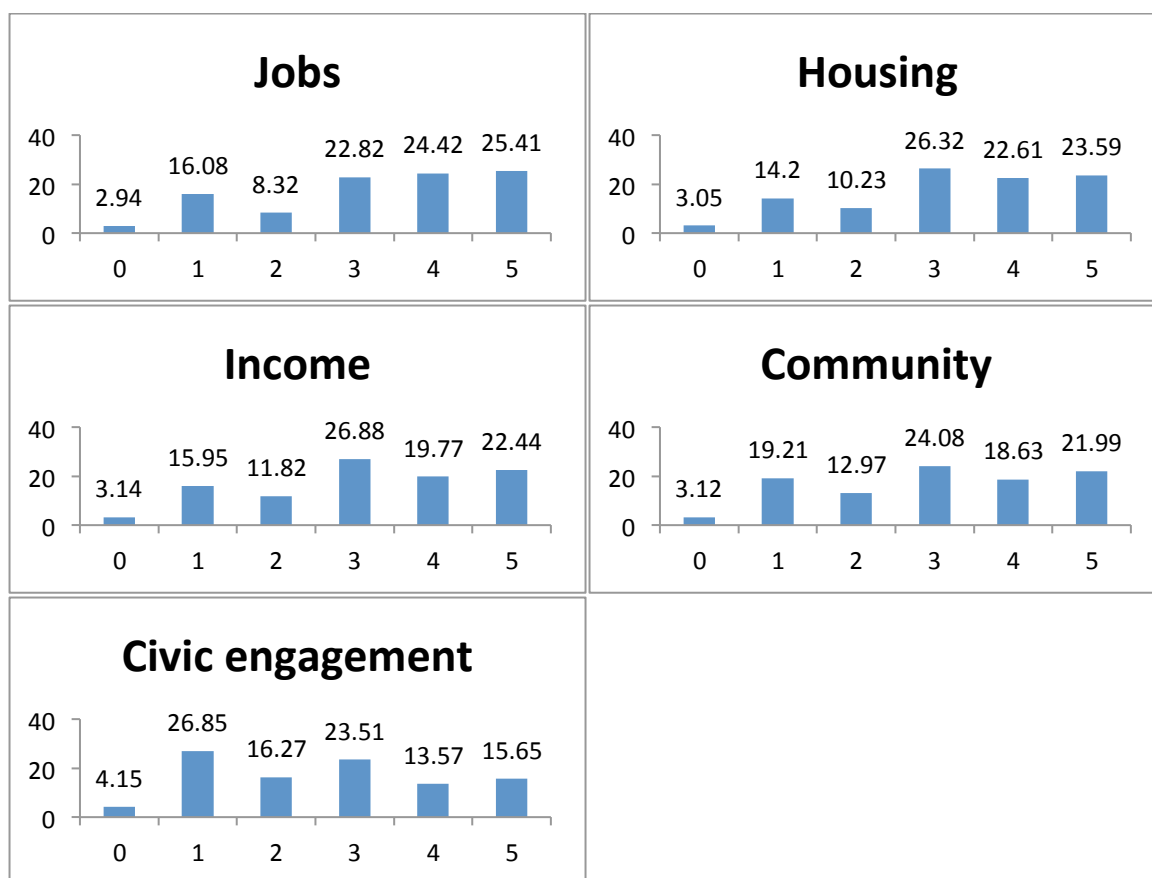
Russian Federation	0	31.57362	20	36	2.194618
Brazil	0	32.16178	21	36	2.192057
Estonia	0	30.72778	22	36	1.624809
Chile	0	32.8798	24	36	1.3835
Turkey	0	35.79582	28	36	0.497828

Only 14 countries are ranked number one and just 6 countries, Australia, Sweden, Switzerland, Norway, the United States and Canada account for over 98% of the top rankings. Although this is not an exhaustive exploration of the sample space of weights, it does seem to show that the index defines what Foster, McGillivray and Seth (2009) refer to as an underlying “quasi-ordering” of the countries.

It should be noted that we chose the weights in the analysis above in a purely random manner, with each weight from 0 to 5 having equal probability of being chosen. This is probably not indicative of the way users select their weights. As mentioned above, one of the innovative features of the **Better Life Index** is the ability of the user to set the weights of each **dimension** to any integer from 0 to 5. As of March 7, 2014 users had submitted a total of 66,639 indices through the interactive online tool. What weights are users selecting for the various domains? The charts below display the frequencies of user-defined weights (0-5) in the indices submitted thus far for the corresponding domain (see <http://blirt.oecdcode.org/>).

Figure 2: Relative Frequencies of User-Defined Weights.





There are two things that we notice in these charts. First, users choose a weight of 0 less than 5% of the time for any particular dimension. This might be used to support the premise that people submitting indices through the **Better Life Index** site at least consider all the dimensions important for well-being. Second, we notice that the percentage that a weight of 1 is chosen is much higher than the percentage of 2's. We can speculate here that the preponderance of 1's is caused by index submitters simply leaving many of the pre-set weights at 1 for many of the dimensions; on the other hand, the relative scarcity of 2's may indicate that when they do adjust the weights they have a tendency to bypass a weight of 2 and select something higher.

As Sharpe and Andrews (2012) point out, the weights collected through the OECD website "might not accurately reflect the views of society" and that by letting the users define the weights, the OECD is opening up the possibility for "people to manipulate the contents of the database in order to create a given bias." To see if weights submitted by users give a substantially different "quasi-ordering" of the countries, we took a sample of 21,233 actual vectors of weights submitted by users and calculated the rankings of countries determined by those weights. The results are shown below.

Table 3: Country Rankings Using User-Submitted Weights

Country	Number of Times Ranked First	Percentage of Number One Rankings	Average Rank	Highest Rank	Lowest Rank

Sweden	11758	0.553761	2.152451	1	27
Switzerland	4197	0.197664	3.927754	1	31
Australia	3002	0.141384	3.173456	1	29
Norway	884	0.041633	3.697546	1	19
Canada	588	0.027693	3.514623	1	21
United States	477	0.022465	7.769698	1	28
Iceland	124	0.00584	8.658221	1	30
Denmark	101	0.004757	7.191118	1	21
United Kingdom	38	0.00179	10.59591	1	26
Finland	18	0.000848	11.30975	1	21
Netherlands	18	0.000848	8.221825	1	24
Russian Federation	15	0.000706	31.87811	1	36
New Zealand	9	0.000424	10.07093	1	24
Ireland	2	9.42E-05	13.48246	1	24
Japan	2	9.42E-05	20.82979	1	35
Luxembourg	0	0	13.58225	2	31
Spain	0	0	19.99637	2	34
Belgium	0	0	15.68728	3	30
Korea	0	0	26.62313	3	35
Poland	0	0	25.18843	3	35
Austria	0	0	13.92154	4	25
Germany	0	0	16.57387	4	29
Israel	0	0	24.07616	5	35
Slovenia	0	0	19.40465	7	27
Estonia	0	0	30.6399	9	35
France	0	0	18.0284	9	27
Hungary	0	0	29.54486	9	36
Portugal	0	0	27.93298	9	35
Czech Republic	0	0	22.33349	10	28
Mexico	0	0	34.83954	10	36
Italy	0	0	22.77587	11	32
Slovak Republic	0	0	26.04545	11	34
Turkey	0	0	35.91527	11	36
Greece	0	0	29.75477	14	35
Brazil	0	0	32.81218	16	36
Chile	0	0	33.48627	17	36

In this random sample there are 15 countries that get ranked first, and the same top six countries account for over 99% of the top rankings. However, Sweden takes top spot in over 55% of the user defined indices, compared with just over 26% in indices defined by the purely random sample of weights (see Table2).

3. Better Life Index: Including the Canadian Provinces

To include the Canadian provinces in the index as separate “countries” to be ranked, we had to find data sources for the 24 indicators for all 10 provinces. This was a real challenge since we were using mainly “off the shelf” data products and we were constrained by the OECD’s original selection of data sources. Unfortunately, as a result of data availability, we are not able to include the Yukon territory, the Northwest Territories and Nunavut. The territories are not covered by the General Social Survey, for instance, which is used for several of the indicators.

The OECD, in selecting its data sources, wanted to make sure it had as wide coverage as possible for the member countries. As stated in (How’s Life p. 21):

“An ideal set of well-being indicators should come from an internationally harmonised data collection based on common definitions and survey practices, and collected as part of the official statistical system of member countries.”

The following indicators adhere to the above maxim: they rely on data collected by national statistics or government agencies. As such, we can extend these to the provinces with relatively minor adjustments.

- | | |
|--|---|
| • dwellings without basic facilities | • educational attainment |
| • housing expenditure, | • student skills |
| • rooms per person, | • years in education |
| • household net adjusted disposable income | • voter turnout |
| • household net financial wealth | • life expectancy |
| • employment rate | • self-reported health |
| • job security | • homicide rate |
| • long-term unemployment rate | • employees working very long hours |
| • personal earnings | • time devoted to leisure and personal care |

We describe in detail all the data sources and methods used for each indicator listed above in the appendix, but for now we note the following:

1. In some cases the value of an indicator calculated from our sources is slightly different from the OECD’s value. For such cases, we take the ratio of the OECD’s value of the indicator for Canada and our value of the indicator for Canada and multiply each data value by that ratio. For example, our value for housing expenditure for Canada is 0.238 and the OECD’s value for housing expenditure for Canada is 0.220. To ensure that the value of the indicator for Canada is the same as the OECD’s we “adjust” our indicator values for Canada and the provinces by multiplying by the ratio 0.220/0.238.
2. For household net adjusted disposable income, household net financial wealth and personal earnings, the dollar values for the OECD **Better Life Index** indicators are given in US dollars at

current Purchasing Power Parity per capita. Since purchasing power parities are not available for the provinces, we have to apply the Canadian PPP to the dollar values of these indicators for each province.

3. The OECD defines years in education to be the number of years of education that a 5 year old can expect to achieve by the age of 39. We use the Labour Force Survey to estimate student enrolment rates for Canada and the Provinces; however, the Labour Force Survey only provides data up to age 29, so our estimate will be slightly lower than the OECD's. The OECD uses the UNESCO/OECD/EUROSTAT (UOE) database on education statistics which has enrolment data for Canada up to age 39.

To complete its list of indicators, the OECD had to apply a "pragmatic solution" and use data from non-official sources such as the Gallup World Poll (*How's Life*, p21).

The OECD used the Gallup World Poll for four of its indicators: quality of support network, water quality, life satisfaction and assault rate. Since the results from the Gallup World Poll cannot be extended to the Canadian provinces, we had to improvise and select a different data source in each case.

1. The quality of support network is determined by the percentage of respondents who replied yes to the following Gallup World Poll question: "If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?" The Canadian General Social Survey on social engagement (cycle 22), 2008 includes the question: "How many close friends do you have (that is, people who are not your relatives, but who you feel at ease with, can talk to about what is on your mind, or call on for help)?" We took the percentage of people who said they had at least one close friend in response to this question as our proxy measure of the quality of support network. This seems to be a reasonable substitution. In fact, 94 percent of respondents said they had at least one close friend on the General Social Survey, which coincides exactly with the percentage of Canadians who responded positively to the World Gallup Poll question.
2. The Gallup World Poll uses the 0 to 10 scale of the Cantril Ladder to measure respondents' life satisfaction. Our measure of life satisfaction is taken from the Canadian Community Health Survey (CCHS) where the same 0 to 10 scale is used. Even though we are using a different survey, life satisfaction is a well-established measure of well-being and the results from both surveys should be comparable. In fact, the Gallup World Poll surveys only 1000 people in each country; the Canadian Community Health Survey collects responses from more than 100,000 people in Canada and produces reliable estimates at the provincial and health region level. The 2010 Gallup World Poll result for life satisfaction for Canada was 7.4, while the 2009-2010 CCHS measured life satisfaction for Canada at 8.01. This was adjusted so that the result for Canada was the same as the OECD's value.
3. The OECD measures water quality as the percentage of people who answered satisfied to the World Gallup Poll question: "In the city or area where you live, are you satisfied or dissatisfied with the quality of water?" We could not locate a comparable survey for Canada and the Provinces, but the 2011 Household and the Environment survey did ask the question: "During

the past 12 months, what type of water did your household primarily use for drinking at home? Was it...?" We used the percentage of respondents who said they drink primarily tap water as a proxy measure of satisfaction with water quality.

4. The OECD measures assault rate as the percentage of people who respond positively to the Gallup World Poll question: "Within the past 12 months have you been assaulted or mugged?" Although there are official objective statistics that could be used here to measure the assault rate in Canada, we stick with subjective statistics and use the 2009 General Social Survey on victimization (cycle 23) to calculate the self-reported victimization rates.

The final two indicators are air pollution and consultation on rule-making.

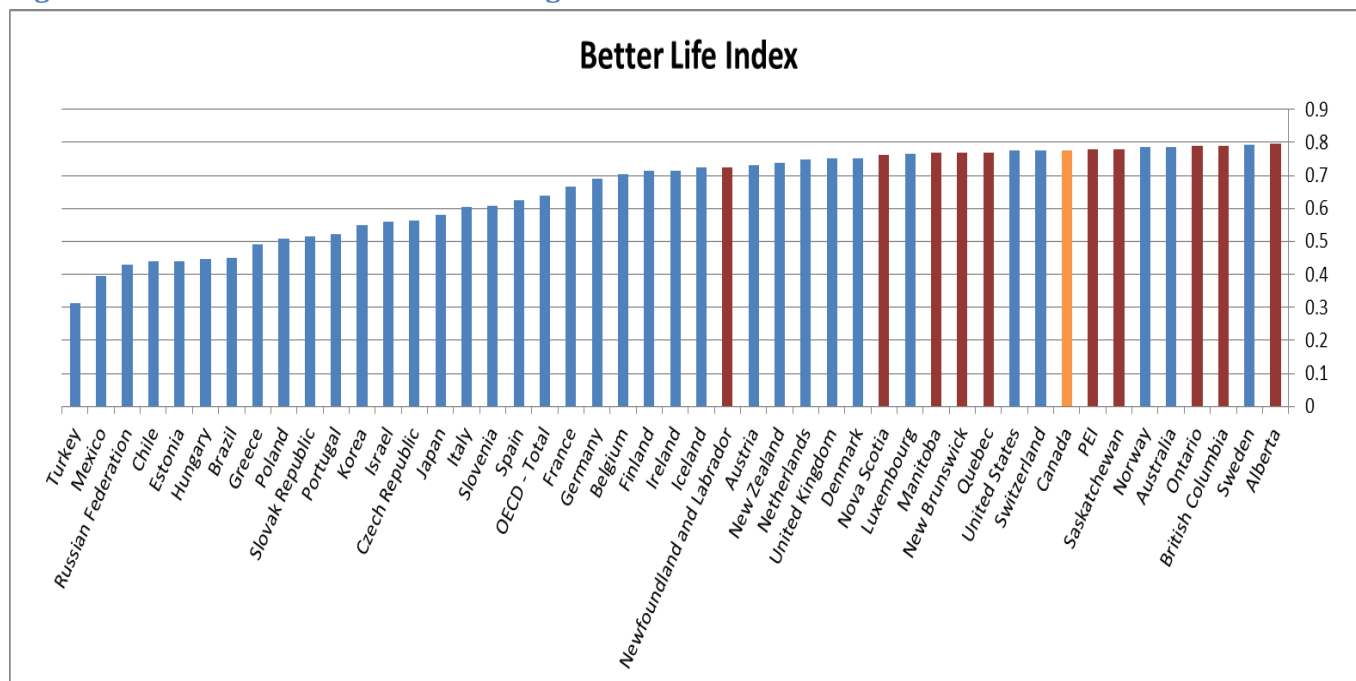
Air pollution is measured by the population-weighted average concentration of particulate matter 10 microns or less in diameter (PM10) in the atmosphere in cities with more than 100,000 residents. Data for this comes from the World Bank Development Indicators database. We had to improvise here by first using PM2.5 concentrations from Environment Canada (Ground-Level Ozone and Fine Particulate Matter Air Quality Indicators Data: http://www.ec.gc.ca/indicateurs_indicators/default.asp?lang=en&n=25C196D8-1#pm_2). The ratio between PM10 and PM2.5 concentrations is taken to be 0.6 (insert reference here), so we divide the PM2.5 values by 0.6 to get a measure of PM10 concentration for the 10 provinces. It should be noted that the concentration levels of PM2.5 is not population-weighted so the values should be used with caution.

The data for the consultation on rule-making indicator come from the 2009 Indicators of Regulatory Management Systems Report (OECD, 2009). Government officials in OECD member countries were surveyed and asked a series of questions related to the consultation process and what formal procedures enables the general public to engage in, and influence, government legislation. We failed to locate any survey or data source that we could use to extend this measure to the Canadian provinces, so we decided to give all Canadian provinces a score of 10.5, the same score that OECD gives Canada.

4. Results

We now use the indicator data for the provinces, along with the original OECD Better Life Index data, and recalculate the Better Life Index. The chart below shows how our index ranks the provinces in relation to the OECD countries.

Figure 3 : OECD Better Life Index rankings For Countries and Canaian Provinces 2012.



And the table below gives the numerical rank of Canada and each of the provinces.

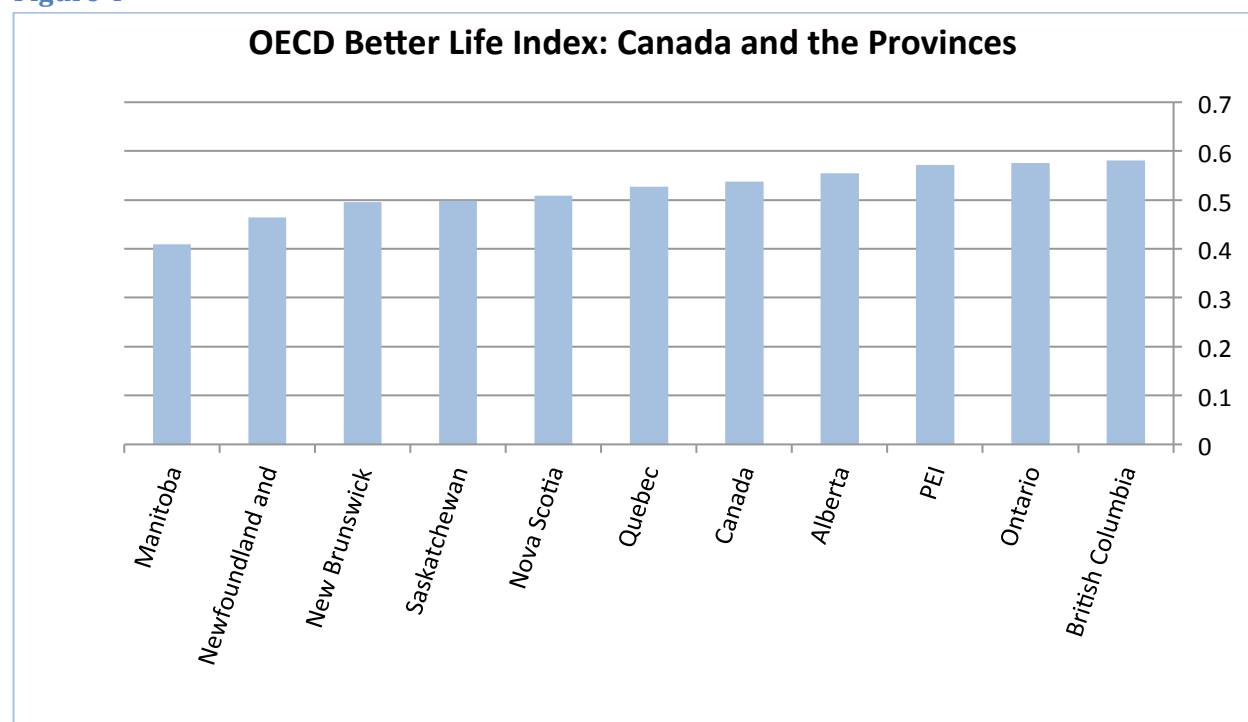
Table 4

Country or Province	Rank
Alberta	1
British Columbia	3
Ontario	4
Saskatchewan	7
PEI	8
Canada	9
Quebec	12
New Brunswick	13
Manitoba	14
Nova Scotia	16
Newfoundland and Labrador	22

We can see that Canada ranks 9th overall with 5 provinces, Alberta, British Columbia, Ontario, Saskatchewan and PEI above it. But more importantly, we see that Canada's relative rank amongst the OECD countries is now fourth instead of third with Norway ranked one spot above Canada rather than one spot below. This is understandable. Since the maximum and minimum values of indicators may have changed by including data for the 10 Canadian provinces, the normalized values of an indicator may have changed as well, causing the rankings of the OECD countries to change relative to each other. This illustrates one of the deficiencies of the OECD's aggregation procedure. The normalization and aggregation process does not satisfy the independence of irrelevant alternatives. Even though the original data for Canada and Norway has not changed, by simply adding more "countries" to the list we have altered the relative positions of the two countries. The fact that two countries can reverse positions relative to each other when data for other "irrelevant" countries is changed in the OECD Better Life Index was also pointed out by Kasperian and Rolland (2012).

We can illustrate this rank reversal more dramatically if we remove all other countries from the index, leaving just Canada and the 10 provinces. The chart below shows that British Columbia takes over top spot with Alberta moving from first down to fourth place. The underlying raw data has not changed; however, the changes in maximum and minimum scores of the indicators alters the ranking considerably.

Figure 4



As with the original **Better Life Index**, we can do a robustness check by selecting a random sample of weights and tabulate the number of times a country (or province) is ranked number one. We also calculated the average ranking, the highest ranking and lowest ranking that each country (province) had with the same set of randomly chosen weights. The results after randomly selecting 100,000 sets of weights and ranking the index are shown below.

Table 5 : Rankings Using Random Weights

Country	Number of Times Ranked First	Average Rank	Highest Rank	Lowest Rank	Standard Deviation
Sweden	24569	6.00591	1	27	5.21310146
Australia	18110	6.78288	1	30	5.467282489
Alberta	15479	4.59461	1	23	3.353929253
Switzerland	13201	9.74231	1	35	7.016999234
British Columbia	7076	4.56801	1	19	2.692617155
Norway	6761	7.88941	1	28	4.701289278
United States	4490	14.24345	1	33	8.079619725
PEI	4259	9.34572	1	29	5.207877581
Ontario	4193	4.32833	1	18	1.891328946
Iceland	631	16.74519	1	32	6.072679033

Quebec	588	12.22359	1	28	4.585423402
Denmark	203	14.23882	1	29	5.910608629
Newfoundland and Labrador	193	20.43839	1	37	5.190257565
Netherlands	72	16.22043	1	31	5.160138262
Finland	57	19.69584	1	29	5.353784953
Luxembourg	33	20.97889	1	40	5.444551478
New Brunswick	31	13.72042	1	28	4.58275518
Nova Scotia	21	12.40398	1	26	3.891409975
Ireland	18	21.96395	1	32	3.812549771
United Kingdom	12	17.6876	1	31	4.851024795
Saskatchewan	2	10.606	1	27	3.412650064
Japan	1	31.4382	1	44	2.70771381
New Zealand	0	18.68085	2	29	4.501999107
Canada	0	8.18735	3	19	2.145617863
Manitoba	0	14.84099	3	27	2.846887224
Belgium	0	24.41955	4	35	2.95424357
Germany	0	25.51306	6	34	2.432806737
Austria	0	22.28203	9	30	2.418372917
Korea	0	37.45453	9	46	2.905442633
Spain	0	30.96071	10	43	1.937509699
Slovenia	0	30.11768	12	35	1.44370089
France	0	28.27495	18	37	0.878999559
Poland	0	36.2678	18	44	1.808600528
Czech Republic	0	33.56818	20	39	1.245153401
Israel	0	35.8803	23	46	2.949053896
Estonia	0	41.78042	24	47	1.633845561
Italy	0	33.81501	24	42	1.694779461
Slovak Republic	0	37.04516	26	44	1.462847215
OECD - Total	0	30.26435	27	37	0.92781339
Hungary	0	40.6818	28	47	2.213657101
Mexico	0	45.77081	28	47	1.39648181
Portugal	0	38.98914	28	46	2.039839128
Russian Federation	0	42.51467	28	47	2.232840041
Greece	0	40.98324	31	47	2.183718569
Brazil	0	43.15466	32	47	2.188800629
Chile	0	43.88781	36	47	1.39234435
Turkey	0	46.80302	39	47	0.490755833

All the provinces except Manitoba have at least one set of weights in this random sample that give it top ranking. Canada does not have any top rankings, but this is to be expected since its indicator scores are essentially a population weighted mean of the indicators for the 10 province.

5. Extensions

5.1 Selecting Domain Weights

Following the example set by the OECD's Better Life Index website, we have embedded an online tool in the Centre for Applied Research in Economics website (<http://www.carenl.org/oecd.html>) that allows users to set their own weights for each dimension and calculate a Better Life Index (which we refer to as a "User BLI") for Canada and the provinces. There is also an option to include the OECD countries. In Figure 5 below we have altered some of the weights to give the domains greater importance. For example, the domain "Jobs" is given a weight of 2 while "Civic Engagement" is given a weight of 3. Note that giving a domain a weight of "0" basically excludes that domain.

Figure 5: Screenshot of CARE website showing a User BLI Index for Canada and the Provinces.

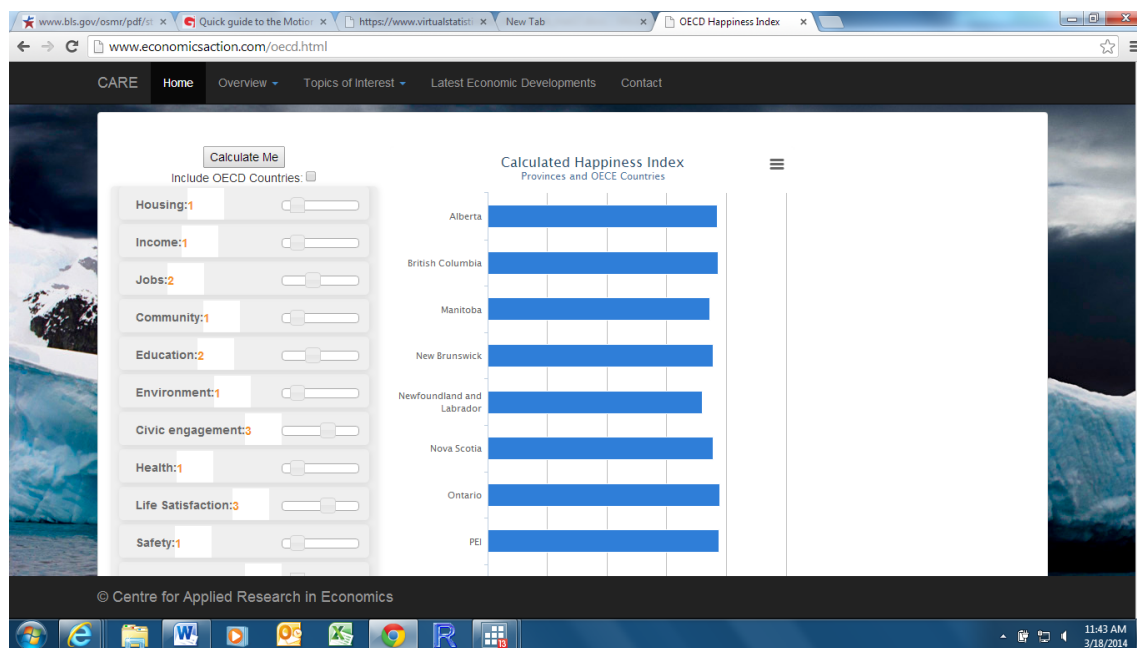
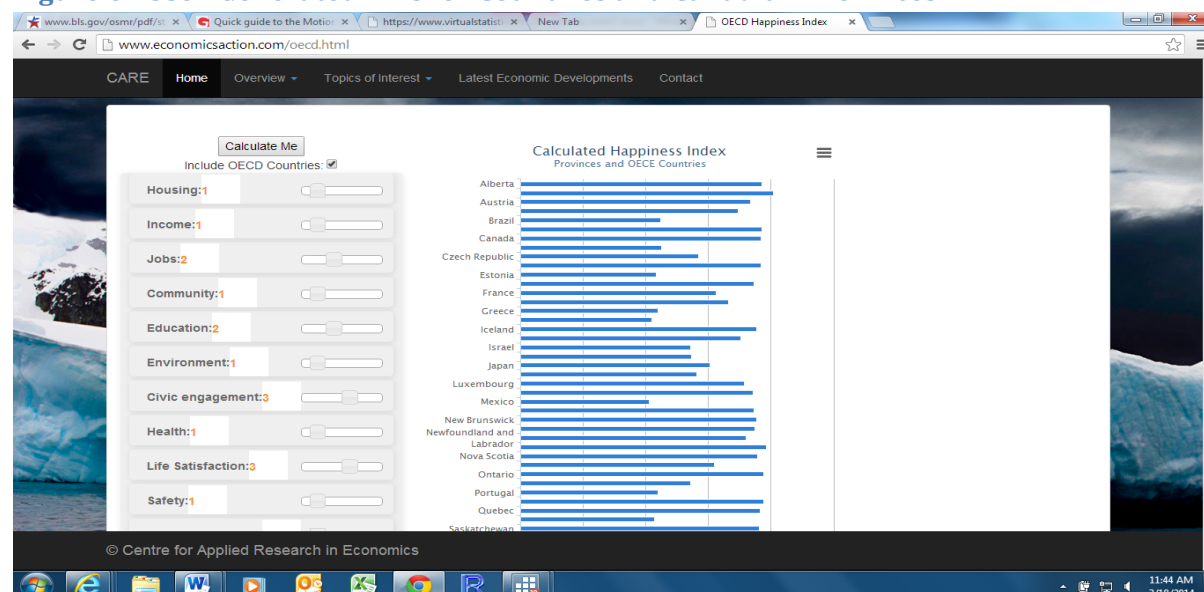


Figure 6: User-Generated BLIs for Countries and Canadian Provinces



5.2 Selecting Indicator Weights

There is no reason why we cannot allow the weights of the indicators to change as well as the weights of the domains. The United Nations Development Programme's Human Development Index website, for example, has a "build your own index" tool (<http://hdr.undp.org/en/data/build>) that lets users select and assign weights to both dimensions and indicators. The default setting has the dimensions of Health (along with life expectancy at birth), Education (along with expected years of schooling and mean years of schooling) and Income (along with GDP per capita) preselected to correspond with the official published version of the Human Development Index. Users can add dimensions (Inequality, Poverty and Gender) and add or take away individual indicators within each dimension. They can also set the weights of each dimension and indicator separately to build their index, which is then automatically calculated and compared to the official HDI.

We can do the same thing for the **Better Life Index**. By letting each indicator have an adjustable weight from 0 to 5, we increase the sample space of weights considerably and effectively allow the user to select or deselect indicators as well as domains. The screenshot below in Figure 7 shows an implementation of this in Microsoft Excel. Note that the first section (3 columns) shows weights assigned to domains; the second section (3 columns) shows the weights assigned to individual indicators; and the third section (3 columns) illustrates the produced rankings.

Figure 7: Weighting Domains and Indicators to Produce User-Generated Rankings

Select Domain Weights	Weight	Domain	Select Indicator Weights	Weight	Indicator	Ranking	Country	Better Life Index
				2	Dwellings without basic facilities	1	Switzerland	0.779076322
	1	Housing		4	Housing expenditure	2	United States	0.778566533
				3	Rooms per person	3	Canada	0.777156638
	2	Income		1	Household net adjusted disposable income	4	Sweden	0.773968215
				1	Household net financial wealth	5	Australia	0.756751847
	1	Jobs		1	Employment rate	6	Norway	0.750168363
				2	Job security	7	Netherlands	0.738503704
				1	Long-term unemployment rate	8	United Kingdom	0.724735099
				1	Personal earnings	9	Finland	0.720720153
	1	Community		1	Quality of support network	10	Iceland	0.72015725
	2	Education		2	Educational attainment	11	Denmark	0.719560651
				1	Student skills	12	New Zealand	0.718554336
				1	Years in education	13	Luxembourg	0.712956963
	1	Environment		2	Air pollution	14	Austria	0.70481555
				1	Water quality	15	Ireland	0.699354549
	1	Civic engagement		2	Consultation on rule-making	16	Belgium	0.698498783
				1	Voter turnout	17	Germany	0.693580459
	1	Health		1	Life expectancy	18	France	0.647364628
				1	Self-reported health	19	Japan	0.639085531
	1	Life Satisfaction		1	Life satisfaction	20	Slovenia	0.615400389

Three points can be made. Obviously the rankings of any jurisdiction/sub-population will change depending on which indicators and domains are selected (a weight >0) as well as the weight given to those that are selected. Secondly, by selecting specific indicators one can essentially duplicate any composite indicator such as the OECD's BLI, the UN's HDI or the Canadian Index of Well-Being. Thirdly, individuals in countries and within any country or province/state may self-select. We would argue that collecting preferences only makes sense at the national or state/province level or the sub-provincial level.

6.0 Better Life Index for Canada and Provinces

For our version of the Better Life Index for Canada and the provinces, we kept the conceptual framework and methodology of the OECD Better Life Index, but we did make a few changes in the list of indicators. We dropped the dwellings without basic facilities indicator from the housing domain. In the Income domain we have replaced the household net adjusted disposable income with household net income and replaced household net financial wealth with household net worth. This is done primarily because of data issues; we wanted to make sure that we had enough data points for each indicator to enable an analysis of the composite index over time.

Table 6: Domains and Indicators

Domain	Indicators
Housing	Housing expenditure
	Rooms per person
Income	Household disposable income
	Household net worth
Jobs	Employment rate
	Job security

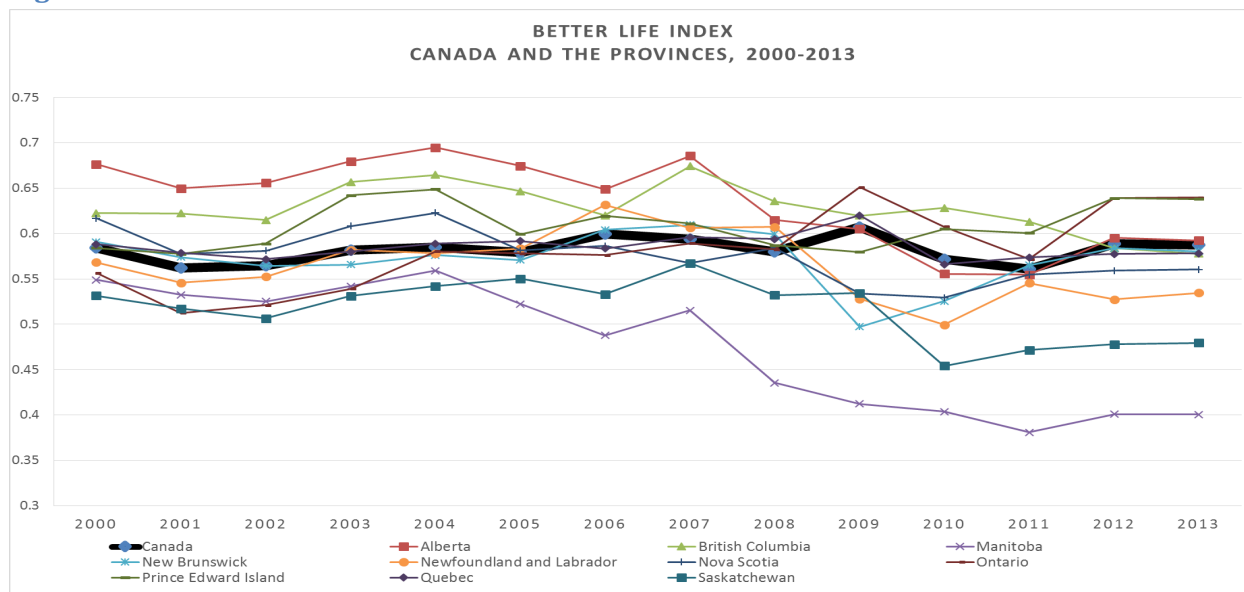
	Long-term unemployment rate
	Personal earnings
Community	Quality of support network
Education	Educational attainment
	Student skills
	Years in education
Environment	Air pollution
	Water quality
Civic engagement	Consultation on rule-making
	Voter turnout
Health	Life expectancy
	Self-reported health
Life Satisfaction	Life satisfaction
Safety	Assault rate
	Homicide rate
Work-Life Balance	Employees working very long hours
	Time devoted to leisure and personal care

We were able to produce this **Better Life Index** for Canada and the provinces for the years 2000 to 2013. It should be noted, however, that data for all indicators are not available for all years in this span. Census data, for example, is only available for 2001, 2006 and 2011. In such cases we simply used the data for the year it was produced and continued to use it for subsequent years until new data for the indicator became available.

We use the same normalization technique as before: the maximum indicator value is set to 1, the minimum indicator value is set to 0, and all other values are scaled to a value between 0 and 1. However, since we are now comparing the index over time, there are several choices for selecting the maximum and minimum values. We consider three possibilities here.

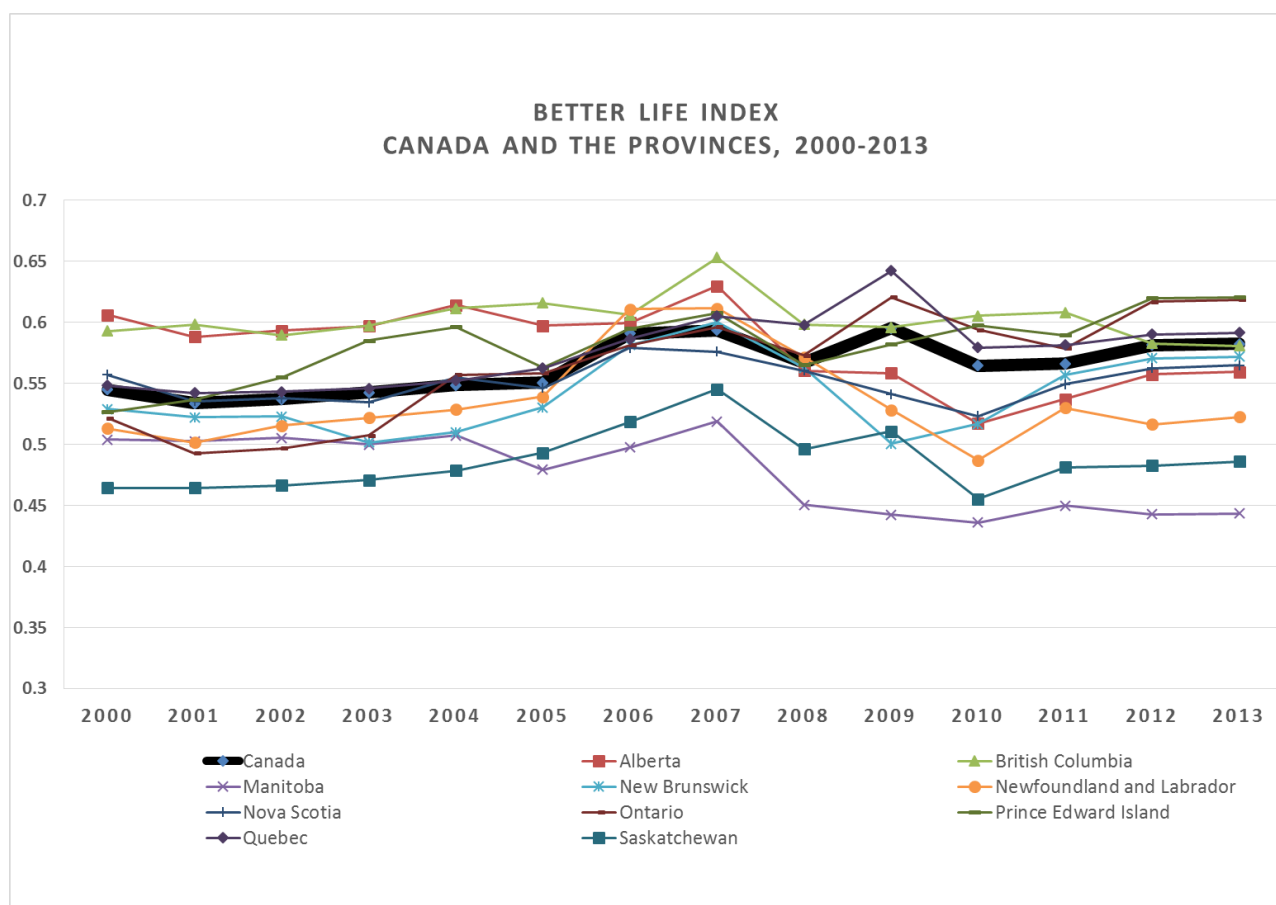
1. We take the maximum and minimum values of an indicator for each year of data separately. A chart of the times series of the index with this normalization formula is shown in Figure 8 below.

Figure 8:



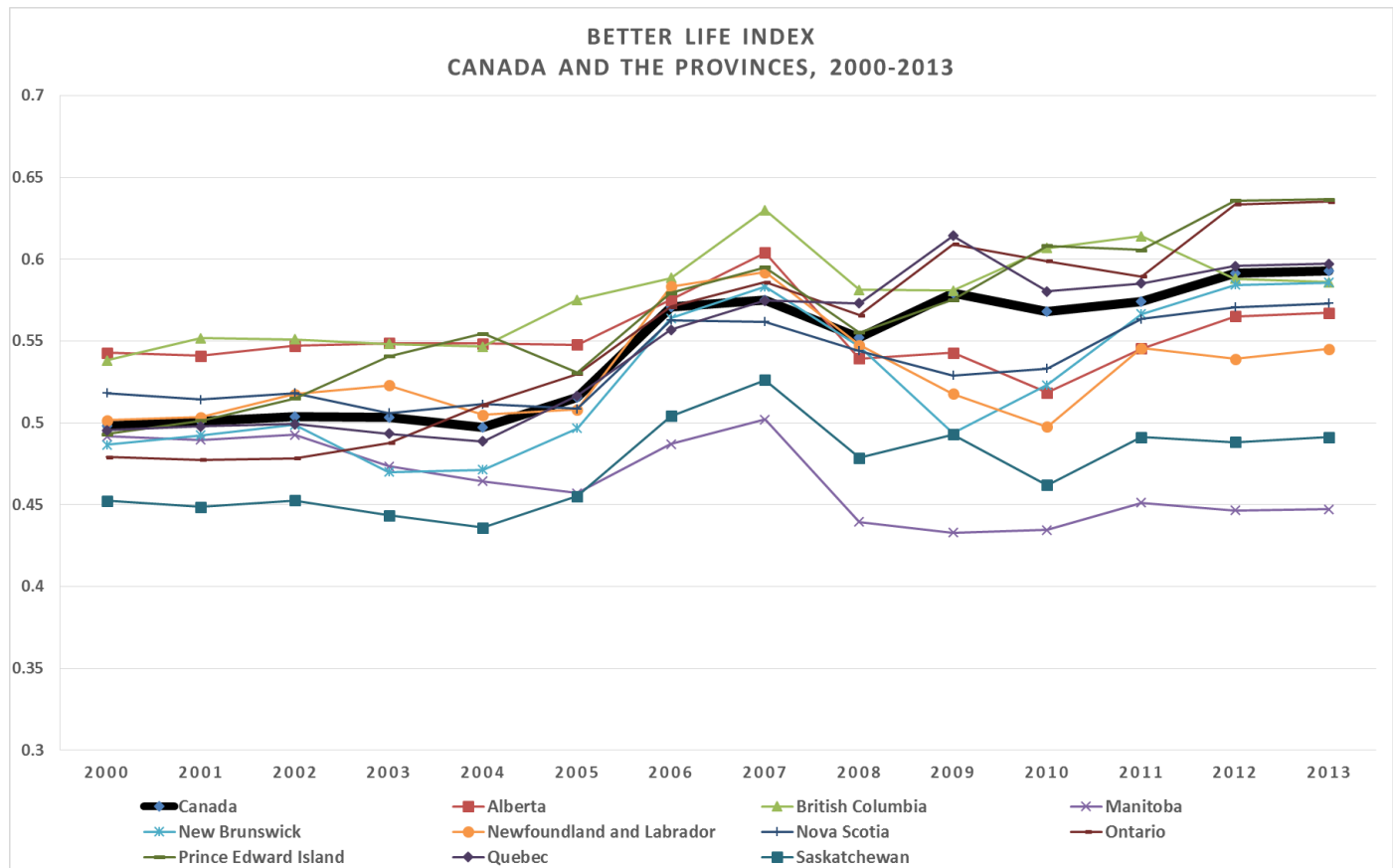
- For a given year and a given indicator, we take the maximum and minimum value of the indicator to be the overall maximum or minimum value of that indicator up to the given year. Using this scenario for normalization produces the time series given in the chart in Figure 9 below.

Figure 9:



- For each indicator, we take the maximum and minimum value of the indicator over the entire time series and normalize the indicator values for each year using the same overall maximum and minimum value. This normalization produces the time series shown in the chart in Figure 10 below.

Figure 10:



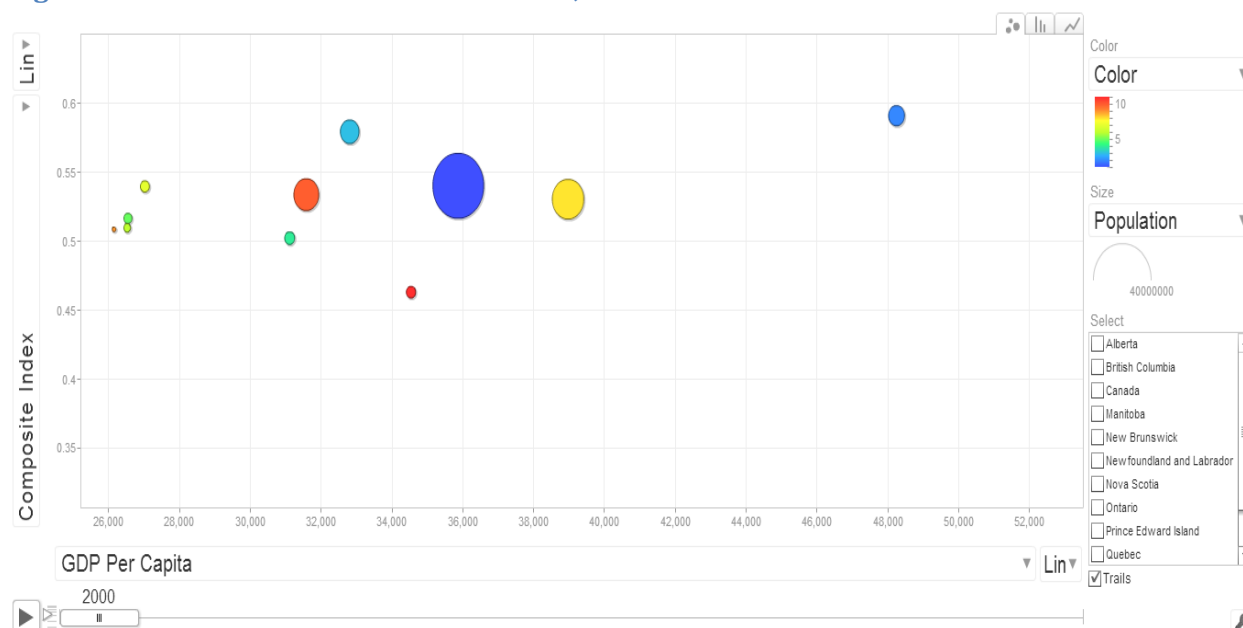
As we can see, a change in normalization can substantially change the time series produced. It is very difficult to assess the overall progress of a particular province over time since the value of its composite index depends heavily on the indicator scores of other provinces. We should not take the composite index score as an absolute measure: to really find out how a province is doing, it is very important to consider the individual indicators themselves (see Appendix C for charts of the percentage increase or decrease of the individual indicators over time).

To facilitate an exploration of the index and the underlying indicators, instead of displaying the time series as a static chart or as a series of static charts we decided to use “motion” charts to present the multidimensional data contained in the index in a dynamic way. With its animation and its ability to display multiple dimensions of data at once, a motion chart provides the user with an interactive visualization of the underlying data. As Al-Aziz, Christou and Dinov(2010) state:

“Active data visualization is a critical component of any data understanding, as it provides visual, informative and quantitative cues to the data behavior and the intrinsic data characteristics.”

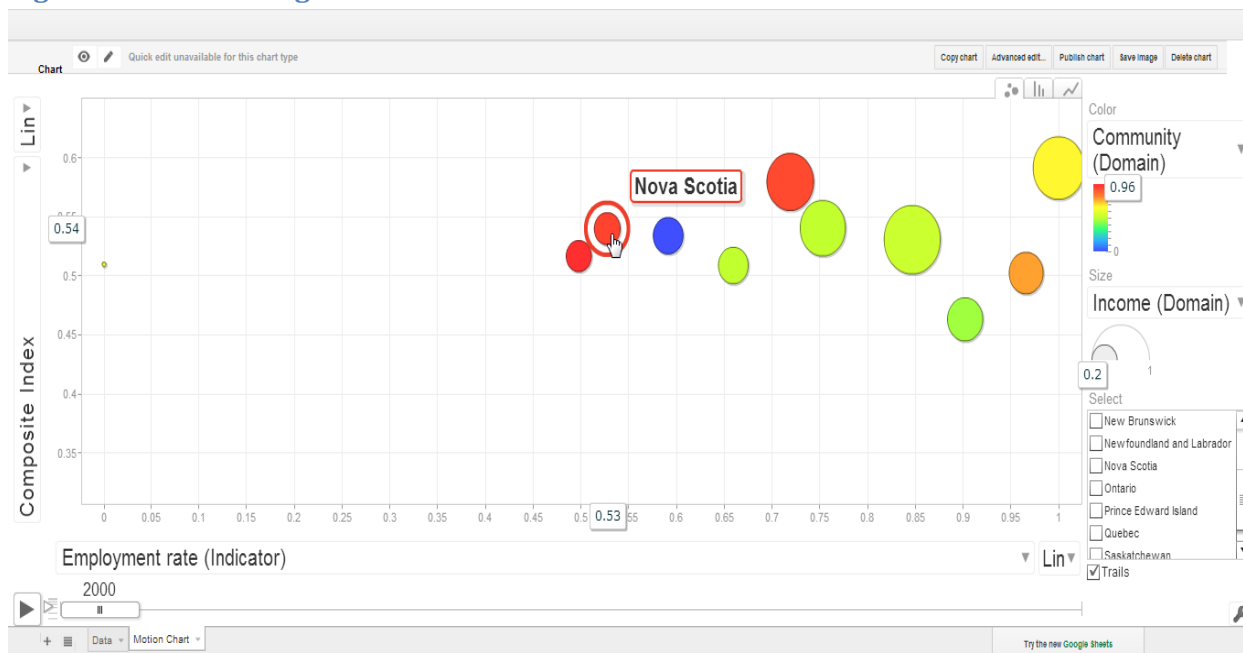
We placed our Better Life Index data into a Google Spreadsheet and used Google Motion Chart (<https://developers.google.com/chart/interactive/docs/gallery/motionchart>) to produce a motion chart for the time series (see the screenshot in Figure 10 below).

Figure 11: The BLI for Canadian Provinces, 2000-2013.



In fact, a motion chart can be used to explore six dimensions of data at the same time. The x and y axis represent two dimensions of data and the size of a bubble represents a third. Once the play button is pressed, the animation brings time in as the fourth dimension. The colour of the bubbles acts as the fifth dimension and, if we count the list of countries as a dimension, we are essentially exploring six dimensions of data in a single pane. Since our composite index has 8 dimensions and 23 indicators, being able to analyse six dimensions at once can greatly aid the user in digesting the vast amount of data hidden behind the composite index.

Figure 12: Illustrating the Various Dimensions of a Motion Chart



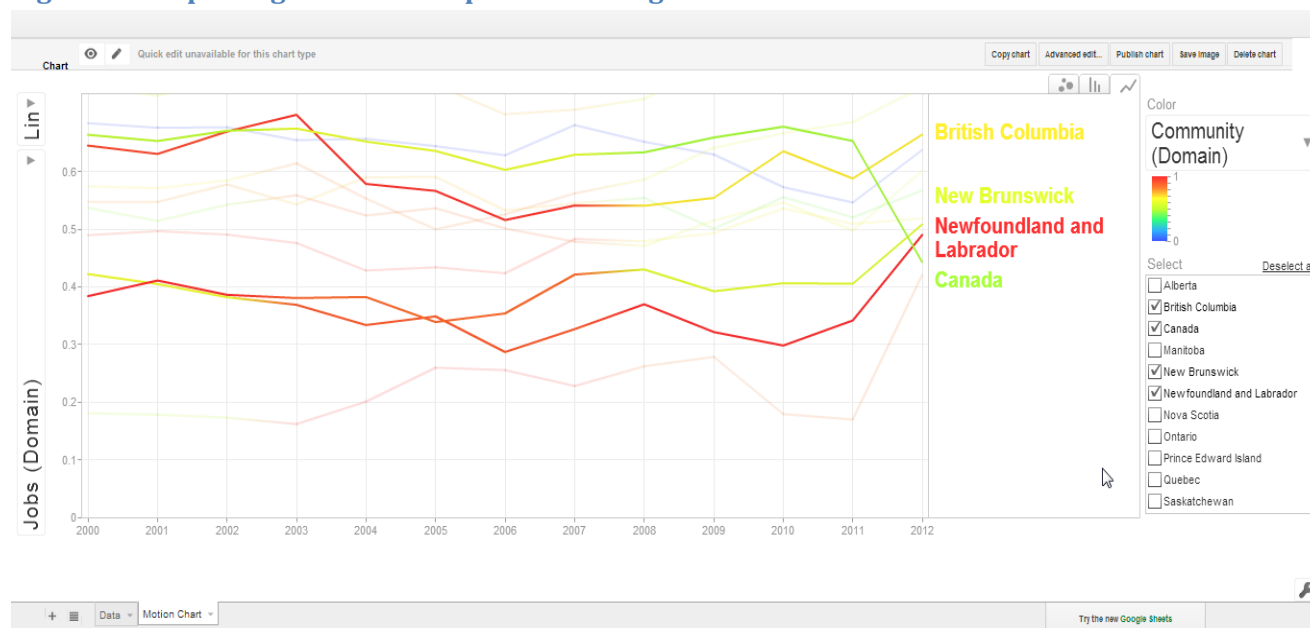
In Figure 12 above, the motion chart displays six dimensions of data.

1. Nova Scotia is highlighted from the list of provinces.
2. The y-axis represents the composite index score.
3. The x-axis represents the employment rate indicator score.
4. The colour of the each bubble measures the community domain score (ranging from dark blue to bright red).
5. The size of the bubble is proportional to the size of the income domain score.
6. Once the play button is pushed, the animation takes the data from 2000 to 2013.

There are other features of Google Motion Chart that can be used to explore the underlying data in more detail. For example, if we select an indicator or domain for the y axis and select a number of provinces in the check boxes provided, we can then click the line tab on the upper right hand corner of the motion chart interface to instantly produce a time series chart for that indicator and the chosen provinces.

In Figure 11 below, we see that the Jobs domain on the y-axis is the chosen indicator. With British Columbia, New Brunswick, Newfoundland and Canada selected, the line graph automatically produces a time series graph of the Jobs domain score for 2000 to 2013.

Figure 13: Exploring Domain Comparisons Using Moion Charts



7. Summary and Future Developments

In our work we have attempted to reproduce the OECD's **Better Life Index (BLI)** for Canada and its provinces over the period from 2000 until 2013. We selected the OECD's BLI not because its framework is unique. Indeed, we support the framework because it mirrors the one that May developed for the **System of Community Accounts** and is outlined in May and Hollett (2008) and in an OECD publication Giles, Hollett and May (2008). Many of the indicators for the OECD's BLI are generic. Those indicators selected for the BLI must be available for all of the countries in the OECD and any others for which comparisons are sought. We know from our own work with the Community Accounts (www.communityaccounts.ca), with the Canadian Index of Well-Being and from the work of others such as Sharpe and Osberg's Index of Economic Well-Being (IEWB) or the efforts in Australia that a wider variety and perhaps more appropriate set of indicators are available at the national level at the provincial and national level within Canada and Australia. Future cooperation with groups such as ANDI (Australian National Development Indicators) and the Centre for the Study of Living Standards (CSLS) must investigate the selection of indicators based on a comprehensive analytical framework. Also to be investigated and developed are pushing composite indicators down to the community and neighbourhood levels. The analytical capability of adopting a "bottom-up" approach exists for Newfoundland and Labrador.

The justification for the production of composite indicators such as the BLI is complex and ultimately rests on making interpersonal utility comparisons over time, which relate to measurability and comparability. The difficulties associated with composite indices were briefly at the beginning of this paper. The OECD's response is to record the weights assigned to domains by Internet "voters". This approach too has its deficiencies.

There are three major reasons that we see in using a BLI approach. Firstly, in a manner similar to indicators such as GDP, unemployment rates, consumer price indices we seek summary indicators that permit us to track progress over time; the BLI does this. Unfortunately, several candidates for measuring social well-being exist with the possibility of discouraging citizens and governments from the use and development of such a concept. Secondly, the application of the BLI to nations and states/provinces permits us to make comparisons with others, which socially we naturally do. Doing so can lead to strategic management and to realization of our potential capabilities. Thirdly, and most importantly in our opinion is that the BLI attempts to measure social progress and in doing so forces us to answer the questions: "What is important in our lives? What sort of society do we wish to live in? and Are our institutions contributing to our well-being to the extent that is possible?" As economists have long recognized maximizing societal well-being is the ultimate objective with the efficient use of inputs and the production of outputs milestones along the way.

This paper provides evidence in the OECD's BLI framework that seeks to answer those questions. By international standards Canada does quite well and certain provinces, such as Alberta, British Columbia and Ontario do very well by international standards. Over the first decade we do not observe much progress and in some cases such as Manitoba see marked decline. Newfoundland and Labrador has witnessed an increase in GDP per capita but not much of an increase in social progress. Prince Edward Island has not seen of an increase in GDP per capita but does fairly well in terms of well-being.

In the Appendix, we explore the individual indicators in somewhat more detail. As is the fashion, we hopefully will raise many questions and call for more research progress in this area.

Appendix A

Dimensions and Indicators in Detail

Dimension: Housing

The Housing domain consists of three indicators: dwellings without basic facilities, housing expenditure and rooms per person. We were able to get data for these three indicators using the same data used by the OECD.

Dwellings without facilities

This indicator is the “percentage of the population living in a dwelling without indoor flushing toilet for the sole use of their households” and the Better Life Index reference year for Canada is 1997. We use the Survey of Consumer Finances - Household income, facilities and equipment (1997) to get this data for Canada and the provinces.

Province	Dwellings without basic facilities
Canada	0.19%
Alberta	0.18%
British Columbia	0.22%
Manitoba	0.51%
New Brunswick	0.18%
Newfoundland and Labrador	0.00%
Nova Scotia	0.21%
Ontario	0.14%
Prince Edward Island	0.40%
Quebec	0.21%
Saskatchewan	0.25%

Source: Survey of Consumer Finances - Household income, facilities and equipment – 1997

Housing Expenditure

This indicator represents the percentage of income that households pay on such things as housing, water, electricity, gas and other fuels, as well as spending on furnishings, household equipment and routine maintenance of the house. The OECD’s reference year for Canada is 2010, so we use the Survey of household spending for 2010 to determine housing expenditure for the provinces.

Province	Housing expenditure
Canada	0.238
Alberta	0.231
British Columbia	0.254
Manitoba	0.218
New Brunswick	0.204
Newfoundland and Labrador	0.201
Nova Scotia	0.220
Ontario	0.251

Prince Edward Island	0.225
Quebec	0.220
Saskatchewan	0.232

Source: CANSIM Table 203-0021, Survey of household spending (SHS), 2010

Rooms per person

This indicator is the average number of rooms per person. Data for this indicator comes from the 2006 Census and is easily extended to the provinces. We calculate rooms per person by taking the average number of rooms in a dwelling and dividing by the average number of persons per dwelling.

Province	Rooms per person
Canada	2.6
Alberta	2.6
British Columbia	2.6
Manitoba	2.5
New Brunswick	2.8
Newfoundland and Labrador	2.9
Nova Scotia	2.8
Ontario	2.5
Prince Edward Island	2.7
Quebec	2.5
Saskatchewan	2.8

Source: Statistics Canada, 2006 Census of Population, Profile of Marital Status, Common-law Status, Families, Dwellings and Households

Income

The Income domain consists of two indicators: household net adjusted disposable income and household net financial wealth.

Household net adjusted disposable income

The OECD's calculates household net adjusted disposable income by taking household disposable income and adding in the social transfers in-kind, such as education and health care, that households receive from governments and non-profit institutions serving households. It is given in US dollars at current PPPs per capita. We are using household disposable income as measured by Statistics Canada, which does not include social transfers in-kind. For now, the in-kind expenditures for the provinces are scaled to that of the Canada as a whole; we will include these when the revised government expenditures are made available (summer of 2014).

Province	Household disposable income
Canada	28068
Alberta	35664
British Columbia	27550
Manitoba	25407
New Brunswick	25478
Newfoundland and Labrador	26233
Nova Scotia	25770
Ontario	28464

Prince Edward Island	23784
Quebec	24988
Saskatchewan	28946

Sources: Statistics Canada. CANSIM Table384-0040 - Current accounts - Households, provincial and territorial, annual and CANSIM Table051-0001 - Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (Household disposable income per capita)

Household net financial wealth

Household net financial wealth is the sum of a household's financial assets minus liabilities.

Province	Household net financial wealth
Canada	52487
Alberta	50684
British Columbia	74000
Manitoba	50684
New Brunswick	34832
Newfoundland and Labrador	34832
Nova Scotia	34832
Ontario	55201
Prince Edward Island	34832
Quebec	42772
Saskatchewan	50684

Source: Survey of Financial Security 2005, Special tabulation

Jobs

The jobs domain consists of four indicators: employment rate, job security, long-term unemployment rate and personal earnings

Employment rate

The OECD defines the employment rate as the “number of employed persons aged 15 to 64 over the population of the same age” where a person is considered employed if they have worked “in gainful employment for at least one hour in the previous week”. The OECD uses estimates from the Canadian Labour force survey for 2011 and this survey can be used to produce employment rates for the provinces.

Province	Employment rate
Canada	72
Alberta	77.3
British Columbia	70.6
Manitoba	76
New Brunswick	67.9
Newfoundland and Labrador	62.7
Nova Scotia	69.5
Ontario	71.4
Prince Edward Island	71

Quebec	71.4
Saskatchewan	76.5

Source: CANSIM Table 282-0002 - Labour force survey estimates (LFS), by sex and detailed age group, annual (persons unless otherwise noted)

Job security

Job security is measured by the percentage of the “dependent employed” that have a job tenure of less than 6 months. The OECD Better Life Index data for Canada comes from the Labour force survey and the reference year is 2010. A special tabulation on the Labour force survey for 2010 allows us get these percentages for the provinces as well. (**Note:** In the recently released 2014 version of the Better Life Index, this indicator has been changed. Job security is now measured as the probability that a person will become unemployed in a given year. For example, for 2012, this probability is calculated by taking the number of people who were employed in 2011 and had become unemployed in 2012 and dividing by the total number of people employed in 2011.)

Province	Job security
Canada	0.113
Alberta	0.131
British Columbia	0.112
Manitoba	0.108
New Brunswick	0.123
Newfoundland and Labrador	0.149
Nova Scotia	0.119
Ontario	0.103
Prince Edward Island	0.157
Quebec	0.114
Saskatchewan	0.121

Source: Labour force survey 2010, Special Tabulation

Long-term unemployment rate

This indicator measures the number of persons who have been unemployed for one year or more. A person is considered to be unemployed if they are out of work but are willing to do so and are actively looking for work. It is calculated as a percentage of the labour force. Again the OECD uses the labour force survey for the data for this indicator with reference year 2011. And we again use own special tabulation of labour force survey for 2011 to produce the data for the provinces.

Province	Long-term unemployment rate
Canada	0.009
Alberta	0.006
British Columbia	0.008
Manitoba	0.003
New Brunswick	0.006
Newfoundland and Labrador	0.009
Nova Scotia	0.009
Ontario	0.013

Prince Edward Island	0.004
Quebec	0.008
Saskatchewan	0.003

Source: Labour Force Survey, 2011-Special Tabulation

Personal earnings

The OECD defines this indicator is calculated by taking “the average annual wages per full-time equivalent dependent employee, which are obtained by dividing the national-accounts-based total wage bill by the average number of employees in the total economy, which is then multiplied by the ratio of average usual weekly hours per full-time employee to average usually weekly hours for all employees.” The OECD says that this is unpublished data and they have used their own calculations to produce the data for this indicator.

Province	Personal earnings
Canada	45400
Alberta	56300
British Columbia	44800
Manitoba	40000
New Brunswick	37500
Newfoundland and Labrador	42700
Nova Scotia	37200
Ontario	47400
Prince Edward Island	34300
Quebec	40200
Saskatchewan	44800

Source: Statistics Canada. *Table 202-0101 - Distribution of earnings, by sex, 2011 constant dollars, annual*, CANSIM (database). (accessed: 2014-03-03).

Community

Community consists of a single indicator: quality of support network.

Quality of support network

The OECD uses the World Gallup Poll to measure the quality of a person’s support network. This indicator is determined by the percentage of respondents who replied yes to the question: “*If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?*”

This presents a problem for us since there is no way to extend the results of the World Gallup Poll to the Canadian provinces. However, the General Social Survey on social engagement (cycle 22), 2008 asks the question: “How many close friends do you have (that is, people who are not your relatives, but who you feel at ease with, can talk to about what is on your mind, or call on for help)?” We measure quality of support network by the percentage of people who answered that they had at least one close friend. This seems to be a reasonable proxy measure and, in fact, 94 percent of respondents said they had at least one close friend on the General Social Survey and this coincides exactly with the percentage of Canadians who responded positively to the World Gallup Poll question used by the OECD

Province	Quality of support network
Canada	0.94
Alberta	0.95
British Columbia	0.95
Manitoba	0.94
New Brunswick	0.95
Newfoundland and Labrador	0.97
Nova Scotia	0.95
Ontario	0.95
Prince Edward Island	0.96
Quebec	0.92
Saskatchewan	0.95

Source: General Social Survey, 2008 [Canada]. Cycle 22: Social Networks

Education

The education domain consists of three indicators: educational attainment, student skills and years in education.

Educational attainment

Educational attainment is measured by the percentage of adults aged 25 to 64 holding at least an upper secondary degree. The OECD's data for Canada from 2010 but we use data from the 2011 National Household Survey to get data for Canada and the provinces. The percentage for Canada from the NHS is very close to the OECD's so only a minor adjustment is required.

Province	Educational attainment
Canada	87.3
Alberta	87.7%
British Columbia	89.9%
Manitoba	82.8%
New Brunswick	83.2%
Newfoundland and Labrador	79.7%
Nova Scotia	85.4%
Ontario	89.0%
Prince Edward Island	85.8%
Quebec	85.2%
Saskatchewan	84.6%

Source: National Household Survey 2011

Student skills

The student skills indicator is measured by the average score in reading, mathematics and science as assessed by the OECD's Programme for International Student Assessment (PISA). Since PISA data is readily available for all the Canadian provinces, the indicator can easily be extended.

Province	Student skills
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Canada	527
Alberta	536
British Columbia	528
Manitoba	501
New Brunswick	501
Newfoundland and Labrador	509
Nova Scotia	517
Ontario	529
Prince Edward Island	489
Quebec	530
Saskatchewan	508

Source: PISA

Years in education

The years in education indicator is measured by the expected number of years of education that a person can hope to achieve from the age of 5 to the age of 39. It is calculated by summing the enrolment rates (number of students of a particular age enrolled divided by the cohort population) for each age from 5 to 39.

While we could not duplicate this exactly for the provinces, we have managed to calculate the expected number of years of education from 5 up to the age of 29 by using Labour Force Survey Data and population estimates. From the Labour Force Survey we take the number of students in the age categories 15-19, 20-24 and 25-29 and divide the number of students by the total population in the age categories 15-19, 20-24 and 25-29 to get the enrolment rates for each category. Summing these rates and adding in the 11 years of compulsory education from age 5 to 14 gives us the expected number of years of education.

Province	Years in education
Canada	16.7
Alberta	16
British Columbia	16.9
Manitoba	16.3
New Brunswick	16.4
Newfoundland and Labrador	16.6
Nova Scotia	16.8
Ontario	17.2
Prince Edward Island	16.5
Quebec	17.4
Saskatchewan	16

Source: CANSIM Table 282-0095 Labour force survey estimates (LFS), by full- and part-time students during school months, sex and age group annual (persons unless otherwise noted) and CANSIM Table 051-0001 - Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons unless otherwise noted)

Environment

The environment domain consists of two indicators: air pollution and water quality

Air pollution

Air pollution is measured by the population-weighted average of particulate matter less than 10 microns in diameter (PM10) in the air in cities with more than 100,000 residents. The data comes from the World Bank Database and the reference year is 2009 for all countries.

To estimate the concentration of PM10 for Canada and the Provinces took the PM2.5 concentrations from Environment Canada (Ground-Level Ozone and Fine Particulate Matter Air Quality Indicators Data: http://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=25C196D8-1#pm_2) and converted to PM10 concentrations by dividing each value by 0.6. The ratio between PM10 and PM2.5 concentrations is taken to be 0.6.

Province	Air pollution
Canada	11.62
Alberta	12.03
British Columbia	9.45
Manitoba	12.03
New Brunswick	12.77
Newfoundland and Labrador	12.77
Nova Scotia	12.77
Ontario	10.40
Prince Edward Island	12.77
Quebec	13.92
Saskatchewan	12.03

Water quality

This indicator was measured by the percentage of people who answered satisfied to the Gallup World Poll question "In the city or area where you live, are you satisfied or dissatisfied with the quality of water?"

The Gallup World Poll survey, of course, cannot be extended to the Canadian provinces and we could not locate a comparable Canadian survey. However, the 2011 Household and the Environment Survey asked the question: "During the past 12 months, what type of water did your household primarily use for drinking at home? Was it...?" We use the percentage of respondents who responded that they drink primarily tap water. Although not ideal, it does at least indicate to a certain degree the respondents' satisfaction with the quality of their drinking water.

Province	Water quality
Canada	68
Alberta	68
British Columbia	80
Manitoba	67
New Brunswick	70
Newfoundland and Labrador	64
Nova Scotia	77
Ontario	65
Prince Edward Island	81
Quebec	63
Saskatchewan	76

Source: CANSIM: Table 153-0063 Households and the environment survey, primary type of drinking water consumed, Canada and provinces, 2011 (percentage of households drinking primarily tap water)

Civic engagement

The civic engagement domain consists of two indicators: consultation on rule making and voter turnout.

Consultation on rule-making

The data for this indicator comes from the 2009 OECD, Indicators of Regulatory Management Systems Report. Government officials in OECD member countries were surveyed and asked a series of questions related to the consultation process and what formal procedures enables the general public to engage in, and influence, government legislation.

We failed to locate any survey or data source that we could use to extend this measure to the Canadian provinces, so we decided to give all provinces the same score as Canada.

Voter turnout

Voter turnout is the percentage of eligible voters who cast a ballot during an election. The OECD's reference year for Canada is 2011 and refers to the most recent federal election. The voter turnout results for the provinces during the same federal election are used for provincial scores for this indicator.

Province	Voter turnout
Canada	61
Alberta	55.8
British Columbia	60.4
Manitoba	59.4
New Brunswick	66.2
Newfoundland and Labrador	52.6
Nova Scotia	62
Ontario	61.5
Prince Edward Island	73.3
Quebec	62.9
Saskatchewan	63.1

Source: Elections Canada

Health

Health domain consists of two indicators: life expectancy and self-reported health.

Life expectancy

Life expectancy measures how long on average people could expect to live from birth and the reference year for Canada is 2009. We have life expectancy numbers from CANSIM table102-0512 for Canada and the provinces. No adjustment is necessary.

Province	Life expectancy
Canada	81
Alberta	80.7
British Columbia	81.7
Manitoba	79.5
New Brunswick	80.2
Newfoundland and Labrador	78.9
Nova Scotia	80.1
Ontario	81.5
Prince Edward Island	80.2
Quebec	81.2
Saskatchewan	79.6

Source: CANSIM table102-0512

Self-reported health

This indicator refers to the percentage of the population aged 15 years old and over who report “good” or better health on a survey question with a five category ordinal response scale that ranges from very bad to very good. The OECD reference year for Canada is 2011. We use the Canadian Community Health Survey that asks the question: “In general, would you say your health is... ?” and the respondent is given five options: Poor, Fair, Good, Very Good and Excellent.

Province	Self-reported health (Good or better)
Canada	88.7
Alberta	89.5
British Columbia	88.7
Manitoba	88
New Brunswick	84.9
Newfoundland and Labrador	86.4
Nova Scotia	87
Ontario	88
Prince Edward Island	87.6
Quebec	90.2
Saskatchewan	88.5

Source: CCHS 2009-10 but should be able to update to 2011

Life satisfaction

The OECD takes its measure of life satisfaction from the Gallup World Poll where people's evaluation of their life as a whole is rated on a scale from 0 to 10, using the Cantril Ladder. Our measure of life satisfaction is taken from the Canadian Community Health Survey where the same 0 to scale is used. However, average life satisfaction is 7.4 from the World Gallup Poll and 8.01 from the CCHS. This is another case where we scale the results for the provinces by multiplying the averages by the ratio of the average from the

Province	Life satisfaction
Canada	8.01
Alberta	7.97
British Columbia	7.93
Manitoba	7.99
New Brunswick	8.15
Newfoundland and Labrador	8.21
Nova Scotia	8.1
Ontario	7.96
Prince Edward Island	8.28
Quebec	8.12
Saskatchewan	8.11

Source: CCHS 2009-10

Safety

Two indicators are included homicide rate and assault rate

Homicide rate

This is simply the homicide rate per 100,000 population and the reference year for Canada is 2010. We use the data from CANSIM. Table 253-0001 (rate per 100,000) to get data from the provinces. There is a slight adjustment to be made but the results are very close.

Province	Homicide rate
Canada	1.62
Alberta	2.07
British Columbia	1.83
Manitoba	3.65
New Brunswick	1.2
Newfoundland and Labrador	0.78
Nova Scotia	2.22
Ontario	1.43
Prince Edward Island	0
Quebec	1.06
Saskatchewan	3.26

Assault Rate

The OECD uses the Gallup World Poll and the percentage of people who respond positively to the question: "Within the past 12 months have you been assaulted or mugged?" Again, it is impossible to directly extend this survey to the provinces so we have to look for an alternative data source entirely.

Since the original Better Life Index indicator is subjective, and we want to stick with a subjective indicator, we use the 2009 General social survey on victimization (cycle 23) for the self-reported victimization rates per 100,000.

Province	Assault Rate
Canada (Our Sources)	118
Alberta	135

British Columbia	135
Manitoba	175
New Brunswick	120
Newfoundland and Labrador	94
Nova Scotia	96
Ontario	114
Prince Edward Island	92
Quebec	98
Saskatchewan	159

Source: "Criminal victimization in Canada, 2009, Catalogue no. 85-002-X, Vol. 30, no. 2, Source: General Social Survey (rate per 1000)"

Work-Life Balance

Work-life balance is composed of two indicators: employees working long hours and time devoted to leisure and personal care.

Employees working long hours

This indicator measures the proportion of dependent employed whose usual hours of work per week are 50 hours or more. We use a special tabulation of the 2011 Labour Force Survey to get this data for the provinces.

Province	Employees working very long hours
Canada	0.0407
Alberta	0.0645
British Columbia	0.0406
Manitoba	0.0408
New Brunswick	0.0541
Newfoundland and Labrador	0.0914
Nova Scotia	0.0520
Ontario	0.0391
Prince Edward Island	0.0726
Quebec	0.0237
Saskatchewan	0.0527

Source: Labour Force Survey 2011-Special tabulation

Time devoted to leisure and personal care

This indicator measures the amount of time per day that full-time employed people spend on leisure and personal care activities. The OECD uses Time Use Surveys to estimate the time spent on leisure and personal care. We use the 2010 General social survey on time-stress and well-being (cycle 24) to calculate the average amount of time (in minutes) that full-time employed people spend on leisure and personal care.

Province	Time devoted to leisure and personal care
Canada (Our Sources)	872

Alberta	885
British Columbia	871
Manitoba	917
New Brunswick	874
Newfoundland and Labrador	861
Nova Scotia	856
Ontario	864
Prince Edward Island	861
Quebec	877
Saskatchewan	867

Source: General Social Survey 2010-Special tabulation (measured in minutes)

Appendix B

Indicator Data for Better Life Index Times Series for Canada and the Provinces

Housing Expenditure														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2012
Canada	0.214	0.217	0.217	0.220	0.222	0.219	0.223	0.223	0.226	0.225	0.238	0.234	0.239	0.239
Alberta	0.205	0.211	0.205	0.213	0.216	0.207	0.208	0.204	0.217	0.217	0.231	0.236	0.229	0.229
British Columbia	0.233	0.233	0.234	0.234	0.228	0.234	0.232	0.235	0.236	0.249	0.254	0.248	0.268	0.268
Manitoba	0.199	0.206	0.205	0.195	0.199	0.195	0.200	0.199	0.213	0.212	0.218	0.216	0.221	0.221
New Brunswick	0.196	0.195	0.191	0.199	0.203	0.200	0.198	0.199	0.200	0.200	0.204	0.205	0.201	0.201
Newfoundland and Labrador	0.193	0.195	0.189	0.191	0.199	0.196	0.193	0.195	0.199	0.199	0.201	0.195	0.208	0.208
Nova Scotia	0.206	0.215	0.208	0.206	0.206	0.209	0.215	0.210	0.214	0.217	0.220	0.216	0.227	0.227
Ontario	0.222	0.228	0.228	0.234	0.238	0.228	0.237	0.241	0.240	0.228	0.251	0.246	0.248	0.248
Prince Edward Island	0.201	0.204	0.201	0.206	0.212	0.212	0.215	0.208	0.218	0.222	0.225	0.214	0.211	0.211
Quebec	0.198	0.198	0.200	0.199	0.199	0.205	0.210	0.204	0.211	0.216	0.220	0.217	0.222	0.222
Saskatchewan	0.194	0.201	0.200	0.200	0.212	0.204	0.206	0.197	0.202	0.208	0.232	0.218	0.215	0.215
Source: CANSIM Table 203-0021, Survey of household spending (SHS)														

Rooms per Person														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2001	2001	2001	2001	2001	2001	2006	2006	2006	2006	2006	2011	2011	2011
Canada	2.4	2.4	2.4	2.4	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5
Alberta	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
British Columbia	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5
Manitoba	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
New Brunswick	2.6	2.6	2.6	2.6	2.6	2.6	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Newfoundland and Labrador	2.6	2.6	2.6	2.6	2.6	2.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Nova Scotia	2.6	2.6	2.6	2.6	2.6	2.6	2.8	2.8	2.8	2.8	2.8	2.9	2.9	2.9
Ontario	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Prince Edward Island	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8
Quebec	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Saskatchewan	2.6	2.6	2.6	2.6	2.6	2.6	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7
Source: Statistics Canada 2001, 2006 and 2011 Census														

Household Disposable Income per Capita														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2012
Canada	22069	22370	22670	23024	23649	24116	25357	26043	26792	26930	27250	27637	28003	28003
Alberta	24799	26646	26240	26523	28137	30039	32345	32387	33410	32377	33331	34832	36567	36567
British Columbia	21676	22023	22699	22968	23781	24411	26155	26827	27711	27254	27508	28047	28507	28507
Manitoba	20308	20547	20901	20956	21443	21592	22519	23438	24350	24388	24411	24659	25135	25135
New Brunswick	19558	19831	20100	20268	20773	21115	21948	22675	23766	24271	24686	24752	24808	24808
Newfoundland and Labrador	17701	18405	18986	19445	19543	19895	25223	24631	23917	25120	25531	26688	27895	27895
Nova Scotia	20743	20985	21339	21439	21706	22271	22952	23521	24176	24728	24849	25340	24851	24851
Ontario	23857	23657	23720	24053	24497	24689	25721	26331	26867	27519	27928	27860	27903	27903
Prince Edward Island	20004	19966	20876	20565	20620	20760	21532	22350	22840	23590	23820	23605	23806	23806
Quebec	19663	20038	20675	21182	21564	21815	22510	23479	24076	24297	24307	24626	24739	24739
Saskatchewan	19328	19522	19765	20523	21511	21791	22995	24540	27287	26331	26334	28087	28564	28564
Sources: Statistics Canada. CANSIM Table384-0040 - Current accounts - Households, provincial and territorial, annual and CANSIM Table051-0001 - Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (Household disposable income per capita)														

Household Net Worth per Capita														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	1999	1999	1999	1999	1999	2005	2005	2005	2005	2005	2005	2005	2012	2012
Canada	128383	128383	128383	128383	128383	171529	171529	171529	171529	171529	171529	171529	232305	232305
Alberta	137293	137293	137293	137293	137293	160593	160593	160593	160593	160593	160593	160593	250607	250607
British Columbia	157362	157362	157362	157362	157362	246016	246016	246016	246016	246016	246016	246016	301945	301945
Manitoba	106584	106584	106584	106584	106584	160593	160593	160593	160593	160593	160593	160593	189114	189114
New Brunswick	92449	92449	92449	92449	92449	115178	115178	115178	115178	115178	115178	115178	162813	162813
Newfoundland and Labrador	60900	60900	60900	60900	60900	115178	115178	115178	115178	115178	115178	115178	152300	152300
Nova Scotia	95442	95442	95442	95442	95442	115178	115178	115178	115178	115178	115178	115178	172194	172194
Ontario	139069	139069	139069	139069	139069	181776	181776	181776	181776	181776	181776	181776	233753	233753
Prince Edward Island	107410	107410	107410	107410	107410	115178	115178	115178	115178	115178	115178	115178	125712	125712
Quebec	110851	110851	110851	110851	110851	141069	141069	141069	141069	141069	141069	141069	210528	210528
Saskatchewan	125418	125418	125418	125418	125418	160593	160593	160593	160593	160593	160593	160593	247645	247645
Source: Survey of Financial Security- 1999, 2005 and 2012														

Employment Rate														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2012
Canada	70.9	70.8	71.4	72.2	72.5	72.4	72.8	73.5	73.6	71.5	71.5	72	72.2	72.2
Alberta	76.7	77.2	77.2	77.9	78.1	78	79.2	79.7	79.9	77	75.7	77.3	77.9	77.9
British Columbia	70.1	68.9	69.3	70.3	70.8	71.8	72.8	74	73.8	70.8	70.7	70.6	71.3	71.3
Manitoba	75.9	75.8	77.2	76.7	76.8	76.4	76.7	77.2	77.4	76.2	76.5	76	76.3	76.3
New Brunswick	64.9	64.7	66.8	66.5	67.7	67.5	68.4	69.5	69.9	69.6	68.7	67.9	68.2	68.2
Newfoundland and Labrador	53.2	55.5	56.3	57.4	57.9	57.9	59	59.8	60.6	59	60.8	62.7	64.5	64.5
Nova Scotia	65.6	66	66.6	67.6	68.8	68.6	68.4	69.4	69.8	69.3	69.3	69.5	69.8	69.8
Ontario	73.1	72.8	72.6	73.5	73.5	73.1	73.1	73.3	73.3	70.6	70.8	71.4	71.2	71.2
Prince Edward Island	68.7	68.9	69.6	70.7	70.6	71.1	71.4	71.5	71.7	70	70.8	71	71.6	71.6
Quebec	67.1	67.4	69.2	69.7	70.2	70.1	70.3	71.4	71.7	70.5	71.1	71.4	71.6	71.6
Saskatchewan	74.4	73.2	74.7	75.7	75.9	75.8	77.2	78.3	78.4	77.9	77.3	76.5	76.9	76.9
Source: CANSIM Table 282-0002 - Labour force survey estimates (LFS), by sex and detailed age group, annual (persons unless otherwise noted)														

Job Security														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2012
Canada	0.0073	0.0065	0.0071	0.0073	0.0065	0.0062	0.0052	0.0043	0.0041	0.0062	0.0092	0.0092	0.0086	0.0086
Alberta	0.0025	0.0015	0.0017	0.0016	0.0021	0.0018	0.0009	0.0010	0.0008	0.0024	0.0057	0.0057	0.0030	0.0030
British Columbia	0.0073	0.0077	0.0092	0.0100	0.0064	0.0059	0.0032	0.0023	0.0022	0.0040	0.0080	0.0080	0.0085	0.0085
Manitoba	0.0029	0.0023	0.0022	0.0025	0.0038	0.0031	0.0028	0.0016	0.0016	0.0023	0.0031	0.0031	0.0041	0.0041
New Brunswick	0.0064	0.0080	0.0071	0.0062	0.0066	0.0055	0.0051	0.0030	0.0050	0.0041	0.0065	0.0065	0.0080	0.0080
Newfoundland and Labrador	0.0201	0.0190	0.0169	0.0180	0.0138	0.0146	0.0123	0.0086	0.0076	0.0089	0.0094	0.0094	0.0079	0.0079
Nova Scotia	0.0086	0.0084	0.0064	0.0058	0.0070	0.0055	0.0041	0.0050	0.0040	0.0060	0.0092	0.0092	0.0075	0.0075
Ontario	0.0052	0.0046	0.0057	0.0061	0.0061	0.0059	0.0050	0.0041	0.0045	0.0077	0.0127	0.0127	0.0111	0.0111
Prince Edward Island	0.0036	0.0032	0.0026	0.0015	0.0042	0.0040	0.0052	0.0028	0.0040	0.0055	0.0041	0.0041	0.0044	0.0044
Quebec	0.0135	0.0114	0.0112	0.0112	0.0096	0.0094	0.0093	0.0078	0.0067	0.0080	0.0080	0.0080	0.0092	0.0092
Saskatchewan	0.0039	0.0037	0.0047	0.0036	0.0040	0.0034	0.0023	0.0012	0.0014	0.0017	0.0030	0.0030	0.0031	0.0031

Source: Labour Force Survey - special tabulation

Long Term Unemployment Rate														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Canada	0.130	0.124	0.123	0.118	0.119	0.122	0.125	0.128	0.126	0.108	0.113	0.115	0.113	0.108
Alberta	0.158	0.157	0.150	0.142	0.146	0.155	0.158	0.155	0.151	0.125	0.131	0.136	0.132	0.132
British Columbia	0.126	0.120	0.122	0.115	0.124	0.126	0.130	0.132	0.134	0.111	0.112	0.116	0.113	0.113
Manitoba	0.128	0.122	0.116	0.120	0.108	0.114	0.127	0.128	0.122	0.113	0.108	0.111	0.110	0.101
New Brunswick	0.160	0.148	0.148	0.137	0.136	0.136	0.140	0.130	0.141	0.122	0.123	0.119	0.115	0.117
Newfoundland and Labrador	0.180	0.159	0.153	0.152	0.154	0.146	0.163	0.167	0.157	0.149	0.149	0.144	0.142	0.127
Nova Scotia	0.146	0.137	0.130	0.125	0.135	0.128	0.128	0.133	0.132	0.122	0.119	0.117	0.116	0.109
Ontario	0.123	0.118	0.115	0.111	0.111	0.114	0.114	0.119	0.116	0.096	0.103	0.105	0.104	0.099
Prince Edward Island	0.212	0.185	0.178	0.169	0.162	0.146	0.161	0.163	0.170	0.155	0.157	0.163	0.145	0.138
Quebec	0.123	0.114	0.118	0.116	0.114	0.115	0.118	0.122	0.120	0.109	0.114	0.117	0.113	0.106
Saskatchewan	0.130	0.133	0.132	0.118	0.119	0.124	0.134	0.141	0.149	0.124	0.121	0.130	0.125	0.116

Source: Labour Force Survey - special tabulation

Personal Earnings														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2011	2011
Canada	52700	53600	53700	53300	55200	54600	55600	57000	57900	58200	58400	57600	57600	57600
Alberta	52200	56800	56800	57700	60000	61300	65900	67900	69800	70000	70200	71500	71500	71500
British Columbia	50800	50800	52600	52700	52700	52100	54200	55800	59100	57300	58000	56900	56900	56900
Manitoba	43300	43400	45100	44900	45300	47700	50400	52500	51500	51900	51700	50800	50800	50800
New Brunswick	42500	43600	43400	43400	42900	42900	44800	46000	44700	46800	46100	47600	47600	47600
Newfoundland and Labrador	44700	41900	41800	42000	43300	44000	45300	49800	49200	48800	52100	54200	54200	54200
Nova Scotia	45000	45900	46900	46100	44800	46000	47700	47200	49400	50900	49800	47200	47200	47200
Ontario	58900	59200	59100	58100	61800	60000	59600	61100	61800	62300	62300	60200	60200	60200
Prince Edward Island	37800	36000	39100	38600	38900	40500	41700	41800	42500	44000	41600	43600	43600	43600
Quebec	48800	49700	49200	48600	49700	48900	49200	49700	49000	50200	51600	51000	51000	51000
Saskatchewan	43000	45000	46200	45300	44500	48200	51100	52400	55800	58100	56200	56900	56900	56900

Source: CANSIM Table 202-0101, 2011 constant dollars

Quality of Support Network														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	1996	1996	1996	2003	2003	2003	2003	2003	2008	2008	2008	2008	2008	2008
Canada	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Alberta	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
British Columbia	0.98	0.98	0.98	0.96	0.96	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95
Manitoba	0.97	0.97	0.97	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
New Brunswick	0.98	0.98	0.98	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Newfoundland and Labrador	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.97	0.97	0.97	0.97	0.97	0.97
Nova Scotia	0.98	0.98	0.98	0.96	0.96	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95
Ontario	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Prince Edward Island	0.95	0.95	0.95	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Quebec	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92
Saskatchewan	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Source: General Social Survey (Percentage of people with at least one close friend)														

Educational Attainment														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2001	2001	2001	2001	2001	2001	2006	2006	2006	2006	2006	2011	2011	2011
Canada	77.3	77.3	77.3	77.3	77.3	77.3	84.5	84.5	84.5	84.5	84.5	87.3	87.3	87.3
Alberta	78.1	78.1	78.1	78.1	78.1	78.1	84.6	84.6	84.6	84.6	84.6	87.7	87.7	87.7
British Columbia	80.6	80.6	80.6	80.6	80.6	80.6	87.7	87.7	87.7	87.7	87.7	89.9	89.9	89.9
Manitoba	71.6	71.6	71.6	71.6	71.6	71.6	79.6	79.6	79.6	79.6	79.6	82.8	82.8	82.8
New Brunswick	70.9	70.9	70.9	70.9	70.9	70.9	79.1	79.1	79.1	79.1	79.1	83.2	83.2	83.2
Newfoundland and Labrador	65.0	65.0	65.0	65.0	65.0	65.0	74.4	74.4	74.4	74.4	74.4	79.7	79.7	79.7
Nova Scotia	73.6	73.6	73.6	73.6	73.6	73.6	81.4	81.4	81.4	81.4	81.4	85.4	85.4	85.4
Ontario	79.4	79.4	79.4	79.4	79.4	79.4	86.5	86.5	86.5	86.5	86.5	89.0	89.0	89.0
Prince Edward Island	71.1	71.1	71.1	71.1	71.1	71.1	81.3	81.3	81.3	81.3	81.3	85.8	85.8	85.8
Quebec	75.5	75.5	75.5	75.5	75.5	75.5	82.9	82.9	82.9	82.9	82.9	85.2	85.2	85.2
Saskatchewan	71.7	71.7	71.7	71.7	71.7	71.7	80.8	80.8	80.8	80.8	80.8	84.6	84.6	84.6
Sources: Census 2001, 2006 and National Household Survey 2011														

Student Skills														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2000	2000	2003	2003	2003	2006	2006	2006	2009	2009	2009	2012	2012
Canada	532	532	532	526	526	526	538	529	529	527	527	527	522	522
Alberta	548	548	548	544	544	544	530	536	536	536	536	536	527	527
British Columbia	535	535	535	533	533	533	520	531	531	528	528	528	534	534
Manitoba	530	530	530	520	520	520	503	515	515	501	501	501	497	497
New Brunswick	502	502	502	504	504	504	516	514	514	501	501	501	502	502
Newfoundland and Labrador	514	514	514	517	517	517	510	514	514	509	509	509	502	502
Nova Scotia	517	517	517	511	511	511	532	510	510	517	517	517	507	507
Ontario	526	526	526	525	525	525	502	531	531	529	529	529	523	523
Prince Edward Island	512	512	512	495	495	495	531	504	504	489	489	489	486	486
Quebec	542	542	542	527	527	527	510	526	526	530	530	530	524	524
Saskatchewan	525	525	525	511	511	511	518	518	518	508	508	508	509	509
Source: PISA														

Years in Education														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Canada	16.4	16.6	16.6	16.6	16.6	16.7	16.7	16.7	16.6	16.7	16.8	16.8	16.8	16.8
Alberta	15.7	15.9	15.9	16.0	15.8	15.8	15.8	15.6	15.5	15.6	15.9	15.7	15.7	15.8
British Columbia	16.5	16.5	16.6	16.8	16.6	16.5	16.5	16.5	16.6	16.7	16.8	16.9	16.9	16.8
Manitoba	15.6	15.8	15.8	16.0	16.0	16.0	16.0	15.9	15.9	15.8	16.0	15.9	15.8	15.8
New Brunswick	15.8	15.8	15.8	16.1	16.1	16.2	16.2	16.4	16.2	16.0	16.2	16.2	16.2	16.3
Newfoundland and Labrador	16.7	16.5	16.7	16.4	16.5	16.7	16.9	16.8	16.7	16.6	16.4	16.3	16.3	16.5
Nova Scotia	16.6	16.3	16.3	16.5	16.6	16.4	16.6	16.5	16.2	16.3	16.5	16.6	16.6	16.6
Ontario	16.8	16.9	16.9	16.8	16.9	17.1	17.0	17.1	17.0	17.2	17.2	17.1	17.2	17.2
Prince Edward Island	16.1	16.2	16.1	16.4	16.2	16.3	16.2	16.5	16.6	16.6	16.7	16.6	17.0	16.9
Quebec	16.6	16.8	16.8	16.8	16.8	17.0	17.0	17.0	16.9	17.0	17.1	17.2	17.3	17.3
Saskatchewan	15.7	15.9	15.9	15.8	15.6	15.6	15.6	15.4	15.4	15.2	15.4	15.4	15.3	15.4
Source: CANSIM Table 282-0095 Labour force survey estimates (LFS), by full- and part-time students during school months, sex and age group annual (persons unless otherwise noted) and CANSIM Table 051-0001 - Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons unless otherwise noted)														

Air Pollution														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2010	2010	2010
Canada	13.8	14.7	16.1	15.0	14.5	15.6	13.0	13.4	13.9	11.6	14.4	14.4	14.4	14.4
Alberta	9.5	10.4	11.4	12.0	9.7	8.3	10.3	8.9	13.7	12.0	18.7	18.7	18.7	18.7
British Columbia	9.7	8.5	8.5	9.8	9.4	8.7	9.0	7.5	8.2	9.5	8.3	8.3	8.3	8.3
Manitoba	9.5	10.4	11.4	12.0	9.7	8.3	10.3	8.9	13.7	12.0	18.7	18.7	18.7	18.7
New Brunswick	7.7	9.8	9.6	9.8	7.5	7.2	7.3	8.5	9.8	12.8	12.4	12.4	12.4	12.4
Newfoundland and Labrador	7.7	9.8	9.6	9.8	7.5	7.2	7.3	8.5	9.8	12.8	12.4	12.4	12.4	12.4
Nova Scotia	7.7	9.8	9.6	9.8	7.5	7.2	7.3	8.5	9.8	12.8	12.4	12.4	12.4	12.4
Ontario	16.6	18.0	19.8	17.1	17.0	18.4	15.3	15.8	14.0	10.4	13.2	13.2	13.2	13.2
Prince Edward Island	7.7	9.8	9.6	9.8	7.5	7.2	7.3	8.5	9.8	12.8	12.4	12.4	12.4	12.4
Quebec	10.2	12.6	15.0	13.4	12.7	14.4	11.0	11.6	15.3	13.9	16.8	16.8	16.8	16.8
Saskatchewan	9.5	10.4	11.4	12.0	9.7	8.3	10.3	8.9	13.7	12.0	18.7	18.7	18.7	18.7
Source: Environment Canada, Ground-Level Ozone and Fine Particulate Matter Air Quality Indicators Data (url: http://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=25C196D8-1#pm_2)														

Water Quality														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2007	2007	2007	2007	2007	2007	2007	2007	2007	2009	2009	2011	2011	2011
Canada	54	54	54	54	54	54	54	54	54	51	51	50	50	50
Alberta	56	56	56	56	56	56	56	56	56	54	54	52	52	52
British Columbia	60	60	60	60	60	60	60	60	60	56	56	56	56	56
Manitoba	53	53	53	53	53	53	53	53	53	53	53	53	53	53
New Brunswick	47	47	47	47	47	47	47	47	47	49	49	45	45	45
Newfoundland and Labrador	66	66	66	66	66	66	66	66	66	64	64	65	65	65
Nova Scotia	53	53	53	53	53	53	53	53	53	51	51	52	52	52
Ontario	64	64	64	64	64	64	64	64	64	57	57	56	56	56
Prince Edward Island	38	38	38	38	38	38	38	38	38	49	49	53	53	53
Quebec	37	37	37	37	37	37	37	37	37	37	37	36	36	36
Saskatchewan	48	48	48	48	48	48	48	48	48	45	45	50	50	50
Source: CANSIM Table 153-0063 Households and the environment survey, primary type of drinking water consumed, Canada and provinces, 2011 (percentage of households drinking primarily tap water)														

Voter Turnout														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2000	2000	2000	2004	2004	2006	2006	2008	2008	2008	2011	2011	2011
Canada	64.1	64.1	64.1	64.1	60.9	60.9	64.7	64.7	58.8	58.8	58.8	61	61	61
Alberta	60.2	60.2	60.2	60.2	58.9	58.9	61.9	61.9	52.4	52.4	52.4	55.8	55.8	55.8
British Columbia	63	63	63	63	63.3	63.3	63.7	63.7	60.1	60.1	60.1	60.4	60.4	60.4
Manitoba	62.3	62.3	62.3	62.3	56.7	56.7	62.3	62.3	56.1	56.1	56.1	59.4	59.4	59.4
New Brunswick	67.7	67.7	67.7	67.7	62.8	62.8	69.2	69.2	62.9	62.9	62.9	66.2	66.2	66.2
Newfoundland and Labrador	57.1	57.1	57.1	57.1	49.3	49.3	56.7	56.7	47.7	47.7	47.7	52.6	52.6	52.6
Nova Scotia	62.9	62.9	62.9	62.9	62.3	62.3	63.9	63.9	60.3	60.3	60.3	62	62	62
Ontario	58	58	58	58	61.8	61.8	66.6	66.6	58.6	58.6	58.6	61.5	61.5	61.5
Prince Edward Island	72.7	72.7	72.7	72.7	70.8	70.8	73.2	73.2	69	69	69	73.3	73.3	73.3
Quebec	64.1	64.1	64.1	64.1	60.5	60.5	63.9	63.9	61.7	61.7	61.7	62.9	62.9	62.9
Saskatchewan	62.3	62.3	62.3	62.3	59.1	59.1	65.1	65.1	58.7	58.7	58.7	63.1	63.1	63.1
Source: Elections Canada														

Life Expectancy														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2009	2009	2009	2009
Canada	79	79.3	79.6	79.8	80	80.2	80.5	80.7	80.9	81.1	81.1	81.1	81.1	81.1
Alberta	79.3	79.4	79.6	79.8	80	80.1	80.4	80.5	80.6	80.7	80.7	80.7	80.7	80.7
British Columbia	79.9	80.2	80.4	80.5	80.7	80.9	81	81.2	81.4	81.7	81.7	81.7	81.7	81.7
Manitoba	78	78.2	78.5	78.7	78.8	78.9	79.2	79.3	79.5	79.5	79.5	79.5	79.5	79.5
New Brunswick	78.4	78.7	79	79.2	79.4	79.6	79.9	80	80.2	80.2	80.2	80.2	80.2	80.2
Newfoundland and Labrador	77.4	77.7	77.9	78.2	78.3	78.2	78.3	78.3	78.5	78.9	78.9	78.9	78.9	78.9
Nova Scotia	78.4	78.8	78.9	79	79.1	79.2	79.4	79.7	79.9	80.1	80.1	80.1	80.1	80.1
Ontario	79.3	79.6	79.8	80	80.3	80.5	80.8	81	81.3	81.5	81.5	81.5	81.5	81.5
Prince Edward Island	78	78.5	78.6	78.9	79.1	79.5	79.7	80.2	80.2	80.2	80.2	80.2	80.2	80.2
Quebec	78.7	79	79.3	79.5	79.8	80.1	80.4	80.7	81	81.2	81.2	81.2	81.2	81.2
Saskatchewan	78.5	78.8	79	79.1	79.1	79.2	79.4	79.5	79.5	79.6	79.6	79.6	79.6	79.6
Source: CANSIM Table 102-0512 Life expectancy, at birth and at age 65, by sex, Canada, provinces and territories annual (years)														

Self Reported Health														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2001	2001	2001	2003	2003	2005	2005	2005	2008	2008	2010	2010	2010	2010
Canada	88.1	88.1	88.1	88.7	88.7	88.8	88.8	88.8	88.6	88.6	88.7	88.7	88.7	88.7
Alberta	89.6	89.6	89.6	91.1	91.1	89.4	89.4	89.4	90.3	90.3	89.5	89.5	89.5	89.5
British Columbia	87.6	87.6	87.6	88.8	88.8	88.2	88.2	88.2	88	88	88.7	88.7	88.7	88.7
Manitoba	87.6	87.6	87.6	88.9	88.9	88.7	88.7	88.7	87.9	87.9	88	88	88	88
New Brunswick	83.9	83.9	83.9	83.9	83.9	85.5	85.5	85.5	84.3	84.3	84.9	84.9	84.9	84.9
Newfoundland and Labrador	87.5	87.5	87.5	89	89	88.1	88.1	88.1	88	88	86.4	86.4	86.4	86.4
Nova Scotia	85.6	85.6	85.6	86.2	86.2	85.7	85.7	85.7	85.4	85.4	87	87	87	87
Ontario	88	88	88	88.4	88.4	88.9	88.9	88.9	88	88	88	88	88	88
Prince Edward Island	87.7	87.7	87.7	90	90	86.1	86.1	86.1	86.8	86.8	87.6	87.6	87.6	87.6
Quebec	89	89	89	89.2	89.2	89.9	89.9	89.9	90.2	90.2	90.2	90.2	90.2	90.2
Saskatchewan	87.3	87.3	87.3	88	88	87.1	87.1	87.1	87.4	87.4	88.5	88.5	88.5	88.5
Source: Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2012 boundaries) and peer groups occasional (Canadian Community Health Survey)														

Life Satisfaction														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2003	2003	2003	2003	2003	2005	2005	2007	2008	2009	2010	2011	2012	2012
Canada	91.3	91.3	91.3	91.3	91.3	91.8	91.8	91.9	91.4	92.1	92.1	92.3	92.4	92.4
Alberta	92.5	92.5	92.5	92.5	92.5	92	92	92.7	92.1	91.3	90.9	92.4	92.8	92.8
British Columbia	90.3	90.3	90.3	90.3	90.3	90.7	90.7	91.9	90.3	90.9	91.5	91.9	90.1	90.1
Manitoba	92.4	92.4	92.4	92.4	92.4	91.8	91.8	92.6	91.6	91.4	90.6	91	90.6	90.6
New Brunswick	91.7	91.7	91.7	91.7	91.7	92.6	92.6	93.6	93.2	91.8	92	93.5	93.5	93.5
Newfoundland and Labrador	93.9	93.9	93.9	93.9	93.9	93.7	93.7	93.8	93.4	91.5	92	92.9	92.1	92.1
Nova Scotia	92.7	92.7	92.7	92.7	92.7	91.8	91.8	91.8	92.3	91.7	92	92.6	93.3	93.3
Ontario	90.5	90.5	90.5	90.5	90.5	91.1	91.1	90.9	90.5	91.5	91.6	91.2	92.4	92.4
Prince Edward Island	94.3	94.3	94.3	94.3	94.3	93.8	93.8	94.5	93.9	93.9	95.1	93.5	94.4	94.4
Quebec	91.9	91.9	91.9	91.9	91.9	92.9	92.9	92.8	92.5	94.2	93.9	94	93.6	93.6
Saskatchewan	92.6	92.6	92.6	92.6	92.6	92.8	92.8	92.8	92	93.1	92.8	92.9	92.2	92.2
Source: Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2012 boundaries) and peer groups occasional (Canadian Community Health Survey)														

Homicide Rate														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2011	2011
Canada	1.78	1.78	1.86	1.74	1.95	2.06	1.86	1.8	1.83	1.81	1.62	1.73	1.73	1.73
Alberta	1.96	2.29	2.24	2.01	2.65	3.25	2.78	2.51	3.06	2.59	2.07	2.88	2.88	2.88
British Columbia	2.1	2.06	3.07	2.28	2.72	2.41	2.55	2.04	2.67	2.65	1.83	1.9	1.9	1.9
Manitoba	2.61	2.95	3.11	3.69	4.26	4.16	3.29	5.11	4.48	4.68	3.65	4.24	4.24	4.24
New Brunswick	1.33	1.07	1.2	1.07	0.93	1.2	0.94	1.07	0.4	1.6	1.2	1.06	1.06	1.06
Newfoundland and Labrador	1.14	0.19	0.38	0.96	0.39	2.14	1.37	0.59	0.99	0.2	0.78	0.78	0.78	0.78
Nova Scotia	1.61	0.97	0.96	0.85	1.49	2.13	1.71	1.39	1.28	1.6	2.22	2.33	2.33	2.33
Ontario	1.34	1.43	1.47	1.45	1.51	1.75	1.55	1.58	1.36	1.36	1.43	1.2	1.2	1.2
Prince Edward Island	2.2	1.46	0.73	0.73	0	0	0.73	0	1.43	0	0	0.69	0.69	0.69
Quebec	2.04	1.89	1.59	1.32	1.47	1.32	1.22	1.17	1.19	1.12	1.06	1.32	1.32	1.32
Saskatchewan	2.58	2.7	2.71	4.11	3.91	4.33	4.23	3	2.96	3.5	3.26	3.59	3.59	3.59
Source: CANSIM Table 253-0001 Homicide survey, number and rates (per 100,000 population) of homicide victims, Canada, provinces and territories, annual														

Assault Rate														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2011	2011
Canada	839.8	841.4	829.9	822.8	805.5	807.0	807.0	791.1	783.1	766.4	741.7	721.8	721.8	721.8
Alberta	918.4	953.0	928.9	933.0	944.6	947.2	947.9	953.7	973.9	941.4	886.1	877.5	877.5	877.5
British Columbia	1098.4	1069.8	1060.5	1071.8	1057.5	1072.9	1072.1	1018.2	956.7	936.4	874.2	828.7	828.7	828.7
Manitoba	1423.2	1400.6	1423.9	1405.4	1373.3	1373.7	1342.2	1293.8	1313.1	1373.4	1368.3	1321.6	1321.6	1321.6
New Brunswick	856.3	898.8	889.9	894.6	841.6	780.7	780.6	783.1	858.7	905.0	873.8	851.1	851.1	851.1
Newfoundland and Labrador	878.9	868.7	873.3	890.4	857.5	826.7	804.0	903.8	905.3	900.4	867.4	896.3	896.3	896.3
Nova Scotia	890.9	933.6	1012.5	1090.2	1069.4	1031.0	1003.0	960.3	937.6	902.4	820.8	819.2	819.2	819.2
Ontario	760.0	752.0	709.2	657.0	626.3	627.2	625.7	609.8	593.9	566.4	559.2	545.3	545.3	545.3
Prince Edward Island	687.3	714.9	832.9	853.4	754.0	722.9	662.7	641.4	615.6	629.5	597.6	623.9	623.9	623.9
Quebec	555.5	550.9	563.7	572.0	574.8	592.0	608.3	589.6	610.1	603.0	591.3	571.7	571.7	571.7
Saskatchewan	1503.6	1627.2	1645.0	1814.5	1788.1	1774.4	1778.0	1801.0	1716.8	1701.3	1679.7	1622.8	1622.8	1622.8
Source: CANSIM Table 252-0051 Incident-based crime statistics, by detailed violations, annual														

Employees working very long hours														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2012
Canada	0.0513	0.0504	0.0470	0.0457	0.0461	0.0472	0.0468	0.0445	0.0425	0.0391	0.0391	0.0407	0.0404	0.0404
Alberta	0.0719	0.0786	0.0732	0.0710	0.0715	0.0796	0.0775	0.0711	0.0686	0.0598	0.0598	0.0645	0.0660	0.0660
British Columbia	0.0469	0.0440	0.0447	0.0437	0.0469	0.0469	0.0467	0.0475	0.0431	0.0423	0.0423	0.0406	0.0398	0.0398
Manitoba	0.0477	0.0480	0.0460	0.0498	0.0467	0.0440	0.0498	0.0468	0.0451	0.0394	0.0394	0.0408	0.0417	0.0417
New Brunswick	0.0664	0.0625	0.0654	0.0670	0.0638	0.0673	0.0638	0.0626	0.0603	0.0571	0.0571	0.0541	0.0628	0.0628
Newfoundland and Labrador	0.0765	0.0850	0.0804	0.0789	0.0865	0.0938	0.1054	0.0940	0.1058	0.0914	0.0914	0.0914	0.0924	0.0924
Nova Scotia	0.0678	0.0666	0.0697	0.0600	0.0621	0.0645	0.0560	0.0587	0.0569	0.0556	0.0556	0.0520	0.0524	0.0524
Ontario	0.0518	0.0504	0.0463	0.0463	0.0453	0.0454	0.0450	0.0417	0.0398	0.0369	0.0369	0.0391	0.0377	0.0377
Prince Edward Island	0.0882	0.0880	0.0821	0.0816	0.0802	0.0776	0.0815	0.0783	0.0795	0.0691	0.0691	0.0726	0.0702	0.0702
Quebec	0.0363	0.0339	0.0288	0.0257	0.0268	0.0266	0.0257	0.0249	0.0225	0.0218	0.0218	0.0237	0.0225	0.0225
Saskatchewan	0.0669	0.0644	0.0621	0.0594	0.0606	0.0636	0.0638	0.0627	0.0632	0.0543	0.0543	0.0527	0.0565	0.0565
Source: Labour Force Survey - Special tabulations														

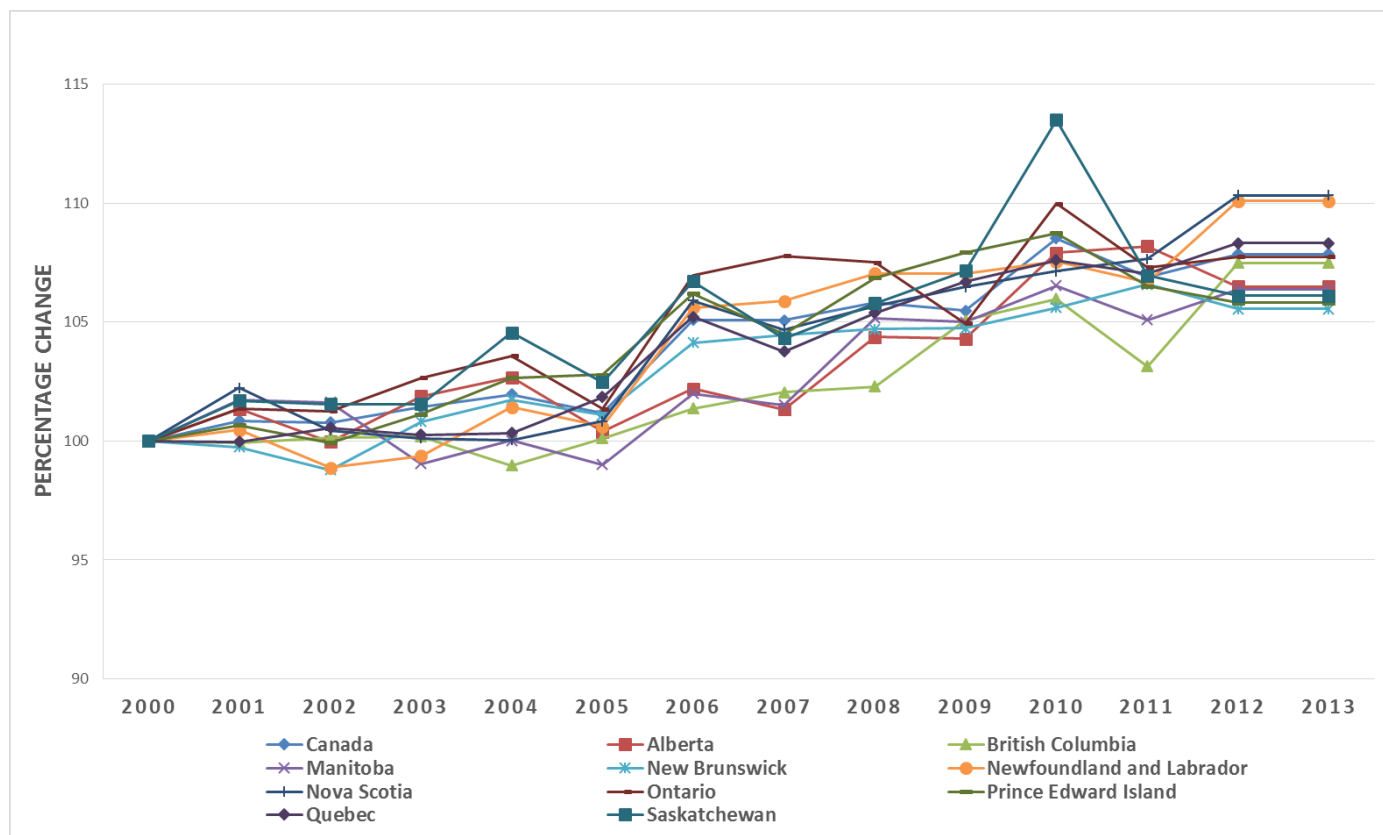
Time devoted to leisure and personal care (minutes)														
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year of data source used	1998	1998	1998	1998	1998	2005	2005	2005	2005	2005	2010	2010	2010	2010
Canada	867	867	867	867	867	870	870	870	870	870	872	872	872	872
Alberta	857	857	857	857	857	875	875	875	875	875	885	885	885	885
British Columbia	874	874	874	874	874	885	885	885	885	885	871	871	871	871
Manitoba	887	887	887	887	887	860	860	860	860	860	917	917	917	917
New Brunswick	858	858	858	858	858	845	845	845	845	845	874	874	874	874
Newfoundland and Labrador	853	853	853	853	853	878	878	878	878	878	861	861	861	861
Nova Scotia	842	842	842	842	842	880	880	880	880	880	856	856	856	856
Ontario	858	858	858	858	858	850	850	850	850	850	864	864	864	864
Prince Edward Island	844	844	844	844	844	836	836	836	836	836	861	861	861	861
Quebec	889	889	889	889	889	896	896	896	896	896	877	877	877	877
Saskatchewan	851	851	851	851	851	864	864	864	864	864	867	867	867	867
Source: General Social Survey on time use, 1998, 2005, and 2010														

Appendix C

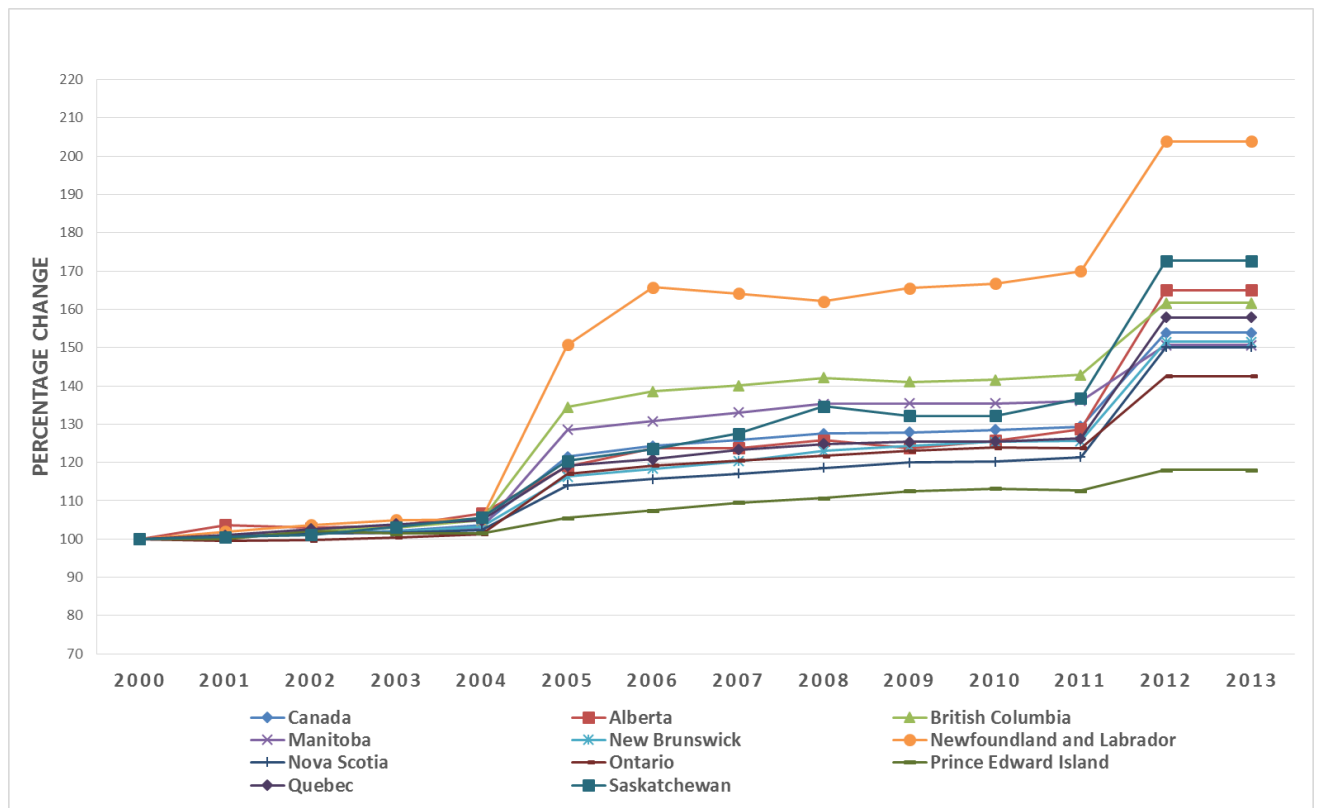
Trends in the Individual Better Life Index Domains (2000-2013)

For the following charts, we measure the change in each domain as the average percentage change of all the indicators in that domain. For negative indicators, we reverse the sign of the percentage change to ensure that for all indicators a positive percentage change is good and a negative percentage change is bad.

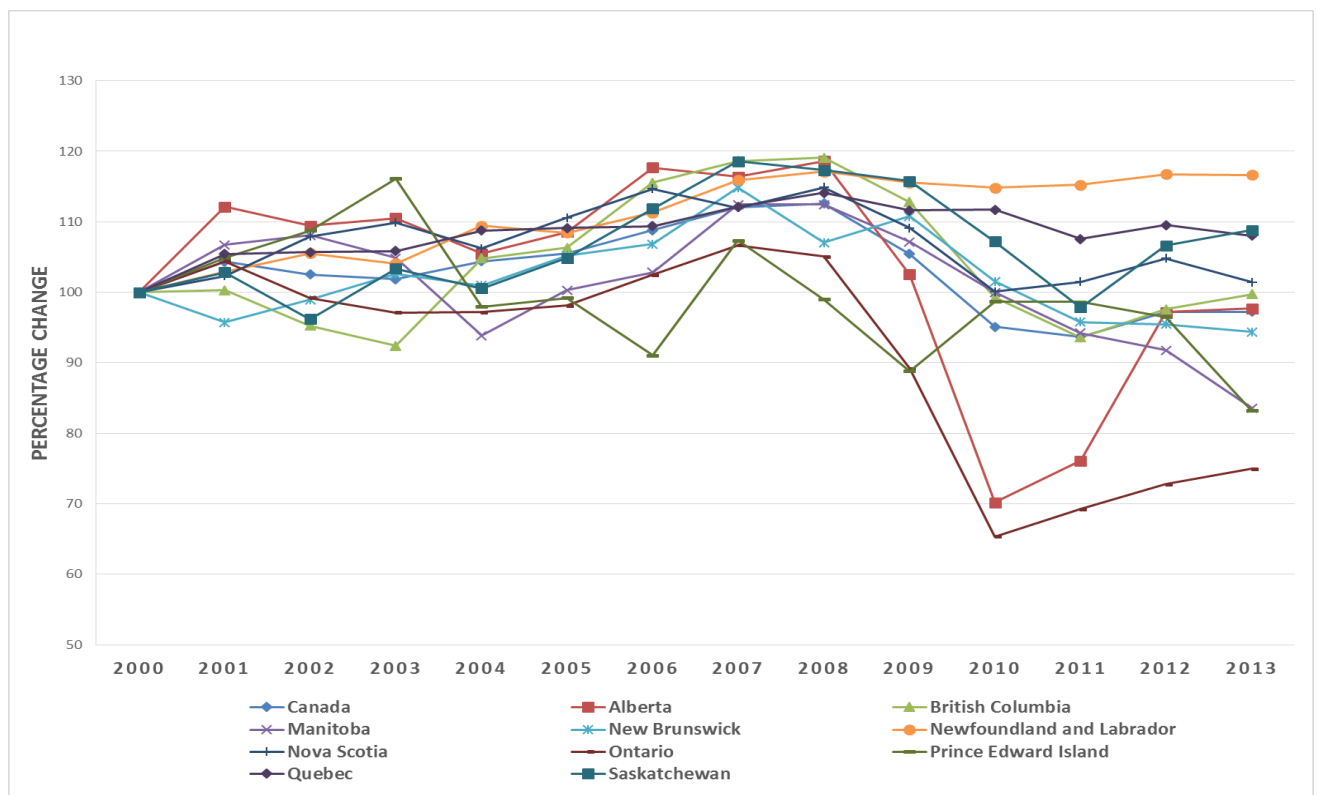
Housing – Percentage change from 2000-2013



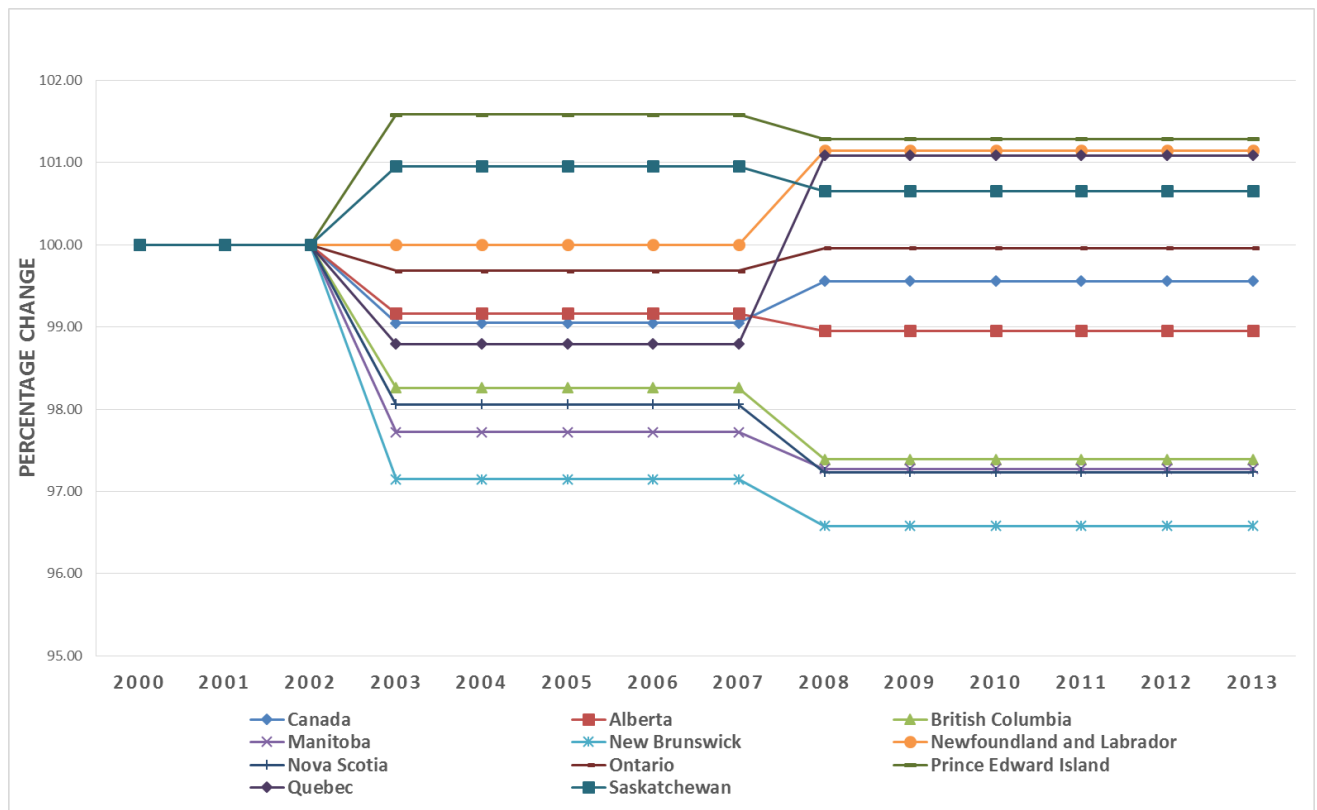
Income – Percentage change from 2000-2013



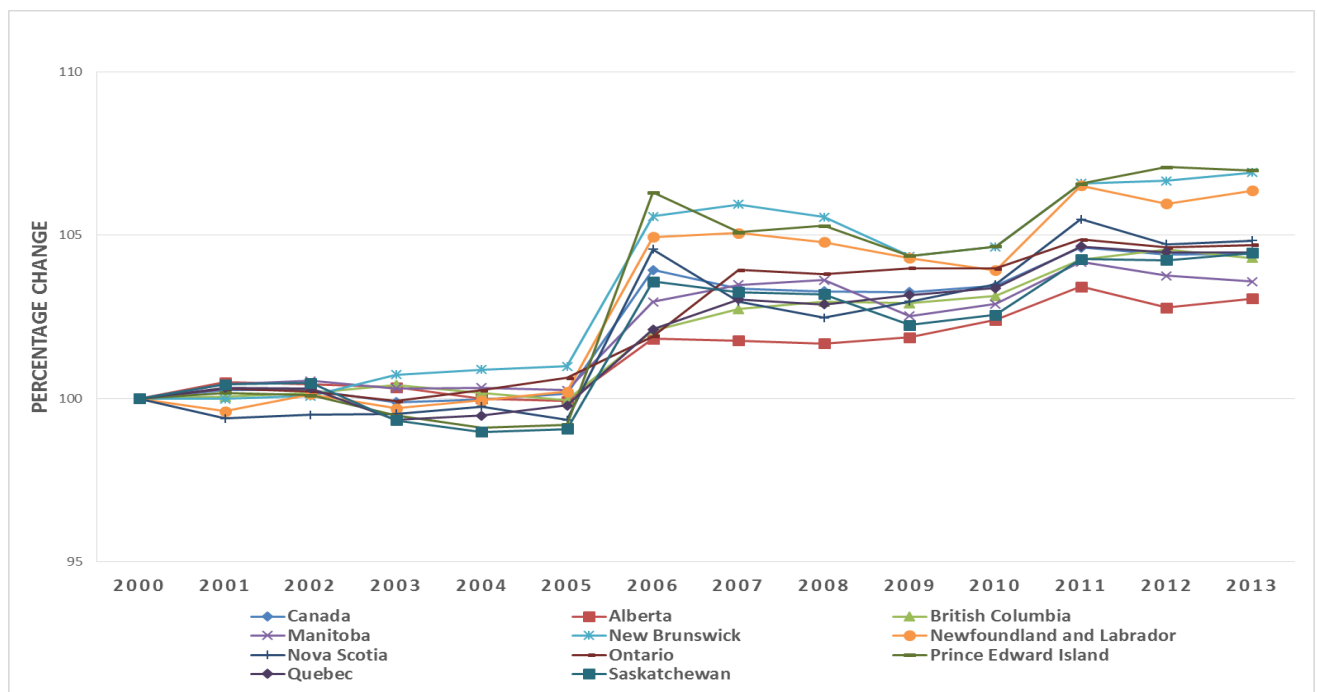
Jobs – Percentage change from 2000-2013



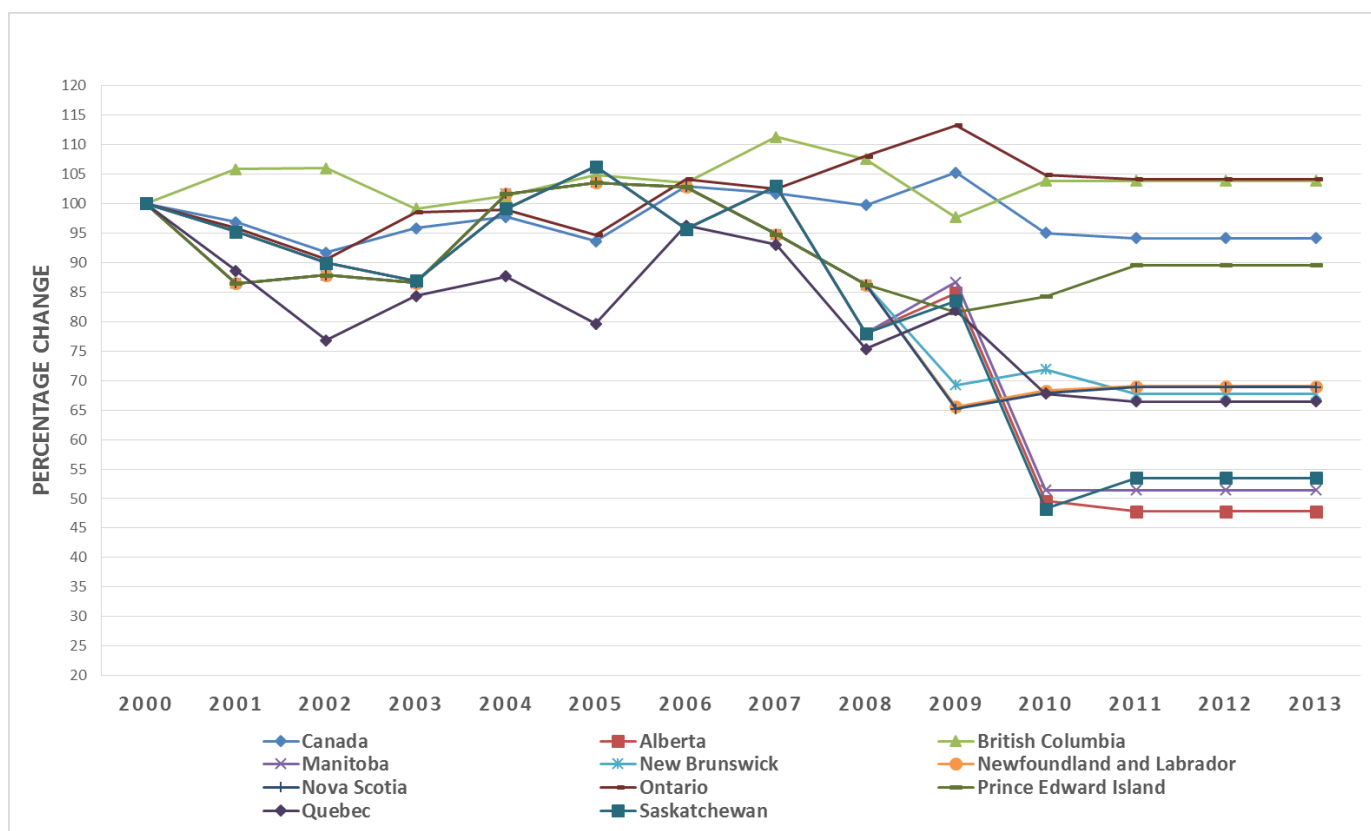
Community – Percentage change from 2000-2013



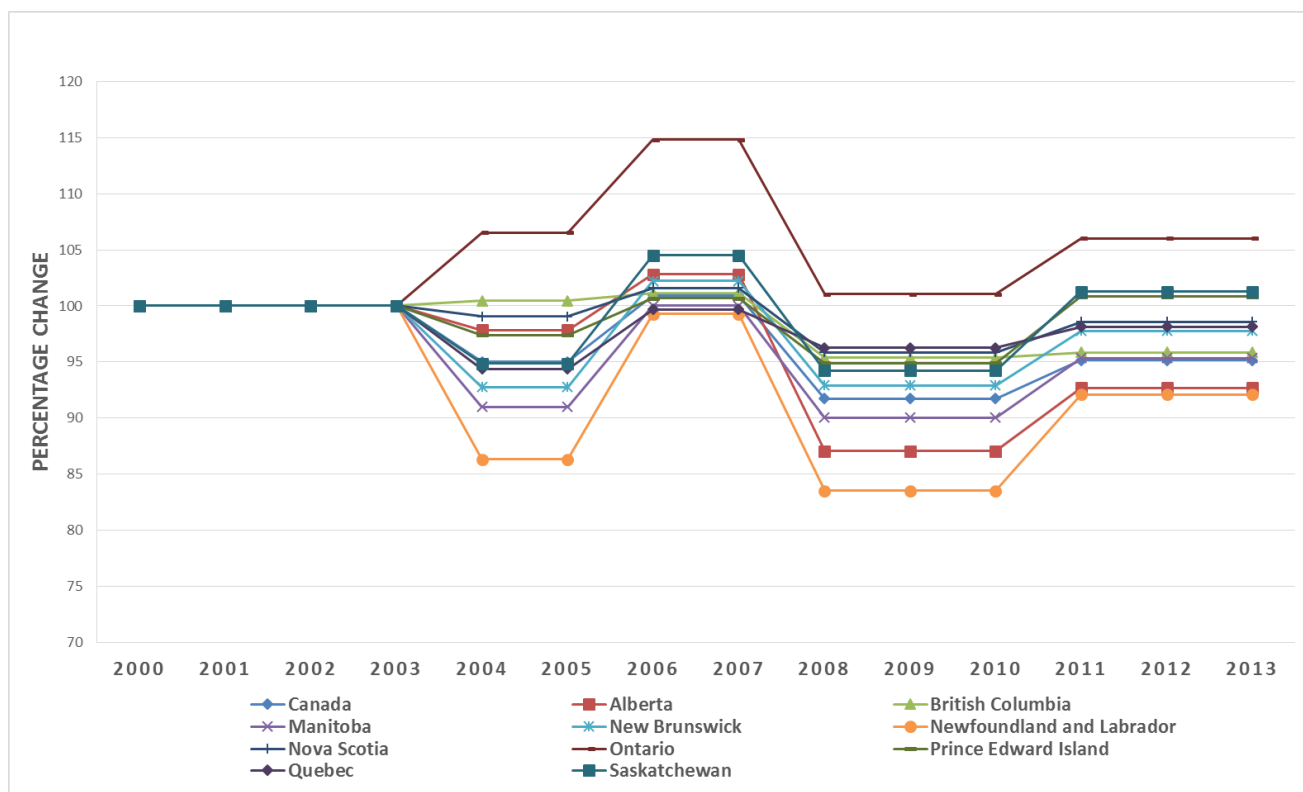
Education – Percentage change from 2000-2013



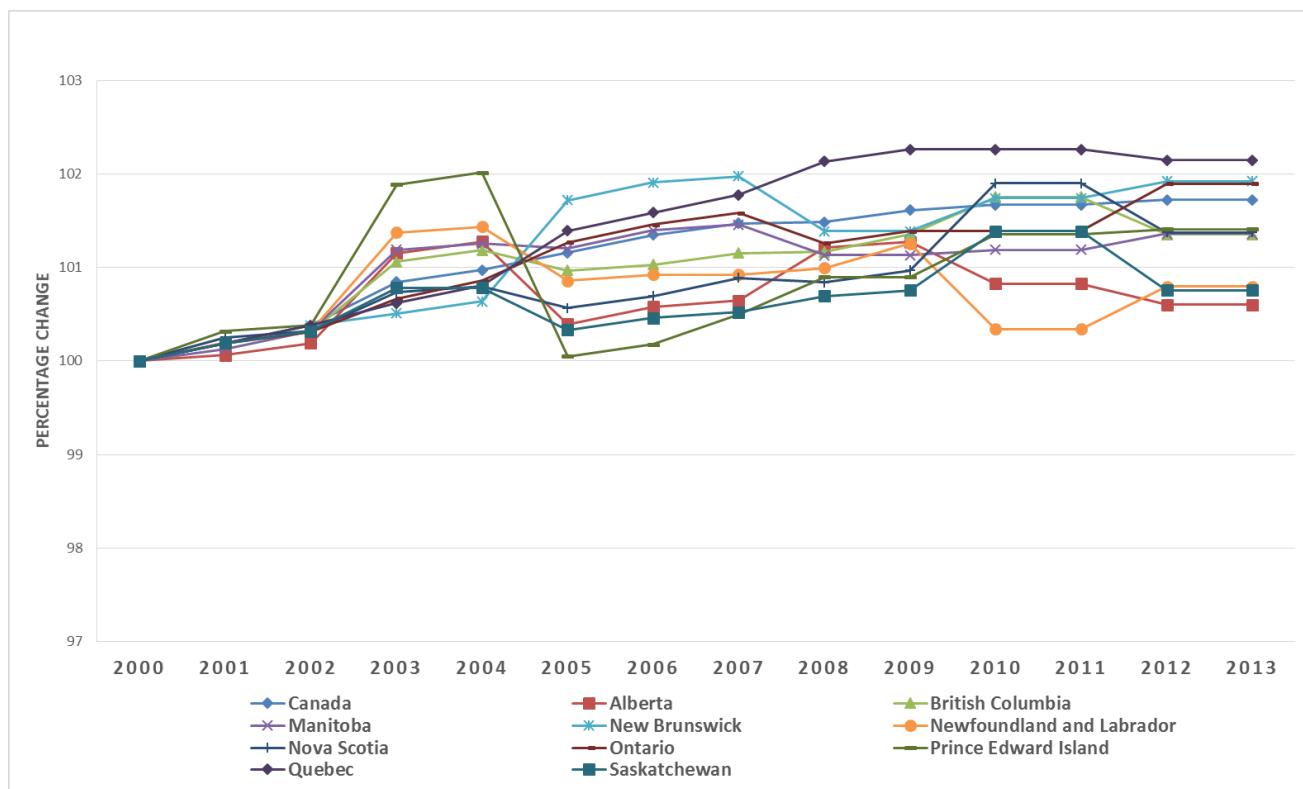
Environment – Percentage change from 2000-2013



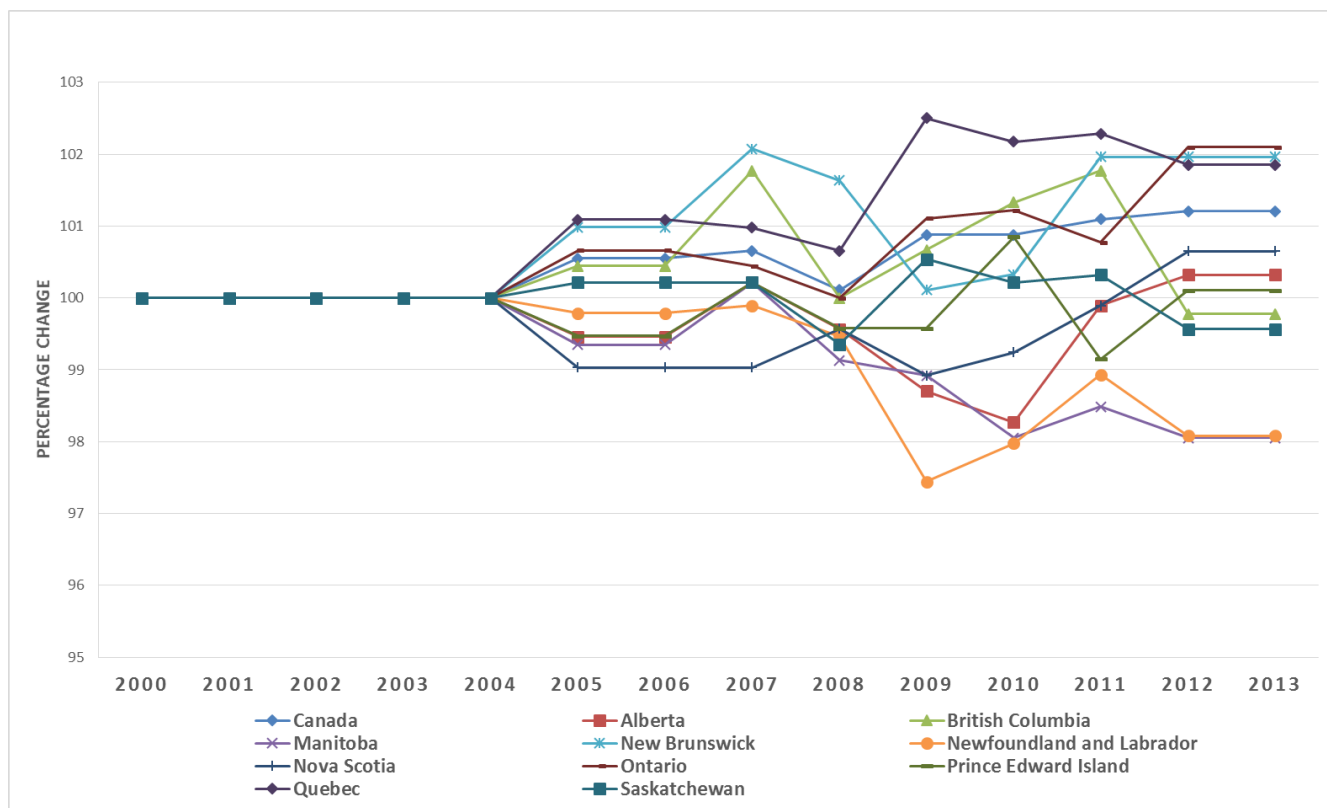
Civic engagement – Percentage change from 2000-2013



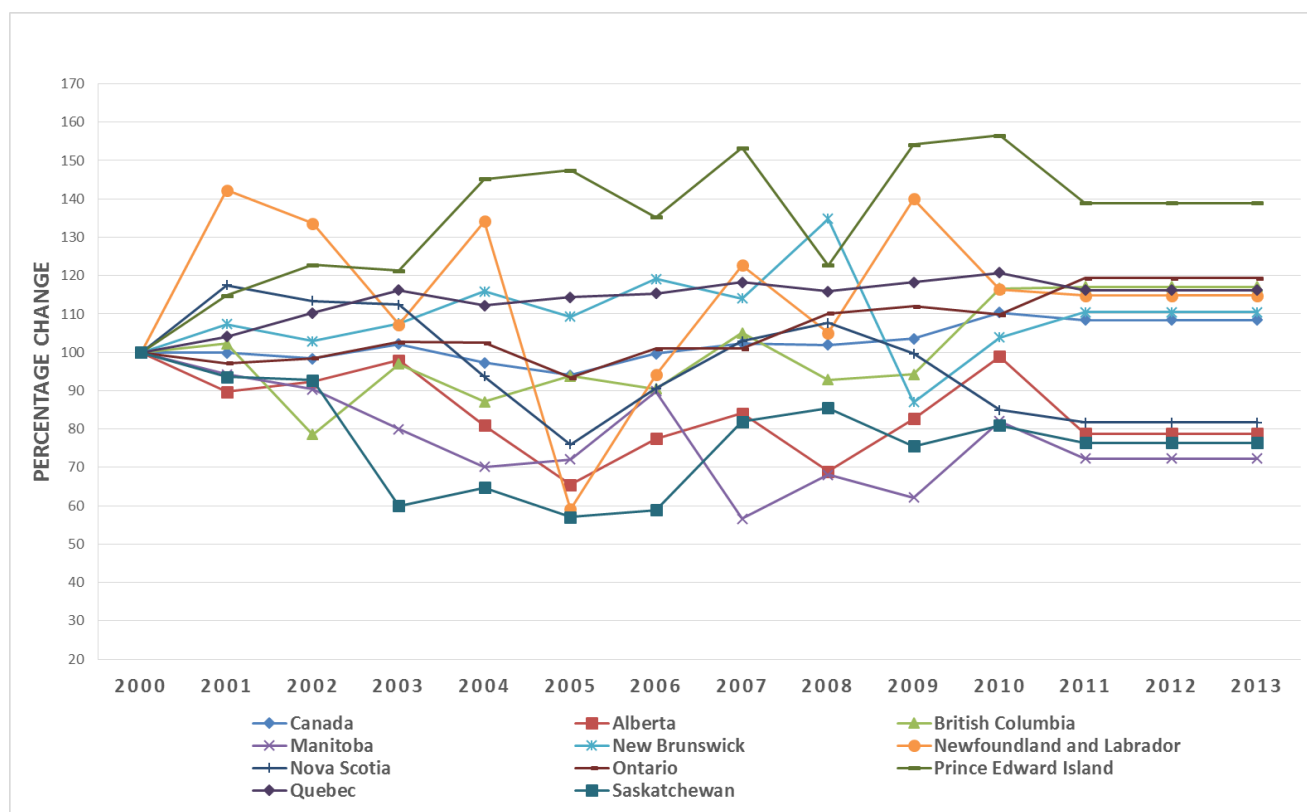
Health – Percentage change from 2000-2013



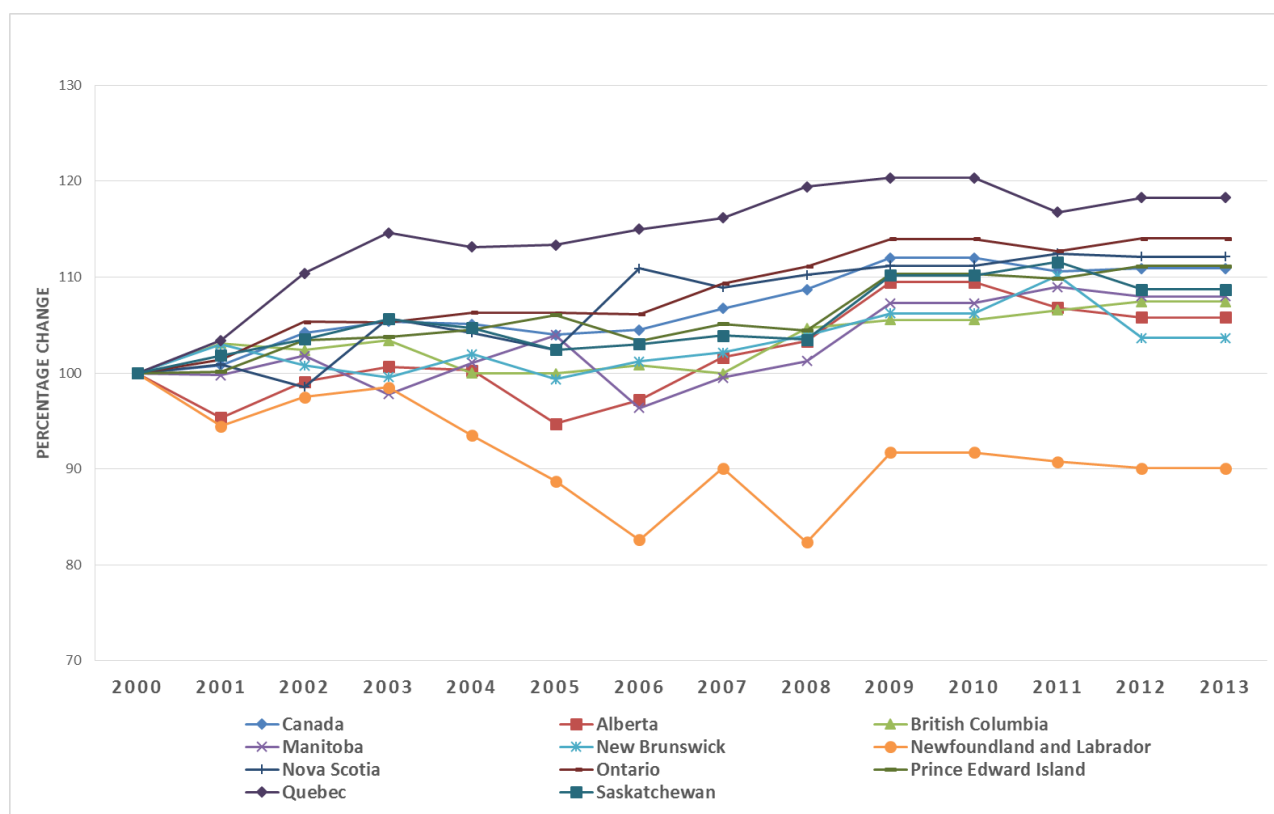
Life Satisfaction – Percentage change from 2000-2013



Safety – Percentage change from 2000-2013

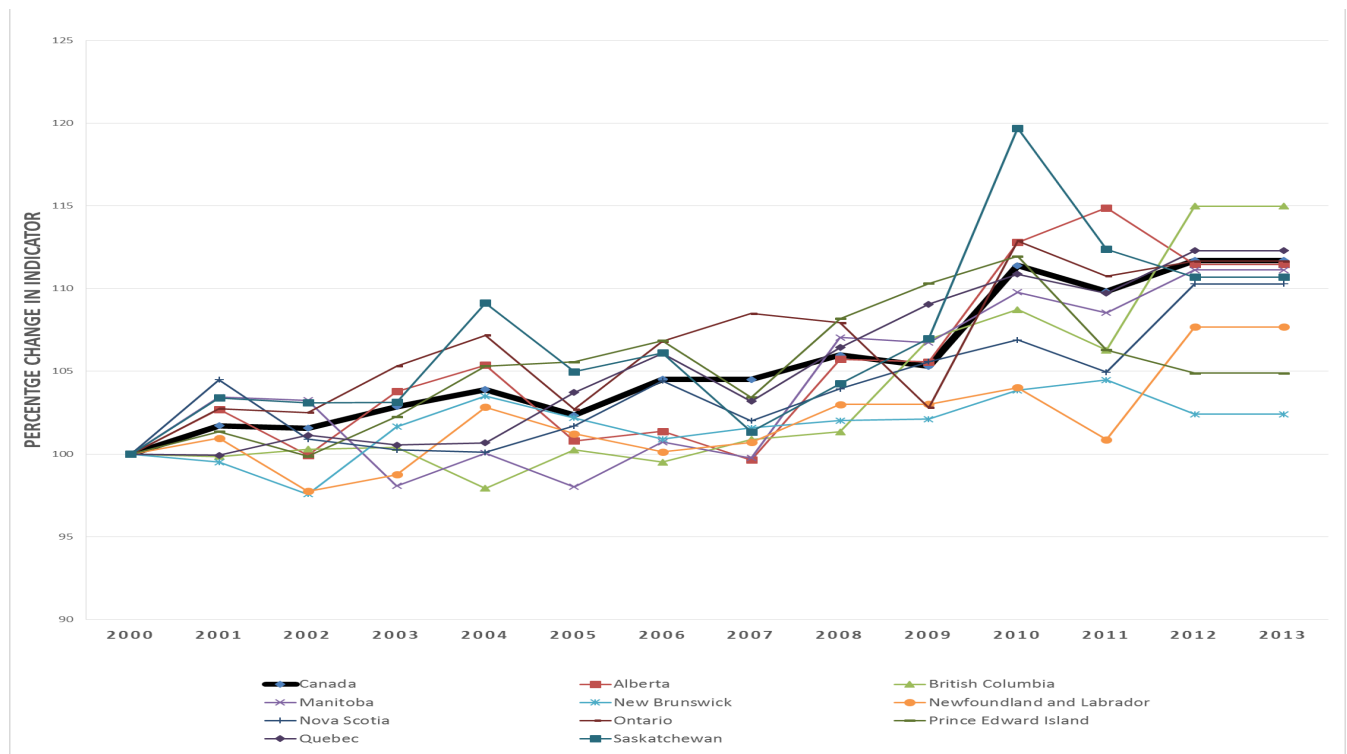


Work-Life Balance– Percentage change from 2000-2013

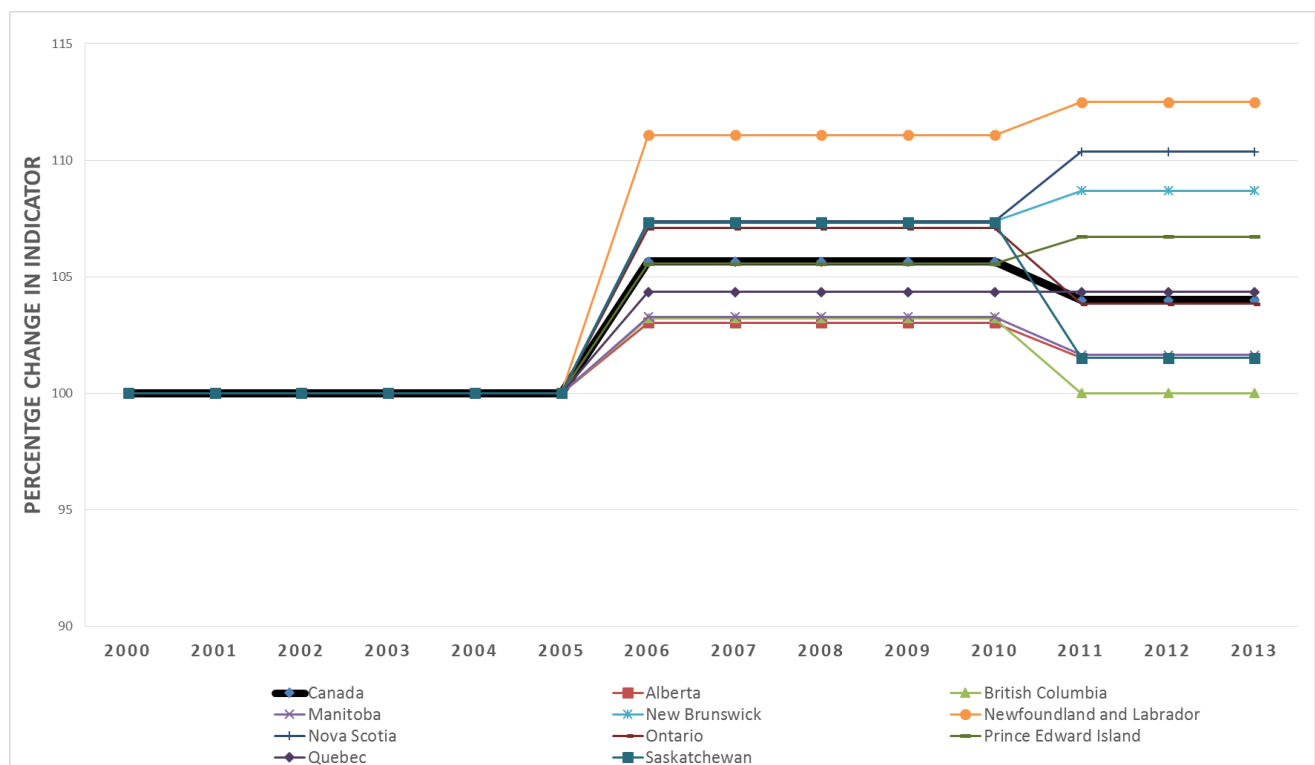


Trends in the Individual Better Life Index Indicators (2000-2013)

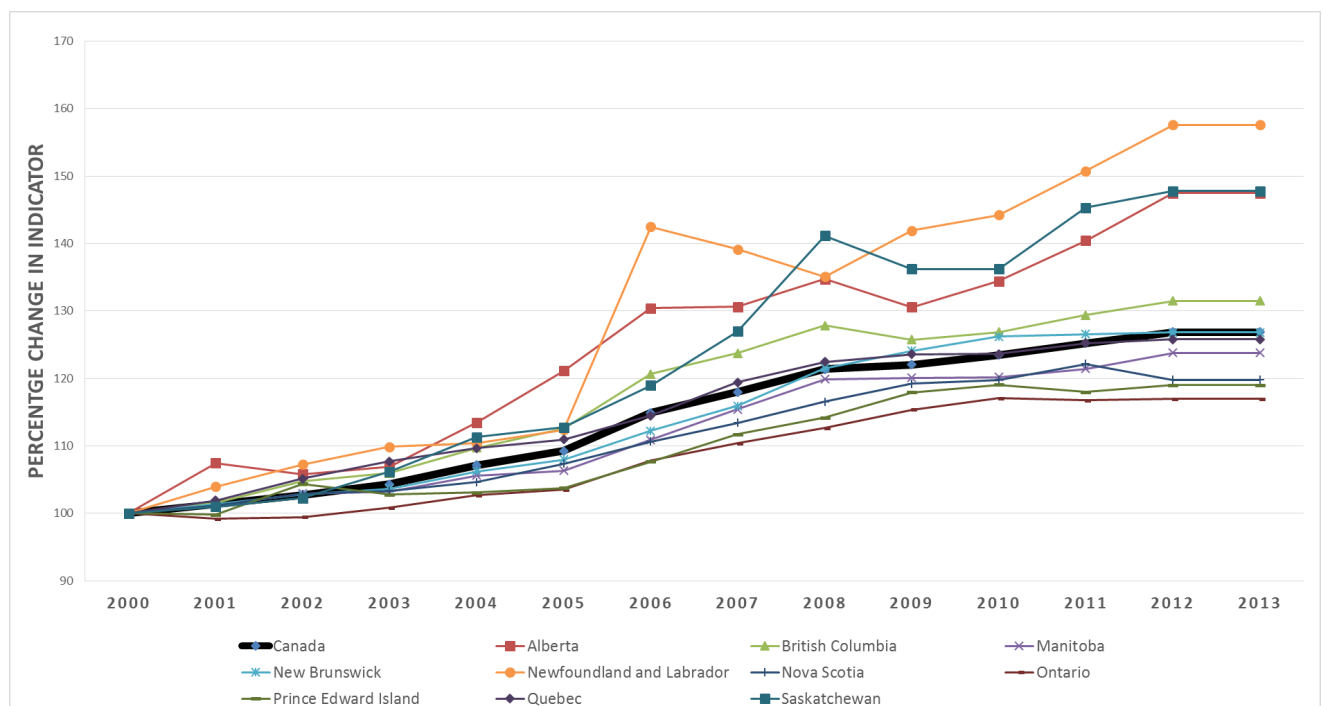
Housing Expenditure:



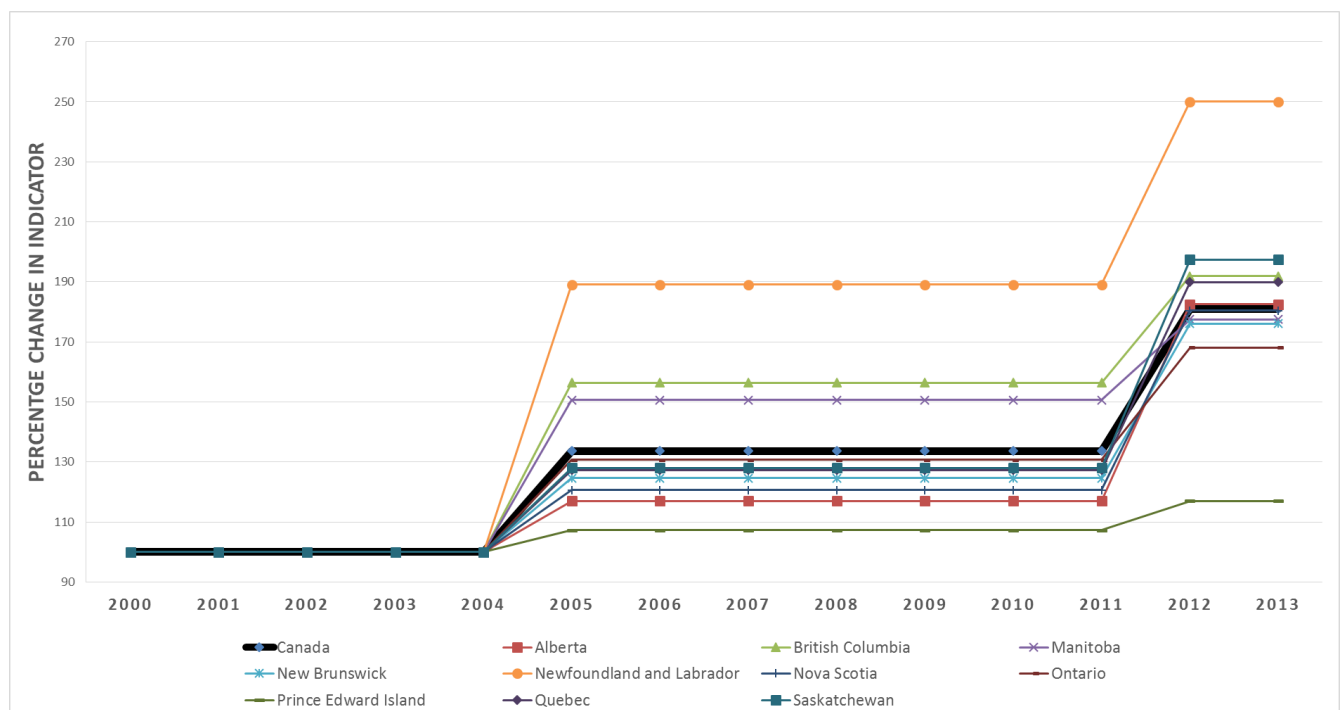
Rooms per person:



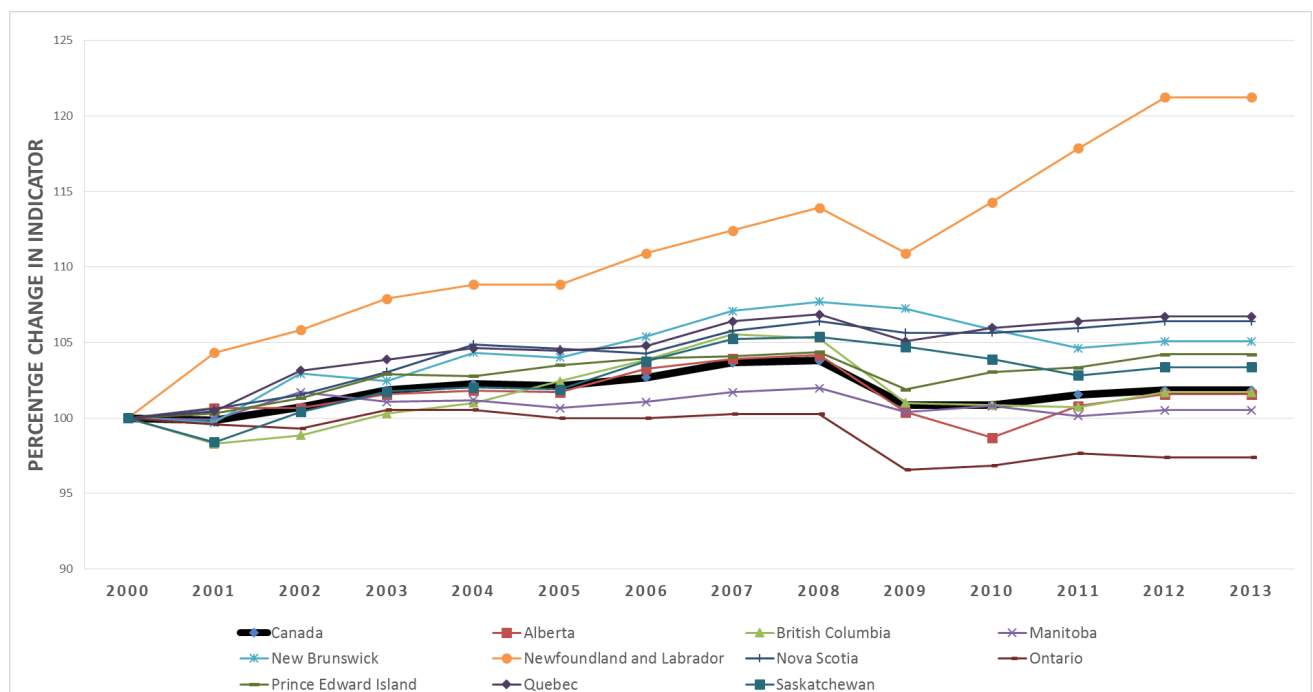
Household disposable income:



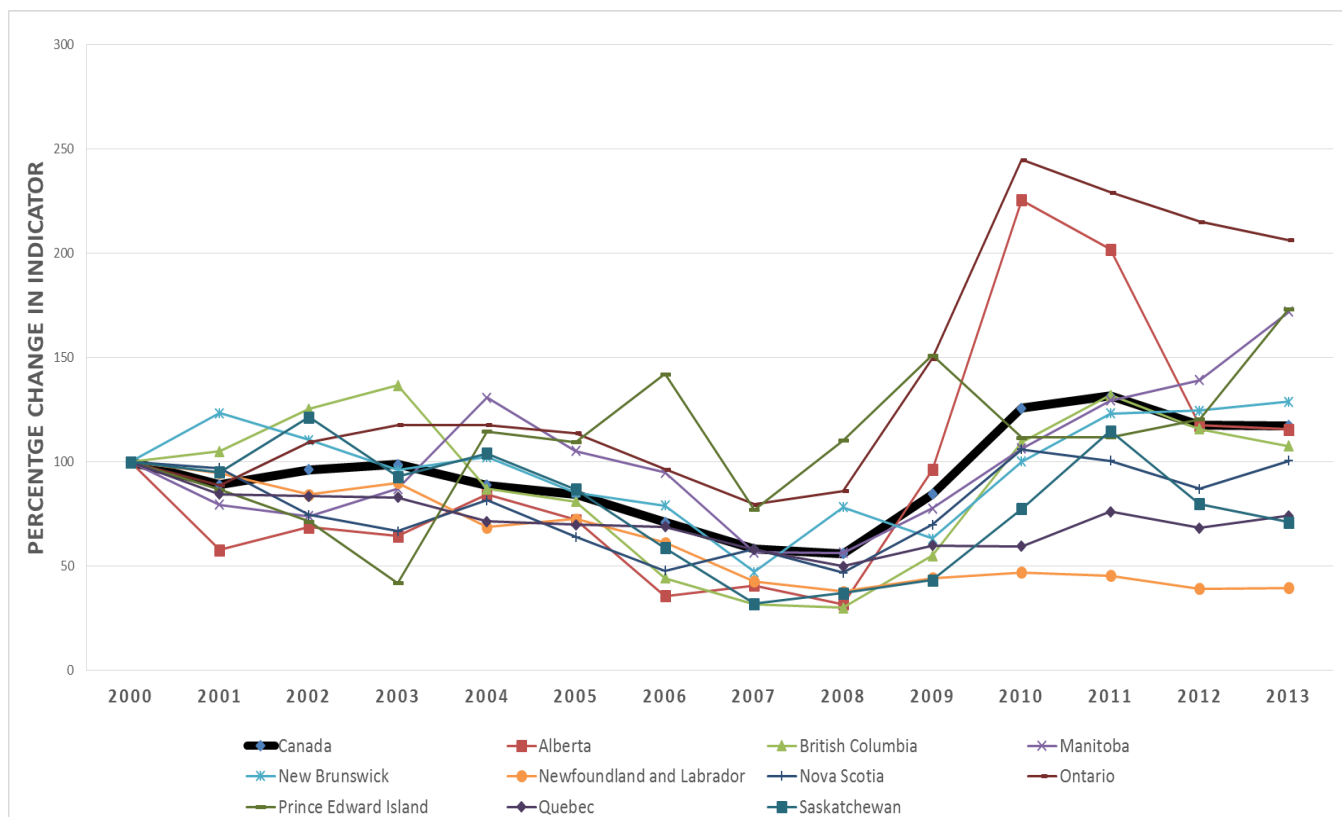
Household net worth:



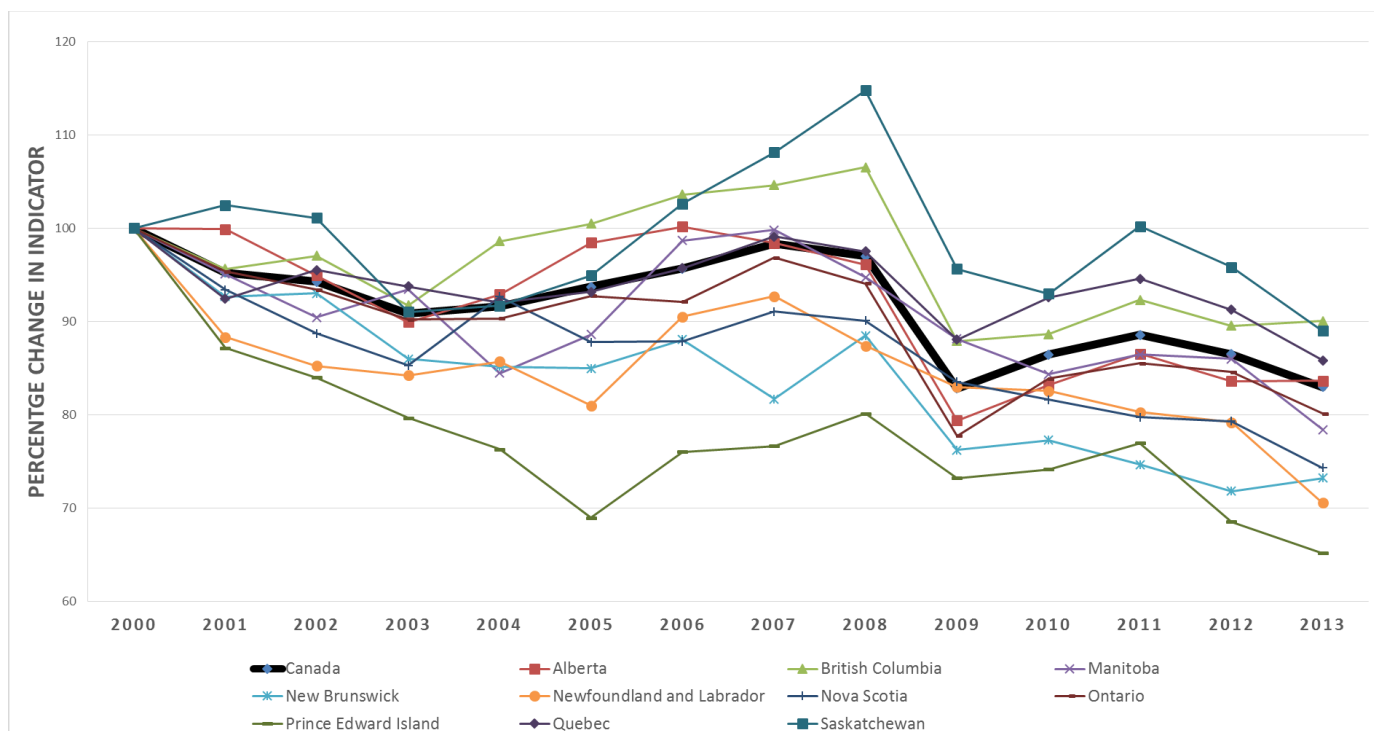
Employment rate:



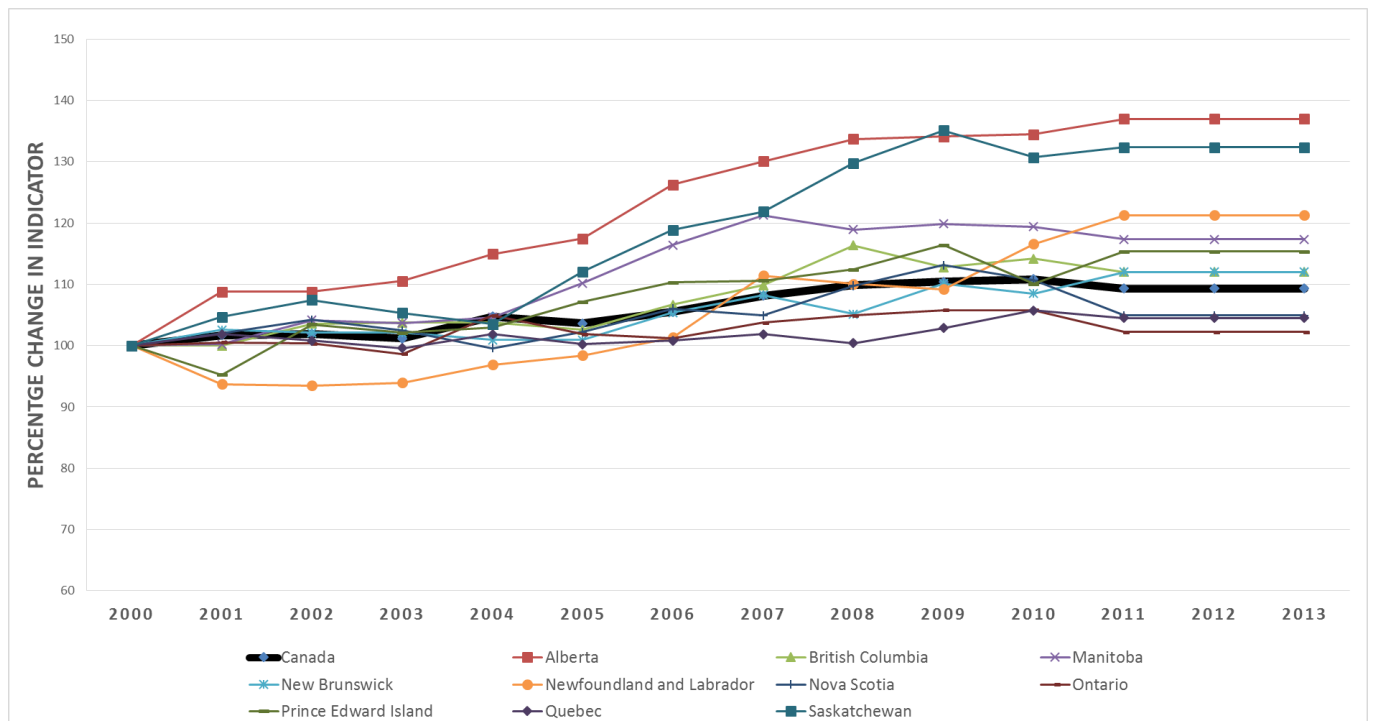
Long term unemployment:



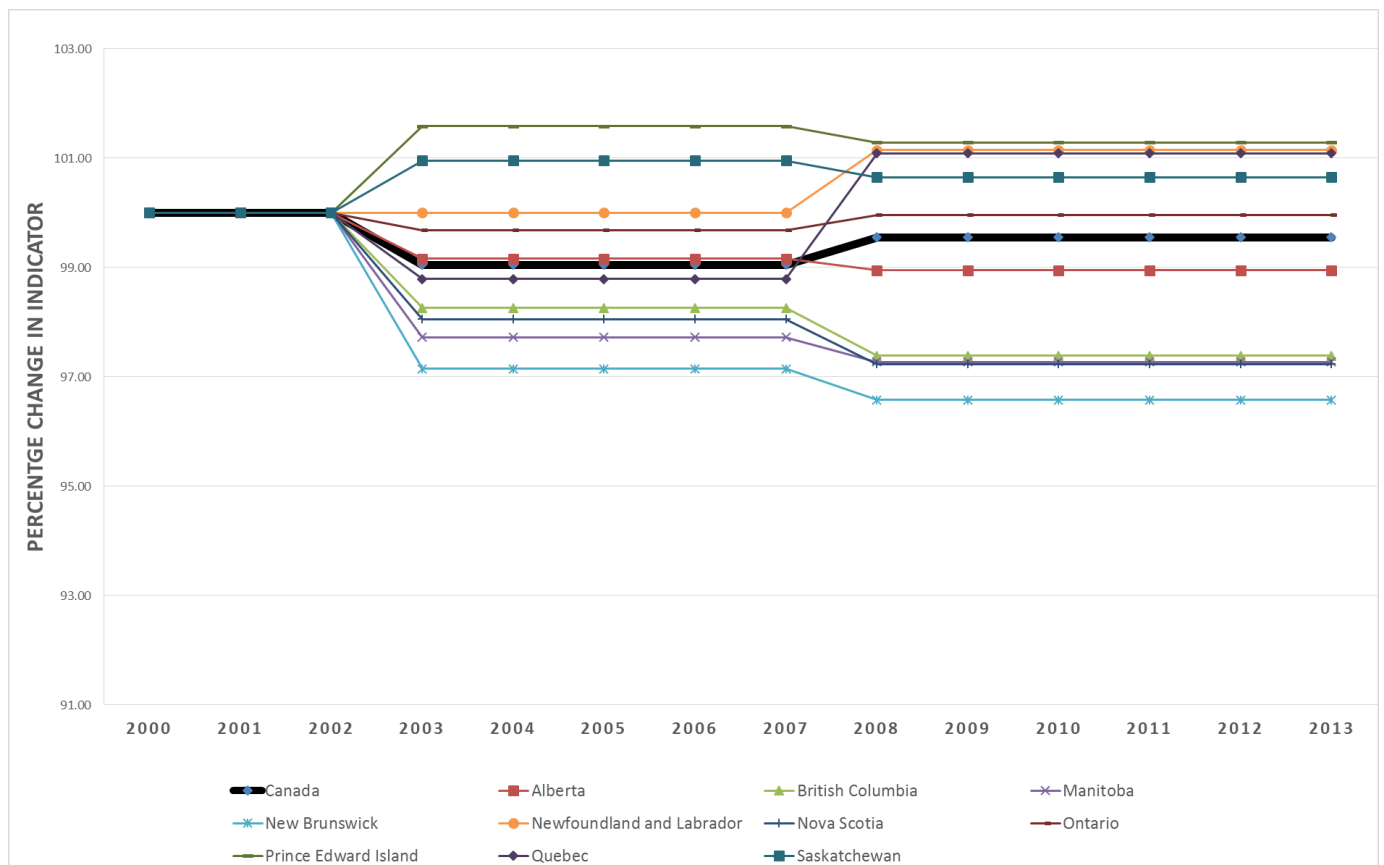
Job security:



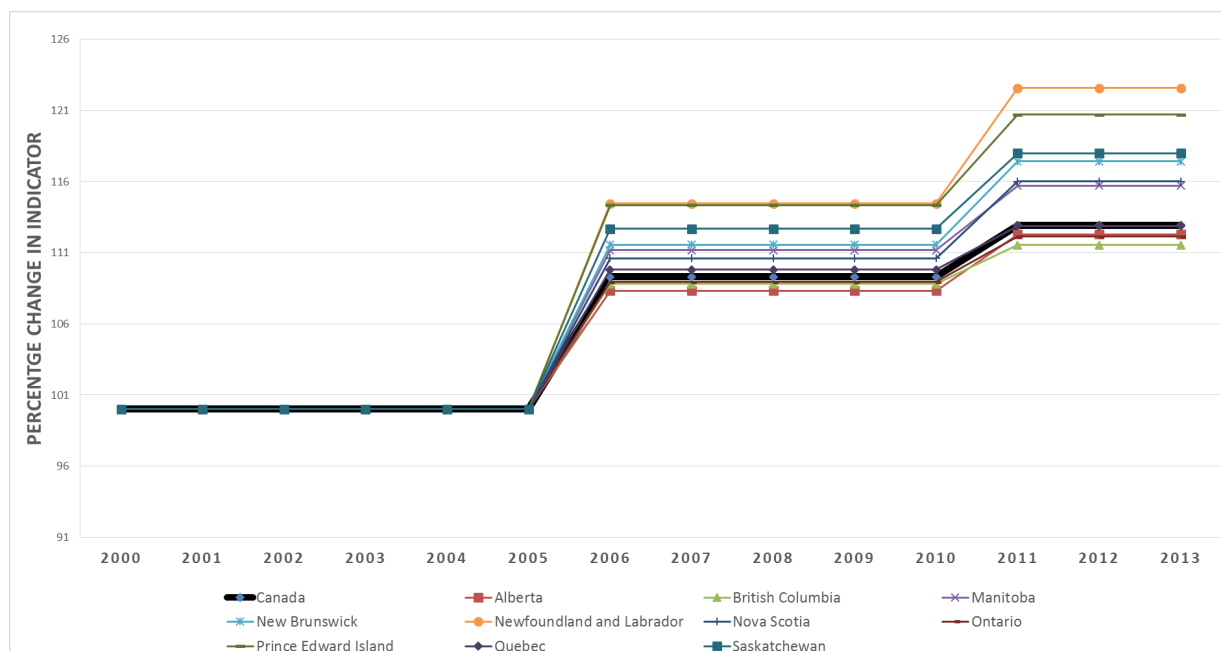
Personal earnings:



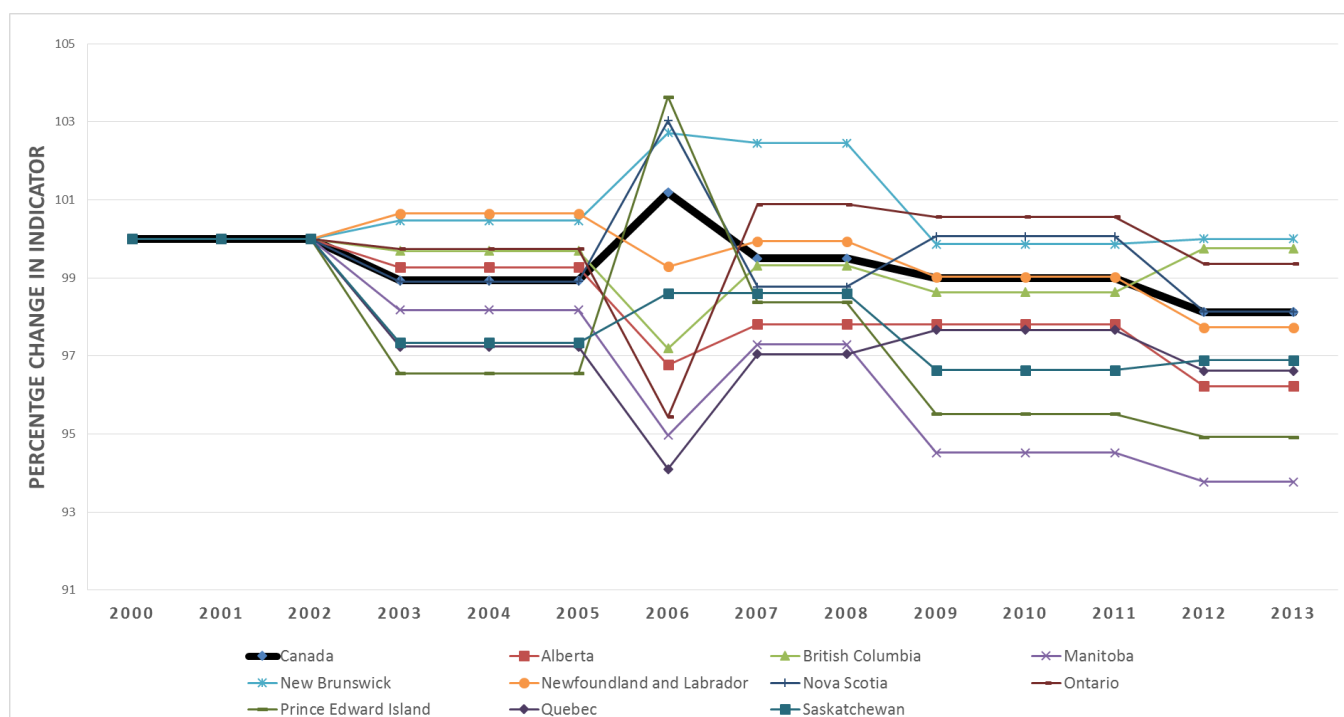
Quality of support network:



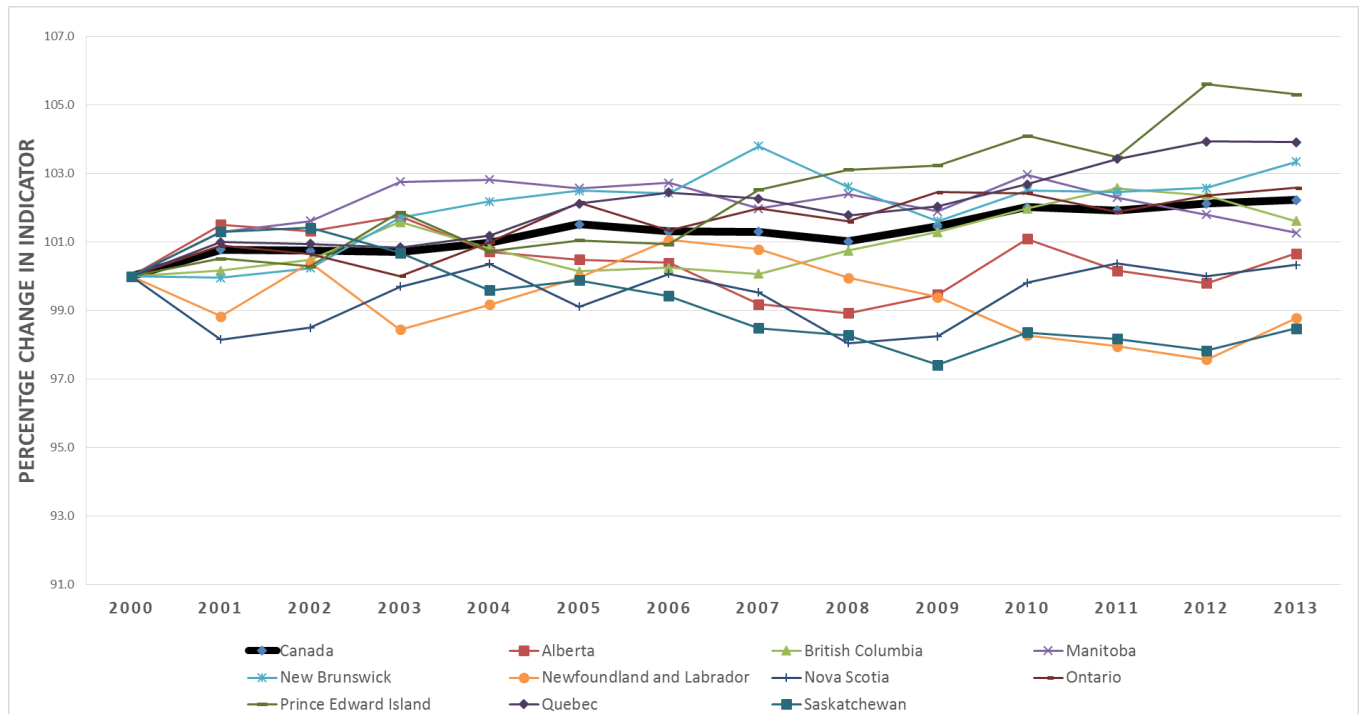
Educational attainment:



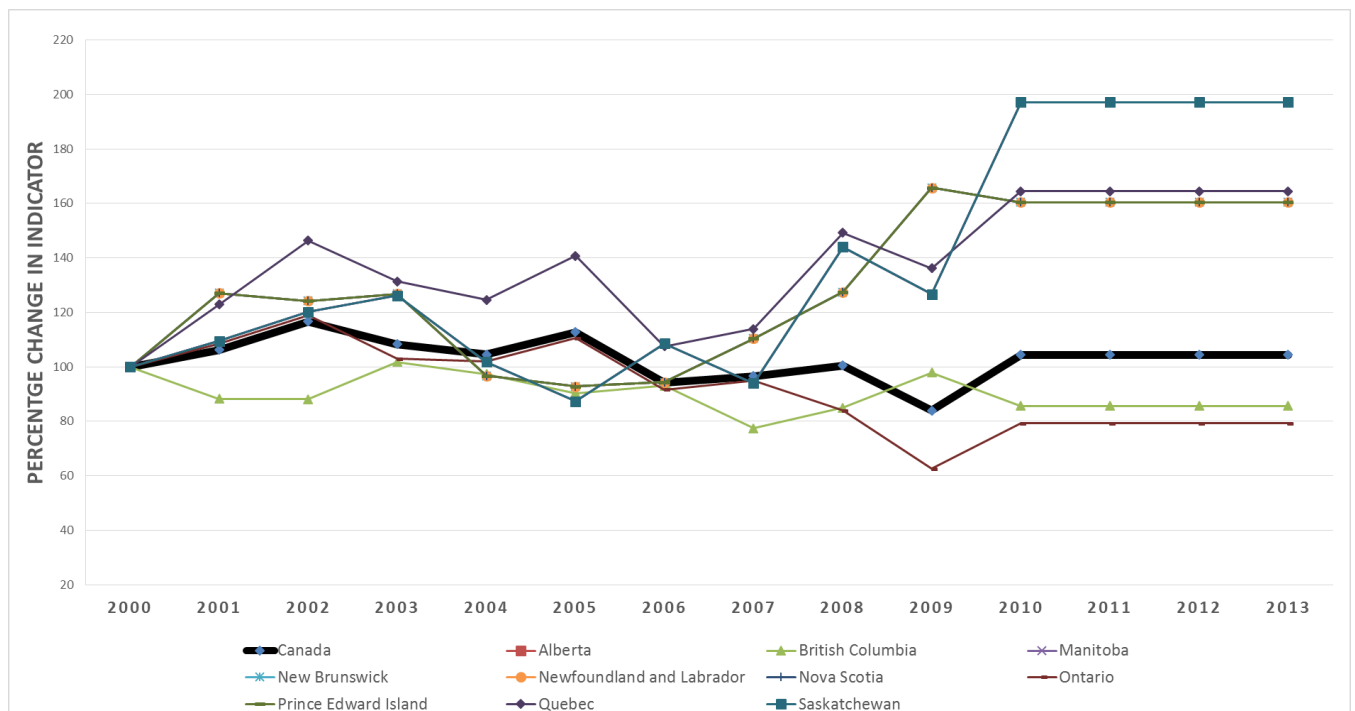
Student skills:



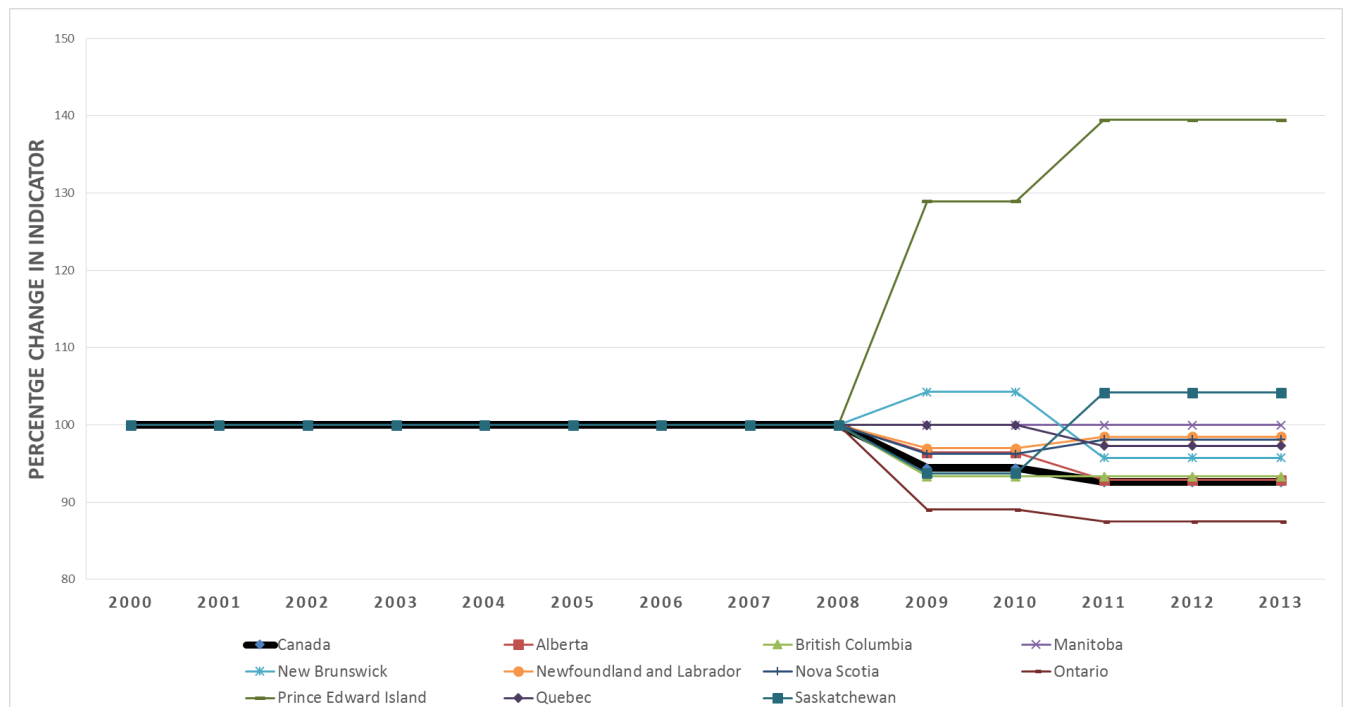
Years in education:



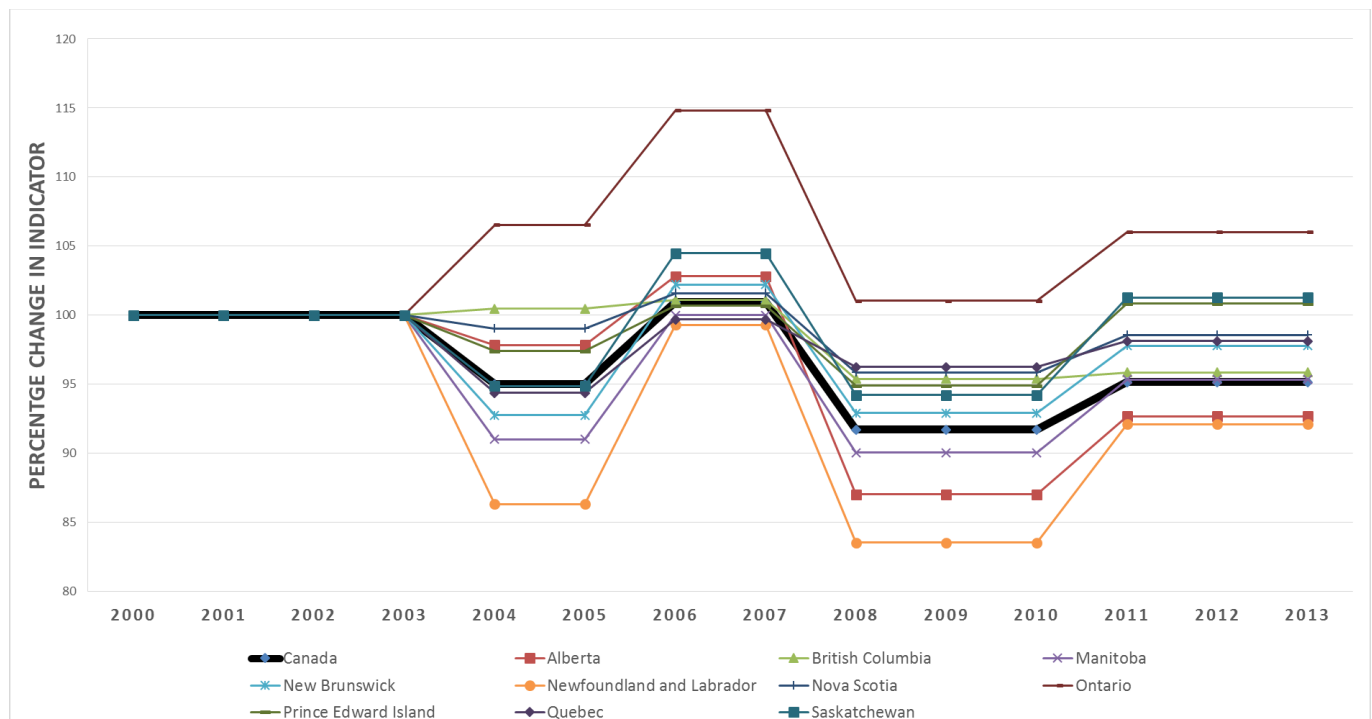
Air pollution:



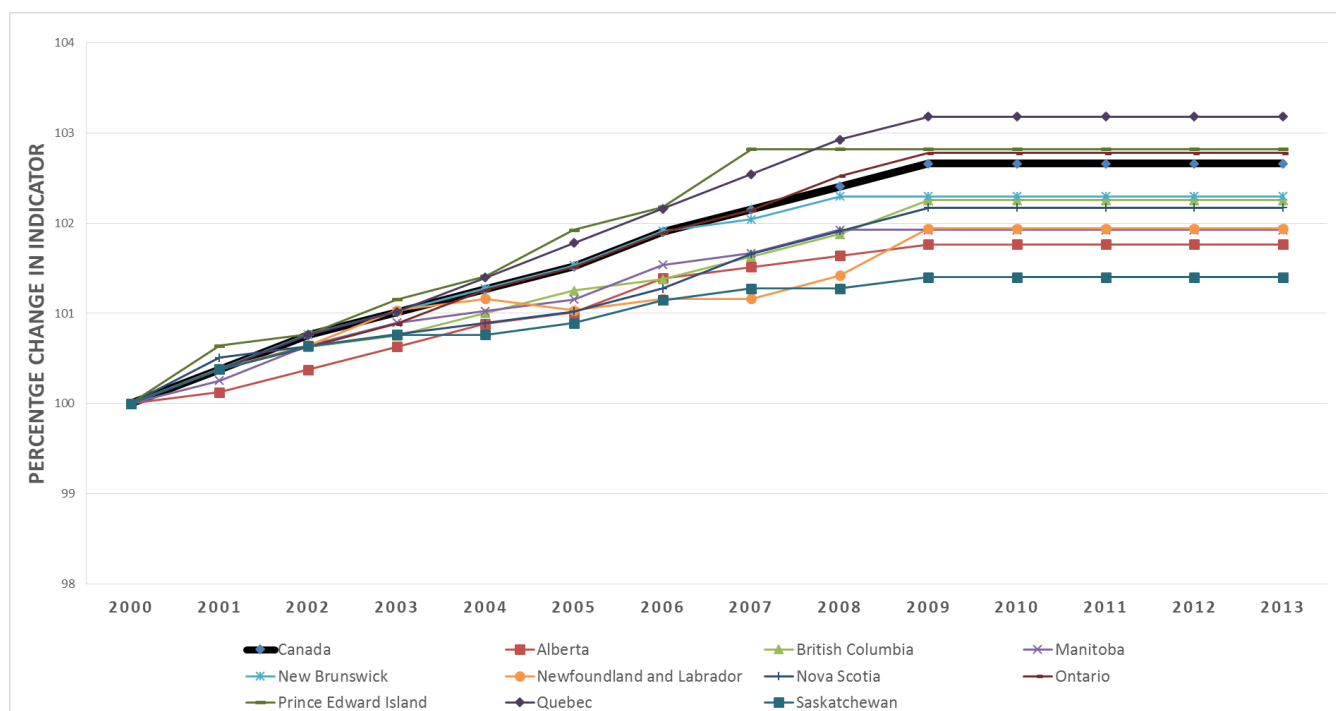
Water quality:



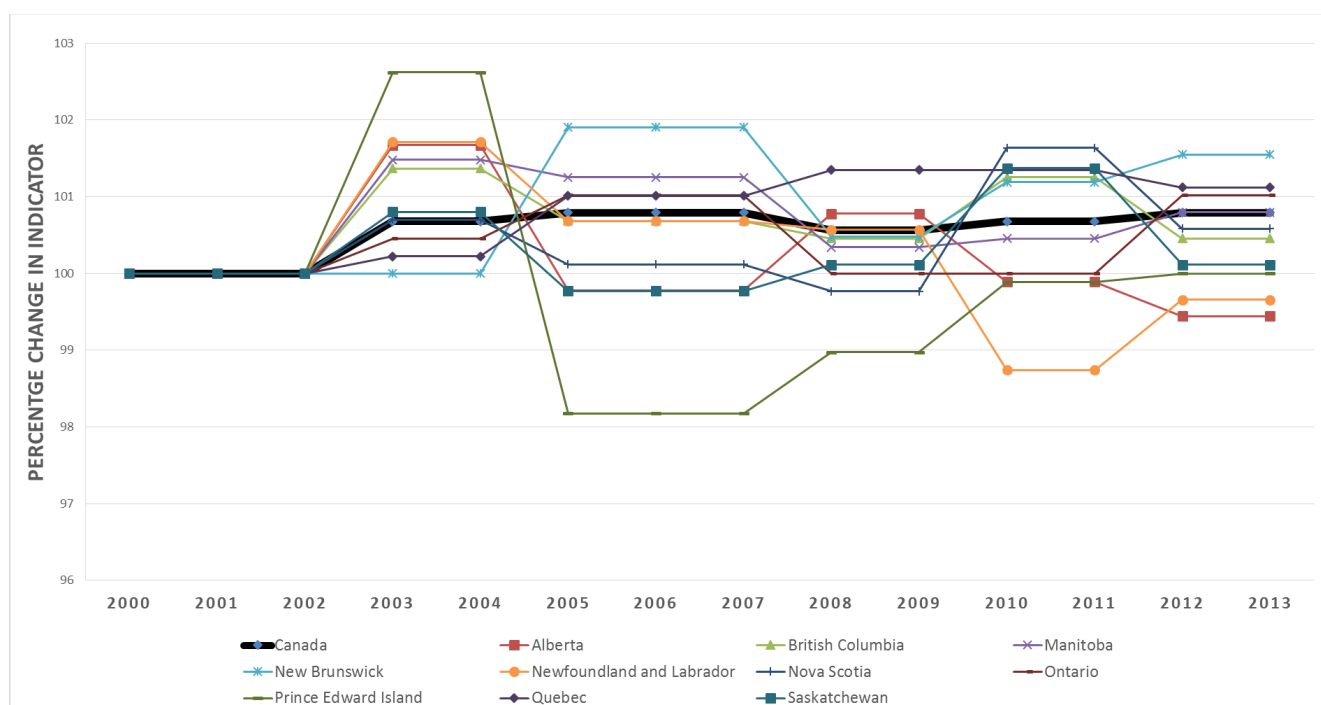
Voter turnout:



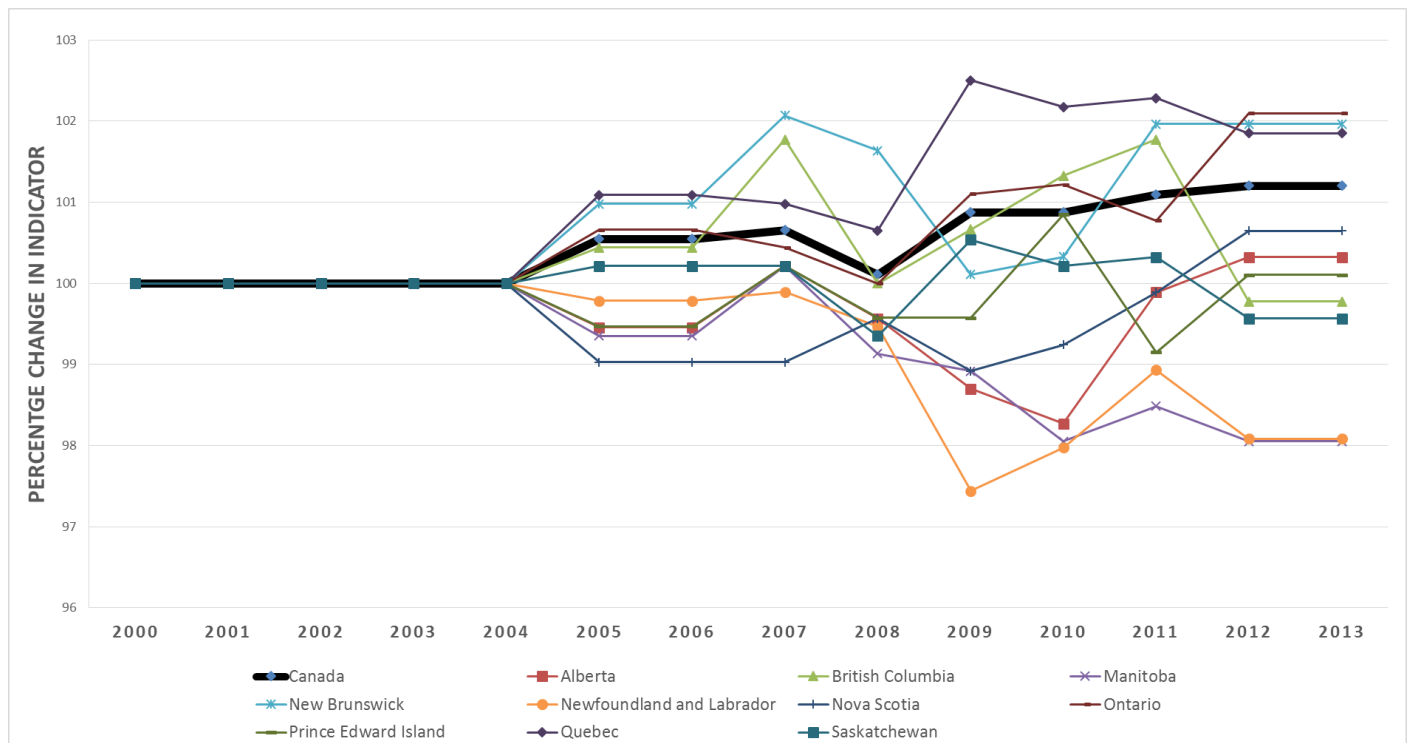
Life expectancy:



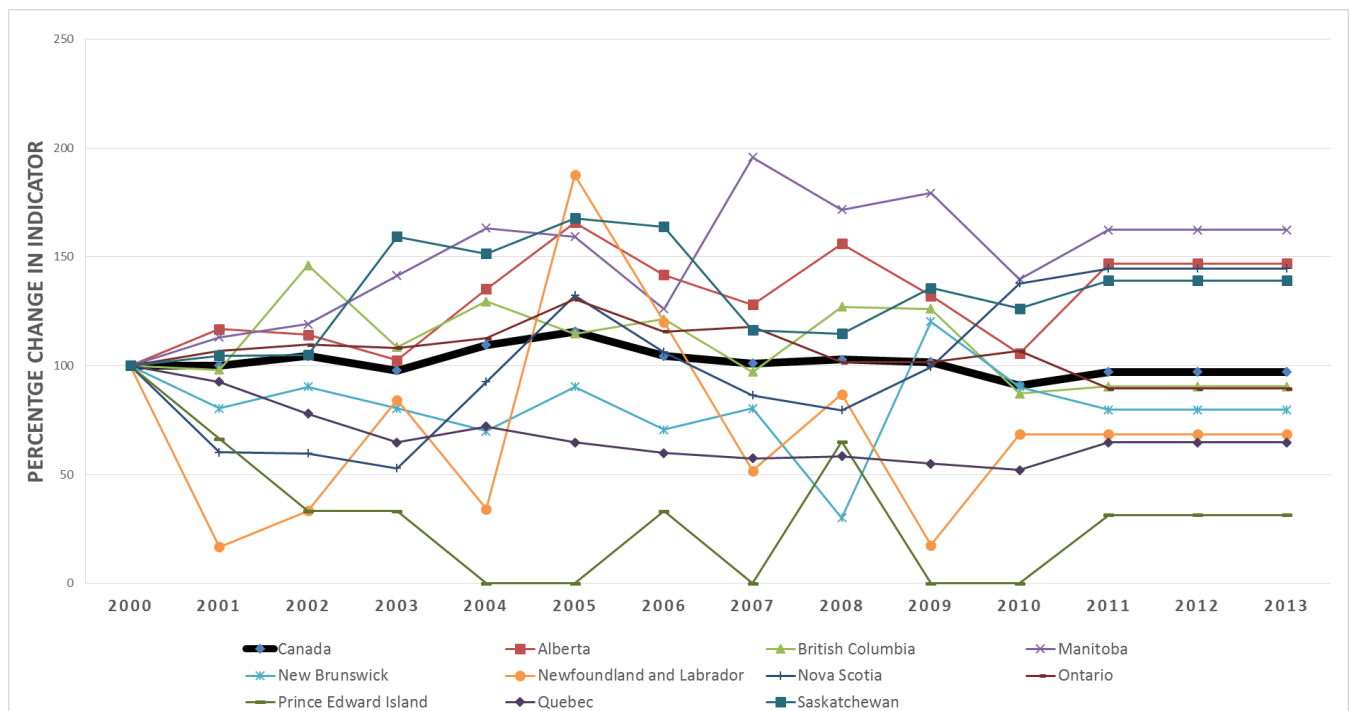
Self-reported health:



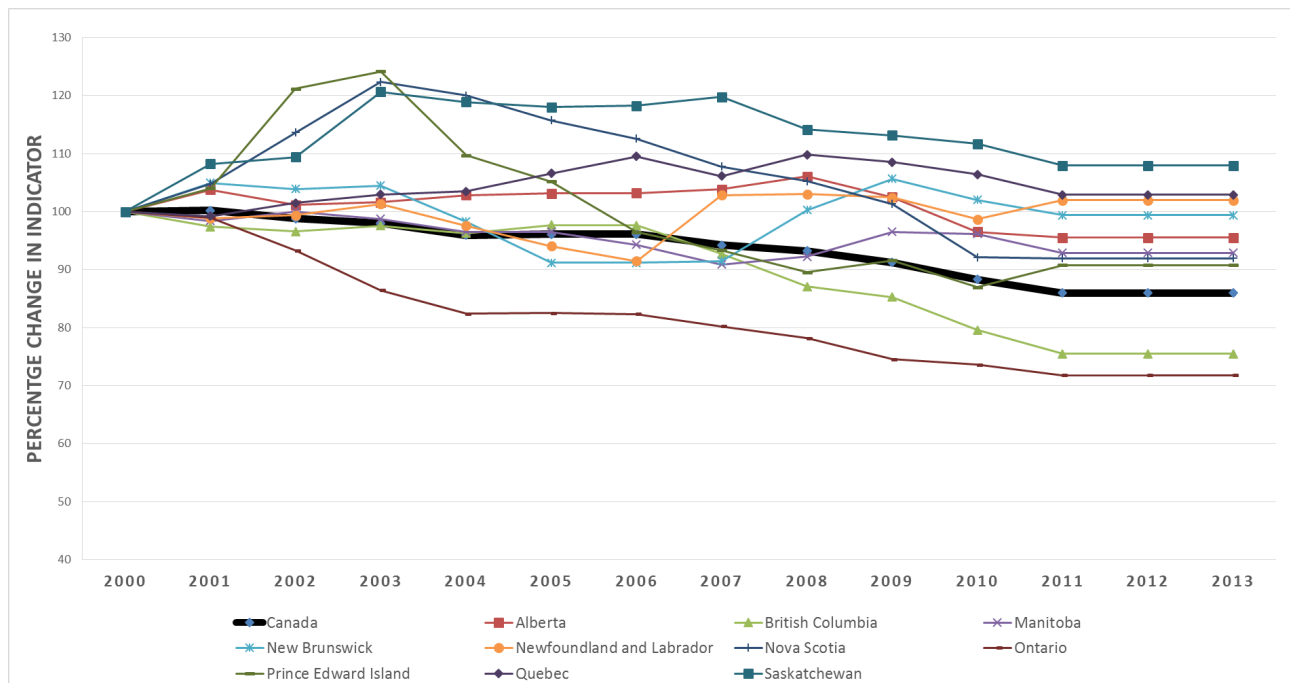
Life satisfaction:



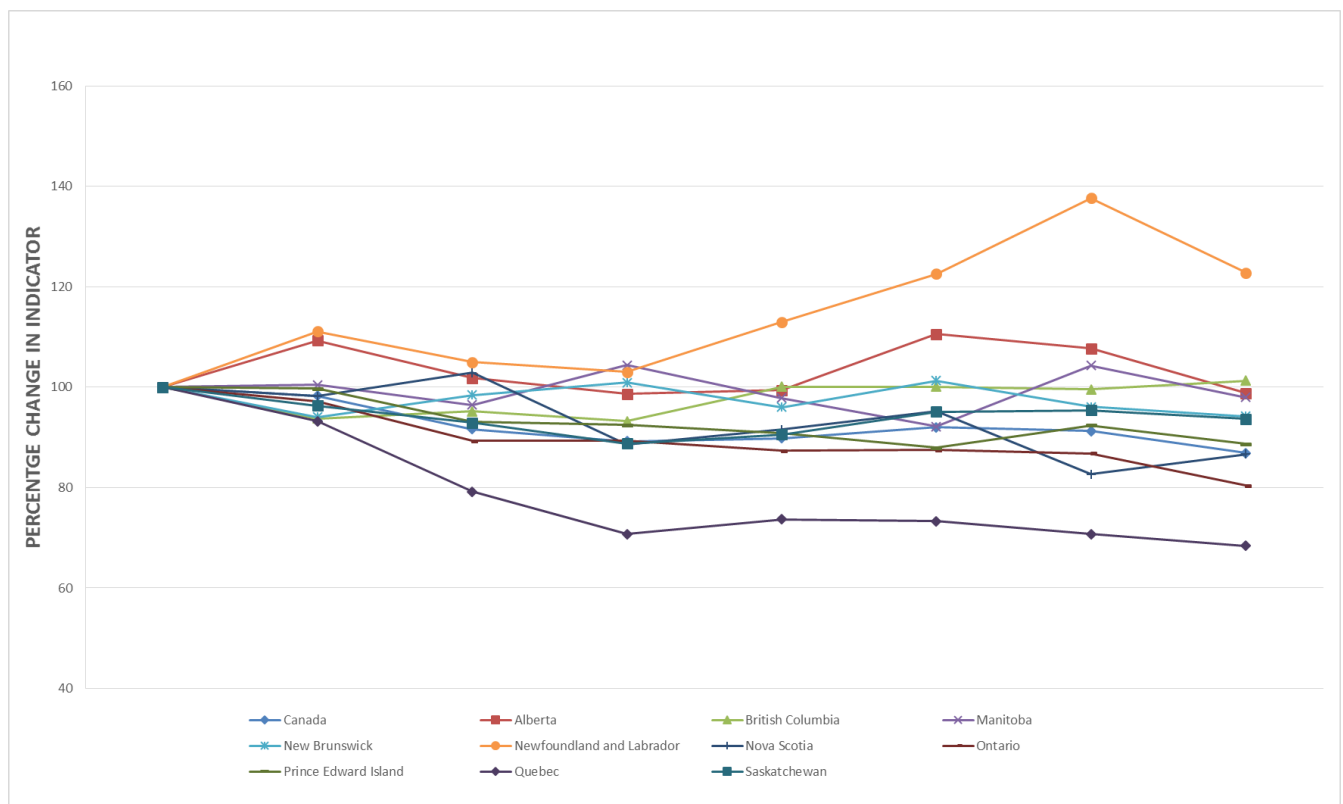
Homicide rate:



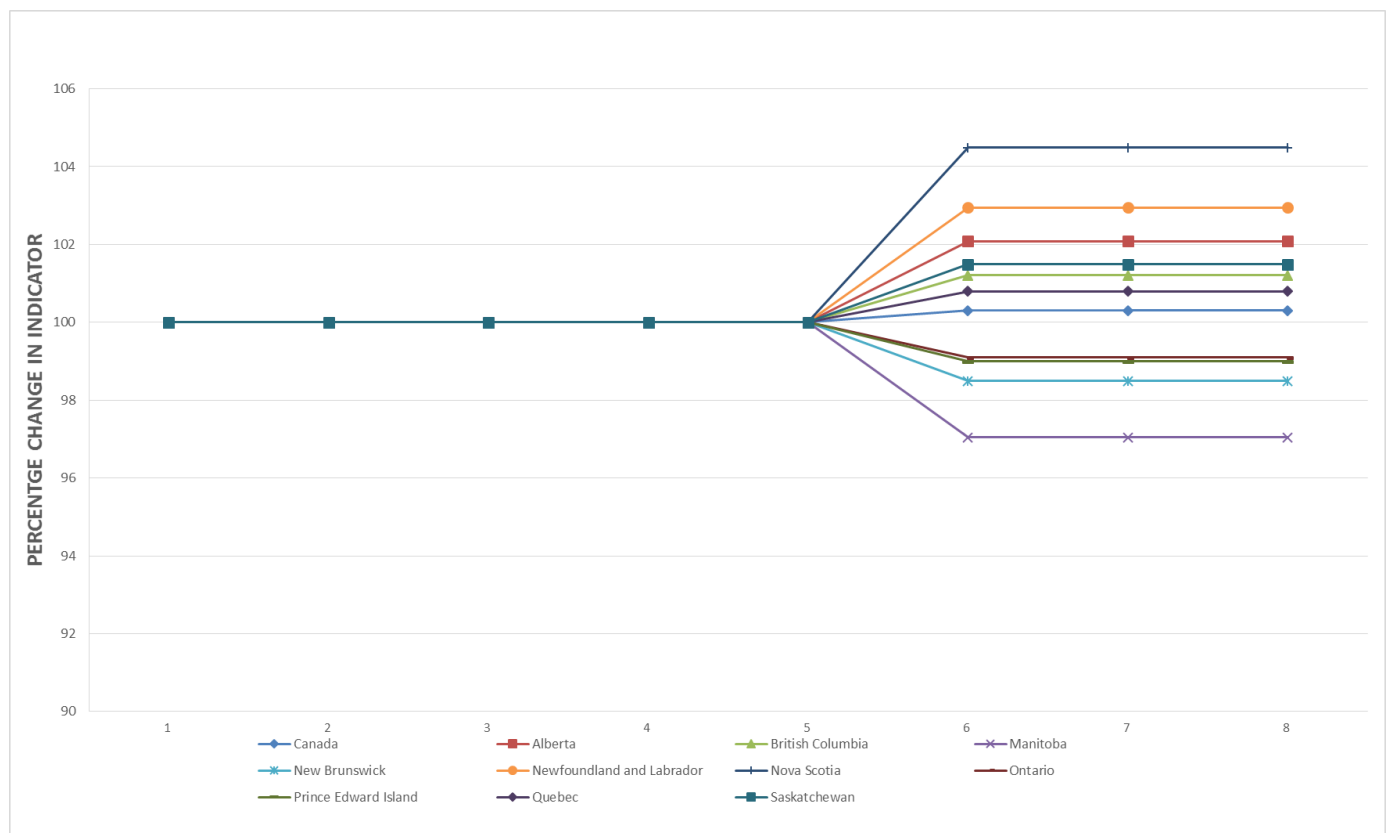
Assault rate:



Employees working very long hours:



Time devoted to leisure and personal care:



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